PESHAWAR INSTITUTE OF CARDIOLOGY
MEDICAL TEACHING INSTITUTUE
PESHAWAR

BIDDING DOCUMENT

For

Supply installation, testing and commissioning of Fire & Safety Solution and Upgradation/Integration of Fire Detection/Fighting System at Peshawar Institute of Cardiology
PIC-069

SINGLE STAGE TWO ENVELOPES

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INVITATION
FOR BIDS

INVITATION FOR BIDS

Dat: _____
Loan / Credit No. _____
Bid Reference No.: _____

1. The _____ (the (Name of Procuring Entity) "Procuring Entity") has applied for/received a loan/credit from the _____
(Name of Funding Agency/GOP/Provincial Govt/Any Other)
towards the cost of _____
(Name of Project)
and it is intended that part of the proceeds of the loan/credit will be applied to eligible payments under the Contract for the _____.Bidding
(Brief description of the Works)
is open to all eligible Bidders.

2. The Procuring Entity invites sealed bids from eligible firms or persons licensed by the Pakistan Engineering Council, registered / enrolled with the Procuring Entity's Department / Authority or prequalified for the respective work(s) registered/enrolled with the Procuring Entity Department / Authority or prequalified for the respective in the appropriate category for the Works. A foreign bidder is also entitled to bid only in a joint venture with a Pakistani constructor in accordance with the relevant provisions of PEC/KP-PPRA Bye-laws.

3. Bidders may obtain further information from, inspect at and acquire the Bidding Documents from the office of the Procuring Entity, at _____
(Mailing address)

4. A complete set of Bidding Documents may be purchased by an interested bidder on submission of a written application to the above office and upon payment of a non- refundable fee of Rs. _____ _____
(Insert Amount)

5. All bids must be accompanied by a Bid Security in the shape of Deposit at Call _____ [Deleted][1] from a Scheduled Bank of Pakistan, in the amount of Rs. (Rupees_____) or an equivalent amount in a freely convertible currency, and must be delivered to_____

_____

(Indicate Address and Exact Location)

at or before_____hours, on (Date). Bids will be opened at hours on the same day, in the presence of bidders' representatives who choose to attend at the same address. (Indicate address and exact location if it differs).

The bid must also be accompanied by a separate non-refundable Tender form fee at the prevailing rates (0.05% of the estimated cost) in shape of Demand Draft / Deposit at Call or Pay Order favouring _____ to be issued by a scheduled bank.

[Note: the bids shall be opened at least thirty minutes after the deadline for submission of bids]

INSTRUCTIONS TO BIDDERS

INSTRUCTIONS TO BIDDERS

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

A. GENERAL

IB.1 Scope of Bid

1.1 The Procuring Entity as defined in the Bidding Data hereinafter called "the Procuring Entity" invites bids for the construction and completion of works as described in these Bidding Documents, and summarized in the Bidding Data hereinafter referred to as the "Works".

1.2 The successful bidder will be expected to complete the Works within the time specified in Appendix-A to Bid.

1.3 Throughout these bidding documents, the terms 'bid' and 'tender' and their derivatives (bidder / tenderer, bid / tender, bidding / tendering etc.) are synonymous.

IB.2 Source of Funds

2.1 The expenditure on this project will be met from the Public Funds of the Provincial Government of Khyber Pakhtunkhwa, Health Department, as defined in Rule-2(l) of KPPRA Procurement Rules or through a loan/credit from the source (s) as indicated in the Bidding Data in various currencies towards the cost of the Project specified in the Bidding Data and it is intended that part of these Public Funds or proceeds of this loan/credit will be applied to eligible payments under the Contract for which these Bidding Documents are issued.

IB.3 Eligible Bidders

3.1 This Invitation for Bids is open to all bidders meeting the following requirements:

a. Duly licensed by the Pakistan Engineering Council (PEC) in the category C4 and above.
b. Duly registered with FBR for Income Tax and KPRA and reflected on Active Tax Payer list (ATL) of FBR for the mentioned works in the TOR's and BOQ's.
c. Is neither associated, nor has been associated, directly or indirectly, with the Consultants or any other entity that has prepared the design, specifications and other documents for the Project or being proposed for any position in the Project Management.

3.2 A bidder having a conflict of interest will be declared as non-responsive if the bidder has a close business relationship with the Procuring Entity's professional personnel, who directly or indirectly involved in any part of: (i) the preparation of the bidding documents for the Works, (ii) the Bid evaluation or (iii) the supervision of such Works.

IB.4 One Bid per Bidder

4.1 Each bidder shall submit only one bid either by himself. A bidder who submits or participates in more than one bid (other than alternatives pursuant to Clause IB.16) will be disqualified.

IB.5 Cost of Bidding

5.1 The bidders shall bear all costs associated with the preparation and submission of their respective bids and the Procuring Entity will in no case be responsible or liable for those costs, regardless of the conduct or outcome of the bidding process.

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IB.6 Site Visit

6.1 The bidders are advised to visit and examine the site of Works and its surroundings and obtain for themselves on their own responsibility all information that may be necessary for preparing the bid and entering into a contract for construction of the Works. All cost in this respect shall be at the bidder's own expense.

6.2 The bidders and any of their personnel or agents will be granted permission by the Procuring Entity to enter upon his premises and lands for the purpose of such inspection, but only upon the express condition that the bidders, their personnel and agents, will release and indemnify the Procuring Entity, his personnel and agents from and against all liability in respect thereof and will be responsible for death or personal injury, loss of or damage to property and any other loss, damage, costs and expenses incurred as a result of such inspection.

B. BIDDING DOCUMENTS

IB.7 Contents of Bidding Documents

7.1 The Bidding Documents, in addition to invitation for bids, are those stated below and should be read in conjunction with any Addenda issued in accordance with Clause IB.9.

1. Instructions to Bidders.
2. Bidding Data.
3. General Conditions of Contract, Part-I (GCC).
4. Particular Conditions of Contract, Part-II (PCC).
5. Specifications – Special Provisions.
6. Specifications - Technical Provisions.
7. Form of Bid & Appendices to Bid.
8. Bill of Quantities (Appendix-D to Bid).
9. Form of Bid Security.
10. Form of Contract Agreement.
11. Forms of Performance Security and Mobilization Advance Guarantee/Bond.
12. Drawings.

7.2 The bidders are expected to examine carefully the contents of all the above documents. Failure to comply with the requirements of bid submission will be at the Bidders own risk. Pursuant to Clause IB.26, bids which are not substantially responsive to the requirements of the Bidding Documents will be rejected.

IB.8 Clarification of Bidding Documents

8.1 Any prospective bidder requiring any clarification (s) in respect of the Bidding Documents may notify the Procuring Entity in writing at the Procuring Entity's address indicated in the Invitation for Bids. The Procuring Entity will respond to any request for clarification which he receives earlier than 28 days prior to the deadline for submission of bids.

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Copies of the Procuring Entities response will be forwarded to all purchasers of the Bidding Documents, including a description of the enquiry but without identifying it's source.

IB.9 Amendment of Bidding Documents

9.1 At any time prior to the deadline for submission of bids, the Procuring Entity 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.

9.2 Any addendum thus issued shall be part of the Bidding Documents pursuant to Sub-Clause 7.1 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 Entity.

9.3 To afford prospective bidders reasonable time in which to take an addendum into account in preparing their bids, the Procuring Entity may extend the deadline for submission of bids in accordance with ClauseIB.20

C. PREPARATION OF BIDS

IB.10 Language of Bid

10.1 The bid and all correspondence and documents related to the bid exchanged by a bidder and the Procuring Entity shall be in the bid language stipulated in the Bidding Data and Particular Conditions of Contract. Supporting documents and printed literature furnished by the bidders may be in any other language provided the same are accompanied by an accurate translation of the relevant parts in the bid language, in which case, for purposes of evaluation of the bid, the translation in bid language shall prevail.

IB.11 Documents Accompanying the Bid

11.1 Each bidder shall:

(a) submit a written power of attorney authorizing the signatory of the bid to act for and on behalf of the bidder;

(b) update the information indicated and listed in the Bidding Data and previously submitted with the application for prequalification, and continue to meet the minimum criteria set out in the prequalification documents which as a minimum, would include the following:

(i) Evidence of access to financial resources along with average annual construction turnover;
(ii) Financial predictions for the current year and the two following years including the effect of known commitments;
(iii) Work commitments since prequalification;
(iv) Current litigation information; and
(v) Availability of critical equipment.

and

(c) furnish a technical proposal taking into account the various Appendices to Bid specially the following:

Appendix-E to Bid Proposed Construction Schedule
Appendix-F to Bid Method of Performing the Work
Appendix-G to Bid List of Major Equipment
Appendix-K to Bid Organization Chart for Supervisory Staff
and other pertinent information such as mobilization program etc;

11.3 Bidders shall also submit proposals of work methods and schedule, in sufficient detail to demonstrate the adequacy of the Bidders' proposals to meet the technical specifications and the completion time referred to in Sub-Clause 1.2 hereof.

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IB.12 Bid Prices

12.1 Unless stated otherwise in the Bidding Documents, the Contract shall be for the whole of the Works as described in Sub-Clause 1.1 hereof, based on the unit rates and / or prices submitted by the bidder.

12.2 The bidders shall fill in rates and prices for all items of the Works described in the Bill of Quantities. Unit rate offered for an item shall be considered upto two significant decimals places for evaluation purposes. Items against which no rate or price is entered by a bidder will not be paid for by the Procuring Entity when executed and shall be deemed covered by rates and prices for other items in the Bill of Quantities. Corrections in rates and prices, if any, shall be made by crossing out, initialing, dating and re-writing.

12.3 All duties, taxes and other levies payable by the Contractor under the Contract, or for any other cause, as on the date 28 days prior to the deadline for submission of bids shall be included in the rates and prices and the total Bid Price submitted by a bidder.

Additional / reduced duties, taxes and levies due to subsequent additions or changes in legislation shall be reimbursed / deducted as per Sub-Clause 70.2 of the General Conditions of Contract Part-I.

IB.13 Currencies of Bid and Payment

13.1 The unit rates and the prices shall be quoted by the bidder entirely in Pak rupees. A bidder expecting to incur expenditures in other currencies for inputs to the Works supplied from outside the Procuring Entity's country (referred to as the "Foreign Currency Requirements") shall indicate the same in Appendix-B to Bid. The proportion of the Bid Price (excluding Provisional Sums) needed by him for the payment of such Foreign Currency Requirements either (i) entirely in the currency of the Bidder's home country or, (ii) at the bidder's option, entirely in Pak rupees provided always that a bidder expecting to incur expenditures in a currency or currencies other than those stated in (i) and (ii) above for a portion of the foreign currency requirements, and wishing to be paid accordingly, shall indicate the respective portions in his bid.

13.2 The rates of exchange to be used by the bidder for currency conversion shall be the TT&OD Selling Rates published or authorized by the State Bank of Pakistan prevailing on the date 28 days prior to the deadline for submission of bids.

For the purpose of payments, the exchange rates used in bid preparation shall apply for the duration of the Contract.

IB.14 Bid Validity

14.1 Bids shall remain valid for the period stipulated in the Bidding Data after the Date of Bid Opening specified in Clause IB.23.

14.2 In exceptional circumstances, prior to expiry of the original bid validity period, the Procuring Entity may request that the bidders extend the period of validity for a specified additional period which shall in no case be more than the original bid validity period. The request and the responses thereto shall be made in writing. A bidder may refuse the request without forfeiting his Bid Security. A bidder agreeing to the request will not be required or permitted to modify his bid, but will be required to extend the validity of his Bid Security for the period

of the extension, and in compliance with Clause IB.15 in all respects. The bidder shall bear all costs to be incurred on such extensions.

IB.15 Bid Security

15.1 Each bidder shall furnish, as part of his bid, a Bid Security in the amount stipulated in the Bidding Data in Pak Rupees or an equivalent amount in a freely convertible currency. [The bid security shall be submitted from the account of the firm/bidder/contractor who submits the bid][2]

15.2 The Bid Security shall be, at the option of the bidder, in the form of Deposit at Call or a Bank Guarantee issued by a Scheduled Bank in Pakistan or from a foreign bank duly counter guaranteed by a Scheduled Bank in Pakistan in favour of the Procuring Entity valid for a period 28 days beyond the Bid Validity date.

15.3 Any bid not accompanied by an acceptable Bid Security shall be rejected by the Procuring Entity as non-responsive.

15.4 The bid securities of unsuccessful bidders will be returned as promptly as possible, but not later than 28 days after the expiration of the period of Bid Validity.

15.5 ["The bid security of the successful bidder be retained with the Procuring Entity till completion of the defect liability period and the amount of guarantee will be reduced by an equivalent amount".][3]

15.6 The Bid Security may be forfeited:

(a) if the bidder withdraws his bid except as provided in Sub-Clause 22.1;

(b) In case of false information provided by the bidder

(c) if the bidder does not accept the correction of his Bid Price pursuant to Sub-Clause 27.2 hereof; or

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(c) In the case of successful bidder, if he fails within the specified time limit to:

(i) furnish the required Performance Security; or

(ii) sign the Contract Agreement.

IB.16 Alternate Proposals by Bidder

16.1 Should any bidder consider that he can offer any advantages to the Procuring Entity by a modification to the designs, specifications or other conditions, he may, in addition to his bid to be submitted in strict compliance with the Bidding Documents, submit any Alternate Proposal(s) containing (a) relevant design calculations; (b)technical specifications; (c)proposed construction methodology; and (d) any other relevant details / conditions, provided always that the total sum entered on the Form of Bid shall be that which represents complete compliance with the Bidding Documents.

16.2 Alternate Proposal(s), if any, of the lowest evaluated responsive bidder only may be considered by the Procuring Entity as the basis for the award of Contract to such bidder.

IB.17 Pre-Bid Meeting

17.1 The Procuring Entity may, on his own motion or at the request of any prospective bidder(s), hold a pre-bid meeting to clarify issues and to answer any questions on matters related to the Bidding Documents or any other matter that may be raised at that stage. The date, time and venue of pre- bid meeting, if convened, is as stipulated in the Bidding Data. All prospective bidders or their authorized representatives shall be invited to attend such a pre- bid meeting.

17.2 The bidders are requested to submit questions, if any, in writing so as to reach the Procuring Entity not later than seven (7) days before the proposed pre-bid meeting.

17.3 Minutes of the pre-bid meeting, including the text of the questions raised and the replies given, will be transmitted without delay to all purchasers of the Bidding Documents. Any modification of the Bidding Documents listed in Sub-Clause 7.1 hereof which may become necessary as a result of the pre-bid meeting shall be made by the Procuring Entity exclusively through the issue of an Addendum pursuant to Clause IB.9 and not through the minutes of the pre-bid meeting.

17.4 Absence at the pre-bid meeting will not be a cause for disqualification of a bidder.

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IB.18 Format and Signing of Bid

18.1 Bidders are particularly directed that the amount entered on the Form of Bid shall be for performing the Contract strictly in accordance with the Bidding Documents.

18.2 All appendices to Bid are to be properly completed and signed.

18.3 No alteration is to be made in the Form of Bid nor in the Appendices thereto except in filling up the blanks as directed. If any such alterations be made or if these instructions be not fully complied with, the bid may be rejected.

18.4 Each bidder shall prepare by filling out the forms completely and without alterations one (1) original and number of copies, specified in the Bidding Data, of the documents comprising the bid as described in Clause IB.7 and clearly mark them “ORIGINAL” and “COPY” as appropriate. In the event of discrepancy between them, the original shall prevail.

18.5 The original and all copies of the bid shall be typed or written in indelible ink (in the case of copies, photostats are also acceptable) and shall be signed by a person or persons duly authorized to sign on behalf of the bidder pursuant to Sub-

Clause 11.1(a) hereof. All pages of the bid shall be initialed and stamped by the person or persons signing the bid.

18.6 The bid shall contain no alterations, omissions or additions, except to comply with instructions issued by the Procuring Entity, or as are necessary to correct errors made by the bidder, in which case such corrections shall be initialed by the person or persons signing the bid.

18.7 Bidders shall indicate in the space provided in the Form of Bid their full and proper addresses at which notices may be legally served on them and to which all correspondence in connection with their bids and the Contract is to be sent.

18.8 Bidders should retain a copy of the Bidding Documents as their file copy.

D. SUBMISSION OF BIDS

IB.19 Sealing and Marking of Bids

19.1 Each bidder shall submit his bid as under:

(a) ORIGINAL and each copy of the Bid shall be separately sealed and put in separate envelopes and marked as such.

(b) The envelopes containing the ORIGINAL and copies will be put in one sealed envelope and addressed / identified as given in Sub- Clause 19.2 hereof.

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19.2 The inner and outer envelopes shall:

(a) be addressed to the Procuring Entity 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.

19.3 In addition to the identification required in Sub- Clause 19.2 hereof, the inner envelope shall indicate the name and address of the bidder to enable the bid to be returned unopened in case it is declared “late” pursuant to Clause IB.21

19.4 If the outer envelope is not sealed and marked as above, the Procuring Entity will assume no responsibility for the misplacement or premature opening of the Bid.

IB.20 Deadline for Submission of Bids

20.1 (a) Complete Bids must be received by the Procuring Entity at the address specified no later than the time and date stipulated in the Bidding Data In the event of the specified date for the submission of bids declared a

holiday for the Procuring Entity, the Bids will be received up to the appointed time on the next working day.

(b) Bids with charges payable will not be accepted, nor will arrangements be undertaken to collect the bids from any delivery point other than that specified above. Bidders shall bear all expenses incurred in the preparation and delivery of bids. No claims will be entertained for refund of such expenses.

(c) Where delivery of a bid is by mail and the bidder wishes to receive an acknowledgment of receipt of such bid, he shall make a request for such acknowledgment in a separate letter attached to but not included in the sealed bid package.

(d) Upon request, acknowledgment of receipt of bids will be provided to those making delivery in person or by messenger.

20.2 The Procuring Entity may, at his discretion, extend the deadline for submission of bids by issuing an amendment in accordance with Clause IB.9, in which case all rights and obligations of the Procuring Entity and the bidders previously subject to the original deadline will thereafter be subject to the deadline as extended.

IB.21 Late Bids

21.1 (a) Any bid received by the Procuring Entity after the deadline for submission of bids prescribed in Clause IB.20 will be returned unopened to such bidder.

(b) Delays in the mail, delays of person in transit, or delivery of a bid to the wrong office or due to any other reason, shall not be accepted as an excuse for failure to deliver a bid at the proper place and time. It shall be the bidder's responsibility to determine the manner in which timely delivery of his bid will be accomplished either in person, by messenger or by mail.

IB.22 Modification, Substitution and Withdrawal of Bids

22.1 Any bidder may modify**,** substitute or withdraw his bid after bid submission provided that the modification, substitution or written notice of withdrawal is received by the Procuring Entity prior to the deadline or the extended deadline pursuant to clause IB.20.2, for submission of bids.

22.2 The modification, substitution or notice for withdrawal of any bid shall be prepared, sealed, marked and delivered in accordance with the provisions of Clause IB.19 with the outer and inner envelopes additionally marked "MODIFICATION", "SUBSTITUTION" or "WITHDRAWAL" as appropriate.

22.3 No bid may be modified by a bidder after the deadline for submission of bids except in accordance with Sub-Clauses 22.1 and 27.2.

22.4 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 in pursuance to Clause IB.15.

E. BID OPENING AND EVALUATION

IB.23 Bid Opening

23.1 The Procuring Entity will open all the bids received (except those received late), including withdrawals, substitution and modifications made pursuant to Clause IB.22, in the presence of bidders' or their representatives who choose to attend, at the time, date and location stipulated in the Bidding Data. In the event of the specified date for the opening of bids being declared a holiday for the Procuring Entity, the Bids will be opened at the appointed time and location on the next working day. The bidders' representatives who are present shall sign a register evidencing their attendance.

23.2 Envelopes marked "MODIFICATION", "SUBSTITUTION" or "WITHDRAWAL" shall be opened and read out first. Bids for which an acceptable notice of withdrawal has been submitted pursuant to Clause IB.22 shall not be opened.

23.3 The bidder's name, total Bid Price and price of any Alternate Proposal(s), any discounts, bid modifications, substitution and withdrawals, the presence or absence of Bid Security and such other details as the Procuring Entity may consider appropriate, will be announced by the Procuring Entity at the opening of bids.

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23.4 Procuring Entity shall prepare minutes of the bid opening including the information disclosed to those present in accordance with the Sub-Clause 23.3.

IB.24 Process to be Confidential

24.1 Information relating to the examination, clarification, evaluation and comparison of bid and recommendations for the award of a contract shall not be disclosed to bidders or any other person not officially concerned with such process before the announcement of the final result of the bid evaluation which shall be done at least ten (10) days prior to issue of Letter of Acceptance and place the same on its and Authority's Website (KP-PPRA 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. Any effort by a bidder to influence the Procuring Entity's processing of bids or award decisions may result in the rejection of such bidder's bid. Whereas any bidder feeling aggrieved may lodge a written complaint not later than fifteen (15) days after the announcement of the bid evaluation report; however mere fact of lodging a complaint shall not warrant suspension of the procurement process.

IB.25 Clarification of Bids

25.1 To assist in the examination, evaluation and comparison of bids, the Procuring Entity may, at his discretion, ask any bidder for clarification of his bid, including breakdowns of unit rates. The request for clarification and the response shall be in writing but no change in the price or substance of the bid shall be sought, offered or permitted except as required to confirm the correction of arithmetic errors discovered by the Procuring Entity in the evaluation of the bids in accordance with Clause IB.28.

IB.26 Examination of Bids and Determination of Responsiveness

26.1 Prior to the detailed evaluation of bids, the Procuring Entity will determine whether each bid is substantially responsive to the requirements of the Bidding Documents.

26.2 A substantially responsive bid is one which (i) meets the eligibility criteria; (ii) has been properly signed; (iii) is accompanied by the required Bid Security and (iv) conforms to all the terms, conditions and specifications of the Bidding Documents, without material deviation or reservation. A material deviation or reservation is one (i) which affect in any substantial way the

scope, quality or performance of the Works; (ii) which limits in any substantial way, inconsistent with the Bidding Documents, the Procuring Entity's rights or the bidder's obligations under the Contract; or (iii)
adoption/rectification whereof would affect unfairly the competitive position of other bidders presenting substantially responsive bids.

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26.3 If a bid is not substantially responsive, it will be rejected by the Procuring Entity and may not subsequently be made responsive by correction or withdrawal of the non-conforming deviation or reservation.

IB.27 Correction of Errors

27.1 Bids determined to be substantially responsive will be checked by the Procuring Entity for any arithmetic errors. Errors will be corrected by the Procuring Entity as follows:

(a) where there is a discrepancy between the amounts in figures and in words, the amount in words will govern and

(b) where there is a discrepancy between the unit rate and the line item total resulting from multiplying the unit rate by the quantity, the unit rate as quoted will govern, unless in the opinion of the Procuring Entity there is an obviously gross misplacement of the decimal point in the unit rate, in which case the line item total as quoted will govern and the unit rate will be corrected.

27.2 The amount stated in the Form of Bid will be adjusted by the Procuring Entity in accordance with the above procedure for the correction of errors and with the concurrence of the bidder, shall be considered as binding upon the bidder. If the bidder does not accept the corrected bid price, his bid will be rejected and the Bid Security shall be forfeited in accordance with Sub-Clause 15.6(b) hereof.

IB.28 Evaluation and Comparison of Bids

28.1 The Procuring Entity will evaluate and compare only the bids determined to be substantially responsive in accordance with Clause IB.26.

28.2 In evaluating the bids, the Procuring Entity will determine for each bid the evaluated Bid Price by adjusting the Bid Price as follows:

(a) making any correction for errors pursuant to Clause IB.27;
(b) excluding Provisional Sums and the provision, if any, for contingencies in the Summary Bill of Quantities, but including competitively priced Day work; and
(c) making an appropriate adjustment for any other acceptable variation or deviation, including discounts or other price modification in the bids.

28.3 The estimated effect of the price adjustment provisions of the Conditions of Contract, applied over the period of execution of the Contract, shall not be taken into account in Bid evaluation.

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28.4 If the Bid of the successful bidder is seriously unbalanced in relation to the Procuring Entity's estimate of the cost of work to be performed under the Contract, the Procuring Entity may require the bidder to produce detailed price analyses for any or all items of the Bill of Quantities to demonstrate the internal consistency of those prices with the construction methods and schedule proposed. After evaluation of the price analyses, the Procuring Entity may require that the amount of the Performance Security set forth in Clause IB.32
be increased at the expense of the successful bidder to a level sufficient to protect the Procuring Entity against financial loss in the event of default of the successful bidder under the Contract.

F. AWARD OF CONTRACT IB.29

Award

29.1 Subject to Clauses IB.30 and IB.34, the Procuring Entity 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 eligible in accordance with the provisions of Clause IB.3 and qualify pursuant to Sub-Clause IB 29.2.

29.2 The Procuring Entity, 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.

IB.30 Procuring Entity's Right to Accept any Bid and to Reject any or all Bids

30.1 Notwithstanding Clause IB.29, the Procuring Entity 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 except that the grounds for rejection of all bids shall upon request be communicated to any bidder who submitted a bid, without justification of grounds. Rejection of all bids shall be notified to all bidders promptly.

I-14

IB.31 Notification of Award

31.1 Prior to expiration of the period of bid validity prescribed by the Procuring Entity, the Procuring Entity will notify the successful bidder in writing ("Letter of Acceptance") that his Bid has been accepted. This letter shall name the sum which the Procuring Entity will pay the Contractor in consideration of the execution and completion of the Works by the Contractor as prescribed by the Contract (hereinafter and in the Conditions of Contract called the "Contract Price").

31.2 No Negotiation with the bidder having evaluated as lowest responsive or any other bidder shall be permitted, however, Procuring Entity may have clarification meetings to get clarify any item in the bid evaluation report.

31.3 The notification of award and its acceptance by the bidder will constitute the formation of the Contract, binding the Procuring Entity and the bidder till signing of the formal Contract Agreement.

31.3 Upon furnishing by the successful bidder of a Performance Security, the Procuring Entity will promptly notify the other bidders that their Bids have been unsuccessful and return their bid securities.

IB.32 Performance Security

32.1 The successful bidder shall furnish to the Procuring Entity a Performance Security in the form and the amount stipulated in the Bidding Data and the Conditions of Contract plus additional security for unbalanced bids in accordance with Clause IB.28.4 within a period of 28 days after the receipt of Letter of Acceptance.

32.2 Failure of the successful bidder to comply with the requirements of Sub-Clause IB.32.1 or Clauses IB.33 or IB.35 shall constitute sufficient grounds for the annulment of the award and forfeiture of the Bid Security.

IB.33 Signing of Contract Agreement

33.1 Within 14 days from the date of furnishing of acceptable Performance Security under the Conditions of Contract, the Procuring Entity will send the successful bidder the Contract Agreement in the form provided in the Bidding Documents, incorporating all agreements between the parties.

33.2 The formal Agreement between the Procuring Entity and the successful bidder shall be executed within 14 days of the receipt of the Contract Agreement by the successful bidder from the Procuring Entity.

IB.34 General Performance of the Bidders

The Procuring Entity reserves the right to obtain information regarding performance of the bidders on their previously awarded contracts/works. The Procuring Entity may in case of consistent poor performance of any Bidder as reported by the Procuring Entity's of the previously awarded contracts, inter alia, reject his bid and/or refer the case to the Pakistan Engineering Council (PEC) and KPPRA. Upon such reference, PEC / K P P R A in accordance with its rules, procedures and relevant laws of the land take such action as may be deemed appropriate under the circumstances of the case including black listing of such Bidder and debarring him from participation in future bidding for similar works.

IB.35 Integrity Pact

The Bidder shall sign and stamp the Integrity Pact provided at Appendix-L to Bid in the Bidding Documents for all procurement contracts exceeding Rupees ten million. Failure to provide such Integrity Pact shall make the bidder non- responsive.

IB.36 Instructions not Part of Contract

Bids shall be prepared and submitted in accordance with these Instructions which are provided to assist bidders in preparing their bids, and do not constitute part of the Bid or the Contract Documents.

BIDDING DATA

BD-1
[NOTES ON BIDDING DATA

This Section is intended to assist the Procuring Entity in providing the specific information in relation to corresponding clauses in Instructions to Bidders (ITB) and should be prepared to suit each individual contract.

The Procuring Entity should provide in the Bidding Data information and requirements specific to the circumstances of the Procuring Entity, the processing of the Bid, the applicable rules regarding Bid Price and currency, and the Bid evaluation criteria that will apply to the Bids. In preparing this section, the following aspects should be checked:

(a) Information that specifies and complements the provisions of section; Instruction to Bidders must be incorporated.

(b) Amendments and/or supplements, if any, to the provisions of Instructions to Bidders, necessitated by the circumstances of each individual contract, can be introduced only in this section since Instructions to Bidders will remain unchanged.

Bidding Data

Bidding Data Sheet

The following specific data for the Works to be bided shall complement, amend or supplement the provisions in the instructions to Bidders. Wherever there is a conflict, the provisions herein shall prevail over those in the instructions to Bidders

Instructions to Bidders

Clause Reference

Clause IB.1 Scope of Bid

Sub Clause 1.1 Name and address of the Procuring

The Employer
Peshawar Institute of Cardiology,
5-A, Sector B-3, Hayatabad Phase-5, Peshawar, KPK:

The Employer Representative is:

Director Building and Facilities PIC-MTI

1.1 **Name of the Project & Summary of the Works:**

Supply installation, testing and commissioning of Fire & Safety Solution and Upgradation/Integration of Fire Detection/Fighting System at Peshawar Institute of Cardiology.

Clause IB.2 Source of Funds

Sub Clause 2.1 **Name of the Borrower/Source of Financing/Funding Agency:**

(MTI-PIC)

Clause IB.7 Contents of Bidding Documents

- **Sub-Clause 7.1** Delete the text of Sub-Clause 7.1 and substitute it with the following:

The Bidding Documents are those stated below, and should be read in conjunction with any Addenda issued in accordance with the Clause IB.9.

Technical Bid

7.1.1 **Volume – I**

- Instruction to Bidders
- Bidding Data

- Form of Bid & Appendices to Bid (excluding Appendix-D)
- Forms of Bid Security Performance Security, Contract Agreement, Bank Guarantee
- Part-I- General Conditions of Contract
- Part-II- Particular Conditions of Contract
- Specifications – Special Provisions

7.1.2 **Volume-II**

- Specifications- Technical Provisions

7.1.3 **Volume-III**

- Bid Drawings

Clause IB.8 **Clarification of Bidding Documents**
Sub-Clause 8.1 **Time limit for clarification**

Delete the word ''28 days'' and replace with ''7 days''

Clause IB.10 **Language of Bid**
Sub-Clause 10.1 All communications and documentations related to this procurements shall be in English.

Clause IB.11 **Documents Accompanying the Bid**
11.1 (A) The Bidder shall submit with its Technical Bid the following documents:

Volume-I

i. Letter of Technical Bid
ii. Written power of attorney authorizing the signatory of the Bid
iii. Original Bidding Documents (Volume-I)
iv. Dully filled in Schedules to Bid
v. Qualifications Documents establishing bidder's eligibility

Volume-II

i. Specifications – Technical

Volume – III

i. Bid Drawings

11.1(B) The Bidder shall submit with its **Price Bid** the following documents:

Volume – IV

ii. Letter of Price Bid
iii. Preamble to Bill of Quantities
iv. Appendix – D to Bid (Bill of Quantities)
v. Bid Security

Clause IB.12 **Bid Prices**

Sub-Clause 12.1 Unless stated otherwise in the Bidding Documents, the Contract shall be for the whole of the Works as described in Sub-Clause 1.1 hereof, based on the Priced Bill of Quantities with premium/rebate submitted by the bidder.

Sub-Clause 12.2 The Quantities Set Out in the Bill of Quantities are estimated only. The actual sum to be paid to the Contractor whose tender is accepted will be determined by measuring the work actually done in accordance with the contract.

Sub-Clause 12.3 All duties, taxes and other levies payable by the Contractor under the Contract, or for any other cause, prior to the deadline for submission of bids shall be included in the rates and prices and the total Bid Price submitted by a bidder.

Additional / reduced duties, taxes and levies due to subsequent additions or changes in legislation shall be reimbursed / deducted as per Sub-Clause 70.2 of the General Conditions of Contract Part-I.

Sub-Clause 12.5 All discounts offered by the bidders should be as per the procedure given in the Bidding Data accompanying the instruction to bidder.

Clause IB. 1.3 **Currencies of Bid and payment.**

Sub-clause 13.1 Delete the text of sub-clause 13.1 and substitute with the following.

The payments to the contractor for the works done shall be made in Pakistani Rupees

Sub-Clause 13.2 The sub-clause is deleted in its entirety.

Clause IB 14 **Bid validity**

Sub clause 14.1 **Period of Bid validity:**

One hundred twenty (120) days
In exceptional circumstances, PIC Hospital may solicit the Bidder's consent to an extension of the period of validity reasons shell be recorded in writing. The request and the responses there to shall be made in writing. The Bid Security provided shall also be suitably extended. A Bidder may refuse the request without forfeiting its bid Security. A Bidder granting the request will not be required nor permitted to modify its bid, except as provided in the bidding document.

Clause IB. 15 **Amount of Bid security**

Sub-clause 15.1 2% of the Bid Cost

Clause IB 16. **Alternate proposals by Bidder**

The clause is deleted in its entirety

Clause IB 17. **Pre-Bid Meeting**
Sub-clause 17.1 **Venue, time, and date of the pre-Bid meeting:**

Pre-Bid Meeting will be held on **August 21, 2023 at 10:00 AM (PST)** at the office of the Manager Material Management, 1st Floor, OPD Building, of Peshawar Institute of Cardiology (PIC-MTI). Prospective Bidder are encouraged to attend the meeting

Sub-clause 17.2. Delete the text of sub-clause 17.2 and substitute which the following.

The Bidders are requested to submit any questions in writing or by Fax. To reach The Employer three (3) days before the date given for pre-bid meeting in the

Invitation for Bids.

Class IB 18. **Format and signing of Bid**
Sub-Clause 18.4 **Number of copies of Bid:**
The Bidder shall prepare and submit the original and one copy documents Comprising the Bid as described in clause 7 of these instructions to Bidders and Clearly marked **"ORIGINAL"** and COPY.

Sub-clause 18.5 Delete the text of Sub-clause 18.5 and substitute with the following.

The Bid shall be typed or written in indelible ink and shall be signed by a person or persons duly authorized to sign on behalf of the Bidder pursuant to Sub-clause 11.1(a) hereof. All pages of the Bid shall be initialed and stamped by the person or persons signing the Bid. One (1) copy of power of attorney must Be attached to the Bid submitted to the Employer if this Bid is signed/executed by a person other than the president, Partner or Owner of the Bidder, company.

Clause IB 19 **Sealing and Marking of Bids**

Sub-Clause 19.1 Delete the text of sub-clause 19.1 (c) and substitute with the following:
(c) the technical bid shall comprise of documents listed in IB 11.1(A) alone With Bid security and the price bid shall comprise of documents listed in IB 11.1(B) which shall be placed in separate envelopes in accordance with IB-11.1.
Sub-Clause 19.2 (a) Employer's address for the purpose of Bid submission is as follows:

Manager Material Management, 1st floor, OPD Block, Peshawar Institute of Cardiology.

(b) Name & identification number of the contract is as follows:

"Supply installation, testing and commissioning of Fire & Safety Solution and Upgradation/Integration of Fire Detection/Fighting System".PIC-069

Identification Number: PIC-069

Clause IB 20	**Deadline for submission of Bids**
Sub clause 20.1(a)	Bids are to be delivered to the office of the Manager Material Management, 1st Floor, OPD Building, of Peshawar Institute of Cardiology (PIC-MTI) on or before **August 31st, 2023 at 11:00 AM (PST).**
Clause-IB 23. **Sub-Clause 23.1**	**Bid Opening** **Venue, time, and date of Bid opening.**
	Bids shall be opened on the same day as prescribe in 20.1 above at **11:30 AM (PST)** in the presence of bidders who choose to attend in the office of Manager Material Management, 1st Floor, OPD Building, of Peshawar Institute of Cardiology (PIC-MTI).
Sub-clause 26.2	at the end of words" ……deviation or reservation in fifth line of sub-clause 26.2 add following: vi. determined "as qualified"
Clause IB 28	**Evaluation and comparison of Bids**
Sub clause 28.2	Delete the sub-clause IB 28.2 (c) in its entirety
Sub-clause 28.4	The Contractors quoting their bids more than 10% below upto 20% below on Total Estimate shall submit along with their bids 8% additional security of Total estimated cost in addition to 2% bid security. If the bid is not accompanied with the required amount of additional security, then it will be considered as non-responsive and the 2% bid security shall be forfeited in favour of Hospital Director Peshawar Institute of Cardiology and the second lowest bidder and so on will be considered accordingly. a. Similarly, a contractor security on quoting bid more than 20% below shall submit with his bid an additional security on Engineer's Estimated cost equal to differential. amount of submitted-bid and Total Estimate along with detailed rate analysis. In case of more than 20% below bids, if the bid is not accompanied by the detailed rate analysis and / or required amount of additional security, then the said bid shall be considered as non-responsive. All the securities submitted along with such non-responsive bid shall be forfeited in favour of Hospital Director Peshawar Institute of Cardiology and the 2nd lowest bidder and so on will be considered

accordingly

b. In case detailed rate analysis submitted with the bids is, in view of the Engineer in charge , not convincing, the Head of the Procuring Entity on the recommendation of Engineer in charge may declare such bid as non-responsive without any forfeiture of bid securities and record reasons thereof.

c. The procuring entity may offer the contract to next lowest bidder after due diligence in the context of financial difference between such to bids or may advertise procurement opportunity afresh. (as per KPPRA Rules)

Clause IB 32 **Performance Security**

Sub-clause 32.1 Delete the text of sub-clause 32.1 and substitute with the following:

The Successful bidder shall provide a Performance Security in the prescribed Form annexed to these Documents. The said Security shall be furnished by the successful bidder within fourteen (14) days after the receipt of Letter of Acceptance/work order. The Performance Security shall be of an amount equal to five percent (5%) of the Contract Price in the currency (ie)of the Contract at the option of the bidder, in the form of Call Deposit Receipt (CDR) or Bank Guarantee from any Scheduled Bank in Pakistan excluding micro finance bank.

Clause IB 33 **Signing of Contract Agreement**

Sub Clause 33.1 Delete the text of Sub-Clause 33.1 and substitute with the following:

The successful bidder shall receive an invitation in form of Letter of Acceptance/work order from Peshawar Institute of Cardiology PIC-MTI with the aim to sign a Contract Agreement for Required Works as defined in bidding documents. The successful bidder shall, within Fourteen days (14) days of receipt of Letter of Acceptance/work order will sign the agreement.

In the event of a withdrawal by a successful bidder, Peshawar Institute of Cardiology PIC-MTI may invite the next successful bidder to conclude a Contract Agreement for the Works.

If a successful bidder which was invited by Peshawar Institute of Cardiology PIC-MTI to sign Contract Agreement withdraws from the Bidding Process, the Bid Security of the said successful bidder shall be forfeited by Peshawar Institute of Cardiology PIC-MTI.

Clause IB.37 **Services at Site**

Sub-Clause 37.1 It shall be the sole responsibility of the Contractor to provide, operate and maintain in working condition all temporary utilities and services such as water supply, Electricity, Telephone connections, sewerage disposal etc.

Required for the proper execution of works under this Contract the Contractor shall also be responsible for payment of the installations as well as consumption charges, directly to the concerned agencies or any other charges or royalties levied by the concerned authority or local governing agency or any other municipal body. Bidder's attention is specially directed to sub-clause 26 of Special Provisions attached to these Bid Document where by the successful bidder is required to make all the necessary arrangements for a temporary electricity service, at site during the whole of the Construction period and shall furnish an Electric Power Generating set at site and maintain the generating set-in perfect working condition throughout the duration of Contract.

Clause IB-38 **Contractor's Camp/Temporary Areas and Offices/Site Office for Engineer**

Sub-Clause 38.1 The Contractor shall make on his own, arrangements for his own camp, workshop, yards, storage areas, offices etc.

LETTER OF TECHNICAL BID AND APPENDICES TO BID

Letter of Technical Bid & Appendices to Bid

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Letter Of Technical Bid

Name Of Contract: **'Supply installation, testing and commissioning of Fire & Safety Solution and Upgradation/Integration of Fire Detection/Fighting System".PIC-069"**

To:

Hospital Director
Peshawar Institute of Cardiology
5-A, Sector B-3, Hayatabad Phase-5
Tel:- **091-9219641-5**

We, the undersigned, declared that

a) We have examined and have no reservations to the Bidding Documents, including Addenda issued in accordance with instructions to Bidders (IB) 9;
b) We offer to Execute and complete in conformity with the Bidding Documents the following Works;
Construction Of. **'' Supply installation, testing and commissioning of Fire & Safety Solution and Upgradation/Integration of Fire Detection/Fighting System".PIC-069"**
c) Our Bid consisting of the Technical Bid and the Price Bid shall be valid for the period of one hundred twenty (120) days from the date fixed for the bid submission deadline in accordance with the Bidding Documents and it shall remain binding upon us and may be accepted at any time before the expiration of that period,
d) As security for due performance of the undertakings and obligations of our bid, we submit here with a bid security, in the amount specified in Bidding Data Sheet, which is valid 28 days beyond validity of Bid itself,
e) We are not participating as a Bidder or as a subcontractor, in more than one bid in this bidding process, other than alternative offers submitted in accordance with IB 16 (as applicable)
f) We agree to permit Employer of its representative to inspect our accounts and records and other documents relating to the bid submission and to have them audited by auditors. This permission is extended for verification of any information provided in our Technical Bid which comprises all documents enclosed herewith in accordance with IB.11.1 of the Bidding Data sheet.

Name.....
In Capacity Of.....
Signed.....
Duly authorized to sign the Bid for and on behalf of.....
Date.....

Address.....

FORM OF BID **FB-1**

Bid Reference No. "Supply installation, testing and commissioning of Fire & Safety Solution and Upgradation/Integration of Fire Detection/Fighting System".PIC-069"

To:

Hospital Director

Peshawar Institute of Cardiology

Gentleman,

1. Having examined the Bidding Documents including Instructions to Bidders, Bidding Data, Conditions of Contract. Specifications, Drawings and Bill of Quantities and Addenda Nos. _____for the execution of the above-named Works, we, the undersigned, offer to execute and complete such Works and remedy any defects therein in conformity with the Conditions of Contract. Specifications, Drawings, Bill of Quantities and Addenda for the sum of Rs. (Rupees_____) Or such other sum as may be ascertained in accordance with the said conditions

2. We understand that all the Appendices 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 Rupees _____ (Rs. _____) drawn in your favor or made payable to you and valid for a period of _____days beginning from the date Bids are opened.

4. We undertake, if our Bid is accepted, to commence the Works and to complete the whole of the Works comprised in the Contract within the time stated in Appendix-A to Bid.

5. We agree to abide by this Bid for the period of _____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 do hereby declare that the Bid is made without any collusion, comparison of figures or arrangement with any other bidder for the Works.

FB-2

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

Dated this _____day of_____20_____

Signature: _____

in the capacity of _____duly authorized to sign Bids for and on behalf of

_____
(Name of Bidder in Block Capitals) (Seal)

Address:_____
_____
_____

Witness:

Signature: _____ Name: ___
Address. _____
_____
Occupation_____

Name.....
In Capacity Of.....
Signed.....
Duly authorized to sign the Bid for and on behalf of.....
Date.....
Address.....

BA-1
Appendix-A to Bid

SPECIAL STIPULATIONS
Clause
Conditions of Contract

1.	Engineer's Authority to issue Variation in Emergency	2.1	As per Engineer in-charged
2.	Amount of Performance Security	10.1	05% of Contract Price stated in the Letter of Acceptance.
3.	Time for Furnishing Program	14.1	Within 14 days from the date of receipt of Letter of Acceptance.
5.	Time for Commencement	41.1	Within 14 days from the date of receipt of Engineer's Notice to Commence which shall be issued within fourteen (14) days after signing of Contract Agreement.
6.	Time for Completion	43.1, 48.2	365 days from the date of receipt of Engineer's Notice to Commence. (Extension may be granted by the competent authority).
7.	Amount of Liquidated Damages	47.1	Rs. 0.25% for each day of delay in completion of the Works subject to a maximum of 10% of Contract Price stated in the Letter of Acceptance.
8.	Defects Liability Period	49.1	365 days from the effective date of Taking Over Certificate.
9.	Percentage of Retention Money	60.2	10 % of the amount of Interim Payment Certificate.
10.	Limit of Retention Money	60.2	8% Of Contract Price stated in the Letter of acceptance.
11.	Minimum amount of Interim Payment Certificates (Running Bills)	60.2	Rs. 2,000,000/-
12	Time of Payment from delivery of Engineer's Interim Payment Certificate to the Procuring	60.10	28 days in case of local currency or 42 days in case of foreign funded projects.

Authorized Signature and Official Stamp …….....
Name …….....
Date.....

BB-1
Appendix-B to Bid

FOREIGN CURRENCY REQUIREMENTS

NOT USED

BC-1
Appendix-C to Bid

PRICE ADJUSTMENT UNDER CLAUSE 70 OF CONDITION OF CONTRACT

NOT APPLICABLE

BD-1
Appendix-D to Bid

BILL OF QUANTITIES

A. Preamble

1. The Bill of Quantities shall be read in conjunction with the Conditions of Contract, Specifications and Drawings.

2. The quantities given in the Bill of Quantities are estimated and provisional, and are given to provide a common basis for bidding. The basis of payment will be the actual quantities of work executed and measured by the Contractor and verified by the Consultant and valued at the rates and prices entered in the priced Bill of Quantities, where applicable, and otherwise at such rates and prices as the Consultant may fix as per the Contract.

3. The rates and prices entered in the priced Bill of Quantities shall, except in so far as it is otherwise provided under the Contract include all costs of Contractor's plant, labor, supervision, materials, execution, insurance, profit, taxes and duties, together with all general risks, liabilities and obligations set out or implied in the Contract. Furthermore, all duties, taxes and other levies payable by the Contractor under the Contract, or for any other cause, as on the date 28 days prior to deadline for submission of Bids, shall be included in the rates and prices and the total Bid Price submitted by the Bidder.

4. The whole cost of complying with the provisions of the Contract shall be included in the items provided in the priced Bill of Quantities, 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.

5. Provisional sums included and so designated in the Bill of Quantities shall be expended in whole or in part at the direction and discretion of the Engineer in accordance with Sub-Clause 58.2 of Part I, General Conditions of Contract.

Authorized Signature and Official Stamp…….....
Name…….....
Date.....

BD-2

Appendix-D to Bid

BILL OF QUANTITIES

B. Work Items (specimen)

1. The Bill of Quantities contains the following Bills and Schedule: (by way of example)

Bill No. 1	-	Fire Fighting Works
Bill No. 2	-	Fire Detection Works
Bill No. 3	-	HVAC Works
Bill No. 4	-	Civil & Misc. Works

2. Bidders shall price the Bill of Quantities in Pakistani Rupees only.

BD-2

Appendix-D to Bid

BILL OF QUANTITIES
Firefighting Works

Sr. #	Description	Unit	Quantity	Rate (PKR)	Amount (PKR)
	FIRE FIGHTING SYSTEM				

BD-4

Appendix-D to Bid

BILL OF QUANTITIES
Firefighting Works

Sr. #	Description	Unit	Quantity	Rate (PKR)	Amount (PKR)
	FIRE DETECTION SYSTEM				

BD-4

Appendix-D to Bid

BILL OF QUANTITIES
HVAC Works

Sr. #	Description	Unit	Quantity	Rate (PKR)	Amount (PKR)
	HVAC SYSTEM				

BD-4

Appendix-D to Bid

BILL OF QUANTITIES
Civil & Misc. Works

Sr. #	Description	Unit	Quantity	Rate (PKR)	Amount (PKR)
	CIVIL & MISC. WORKS				

BE-1
Appendix-E to Bid

PROPOSED CONSTRUCTION SCHEDULE

Pursuant to Sub-Clause 43.1 of the General Conditions of Contract, the Works shall be completed on or before the date stated in Appendix-A to Bid. The Bidder shall provide as Appendix-E to Bid, the Construction Schedule showing the sequence of work items and the period of time during which he proposes to complete each work item in such a manner that his proposed program for completion of the whole of the Works and parts of the Works may meet Procuring Entity's completion targets in days noted below and counted from the date of receipt of Engineer's Notice to Commence (Attach sheets as required for the specified form of Construction Schedule):

Description	Time for Completion
a **Supply installation, testing and commissioning of Fire & Safety Solution and Upgradation/Integration of Fire Detection/Fighting System".PIC-069,**	**365 DAYS**

Authorized Signature and Official Stamp…….....
Name…….....
Date.....

BF-1
Appendix-F to Bid

METHOD OF PERFORMING THE WORK

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

1. Organization Chart indicating head office and field office personnel involved in management and supervision, engineering, equipment maintenance and purchasing.

2. Mobilization in Pakistan, the type of facilities including personnel accommodation, office accommodation, provision for maintenance and for storage, communications, security and other services to be used.

3. The method of executing the Works, the procedures for installation of equipment and machinery and transportation of equipment and materials to the site and providing all services including but not limited to supply of power, water, maintenance of facilities, safety and security and all which is required for completion of works in accordance with the contract.
4. Quality Control/ Quality Assurance measures to be adopted including procedures to be followed for carrying out all tests required under specifications.
5. **The Bidder While preparing his methodology for performing and executing the works shall also consider the following:**

a) The timely completion of the project as per time provided in Appendix-A to this Bid.
b) The Contractor while filling out the list of major equipment required at site, shall ensure that the equipment requirement is in consonance with the Construction Requirement.
c) The Contractor is not restricted to carry out work in Single Shift. The Contractor should note that if he plans to execute the work in more than single shift than all costs related to the additional superintendence to be provided by the Engineer will be borne by the contractor. Procedure for such additional costs will be worked out and finalized between the Contractor and Engineer with the Consent of the Employer.
d) The portions of the Site Shall be made available to the Contractor in coordination with other Contractors working at Site. The Contractor Shall prepare the work program accordingly]

Authorized Signature and Official Stamp…….....
Name…….....
Date.....

BG-1

Appendix-G to Bid

LIST OF MAJOR EQUIPMENT – RELATED ITEMS

[The Bidder will provide on Sheet 2 of this Appendix a list of all major equipment and related items, under separate heading for items owned, to be purchased or to be arranged on lease by him to carry out the Works. The information shall include make, type, capacity, and anticipated period of utilization for all equipment which shall be in sufficient detail to demonstrate fully that the equipment will meet all requirements of the Specifications.]

Minimum Mandatory Equipment Requirement to be brought/installed/erected at Site prior to release of the 2nd Part of

Sr. No.	Equipment Type and Characteristics	Maximum Marks
1.	Welding Plant (3 nos)	3
2.	Die set for cutting (1 nos)	1
3.	Grinders / Cutters (1 nos)	1
4.	Mechanical Tool Kit (1 nos)	1
5.	Electrical Tool Kit (1 nos)	1
6.	Safety Tool Kit / Set (1 nos)	1
7.	Drill Machines (2 nos)	2
8.	Core Cutting Machine (1 nos)	1
9.	Chain Block 3 ton (1 nos)	1
10.	Pallet jack (1 nos)	1
11.	Generator 5 KVA (1 nos)	2
	Sub-Total:	**15**

Note: The Bidder while Preparing his methodology for performance and executing the works and listing out Major Equipment (Required to Complete the Works in the Specified Time Schedule) in this Appendix shall consider the above-mentioned minimum requirement of Construction Equipment to be brought/installed/erected at Site.

Authorized Signature and Official Stamp …….....
Name …….....
Date.....

BG-2
Appendix-G to Bid

LIST OF MAJOR EQUIPMENT

Owned Purchase d or	Description of Unit (Make, Model, Year)	Capacity HP Rating	Condition	Present Location or Source	Date of Delivery at Site	Period of Work
1	2	3	4	5	6	7
a. Owned						
b. To be Purchased						
c. To be arranged on Lease						

Authorized Signature and Official Stamp…….....
Name…….....

Date.....

BH-1
Appendix-H to Bid

CONSTRUCTION CAMP AND HOUSING FACILITIES

The Contractor in accordance with Clause 34 of the Conditions of Contract shall provide description of his construction camp's facilities and staff housing requirements.

The Contractor shall be responsible for pumps, electrical power, water and electrical distribution systems, and sewerage system including all fittings, pipes and other items necessary for servicing the Contractor's construction camp.

The Bidder shall list or explain his plans for providing these facilities for the service of the Contract as follows:

1. Site Preparation (clearing, land preparation, etc.).

2. Provision of Services.

   a) Power (expected power load, etc.).
   b) Water (required amount and system proposed). c) Sanitation (sewage disposal system, etc.).

3. Construction of Facilities

   a) Contractor's Office. Workshop and Work Areas (areas required and proposed layout, type of construction of buildings, etc.).
   b) Warehouses and Storage Areas (area required, type of construction and layout).
   c) Housing and Staff Facilities (Plans for housing for proposed staff, layout, type of construction, etc.).

4. Construction Equipment Assembly and Preparation (detailed plans for carrying out this activity).

5. Other Items Proposed (Security services, etc.).

Authorized Signature and Official Stamp …….....
Name …….....
Date.....

BI-1
Appendix-I to Bid

LIST OF SUBCONTRACTORS

I/We intend to subcontract the following parts of the Work to subcontractors. In my/our opinion, the subcontractors named hereunder are reliable and competent to perform that part of the work for which each is listed.

Enclosed are documentation outlining experience of subcontractors, the curriculum vitae and experience of their key personnel who will be assigned to the Contract, equipment to be supplied by them, size, location and type of contracts carried out in the past.

Part of Works	**Subcontractor (With Complete Address)**
1	**2**

Authorized Signature and Official Stamp …….....
Name …….....
Date.....

BJ-1
Appendix-J to Bid

ESTIMATED PROGRESS PAYMENTS

Bidder' estimate of the value of work which would be executed by him during each of the periods stated below, based on his Program of the Works and the Rates in the Bill of Quantities, expressed in thousands of Pakistani Rupees:

Quarter/ Year/ Period	**Amounts (1,000 Rs.)**
1	**2**
1st Quarter	
2nd Quarter	
3rd Quarter	
4th Quarter	
5th Quarter	
6th Quarter till Completion of Project	
Total	**100%**

Authorized Signature and Official Stamp…….....

Name…….....

Date.....

BK-1
Appendix-K to Bid

ORGANIZATION CHART FOR THE SUPERVISORY STAFF AND LABOUR

Minimum Mandatory Staff Requirement:

The Contractor Should Arrange the following Staff at Site immediately upon commencement of Work:

Sr. No.	Description	Maximum Points
1.	**Project Manager** B.Sc. Electrical/Mechanical Engineer with 10 years' or above experience of similar nature project & registered with PEC.	5
2.	**Mechanical Engineer** B.Sc. Mechanical Engineer with 5 years' or above experience of similar nature project & registered with PEC	5
3.	**Electrical Engineer** B.Sc. Electrical Engineer with 5 years' or above experience of similar nature project & registered with PEC.	5
4.	**Civil Engineer** B.Sc. Civil Engineer with 5 years' or above experience of similar nature project & registered with PEC.	5
5.	**Sub Engineer** DAE Mechanical/Electrical/Civil with 03 years of relevant experience.	2.5
6.	**QA/QC Inspector** DAE Mechanica5/Electrical/Civil with 03 years of relevant experience	2.5
	Sub-Total:	**25**

Authorized Signature and Official Stamp …….....

Name …….....

Date.....

BL-1
Appendix-L to Bid

(INTEGRITY PACT)

DECLARATION OF FEES, COMMISSION AND BROKERAGE ETC. PAID 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 time 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 Government of Pakistan.

Name of Buyer: ……	Name of Seller/Supplier: ……
Signature: ……	Signature: ……
[Seal]	[Seal]

BN-1
Appendix-M-1 to Bid

Qualification Criteria

Qualification of bidders shall be evaluated on the basis of mentioned criteria. Bidders must secure at least 50% score in each category regarding the work experience, personnel capabilities, equipment capabilities and financial soundness with overall passing marks of 70%, in addition to fulfilment of mandatory requirements.
The Employer reserves the right to waive minor deviations, if they do not materially affect the capability of the bidder to perform the Contract.

Eligible Bidder/Mandatory Criteria

1. Applicant must be registered as AOP/Firm or registered as Company with SECP. This applies to all members in case of JV.
2. The firm/contractor must be register with PEC (Pakistan Engineering council) in category C4 & above having relevant codes ME01, ME02 & CE10. (Valid registration). This applies to leading member of Joint Venture (JV);
3. Applicant must be registered with FBR for Income Tax and KPRA and reflected on Active Tax Payer (ATL) list of FBR and KPRA for the mentioned work in BSD. In case of JV, applicable to all members
4. MOU or Agreement Deed or JV Agreement, in case of JV;
5. Audited Statements of Accounts and Annual Turnover duly certified by the Chartered Accountant (signed and stamped) for the last three years
6. A valid Affidavit in Original for the current month issued in the name of client attested by oath commissioner on stamp paper of amount Rs. 100/- that the firm has not been blacklisted or debarred by any Government / Autonomous / International Body and not involve in any litigation.
7. Integrity Pact on judicial Stamp Paper.
8. The firm must be registered with C&W (Communication and Works Department).

Technical Marks Weightage

Sr. No.	Category	Weightage/Marks
1.	Experience Record	30
2.	Personnel Capabilities	25
3.	Equipment Capabilities	15
4.	Financial Soundness	30
	Total:	**100**

- **Note:** Bidders must secure at least 50% score in each category and overall, 70% marks to qualify in technical evaluation.

BN-1
Appendix-M-2 to Bid

The detailed qualification evaluation shall be carried out as per following sub-criteria:

1.2 Experience Record

Marks for experience shall be awarded on the basis of following qualifications:

Sr. No.	Description	Maximum Points
1.	Experience as a contractor in the execution of three (03) project General works and financial outlay of PKR 150 Million (each) completed over the last five (05) years.	10
2.	Experience as a contractor in the execution of Three (3) projects of similar nature (Fire and safety) in last five (05) years. The total cost of each project should be PKR 50 Million or above.	20
	Sub-Total:	**30**

- **Note:** The applicants must provide Letter of Award(s)/Work Order(s) and Taking Over(s)/Completion Certificate(s) of completed project(s).
- The applicants must provide Letter of Award(s)/Work Order(s) and Performance Certificate(s) of the currently in-hand project(s).
- No marks will be given to the projects for which above letters/certificates are not provided.

1.3 Personnel Capabilities

The applicant must have in his employment suitably qualified personnel with relevant experience. The marks shall be awarded under this category using following criteria.

Sr. No.	Description	Maximum Points
1.	**Project Manager** B.Sc. Electrical/Mechanical Engineer with 10 years' or above experience of similar nature project & registered with PEC.	5
2.	**Mechanical Engineer** B.Sc. Mechanical Engineer with 5 years' or above experience of similar nature project & registered with PEC	5
3.	**Electrical Engineer** B.Sc. Electrical Engineer with 5 years' or above experience of similar nature project & registered with PEC.	5
4.	**Civil Engineer** B.Sc. Civil Engineer with 5 years' or above experience of similar nature project & registered with PEC.	5
5.	**Sub Engineer** DAE Mechanical/Electrical/Civil with 03 years of relevant experience.	2.5

6.	**QA/QC Inspector** DAE Mechanica5/Electrical/Civil with 03 years of relevant experience	2.5
	Sub-Total:	**25**

Note: Only those candidates would be considered for whom CVs duly signed by the applicants, Degrees, PEC Registration Certificates, and appointment letters are attached in the profile.

1.4 Equipment Capabilities

Credit Marks shall be granted on the basis of the following criteria for various kinds of equipment relevant for the Project:

Sr. No.	Equipment Type and Characteristics	Maximum Marks
1.	Welding Plant (3 nos)	3
2.	Die set for cutting (1 nos)	1
3.	Grinders / Cutters (1 nos)	1
4.	Mechanical Tool Kit (1 nos)	1
5.	Electrical Tool Kit (1 nos)	1
6.	Safety Tool Kit / Set (1 nos)	1
7.	Drill Machines (2 nos)	2
8.	Core Cutting Machine (1 nos)	1
9.	Chain Block 3 ton (1 nos)	1
10.	Pallet jack (1 nos)	1
11.	Generator 5 KVA (1 nos)	2
	Sub-Total:	**15**

Note: Bidders shall submit a valid Affidavit on an stamp paper to the effect that the above items are available with the contractor and can be inspected by the committee at any stage.

1.5 Financial Position

Marks will be awarded on the basis of following:

Sr. No.	Description	Maximum Marks
1.	Total annual turnover of PKR **250 Million** in last Five (05) years	30
	Sub-Total:	**30**

Note:

a. The Applicant firms shall submit copies of annual account/audited reports on Auditor's Letter Head for the last five (05) years duly certified by the Chartered Accountant, which indicate the financial soundness of the Applicant's financial position.
The minimum annual volume of Construction Work (Annual Turn-Over) shall be at least **Rs. 250 Million** during any of the last three years.

1.6 **Joint Venture (JV)**

Joint Venture must comply with the following

requirements: -

a. A joint venture of up to 2 firms can apply;

b. Any change in the status of JV after submission of bids, shall be subject to the written approval of the Employer. Such approval may be denied if: -

i) Partner(s) withdraw from a JV and remaining partners do not meet the qualifying requirements;

ii) The new partners to a JV are qualified as another JV; or

c. Application shall be signed by all members in the JV so as to legally bind all partners, jointly and severally, and shall be submitted with a copy of the MOU.

1.6 Litigation History

The applicant should provide accurate information on any litigation or arbitration resulting from contracts completed or under execution over the last five (05) years. A consistent history of litigations against the applicant or any partner of a joint venture may result in rejection of the application.

1.7 Conflict of Interest

The applicant (including all firms of a JV) must not be associated, nor have been associated in the past, with the consultants or any other entity that has prepared the design, specifications and bidding documents for the project, or was proposed as Engineer for the contract, over the last five (05) years. Any such association may result in disqualification of the applicant.

5. ADDITIONAL CLAUSES

5.1 Answers must be given to all questions in the attached Forms. If necessary, additional sheets may be attached. Failure to provide complete information may result in disqualification.

5.2 Each sheet shall be duly signed by the applicant or by the duly authorized representative of the applicant. Such authorization shall be indicated by a written power of attorney which shall be attached with the application.

5.3 All the documents submitted by the applicants shall be treated as confidential and shall not be returned.

5.4 If necessary, additional sheets may be added to the Forms. Each page of each Form shall be clearly marked in the right top corner as follows: Form I, Page 1 of 2, Form I, Page 2 of 2 etc.

5.6 The Firms/Contractors must provide clear evidence through documentations that their manufacturer has the requisite capacity, expertise and specialized

technology regarding the relevant machinery/ equipment to be installed under the project.

ANNEXURE-I

Evaluation Criteria

The firms will be evaluated on the following criteria:

Sr. No.	Description	Marks Assigned	Explanation for Marks Obtained	Remarks
1	Experience as a contractor in the execution of at least three (03) project General works and financial outlay of PKR 150 Million completed over the last five (05) years.	10	• 10 Marks will be given if the contractor has completed at least three (03) project • For less than three (03) 10 x (A/3) A is no. of projects.	• No marks will be given if certificate of respective project mentioned **in BN-1 appendix-M-2-to Bid (1.2)** is not attached. No marks if each project cost is less than Rs. 150 million.
2	Experience as a contractor in the execution of three (03) project of similar nature in last five (05) years. The total cost of the each project should be PKR 50 Million or above.	20	• 20 Marks will be given if the contractor has completed three (3) similar nature. • For less than three similar 20 x (A/3) A is no. of projects.	• No marks will be given if certificate of respective project mentioned **in BN-1 appendix-M-2-to Bid (1.2)** is not attached. • No marks if each project cost is less than Rs. 50 million. • No marks if similar project is not with Government /Semi Government/Autonomous body.
Total Marks Allocated (A1):		**30**		
3	a) Professional Staff	25	• 5 Marks will be given for Project Manager (Mechanical/Electrical) with 10 years of experience of similar nature project & registered with PEC. • 5 Marks will be given for Mechanical Engineer with 5 years of experience of similar nature project & registered with PEC. • 5 Marks will be given for Electrical Engineer with 5	Only those candidates would be considered for whom CVs duly signed by the applicants, Degrees, PEC Registration Certificates, and appointment letters are attached in the profile.

			years of experience of similar nature project & registered with PEC. • 5 Marks will be given for Civil Engineer with 5 years of experience of similar nature project & registered with PEC. • 2.5 Marks will be given for Sub Engineer (Mechanical/Electrical/Civil) with 3 years of experience of similar nature projects. 2.5 x (A/3) A is no. of people • 2.5 Marks will be given for QA/QC Inspector (Mechanical/Electrical/Civil) with 3 years of experience of similar nature projects. 2.5 x (A/3) A is no. of people	• One Sub Engineer from each discipline with site experience. • One QA/QC Inspector from each discipline with site experience.
Total Marks Allocated (A2):		**25**		
5	Equipment Capabilities		• Full marks will be given for following provisions of equipment/ machines:	• For less than specified, relative marks will be given.
a)	Welding Plant	3		Bidders shall submit a valid Affidavit on an stamp paper to the effect that the above items are available with the contractor and can be inspected by the committee at any stage.
b)	Die Set for Cutting	1		
c)	Grinders / Cutters	1		
d)	Mechanical Tool Kit	1		
e)	Electrical Tool Kit	1		
f)	Safety Tool Kit / Set	1		
g)	Drill Machines	2		
h)	Core Cutting Machine	1		
i)	Chain Block 3 ton	1		
j)	Pallet jack	1		
k)	Generator 5 KVA	2		
Total Marks Allocated (A3):		**15**		
Total Technical Marks (A) = (A1+A2+A3):		**70**		
6	Total Annual turnover in last five (5) years	30	• Maximum 30 Marks will be given in case of limit is **Rs. 250** million or more.	The Applicant firms shall submit copies of annual account/audited reports on Auditor's Letter Head

			• For the average annual turnover less than **Rs. 250** million, use following weightage: 30 x (A/250) A= Total annual turnover in last five years in millions.	for the last five (05) years duly certified by the Chartered Accountant, which indicate the financial soundness of the Applicant's financial position. The minimum annual volume of Construction Work (Annual Turn-Over) shall be at least **Rs. 250 million** during any of the last three years. • No marks if audit reports indicating annual turnover are not attached
Total Marks Allocated (B):		**30**		
Total Marks (A +B):		**100**		

FORMS

BID SECURITY
PERFORMANCE SECURITY
CONTRACT AGREEMENT
MOBILIZATION ADVANCE GUARANTEE/BOND

BS-1

BID SECURITY
(Bank Guarantee)

Security Executed on _____
(Date)

Name of Surety (Bank) with Address: _____
(Scheduled Bank in Pakistan)

Name of Principal (Bidder) with Address _____
_____

Penal Sum of Security Rupees . _____(Rs. _____)

Bid Reference No. _____

KNOW ALL MEN BY THESE PRESENTS, that in pursuance of the terms of the Bid and at the request of the said Principal (Bidder) we, the Surety above named, are held and firmly bound unto _____
(hereinafter called the 'Procuring Entity') 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 Bidder has submitted the accompanying Bid dated _____for Bid No. _____for_____(Particulars of Bid) to the said Procuring Entity; and

WHEREAS, the Procuring Entity has required as a condition for considering said Bid that the Bidder furnishes a Bid Security in the above said sum from a Scheduled Bank in Pakistan or from a foreign bank duly counter-guaranteed by a Scheduled Bank in Pakistan, to the Procuring Entity, conditioned as under:

(1) that the Bid Security shall remain in force up to and including the date 28 days after the deadline for validity of bids as stated in the Instructions to Bidders or as it may be extended by the Procuring Entity, notice of which extension(s) to the Surety is hereby waived;

(2) that the Bid Security of unsuccessful Bidders will be returned by the Procuring Entity after expiry of its validity or upon signing of the Contract Agreement; and

(3) that in the event of failure of the successful Bidder to execute the proposed Contract Agreement for such work and furnish the required Performance Security, the entire said sum be paid immediately to the said Procuring Entity pursuant to Clause 15.6 of the Instruction to Bidders for the successful Bidder's failure to perform.

NOW THEREFORE, if the successful Bidder shall, within the period specified therefor, on the prescribed form presented to him for signature enter into a formal Contract with the said Procuring Entity in accordance with his Bid as accepted and furnish within twenty eight (28) days of his being requested to do so, a Performance Security with good and sufficient surety, as may be required, upon the form prescribed by the said Procuring Entity for the faithful performance and proper fulfillment of the said Contract or in the event of non-withdrawal of the said Bid within the time specified for its validity then this obligation shall be void and of no effect, but otherwise to remain in full force and effect.

BS-2

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

PROVIDED ALSO THAT the Procuring Entity shall be the sole and final judge for deciding whether the Principal (Bidder) 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 Surety shall pay without objection the said sum upon demand from the Procuring Entity forthwith and without any reference to the Principal (Bidder) or any other person.

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

SURETY (Bank)

WITNESS: Signature _____

1. _____ Name _____

_____ Title _____

Corporate Secretary (Seal) Corporate Guarantor (Seal)

2. _____

_____
Name, Title & Address

PS-1

FORM OF PERFORMANCE SECURITY
(Bank Guarantee)

Guarantee No._____
Executed on _____
Expiry date _____

[Letter by the Guarantor to the Procuring Entity]

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

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 Entity) 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 Entity, 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 the Procuring Entity'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 Entity, 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 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 49, Defects Liability, 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.

PS-2

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

PROVIDED ALSO THAT the Procuring Entity 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 Entity forthwith and without any reference to the Principal or any other person.

IN WITNESS WHEREOF, the above-bounden 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.

_____
Guarantor (Bank)

Witness:

1.

_____
Corporate Secretary (Seal)

2. _____

_____
Name, Title & Address

Signature

Name _____

Title _____

_____
Corporate Guarantor (Seal)

CA-1

FORM OF CONTRACT AGREEMENT

THIS CONTRACT AGREEMENT (hereinafter called the "Agreement") made on the _____ day of (month) 20 _____ between _____ (hereafter called the "Procuring Entity") Of the one part and_____ (hereafter called the "Contractor") of the other part.

WHEREAS the Procuring Entity 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 Contract Agreement;
   (b) The Letter of Acceptance;
   (c) The completed Form of Bid;
   (d) Special Stipulations (Appendix-A to Bid);
   (e) The Particular Conditions of Contract – Part II;
   (f) The General Conditions – Part I;
   (g) The priced Bill of Quantities (Appendix-D to Bid);
   (h) The completed Appendices to Bid (B, C, E to L);
   (i) The Drawings;
   (j) The Specifications.
   (k) _____(any other)

3. In consideration of the payments to be made by the Procuring Entity to the Contractor as hereinafter mentioned, the Contractor hereby covenants with the Procuring Entity to execute and complete the Works and remedy defects therein in conformity and in all respects with the provisions of the Contract.

4. The Procuring Entity 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.

CA-2

IN WITNESS WHEREOF the parties hereto have caused this 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 Procuring Entity
_____	_____
(Seal)	(Seal)

Signed, Sealed and Delivered in the presence of:

Witness:	Witness:
_____	_____
(Name, Title and Address)	(Name, Title and Address)

MG-1

MOBILIZATION ADVANCE GUARANTEE

NOT APPLICABLE

[Notes on the Conditions of Contract

The Conditions of Contract comprise two parts:

(a) Part I – General Conditions of Contract
(b) Part II - Particular Conditions of Contract

Over the years, a number of "model" General Conditions of Contract have evolved. The one used in these Standard Bidding Documents was prepared by the International Federation of Consulting Engineers (Federation Internationale des Ingenieurs-Conseils, or FIDIC), and is commonly known as the FIDIC Conditions of Contract. (The used version is the fourth edition, 1987, reprinted in 1992 with further amendments).

The FIDIC Conditions of Contract have been prepared for an ad measurement (unit price or unit rate) type of contract, and cannot be used without major modifications for other types of contract, such as lump sum, turnkey, or target cost contracts.

The standard text of the General Conditions of Contract chosen must be retained intact to facilitate its reading and interpretation by bidders and its review by the Client. Any amendments and additions to the General Conditions, specific to the contract in hand, should be introduced in the Particular Conditions of Contract.

The use of standard conditions of contract for all civil Works will ensure comprehensiveness of coverage, better balance of rights or obligations between Procuring Entity and Contractor, general acceptability of its provisions, and savings in time and cost for bid preparation and review, leading to more economic prices.

The FIDIC Conditions of Contract are copyrighted and may not be copied, faxed, or reproduced. Without taking any responsibility of its being accurate, Pakistan Engineering Council with prior consent of FIDIC Secretariat, has reproduced herein the FIDIC General Conditions of Contract for reference purpose only which cannot be used by the users for preparing their bidding documents. The bidding document may include a purchased copy, the cost of which can be retrieved as part of the selling price of the bidding document. Alternatively, the FIDIC Conditions of Contract can be referred to in the bidding documents, and the bidders are advised to obtain copies directly from FIDIC.*

---

* Add the following text if the bidding documents, as issued, do not include a copy:
"Copies of the FIDIC Conditions of Contract can be obtained from:
FIDIC Secretariat
P.O. Box 86
1000 Lausanne 12
Switzerland
e-mail: fidic.pub@fidic.org – FIDIC.org/bookshop]

FEDERATION INTERNATIONAL DES INGENIEURS-CONSEILS

CONDITIONS OF CONTRACT FOR WORKS OF CIVIL ENGINEERING CONSTRUCTION

PART I GENERAL CONDITIONS

WITH FORMS OF TENDER AND AGREEMENT

NOT TO BE CITED

FOURTH EDITION 1987
Reprinted 1988 with editorial amendments
Reprinted in 1992 with further amendments

Copies of the FIDIC Conditions of Contract 4th Edition, 1987 reprinted in 1992 with further amendments can be obtained from:

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PART II - PARTICULAR CONDITIONS OF CONTRACT (Mandatory Provisions not to be Amended / Substituted except as instructed by KPPRA)

1.1 Definitions

(a) (i) The Procuring Entity is Peshawar Institute of Cardiology, 5-A, Sector B-3, Hayatabad Phase-5 the legal successors and any assignee of such person. .....

(a) (iv) The Engineer is .... nominated as Engineer alongwith his full address), or any other competent person appointed by the Procuring Entity, and notified to the Contractor, to act in replacement of the Engineer. Provided always that except in cases of professional misconduct, the outgoing Engineers is to formulate his certifications/ recommendations in relation to all outstanding matters, disputes and claims relating to the execution of the Works during his tenure.

The following paragraph is added:

(a) (vi) **"Employer's Representative" is:**
Director Building and Facilities
PIC-MTI

or any other competent person appointed in writing by the Employer and shall take effect on delivery of such appointment to the Engineer and the Contractor. The Employer may from time-to-time delegate to the Employer's Representative any of the duties and authorities vested in the Employer and may at any time revoke such delegation.

Any communication given by the Employer's Representative to the Engineer and the Contractor in accordance with such delegation shall have the same effect as though it had been given by the Employer.

(a)(vi) "Bidder or Tenderer" means any person or persons, company, corporation, firm or joint venture submitting a Bid or Tender.

(b)(v) The following is added at the end of the paragraph:

The word "Tender" is synonymous with "Bid" and the word "Tender Documents" with "Bidding Documents".

The following paragraph is added:

(b)(ix) "Program" means the program to be submitted by the Contractor in accordance with Sub-Clause 14.1 and any approved revisions thereto.

(e)(i) The text is deleted and substituted with the following:

"Contract Price" means the sum stated in the Letter of Acceptance as payable to the Contractor for the execution and completion of the Works subject to such additions thereto or deductions therefrom as may be made and remedying of any defects therein in accordance with the provisions of the Contract.

2.1 Engineer's Duties and Authority

With reference to Sub-Clause 2.1(b), the following provisions shall also apply;

The Engineer shall obtain the specific approval of the Procuring Entity before carrying out his duties in accordance with the following Clauses:

(i) Consenting to the sub-letting of any part of the Works under Sub-Clause 4.1 "Subcontracting".

(ii) Certifying additional cost determined under Sub-Clause 12.2 "Not Foreseeable Physical Obstructions or Conditions".

(iii) Any action under Clause 10 "Performance Security" and Clauses 21,23,24 & 25 "Insurance" of sorts.

(iv) Any action under Clause 40 "Suspension".

(v) Any action under Clause 44 "Extension of Time for Completion".

(vi) Any action under Clause 47 "Liquidated Damages for Delay" or Payment of Bonus for Early Completion of Works (PCC Sub-Clause 47.3).

(vii) Issuance of "Taking Over Certificate" under Clause 48.

(viii) Issuing a Variation Order under Clause 51,except:

a) in an emergency* situation, as stated here below, or

b) if such variation would increase the Contract Price by less than the amount stated in the Appendix-A to Bid.

(ix) Fixing rates or prices under Clause 52.

(x) Extra payment as a result of Contractor's claims under Clause 53.

(xi) Release of Retention Money to the Contractor under Sub-Clause 60.3 "Payment of Retention Money".

(xii) Issuance of "Final Payment Certificate" under Sub-Clause 60.8.

(xiii) Issuance of "Defect Liability Certificate" under Sub-Clause 62.1.

(xiv) Any change in the ratios of Contract currency proportions and payments thereof under Clause 72 "Currency and Rate of Exchange".

(Note: Procuring Entity may further vary according to need of the project)

* (If in the opinion of the Engineer an emergency occurs affecting the safety of life or of the Works or of adjoining property, the Engineer may, without relieving the Contractor of any of his duties and responsibilities under the Contract, instruct the Contractor to execute all such work or to do all such things as may, in the opinion of the Engineer, be necessary to abate or reduce the risk. The Contractor shall forthwith comply with any such instruction of the Engineer. The Engineer shall determine an addition to the Contract Price, in respect of such instruction, in accordance with Clause 52 and shall notify the Contractor accordingly, with a copy to the Procuring Entity.)

Engineer's Representative

The following paragraph is added:

The Procuring Entity shall ensure that the Engineer's Representative is a professional engineer as defined in the Pakistan Engineering Council Act 1975 (V of 1976)

The following Sub-Clauses 2.7 and 2.8 are added:

2.7 Engineer Not Liable

Approval, reviews and inspection by the Engineer of any part of the Works does not relieve the Contractor from his sole responsibility and liability for the supply of materials, plant and equipment for construction of the Works and their parts in accordance with the Contract and neither the Engineer's authority to act nor any decision made by him in good faith as provided for under the Contract whether to exercise or not to exercise such authority shall give rise to any duty or responsibility of the Engineer to the Contractor, any Subcontractor, any of their representatives or employees or any other person performing any portion of the Works.

2.8 Replacement of the Engineer

"If the Procuring Entity intends to replace the Engineer, the Procuring Entity shall, not less than 14 days before the intended date of replacement, give notice to the Contractor, of the name, address and relevant experience of the intended replacement Engineer. The Procuring Entity shall not replace the Engineer with a person against whom the Contractor raises reasonable objection by notice to the Procuring Entity, with supporting particulars."

5.1 Language(s) and Law

(a) The Contract Documents, shall be drawn up in the English language.
(b) The Contract shall be subject to the Laws of Islamic Republic of Pakistan.

5.2 Priority of Contract Documents

The documents listed at (1) to (6) of the Sub-Clause are deleted and substituted with the following:

(1) The Contract Agreement (if completed);
(2) The Letter of Acceptance;
(3) The completed Form of Bid;
(4) Special Stipulations (Appendix-A to Bid);

(5) The Particular Conditions of Contract – Part II;
(6) The General Conditions – Part I;
(7) The priced Bill of Quantities (Appendix-D to Bid);
(8) The completed Appendices to Bid (B, C, E to L);
(9) The Drawings;

(10) The Specifications; and
(11)_____(any other).

In case of discrepancies between drawings, those of larger scale shall govern unless they are superseded by a drawing of later date regardless of scale. All Drawings and Specifications shall be interpreted in conformity with the Contract and these Conditions. Addendum, if any, shall be deemed to have been incorporated at the appropriate places in the documents forming the Contract.

The following Sub-Clauses 6.6 and 6.7 are added:

6.6 Shop Drawings

The Contractor shall submit to the Engineer for review 3 copies of all shop and erection drawings applicable to this Contract as per provision of relevant Sub-Clause of the Contract.

Review and approval by the Engineer shall not be construed as a complete check but will indicate only that the general method of construction and detailing is satisfactory and that the Engineer's review or approval shall not relieve the Contractor of any of his responsibilities under the Contract.

6.7 As-Built Drawings

At the completion of the Works under the Contract, the Contractor shall furnish to the Engineer 6 copies and one reproducible of all drawings amended to conform with the Works as built. The price of such Drawings shall be deemed to be included in the Contract Price.

10.1 Performance Security

The Contractor shall provide Performance Security to the Procuring Entity in the prescribed form. The said Security shall be furnished or caused to be furnished by the Contractor within 28 days after the receipt of the Letter of Acceptance. The Performance Security shall be of an amount equal to 10% of the Contract Price stated in the Letter of Acceptance. Such Security shall, at the option of the bidder, be in the form of either (a) bank guarantee from any Scheduled Bank in Pakistan or
(b) bank guarantee from a bank located outside Pakistan duly counter-guaranteed by a Scheduled Bank in Pakistan [deleted][6].

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

The following Sub-Clause10.4 is added

10.4 Performance Security Binding on Variations and Changes

The Performance Security shall be binding irrespective of changes in the quantities or variations in the Works or extensions in Time for Completion of the Works which are granted or agreed upon under the provisions of the Contract.

14.1 Program to be Submitted

The program shall be submitted within 42 days from the date of receipt of Letter of Acceptance, which shall be in the form of:

i) a Bar Chart identifying the critical activities.
ii) a CPM identifying the critical path/activities.
(Procuring Entity to select appropriate one)

14.3 Cash Flow Estimate to be Submitted

The detailed Cash Flow Estimate shall be submitted within 21 days from the date of receipt of Letter of Acceptance

The following Sub-Clause 14.5 is added:

14.5 Detailed Program and Monthly Progress Report

a) For purposes of Sub-Clause 14.1, the Contractor shall submit to the Engineer detailed program for the following:

(1) Execution of Works;
(2) Labour Employment;
(3) Local Material Procurement;
(4) Material Imports, if any; and
(5) Other details as required by the Engineer.

(b) During the period of the Contract, the Contractor shall submit to the Engineer not later than the 8th day of the following month, 5 copies each of Monthly Progress Reports covering:

(1) A Construction Schedule indicating the monthly progress in percentage;
(2) Description of all work carried out since the last report;
(3) Description of the work planned for the next 56 days sufficiently detailed to enable the Engineer to determine his program of inspection and testing;
(4) Monthly summary of daily job record;
(5) Photographs to illustrate progress ;and
(6) Information about problems and difficulties encountered, if any, and proposals to overcome the same.

(c) During the period of the Contract, the Contractor shall keep a daily record of the work progress, which shall be made available to the Engineer as and when requested. The

daily record shall include particulars of weather conditions, number of men working, deliveries of materials, quantity, location and assignment of Contractor's equipment.

The following Sub-Clauses 15.2 and 15.3 are added:

15.2 Language Ability of Contractor's Representative

The Contractor's authorized representative shall be fluent in the English language. Alternately an interpreter with ability of English language shall be provided by the Contractor on full time basis. The Engineer / Procuring Entity, however, may relax conditions of the language from English to other local languages if deemed appropriate,

15.3 Contractor's Representative

The Contractor's authorized representative and his other professional engineers working at Site shall register themselves with the Pakistan Engineering Council.
The Contractor's authorized representative at Site shall be authorized to exercise adequate administrative and financial powers on behalf of the Contractor so as to achieve completion of the Works as per the Contract.

The following Sub-Clauses 16.3 and 16.4 are added:

16.3 Language Ability of Superintending Staff of Contractor

A reasonable proportion of the Contractor's superintending staff shall have a working knowledge of the English language. If the Contractor's superintending staff are not fluent in English language, the Contractor shall make competent interpreters available during all working hours in a number deemed sufficient by the Engineer. The Engineer / Procuring Entity, however, may relax conditions of the language from English to other local languages if deemed appropriate,

16.4 Employment of Local Personnel

The Contractor is encouraged, to the extent practicable and reasonable, to employ staff and labour from sources within KPK.

The following Sub-Clauses 19.3 and 19.4 are added:

19.3 Safety Precautions

In order to provide for the safety, health and welfare of' persons, and for prevention of damage of any kind, all operations for the purposes of or in connection with the Contract shall be carried out in compliance with the Safety Requirements of the Government of Pakistan and KPK with such modifications thereto as the Engineer may authorize or direct and the Contractor shall take or cause to be taken such further measures and comply with such further requirements as the Engineer may determine to be reasonably necessary for such purpose.

The Contractor shall make, maintain and submit reports to the Engineer concerning safety, health and welfare of persons and damage to property, as the Engineer may from time to time prescribe.

19.4 Lighting Work at Night

In the event of work being carried out at night, the Contractor shall at his own cost, provide and maintain such good and sufficient light as will enable the work to proceed satisfactorily and without danger. The approaches to the Site and the Works where the night-work is being carried out shall be sufficiently lighted. All arrangement adopted for such lighting shall be to the satisfaction of the Engineer's Representative.

20.4 Procuring Entity's Risks

The Procuring Entity's risks are:

Delete the text and substitute with the following:

(a) insofar as they directly affect the execution of the Works in KPK

(i) war and hostilities (whether war be declared or not), invasion, act of foreign enemies,
(ii) rebellion, revolution, insurrection, or military or usurped power, or civil war,
(iii) ionizing radiations, or contamination by radioactivity from any nuclear fuel, or from any nuclear waste from the combustion of nuclear fuel, radioactive toxic explosive or other hazardous properties of any explosive nuclear assembly or nuclear component thereof,
(iv) pressure waves caused by aircraft or other aerial devices travelling at sonic or supersonic speeds,
(v) riot, commotion or disorder, unless solely restricted to the employees of the Contractor or of his Subcontractors and arising from the conduct of the Works;

(b) loss or damage due to the use or occupation by the Procuring Entity of any Section or part of the Permanent Works, except as may be provided for in the Contract;

(c) loss or damage to the extent that it is due to the design of the Works, other than any part of the design provided by the Contractor or for which the Contractor is responsible; and

(d) any operation of the forces of nature (insofar as it occurs on the Site) which an experienced contractor:

(i) could not have reasonably foreseen, or
(ii) could reasonably have foreseen, but against which he could not reasonably have taken at least one of the following measures:
    (a) prevent loss or damage to physical property from occurring by taking appropriate measures, or
    (b) insure against.

21.1 Insurance of Works and Contractor's Equipment

(Procuring Entity may vary this Sub-clause 1.1 (b))

21.4 Exclusions

The text is deleted and substituted with the following:

There shall be no obligation for the insurances in Sub-Clause 21.1 to include loss or damage caused by the risks listed under Sub-Clause 20.4 para (a) (i) to (iv).

The following Sub-Clause 25.5 is added:

25.5 Insurance Company

The Contractor shall be obliged to place all insurances relating to the Contract (including, but not limited to, the insurances referred to in Clauses 21, 23 and 24) with either National Insurance Company of Pakistan or any other insurance company operating in Pakistan and acceptable to the Procuring Entity.

Costs of such insurances shall be borne by the Contractor.

The following Sub-Clause 31.3 is added:

31.3 Co-operation with other Contractors

During the execution of the Works, the Contractor shall co-operate fully with other contractors working for the Procuring Entity at and in the vicinity of the Site and also shall provide adequate precautionary facilities not to make himself a nuisance to local residents and other contractors.

The following Sub-Clauses 34.2 to 34.12 are added:

34.2 Rates of Wages and Conditions of Labour

The Contractor shall pay rates of' wages and observe conditions of labour not less favourable than those established for the trade or industry where the work is carried out. In the absence of any rates of wages or conditions of labour so established, the Contractor shall pay rates of wages and observe conditions of labour which are not less favourable than the general level of wages and conditions observed by other Procuring Entities whose general circumstances in the trade or in industry in which the Contractor is engaged are similar.

34.3 Employment of Persons in the Service of Others

The Contractor shall not recruit his staff and labour from amongst the persons in the services of the Procuring Entity or the Engineer; except with the prior written consent of the Procuring Entity or the Engineer, as the case may be.

34.4 Housing for Labour

Save insofar as the Contract otherwise provides, the Contractor shall provide and

maintain such housing accommodation and amenities as he may consider necessary for all his supervisory staff and labour, employed for the purposes of or in connection with the Contract including all fencing, electricity supply, sanitation, cookhouses, fire prevention, water supply and other requirements in connection with such housing accommodation or amenities. On completion of the Contract the temporary camps or housing provided by the Contractor shall be removed and the Site reinstated to its original condition, all to the approval of the Engineer.

34.5 Health and Safety

Due precautions shall be taken by the Contractor, and at his own cost, to ensure the safety of his staff and labour at all times throughout the period of the Contract. The Contractor shall further ensure that suitable arrangements are made for the prevention of epidemics and for all necessary welfare and hygiene requirements.

34.6 Epidemics

In the event of any outbreak of illness of an epidemic nature, the Contractor shall comply with and carry out such regulations, orders and requirements as may be made by the Government, or the local medical or sanitary authorities, for purpose of dealing with and overcoming the same.

34.7 Supply of Water

The Contractor shall, so far as is reasonably practicable, having regard to local conditions**,** provide on the Site, to the satisfaction of the Engineer or his representative, adequate supply of drinking and other water for the use of his staff and labour.

34.8 Alcoholic Liquor or Drugs

The Contractor shall not, otherwise than in accordance with the Statutes, Ordinances and Government Regulations or Orders for the time being in force, import, sell, give, barter or otherwise dispose of any alcoholic liquor or drugs, or permit or suffer any such importation, sale, gift, barter or disposal by his Subcontractors, agents, staff or labour.

34.9 Arms and Ammunition

The Contractor shall not give, or otherwise dispose of to any person or persons, any arms or ammunition of any kind or permit or suffer the same as aforesaid.

34.10 Festivals and Religious Customs

The Contractor shall in all dealings with his staff and labour have due regard to all recognized festivals, days of rest and religious and other customs.

34.11 Disorderly Conduct

The Contractor shall at all times take all reasonable precautions to prevent any unlawful, riotous or disorderly conduct by or amongst staff and labour and for the preservation of peace and protection of persons and property in the neighbourhood of the Works against the same.

34.12 Compliance by Subcontractors

The Contractor shall be responsible for compliance by his Subcontractors of the provisions of this Clause.

The following Sub-Clauses 35.2 and 35.3 are added:

35.2 Records of Safety and Health

The Contractor shall maintain such records and make such reports concerning safety, health and welfare of persons and damage to property as the Engineer may from time to time prescribe.

35.3 Reporting of Accidents

The Contractor shall report to the Engineer details of any accident as soon as possible after its occurrence. In the case of any fatality or serious accident, the Contractor shall, in addition, notify the Engineer immediately by the quickest available means.

The following Sub-Clause 36.6 is added:

36.6 Use of Pakistani Materials and Services

The Contractor shall , so far as may be consistent with the Contract, make the maximum use of materials, supplies, plant and equipment indigenous to or produced or fabricated in Pakistan and services, available in Pakistan preferably in KPK provided such materials, supplies, plant, equipment and services shall be of required standard.

41.1 Commencement of Works

The text is deleted and substituted with the following:

The Contractor shall commence the Works on Site within the period named in Appendix-A to Bid from the date of receipt by him from the Engineer of a written Notice to Commence. Thereafter, the Contractor shall proceed with the Works with due expedition and without delay.

The following Sub-Clause 47.3 is added:

Bonus for Early Completion of Works

The Contractor shall in case of earlier completion for either whole or part(s) of the Works pursuant to Sub-Clauses 48.1 and 48.2(a) respectively of the General Conditions of Contract, be paid bonus up-to a limit and at a rate equivalent to 50% of the relevant limit and rate of liquidated damages prescribed in Appendix-A to Bid "Special Stipulations".

48.2 Taking Over of Sections or Parts

For the purposes of para (a) of this Sub-Clause, separate Times for Completion shall be provided in the Appendix-A to Bid "Special Stipulations".

51.2 Instructions for Variations

At the end of the first sentence, after the word "Engineer", the words "in writing" are added.

52.1 Valuation of Variations

In the tenth line, after the words "Engineer shall" the following is added:
within a period not exceeding one-eighth of the completion time subject to a minimum of 28 days from the date of disagreement whichever is later.

53.4 Failure to Comply

This Sub-Clause is deleted in its entirety.

54.3 Customs Clearance

(Procuring Entity may vary this Sub-Clause)

54.5 Conditions of Hire of Contractor's Equipment

The following paragraph is added:

The Contractor shall, upon request by the Engineer at any time in relation to any item of hired Contractor's Equipment, forthwith notify the Engineer in writing the name and address of the Owner of the equipment and shall certify that the agreement for the hire thereof contains a provision in accordance with the requirements set forth above.

The following Sub-Clauses 59.4 & 59.5 are added:

59.4 Payments to Nominated Subcontractors

The Contractor shall pay to the nominated Subcontractor the amounts which the Engineer certifies to be due in accordance with the subcontract. These amounts plus other charges shall be included in the Contract Price in accordance with Clause 58 [Provisional Sums], except as stated in Sub-Clause 59.5 [Certification of Payments].

59.5 Certification of Payments & Nominated Subcontractors

Before issuing a Payment Certificate which includes an amount payable to a nominated Subcontractor, the Engineer may request the Contractor to supply reasonable evidence that the nominated Subcontractor has received all amounts due in accordance with previous Payment Certificates, less applicable deductions for retention or otherwise. Unless the Contractor:

a) submits reasonable evidence to the Engineer, or
b) i)satisfies the Engineer in writing that the Contractor is reasonably entitled to withhold or refuse to pay these amounts, and
   ii) submits to the Engineer reasonable evidence that the nominated Subcontractor has been notified of the Contractor's entitlement,

then the Procuring Entity may (at his sole discretion) pay direct to the nominated Subcontractor, part or all of such amounts previously certified (less applicable deductions) as are due to the nominated Subcontractor and for which the Contractor has failed to submit the evidence described in sub-paragraphs (a) or (b) above. The Contractor shall then repay, to the Procuring Entity, the amount which the nominated Subcontractor was directly paid by the Procuring Entity.

60.1 Monthly Statements

In the first line after the word "shall", the following is added:

"on the basis of the joint measurement of work done under Clause 56.1,"

In Para (c) the words "the Appendix to Tender" are deleted and substituted with the words " Sub-Cause 60.11 (a)(6) hereof". (in case Clause 60.11 is applicable)

60.2 Monthly Payments

In the first line, "28" is substituted by "14".

60.10 Time for Payment

The text is deleted and substituted with the following:

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 47, be paid by the Procuring Entity to the Contractor within 30 days after such Interim Payment Certificate has been jointly verified by Procuring Entity and Contractor, or, in the case of the Final Certificate referred to in Sub Clause 60.8, within 60 days after such Final Payment Certificate has been jointly verified by Procuring Entity and Contractor; Provided that the Interim Payment shall be caused in 42 days and Final Payment in 60 days in case of foreign funded project. In the event of the failure of the Procuring Entity to make payment within the times stated, the Procuring Entity shall pay to the Contractor compensation at the 28 days rate of KIBOR+2% per annum for local currency and LIBOR+1% for foreign currency, upon all sums unpaid from the date by which the same should have been paid. The provisions of this Sub-Clause are without prejudice to the Contractor's entitlement under Clause 69.

The following Sub-Clause 60.11 is added:

60.11 Secured Advance on Materials

a) The Contractor shall be entitled to receive from the Procuring Entity Secured Advance against an indemnity bond acceptable to the Procuring Entity of such sum as the Engineer may consider proper in respect of non-perishable materials brought at the Site but not yet incorporated in the Permanent Works provided that:

(1) The materials are in accordance with the Specifications for the Permanent Works;

(2) Such materials have been delivered to the Site and are properly stored and protected against loss or damage or deterioration to the satisfaction of the Engineer but at the risk and cost of the Contractor;

(3) The Contractor's records of the requirements, orders, receipts and use of materials are kept in a form approved by the Engineer, and such records shall be available for inspection by the Engineer;

(4) The Contractor shall submit with his monthly statement the estimated value of the materials on Site together with such documents as may be required by the Engineer for the purpose of valuation of materials and providing evidence of ownership and payment therefor;

(5) Ownership of such materials shall be deemed to vest in the Procuring Entity and these materials shall not be removed from the Site or otherwise disposed of without written permission of the Procuring Entity; and

(6) The sum payable for such materials on Site shall not exceed 75 % of the (i) landed cost of imported materials, or (ii) ex-factory / ex-warehouse price of locally manufactured or produced materials, or (iii) market price of other materials.

(b) The recovery of Secured Advance paid to the Contractor under the above provisions shall be effected from the monthly payments on actual consumption basis.

60.11 Financial Assistance to Contractor

Financial assistance shall be made available to the Contractor by the Procuring Entity by adopting any one of the following three Alternatives**:**
(*Appropriate* alternative only to be retained)

Alternative One: Mobilization Advance

(a) An interest-free Mobilization Advance 10-15 % of the Contract Price stated in the Letter of Acceptance shall be paid by the Procuring Entity to the Contractor in two equal parts
(b) upon submission by the Contractor of a Mobilization Advance Guarantee/ for the full amount of the Advance in the specified form from a Scheduled Bank in Pakistan :

(1) First part within 14 days after signing of the Contract Agreement or date of receipt of Engineer's Notice to Commence, whichever is earlier; and

(2) Second part within 42 days from the date of payment of the first part, subject to the satisfaction of the Engineer as to the state of mobilization of the Contractor.

(b) This Advance shall be recovered in equal installments; first installment at the expiry of third month after the date of payment of first part of Advance and the last installment two months before the date of completion of the Works as per Clause 43 hereof.

Alternative Two: Mobilization/ Demobilization Cost

Mobilization Cost shall be paid to the Contractor as a part of the priced Bill of Quantities. This cost shall not exceed 10 % of the Tender Price and shall be paid to the Contractor as follows:

(i) 80 % of the Mobilization Cost shall be paid for mobilization at Site. This payment shall be in three stages as follows:

Stage I:20 % of Mobilization Cost upon obtaining and furnishing of Performance Security and insurance policies and construction of camp and housing facilities as required under the Contract;

Stage II:30 % of Mobilization Cost upon providing & installing preliminary requirements of Contractor's Equipment, materials and temporary structures for the commencement of Works to the satisfaction of the Engineer and achieving 3 % value of the Works (excluding payment under Stage-I);

Stage III: 30 % of Mobilization Cost upon providing balance Contractor's Equipment to complete full requirement for the entire work and after achievement of progress to the extent of 6 % value of the Works (excluding payments under Stages I and II); and

(ii) 20 % of Mobilization Cost shall be paid for operation and maintenance of the

constructed facilities and for demobilization as per schedule of payment to be submitted by the Contractor in accordance with Clause 57.2 and approved by the Engineer.

Alternative Three: Materials Supplied by Procuring Entity

The Procuring Entity shall supply to the Contractor materials, like cement, steel, bitumen or any other material whichever deemed necessary to complete the project; and the cost thereof shall be recovered from the Contractor through monthly statements on the basis of actual consumption.

The list of materials, quantities and rates to be charged to the Contractor shall be provided along with Appendix-A to Bid "Special Stipulations".
(Procuring Entity may opt either "Secured Advance on Materials" or "Financial Assistance to Contractor")

63.1 Default of Contractor

The following para is added at the end of the Sub-Clause:

Provided further that in addition to the action taken by the Procuring Entity against the Contractor under this Clause, the Procuring Entity may also refer the case of default of the Contractor to Pakistan Engineering Council for punitive action under the Construction and Operation of Engineering Works Bye-Laws 1987, as amended from time to time as well as under the prevailing rules of KPPRA.

65.2 Special Risks

The text is deleted and substituted with the following:
The Special Risks are the risks defined under Sub-Clause 20.4 sub paragraphs (a) (i) to (a) (v).

67. 3 Arbitration

In the sixth to eight lines, the words "shall be finally settled ..... appointed under such Rules" are deleted and substituted with the following:

shall be finally settled under the provisions of the Arbitration Act, 1940 as amended or any statutory modification or re-enactment thereof for the time being in force.

The following paragraph is added:
The place of arbitration shall be ……, Pakistan.

68.1 Notice to Contractor

The following paragraph is added:

For the purposes of this Sub-Clause, the Contractor shall, immediately after receipt of Letter of Acceptance, intimate in writing to the Procuring Entity and the Engineer by registered post, the address of his principal place of business or any change in such address during the period of the Contract.

Notice to Procuring Entity and Engineer

For the purposes of this Sub-Clause, the respective address are:

a) The Procuring Entity :
(to be filled in by the Procuring Entity as appropriate)

b) The Engineer:
(to be filled in by the Procuring Entity as appropriate)

70.1 Increase or Decrease of Cost

Sub-Clause 70.1 is deleted in its entirety, and substituted with the following:

The amounts payable to the Contractor, pursuant to Sub-Clause 60.1, shall be adjusted in respect of the rise or fall in the cost of labor, materials, and other inputs to the Works, by applying to such amount the formula prescribed in this Sub-Clause.

(a) Other Changes in Cost

To the extent that full compensation for any rise or fall in costs to the Contractor is not covered by the provisions of this or other Clauses in the Contract, the unit rates and prices included in the Contract shall be deemed to include amounts to cover the contingency of such other rise or fall of costs.

(b) Adjustment Formula

The adjustment to the monthly statements in respect of changes in cost shall be determined from the following formula:-

$$Pn = A + b\frac{Ln}{Lo} + c\frac{Mn}{Mo} + d\frac{En}{Eo} + \cdots\cdots\cdots\cdots$$

Where:

Pn is a price adjustment factor to be applied to the amount for the payment of the work carried out in the subject month, determined in accordance with Paragraph 60.1 (a), and with Paragraphs 60.1 (b) and (e), where any variations and daywork are not otherwise subject to adjustment;

A is a constant, specified in Appendix-C to Bid, representing the nonadjustable portion in contractual payments;

b, c, d, etc., are weightages or coefficients representing the estimated proportion of each cost element (labour, cement and reinforcing steel etc.) in the Works or Sections thereof, net of Provisional Sums and Prime Cost; the sum of A, b, c, d,

etc., shall be one;

Ln, Mn, En, etc., are the current cost indices or reference prices of the cost elements for month "n" , determined pursuant to Sub-Clause 70.1(d), applicable to each cost element; and

Lo, Mo, Eo, etc., are the base cost indices or reference prices corresponding to the above cost elements at the date specified in Sub-Clause 70.1(d).

(c) Sources of Indices and Weightages

The sources of indices and weightages shall be those listed in Appendix-C to Bid, duly filled in by the Procuring Entity /Engineer.

(d) Base, Current, and Provisional Indices

The base cost indices or prices shall be those prevailing on the day 28 days prior to the latest date for submission of bids. Current indices or prices shall be those prevailing on the day 28 days prior to the last day of the period to which a particular monthly statement is related. If at any time the current indices are not available, provisional indices as determined by the Engineer will be used, subject to subsequent correction of the amounts paid to the Contractor when the current indices become available.

(e) Adjustment after Completion

If the Contractor fails to complete the Works within the Time for Completion prescribed under Clause 43, adjustment of prices thereafter until the date of completion of the Works shall be made using either the indices or prices relating to the prescribed time for completion, or the current indices or prices, whichever is more favorable to the Procuring Entity, provided that if an extension of time is granted pursuant to Clause 44, the above provision shall apply only to adjustments made after the expiry of such extension of time.

(f) Weightages

The weightages for each of the factors of cost given in Appendix-C to Bid shall be adjusted if, in the opinion of the Engineer, they have been rendered unreasonable, unbalanced, or inapplicable as a result of varied or additional work executed or instructed under Clause 51. Such adjustment(s) shall have to be agreed in the variation order.

The following Sub-Clauses 73.1, 73.2, 74.1, 75.1, 76.1, 77.1and 78.1 are added:

73.1 Payment of Income Tax

The Contractor, Subcontractors and their employees shall be responsible for payment

of all their income tax, super tax and other taxes on income arising out of the Contract and the rates and prices stated in the Contract shall be deemed to cover all such taxes.

73.2 Customs Duty & Taxes

(Procuring Entity may incorporate provisions where applicable)

74.1 Integrity Pact

If the Contractor or any of his Subcontractors, agents or servants is found to have violated or involved in violation of the Integrity Pact signed by the Contractor as Appendix-L to his Bid, then the Procuring Entity 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 Subcontractors, agents or servants;

(b) terminate the Contract; and

(c) recover from the Contractor any loss or damage to the Procuring Entity as a result of such termination or of any other corrupt business practices of the Contractor or any of his Subcontractors, agents or servants.

The termination under Sub-Para (b) of this Sub-Clause shall proceed in the manner prescribed under Sub-Clauses 63.1 to 63.4 and the payment under Sub-Clause 63.3 shall be made after having deducted the amounts due to the Procuring Entity under Sub-Para (a) and (c) of this Sub-Clause.

75.1 Termination of Contract for Procuring Entity's Convenience

The Procuring Entity shall be entitled to terminate the Contract at any time for the Procuring Entity's convenience after giving 56 days prior notice to the Contractor, with a copy to the Engineer. In the event of such termination, the Contractor :

(a) shall proceed as provided in Sub-Clause 65.7 hereof; and

(b) shall be paid by the Procuring Entity as provided in Sub-Clause 65.8 hereof.

76.1 Liability of Contractor

The Contractor or his Subcontractors or assigns shall follow strictly, all relevant

labour laws including the Workmen's Compensation Act and the Procuring Entity shall be fully indemnified for all claims, damages etc. arising out of any dispute between the Contractor, his Subcontractors or assigns and the labour employed by them.

77.1 Joint and Several Liability

If the Contractor is a joint venture of two or more persons, all such persons shall be jointly and severally bound to the Procuring Entity for the fulfillment of the terms of the Contract and shall designate one of such persons to act as leader with authority to bind the joint venture. The composition or the constitution of the joint venture shall not be altered without the prior consent of the Procuring Entity.

78.1 Details to be Confidential

The Contractor shall treat the details of the Contract as private and confidential, save in so far as may be necessary for the purposes thereof, and shall not publish or disclose the same or any particulars thereof in any trade or technical paper or elsewhere without the prior consent in writing of the Procuring Entity or the Engineer. If any dispute arises as to the necessity of any publication or disclosure for the purpose of the Contract, the same shall be referred to the decision of the Engineer whose award shall be final.

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SPECIFICATIONS-
SPECIAL PROVISIONS

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SP-5	Health, Safety and Environment (HSE)

1. Contractor's/Supplier's Office, Facilities Etc.

The Contractor/Supplier shall establish and maintain a Site office. The Contractor/Supplier shall provide all facilities in connection with the execution, completion, of the Works, remedying defects therein and maintenance of the utilities services. The facilities shall not be limited to the Contractor's/Supplier's Site Office, labor camps, work yard and storage areas, temporary water supply, waste water disposal, temporary electricity, internet, voice and data communication, other communication facility, first aid, temporary roads, fire protection and firefighting equipment etc. *The* Contractor/Supplier shall be solely responsible for arranging all utilities and the Contractor/Supplier shall setup, maintain and operate an architectural and Engineering facility with adequate number of technical and support staff as well as equipment required for particular nature of job covered under the Contract to execute installation/construction/commissioning works and prepare drawings/shop drawings for approval of Client / the Engineer.
The Contractor/Supplier shall arrange his labor camp, work yard, storage area, site offices, security and space for aforementioned activities. **Inland travelling security will be responsibility of Contractor/Supplier.**

2. Temporary Roads

The Contractor/Supplier shall prepare and maintain such temporary roads as may be necessary, from the site to the nearest road and also within the plot. Such roads shall be positioned strictly in accordance with Client/ the Engineer instructions and the Contractor/Supplier shall reduce or control any dust nuisance by regularly spraying water and compaction as directed.

3. Temporary Services

3.1 Temporary Water Supply

The Contractor/Supplier shall supply in sufficient quantity all necessary portable and other water for construction purposes for all trades at points within a reasonable distance of any building being constructed. The Contractor/Supplier shall make arrangements and pay charges for water service installation, maintenance and removal thereof, and pay the costs of water for all trades.
At completion of the work, the temporary water services equipment and piping shall be removed by the Contractor/Supplier at his own expense.

3.2 Temporary Electricity

The Contractor/Supplier shall make all the necessary arrangements for a temporary electricity service, pay all expenses in connection with the installation, operation and removal thereof and pay the costs of electricity consumed by all trades. Alternately, The Contractor/Supplier shall arrange and operate at his own cost an electric power generator set of sufficient capacity at site which will meet all the electricity requirements during various phases of the project. Contractor/Supplier must ensure round the clock Electricity Supply till approval of taking over certificate.
A temporary lighting system shall be furnished, installed and maintained by the Contractor/Supplier as required to satisfy the minimum requirements for safety and security and to the satisfaction of the Engineer.

3.3 Waste Disposal

The Contractor/Supplier shall make such temporary provisions as may be required in order to dispose of any chemicals, fuels, oils, grease, bituminous materials, waste and soil waste and the like without causing pollution to either the site or the environment. Disposal of any materials, wastes, effluent, garbage, oil, grease, chemicals and the like shall be in areas specified by the concerned local authority proposed by the Contractor/Supplier and subject to the approval of the Client. If any waste material is dumped in unauthorized areas, the Contractor/Supplier shall remove the material and restore the area to the condition of the adjacent undisturbed area. If necessary, contaminated ground shall be excavated, disposed off as directed by the Client and replaced with suitable fill material compacted and finished with topsoil all at the expense of the Contractor/Supplier.

3.4 Fire Protection

The Contractor/Supplier shall provide and maintain adequate fire protection in the form of barrels of water with buckets, fire bucket tanks, fire extinguisher, or other effective means ready for instant use, distributed around the project and in and about temporary inflammable structures during construction of the works.

Gasoline and other flammable liquids shall be stored in and dispensed from safety containers approved by the Client and storage shall not be within a buildings Torch-cutting and welding operations performed by the Contractor/Supplier shall have the approval of the Client before such work is started and sufficient quantity of chemical extinguisher is to be available at the location where such work is in progress.

4. Sign Board

The Contractor/Supplier shall erect and maintain at the Site in a location to be approved by Client / Engineering Consultant two (2) Sign Boards of dimensions approved by Client / Engineering Consultant. The Sign Boards shall be made of metal. It shall be mounted on steel posts securely anchored and braced. The Contractor shall paint on the Sign Boards, the name of the Works, and the names of the Client, Engineering Consultant and the Contractor/Supplier.

4.1 Labor Camps, Staff Residences & Office for his staff

The Contractor/Supplier shall provide, operate and maintain labor camps, staff residences and staff offices and arrangement of space which are required for the proper and efficient progress of the work.

5. Health, Safety and Environment (HSE)

All the work shall be performed in accordance with applicable local and national laws, codes, requirements and regulations including safety, health, welfare of persons and others. The

Contractor shall in general be fully conversant and comply with the relevant sections of all construction regulations enforceable by the law.

The Contractor shall employ a full time safety engineer having OSHA certification to help accomplish the purposes of this Clause.

The Contractor will maintain and make it available Safety Violation Register to Log and Record the safety violation as observed/notices by the Engineer during Site Inspection. These violations will be discussed in Progress Review Meeting and the Contractor will suggest and do necessary arrangement follow the HSE plan strictly, the non conformance will leads to the withholding of partial payment being made to the Contractor.

SPECIFICATIONS-
TECHNICAL PROVISIONS

Scope of Work & Technical Specifications

"Supply installation, testing and commissioning of Fire & Safety Solution and Upgradation/Integration of Fire Detection/Fighting System"

Object of Agreement

Object of this agreement is the supply, installation, testing & commissioning of Fire Fighting, Fire Detection & Public Address System complete in all aspects along with all auxiliaries, Civil work & accessories that required for the successful completion & operation of all systems. Removal of existing installed fire-fighting & fire detection system, placing of scrap/waste material at appropriate place/store allocated by the Hospital is also included in scope of work.

Project Background

Peshawar Institute of Cardiology (PIC) Medical Teaching Institution (MTI), Peshawar requires the services of Contractors for their ongoing project regarding the "Up-gradation of Existing Fire Fighting System, Fire Detection System & Public Address System" as per latest International Standard (NFPA) & National Standard (Building Code of Pakistan). For this purpose existing Fire Fighting, Fire Detection & Public Address system is need to be removed where installed in the Hospital premises. And new system as per tender drawings to be installed within the Hospital premises.

Client

Peshawar Institute of Cardiology – PIC (Peshawar)
5-A Sector B-3, Phase-V, Hayatabad,
Peshawar –Pakistan
Telephone No: +92 91 9219641

1. General

The project is intended to equip the Peshawar Institute of Cardiology (PIC), Peshawar building with the latest fire detection & alarm system, firefighting system & latest emergency communication (public address system) as per rules, regulations & guide lines provided in latest national & international Fire Protection Standard i.e. NFPA & Building Code of Pakistan in line with the Tender drawings. Peshawar Institute of Cardiology Building includes IPD & OPD Wing.

Also removal of the existing fire detection & fire-fighting system. Installation of the new system is done by utilizing the previously installed system space (piping ducts etc.). Contractor shall establish a temporary workshop for the workers, also maintain a store for material handling. Contractor should ensure warranty of the System for **2 years** and shall give service back up for 7 x 24 hrs a week against any failure, software / hardware problem etc. aand the Contractor will be responsible for making good or replacing any defective goods/equipment during the Warranty Period specified in the Preamble to Conditions of Contract which should commence after expiry of Defect Liability Period.

Bidder will execute complete civil, mechanical/piping, electrical, instrumentation, other installation works and temporary civil, mechanical/piping, electrical and instrumentation works of firefighting, fire detection system and PA system. Moreover, all civil and installation works related to mechanical/piping, electrical, instrumentation inside and outside of control room building, Pump shed, installation / provision from existing MCC room / Power House will also be carried out by Bidder.

Material supply and execution of complete/all civil / mechanical / electrical works (foundations, supporting structures, pits, earthing/grounding pits, excavation/backfilling, trenches, drains, RCC walls, Walls, cable trays/support structures etc.) including modification/demolishing/restoration/reconstruction of existing civil works, new civil works and any other works (e.g. false ceiling damage during execution, core cutting etc.) for this project complete in all respects will be in bidder scope. However, any modifications or temporary works such as demolishing/restoration required, to make whole system functional, shall be carried out by the Bidder at his own cost and shall restore/reconstruct the site in workable condition. Moreover, designing and execution of such modifications/temporary works shall also be Bidder responsibility.

Bidders are advised to carefully review and examine the enclosed Tender Documents, Scope / Technical Specifications / Drawings. Also site and site conditions for assessment of quantum of work involved in site execution and for commercial proposal. The bidders are advised to visit and examine the Site for evaluating quantum of Works and its surroundings and obtain for themselves, on their own responsibility, all information that may be necessary for preparing the bid and entering into a contract for this project. All cost in this respect shall be borne by the bidders.

The Time for Completion is 365 days from the Commencement Date which includes supply, installation, testing and commissioning of firefighting system, fire detection system and public address system and removal of existing Fire Fighting, Fire Detection & Public Address systems.

2. Operational Acceptance

Operational Acceptance means that the supplies and services in the contract have been installed and run in operations after testing in accordance with the products' parameters mentioned in the technical specifications and features meeting the technical requirements of the project.

At least One (01) month of successful operations of the installed equipment, in accordance with the purchaser required configuration, will confirm the Operational Acceptance of all the supplies under this contract. Also the supplier will ensure dedicated on-site support till operational acceptance.

Any component identified and confirmed through OEM/Distributor or Dealer or by Physical Inspection or performance to be non-genuine, copy or refurbished will be rejected for acceptance and it will be suppliers responsibility to replace that component or Equipment or the entire lot failing which the purchaser may terminate the contract.

Any testing related cost shall be borne by the Bidder.

3. Requirements

- The offered equipment's should be the manufacturers' latest model.
- Bidder shall provide sample of each offered equipment's and brochures of the equipment's which are not possible to provide.
- Equipment's will be tested at PIC premise by the user, for the technical evaluation of equipment according to the technical compliances and specification.
- The equipment's failing the test will not be eligible to be considered for further processing being technically non-compliant.

4. Trainings

The Contractor/Supplier will arrange meetings and trainings as per requirement of Tender Document.

- Training for Operation, Maintenance & Troubleshooting of Fire Pumps & Control Panels.
- Training for Operation, Maintenance & Troubleshooting of Firefighting System.
- Training for Operation, Maintenance & Troubleshooting of Fire Detection System.
- Training for Operation, Maintenance & Troubleshooting of Public Address System.

5. Documentation

The Contractor / Supplier shall supply all documentation related to Fire Fighting System, Fire Detection System & Public Address System. The documentation shall include all but not limited to;

- Fire Pumps Operations, Maintenance & Troubleshooting Manuals
- Fire Pumps Control Panels Operations, Maintenance & Troubleshooting Manuals
- Data Sheets of Fire Hydrants & Hoses and Nozzles
- Fire Alarm Main & Repeater Panel Operations, Maintenance & Troubleshooting Manuals
- Data Sheets of Smoke, Heat Detectors, Manual Call Point & Sounder Flasher.
- Public Address System Manager & Amplifier Operations, Maintenance & Troubleshooting Manuals
- Data Sheets of Speakers.
- Test Certificates of all items of Firefighting, Fire detection & Public Address System.
- Shop drawings before the installation of any system.
- Shop drawings & coordinate drawings before the construction of control room and pump room.
- All the shop drawings must be approved by the client/ the Engineer.
- Provide as-built drawings of Firefighting, Fire detection and Public address system which accurately represents the final installed system.

6. Site Supervisor/Engineer

Bidder make sure the availability of PEC certified Engineers (Civil, Electrical, and Mechanical) for supervision of site works (i.e. installation, testing and Commissioning) with minimum experience of 4-7 years and at least having 2-3 years' experience of same nature according to the current project.

7. Installation and Commissioning

Bidder shall submit a site work approval system / procedure, for approval, prior to mobilization to site and shall include the method of notifying company for a request for inspection; the control of inspection and test plans; and the control of punch lists.

8. Request for Inspection (Inspection and Test Plans)

The site work approval system shall reference the method of controlling inspection and test plans which will be compiled by Bidder and approved prior to works commencing at site and will include generic inspection and test plans in relation to at least the following. Bidder shall develop and implement further inspection and test plans to control detailed inspection activities in compliance of the agreement requirements:

a. Temporary construction SITE facilities and services
b. SITE preparation
c. Civil / / buildings / piping
d. Mechanical
e. Welding
f. Piping
g. Electrical
h. Instrumentation
i. SITE testing

9. Coordination of Punch Lists

The SITE Work Approval System shall describe the method of raising, logging, coordinating and closing of punch lists. Punch lists raised shall relate to the system number and equipment tag number, where applicable. All Inspection and Test Plans developed shall be subject to APPROVAL prior to commencement of any WORKS at the SITE.

10. Work Schedule

Using the available timelines, the Bidder shall produce a detailed work. This should outline the time sequence of the supply and construction phases, in order to enable the CLIENT to be able to verify the production progress on a monthly basis and the construction progress on a weekly basis to see that it corresponds with to project timelines.

11. Pre-Commissioning & Commissioning

Bidder shall provide suitable experienced and qualified personnel for commissioning as per approved plans, schedules and procedures. The commissioning of complete system includes but not limited to;

- Cold functional testing
- Megger testing
- Earthing/grounding testing
- Startup
- Performance/Field testing
- Preliminary tests
- Functional tests
- Operational tests
- Hydro testing of Piping
- Other necessary testing

Detailed procedures/manuals shall be prepared by the Bidder for pre-commissioning and commissioning phase. These procedures shall be presented for approval at least 2 weeks before commencement of commissioning. Detailed protocols shall be written by the Bidder for all tests including the acceptance test run. During commissioning the CLIENT´s personnel shall be introduced to all functions of the unit in accordance with operating instructions at no extra cost.

The Bidder shall be solely responsible for arranging all utilities and the Bidder shall setup site office, residential camp at own cost and place. Further, bidder to fulfill all safety requirements during site works as per safety standards.

SITE WORKS / SUPPLY

Site scope of works / supply includes but not limited to;

Fire Fighting System

All firefighting system items (portable extinguishers etc.) are to be of same make (brand) for easy better customization / maintenance/logistics & support and must be supplied by one Supplier /OEM representative/distributor.

Fire Water Pumps

The Fire Pumping Station as per NFPA 20 & Building Code of Pakistan shall consist of one Jockey Pump, One Electric Motor-Driven Fire Water Pump & One Engine-Driven Fire Water Pump, along with Electric & control panels, diesel day tank for engine, batteries & battery charger for engine. Fire water pumps shall be centrifugal type with horizontal / vertical split case. Also includes power, control cable & breaker in contractor scope of supply form the client main panel.

Indoor Fire Water Piping

All existing GI piping of indoor riser system shall be replaced with pressurized MS piping of 4” & 2½” or as mentioned in drawinsg. The route for the Riser piping is the same duct via which existing Fire Water Riser is passing as shown on drawings in Appendix- IV. It’s the contractor responsibility to remove existing piping for the installation of new riser system.

Indoor Hydrant & Hose Cabinet

Indoor Hydrants & Hose Cabinets shall be installed at each floor of the IPD Wing and OPD Wing as shown on the drawings in Appendix-IV. Indoor Hydrant consist of Landing Valve of 2½"for hose connection along with hose pipe of 100ft length & nozzles. The installation location of the hose cabinets is the same as the existing cabinets. It's the contractor responsibility to remove the existing cabinets for the installation of new Class I Risers & Hose Connections.

Outdoor Fire Water Piping

All existing GI piping of outdoor firefighting system shall be replaced with pressurized MS piping & valves. The size & route of the outdoor piping & valves is as per Tender Drawings. The removal of existing piping shall also include in contractor scope and use the existing space for the installation of new outdoor piping. Outdoor fire water piping shall be above ground laying on the slippers adjacent to the boundary wall and at the entrance gate piping shall be underground.

Outdoor Hydrants & Hose Cabinets

Outdoor Hydrants & hose cabinets shall be installed within the Hospital premises as per Tender Drawings. Class I Hydrants & Hose connections, installed in a way to cover the whole Hospital area. It's the contractor responsibility to remove the existing hydrants and cabinets for the installation of new Class I hydrants & Cabinets. Each Hose Cabinet shall be self-mounted contains 02 Hoses of 100 ft. length and 02 Brass Nozzles Jet/Spray Type. Any civil work (foundations etc.) require for the installation of outdoor hydrants shall include in contractor scope of work.

Breeching Inlets

Breeching inlets shall be provided in the building main gates. Breeching inlets are 2-way type, that can be used for both water intake and water withdraw from the system.

Portable Fire Extinguishers

Portable fire extinguishers of DCP & CO2 & Foam type shall be installed at different locations within the IPD Wing and OPD Wing of building and also in the outdoor & service area of the Hospital. Location of the portable fire extinguishers is as per Tender Drawings.

Automatic Foam System

Automatic foam system shall be provided at the generators & their respective day tanks. Automatic foam system consists of Foam Cylinders, Detectors, Discharge Nozzles, Piping and Auxiliaries. When any detector in that room detects Smoke/Heat a signal is generated to the local panel which sends signal to the solenoid valve at the cylinder discharge, that causes cylinder discharge valve to open & the pressurized foam from cylinder starts to discharge at the Generator & Diesel Day Tank.

FM 200/Novec 1230

FM200/Novec-1230 gaseous extinguishing system shall be installed for the IT data center room, the system shall include all features that are mentioned in technical specifications & which are requires for the successful operation.

Fire Detection System

Contractor shall replace the existing Fire Detection & Alarm System with Latest Addressable System, in order to cover the whole area of the building. Smoke Detectors shall provide in Hospital spaces & corridors whereas heat detectors in Kitchen & Heat generated areas. Manual Call Point & Sounder (Audible & Visual) shall provide at a suitable location on each floor of the Building. Main Fire Alarm Control Panel shall be installed in Proposed Control Room. When any Smoke detector detects smoke a signal is generated to FACP that gives back the response to the Bell/Sounder of that particular area/floor to generate visual & audible alarm.

All fire detection system items (detectors and fire panels) are to be of same make (brand) for easy better customization / maintenance/logistics & support and must be supplied by one Supplier /OEM representative/distributor.

Public Address System

The scope of work under this head shall include repair/ maintenance and operation of Public Address System Manager having the provision of zone control, emergency messaging, line isolator's modules etc. with all mounting accessories for 2 zones as per specifications complete in all respect.

Public Address System shall be installed in all areas of the building including basement, IPD Wing, OPD Wing & outdoor areas. The Public Address Control System main panel is to be installed in the Control Room from where all the instructions are passed.

All public address system items are to be of same make (brand) for easy better customization/maintenance/logistics & support and must be supplied by one Supplier/OEM representative/distributor.

REMOVAL OF EXISTING SYSTEMS

Existing Firefighting systems Details

Existing fire-fighting system includes fire water piping of 4", outdoor fire hose cabinets, outdoor fire hydrants, indoor fire hose connections and indoor fire hose cabinet along hose pipe. There is 01 fire hose connection consisting of landing valve & 01 hose pipe along with nozzle & hose cabinet for hose placement at each floor of IPD Wing and OPD Wing of Building.

Existing Fire Detection System Details

The building has fire detection and fire alarm system. Fire Detection system includes Smoke detectors along with Fire Alarm Panel. Also Manual Call points along with Horn/Bell. Fire detection system is installed in different areas of floors of Hospital block along with repeater panels, smoke detectors, sounders, manual call points & wiring. There is one main fire alarm control panel, smoke detectors and manual call points along wiring installed in duty room.

TECHNICAL SPECIFICATIONS FOR FIRE FIGHTING SYSTEM

Fire Pumps

1. Supply and installation of fire pumps, one Electric one Diesel and one jockey pump, all piping, landing valves fire hose cabinets and all accessories, appurtenances control panels etc. required to provide complete fire protection system. Pumps shall be in

accordance with the requirements of NFPA & Building Code of Pakistan and shall be NFPA 20 Compliant.

2. It is the responsibility of the contractor to make a detailed review of all drawings during the tender period, in order to fully comprehend the extent of the work to be completed.
3. The design drawings have been prepared after coordination with other services and architectural elements and as per the requirements of all relevant standards. Obstructions to pipe: routing and obstructions to the location of hydrants are not shown on these drawings. It is the contractor's responsibility to locate and detail these obstructions as part of the scope of work.
4. During the construction phase the Contractor will coordinate between all trades and obstructions, and if any, and provide coordinate shop drawings.
5. It is the contractor’s responsibility to verify pump head requirements.
6. Water supply header and main pipe up to hydrant valve/landing valves shall be kept pressurized by the jockey pump which shall start automatically on receiving the impulse from the pressure switch in case of any pressure drop in the header. It shall stop at a preset pressure as soon as pressure builds up in the header.
7. In the event of fire outbreak, opening of hydrant valve/hose will result in fall of pressure in the header and electric motor driven fire pump shall come into operation automatically through the impulse from the pressure switch. The fire pump shall be stopped manually only.
8. In case the electric driven main fire pump fails to start; the diesel engine driven pump shall come into action automatically on further fall of pressure and receiving impulse from pressure switch.
9. The setting of the pressure switches shall be done keeping the above sequence in consideration.
10. Jockey Pump; Multistage, vertical mounted centrifugal pumpcoupled to a suitably electric motor. Motor HP to be suitably selected to suit minimum discharge and residual head at the top most hydrants.
11. Motor Driven Pump; End suction type, horizontally mounted centrifugal pump NFPA 20 Compliant capable to deliver 750 gpm of clear water at minimum 7.5 bar, coupled to a suitably electric motor mounted on a common base frame and anti-vibration pads coupling, coupling guard and fixing bolts etc. Motor HP to be suitably selected to suit minimum discharge and residual head at the top most hydrants. The characteristic curve should have a large range of discharge points for different heads
12. Engine Driven Pump; End suction type, horizontally mounted centrifugal pump NFPA 20 Compliant capable to deliver 750 gpm of clear water at minimum 7.5 bar, coupled to a diesel engine, continuously rated of suitable horse power, direct injection, four stroke, water cooled type complete with coupling, coupling guard common base frame, anti-vibration pads, instrument panel with RPM indicator, pressure gauge, radiator with engine cooling system, fuel tank, tool kit, air filtration unit, exhaust piping with silencer, engine shut-down mechanism, starting mechanism, for both automatic & manual mode, heavy duty batteries with charging system etc. The engine shall be provided with an adjustable governor to control the engine speed within 10% of its rated speed under any condition of load up to the full load rating.

13. Supply, installation and commissioning of power and control wiring between the pumps motor control panel and the common remote indicator panel. Supply, installation and commissioning of power wiring to the pump motor control panel from the distribution board / LT room. Supply, installation and provision of new breaker and accessories for power wiring for pumps etc. in existing LT room / distribution board. Supply, installation and commissioning of power and control wiring to the pumps from the motor control panel. Comply with the requirements of BS 7671 for the electrical and controls installations.
14. NOTE:
    a. Above pumps shall be capable of furnishing not less than 150% of rated discharge capacity at a head of not less than 65% of the rated head. The shut-off head shall not exceed 120% of rated head.
    b. Diesel engine/motor shall be of continuous rating type and its rating shall be at equivalent to the maximum horse power required as per curve requirement.

Electric Motor Driven Fire Pump-Controller

Following are the minimum requirements but not limited to:

1. Main combined manual and automatic controller for squirrel cage induction motor-driven fire pump, full voltage or reduced voltage, auto-transformer, closed transition or soft start/stop. Starting, accommodated in drip-proof CSA enclosure 3 or equivalent, completely wired and tested by manufacturer before shipment from factory, for pumps over 25 hp use reduced voltage or soft start/stop.
2. To NFPA No. 20, and UL listed for fire pump control.
3. Rating: Horsepower as indicated 400 V, 3 phase, 50 Hz.
4. Controller microprocessor based capable of being energized automatically through pressure switch or manually by externally operable handle. Pressure switch set to cut in and out as determined on site. Minimum running period timer set to keep motor in operation when started automatically, for minimum period of 1 minute for each 10 Hp of motor rating, but not to exceed 7 min., automatic weekly test.
5. Pilot lamp to indicate circuit breaker closed and power available.
6. Individual alarm contacts relay to energize audible and visible alarm through independent source of power to indicate circuit breaker open, power failure and phase reversal.
7. Alarm and signal devices in controller and in remote location to indicate trouble on controller and pumping unit.
8. Ammeter test link and voltmeter test studs.
9. Manual selector station, two positions, marked "Automatic" and "Non-Automatic".
10. Means on controller to operate alarm signal continuously while pump is running.
11. Mark "FIRE PUMP CONTROLLER".
12. Where multiple pumps are provided, indicate area or zone served by each pump controller.

13. Digital Display for
    a. System frequency
    b. Line-to-line voltages
    c. Line-to-line amperages
    d. Elapsed run time
    e. Pressure system settings
    f. Pump starting failure
    g. Over current problem
    h. Under current problem
    i. Pressure transmitter problem
14. Annunciator for
    a. Power available
    b. System trouble
    c. Phase reversal
    d. Low system pressure

Engine Driven Fire Pump –Controller

Following are the minimum requirements but not limited to:

1. Automatic engine-driven microprocessor based fire pump controller: to NFPA No. 20 and equipped as follows:
    i. Pressure-switch transducer start.
    ii. Fire protection equipment start.
    iii. Main ac power failure relay connected either to start engine or to actuate remote trouble alarm.
    iv. Common local alarm bell and individual trouble lamps or annunciator to indicate:
        a) Low oil pressure.
        b) High cooling water temperature.
        c) Engine failure to start.
        d) Shut down from over speed.
        e) Shut down from pump operation.
        f) Shut down from trouble on controller or engine.
        g) Shut down from loss of ac power.
        h) Battery failure for each battery.
        i) Battery charger failure.
        j) Low suction

k) Low fuel level

l) Water reservoir low

m) Water reservoir empty

n) Low pump room temperature

o) High fuel level

p) Main switch in auto

q) Engine run

r) Failure when running

v. Provision for selectable automatic alternate use of two separate storage batteries. With alarm if battery fails and prevention of use of defective battery on startup.

vi. Intermittent cranking of engine with lock-out if engine fails to start on 6 crank periods of approximately 15 s duration separated by 5 rest periods of approximately 15 s duration.

vii. Provision for lock-out alarm if a battery is disconnected or becomes inoperative.

viii. Selector switch to bypass relay circuits and provide for manual starting.

ix. Provision for 10 s delayed start.

x. Sequential timing device.

xi. Circuits for various engine mounted devices such as automatic chokes, anti-dieseling solenoid valve, cooling water line solenoid valve.

xii. Timing relay for automatic stop.

xiii. Weekly timer for automatic weekly test run.

xiv. Remote start switch relay.

xv. Auto-manual, selector.

xvi. "Auto" position indicating lamp.

xvii. Manual, start-stop pushbuttons.

xviii. Recording pressure gauge with 7 day chart.

xix. Two built-in automatic battery chargers.

xx. Control cabinet strip heater.

xxi. NEMA 3R enclosure.

xxii. Mark "FIRE PUMP CONTROLLER".

xxiii. Where multiple pumps are provided, indicate area or zone served by each pump controller.

xxiv. Remote alarm contacts rated at 10 amp, 125 VAC for:

a) Over speed

b) Fail to start

c) Low oil pressure

d) High coolant temperature

e) Failure when running

xxv. Provision for deluge valve, start, remote.

xxvi. Operator control panel and annunciator to incorporate

a) Individual charger voltmeter and ammeter readout, charger mode indication.

b) Individual cut-in, cut-out and system pressure.

c) Lamp test/silence, run test, print and paper feed test buttons.

d) Individual battery manual crank push button.

xxvii. Controller to shut down engine for low oil pressure or high coolant temperature during exercise cycle but restart in case of water pressure drop.

xxviii. Engine over speed shutdown without time delay and lockout until manually reset.

xxix. Include low fuel level float switch, high fuel level float switch, low pump room temperature thermostat, low suction pressure switch mounted inside controller.

Pipe and Fittings

For working pressures below 2000 kPa;

1. Where working pressure in the piping is below 2000 kPa pipes shall be seamless factor galvanized steel ASTM A53 grade B, schedule 40.
2. Fittings for piping 50mm and smaller shall be UL listed and FM approved threaded factory galvanized cast iron fitting, class 250 to ANSI B16.4.
3. Fittings for piping larger than 50mm shall be joined using factory galvanized mechanical roll grooved fittings and mechanical joints. Fittings, gaskets and mechanical couplings shall be UL listed and FM approved.
4. Galvanizing shall be on the inside and outside of pipe and fittings.
5. All pipes outside the building shall be laid aboveground at a height of 1 ft. (approx.) along the boundary wall, however, at road crossing & entrance gates piping shall be laid underground at a depth of 1 meter (approx.) and laying shall be as per layout drawing, excavation, back filling of earth, cutting holes in existing structure where necessary, providing puddle collars/pipes as required & making good the damages including making the concerned portion of the structure water tight.
6. Erection of over ground piping shall be complete with necessary pipe supports hangers with MS angles/plate/nut bolts/clamps etc. with fabrication as required including providing MS puddle pipes/collars as required for punctures through walls/slabs etc.
7. Erection of pipe lines shall also include chipping of wall; making holes inside RCC or brick walls, slabs and necessary civil works for restoration of the surface after completion of erection.

Welding

1. Shop welding and galvanizing of piping will be permitted in lieu of screwed or flanged connections. Joining of sections of welded piping in the field shall be by screwed, flanged or mechanical joints as specified. Field welding will not be permitted.
2. Welding fittings shall be in compliance with ANSI standard for factory made wrought steel butt weld fittings ANSI No. B16.9, ANSI standard butt welding ends or pipe, valves, flanges and fittings ANSI No. B16.25 and ASTM Standard, Specifications for piping fittings of wrought carbon steel and alloy steel for moderate and elevated temperatures ASTM No. A-234.
3. Tee connections in welded piping shall be made with a factory fabricated butt welding tee or with welded of butt, socket or threaded type. When welded are used, the branch connections shall be one half the diameter of the main or less. Scarf welding or direct butt welding of side connections shall not be permitted. Tees fabricated from pipe shall not be permitted.
4. Long radius, welding elbow shall, wherever possible, be used in changing pipe directions of welded pipe lines.
5. Welders shall be certified as being qualified for welding in compliance with the requirements of the ASME Boiler and Pressure Vesse1 Code, Section 'IX Qualification Standard for Welding and Brazing Procedures, Welders Brazers, and Welding and Brazing Operators, latest Edition.

Hangers and Supports

1. Piping hangers, supports and sway braces shall be fabricated in accordance with NFPA-13. The hangers, rods supports and supporting devices and accessories shall be capable of supporting at least twice the live loads of the product being supported. All hangers, supports and accessories shall be UL listed and FM approved.
2. Clevis hangers shall be adjustable of yoke and lower U strap design with cross bolt and manufactured from galvanized steel. Cross bolt shall have a double locking nut. Vertical adjustable supporting rod shall have a load nut below the yoke and a locking a nut above the yoke. Vertical inserts installed using power activated gun will not be accepted. 'C' type beam clamps will not be accepted.
3. Welded steel brackets for supporting loads up to maximum of 390 kg shall be galvanized steel and designed to accept standard hanger rods and pipe supporting devices.
4. Riser clamps shall be galvanized steel bands shaped to tightly fit O.D. of pipe, secured with bolts.

Flow Alarm Switches

1. Flow alarm switch shall be UL listed and FM approved for the size of pipe in which it is installed as a paddle type water flow indicator.
2. Each flow switch shall be completed with, supervised shut-off valve, drain valve and test valve and with sight glass.

Fire Department Breeching Inlet Connection

1. Breeching Inlet connections shall be by an acceptable manufacturer. The unit shall be complete with two 65mm threaded connections to suit type of thread on hose used by local fire department and a common 150mm outlet pipe complete with check valve.

Connections shall be completed with threaded caps, chained to body. All parts including valve body, chain and caps shall be polished and-chrome plated bronze.

2. Breeching Inlets shall be as shown on drawings with wording in English as specified below, cast into face plate.
3. Breeching Inlet connected to the standpipe system shall bear the wording.

   "Standpipe Fire Department Inlet"

4. Fire department inlet breeching connections shall be installed in accordance with Civil Defense and NFPA & Building Code of Pakistan requirements and as shown on drawings. Provide one check valve for each connection.

Valves

1. All zone sectional isolation valves shall be UL listed and FM approved.
2. Except where special features are required or unless otherwise noted all valves shall be of one manufacturer with the manufacturer's name and the pressure rating clearly marked on the outside of the valve body.

Pressure Gauges

1. All pressure gauges shall be UL listed spring pressure gauges with 90mm dial. Each gauge shall be controlled by a valve having arrangement for draining.
2. Install gauges on the suction and discharge side of all pumps, on incoming water services, on fire water main pipe line (6 inches) at four (4) no. of appropriate locations, before each indoor fire hose reel cabinet landing valve at each floor and at the highest point of all hydrant risers for the visual inspection of activated system.

Inspector Test Connections and Drains

Provide Inspector's test connections, riser drains and low point drains as required in NFPA 13 and NFPA 14. Drains and test connections shall be piped to drain risers in locations acceptable to the Engineer.

Identifications Tags

Properly lettered polished brass or bronze metal tags conforming to NFPA 13 shall be attached to each valve and alarm device.

Supervisory Switches

1. All supervisory switches controlling the pumps operations system shall be UL listed.
2. The "Normally Open" (N.O) contacts shall include trouble on the fire alarm control panel without sounding an alarm.
3. All electrical service wiring for monitoring switches shall be supplied and installed as per NFPA 70.
4. Monitoring switches shall be arranged to initiate an alarm condition on the fire alarm control panel if the valve is closed or open (as applicable) or tampered with.

Testing

1. The contractor shall pressure tests all fire protection piping included in the contract. Tests shall be made after all indoor and outdoor hydrants are installed but before piping is painted, covered or concealed. All labor and equipment required for testing is part of the contractor's responsibility.
2. Testing shall be in accordance with the requirements of NFPA & Building Code of Pakistan.
3. The client shall be notified one week in advance of any testing so that the tests can be witnessed.
4. Defects that develop during the tests shall be promptly remedied and testing shall be reapplied to the satisfaction of Client / the Engineer.

Painting

1. All fire protection piping shall be painted red in accordance with Civil Defense requirements.
2. All external steel surfaces shall be thoroughly cleaned to remove rust, scale etc. before applying the primer.
3. All underground piping shall be provided protective wrappings.
4. All over ground piping/hose boxes/landing valves/hose reel, M S frames etc. shall be painted with two (2) coats of RED LEAD primer or equivalent followed by two coats of Post Office Red colored Synthetic enamel finish paint.
5. All other equipment shall be given a red oxide/zinc chromate primer and two (2) coats of synthetic enamel.

Hydrant System

1. Hydrants shall be approved of Class I type, having two 65mm hose connections and one connection of pumper nozzles.
2. The metal of fire hydrant shall confirm to BS-750 and shall be of screw down streamline pattern.
3. The body shall be best quality, closed grain, gray cast iron with spindle of manganese bronze having tensile strength of not less than 1.63 Kg/mm machined from solid rolled bars, the seating valves and other parts shall be of best quality gun metal with Brinell Hardness No. 80.
4. The direction of closing shall be by clockwise rotation and outlet shall have screwed joint for accommodation 63 mm dia hose connection.
5. Inlet flanges of hydrant shall be suitable for jointing with flanges of hydrant bends and tees.
6. All fire hydrants shall be coated with three coats of solution from an approved manufacturer to give a uniform protective coating on cast iron.

Indoor Fire Hose Reel Cabinet

1. Fire hose cabinets, valves, hose and accessories shall be approved by and shall be in conformance with the requirements of NFPA & Building Code Of Pakistan.

2. Except as indicated in item below, all cabinets shall be 12 SWG Mild steel with half Solid and half Glass front and hair line finish internally. Mirror finished stainless steel doors shall be provided for cabinets subject to clients' approval.
3. Painted on the door of the fire hose cabinet with minimum 12mm block letters shall be the notice in English.
4. Cabinet shall contain a chrome plated swing hose reel complete with 30m of 65mm double red, The cabinet shall also contain a 65mm chrome plated, cast brass landing valve connected to the stand pipe riser as well as 30 meter hose canvas with hose rack.
5. All fire hose cabinets shall be securely mounted at locations shown on drawings.
6. In all hose outlets, UL listed adjustable pressure reducing valves shall be provided where required to reduce the flowing pressure to approximately 500 kPa.

Out Door Hose Cabinet

1. Fire hose cabinets, valves, hose and accessories shall be approved by and shall be in conformance with the requirements of NFPA & Building Code of Pakistan.
2. Except as indicated in item below, all cabinets shall be 12 SWG Mild steel with Solid/Glass front and hair line finish internally. Mirror finished stainless steel doors shall be provided for cabinets subject to clients' approval.
3. Painted on the door of the fire hose cabinet with minimum 12mm block letters shall be the notice in English.
4. Cabinet All cabinet shall have 2 (two) no. of 30m hose canvas with hose rack and 2 (two) Brass 65mm (2 ½") fire hose nozzle jet/spray type..
5. All fire hose cabinets shall be securely mounted at locations shown on drawings. A steel support frame suitable for outdoor use shall be provided for free standing cabinets located on the roof. Stand shall be of steel construction with 2 coats of exterior enamel red in color mounting hardware and attachment shall be stainless steel.
6. In all hose outlets, UL listed adjustable pressure reducing valves shall be provided where required to reduce the flowing pressure to approximately 500 kPa.

PORTABLE FIRE EXTINGUISHERS

Fire extinguishers shall comply with NFPA-10 for listing and labeling.

Fire extinguishers shall be as follows:

Carbon dioxide: 5 Kg.

Carbon dioxide fire extinguisher capacity 05 kgs , Self-Propelling, deep drawn seemless high pressure cylinder, Cylinder Material shall be carbon steel or equivalent, Fire Rating shall be 55B-80B, Test Pressure 250 bar or higher , Range of discharge shall be 5-6m, Duration of Discharge shall be 10-12sec, Hose length shall be 700mm-900mm, Operating temperature shall be -20ºC to +60ºC, Maximum operating pressure 165 bar @ 60ºC or higher, total weight 20 kg or less, duration of discharge 10-10 sec, initially charged & supplied with wall bracket. ISO 9001 approved and according to standards NFPA & Building Code of Pakistan/EN standards and testing certificate by authorized.

Dry Chemical/Multipurpose: 6 Kg type ABC

Dry chemical powder fire extinguisher automatic Stored pressure type, filled with multipurpose powder C/w pressure gauge, Cylinder Material shall be CRCA steel or equivalent, Test Pressure 25 bar to 30 bar , Range of discharge shall be 6-8m, Duration of Discharge shall be 18-20sec, Hose length shall be 500mm-700mm, Operating temperature shall be -20ºC to +60ºC, Maximum operating pressure 15 bar @ 20ºC or higher, Total weight 15 kg or less, duration of discharge 18-20 sec, initially charged. ISO 9001 approved and according to standards NFPA & Building Code of Pakistan/EN standards and testing certificate by authorized.

Portable foam (AFFF) Extinguishers: 10 Liter

AFFF (foam) fire extinguisher 9/10 liter capacity, stored pressure type , AFFF ratio shall be 5%, Discharge range shall be 6 m or higher, Discharge time shall be 30 sec or higher, Gross weight 20 kg or less, Operating pressure 15 bar or higher, Test pressure 25 bar or higher, Temperature Range +5ºC to +60ºC, Cylinder Material shall be Cold Rolled Steel Sheet or equivalent, Pressure gauge to indicate stored pressure ISO 9001 approved and according to standards NFPA & Building Code of Pakistan/EN standards and testing certificate by authorized.Fire extinguishers shall be located shown on drawings and as prescribed in the NFPA 10 standard and in accordance with Local Defense authorities.

CLEAN AGENT FIRE EXTINGUISHING (Novec 1230/FM-200) SUPPRESSION SYSTEM

General Requirements

1. The Novec-1230/FM-200 Clean Agent System materials and equipment shall be standard products of the supplier's latest design and suitable to perform the functions intended. When one or more pieces of equipment must perform the same function(s), they shall be duplicates produced by one manufacturer.
2. All devices and equipment shall be UL Listed and/or FM approved.
3. The fire suppression agent shall be Novec-1230/FM-200 fire protection fluid; clean dry, non-corrosive, non-damaging, non-deteriorating, and meeting the requirements of NFPA 2001. The agent shall be suitable for use in normally occupied spaces. Agent shall be listed as "Acceptable" on the EPA's SNAP list.

Clean Agent Storage and Distribution

1. Each system shall have its own supply of clean agent.
2. The system design can be modular, central storage, or a combination of both design criteria.
3. Systems shall be designed in accordance with the manufacturer's guidelines.
4. Each supply shall be located within the hazard area, or as near as possible, to reduce the amount of pipe and fittings required to, install the system.
5. The clean agent shall be stored in Minimax Agent Storage Cylinder Assemblies. Cylinders shall be super-pressurized with dry nitrogen to an operating pressure of 360 psi @ 70°F (24.8 bar @ 20°C). Cylinders shall be of high-strength low alloy steel construction and conform to NFPA 2001.

Cylinders shall have a threaded protection ring on the tank collar and ¼" steel protection cap for handling and shipment.

7. Valve shall be constructed of forged brass and operate by means of pressure differential. Valve shall be constructed as to not require rebuild after discharge, Valve shall allow for means to pressurize cylinder without need for valve operation.
8. The primary cylinder assembly(s) shall be actuated by a resettable electric actuator or by pneumatic means from a PAE pilot cylinder. Non-resettable or explosive devices shall not be permitted.
9. The cylinders shall be mounted using wall racks on solid walls. The cylinders and racks shall be arranged to allow a service aisle for cylinder removal and cylinder weighing.
10. Each cylinder assembly shall have a contact pressure gauge with integrated low pressure switch to provide visual and electrical supervision of the cylinder pressure. The low pressure switch shall be wired to the control panel to provide an audible and visual supervisory condition signal in the event the cylinder pressure drops below 10% working pressure. The pressure gauge shall be color coded to provide an easy, visual indication of cylinder pressure.
11. Each cylinder assembly shall have a pressure relief provision that automatically operates before the internal pressure exceeds 710 psi (49 bar).
12. When more than one cylinder is connected to a common manifold, a check valve shall be provided with each cylinder.
13. Engineered discharge nozzles shall be provided within the manufacturer's guidelines to distribute the Novec-1230/FM-200 fluid throughout the protected spaces. The nozzles shall be designed to provide proper agent quantity and distribution. Nozzles shall be available in ½ in. through 2 in. pipe sizes. Each size shall be available in 180°and 360º distribution pattern.
    a. Nozzles shall be permanently marked as to part number and orifice diameter.
    b. Nozzles shall be of the type utilizing internal orifice plates.
    c. Nozzles should be listed and/or approved to be used in the upright or pendant position.
    d. Ceiling plates can be used with the nozzles to conceal pipe entry holes through ceiling tiles.
14. Distribution piping, and fittings, shall be installed in accordance with the manufacturer's requirements, NFPA 2001 and approved piping standards and guidelines. All distribution piping shall be installed by qualified individuals using accepted practices and quality procedures. All piping shall be adequately supported and anchored at all directional changes and nozzle locations. The piping shall be laid out to give maximum flow and to avoid possible mechanical, chemical or other damage. Installation shall follow drawings as closely as possible. System designer must be consulted for anything other than minor deviations in pipe routing.
    a. Black or galvanized steel pipe shall be either ASTM A53 seamless or electric welded, Grade A or B or ASTM A-106, Grade A, B, or C. ASTM A-120, ordinary cast-iron pipe, aluminum pipe, or non-metallic pipe shall not be used. Stainless steel pipe shall be 304, 316, 304L, or 316L for threaded connections or 304L or 316L for welded connections.

b. Threaded fittings must comply with NFPA 2001 and be at a minimum class 300 malleable iron, class 300 ductile iron. Cast iron and Class 150 pound fittings shall not be used.

c. Grooved fittings and couplings must comply with NFPA 2001. Piping shall be rolled or cut grooved in accordance with the fitting or coupling manufacturer's guidelines.

d. Gaskets must be compatible with Novec 1230 fluid (typically EPDM having a temperature range of -30°F to 230°F [-34°C to 110°C]). Gasket lubricant must be in accordance with manufacturer's specifications.

e. The minimum allowable working pressure at 70°F (21.1°C) for pipe and fittings in closed sections of pipe must be greater than or equal to the maximum operating pressure of the discharge pipe safety relief valve.

f. Reductions in pipe sizes may be accomplished using threaded or grooved concentric reducing fittings, steel or stainless steel concentric swage fittings, or steel or stainless steel reducing bushings. All such fittings must comply with NFPA 2001. Pipe reductions can be made using machined or forged steel hex bushings. Malleable and/or cast iron bushings are NOT to be used.

g. All piping shall be reamed, blown clear and swabbed with suitable solvents to remove burrs, mill varnish and cutting oils before assembly.

h. All screwed pipe shall be coated with Teflon tape.

i. Piping shall be pneumatically tested in a closed circuit for a period of 10 minutes at 40 psi (2.76 bar) per the latest edition of NFPA 2001. At the end of 10 minutes, the pressure drop shall not exceed 20 percent of the test pressure. The pressure test shall be permitted to be omitted if the total piping contains no more than one change in direction fitting between the storage container and the discharge nozzle, and where all piping is physically tested for tightness.

Control Panel

1. The control panel shall be Conventional Control Panel and its components shall be UL Listed and/or FM Approved for release.
2. The Control System shall perform all functions necessary to operate the system detection, actuation and auxiliary functions as outlined.
3. The Control System shall be capable of providing 8.0 AH or 12.0 AH battery standby power supplies, providing from 24 to 90 hours standby.
4. The Control System shall support Cross-Zoned, Single Detector Release and Manual Release detection/actuation methods.
5. The Control System shall provide the following capabilities and functions:

    a. The Control Panel shall include six programmable initiating device circuits, four programmable output circuits, three programmable Form-C relays, A 7.0 Amp integral power supply and 80 character LCD

    b. The IDCs (Initiating Device Circuits) shall be individually programmable as conventional two-wire smoke detector circuits, as well as any dry contact input device. The IDCs shall support Style D (Class A) operations by adding an expansion board. The IDCs shall support conventional two-wire smoke detectors as well as conventional smoke detectors capable of generating a

maintenance signal when the detector becomes dirty and a separate supervisory 'freeze' signal when ambient temperature falls below the detector rating of approximately 45 degrees F.

c. The four programmable outputs shall be individually programmable as conventional supervised NACs (Notification Appliance Circuits) or for releasing solenoids. Each NAC may be individually programmed as any of the following: Silence Inhibit, Auto-Silence, Strobe Synchronization, Selective Silence (horn-strobe mute), Temporal or Steady Signal, Silence able or Non-silence able, or Release Stage Sounder. The system shall also provide resettable and non-resettable output power for general use.

d. The three programmable relays shall be individually programmable as Alarm, Trouble, Supervisory, Discharge, and AC Power Loss. When programmed as a Trouble relay, the relay shall be fail-safe.

e. The on board power supply shall be capable of 7.0 Amps of regulated, filtered power.

Detectors

1. The detectors shall be spaced and installed in accordance with the manufacturer's specifications and the guidelines of NFPA 72.
2. Smoke detectors shall be 24VDC photoelectric.
3. The detector screen and cover assembly shall be easily removable for field cleaning of the detector chamber.
4. Built in magnetic detector sensitivity test feature.
5. Tamper resistant security lock.

Manual Release (Electric)

1 The electric manual release station shall be a dual action device which provides a means of manually discharging the clean agent fire extinguishing system when used in conjunction with control system.
2 The manual release station shall be as per standards.
3 The manual release station shall be a dual action device requiring two distinct operations to initiate a system actuation.
4 The manual release station shall bypass the time delay and abort functions, shall cause the system to discharge and shall cause all release and shutdown devices to operate in the same manner as if the system had operated automatically.
5 A manual release station shall be located at each exit from the protected hazard.

Manual Release (Mechanical)

1. Mechanical Manual Release shall be made available in the event all battery back-up and commercial power is lost. Manual Release shall be installed atop the electric actuator. Consideration should be given for convenience of operation and egress from the hazard area(s).

Abort Station (Optional)

1. The optional Abort Station shall be "Dead Man" type and shall be located next to each manual release station.

2. "Locking" or "Keyed" abort stations shall not be permitted.

3. The Abort Station shall be according to standards.

A. AUDIBLE and VISUAL ALARMS

1. Audible alarm and visual signal devices shall operate from the Control Panel.
2. Alarms shall operate on 24 VDC nominal polarized.
3. Audible alarms shall provide continuous or interrupted tones with an output sound level of at least 90 dBA measured at 10 feet from the device.
4. A Strobe device shall be placed outside, and above, each exit door.

Batteries

1. Shall be 12.0 volt, Gel-Cell type (2 required).
2. Battery shall have sufficient capacity to power the fire alarm system for not less than twenty-four hours plus 5 minutes of alarm upon a normal AC power failure. Optional battery power for ninety hours
3. The batteries are to be completely maintenance free.

Electrical Installation

1. Installation shall be in accordance with the NFPA 70 (NEC), NFPA 72, NFPA 2001, local and state codes, as shown on the drawings, and as recommended by the major equipment manufacturer.
2. All conduit along with fittings / clamps / accessories, junction boxes, conduit supports and hangers shall be concealed in finished areas and may be exposed in unfinished areas. Conduit installation shall be in accordance with The National Electrical Code (NEC), local and state requirements. Smoke detectors shall not be installed prior to the system programming and test period. If construction is ongoing during this period, measures shall be taken to protect smoke detectors from contamination and physical damage.
3. All fire detection and alarm system devices, control panels and remote annunciators shall be flush mounted when located in finished areas and may be surface mounted when located in unfinished areas.

TECHNICAL SPECIFICATIONS FOR FIRE DETECTION SYSTEM

General Conditions

1. The Fire Detection & Alarm System shall be UL certified; designed, manufactured, supplied, erected and tested as per the requirement laid in relevant NFPA-101 Life Safety Code &NFPA Standard No. 72 / EN 54 Part 2 & 4 for protected premises signaling systems except as modified and supplemented by this specification.
2. The fire alarm manufacturer shall be of the highest caliber and quality. The system shall be manufactured by an ISO 9001 certified company and meet the requirements of BS5750: Part 1: ANSI/ASQC Q91-1987.
3. The addressable Fire Detection & Alarm system shall be complete in all respects and any device not included in the specification but essential for proper operation of the system shall be deemed to be within the scope of the contractor whether specifically mentioned in this specification or not.
4. The system shall be designed keeping in view the spare capacity in the hardware wherever possible and logical, in order to accommodate for future expansion and / or modification.

5. All nameplates, drawings, operating and maintenance instructions etc. shall be in English language. The dimensions, weights shall be in metric units.
6. All equipment, materials and components supplied shall be newly manufactured and without loose or temporary cabling. Wired options used in the system hardware shall be minimum.
7. All components shall be rated for continuous operation.
8. All metal parts of frames, supports etc., shall be mechanically rugged and constructed of corrosion resistant material or treated with anti-corrosive finish.
9. Adequate ventilation and cooling arrangements shall be provided; for heat dissipation.
10. All cables for inter bay connection shall be of plug in type.
11. All power supply shall be through. MCBs with suitable marking for the different ratings to enable easy identification and replacements.
12. The system shall be protected against malfunctioning on account of noise from electromagnetic or electrostatic sources like power supplies, radio system, fluorescent tubes, motors, electric mechanical relay circuits etc.
13. All imported items shall bear UL, FM, certificate/ approvals. All detectors shall have UL / FM approval.
14. The detectors shall be located and spaced as per latest NFPA & Building Code of Pakistan codes.
15. For the items not covered in the specification, the contractor shall furnish the full details of such items that he proposes to offer with the details of the standards followed.
16. The Fire Detection & Alarm System equipment shall be suitable-for operating at 230 V + 1.0 +/- 15 %, single phase, 50 Hz + / - 5 % power supply. If the equipment is required to, operate at any other voltage level, then necessary transformation / conversion and distribution of required power supply shall be in Contractor scope.

System Features

1. The Fire Detection and Alarm system shall be State of the art microprocessor based, software controlled automatic system with necessary programming functions, annunciation and controls. The system will consist of a UL listed Microprocessor based Fire Alarm Panel, addressable smoke detectors, addressable heat detectors, combination detectors, addressable manual call Points with the necessary enclosures including explosion proof call points, Electronic sounders/ hooters Addressable Fault Isolation Modules, Response indicators, Repeater panel, Control modules and Other units/accessories as required.
2. In the event of fire, detectors shall, sense and transmit the signal to the Main Control Panel. Audio-visual alarms shall be initiated simultaneously on main control panel, repeater panel, if any and locally. Main control panel shall display the address of the detector where the smoke / fire has been sensed: Main fire alarm panel shall be provided with a block type mimic display/ backlit LCD display for indicating fire zones, detector address and LED's for fire and fault conditions.
3. The total area under surveillance shall consist of suitable number of detector according to the drawings.

4. All equipment and components shall be installed in strict compliance with manufacturers' recommendations. Consult the manufacturer's installation manuals for all wiring diagrams, schematics, physical equipment sizes, etc., before beginning system installation. Refer to the Riser/Connection diagram for all specific system installation/termination/wiring data.
5. All equipment shall be attached to walls and ceiling/floor assemblies and shall be held firmly in place (e.g. detectors shall not be supported solely by suspended ceilings). Fasteners and supports shall be adequate to support the required load.
6. A test switch shall be provided at the main panel to check the proper functioning and healthiness of the system.

Cables

1. All fire alarm system wiring must be new.
2. *All control cables shall be 2 Core 1.5mm.sq. Cu Conductor (Cu/Mica/LSZH insulated) fire rated FR cable having fire resistance of at least 1-1/2 hours.*

Control Panel

Fire alarm, control panel shall be intelligent, with its own Microprocessor and memory. It shall be enclosed, wall / floor mounting type of modular design. Entire panel shall be designed with solid-state circuitry and provision to house required printed circuit -cards. It shall operate on 220~240V AC mains with a provision for operation through battery backed-up power source during mains failure.

The control panel as a built in feature shall have one/ two loop modules with 2 loops per module. Each loop shall be able to take at least 90 detectors and 90 devices. Control panel shall have provision for future expansion so that additional loops can be created by addition of loop cards modules.

The control panel shall have necessary hardware and software modules for the following:

1. Alarm output and control output for various control functions.
2. Facility to process the input data received from addressable analogue type detectors addressable interface unit.
3. Electronic filters to ignore false alarm and increase sensitivity to real fires from-sensors. The electronic filters shall recognize the unwanted alarm from detectors due to electrical spikes.
4. Separate backlit display area to indicate the address of each device and clear text about the location of alarm / trouble.
5. The facility to support a graphic workstation comprising of PC, Printer, Keypad, Mouse, Peripherals etc.
6. Printer facility to print out the alarm / trouble occurrences.

Manual Call Stations

Manual call stations shall be wall structure mounting break-the-glass/ pull-down cover type and shall be located near the exits, staircases or lift so that in case of fire being spotted by the personnel in the premise, they can actuate the alarm. The unit shall be addressable and communicate with the FAP like other detectors. In case of break glass type, the unit shall be supplied along with a hammer chained with the unit for breaking

the glass marked, "In case of fire break glass." Manual call points for outdoor mounting shall have IP-65 enclosure protection and in explosion hazardous areas shall have explosion proof protection. The explosion proofness shall be certified by either CMRI or any other recognized organizations.

Electronic Sounder

Electronic hooters shall be used for audio alarm to alert people in case of fire and shall be fully solid state with audio output sufficient to be heard at a distance not less than 50 m. The hooters shall have facility for adjustment of volume as per requirement at site.

Smoke Detectors

Smoke detectors shall be low voltage, two wire, solid-state devices that provide for integral communication with microprocessor based fire detection system. The detectors shall be able to communicate with the control panel regarding individual address, sensor type and analogue signals. The main control panel shall analyse the signal value to determine the status of the detector e.g. "alarm, pre alarm, fault etc." Detectors shall be ceiling / wall mounting type and shall be used to detect visible and invisible smoke particles produced during the incipient stages of a developing fire. Fire may include smoldering and fast burning fires of wood, paper, rubber, natural and synthetic fabrics, plastics and common liquid hydrocarbons. The detectors shall have the following features.

1. Early detection of fire conditions.
2. Continuous monitoring of sensor status.
3. Fast response.
4. Corrosion resistant coating.
5. Dual LED’s to provide 360 – Degree viewing.
6. Easy disassembly for cleaning.
7. Sealed sensor head to prevent entry of dust, dirt, insect’s etc. to reduce nuisance alarms.

Technical Particulars

a. Operating Voltage : 15 – 28 V dc
b. Operating Temperature : -10 to 50 Deg. C
c. Humidity : 0 to 95% RH
d. Approval / Listing : FM / UL

Heat Detector

These shall be analog addressable, fixed cum rate of rise type and designed to operate when the ambient temperature rises beyond a fixed temperature or if the rate of rise is faster than the pre-determined rate and allowing the increase/ rise for a specified period. The detector shall be low voltage, two wire, solid-state device that provides for integral communication with microprocessor based fire detection system. The detectors shall be able to communicate with the control panel regarding individual address, sensor type and analogue signals. The main

control panel shall analyse the signal value to determine the status of the detector e.g. "Alarm, prealarm, fault etc. The detectors shall have the following features:

1. Dual thermistors for fast response to temperature increases.
2. Continuous monitoring of sensor status.
3. Corrosion resistant coating.
4. Dual LED's to provide 360-degree viewing.
5. Easy plug in of sensor heads to common base
6. Sealed sensor head to prevent entry of dust, dirt, insects etc to reduce nuisance alarms:

   Technical Particulars

   a. Operating Voltage : 15 – 28 V dc
   b. Operating Temperature : -10 to 50 Deg. C
   c. Humidity : 0 to 95% RH
   d. Approval / Listing : UL
   e. Alarm temp. : Preferably within 10 Deg. C of max Operating temp.

TECHNICAL SPECIFICATIONS FOR EMERGENCY LIGHTING (BATTERY OPERATED EXIT & EMERGENCY LIGHTS)

General Conditions

1. The Emergency Exit & Lighting System shall be KEMA/DEKRA certified; designed, manufactured, supplied, erected and tested as per the requirement laid in relevant NFPA-101 Life Safety Code / Relevant standard.
2. The Emergency Exit & Lighting System manufacturer shall be of the highest caliber and quality. The system shall be manufactured by an ISO 9001 certified company and meet the requirements of NFPA-101 Life Safety Code / Relevant standard.

Emergency Lighting System Features

1. The Emergency Exit & Lighting System shall have following technical specifications:
    a. All system must be new.
    b. Battrey operated Exit and Emergency light's illumination shall be provided for a minimum of 1-1⁄2 hours in the event of failure of normal lighting as per NFPA-101 requirements.
    c. Emergency elighting facilities shall be arranged to provide initial illumination that is not less than an average of 1 foot-candle (10.8 lux) and, at any point, not less than 0.1 foot-candle (1.1 lux), measured along the path of egress at floor level.
    d. Illumination levels shall be permitted to decline to not less than an average of 0.6 foot-candle (6.5 lux) and, at any point, not less than 0.06 foot-candle (0.65 lux) at the end of 1-1⁄2 hours.
    e. The maximum-to-minimum illumination shall not exceed a ratio of 40 to 1.
    f. The emergency lighting system shall be arranged to provide the required illumination automatically in the event of any interruption of normal lighting due to any of the following:

        (1) Failure of a public utility or other outside electrical power supply.

        (2) Opening of a circuit breaker or fuse.

        (3) Manual act(s), including accidental opening of a switch controlling normal lighting facilities.
    g. The emergency lighting system shall be either continuously in operation or shall be capable of repeated automatic operation without manual intervention.
    h. The battery operated emergency and exit lights shall have ingress protection class of IP-65 or higher.
    i. The Emergency luminaire shall be capable of operating at an ambient temperature of -5 to +45 degree celcius.
    j. The Emergency luminaire shall have high efficency LEDs as an illumination source.
    k. The Emergency luminaire will be capable of operating at 210VAC to 250VAC at 50Hz frequency.

l. The rated power of the luminaire will not exceed 7 Watts.

m. The Emergency luminaire will have Ni-Cd batteries for battery backup.

n. The color of the Emergency luminaire will be according to the choice of architect/engr.incharge.

System Wiring

1. The wiring for Emergency Exit & Lighting System will have following technical specifications:

   a. All wiring must be new.

   b. The cables will comply with BS: 6360, 6004, 6387 Category CWZ, IEC 60331, 60332, 60754-1/2, 61034 standards.

   c. Wiring cables will be of 99.99% pure stranded Copper Conductor.

   d. The construction of wiring cables shall be single core copper conductor Mica insulated and will have LSZH (Low Smoke Zero Halogen) sheath i.e. 1Core-Cu/Mica/LSZH. The voltage grade of the wiring cables will be 350/500 or 450/750V.

   e. The wiring cables will be non armoured type.

   f. The cables shall have a minimum fire resistance rating of 1-1/2 hours.

   g. The cables shall be designed to operate at an ambient temperature of -5 to +45 degree celcius.

   h. The following type tests will be conducted on the wiring cables

      i. Flame propogation test in accordance with IEC 60332 Part-1.

      ii. Circuit Integrity Test in accordance with BS 6387 Category C, W & Z.

      iii. Smoke Emission Test in accordance with IEC 61034-2, BS 7622, BS 7846.

      iv. Acid gas Emission test in accordance with IEC 60754 Part-1 & 2, BS 6425.

      v. Limit of Oxygen Index (LOI) in accordance with ASTM-D2863, BS286.

BILL OF QUNATITES

Supply installation, testing and commissioning of Fire & Safety Solution and Upgradation/Integration of Fire Detection/Fighting System at Peshawar Institute of Cardiology
PIC-069

207-A, P-Block Gulberg III Lahore, Pakistan
Ph: +92 423 5441451-3

SUMMARY OF COST

FIREFIGHTING WORKS PESHAWAR INSTITUTE OF CARDIOLOGY
MEDICAL TEACHING INSTITUTION
PESHAWAR

S.NO	DESCRIPTION	COST (PKR)
1	Fire Fighting System	PKR 52,051,192.54
2	Fire Alarm and Exit Emergency lighting System	PKR 72,608,567.52
3	HVAC Works	PKR 2,188,970.88
4	Civil & MISC. Works	PKR 23,770,636.00
	TOTAL AMOUNT WITH ALL TAX (PKR)	PKR 150,619,366.94

Notes:

1. The prices should include the price of incidental services. No separate payment shall be made for the incidental services.
2. Payment will be paid on actual quantities after verification and as per quoted unit rates.
3. Quoted unit rates will remain firm till contract period.
4. The Bidder shall provide the Technical Literature, Operation and Maintenance Manuals for the offered products.
5. The Bidder shall provide complete Installation, Testing & Commissioning Procedures, Manuals and Drawings for the offered products.
6. The Testing Procedures shall be submitted for the approval of Client.
7. The Bidder shall specify the Country of Origin of the Quoted Items.
8. The Bidder shall prepare a Comprehensive Training Manual for the purpose of Self Educating suitably qualified PIC personnel in the Operation and Maintenance of the Equipment.
9. The Bidder shall quote for complete scope. Partial / incomplete or conditional bid will be rejected.
10. The Bidder shall be fully responsible to complete the Works for the completion and operation of all systems and shall include price of all such items of systems and equipment or work, whether mentioned in the BOQ, which are required to make the systems operationally complete in all respects. Also include price, at this stage, as foreseen by Bidder as per his Detailed Engineering / Site Works / Commissioning etc.
11. The contractor / Manufacturer will provide brand genuineness and an authorized distributor certificate before procuring equipment.
12. The Entire Fire Alarm system will fully comply with NFPA 72 / relevant standards.
13. The contractor will be responsible for ensuring the on site coordination with running MEP services.

Contractor Premium
% Above
In Figures: _____
In words: _____

ATPAR: _____

% Below
In Figures: _____
In words: _____

Contractor Name: _____
Contractor Signature: _____

BILL OF QUANTITIES (BOQ)

PIC PESHAWAR

Sr. #	Description	Unit	Quantity	Rate (PKR)	Amount (PKR)
	FIRE FIGHTING SYSTEM				
1	Supply, installation, testing & commissioning of MS Seamless ASTM - A53 Grade B Schedule 40 pipe including all fittings (Tee, Sockets, Reducer, Bend) special fitting, Equipment Connecting Point, complete in all respects including sleeves coating, wrapping and painting as shown on drawings & specifications, including hanger, Supports, loading/unloading and delivery at site. (Brand:Huffaz or Equivalent)				
a)	150 mm Diameter (6")	Rft	2096.00		-
b)	100 mm Diameter (4")	Rft	345.00		-
c)	75 mm Diameter (3")	Rft	325.00		-
d)	65 mm Diameter (2.5")	Rft	495.00		-
e)	50 mm Diameter (2")	Rft	630.00		-
f)	40 mm Diameter (1 1/2")	Rft	325.00		-
g)	32 mm Diameter (1 1/4")	Rft	305.00		-
h)	25 mm Diameter (1")	Rft	1685.00		-
2	Providing and installing gate/ball valves of following nominal dia, of approved make, including jointing, fitting, painting, testing, complete in all respects to match with following pipe dia meters. (Brand:NAFFCO, SFFECO, SHIELD)				
a)	150 mm Diameter (6")	Each	6.00		-
3	Supply, Installation, testing and commissioning Fire Hydrant pillar 4" flanged type with two outlet (2 x 2 1/2), along with control valves, 2 brass nozzles for each hydrant, as per Firefighting system specification. (Brand:NAFFCO, SFFECO)	Each	6.00		-
4	Supply, Installation and testing of Self Mounted outdoor Fire Hose cabinet, made of Mild Steel with Solid front, suitable to accommodate two lengths of hoses of 100' long and two nozzle as per approval of the engineer. (Brand :NAFFCO, SFFECO)	Each	11.00		-
5	Supply, Installation and testing of Pressurized Wall Mounted Fire Hose Reels, made of Mild Steel with Solid Cabinet, lengths of reels of 100' long and 1" diameter and as per approval of the engineer. (Brand :NAFFCO, SFFECO)	Each	6.00		-
6	Supply, installation, testing & commissioning of Breeching inlet fixing a 4"x 2-1/2" x 2-1/2" fire brigade connection main barrel having as per approval of the engineer as per Firefighting system specification. (Brand :NAFFCO, SFFECO)	Each	3.00		-
7	Supply, Installation, Testing and Commissioning of Packaged Fire Pump Set including electrical and control panels as per drawings and specifications Fire fighting Pump Set. NFPA 20 Compliant 1 Electric + 1 Diesel + 1 Jockey+ Skid Control Panel 750 GPM @ 7.5 Bar including all items and accessories, headers/piping, gauges, instrumentation, control cables suction/discharge valves, foot valves, strainers, gauges, pressure switches, instrumentations inside the pump room and to/from water storage tanks. (Brand :NAFFCO, SFFECO, KSB)	Each	1.00		-
8	Supply and Installation of Wall Mounted Fire Extinguisher CO2 Type, Capacity 5 kg as per approval of the engineer. (Brand :NAFFCO, SFFECO)	Each	90.00		-
9	Supply and Installation of Wall Mounted Fire Extinguisher DCP Type, Capacity 6 kg as per approval of the engineer. (Brand :NAFFCO, SFFECO)	Each	90.00		-
10	Supply and Installation of Wall Mounted Fire Extinguisher K type Wet Chemical Type, Capacity 6 Liter as per approval of the engineer. (Brand :NAFFCO, SFFECO)	Each	2.00		-
11	Supply of Trolley Mounted Fire Extinguisher CO2 Type, Capacity 50 kg as per approval of the engineer. (Brand :NAFFCO, SFFECO)	Each	4.00		-

12	Supply and Installation of Fire Blankets as per approval of the engineer. (Brand :NAFFCO, SFFECO)	Each	59.00		-
13	Supply and Installation of Fire Buckets with Stand as per approval of the engineer.	Each	2.00		-
14	Providing, Installing and testing (sprinklers) (K 5.6) including jointing, fitting, testing, including all necessary accessories required for installation, complete in all respect as per specifications and drawings as well as directed by the Engineer. (Brand :VIKING, SHIELD)				
a)	Ceiling type (Concealed)	Each	12.00		-
b)	Upright type	Each	172.00		-
15	Providing, Installing, testing and commissioning fire fighting zone check assembly of required size as per drawing consisting of Alarm valve, PRV, Gate valve, Flow switch, etc. complete, at suitable locations as required by NFPA codes for Fire fighting sprinkler - wet pipe system including fire alarm panel, jointing, fitting, testing, including all necessary accessories required for installation, complete in all respect as per specifications and drawings as well as directed by the Engineer. (Brand :NAFFCO, SFFECO)				
a)	100 mm Diameter (4")	Each	1.00		-
b)	75 mm Diameter (3")	Each	2.00		-
c)	63 mm Diameter (2 1/2")	Each	2.00		-
16	Supply, Install, and Test Automatic Air Release Valve of 1" with all required necessaries accessories complete in all respect as per drawings and instructed by the engineer incharge at site. (Brand :NAFFCO, SFFECO)	Each	3.00		-
17	Repair, Maintenance, testing and commissioning of FM200 system installed in Server room and supply of 50Kg Clean agent cylinder complete in all respect.	Job	1.00		-
				TOTAL AMOUNT (PKR.)	**-**

BILL OF QUANTITIES (BOQ)

PIC PESHAWAR

Sr. #	Description	Unit	Quantity	Rate (PKR)	Amount (PKR)
1	**FIRE ALARM SYSTEM**				
	Approved Manufacturers: Honeywell Gent (USA/UK) / Approved Eqv.				
1.01	Supply at site, installation testing and commissioning of **Addressable Optical Sensor type Smoke Detector** with base complying with NFPA / EN-54 standards make, complete in all respects. **(Installed Above the false Ceiling / on slab)** **Imported Item**	Each	945		-
1.02	Supply at site, installation testing and commissioning of **Addressable Optical Sensor type Smoke Detector** with base complying with NFPA / EN-54 standards , complete in all respects. **(Installed on the surface of false Ceiling)** **Imported Item**	Each	790		-
1.03	Supply at site, installation testing and commissioning of **Addressable Temperature Rise type Heat Detector** with base complying with NFPA / EN-54 standards, complete in all respects. **Imported Item**	Each	98		-
1.04	Supply, installation, testing, and commissioning of **Addressable electronic alarm sounders** (Fire Bell) complying with NFPA / EN-54 standards, complete in all respects and conforming to general specifications. **Imported Item**	Each	23		-
1.05	Supply and Installation of **Addressable Manual Call Point**, pushes with Hammer in suitable MS box. as per approval of the engineer complying with NFPA / EN-54 standards complete in all respects. **Imported Item**	Each	23		-
1.06	Supply at site, installation testing and commissioning of **Carbon Monoxide Detector** with base complying with NFPA / EN-54 standards, complete in all respects. **Imported Item**	Each	2		-
1.07	Supply, installation, testing and commissioning of **6 Loops Fire Alarm Control Panel (FACP)**. The panel should be equipped with LCD display, Backup Batteries serving emergency backup time of maximum 3 hours, integrated BMS Module/Remote Monitoring complete in all respects and conforming to general specifications FACP to be installed at the appropriate place as mentioned in drawings. FACP to be equipped with Network Card. **(For OPD Building)** **Imported Item**	Each	1		-

1.08	Supply, installation, testing and commissioning of **2 Loops Master Fire Alarm Control Panel (FACP)**. The panel should be equipped with LCD display, Backup Batteries serving emergency backup time of maximum 3 hours, integrated BMS Module/Remote Monitoring complete in all respects and conforming to general specifications FACP to be installed at the appropriate place as mentioned in drawings. FACP to be equipped with Network card. **Imported Item**	Each	1		-
1.09	Supply at the site, installation, and testing of **2 Core 1.5mm. sq. Cu.cond LSZH FR cable** having fire resistance of at least 90 minutes, installed in prelaid PVC conduit / cable tray / as per site conditions, complete in all respects. Make: Ventilux (UK) / ELAN / Firecell (EU) / Prysmian (UK) / Approved Eqv. **Imported Item**	Rft	46,581		-
1.10	Supply at the site and installation of **1" Dia PVC / UPVC conduit Class-Electrical complying with relevant standards (PS-1905, BS-6099)** to be installed inside the slab / surface of slab / inside walls / inside floor / as required complete with conduiting accessories, junction boxes, complete in all respects. Make: Plasco / Beta / Dadex Pipes **Local Item**	Rft	51,239		-
1.11	Supply and installation of 7"x4"x4" 16SWG MS coated back boxes, complete in all respects. **Local Item**	Each	15		-
1.12	**Complete Commissioning & Integration** of the Existing Fire Alarm System Fixtures with the IBMS system and Newly Installed fire alarm system complete in all respects. The existing Fire Alarm system detail is as follows: a-Smoke Detectors: 360 make Honeywell Gent b-Manual Call Stations: 24 make Honeywell Gent c-1/2 Loop Fire Alarm Control Panels: 06 make Honeywell Gent This job also includes the Complete Commissioning and Integration of the Newly Installed Fire Alarm System with the existing FA system and IBMS	Job	1		-
2	**EXIT & EMERGENCY LIGHTING**				
	Approved Manufacturers: Alco (USA) / Eaton (UK) / TM Technologies (EU) / Approved Eqv.				
2.01	Supply at site, installation, testing, and commissioning of **Battery-operated Exit lights** in compliance with NFPA 101 Safety Egress requirements, providing a backup time of atleast 1-1/2 hours, complete in all respects.	Each	70		-
2.02	Supply at site, installation, testing and commissioning of **Battery-operated Emergency lights** in compliance with NFPA 101 Safety Egress requirements, providing a backup time of atleast 1-1/2 hours, complete in all respects.	Each	150		-

2.03	Supply at site, testing and wiring of Battery operated Emergency Lights / Exit Lights from **DB MCB to first light point** with 3 x 1Core 2.5mm2 Cu/Mica/LSZH 300/500V grade cable (P+N+E) having fire rating of atleast 90 minutes, laid in 1" dia PVC/UPVC Conduit Class-Electrical complying with relevant standards (PS-1905, BS-6099), including the cost of PVC conduit and conduiting accessories, all wiring accessories, junction boxes, connectors, 1" dia corrugated flexbile conduit from junction box to light point, complete in all respects. Make: Pakistan Cables / Newage Cables / Fast Cables	Each	20		-
2.04	Supply at site, testing and Loop wiring of Battery operated Emergency Lights / Exit Lights from **light point to light point** with 3 x 1Core 1.5mm2 Cu/Mica/LSZH 300/500V grade cable (P+N+E) having fire rating of atleast 90 minutes, laid in 1" dia PVC/UPVC Conduit Class-Electrical complying with relevant standards (PS-1905, BS-6099), including the cost of PVC conduit and conduiting accessories, all wiring accessories, junction boxes, connectors, 1" corrugated flexbile conduit from junction box to light point, complete in all respects. Make: Pakistan Cables / Newage Cables / Fast Cables	Each	200		-
	TOTAL AMOUNT (PKR.)				**-**

BILL OF QUANTITIES (BOQ)

PIC PESHAWAR

Sr. #	Description	Unit	Quantity	Rate (PKR)	Amount (PKR)
	HVAC WORK				
1	Supply, installation & testing of Curtain type Fire Damper with Fusible Link (74 ºC) to be installed in existing duct work complete in all respect as shown on drawings as per approval of the engineer. (Brand :ADP,EAP or Equivalent)				
	6"x4"	Each	1.00		-
	8"x4"	Each	3.00		-
	8"x6"	Each	2.00		-
	10"x4"	Each	1.00		-
	10"x6"	Each	2.00		-
	12"x6"	Each	2.00		-
	12"x8"	Each	3.00		-
	14"x6"	Each	5.00		-
	14"x8"	Each	1.00		-
	16"x8"	Each	2.00		-
	16"x12"	Each	1.00		-
	18"x6"	Each	2.00		-
	18"x8"	Each	2.00		-
	18"x14"	Each	1.00		-
	20"x12"	Each	6.00		-
	20"x16"	Each	1.00		-
	22"x8"	Each	2.00		-
	22"x10"	Each	2.00		-
	22"x12"	Each	8.00		-
	22"x14"	Each	2.00		-
	22"x16"	Each	1.00		-
	24"x12"	Each	1.00		-
	24"x14"	Each	5.00		-
	26"x12"	Each	1.00		-
	28"x14"	Each	1.00		-
	28"x16"	Each	1.00		-
	30"x12"	Each	1.00		-
	30"x14"	Each	2.00		-
	30"x16"	Each	4.00		-
	30"x18"	Each	2.00		-
	30"x20"	Each	3.00		-
	32"x16"	Each	1.00		-

	32"x18"	Each	2.00		-
	32"x20"	Each	3.00		-
	34"x14"	Each	3.00		-
	34"x16"	Each	1.00		-
	34"x18"	Each	1.00		-
	34"x20"	Each	2.00		-
	36"x20"	Each	1.00		-
	38"x14"	Each	1.00		-
	38"x20"	Each	3.00		-
	40"x20"	Each	1.00		-
	42"x20"	Each	2.00		-
	44"x20"	Each	1.00		-
	46"x20"	Each	1.00		-
	50"x10"	Each	1.00		-
	50"x16"	Each	1.00		-
	50"x18"	Each	1.00		-
	56"x20"	Each	1.00		-
	66"x24"	Each	2.00		-
	68"x26"	Each	1.00		-
	72"x18"	Each	1.00		-
	72"x22"	Each	1.00		-
	74"x24"	Each	1.00		-
	86"x22"	Each	1.00		-
	86"x24"	Each	1.00		-
				TOTAL AMOUNT (PKR.)	**-**

BILL OF QUANTITIES (BOQ)

PIC PESHAWAR

Sr. #	Description	Unit	Quantity	Rate (PKR)	Amount (PKR)
	CIVIL & MISC. WORK				
1	Supply and Installation of 2 Hr. Fire Resistant Steel Doors of sizes mentioned in drawings with vision Panel complete in all respect, as per approval of the engineer.				
a)	3'-6"x7'	Each	21.00		-
b)	5'x7'	Each	57.00		-
2	Supply of Hospital Emergency Evacuation foldable stretchers complete in all respect.	Each	20.00		-
3	Supply of Hospital Emergency Evacuation foldable Chairs complete in all respect.	Each	20.00		-
4	Supply of Firefighter PPE set (Helmet with eye protection goggles, Gloves, Suit,Mask and Shoes etc.) complete in all respect.	Each	5.00		-
5	Supply & Execution of material for Modifications or temporary works and pads, sleepers, demolishing, restoration, trenches, excavation, backfilling, sleeves, core cutting, etc. demolishing / restoration required, to make whole system functional, shall be carried out by the bidder and shall restore/reconstruct the site in workable condition and including the cost of breaking through wall, roof and core cutting.	Lot	1.00		-
6	Supply & Execution of foundation works (including all material) of fire fighting pump skid, panels diesel tank any other related civil works.	Job	1.00		-
7	Dismantling of existing door to be replaced by fire rated doors and any other related civil works for door installation including raised walls.	Job	1.00		-
8	Supply and Installation of high quality Fire Evacuation Maps A2 size based on the building floor plans and safety guidelines Including all necessary information, such as escape routes, emergency exits, assembly points, fire extinguisher locations, and other relevant safety instructions.	Each	30.00		-
9	Dismantling and reinstallation of Ceiling for installation of Firefighting and detection system including repair and damages if any complete in all respect.	Job	1.00		-
10	Shop and As Built drawings of Firefighting and Detection system	Job	1.00		-
				TOTAL AMOUNT (PKR.)	**-**

DRAWING

CONSULTANCY SERVICES FOR FIRE RISK ASSESSMENT, FEASIBILITY STUDY, DESIGN/LAYOUT & SUPERVISION

TITLE

PROPOSED FIRE WATER SYSTEM

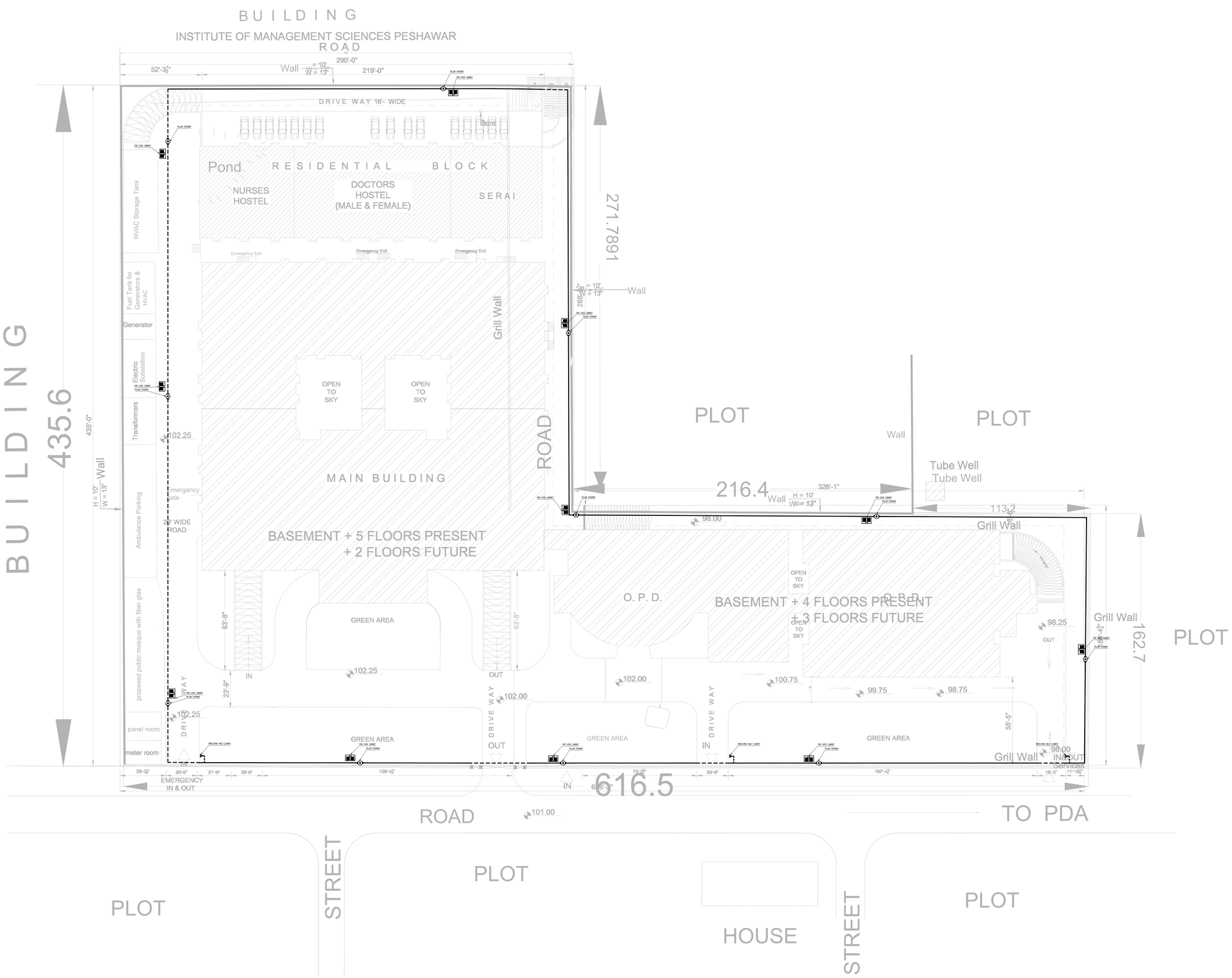
CONSULTANT:

VELOSI
Engineering For A Safer World

VELOSI INTEGRITY & SAFETY PAK.(PVT).LTD
207-A, P-Block Gulberg III, Lahore, Pakistan

CLIENT:

PESHAWAR INSTITUTES OF CARDIOLOGY



LEGENDS

SYMBOL	DESCRIPTION
	ABOVEGROUND FIRE WATER PIPELINE ø 6"
	UNDER GROUND FIRE WATER PIPELINE ø 6"
	ABOVEGROUND FIRE WATER PIPELINE ø 4"
	ABOVEGROUND FIRE WATER PIPELINE ø 3"
	ABOVEGROUND FIRE WATER PIPELINE ø 2½"
	ABOVEGROUND FIRE WATER PIPELINE ø 1½"
	ABOVEGROUND FIRE WATER PIPELINE ø 1"
	FIRE HOSE REEL CABINET
	PILLAR HYDRANT
	REDUCER
	VERTICAL RIESER ø 6"
	VERTICAL RIESER ø 4"
	BREECHING INLET (2xWAY)
	FIRE HOSE CABINET (SELF MOUNTED)

ISSUE FOR TENDER

REV	DESCRIPTION	DATE	DRN	CHK	APP
	TOTAL COVERED AREA				

REVISION

CLIENT
PESHAWAR INSTITUTES OF CARDIOLOGY

CONSULTANT
VELOSI INTEGRITY & SAFETY PAK.(PVT).LTD
207-A, P-BRICK Gulberg III, Lahore, Pakistan
VELOSI Engineering For A Safer World

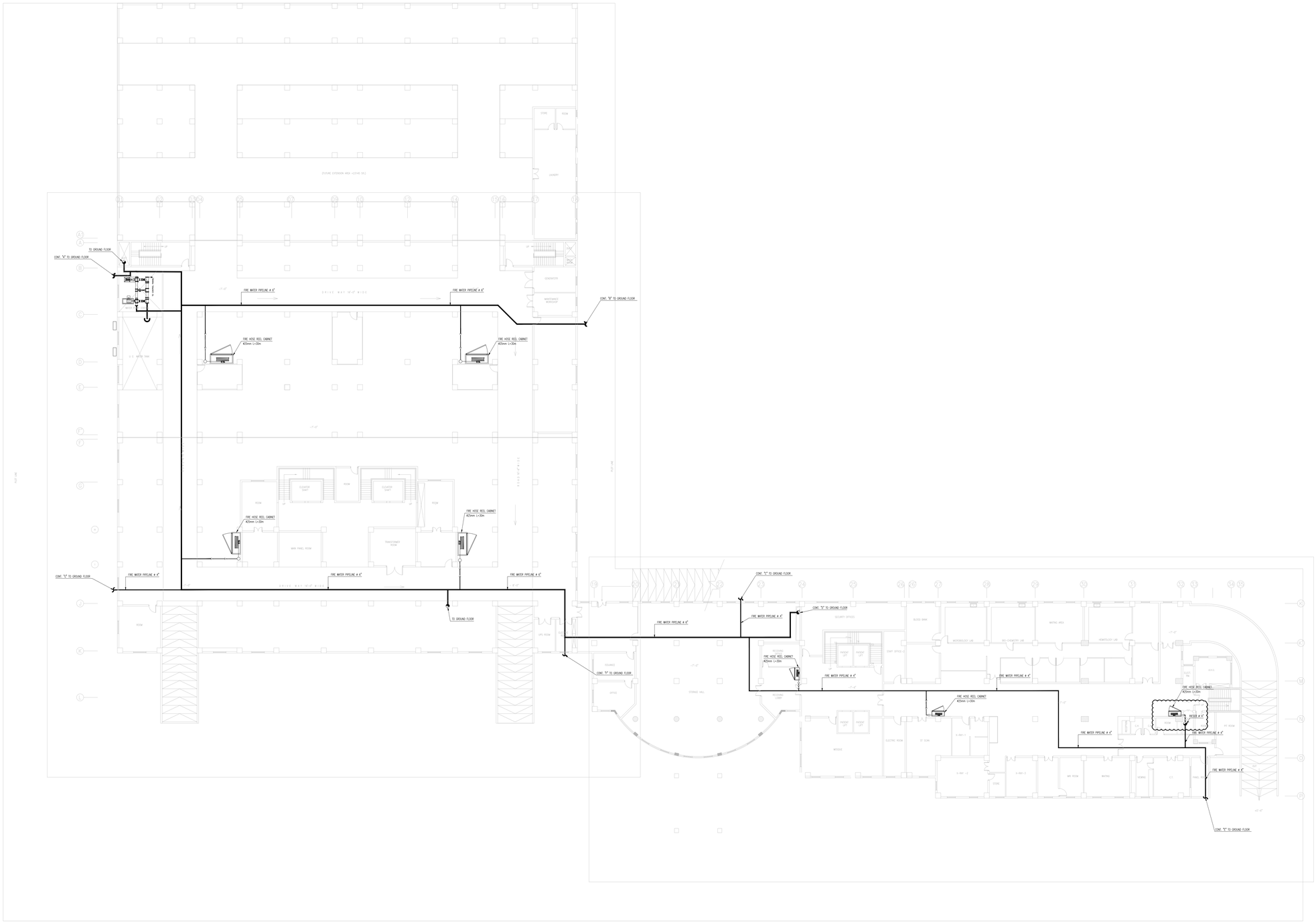
DRAWN BY: T.A
REVIEWED: UA
CHECKED: UA
APPROVED: MA

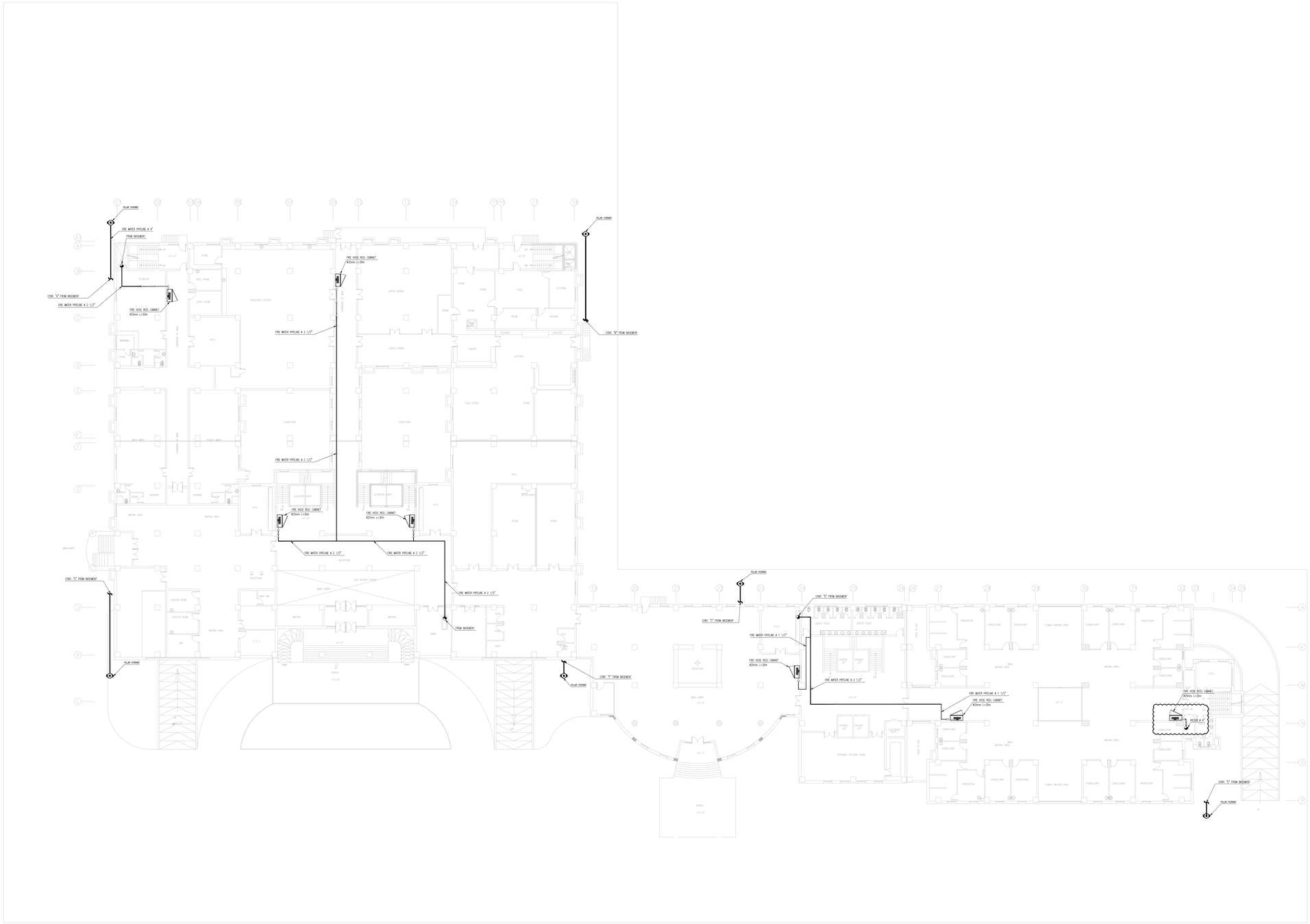
PROJECT
CONSULTANCY SERVICES FOR FIRE RISK ASSESSMENT, FEASIBILITY STUDY, DESIGN/LAYOUT & SUPERVISION

TITLE
PROPOSED FIRE WATER SYSTEM EXTERNAL

DATE: 12-07-2023
SCALE: N.T.S

PROJECT NO.	DRAWING NUMBER	SHEET	SIZE	REV
VISP-L-E22-0313	V-0313-F-D-0001	01 OF 01	A1	A


CONT. "A" TO GROUND FLOOR
TO GROUND FLOOR
FIRE WATER PIPELINE ø 6"
FIRE HOSE REEL CABINET
ø25mm L=30m
CONT. "B" TO GROUND FLOOR
CONT. "C" TO GROUND FLOOR
CONT. "D" TO GROUND FLOOR
CONT. "E" TO GROUND FLOOR
FIRE WATER PIPELINE ø 4"
FIRE WATER PIPELINE ø 3"
FIRE WATER PIPELINE ø 2½"
FIRE WATER PIPELINE ø 1½"
FIRE WATER PIPELINE ø 1"
FIRE HOSE REEL CABINET
ø20mm L=30m
FIRE HOSE REEL CABINET
ø25mm L=30m



GROUND FLOOR PLAN

LEGENDS

SYMBOL	DESCRIPTION
	ABOVEGROUND FIRE WATER PIPELINE ø 6"
	UNDER GROUND FIRE WATER PIPELINE ø 6"
	ABOVEGROUND FIRE WATER PIPELINE ø 4"
	ABOVEGROUND FIRE WATER PIPELINE ø 3"
	ABOVEGROUND FIRE WATER PIPELINE ø 2½"
	ABOVEGROUND FIRE WATER PIPELINE ø 1½"
	ABOVEGROUND FIRE WATER PIPELINE ø 1"
	FIRE HOSE REEL CABINET
	PILLAR HYDRANT
	REDUCER
	VERTICAL RIESER ø 6"
	VERTICAL RIESER ø 4"
	BREECHING INLET (2xWAY)
	FIRE HOSE CABINET (SELF MOUNTED)

ISSUE FOR TENDER

REV	DESCRIPTION	DATE	DRN	CHK	APP

TOTAL COVERED AREA

REVISION

CLIENT

PESHAWAR INSTITUTES OF CARDIOLOGY

CONSULTANT

VELOSI INTEGRITY & SAFETY PAK.(PVT).LTD
207-A, P-BRICK Gulberg III, Lahore, Pakistan

VELOSI
Engineering For A Safer World

DRAWN BY; T.A

REVIEWED UA

CHECKED UA

APPROVED MA

PROJECT

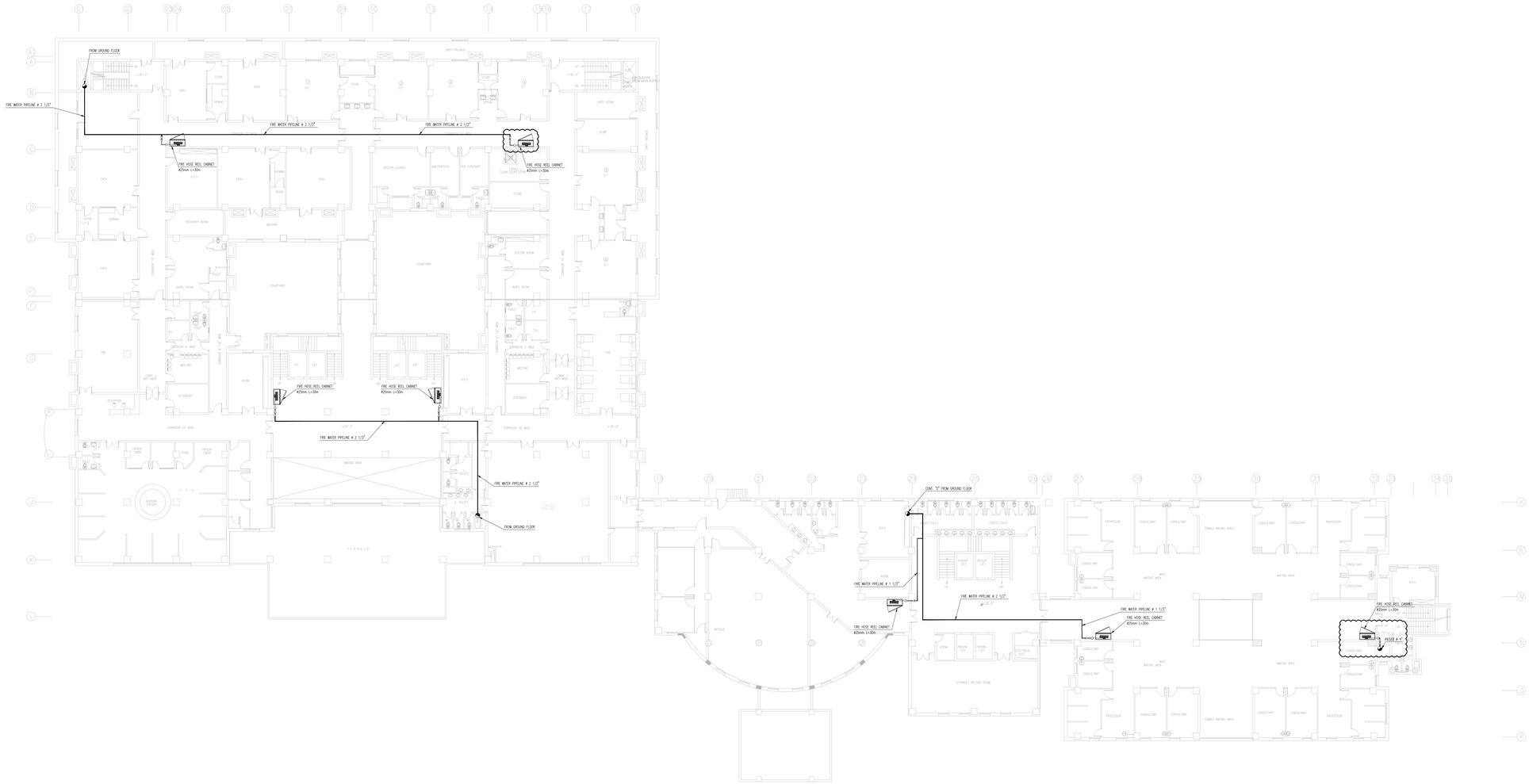
CONSULTANCY SERVICES FOR FIRE RISK ASSESSMENT, FEASIBILITY STUDY, DESIGN/LAYOUT & SUPERVISION

TITLE

PROPOSED FIRE WATER SYSTEM G.F

DATE	SCALE
12-07-2023	N.T.S

PROJECT NO.	DRAWING NUMBER	SHEET	SIZE	REV
VISP-L-E22-0313	V-0313-F-D-0003	01 OF 01	A1	A



1st FLOOR PLAN

LEGENDS

SYMBOL	DESCRIPTION
	ABOVEGROUND FIRE WATER PIPELINE ø 6"
	UNDER GROUND FIRE WATER PIPELINE ø 6"
	ABOVEGROUND FIRE WATER PIPELINE ø 4"
	ABOVEGROUND FIRE WATER PIPELINE ø 3"
	ABOVEGROUND FIRE WATER PIPELINE ø 2½"
	ABOVEGROUND FIRE WATER PIPELINE ø 1½"
	ABOVEGROUND FIRE WATER PIPELINE ø 1"
	FIRE HOSE REEL CABINET
	PILLAR HYDRANT
	REDUCER
	VERTICAL RIESER ø 6"
	VERTICAL RIESER ø 4"
	BREECHING INLET (2xWAY)
	FIRE HOSE CABINET (SELF MOUNTED)

ISSUE FOR TENDER

REV	DESCRIPTION	DATE	DRN	CHK	APP

TOTAL COVERED AREA

REVISION

CLIENT

PESHAWAR INSTITUTES OF CARDIOLOGY

CONSULTANT

VELOSI INTEGRITY & SAFETY PAK.(PVT).LTD
207-A, P-BRICK Gulberg III, Lahore, Pakistan
VELOSI Engineering For A Safer World

DRAWN BY; T.A

REVIEWED UA

CHECKED UA

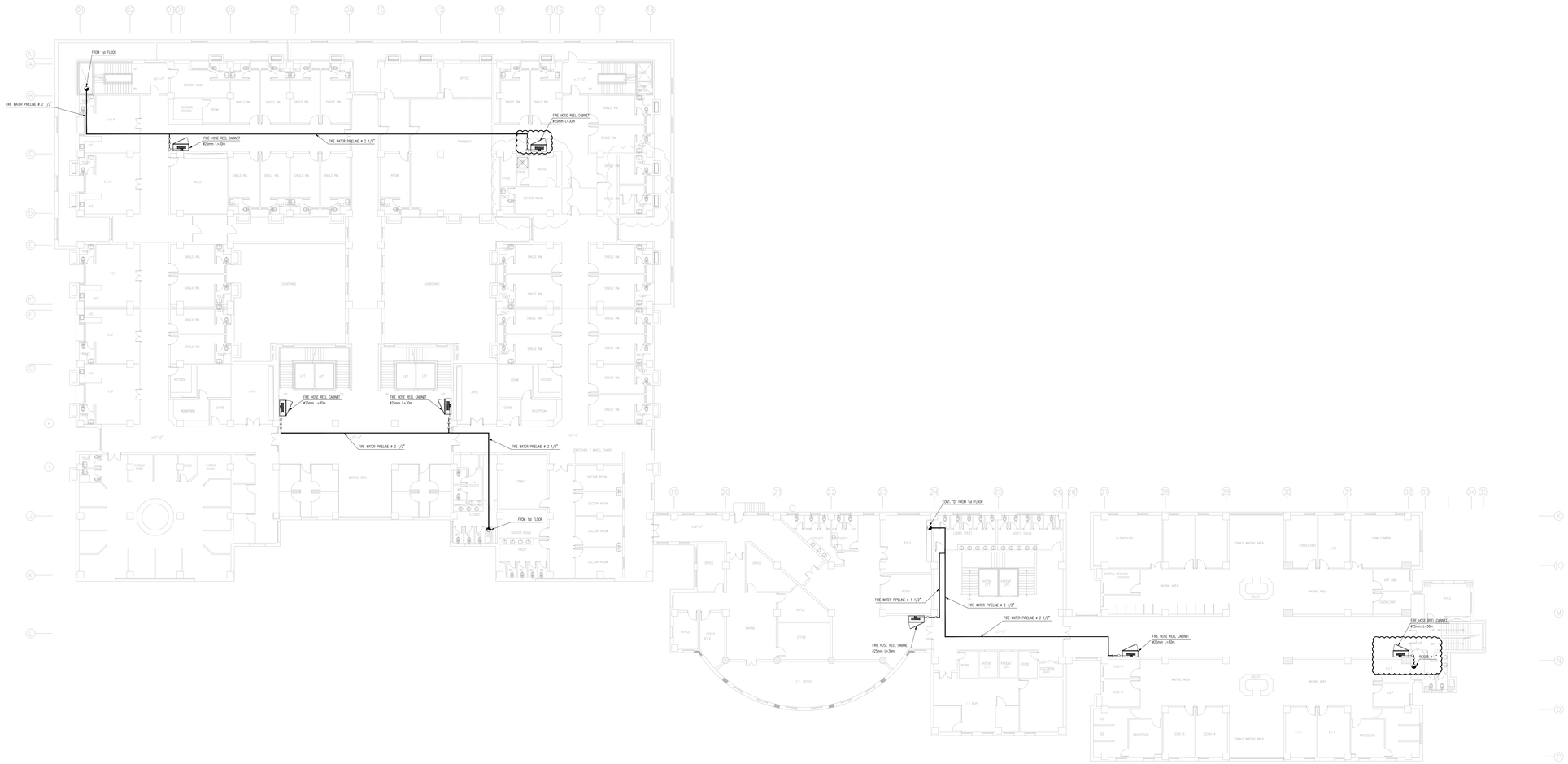
APPROVED MA

PROJECT
CONSULTANCY SERVICES FOR FIRE RISK ASSESSMENT, FEASIBILITY STUDY, DESIGN/LAYOUT & SUPERVISION

TITLE
PROPOSED FIRE WATER SYSTEM F.F

DATE 12-07-2023 | SCALE N.T.S

PROJECT NO.	DRAWING NUMBER	SHEET	SIZE	REV
VISP-L-E22-0313	V-0313-F-D-0004	01 OF 01	A1	A



2nd FLOOR PLAN

LEGENDS

SYMBOL	DESCRIPTION
	ABOVEGROUND FIRE WATER PIPELINE ø 6"
	UNDER GROUND FIRE WATER PIPELINE ø 6"
	ABOVEGROUND FIRE WATER PIPELINE ø 4"
	ABOVEGROUND FIRE WATER PIPELINE ø 3"
	ABOVEGROUND FIRE WATER PIPELINE ø 2½"
	ABOVEGROUND FIRE WATER PIPELINE ø 1½"
	ABOVEGROUND FIRE WATER PIPELINE ø 1"
	FIRE HOSE REEL CABINET
	PILLAR HYDRANT
	REDUCER
	VERTICAL RIESER ø 6"
	VERTICAL RIESER ø 4"
	BREECHING INLET (2xWAY)
	FIRE HOSE CABINET (SELF MOUNTED)

ISSUE FOR TENDER

REV	DESCRIPTION	DATE	DRN	CHK	APP

TOTAL COVERED AREA

REVISION

CLIENT

PESHAWAR INSTITUTES OF CARDIOLOGY

CONSULTANT

VELOSI INTEGRITY & SAFETY PAK.(PVT).LTD
207-A, P-BRICK Gulberg III, Lahore, Pakistan

VELOSI
Engineering For A Safer World

DRAWN BY; T.A

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APPROVED MA

PROJECT

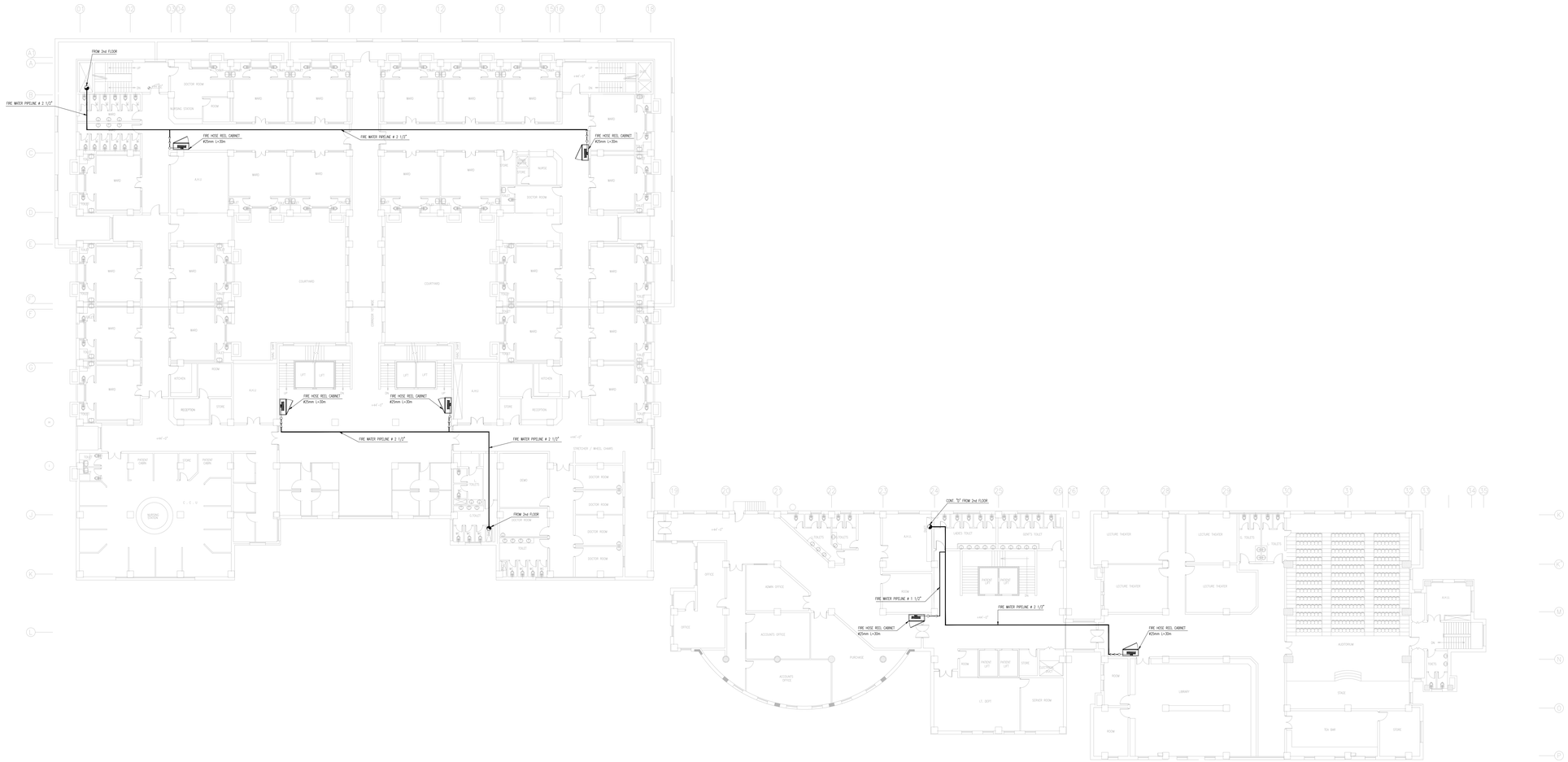
CONSULTANCY SERVICES FOR FIRE RISK ASSESSMENT, FEASIBILITY STUDY, DESIGN/LAYOUT & SUPERVISION

TITLE

PROPOSED FIRE WATER SYSTEM 2.F

DATE	SCALE
12-07-2023	N.T.S

PROJECT NO.	DRAWING NUMBER	SHEET	SIZE	REV
VISP-L-E22-0313	V-0313-F-D-0005	01 OF 01	A1	A



3rd FLOOR PLAN

LEGENDS

SYMBOL	DESCRIPTION
	ABOVEGROUND FIRE WATER PIPELINE ø 6"
	UNDER GROUND FIRE WATER PIPELINE ø 6"
	ABOVEGROUND FIRE WATER PIPELINE ø 4"
	ABOVEGROUND FIRE WATER PIPELINE ø 3"
	ABOVEGROUND FIRE WATER PIPELINE ø 2½"
	ABOVEGROUND FIRE WATER PIPELINE ø 1½"
	ABOVEGROUND FIRE WATER PIPELINE ø 1"
	FIRE HOSE REEL CABINET
	PILLAR HYDRANT
	REDUCER
	VERTICAL RIESER ø 6"
	VERTICAL RIESER ø 4"
	BREECHING INLET (2xWAY)
	FIRE HOSE CABINET (SELF MOUNTED)

ISSUE FOR TENDER

REV	DESCRIPTION	DATE	DRN	CHK	APP

TOTAL COVERED AREA

REVISION

CLIENT
PESHAWAR INSTITUTES OF CARDIOLOGY

CONSULTANT
VELOSI INTEGRITY & SAFETY PAK.(PVT).LTD
207-A, P-BRICK Gulberg III, Lahore, Pakistan
VELOSI Engineering For A Safer World

DRAWN BY; T.A

REVIEWED UA

CHECKED UA

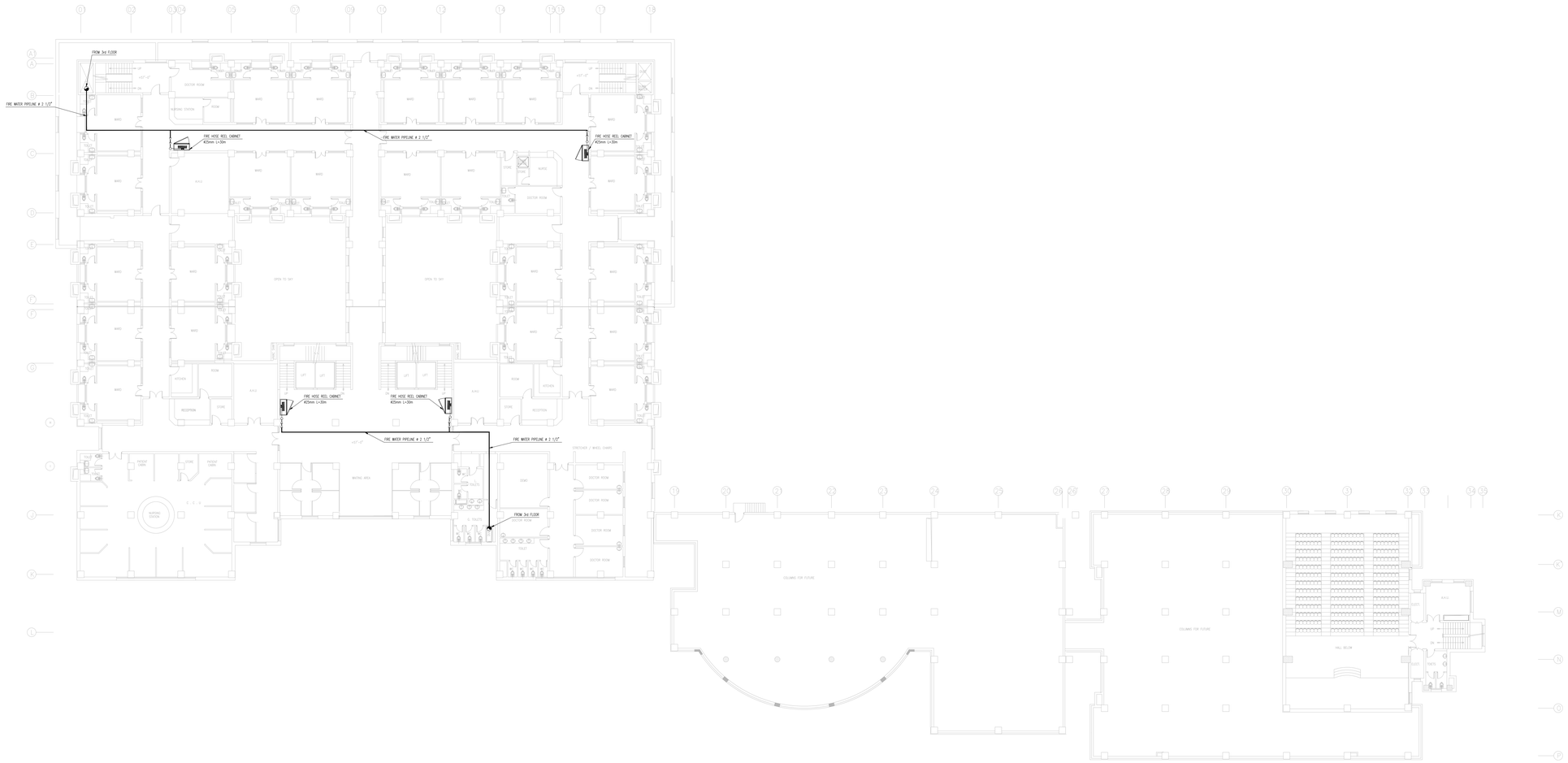
APPROVED MA

PROJECT
CONSULTANCY SERVICES FOR FIRE RISK ASSESSMENT, FEASIBILITY STUDY, DESIGN/LAYOUT & SUPERVISION

TITLE
PROPOSED FIRE WATER SYSTEM 3.F

DATE	SCALE
12-07-2023	N.T.S

PROJECT NO.	DRAWING NUMBER	SHEET	SIZE	REV
VISP-L-E22-0313	V-0313-F-D-0006	01 OF 01	A1	A



4th FLOOR PLAN

LEGENDS

SYMBOL	DESCRIPTION
	ABOVEGROUND FIRE WATER PIPELINE ø 6"
	UNDER GROUND FIRE WATER PIPELINE ø 6"
	ABOVEGROUND FIRE WATER PIPELINE ø 4"
	ABOVEGROUND FIRE WATER PIPELINE ø 3"
	ABOVEGROUND FIRE WATER PIPELINE ø 2½"
	ABOVEGROUND FIRE WATER PIPELINE ø 1½"
	ABOVEGROUND FIRE WATER PIPELINE ø 1"
	FIRE HOSE REEL CABINET
	PILLAR HYDRANT
	REDUCER
	VERTICAL RIESER ø 6"
	VERTICAL RIESER ø 4"
	BREECHING INLET (2xWAY)
	FIRE HOSE CABINET (SELF MOUNTED)

ISSUE FOR TENDER

REV	DESCRIPTION	DATE	DRN	CHK	APP

TOTAL COVERED AREA

REVISION

CLIENT

PESHAWAR INSTITUTES OF CARDIOLOGY

CONSULTANT

VELOSI INTEGRITY & SAFETY PAK.(PVT).LTD
207-A, P-BRICK Gulberg III, Lahore, Pakistan

VELOSI
Engineering For A Safer World

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APPROVED MA

PROJECT

CONSULTANCY SERVICES FOR FIRE RISK ASSESSMENT, FEASIBILITY STUDY, DESIGN/LAYOUT & SUPERVISION

TITLE

PROPOSED FIRE WATER SYSTEM 4.F

DATE	SCALE
12-07-2023	N.T.S

PROJECT NO.	DRAWING NUMBER	SHEET	SIZE	REV
VISP-L-E22-0313	V-0313-F-D-0007	01 OF 01	A1	A

CONSULTANCY SERVICES FOR FIRE RISK ASSESSMENT, FEASIBILITY STUDY, DESIGN/LAYOUT & SUPERVISION

TITLE

PROPOSED SPRINKLER SYSTEM

CONSULTANT:

VELOSI
Engineering For A Safer World

VELOSI INTEGRITY & SAFETY PAK.(PVT).LTD
207-A, P-Block Gulberg III, Lahore, Pakistan

CLIENT:

PESHAWAR INSTITUTES OF CARDIOLOGY

BASEMENT PLAN

ISSUE FOR TENDER

REV	DESCRIPTION	DATE	DRN	CHK	APP

TOTAL COVERED AREA

REVISION

CLIENT

PESHAWAR INSTITUTES OF CARDIOLOGY

CONSULTANT

VELOSI INTEGRITY & SAFETY PAK.(PVT).LTD
207-A, P-BRICK Gulberg III, Lahore, Pakistan

VELOSI
Engineering For A Safer World

DRAWN BY; T.A

REVIEWED UA

CHECKED UA

APPROVED MA

PROJECT

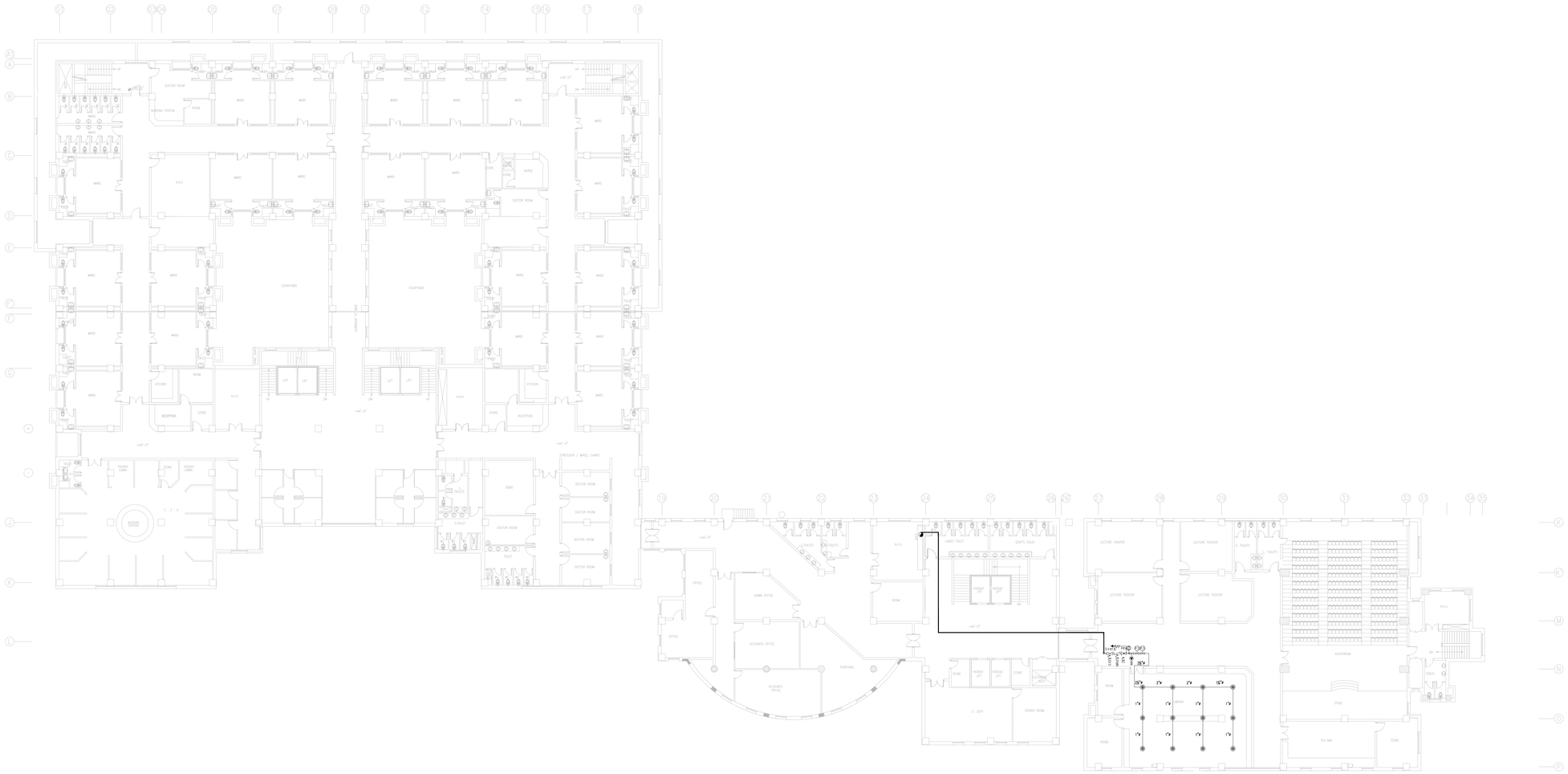
CONSULTANCY SERVICES FOR FIRE RISK ASSESSMENT, FEASIBILITY STUDY, DESIGN/LAYOUT & SUPERVISION

TITLE

PROPOSED SPRINKLER SYSTEM PLAN B.F

DATE	SCALE
12-07-2023	N.T.S

PROJECT NO.	DRAWING NUMBER	SHEET	SIZE	REV
VISP-L-E22-0313	V-0313-F-D-0010	01 OF 01	A1	A



3rd FLOOR PLAN

ISSUE FOR TENDER

REV	DESCRIPTION	DATE	DRN	CHK	APP

TOTAL COVERED AREA

REVISION

CLIENT

PESHAWAR INSTITUTES OF CARDIOLOGY

CONSULTANT

VELOSI INTEGRITY & SAFETY PAK.(PVT).LTD
207-A, P-BRICK Gulberg III, Lahore, Pakistan

VELOSI
Engineering For A Safer World

DRAWN BY; T.A

REVIEWED UA

CHECKED UA

APPROVED MA

PROJECT

CONSULTANCY SERVICES FOR FIRE RISK ASSESSMENT, FEASIBILITY STUDY, DESIGN/LAYOUT & SUPERVISION

TITLE

PROPOSED EVACUATION PLAN 3.F

DATE	SCALE
12-07-2023	N.T.S

PROJECT NO.	DRAWING NUMBER	SHEET	SIZE	REV
VISP-L-E22-0313	V-0313-F-D-0011	01 OF 01	A1	A

CONSULTANCY SERVICES FOR FIRE RISK ASSESSMENT, FEASIBILITY STUDY, DESIGN/LAYOUT & SUPERVISION

TITLE

PROPOSED PORTABLE EXTINGUISHER & FIRE DOORS

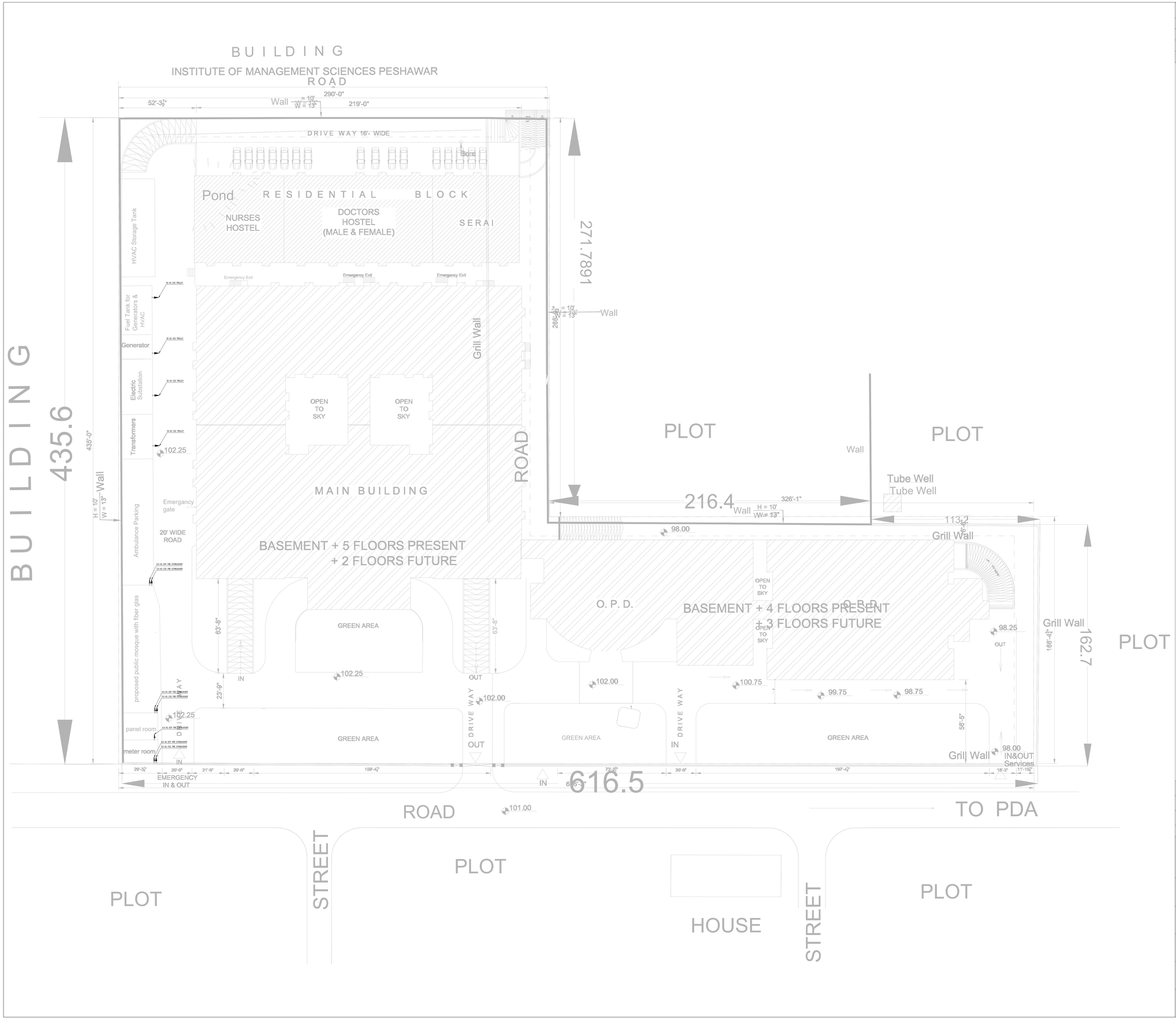
CONSULTANT:

VELOSI
Engineering For A Safer World

VELOSI INTEGRITY & SAFETY PAK.(PVT).LTD
207-A, P-Block Gulberg III, Lahore, Pakistan

CLIENT:

PESHAWAR INSTITUTES OF CARDIOLOGY



LEGENDS

SYMBOL	DESCRIPTION
	6 KG DCP FIRE EXTINGUISHER
	5.0 KG CO2 FIRE EXTINGUISHER
	5.0 KG CO2 TROLLEY

ISSUE FOR TENDER

REV	DESCRIPTION	DATE	DRN	CHK	APP
TOTAL COVERED AREA					
REVISION					

CLIENT
PESHAWAR INSTITUTES OF CARDIOLOGY

CONSULTANT
VELOSI INTEGRITY & SAFETY PAK.(PVT).LTD
207-A, P-BRICK Gulberg III, Lahore, Pakistan
VELOSI Engineering For A Safer World

DRAWN BY; T.A

REVIEWED UA

CHECKED UA

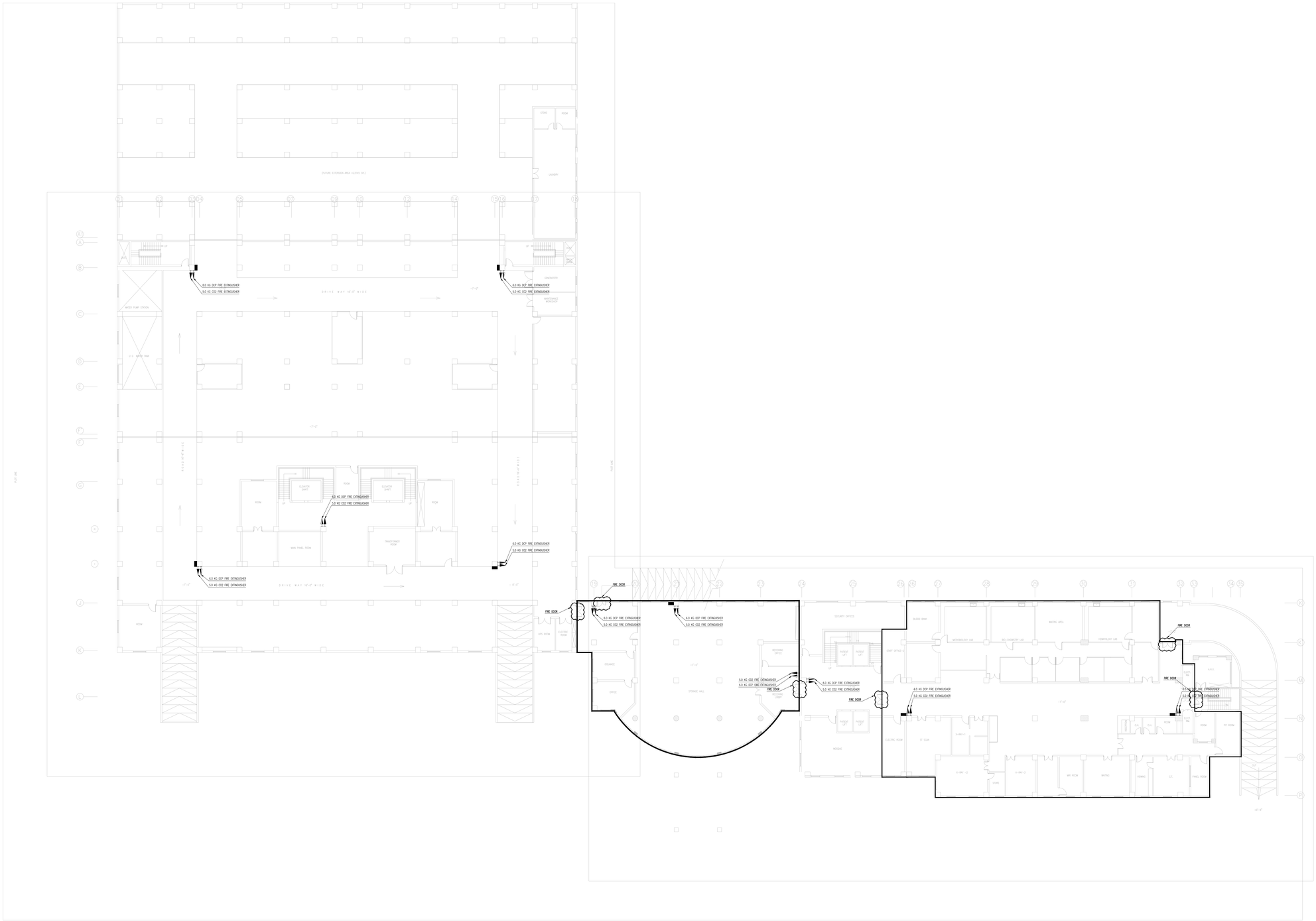
APPROVED MA

PROJECT
CONSULTANCY SERVICES FOR FIRE RISK ASSESSMENT, FEASIBILITY STUDY, DESIGN/LAYOUT & SUPERVISION

TITLE
PROPOSED PORTABLE EXTINGUISHER & FIRE DOORS EXTERNAL

DATE 12-07-2023 | SCALE N.T.S

PROJECT NO.	DRAWING NUMBER	SHEET	SIZE	REV
VISP-L-E22-0313	V-0313-F-D-0012	01 OF 01	A1	A



BASEMENT PLAN

LEGENDS

SYMBOL	DESCRIPTION
	6 KG DCP FIRE EXTINGUISHER
	5.0 KG CO2 FIRE EXTINGUISHER

ISSUE FOR TENDER

REV	DESCRIPTION	DATE	DRN	CHK	APP

TOTAL COVERED AREA

REVISION

CLIENT

PESHAWAR INSTITUTES OF CARDIOLOGY

CONSULTANT

VELOSI INTEGRITY & SAFETY PAK.(PVT).LTD
207-A, P-BRICK Gulberg III, Lahore, Pakistan

VELOSI
Engineering For A Safer World

DRAWN BY; T.A

REVIEWED UA

CHECKED UA

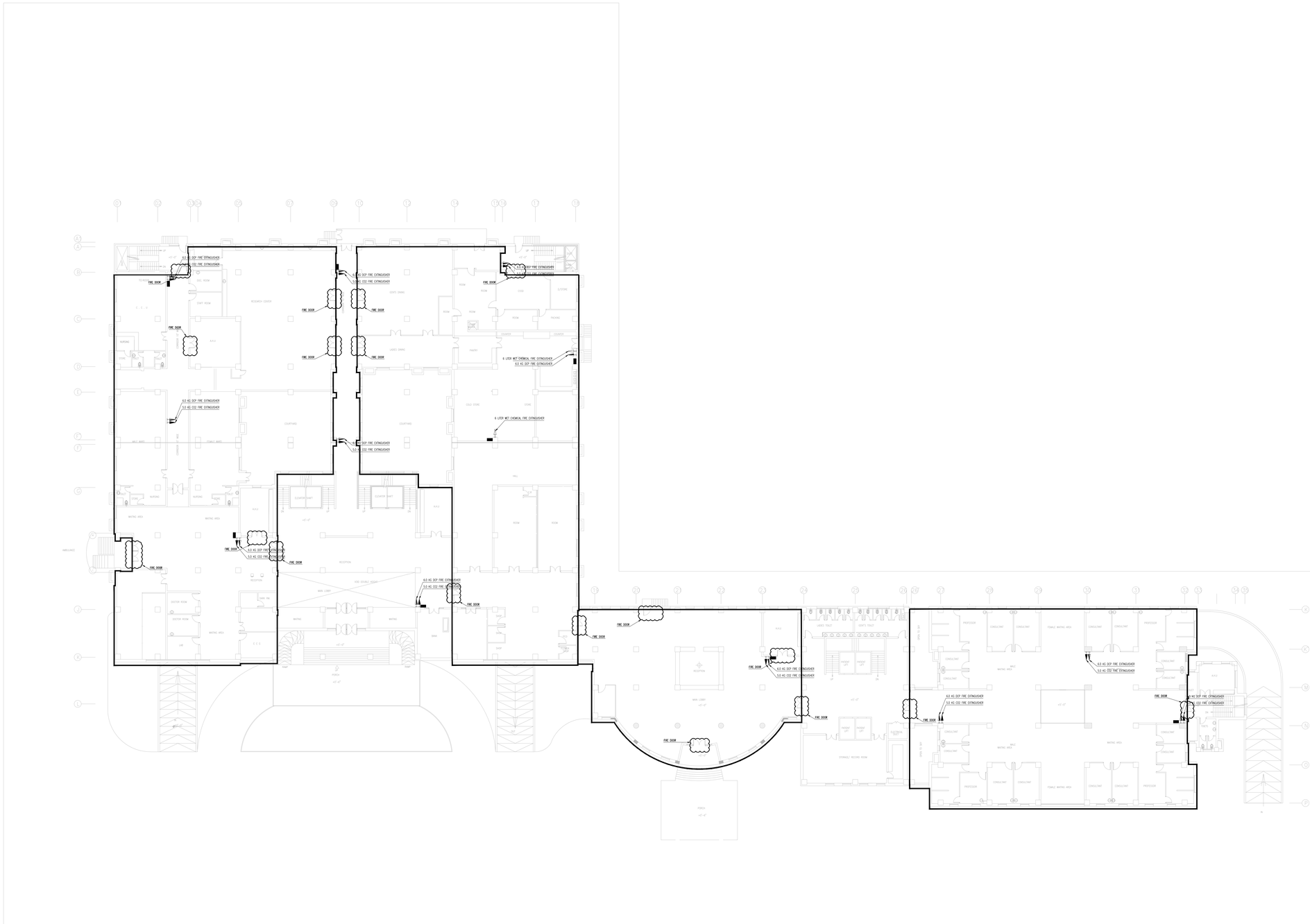
APPROVED MA

PROJECT
CONSULTANCY SERVICES FOR FIRE RISK ASSESSMENT, FEASIBILITY STUDY, DESIGN/LAYOUT & SUPERVISION

TITLE
PROPOSED PORTABLE EXTINGUISHER & FIRE DOORS B.F

DATE	SCALE
12-07-2023	N.T.S

PROJECT NO.	DRAWING NUMBER	SHEET	SIZE	REV
VISP-L-E22-0313	V-0313-F-D-0013	01 OF 01	A1	A



GROUND FLOOR PLAN

LEGENDS

SYMBOL	DESCRIPTION
	6 KG DCP FIRE EXTINGUISHER
	5.0 KG CO2 FIRE EXTINGUISHER
	10.0 KG FOAM FIRE EXTINGUISHER

ISSUE FOR TENDER

REV	DESCRIPTION	DATE	DRN	CHK	APP

TOTAL COVERED AREA

REVISION

CLIENT

PESHAWAR INSTITUTES OF CARDIOLOGY

CONSULTANT

VELOSI INTEGRITY & SAFETY PAK.(PVT).LTD
207-A, P-BRICK Gulberg III, Lahore, Pakistan

VELOSI
Engineering For A Safer World

DRAWN BY; T.A

REVIEWED UA

CHECKED UA

APPROVED MA

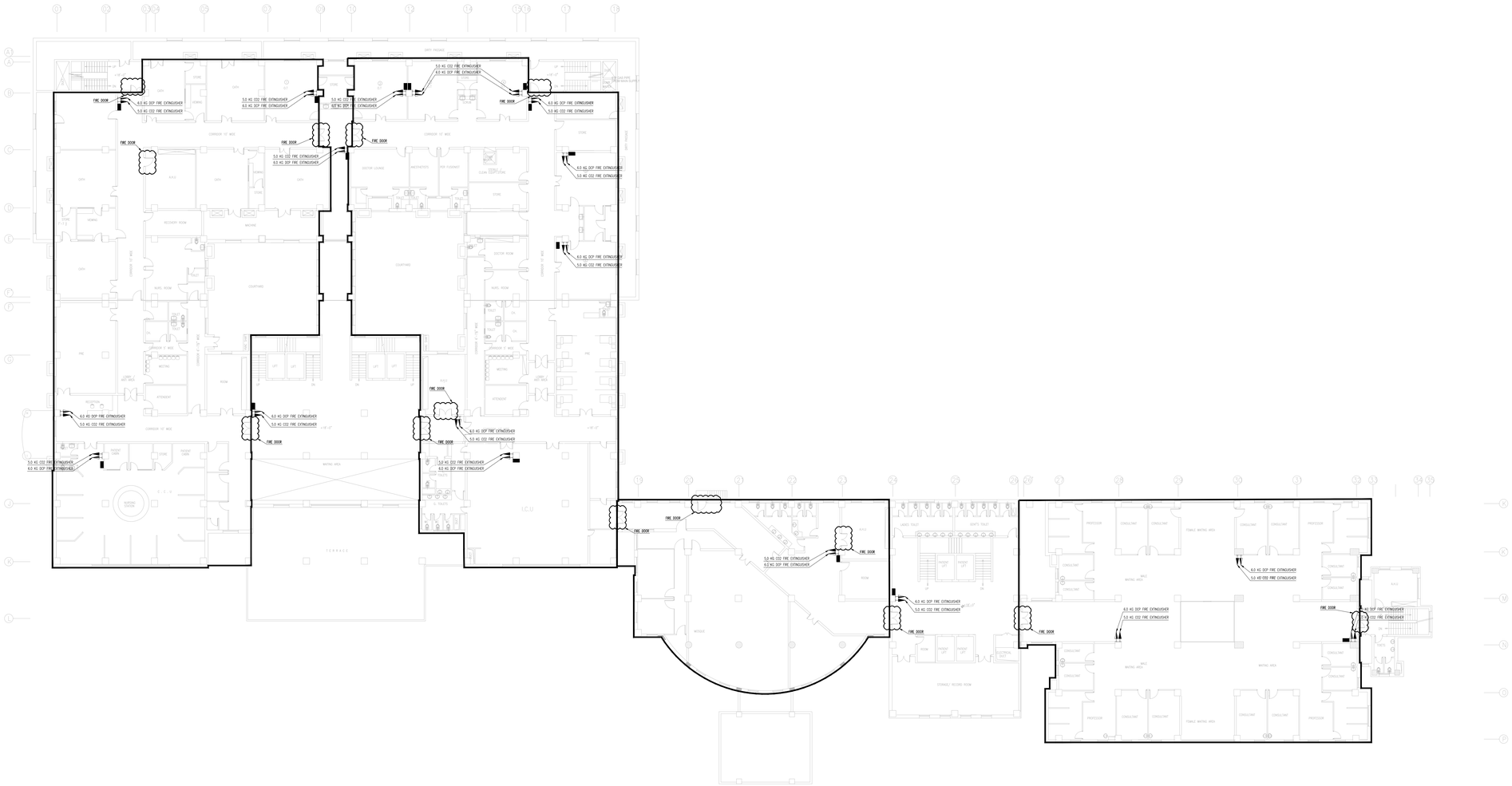
PROJECT
CONSULTANCY SERVICES FOR FIRE RISK ASSESSMENT, FEASIBILITY STUDY, DESIGN/LAYOUT & SUPERVISION

TITLE
PROPOSED PORTABLE EXTINGUISHER & FIRE DOORS G.F

DATE 12-07-2023

SCALE N.T.S

PROJECT NO.	DRAWING NUMBER	SHEET	SIZE	REV
VISP-L-E22-0313	V-0313-F-D-0014	01 OF 01	A1	A



1st FLOOR PLAN

LEGENDS

SYMBOL	DESCRIPTION
	6 KG DCP FIRE EXTINGUISHER
	5.0 KG CO2 FIRE EXTINGUISHER

ISSUE FOR TENDER

REV	DESCRIPTION	DATE	DRN	CHK	APP

TOTAL COVERED AREA

REVISION

CLIENT

PESHAWAR INSTITUTES OF CARDIOLOGY

CONSULTANT

VELOSI INTEGRITY & SAFETY PAK.(PVT).LTD
207-A, P-BRICK Gulberg III, Lahore, Pakistan

VELOSI Engineering For A Safer World

DRAWN BY; T.A

REVIEWED UA

CHECKED UA

APPROVED MA

PROJECT

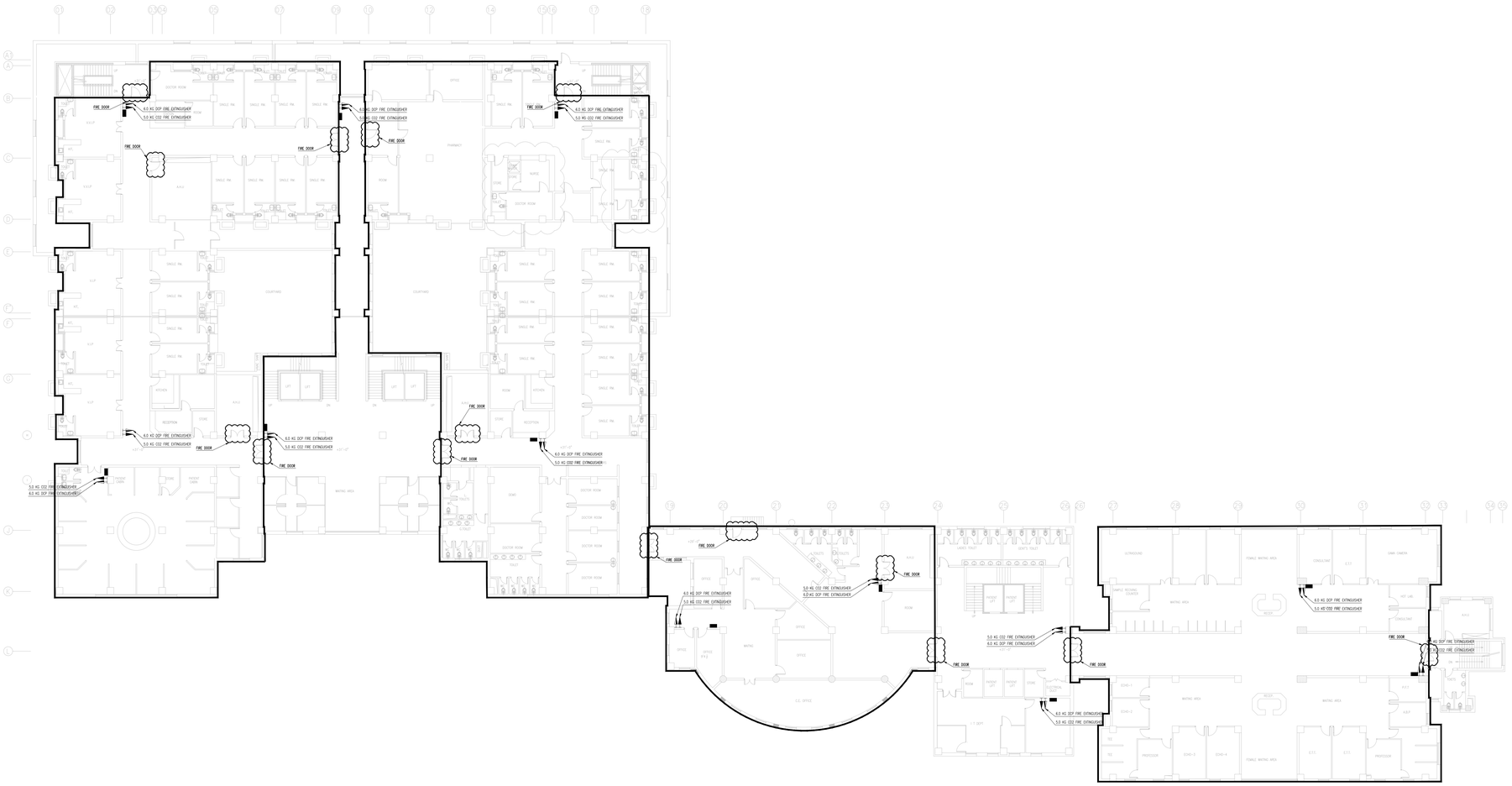
CONSULTANCY SERVICES FOR FIRE RISK ASSESSMENT, FEASIBILITY STUDY, DESIGN/LAYOUT & SUPERVISION

TITLE

PROPOSED PORTABLE EXTINGUISHER & FIRE DOORS F.F

DATE	SCALE
12-07-2023	N.T.S

PROJECT NO.	DRAWING NUMBER	SHEET	SIZE	REV
VISP-L-E22-0313	V-0313-F-D-0015	01 OF 01	A1	A



2nd FLOOR PLAN

LEGENDS

SYMBOL	DESCRIPTION
	6 KG DCP FIRE EXTINGUISHER
	5.0 KG CO2 FIRE EXTINGUISHER

ISSUE FOR TENDER

REV	DESCRIPTION	DATE	DRN	CHK	APP

TOTAL COVERED AREA

REVISION

CLIENT

PESHAWAR INSTITUTES OF CARDIOLOGY

CONSULTANT

VELOSI INTEGRITY & SAFETY PAK.(PVT).LTD
207-A, P-BRICK Gulberg III, Lahore, Pakistan
VELOSI Engineering For A Safer World

DRAWN BY; T.A

REVIEWED UA

CHECKED UA

APPROVED MA

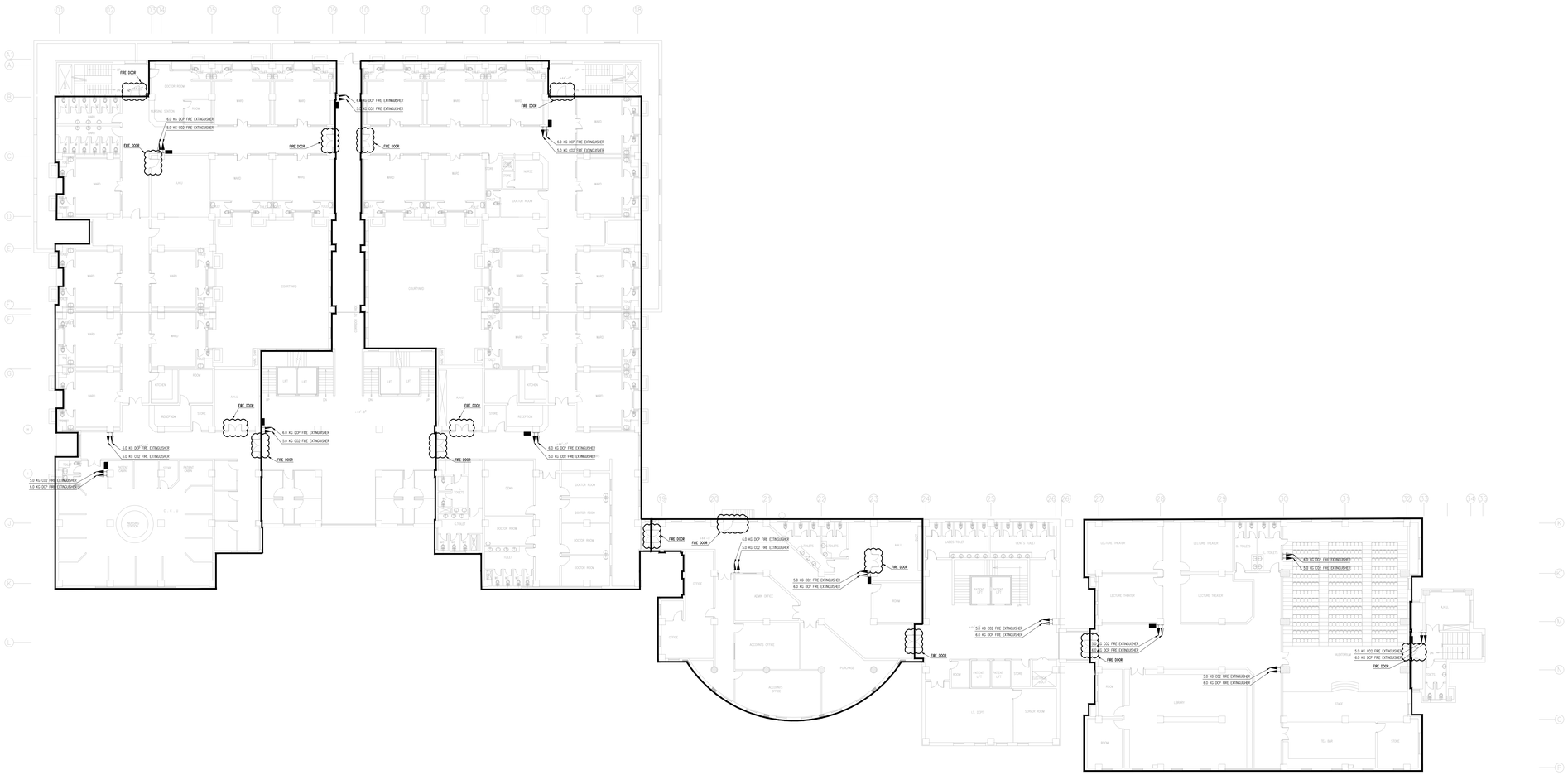
PROJECT
CONSULTANCY SERVICES FOR FIRE RISK ASSESSMENT, FEASIBILITY STUDY, DESIGN/LAYOUT & SUPERVISION

TITLE
PROPOSED PORTABLE EXTINGUISHER & FIRE DOORS 2.F

DATE 12-07-2023

SCALE N.T.S

PROJECT NO.	DRAWING NUMBER	SHEET	SIZE	REV
VISP-L-E22-0313	V-0313-F-D-0016	01 OF 01	A1	A



3rd FLOOR PLAN

LEGENDS

SYMBOL	DESCRIPTION
	6 KG DCP FIRE EXTINGUISHER
	5.0 KG CO2 FIRE EXTINGUISHER

ISSUE FOR TENDER

REV	DESCRIPTION	DATE	DRN	CHK	APP

TOTAL COVERED AREA

REVISION

CLIENT

PESHAWAR INSTITUTES OF CARDIOLOGY

CONSULTANT

VELOSI INTEGRITY & SAFETY PAK.(PVT).LTD
207-A, P-BRICK Gulberg III, Lahore, Pakistan

VELOSI
Engineering For A Safer World

DRAWN BY; T.A

REVIEWED UA

CHECKED UA

APPROVED MA

PROJECT

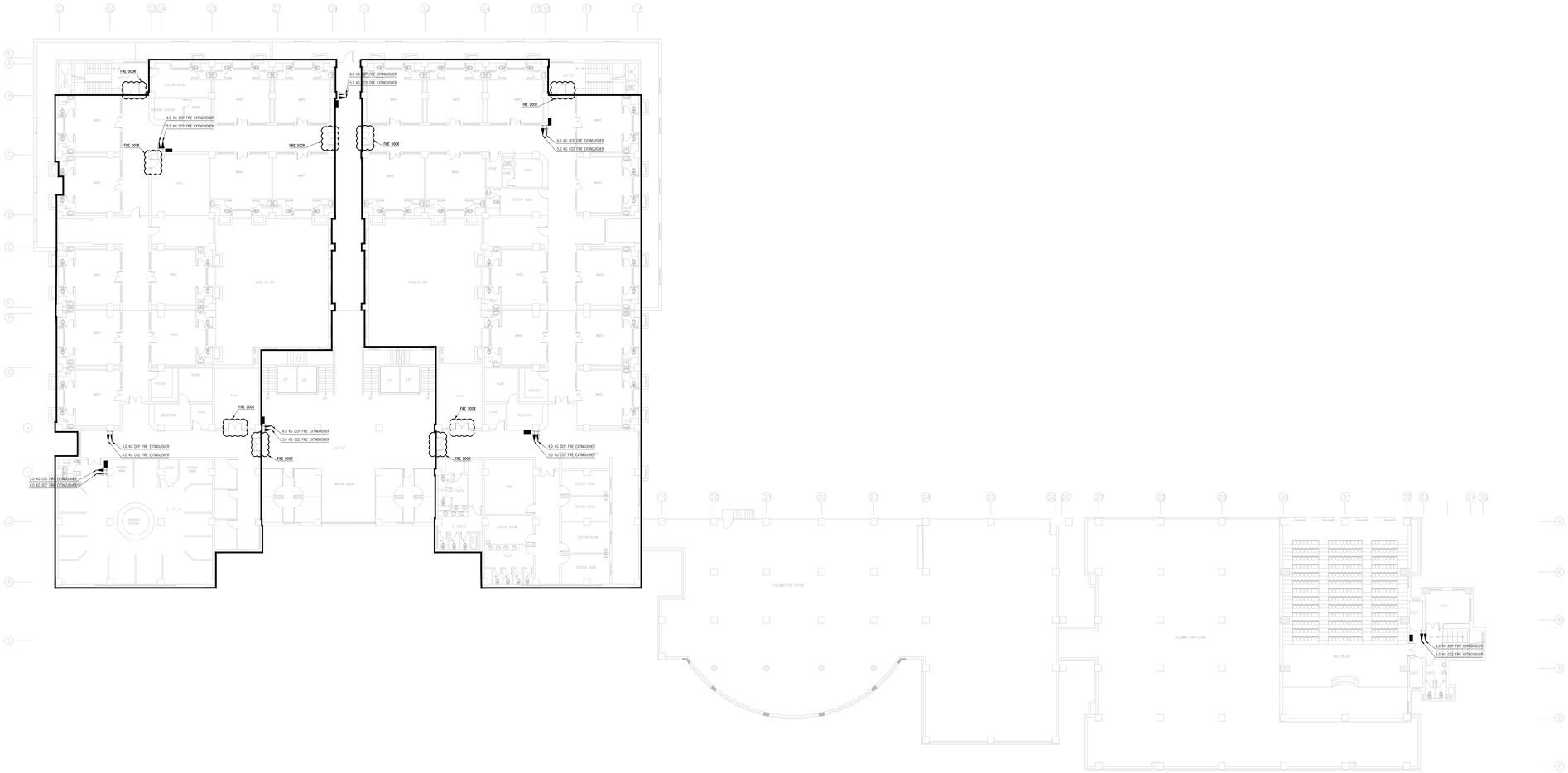
CONSULTANCY SERVICES FOR FIRE RISK ASSESSMENT, FEASIBILITY STUDY, DESIGN/LAYOUT & SUPERVISION

TITLE

PROPOSED PORTABLE EXTINGUISHER & FIRE DOORS 3.F

DATE	SCALE
12-07-2023	N.T.S

PROJECT NO.	DRAWING NUMBER	SHEET	SIZE	REV
VISP-L-E22-0313	V-0313-F-D-0017	01 OF 01	A1	A



4th FLOOR PLAN

LEGENDS

SYMBOL	DESCRIPTION
	6 KG DCP FIRE EXTINGUISHER
	5.0 KG CO2 FIRE EXTINGUISHER

ISSUE FOR TENDER

REV	DESCRIPTION	DATE	DRN	CHK	APP

TOTAL COVERED AREA

REVISION

CLIENT

PESHAWAR INSTITUTES OF CARDIOLOGY

CONSULTANT

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207-A, P-BRICK Gulberg III, Lahore, Pakistan

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REVIEWED UA

CHECKED UA

APPROVED MA

PROJECT

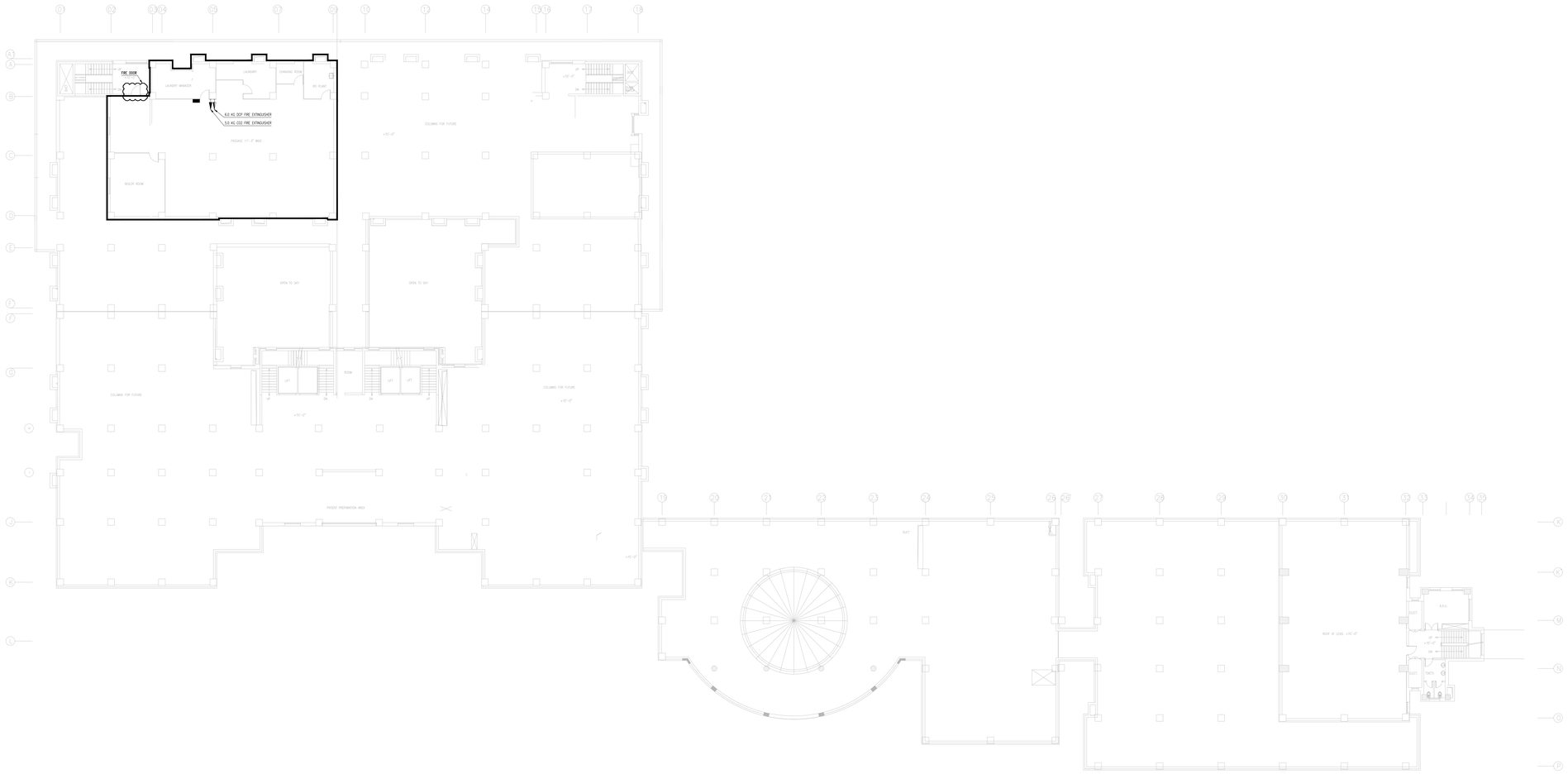
CONSULTANCY SERVICES FOR FIRE RISK ASSESSMENT, FEASIBILITY STUDY, DESIGN/LAYOUT & SUPERVISION

TITLE

PROPOSED PORTABLE EXTINGUISHER & FIRE DOORS 4.F

DATE	SCALE
12-07-2023	N.T.S

PROJECT NO.	DRAWING NUMBER	SHEET	SIZE	REV
VISP-L-E22-0313	V-0313-F-D-0018	01 OF 01	A1	A



5th. FLOOR PLAN

LEGENDS

SYMBOL	DESCRIPTION
	6 KG DCP FIRE EXTINGUISHER
	5.0 KG CO2 FIRE EXTINGUISHER

ISSUE FOR TENDER

REV	DESCRIPTION	DATE	DRN	CHK	APP

TOTAL COVERED AREA

REVISION

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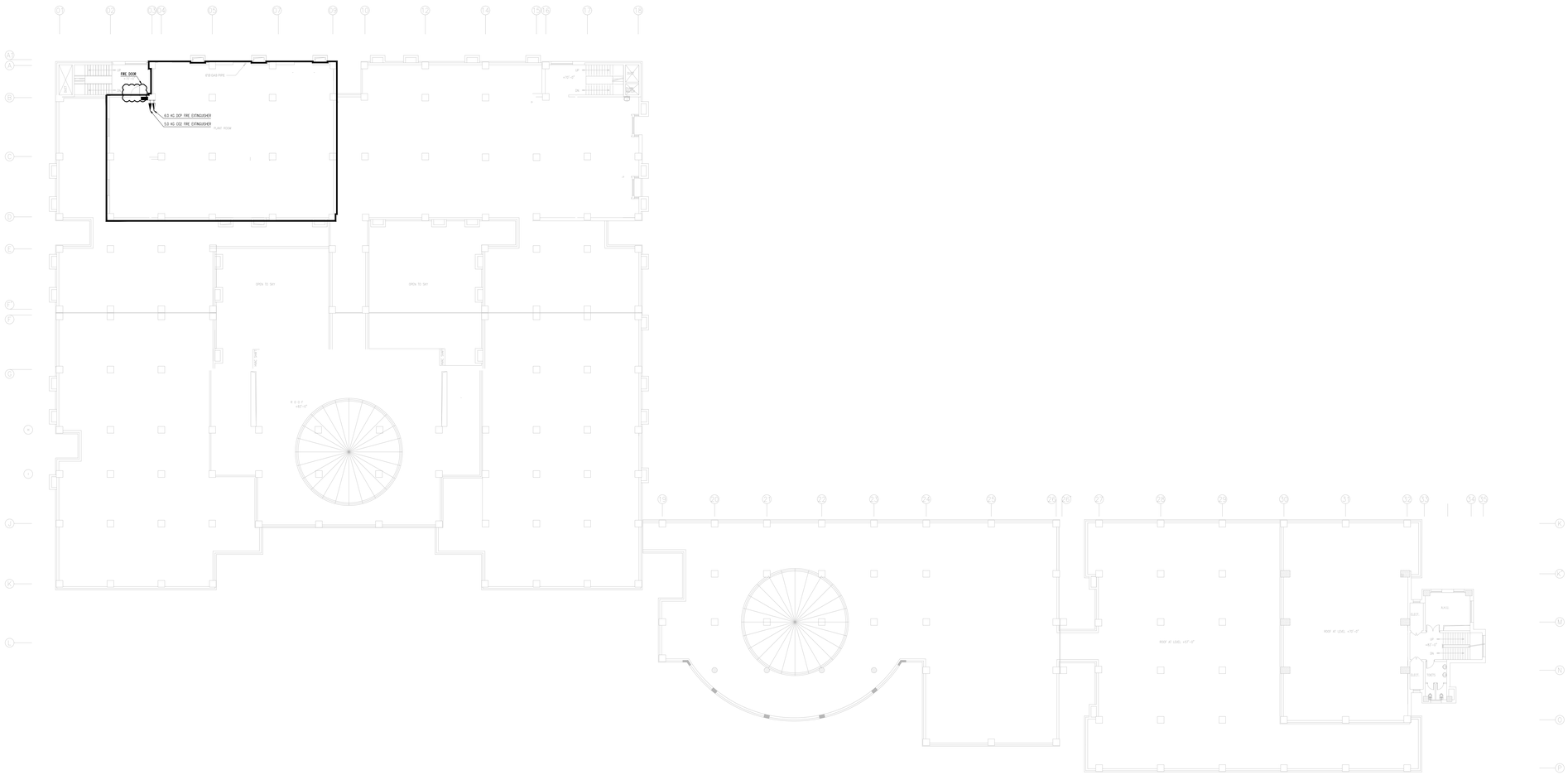
APPROVED MA

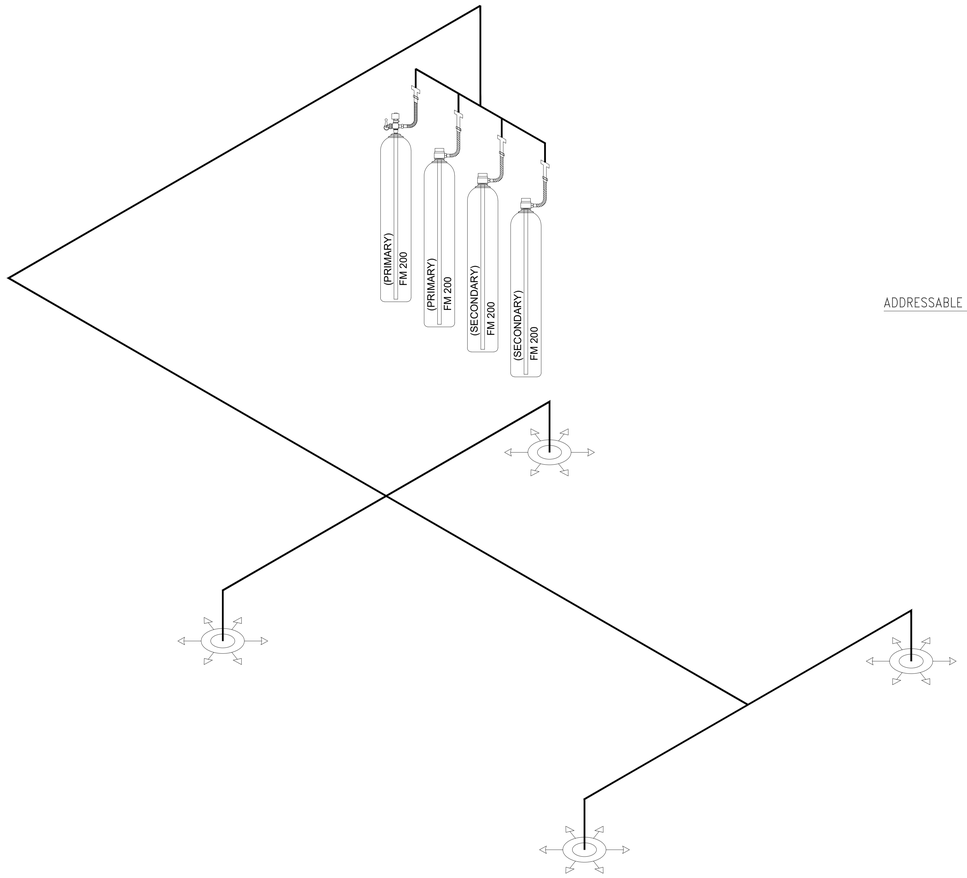
PROJECT
CONSULTANCY SERVICES FOR FIRE RISK ASSESSMENT, FEASIBILITY STUDY, DESIGN/LAYOUT & SUPERVISION

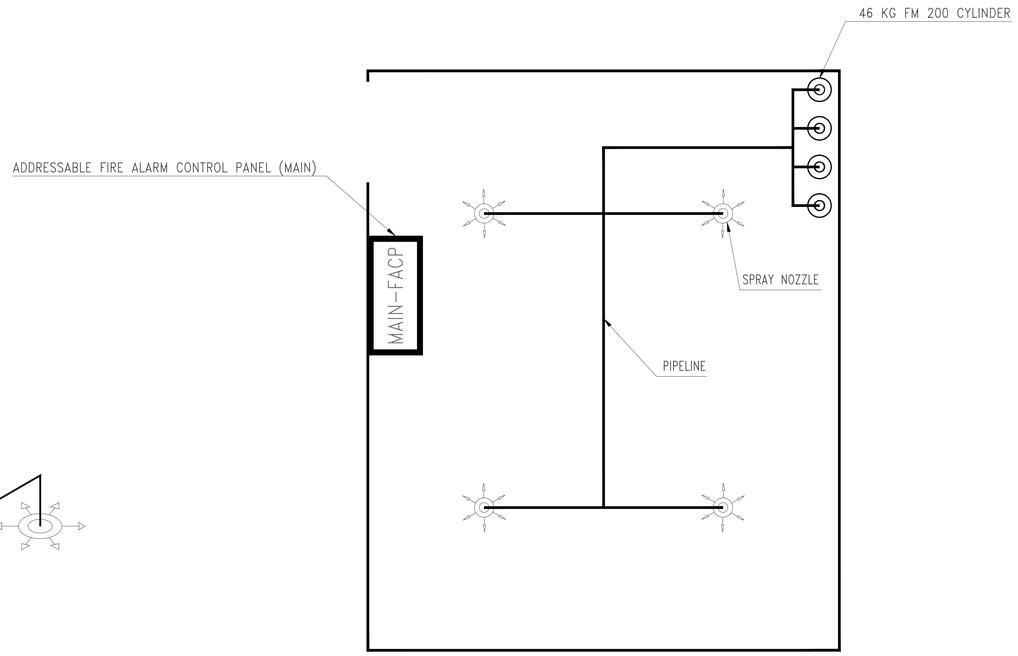
TITLE
PROPOSED PORTABLE EXTINGUISHER & FIRE DOORS 5.F

DATE	SCALE
12-07-2023	N.T.S

PROJECT NO.	DRAWING NUMBER	SHEET	SIZE	REV
VISP-L-E22-0313	V-0313-F-D-0019	01 OF 01	A1	A


FIRE DOOR
FIRE DAMPER
6.0 KG DCP FIRE EXTINGUISHER
5.0 KG CO2 FIRE EXTINGUISHER
PLANT ROOM
OPEN TO SKY
OPEN TO SKY
+70'-0"
+67'-0"
+67'-0"
+67





SERVER ROOM

ISSUE FOR TENDER

REV	DESCRIPTION	DATE	DRN	CHK	APP

TOTAL COVERED AREA

REVISION

CLIENT

PESHAWAR INSTITUTES OF CARDIOLOGY

CONSULTANT

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Engineering For A Safer World

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PROJECT
CONSULTANCY SERVICES FOR FIRE RISK ASSESSMENT, FEASIBILITY STUDY, DESIGN/LAYOUT & SUPERVISION

TITLE
PROPOSED FM 200 SYSTEM SERVER ROOM

DATE	SCALE
12-07-2023	N.T.S

PROJECT NO.	DRAWING NUMBER	SHEET	SIZE	REV
VISP-L-E22-0313	V-0313-F-D-0021	01 OF 01	A1	A

CONSULTANCY SERVICES FOR FIRE RISK ASSESSMENT, FEASIBILITY STUDY, DESIGN/LAYOUT & SUPERVISION

TITLE

PROPOSED FIRE DETECTION SYSTEM

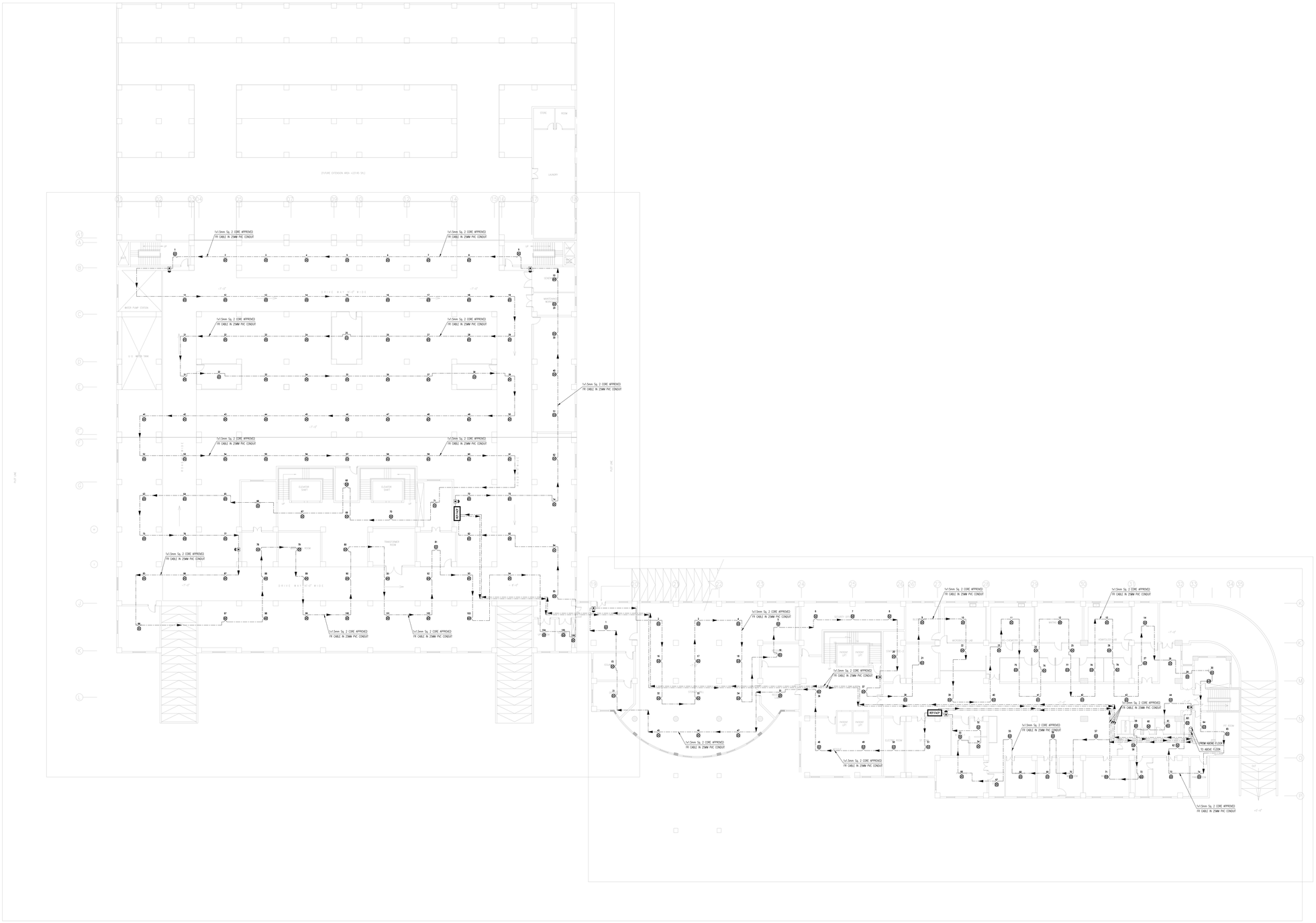
CONSULTANT:

VELOSI
Engineering For A Safer World

VELOSI INTEGRITY & SAFETY PAK.(PVT).LTD
207-A, P-Block Gulberg III, Lahore, Pakistan

CLIENT:

PESHAWAR INSTITUTES OF CARDIOLOGY



BASEMENT PLAN

LEGENDS

SYMBOL	DESCRIPTION
—— – ——	1.5mm 2 CORE FIRE RESISTANT CABLE
—— – ——	1.5mm 2 CORE FIRE RESISTANT CABLE (LOOP-1)
HD	ADDRESSABLE HEAT DETECTOR
SD	ADDRESSABLE SMOKE/MULTI GAS DETECTOR
	CARBON MONOXIDE DETECTOR
	ADDRESSABLE MANUAL CALL POINT
	ADDRESSABLE FIRE ALARM BELL
MAIN-FACP	ADDRESSABLE FIRE ALARM CONTROL PANEL (MAIN)
REP.FACP	ADDRESSABLE FIRE ALARM CONTROL PANEL (REPEATER)

ISSUE FOR TENDER

REV	DESCRIPTION	DATE	DRN	CHK	APP

TOTAL COVERED AREA

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CONSULTANT
VELOSI INTEGRITY & SAFETY PAK.(PVT).LTD
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VELOSI Engineering For A Safer World

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PROJECT
CONSULTANCY SERVICES FOR FIRE RISK ASSESSMENT, FEASIBILITY STUDY, DESIGN/LAYOUT & SUPERVISION

TITLE
FIRE DETECTION SYSTEM PROPOSED B.F

DATE	SCALE
12-07-2023	N.T.S

PROJECT NO.	DRAWING NUMBER	SHEET	SIZE	REV
VISP-L-E22-0313	V-0313-F-D-0022	01 OF 01	A1	A

GROUND FLOOR PLAN

LEGENDS

SYMBOL	DESCRIPTION
—— – ——	1.5mm 2 CORE FIRE RESISTANT CABLE
—— – ——	1.5mm 2 CORE FIRE RESISTANT CABLE (LOOP-1)
HD	ADDRESSABLE HEAT DETECTOR
SD	ADDRESSABLE SMOKE/MULTI GAS DETECTOR
	CARBON MONOXIDE DETECTOR
	ADDRESSABLE MANUAL CALL POINT
	ADDRESSABLE FIRE ALARM BELL
MAIN-FACP	ADDRESSABLE FIRE ALARM CONTROL PANEL (MAIN)
REP.FACP	ADDRESSABLE FIRE ALARM CONTROL PANEL (REPEATER)

ISSUE FOR TENDER

REV	DESCRIPTION	DATE	DRN	CHK	APP

TOTAL COVERED AREA

REVISION

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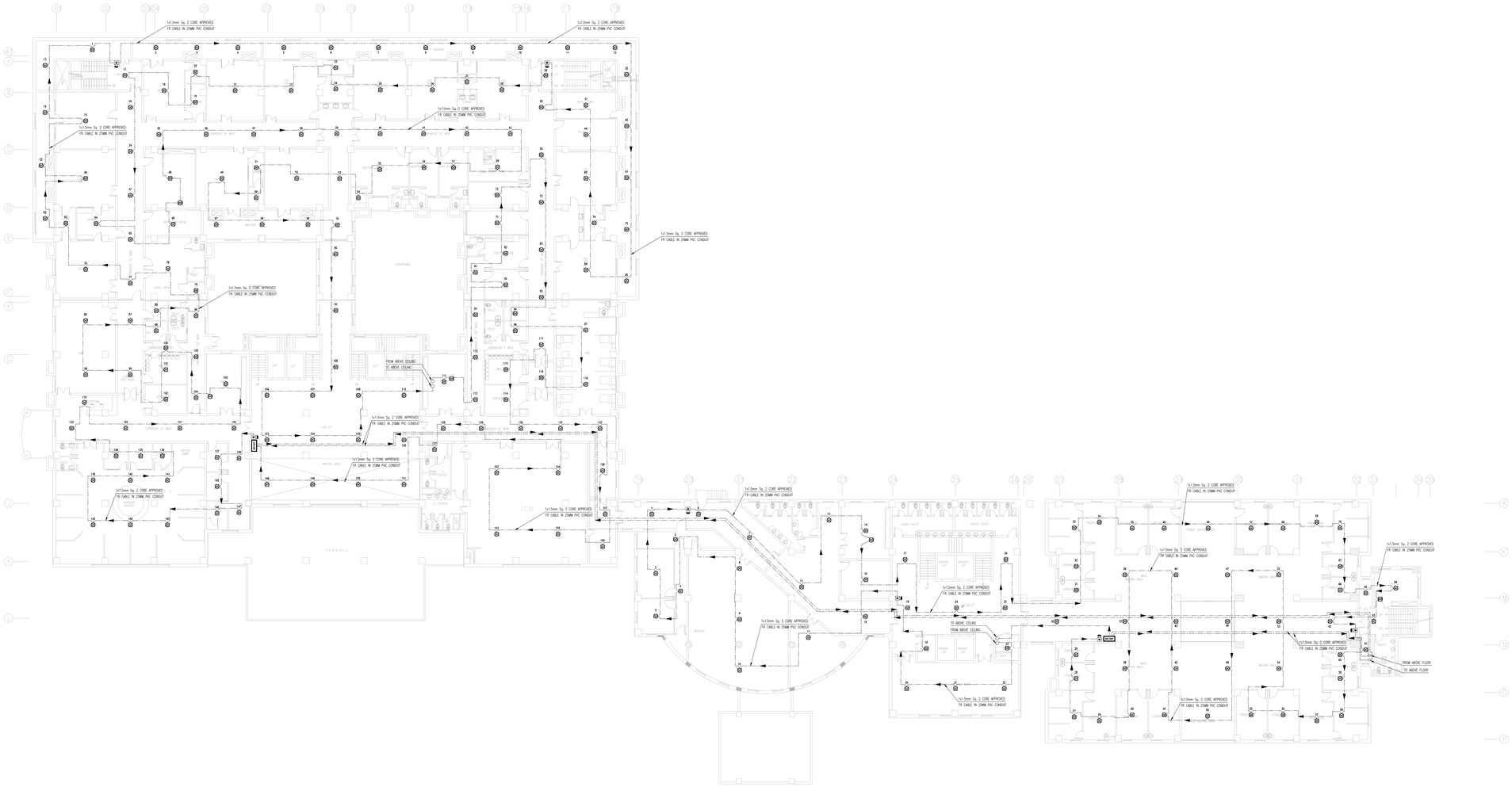
APPROVED MA

PROJECT
CONSULTANCY SERVICES FOR FIRE RISK ASSESSMENT, FEASIBILITY STUDY, DESIGN/LAYOUT & SUPERVISION

TITLE
FIRE DETECTION SYSTEM PROPOSED G.F

DATE	SCALE
12-07-2023	N.T.S

PROJECT NO.	DRAWING NUMBER	SHEET	SIZE	REV
VISP-L-E22-0313	V-0313-F-D-0023	01 OF 01	A1	A



1st FLOOR PLAN

LEGENDS

SYMBOL	DESCRIPTION
—— – ——	1.5mm 2 CORE FIRE RESISTANT CABLE
—— – ——	1.5mm 2 CORE FIRE RESISTANT CABLE (LOOP-1)
HD	ADDRESSABLE HEAT DETECTOR
SD	ADDRESSABLE SMOKE/MULTI GAS DETECTOR
	CARBON MONOXIDE DETECTOR
	ADDRESSABLE MANUAL CALL POINT
	ADDRESSABLE FIRE ALARM BELL
MAIN-FACP	ADDRESSABLE FIRE ALARM CONTROL PANEL (MAIN)
REP.FACP	ADDRESSABLE FIRE ALARM CONTROL PANEL (REPEATER)

ISSUE FOR TENDER

REV	DESCRIPTION	DATE	DRN	CHK	APP
TOTAL COVERED AREA					

REVISION

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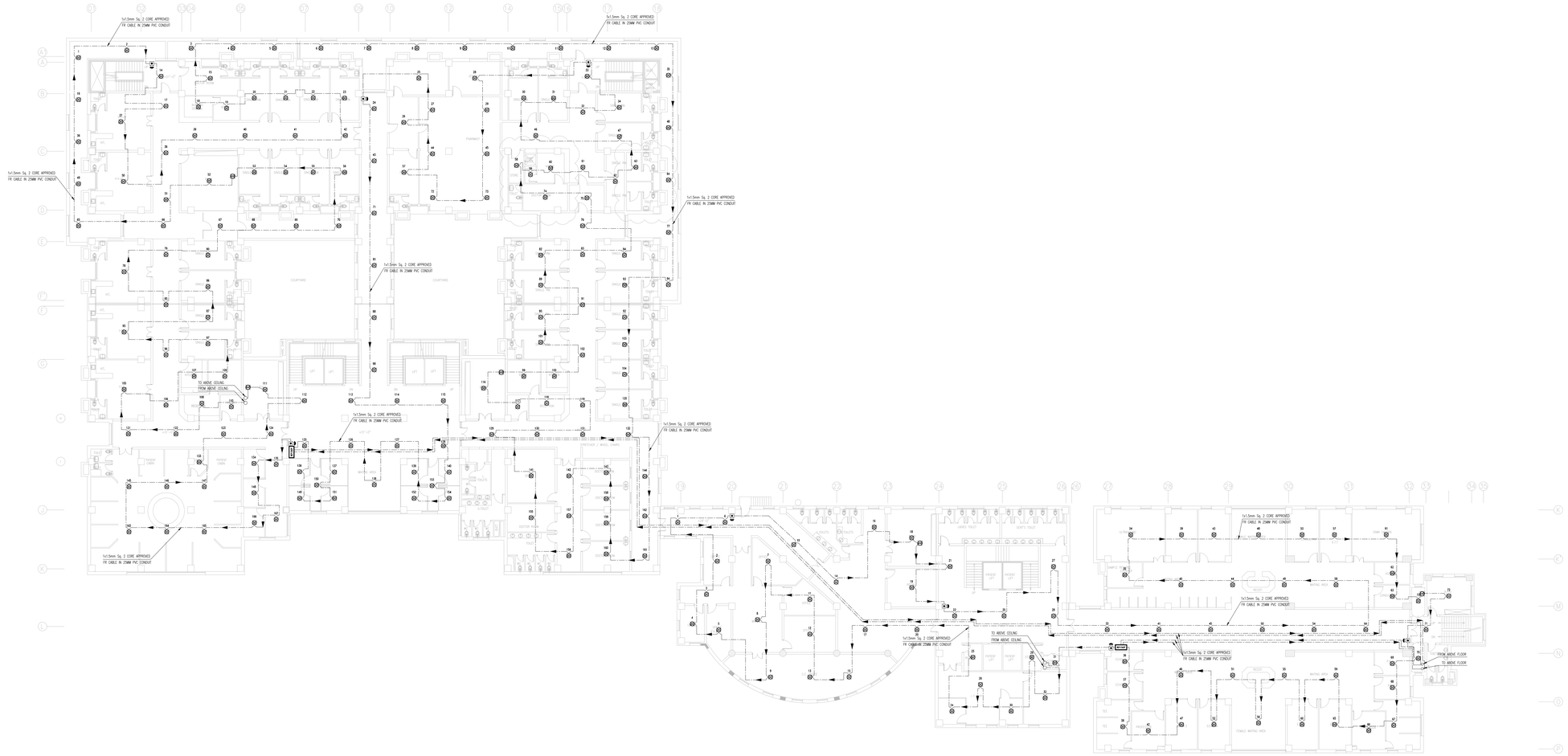
PROJECT
CONSULTANCY SERVICES FOR FIRE RISK ASSESSMENT, FEASIBILITY STUDY, DESIGN/LAYOUT & SUPERVISION

TITLE
FIRE DETECTION SYSTEM PROPOSED F.F

DATE	SCALE
12-07-2023	N.T.S

PROJECT NO.	DRAWING NUMBER	SHEET	SIZE	REV
VISP-L-E22-0313	V-0313-F-D-0024	01 OF 01	A1	A



2nd FLOOR PLAN

LEGENDS

SYMBOL	DESCRIPTION
—— – ——	1.5mm 2 CORE FIRE RESISTANT CABLE
—— – ——	1.5mm 2 CORE FIRE RESISTANT CABLE (LOOP-1)
HD	ADDRESSABLE HEAT DETECTOR
SD	ADDRESSABLE SMOKE/MULTI GAS DETECTOR
	CARBON MONOXIDE DETECTOR
	ADDRESSABLE MANUAL CALL POINT
	ADDRESSABLE FIRE ALARM BELL
MAIN-FACP	ADDRESSABLE FIRE ALARM CONTROL PANEL (MAIN)
REP.FACP	ADDRESSABLE FIRE ALARM CONTROL PANEL (REPEATER)

ISSUE FOR TENDER

REV	DESCRIPTION	DATE	DRN	CHK	APP
	TOTAL COVERED AREA				
	REVISION				

CLIENT

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PROJECT

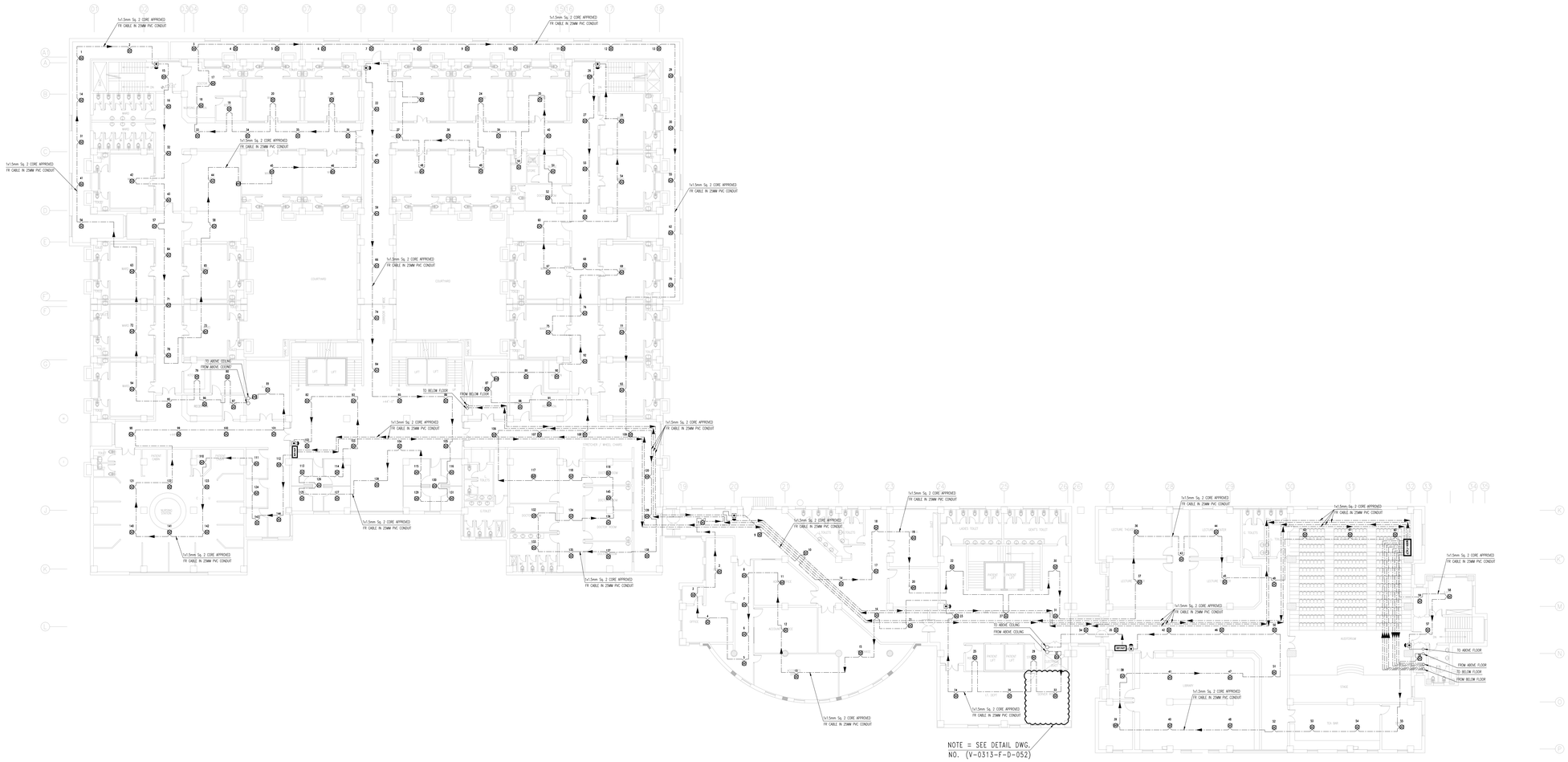
CONSULTANCY SERVICES FOR FIRE RISK ASSESSMENT, FEASIBILITY STUDY, DESIGN/LAYOUT & SUPERVISION

TITLE

FIRE DETECTION SYSTEM PROPOSED 2.F

DATE	SCALE
12-07-2023	N.T.S

PROJECT NO.	DRAWING NUMBER	SHEET	SIZE	REV
VISP-L-E22-0313	V-0313-F-D-0025	01 OF 01	A1	A



3rd FLOOR PLAN

LEGENDS

SYMBOL	DESCRIPTION
—— – ——	1.5mm 2 CORE FIRE RESISTANT CABLE
—— – ——	1.5mm 2 CORE FIRE RESISTANT CABLE (LOOP-1)
HD	ADDRESSABLE HEAT DETECTOR
SD	ADDRESSABLE SMOKE/MULTI GAS DETECTOR
	CARBON MONOXIDE DETECTOR
	ADDRESSABLE MANUAL CALL POINT
	ADDRESSABLE FIRE ALARM BELL
MAIN-FACP	ADDRESSABLE FIRE ALARM CONTROL PANEL (MAIN)
REP.FACP	ADDRESSABLE FIRE ALARM CONTROL PANEL (REPEATER)

ISSUE FOR TENDER

REV	DESCRIPTION	DATE	DRN	CHK	APP
TOTAL COVERED AREA					

REVISION

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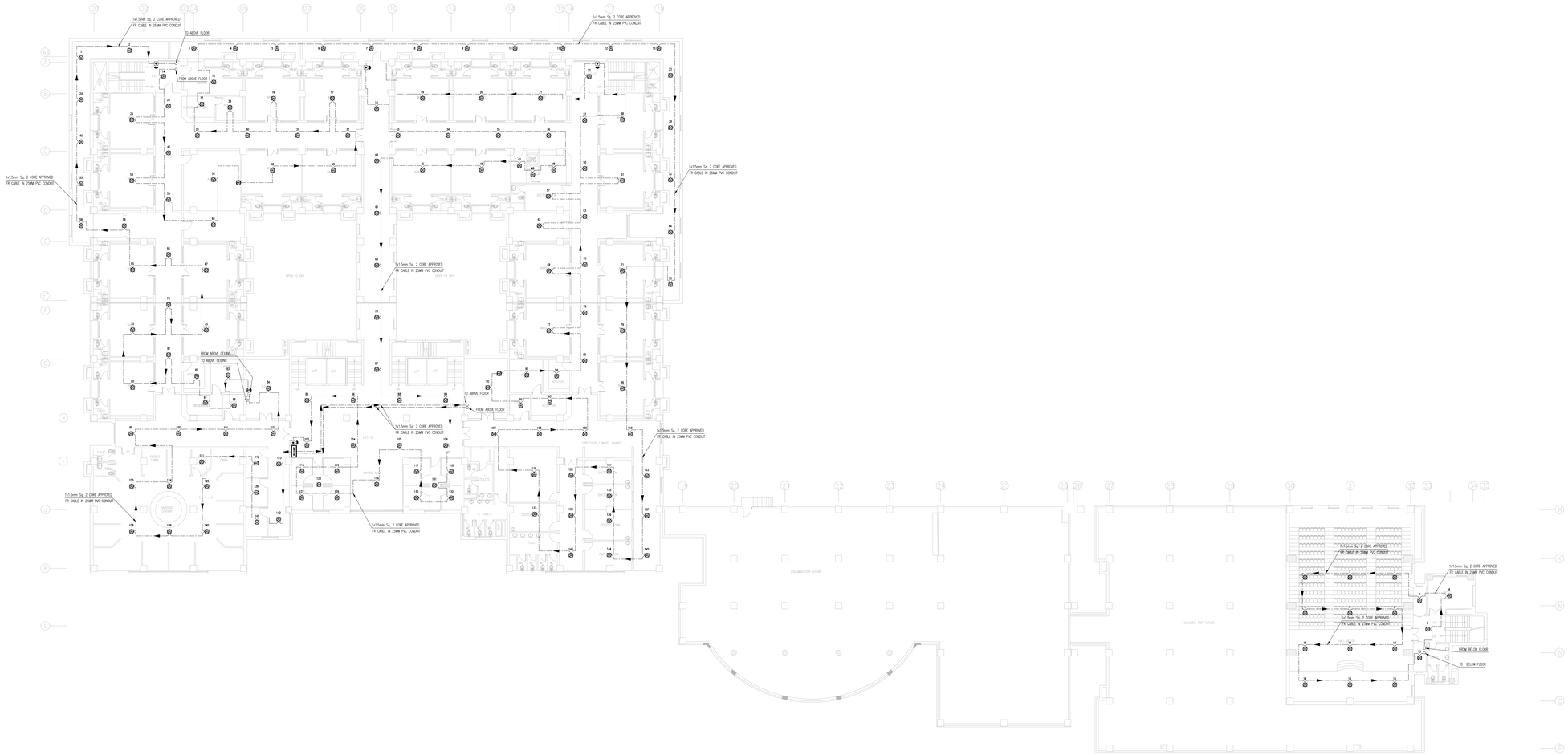
PROJECT
CONSULTANCY SERVICES FOR FIRE RISK ASSESSMENT, FEASIBILITY STUDY, DESIGN/LAYOUT & SUPERVISION

TITLE
FIRE DETECTION SYSTEM PROPOSED 3.F

DATE	SCALE
12-07-2023	N.T.S

PROJECT NO.	DRAWING NUMBER	SHEET	SIZE	REV
VISP-L-E22-0313	V-0313-F-D-0026	01 OF 01	A1	A



4th FLOOR PLAN

LEGENDS

SYMBOL	DESCRIPTION
—— – ——	1.5mm 2 CORE FIRE RESISTANT CABLE
—— – ——	1.5mm 2 CORE FIRE RESISTANT CABLE (LOOP-1)
HD	ADDRESSABLE HEAT DETECTOR
SD	ADDRESSABLE SMOKE/MULTI GAS DETECTOR
	CARBON MONOXIDE DETECTOR
	ADDRESSABLE MANUAL CALL POINT
	ADDRESSABLE FIRE ALARM BELL
MAIN-FACP	ADDRESSABLE FIRE ALARM CONTROL PANEL (MAIN)
REP.FACP	ADDRESSABLE FIRE ALARM CONTROL PANEL (REPEATER)

ISSUE FOR TENDER

REV	DESCRIPTION	DATE	DRN	CHK	APP

TOTAL COVERED AREA

REVISION

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CHECKED UA

APPROVED MA

PROJECT

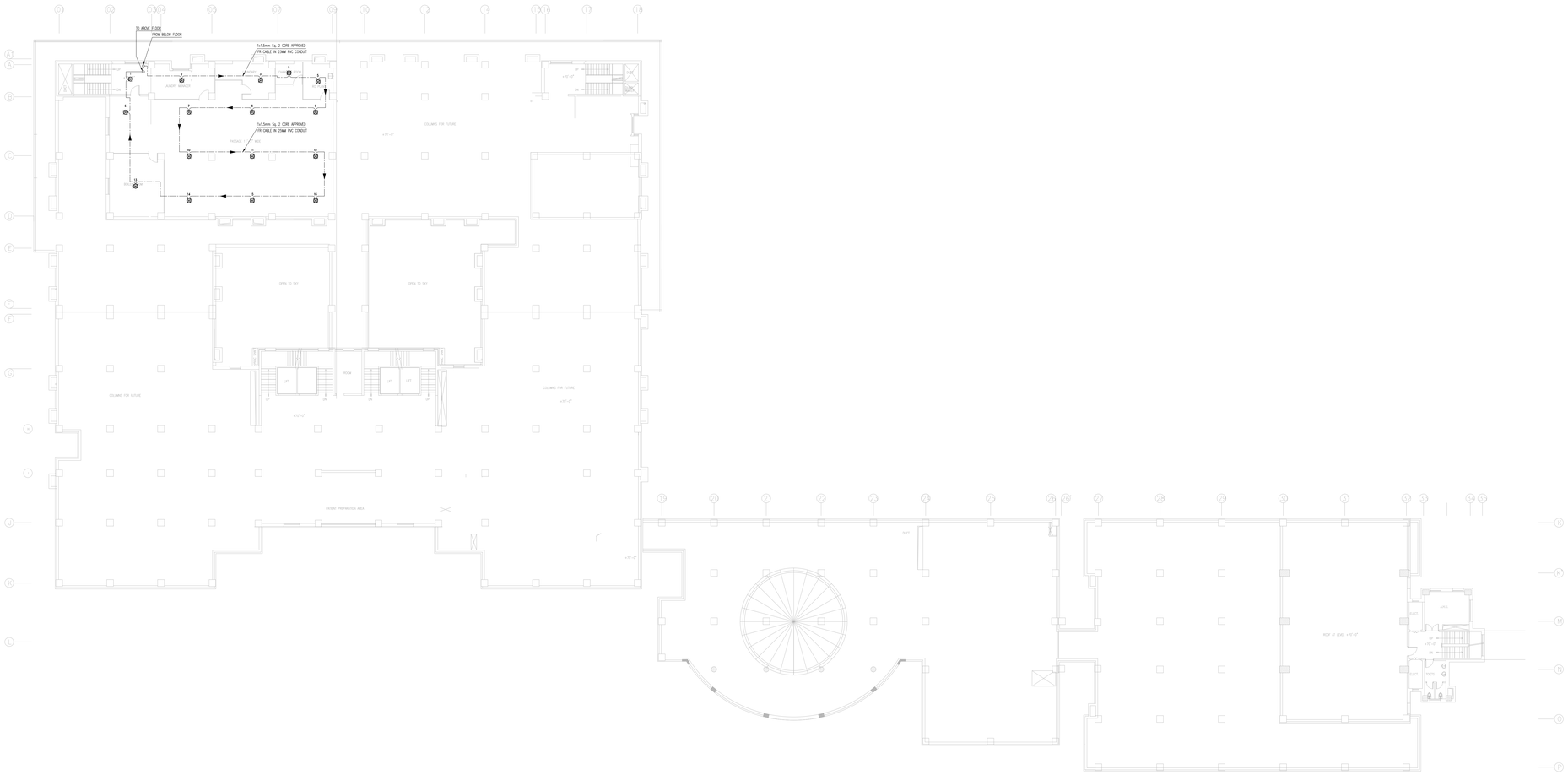
CONSULTANCY SERVICES FOR FIRE RISK ASSESSMENT, FEASIBILITY STUDY, DESIGN/LAYOUT & SUPERVISION

TITLE

FIRE DETECTION SYSTEM PROPOSED 4.F

DATE	SCALE
12-07-2023	N.T.S

PROJECT NO.	DRAWING NUMBER	SHEET	SIZE	REV
VISP-L-E22-0313	V-0313-F-D-0027	01 OF 01	A1	A



5th. FLOOR PLAN

LEGENDS

SYMBOL	DESCRIPTION
—— – ——	1.5mm 2 CORE FIRE RESISTANT CABLE
—— – ——	1.5mm 2 CORE FIRE RESISTANT CABLE (LOOP-1)
HD	ADDRESSABLE HEAT DETECTOR
SD	ADDRESSABLE SMOKE/MULTI GAS DETECTOR
	CARBON MONOXIDE DETECTOR
	ADDRESSABLE MANUAL CALL POINT
	ADDRESSABLE FIRE ALARM BELL
MAIN-FACP	ADDRESSABLE FIRE ALARM CONTROL PANEL (MAIN)
REP.FACP	ADDRESSABLE FIRE ALARM CONTROL PANEL (REPEATER)

ISSUE FOR TENDER

REV	DESCRIPTION	DATE	DRN	CHK	APP

TOTAL COVERED AREA

REVISION

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PROJECT

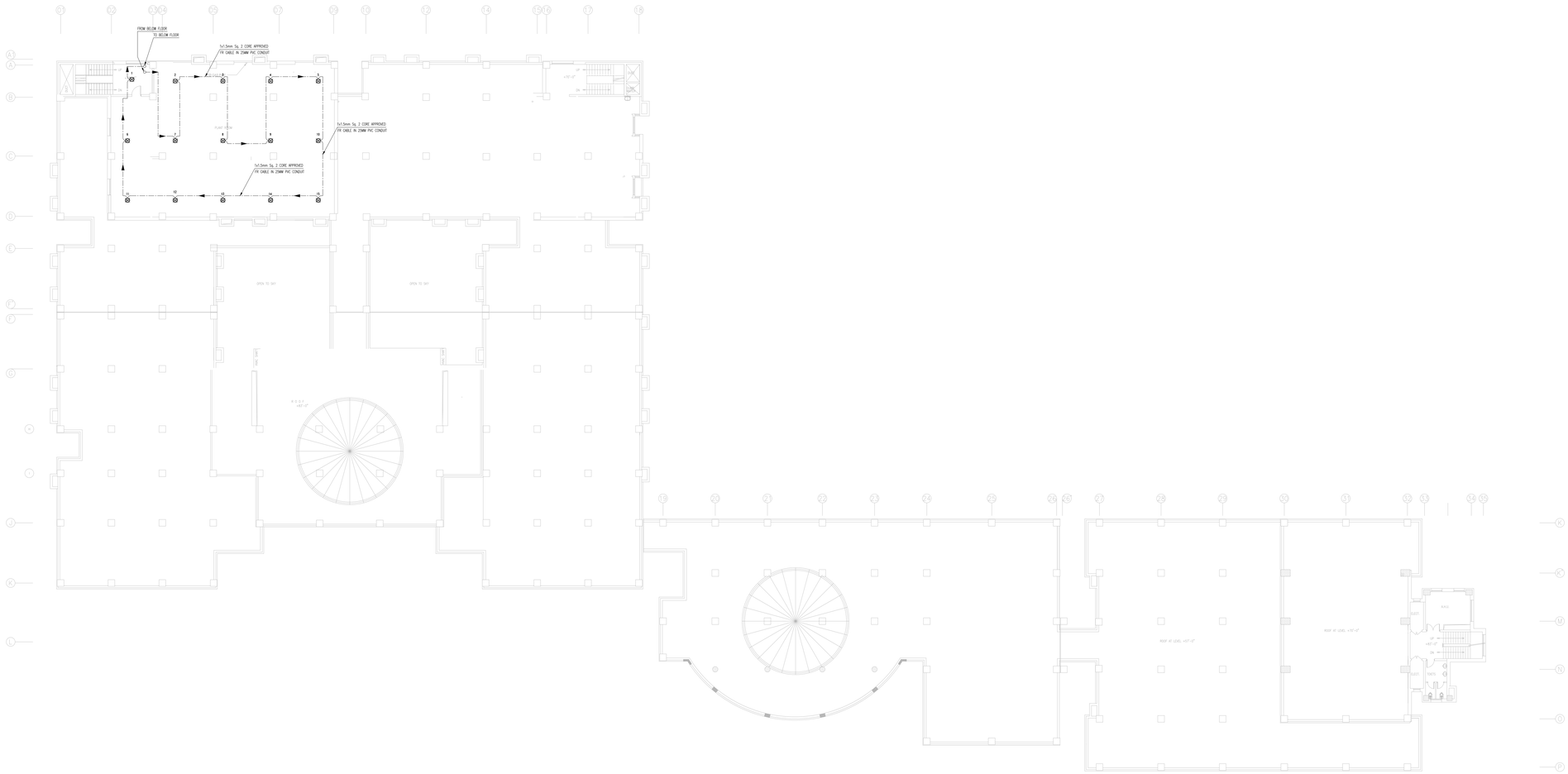
CONSULTANCY SERVICES FOR FIRE RISK ASSESSMENT, FEASIBILITY STUDY, DESIGN/LAYOUT & SUPERVISION

TITLE

FIRE DETECTION SYSTEM PROPOSED 5.F

DATE	SCALE
12-07-2023	N.T.S

PROJECT NO.	DRAWING NUMBER	SHEET	SIZE	REV
VISP-L-E22-0313	V-0313-F-D-0028	01 OF 01	A1	A



6TH FLOOR PLAN

LEGENDS

SYMBOL	DESCRIPTION
—— – ——	1.5mm 2 CORE FIRE RESISTANT CABLE
—— – ——	1.5mm 2 CORE FIRE RESISTANT CABLE (LOOP-1)
HD	ADDRESSABLE HEAT DETECTOR
SD	ADDRESSABLE SMOKE/MULTI GAS DETECTOR
	CARBON MONOXIDE DETECTOR
	ADDRESSABLE MANUAL CALL POINT
	ADDRESSABLE FIRE ALARM BELL
MAIN-FACP	ADDRESSABLE FIRE ALARM CONTROL PANEL (MAIN)
REP.FACP	ADDRESSABLE FIRE ALARM CONTROL PANEL (REPEATER)

ISSUE FOR TENDER

REV	DESCRIPTION	DATE	DRN	CHK	APP

TOTAL COVERED AREA

REVISION

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CONSULTANT

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207-A, P-BRICK Gulberg III, Lahore, Pakistan

VELOSI
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CHECKED UA

APPROVED MA

PROJECT
CONSULTANCY SERVICES FOR FIRE RISK ASSESSMENT, FEASIBILITY STUDY, DESIGN/LAYOUT & SUPERVISION

TITLE
FIRE DETECTION SYSTEM PROPOSED 5.F

DATE	SCALE
12-07-2023	N.T.S

PROJECT NO.	DRAWING NUMBER	SHEET	SIZE	REV
VISP-L-E22-0313	V-0313-F-D-0029	01 OF 01	A1	A

GROUND FLOOR PLAN

LEGENDS

SYMBOL	DESCRIPTION
—— – ——	1.5mm 2 CORE FIRE RESISTANT CABLE
—— – ——	1.5mm 2 CORE FIRE RESISTANT CABLE (LOOP-1)
HD	ADDRESSABLE HEAT DETECTOR
SD	ADDRESSABLE SMOKE DETECTOR

ISSUE FOR TENDER

REV	DESCRIPTION	DATE	DRN	CHK	APP

TOTAL COVERED AREA

REVISION

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CONSULTANT

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207-A, P-BRICK Gulberg III, Lahore, Pakistan
VELOSI Engineering For A Safer World

DRAWN BY; T.A

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CHECKED UA

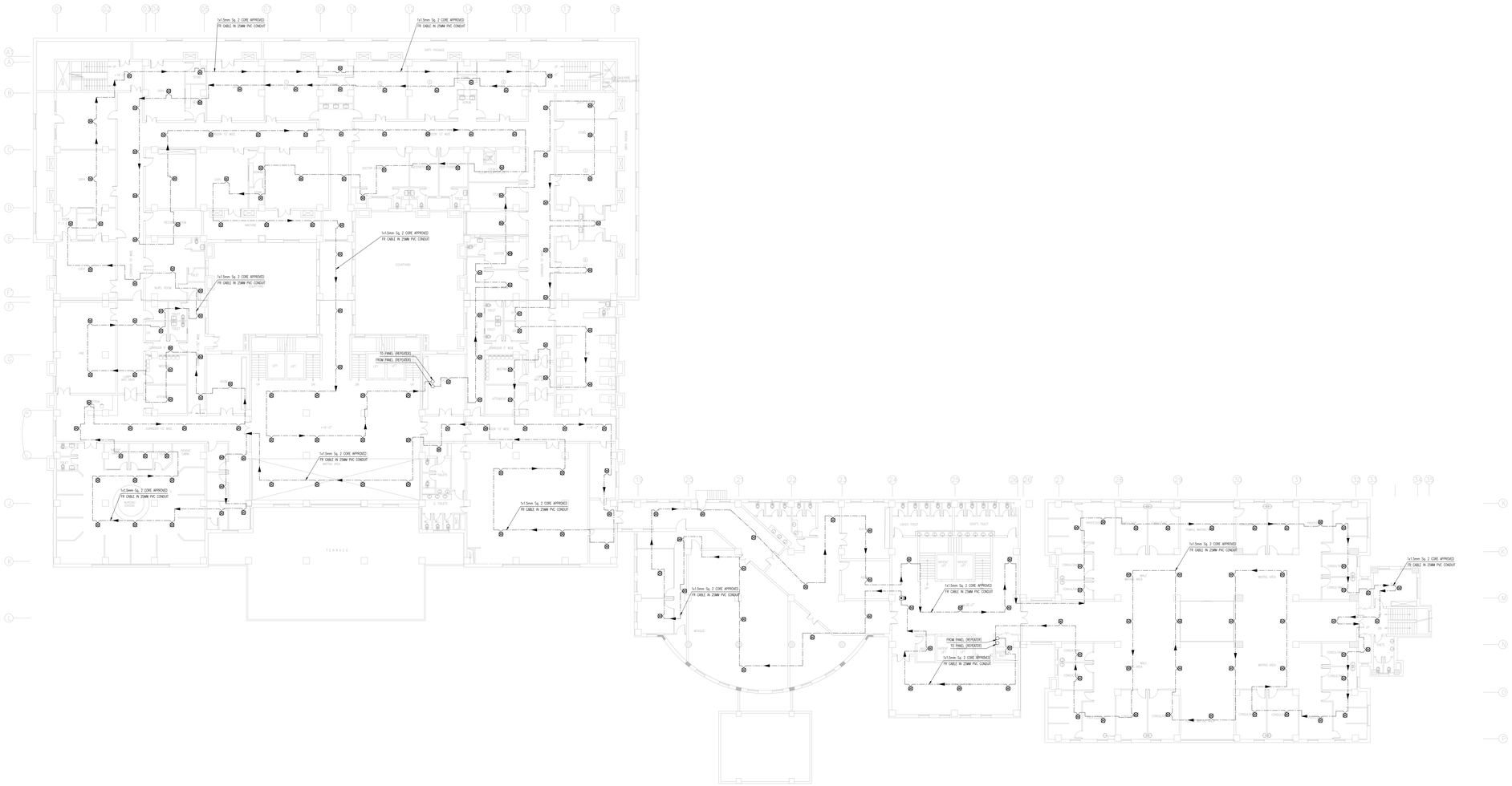
APPROVED MA

PROJECT
CONSULTANCY SERVICES FOR FIRE RISK ASSESSMENT, FEASIBILITY STUDY, DESIGN/LAYOUT & SUPERVISION

TITLE
FIRE DETECTION ABOVE CEILING SYSTEM PROPOSED G.F

DATE 12-07-2023 | SCALE N.T.S

PROJECT NO.	DRAWING NUMBER	SHEET	SIZE	REV
VISP-L-E22-0313	V-0313-F-D-0031	01 OF 01	A1	A



1st FLOOR PLAN

LEGENDS

SYMBOL	DESCRIPTION
—— – ——	1.5mm 2 CORE FIRE RESISTANT CABLE
—— – ——	1.5mm 2 CORE FIRE RESISTANT CABLE (LOOP-1)
HD	ADDRESSABLE HEAT DETECTOR
SD	ADDRESSABLE SMOKE DETECTOR

ISSUE FOR TENDER

REV	DESCRIPTION	DATE	DRN	CHK	APP

TOTAL COVERED AREA

REVISION

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CONSULTANT
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CHECKED UA

APPROVED MA

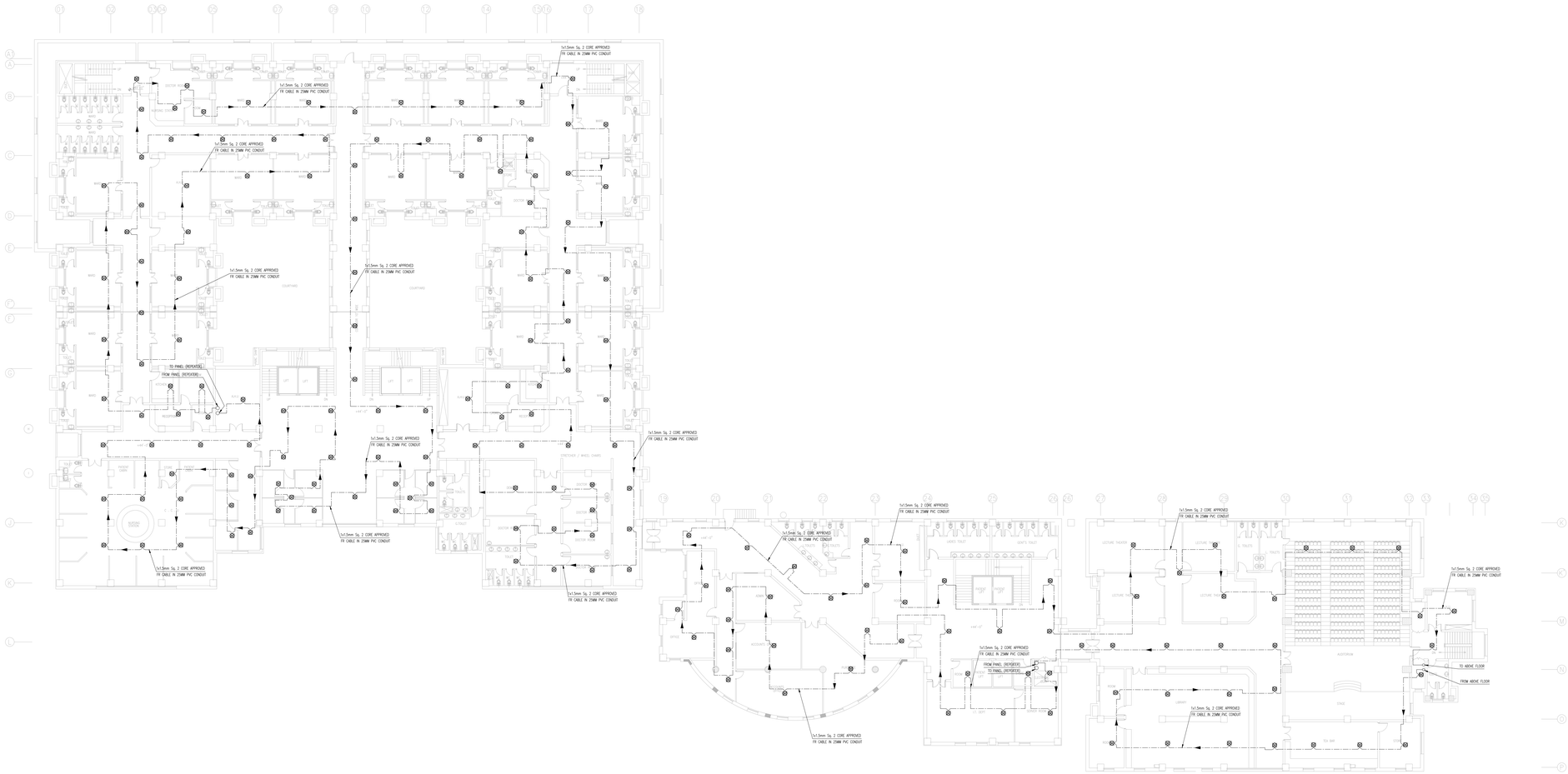
PROJECT
CONSULTANCY SERVICES FOR FIRE RISK ASSESSMENT, FEASIBILITY STUDY, DESIGN/LAYOUT & SUPERVISION

TITLE
FIRE DETECTION ABOVE CEILING SYSTEM PROPOSED F.F

DATE 12-07-2023 | SCALE N.T.S

PROJECT NO.	DRAWING NUMBER	SHEET	SIZE	REV
VISP-L-E22-0313	V-0313-F-D-0032	01 OF 01	A1	A

1x1.5mm Sq. 2 CORE APPROVED FR CABLE IN 25MM PVC CONDUIT
TO PANEL (REPEATER) FROM PANEL (REPEATER)
COURTYARD
LIFT
LADIES TOILET
GENTS TOILET
DOCTOR ROOM
SINGLE BED
DRESSING ROOM
TOILET
DRUG STORE
OFFICE
WAITING AREA
CONSULTANT / MASS CHARGE
PHARMACY
CLINIC
DRESSING ROOM
TOILET
TOILET
TOILET



3rd FLOOR PLAN

LEGENDS

SYMBOL	DESCRIPTION
—— - ——	1.5mm 2 CORE FIRE RESISTANT CABLE
—— - ——	1.5mm 2 CORE FIRE RESISTANT CABLE (LOOP-1)
HD	ADDRESSABLE HEAT DETECTOR
SD	ADDRESSABLE SMOKE DETECTOR

ISSUE FOR TENDER

REV	DESCRIPTION	DATE	DRN	CHK	APP

TOTAL COVERED AREA

REVISION

CLIENT

PESHAWAR INSTITUTES OF CARDIOLOGY

CONSULTANT

VELOSI INTEGRITY & SAFETY PAK.(PVT).LTD
207-A, P-BRICK Gulberg III, Lahore, Pakistan
VELOSI Engineering For A Safer World

DRAWN BY; T.A

REVIEWED UA

CHECKED UA

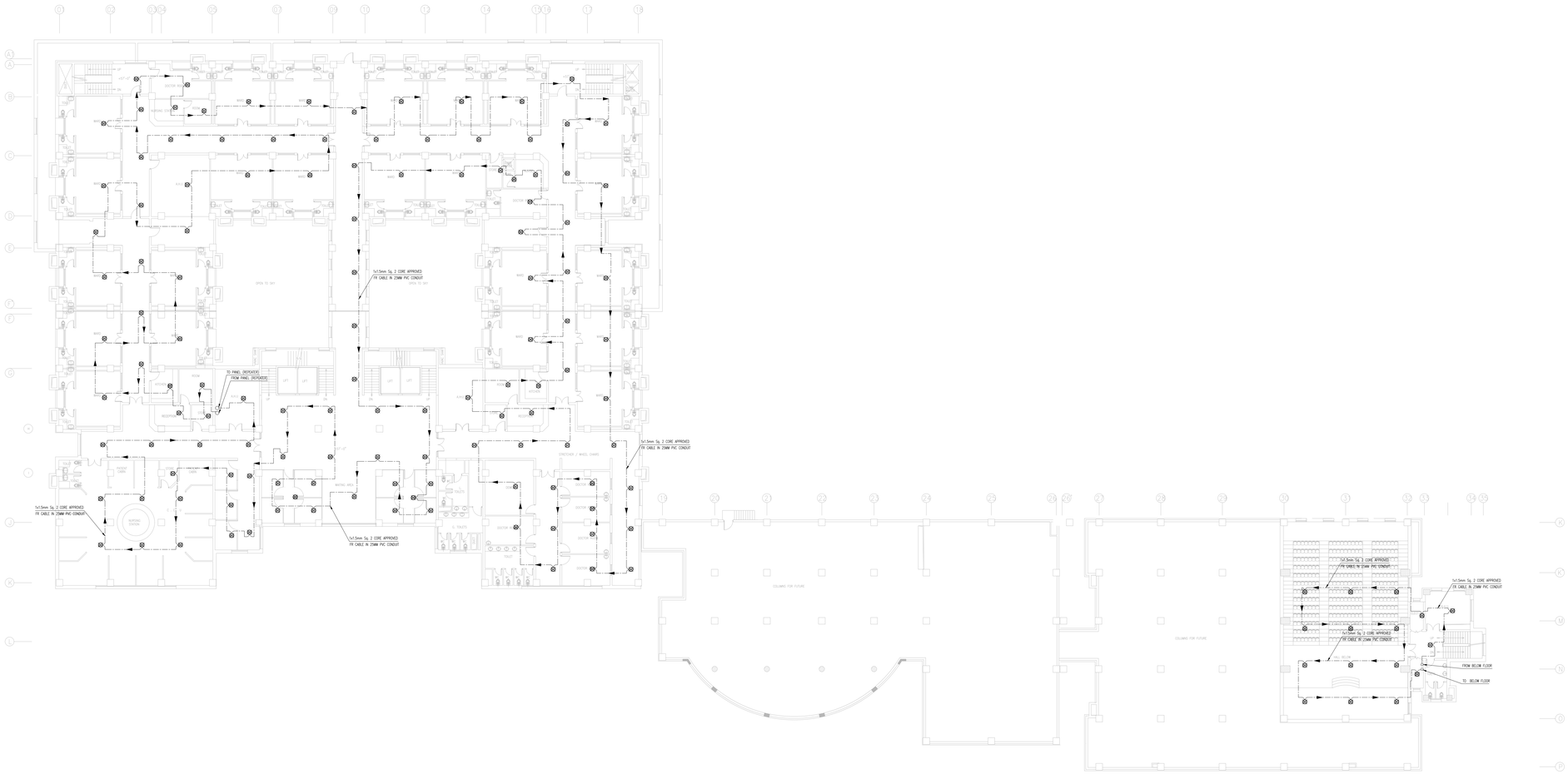
APPROVED MA

PROJECT
CONSULTANCY SERVICES FOR FIRE RISK ASSESSMENT, FEASIBILITY STUDY, DESIGN/LAYOUT & SUPERVISION

TITLE
FIRE DETECTION ABOVE CEILING SYSTEM PROPOSED 3.F

DATE	SCALE
12-07-2023	N.T.S

PROJECT NO.	DRAWING NUMBER	SHEET	SIZE	REV
VISP-L-E22-0313	V-0313-F-D-0034	01 OF 01	A1	A



4th FLOOR PLAN

LEGENDS

SYMBOL	DESCRIPTION
—— – ——	1.5mm 2 CORE FIRE RESISTANT CABLE
—— – ——	1.5mm 2 CORE FIRE RESISTANT CABLE (LOOP-1)
HD	ADDRESSABLE HEAT DETECTOR
SD	ADDRESSABLE SMOKE DETECTOR

ISSUE FOR TENDER

REV	DESCRIPTION	DATE	DRN	CHK	APP

TOTAL COVERED AREA

REVISION

CLIENT

PESHAWAR INSTITUTES OF CARDIOLOGY

CONSULTANT

VELOSI INTEGRITY & SAFETY PAK.(PVT).LTD
207-A, P-BRICK Gulberg III, Lahore, Pakistan

VELOSI Engineering For A Safer World

DRAWN BY; T.A

REVIEWED UA

CHECKED UA

APPROVED MA

PROJECT
CONSULTANCY SERVICES FOR FIRE RISK ASSESSMENT, FEASIBILITY STUDY, DESIGN/LAYOUT & SUPERVISION

TITLE
FIRE DETECTION ABOVE CEILING SYSTEM PROPOSED 4.F

DATE 12-07-2023

SCALE N.T.S

PROJECT NO.	DRAWING NUMBER	SHEET	SIZE	REV
VISP-L-E22-0313	V-0313-F-D-0035	01 OF 01	A1	A

CONSULTANCY SERVICES FOR FIRE RISK ASSESSMENT, FEASIBILITY STUDY, DESIGN/LAYOUT & SUPERVISION

TITLE

PROPOSED EMERGENCY EXIT LIGHTING

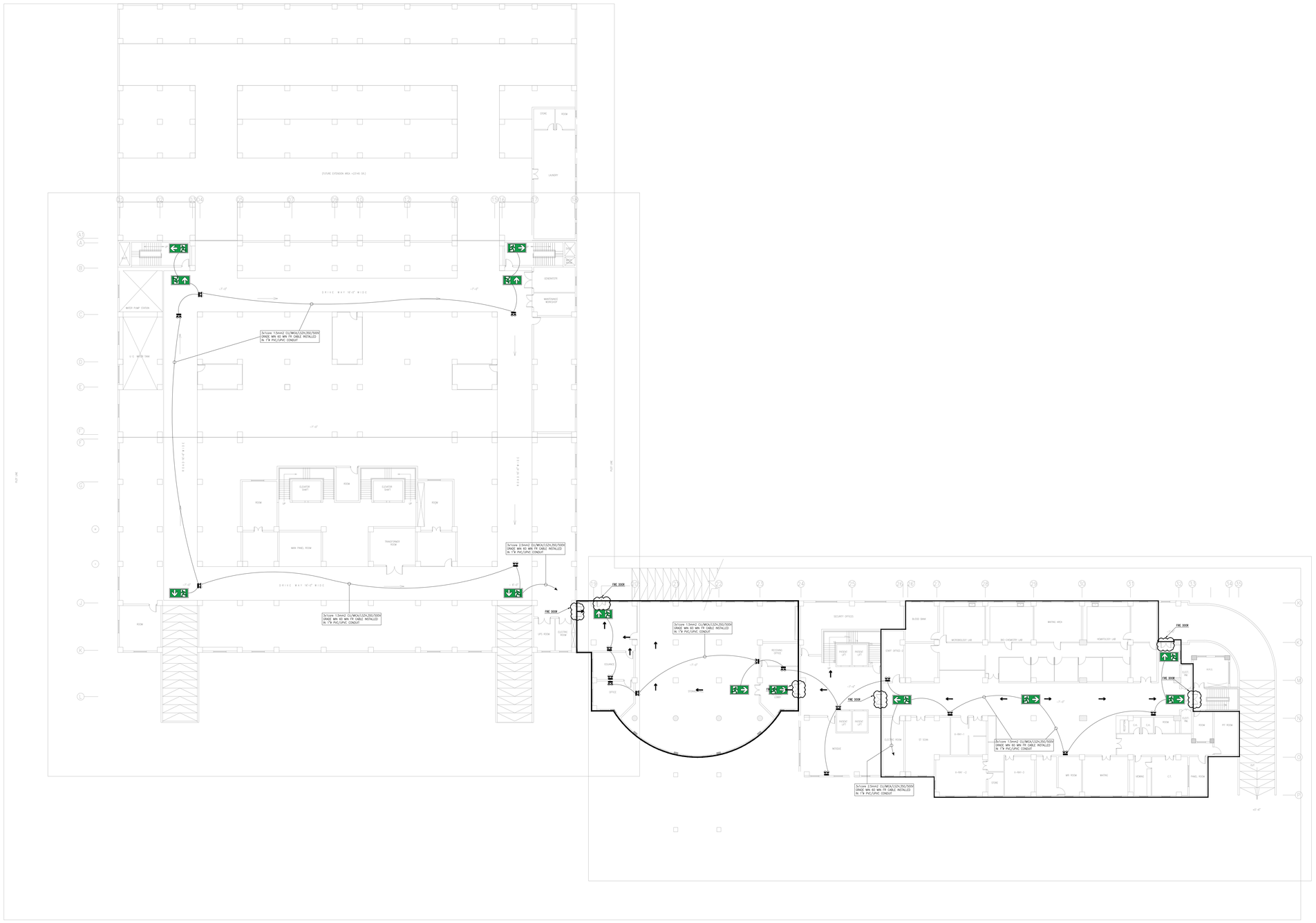
CONSULTANT:

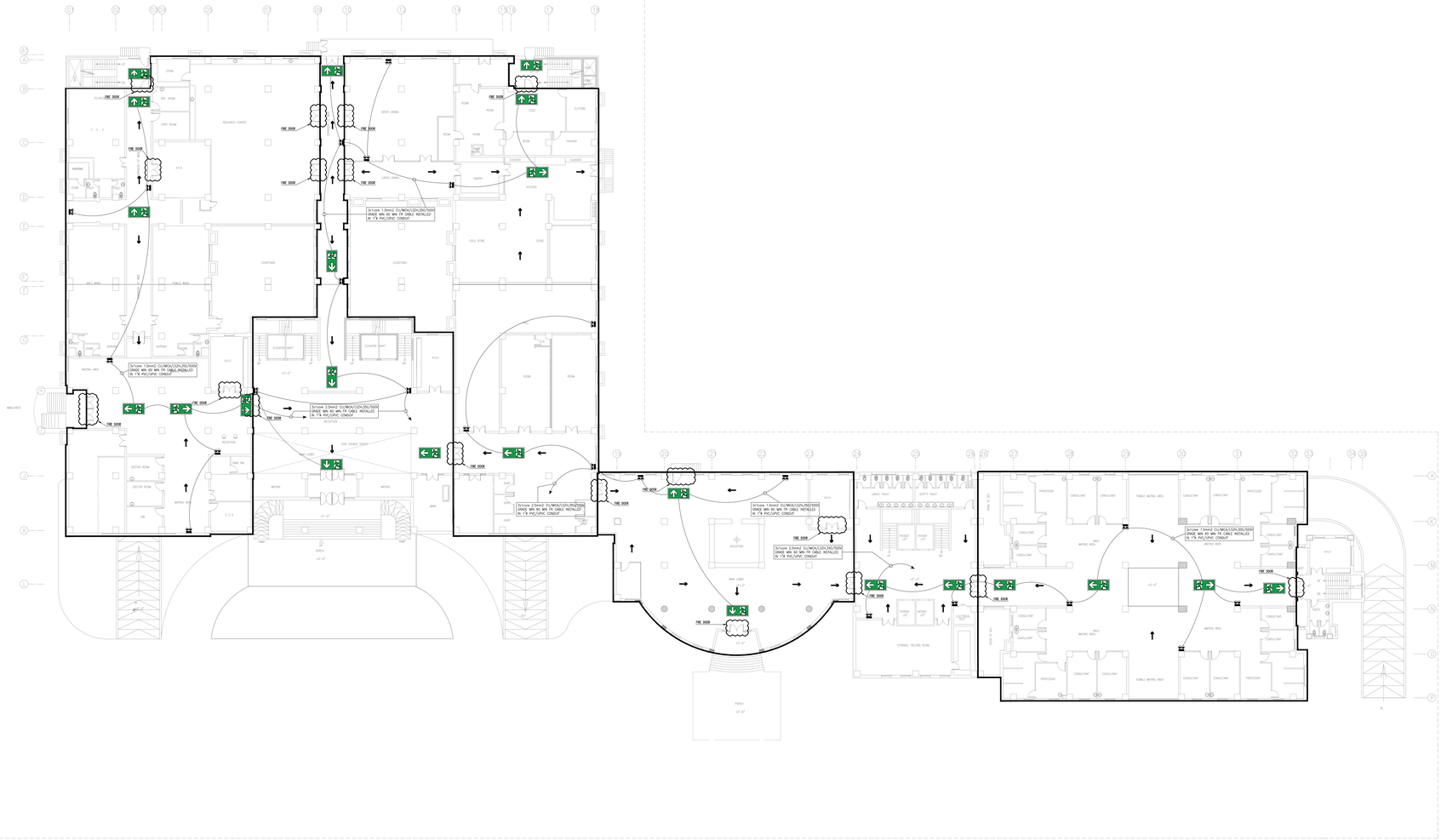
VELOSI
Engineering For A Safer World

VELOSI INTEGRITY & SAFETY PAK.(PVT).LTD
207-A, P-Block Gulberg III, Lahore, Pakistan

CLIENT:

PESHAWAR INSTITUTES OF CARDIOLOGY


STORE
ROOM
LAUNDRY
(FUTURE EXTENSION AREA =2240 SFL)
DRIVE WAY 16'-0" WIDE
GENERATOR
MAINTENANCE WORKSHOP
WATER PUMP CISTERN
U.G. WATER TANK
3x1core 1.5mm2 CU/MICA/LSZH,250/500V
GRADE MIN 60 MIN FR CABLE INSTALLED
IN 1"Ø PVC/UPVC CONDUIT
ELEVATOR SHAFT
ROOM
MAIN PANEL ROOM
TRANSFORMER ROOM
3x1core 2.5mm2 CU/MICA/LSZH,250/500V
GRADE MIN 60 MIN FR CABLE INSTALLED
IN 1"Ø PVC/UPVC CONDUIT
FIRE DOOR
UPS ROOM
COOLING ROOM
RECEIVING OFFICE
SECURITY OFFICES
BLOOD BANK
MICROBIOLOGY LAB
BIO-CHEMISTRY LAB
WAITING AREA
HEMATOLOGY LAB
EMAT OFFICES
PATIENT LIFT
PATIENT LIFT
ELECTRIC ROOM
CT SCAN
X-RAY-1
X-RAY-2
X-RAY-3
MRI ROOM
WAITING
STORE
ATRIUM
E.T.
PANEL ROOM
PT ROOM
CLEAN ROOM
CLEAN ROOM
CR
CR
ROOM
ROOM
ROOM
ROOM
ROOM
ROOM
OFFICE
COUNTER
MEDICAL
OFFICE
ROOM
ROOM
ROOM
ROOM
ROOM
ROOM


FIRE DOOR
3x1core 1.5mm2 CU/WCA/LSZH,250/500V
GRADE WIN 60 WIN FR CABLE INSTALLED
IN TFN PVC/GPVC CONDUIT
3x1core 2.5mm2 CU/WCA/LSZH,250/500V
GRADE WIN 60 WIN FR CABLE INSTALLED
IN TFN PVC/GPVC CONDUIT
3x1core 2.5mm2 CU/WCA/LSZH,250/500V
GRADE WIN 60 WIN FR CABLE INSTALLED
IN TFN PVC/GPVC CONDUIT
3x1core 1.5mm2 CU/WCA/LSZH,250/500V
GRADE WIN 60 WIN FR CABLE INSTALLED
IN TFN PVC/GPVC CONDUIT
3x1core 2.5mm2 CU/WCA/LSZH,250/500V
GRADE WIN 60 WIN FR CABLE INSTALLED
IN TFN PVC/GPVC CONDUIT
3x1core 2.5mm2 CU/WCA/LSZH,250/500V
GRADE WIN 60 WIN FR CABLE INSTALLED
IN TFN PVC/GPVC CONDUIT
3x1core 1.5mm2 CU/WCA/LSZH,250/500V
GRADE WIN 60 WIN FR CABLE INSTALLED
IN TFN PVC/GPVC CONDUIT
3x1core 2.5mm2 CU/WCA/LSZH,250/500V
GRADE WIN 60 WIN FR CABLE INSTALLED
IN TFN PVC/GPVC CONDUIT
3x1core 1.5mm2 CU/WCA/LSZH,250/500V
GRADE WIN 60 WIN FR CABLE INSTALLED
IN TFN PVC/GPVC CONDUIT
3x1core 2

1st FLOOR PLAN

ISSUE FOR TENDER

REV	DESCRIPTION	DATE	DRN	CHK	APP

TOTAL COVERED AREA

REVISION

CLIENT

PESHAWAR INSTITUTES OF CARDIOLOGY

CONSULTANT

VELOSI INTEGRITY & SAFETY PAK.(PVT).LTD
207-A, P-BRICK Gulberg III, Lahore, Pakistan
VELOSI Engineering For A Safer World

DRAWN BY; F.S

REVIEWED Z.F

CHECKED Z.L

APPROVED MA

PROJECT

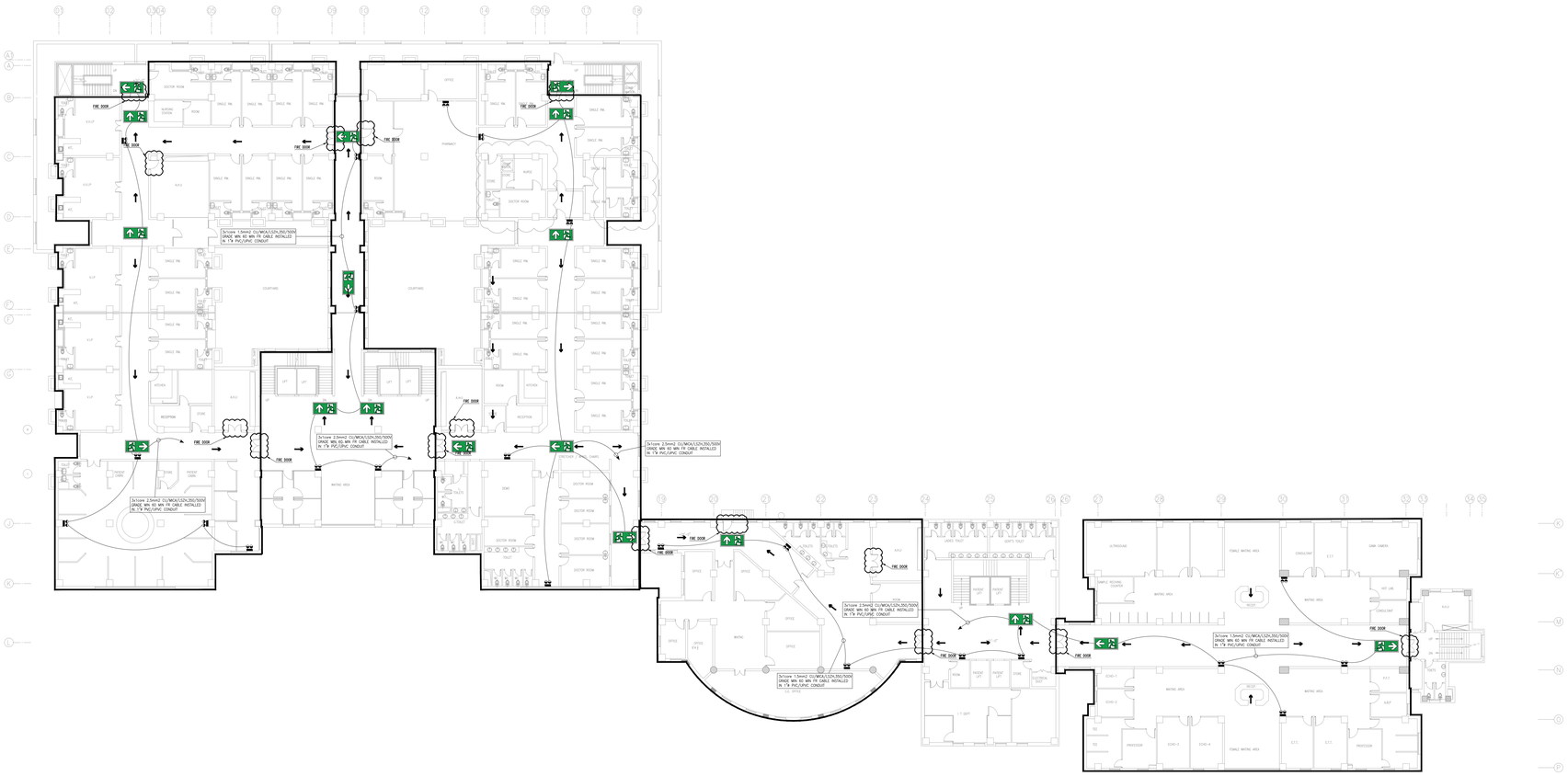
CONSULTANCY SERVICES FOR FIRE RISK ASSESSMENT, FEASIBILITY STUDY, DESIGN/LAYOUT & SUPERVISION

TITLE

PROPOSED EVACUATION PLAN F.F

DATE	SCALE
12-07-2023	N.T.S

PROJECT NO.	DRAWING NUMBER	SHEET	SIZE	REV
VISP-L-E22-0313	V-0313-F-D-053	01 OF 01	A1	A



2nd FLOOR PLAN

ISSUE FOR TENDER

REV	DESCRIPTION	DATE	DRN	CHK	APP

TOTAL COVERED AREA

REVISION

CLIENT

PESHAWAR INSTITUTES OF CARDIOLOGY

CONSULTANT

VELOSI INTEGRITY & SAFETY PAK.(PVT).LTD
207-A, P-BRICK Gulberg III, Lahore, Pakistan

VELOSI
Engineering For A Safer World

DRAWN BY; F.S

REVIEWED Z.F

CHECKED Z.L

APPROVED MA

PROJECT

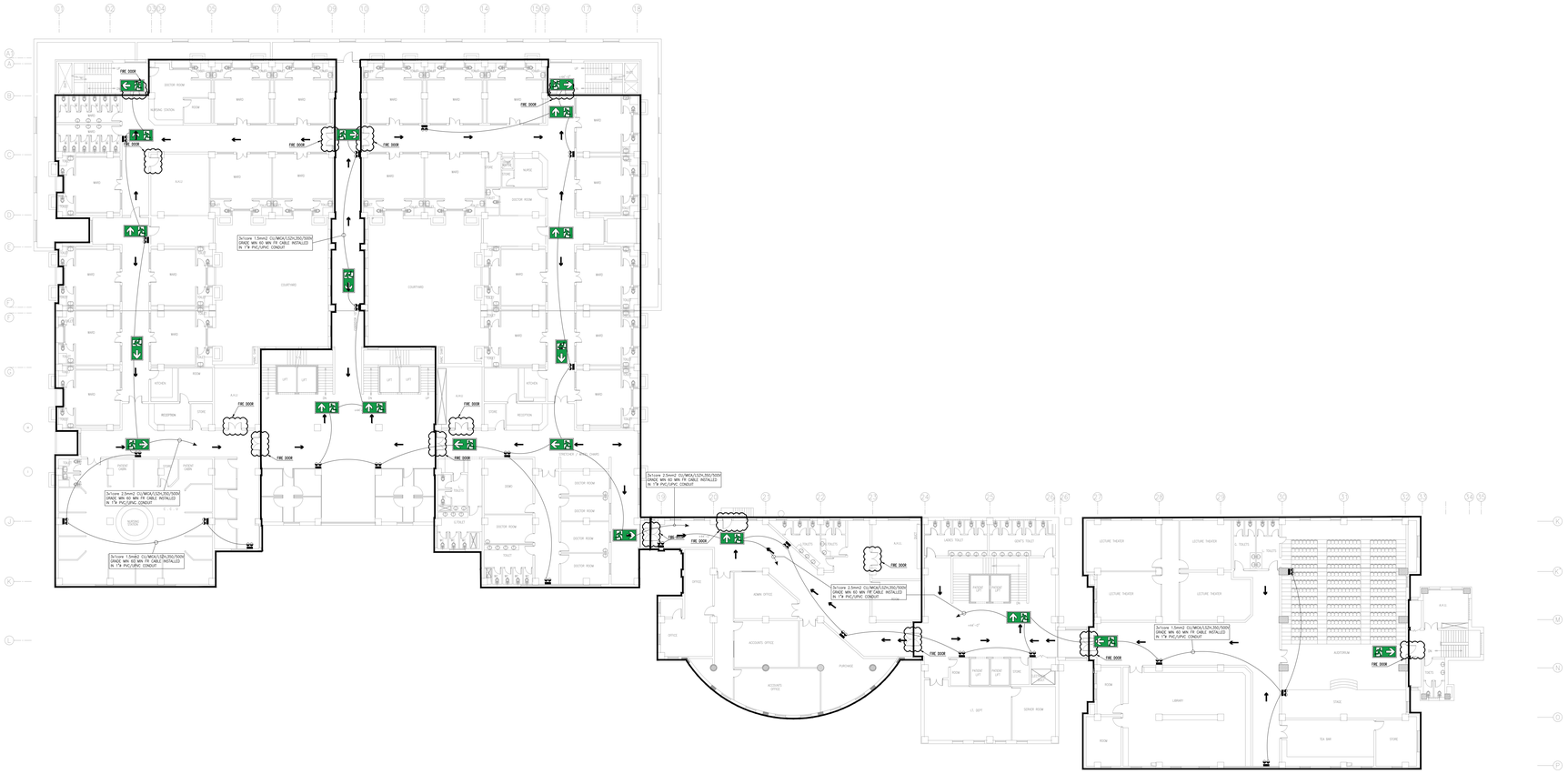
CONSULTANCY SERVICES FOR FIRE RISK ASSESSMENT, FEASIBILITY STUDY, DESIGN/LAYOUT & SUPERVISION

TITLE

PROPOSED EVACUATION PLAN 2.F

DATE	SCALE
12-07-2023	N.T.S

PROJECT NO.	DRAWING NUMBER	SHEET	SIZE	REV
VISP-L-E22-0313	V-0313-F-D-054	01 OF 01	A1	A



3rd FLOOR PLAN

ISSUE FOR TENDER

REV	DESCRIPTION	DATE	DRN	CHK	APP
TOTAL COVERED AREA					

REVISION

CLIENT

PESHAWAR INSTITUTES OF CARDIOLOGY

CONSULTANT

VELOSI INTEGRITY & SAFETY PAK.(PVT).LTD
207-A, P-BRICK Gulberg III, Lahore, Pakistan

VELOSI Engineering For A Safer World

DRAWN BY; F.S

REVIEWED Z.F

CHECKED Z.L

APPROVED MA

PROJECT

CONSULTANCY SERVICES FOR FIRE RISK ASSESSMENT, FEASIBILITY STUDY, DESIGN/LAYOUT & SUPERVISION

TITLE

PROPOSED EVACUATION PLAN 3.F

DATE	SCALE
12-07-2023	N.T.S

PROJECT NO.	DRAWING NUMBER	SHEET	SIZE	REV
VISP-L-E22-0313	V-0313-F-D-055	01 OF 01	A1	A

4th FLOOR PLAN

ISSUE FOR TENDER

REV	DESCRIPTION	DATE	DRN	CHK	APP

TOTAL COVERED AREA

REVISION

CLIENT

PESHAWAR INSTITUTES OF CARDIOLOGY

CONSULTANT

VELOSI INTEGRITY & SAFETY PAK.(PVT).LTD
207-A, P-BRICK Gulberg III, Lahore, Pakistan

VELOSI
Engineering For A Safer World

DRAWN BY; F.S

REVIEWED Z.F

CHECKED Z.L

APPROVED MA

PROJECT

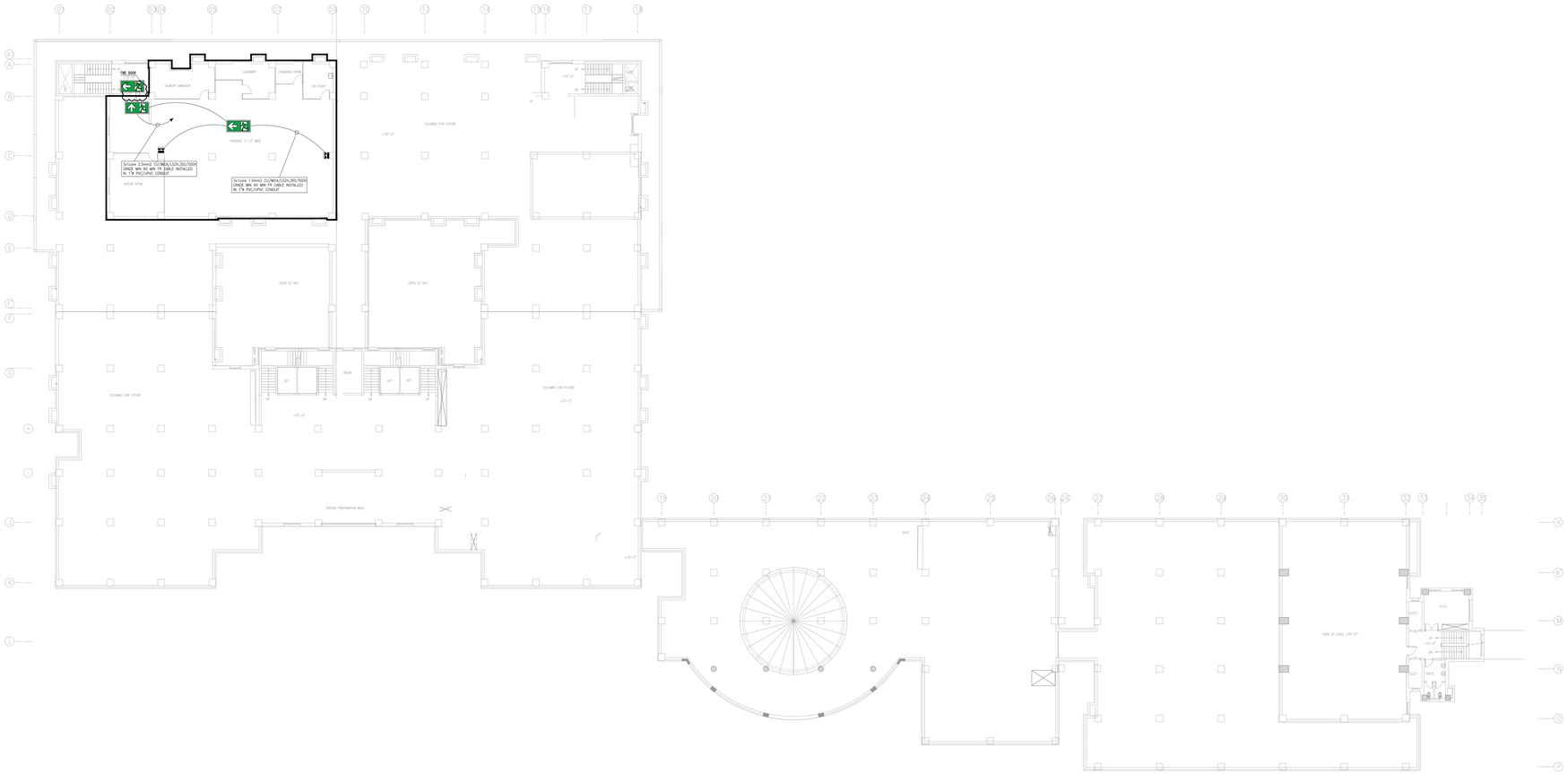
CONSULTANCY SERVICES FOR FIRE RISK ASSESSMENT, FEASIBILITY STUDY, DESIGN/LAYOUT & SUPERVISION

TITLE

PROPOSED EVACUATION PLAN 4.F

DATE	SCALE
12-07-2023	N.T.S

PROJECT NO.	DRAWING NUMBER	SHEET	SIZE	REV
VISP-L-E22-0313	V-0313-F-D-056	01 OF 01	A1	A



5th. FLOOR PLAN

ISSUE FOR TENDER

REV	DESCRIPTION	DATE	DRN	CHK	APP

TOTAL COVERED AREA

REVISION

CLIENT

PESHAWAR INSTITUTES OF CARDIOLOGY

CONSULTANT

VELOSI INTEGRITY & SAFETY PAK.(PVT).LTD
207-A, P-BRICK Gulberg III, Lahore, Pakistan

VELOSI
Engineering For A Safer World

DRAWN BY; F.S

REVIEWED Z.F

CHECKED Z.L

APPROVED MA

PROJECT

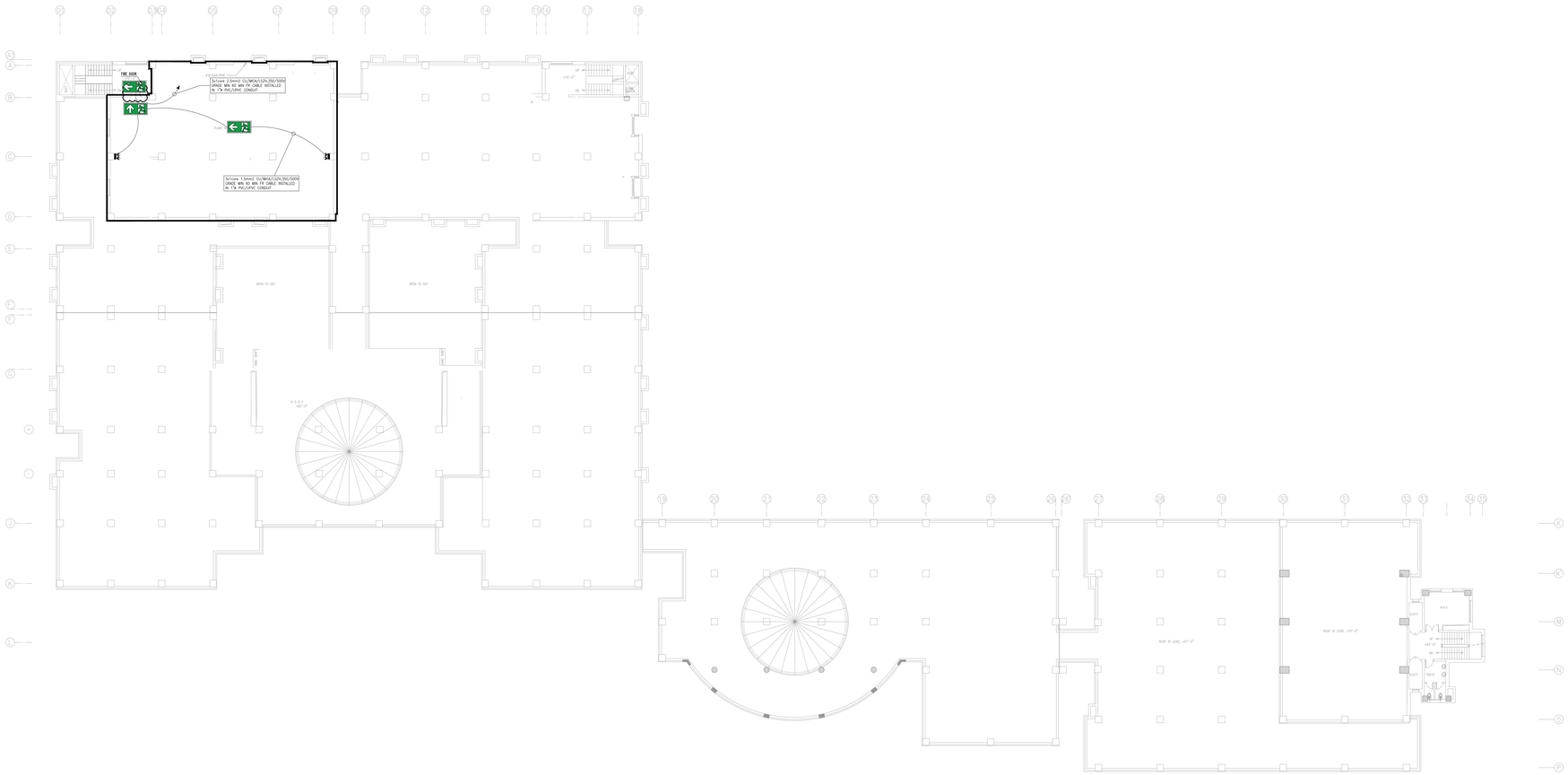
CONSULTANCY SERVICES FOR FIRE RISK ASSESSMENT, FEASIBILITY STUDY, DESIGN/LAYOUT & SUPERVISION

TITLE

PROPOSED EVACUATION PLAN 5.F

DATE	SCALE
12-07-2023	N.T.S

PROJECT NO.	DRAWING NUMBER	SHEET	SIZE	REV
VISP-L-E22-0313	V-0313-F-D-057	01 OF 01	A1	A



6TH FLOOR PLAN

ISSUE FOR TENDER

REV	DESCRIPTION	DATE	DRN	CHK	APP

TOTAL COVERED AREA

REVISION

CLIENT

PESHAWAR INSTITUTES OF CARDIOLOGY

CONSULTANT

VELOSI INTEGRITY & SAFETY PAK.(PVT).LTD
207-A, P-BRICK Gulberg III, Lahore, Pakistan

VELOSI Engineering For A Safer World

DRAWN BY; F.S

REVIEWED Z.F

CHECKED Z.L

APPROVED MA

PROJECT

CONSULTANCY SERVICES FOR FIRE RISK ASSESSMENT, FEASIBILITY STUDY, DESIGN/LAYOUT & SUPERVISION

TITLE

PROPOSED EVACUATION PLAN 6.F

DATE	SCALE
12-07-2023	N.T.S

PROJECT NO.	DRAWING NUMBER	SHEET	SIZE	REV
VISP-L-E22-0313	V-0313-F-D-058	01 OF 01	A1	A

CONSULTANCY SERVICES FOR FIRE RISK ASSESSMENT, FEASIBILITY STUDY, DESIGN/LAYOUT & SUPERVISION

TITLE

PROPOSED FIRE DAMPER SYSTEM

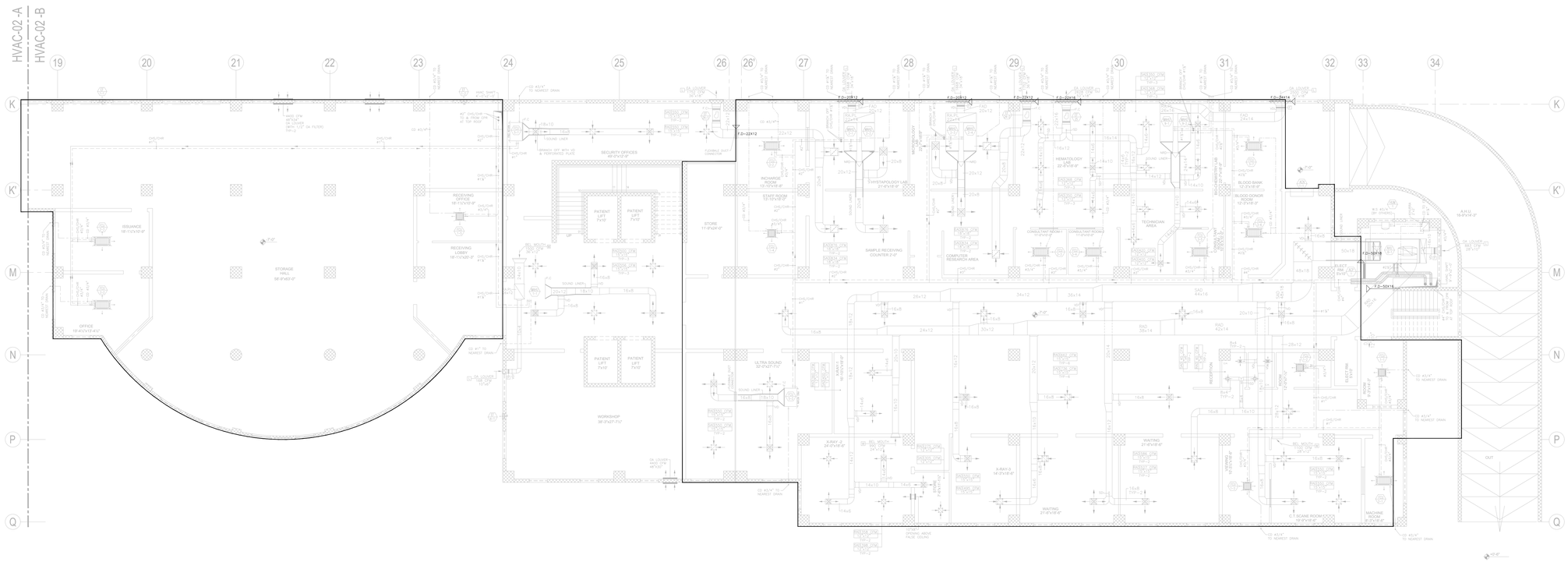
CONSULTANT:

VELOSI
Engineering For A Safer World

VELOSI INTEGRITY & SAFETY PAK.(PVT).LTD
207-A, P-Block Gulberg III, Lahore, Pakistan

CLIENT:

PESHAWAR INSTITUTES OF CARDIOLOGY



NOTE:
ALL DIMENSIONS IN INCHES

FIRE DAMPER

ISSUE FOR TENDER

REV	DESCRIPTION	DATE	DRN	CHK	APP

TOTAL COVERED AREA

REVISION

CLIENT
PESHAWAR INSTITUTES OF CARDIOLOGY

CONSULTANT
VELOSI INTEGRITY & SAFETY PAK.(PVT).LTD
207-A, P-BRICK Gulberg III, Lahore, Pakistan
VELOSI Engineering For A Safer World

DRAWN BY; T.A

REVIEWED UA

CHECKED UA

APPROVED MA

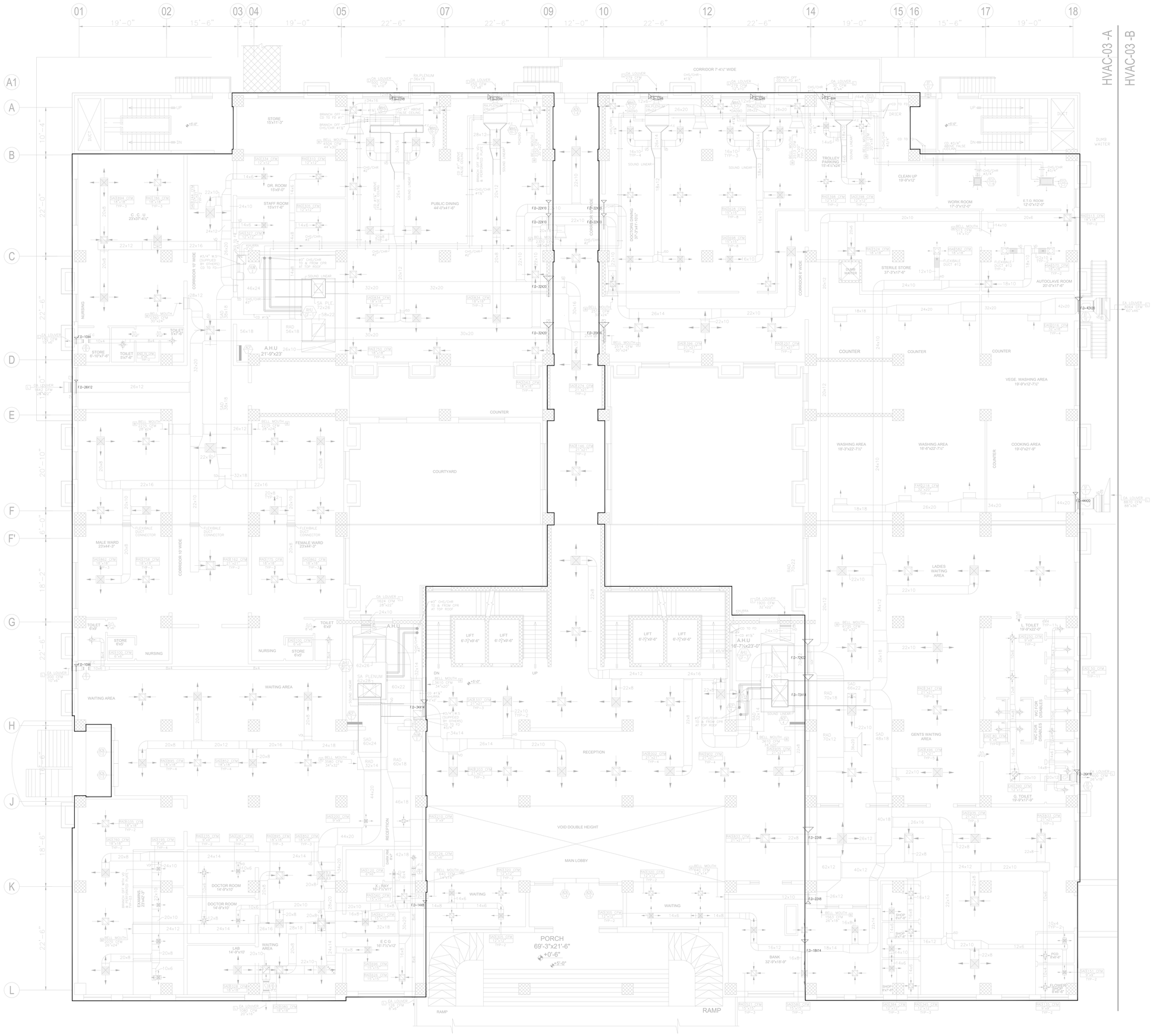
PROJECT
CONSULTANCY SERVICES FOR FIRE RISK ASSESSMENT, FEASIBILITY STUDY, DESIGN/LAYOUT & SUPERVISION

TITLE
PROPOSED FIRE DAMPER PLAN B.F

DATE 12-07-2023

SCALE N.T.S

PROJECT NO.	DRAWING NUMBER	SHEET	SIZE	REV
VISP-L-E22-0313	V-0313-F-D-0038	01 OF 01	A1	A



NOTE:
ALL DIMENSIONS IN INCHES

FIRE DAMPER

ISSUE FOR TENDER

REV	DESCRIPTION	DATE	DRN	CHK	APP
	TOTAL COVERED AREA				

REVISION

CLIENT
PESHAWAR INSTITUTES OF CARDIOLOGY

CONSULTANT
VELOSI INTEGRITY & SAFETY PAK.(PVT).LTD
207-A, P-BRICK Gulberg III, Lahore, Pakistan
VELOSI Engineering For A Safer World

DRAWN BY; T.A

REVIEWED UA

CHECKED UA

APPROVED MA

PROJECT
CONSULTANCY SERVICES FOR FIRE RISK ASSESSMENT, FEASIBILITY STUDY, DESIGN/LAYOUT & SUPERVISION

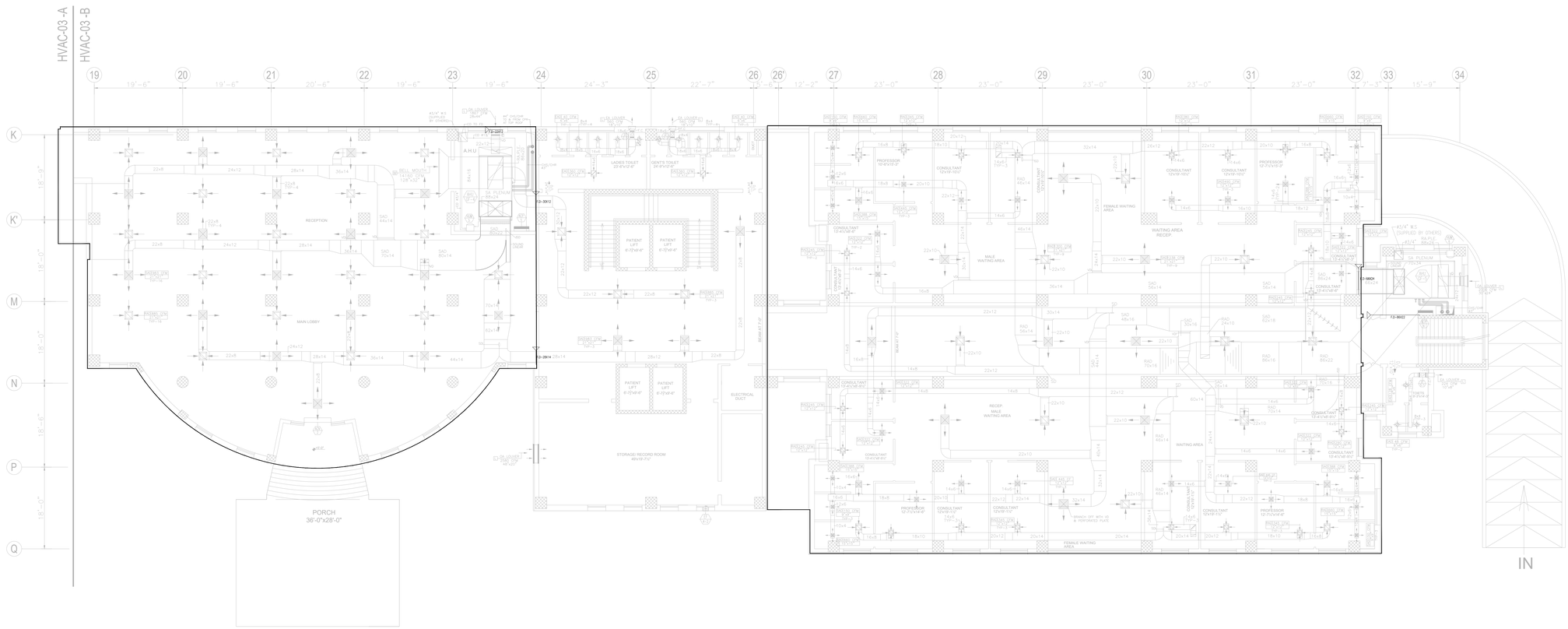
TITLE
PROPOSED FIRE DAMPER PLAN G.F

DATE	SCALE
12-07-2023	N.T.S

PROJECT NO.	DRAWING NUMBER	SHEET	SIZE	REV
VISP-L-E22-0313	V-0313-F-D-0039	01 OF 01	A1	A

NOTE:
ALL DIMENSIONS IN INCHES

FIRE DAMPER



ISSUE FOR TENDER

REV	DESCRIPTION	DATE	DRN	CHK	APP

TOTAL COVERED AREA

REVISION

CLIENT
PESHAWAR INSTITUTES OF CARDIOLOGY

CONSULTANT
VELOSI INTEGRITY & SAFETY PAK.(PVT).LTD
207-A, P-BRICK Gulberg III, Lahore, Pakistan
VELOSI Engineering For A Safer World

DRAWN BY; T.A

REVIEWED UA

CHECKED UA

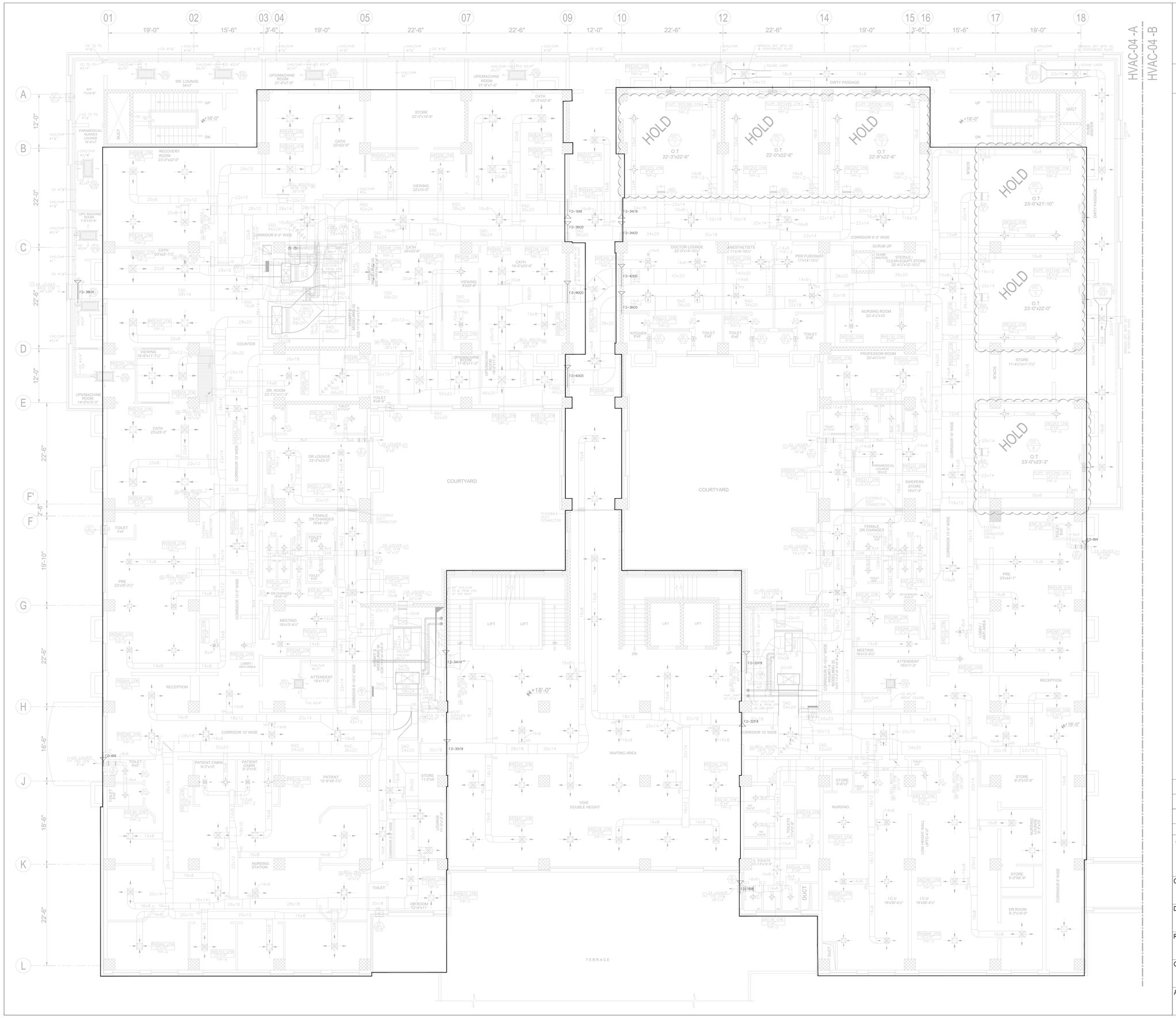
APPROVED MA

PROJECT
CONSULTANCY SERVICES FOR FIRE RISK ASSESSMENT, FEASIBILITY STUDY, DESIGN/LAYOUT & SUPERVISION

TITLE
PROPOSED FIRE DAMPER PLAN G.F (OPD)

DATE	SCALE
12-07-2023	N.T.S

PROJECT NO.	DRAWING NUMBER	SHEET	SIZE	REV
VISP-L-E22-0313	V-0313-F-D-0040	01 OF 01	A1	A



NOTE:
ALL DIMENSIONS IN INCHES

FIRE DAMPER

ISSUE FOR TENDER

REV	DESCRIPTION	DATE	DRN	CHK	APP

TOTAL COVERED AREA

REVISION

CLIENT
PESHAWAR INSTITUTES OF CARDIOLOGY

CONSULTANT
VELOSI INTEGRITY & SAFETY PAK.(PVT).LTD
207-A, P-BRICK Gulberg III, Lahore, Pakistan
VELOSI Engineering For A Safer World

DRAWN BY; T.A

REVIEWED UA

CHECKED UA

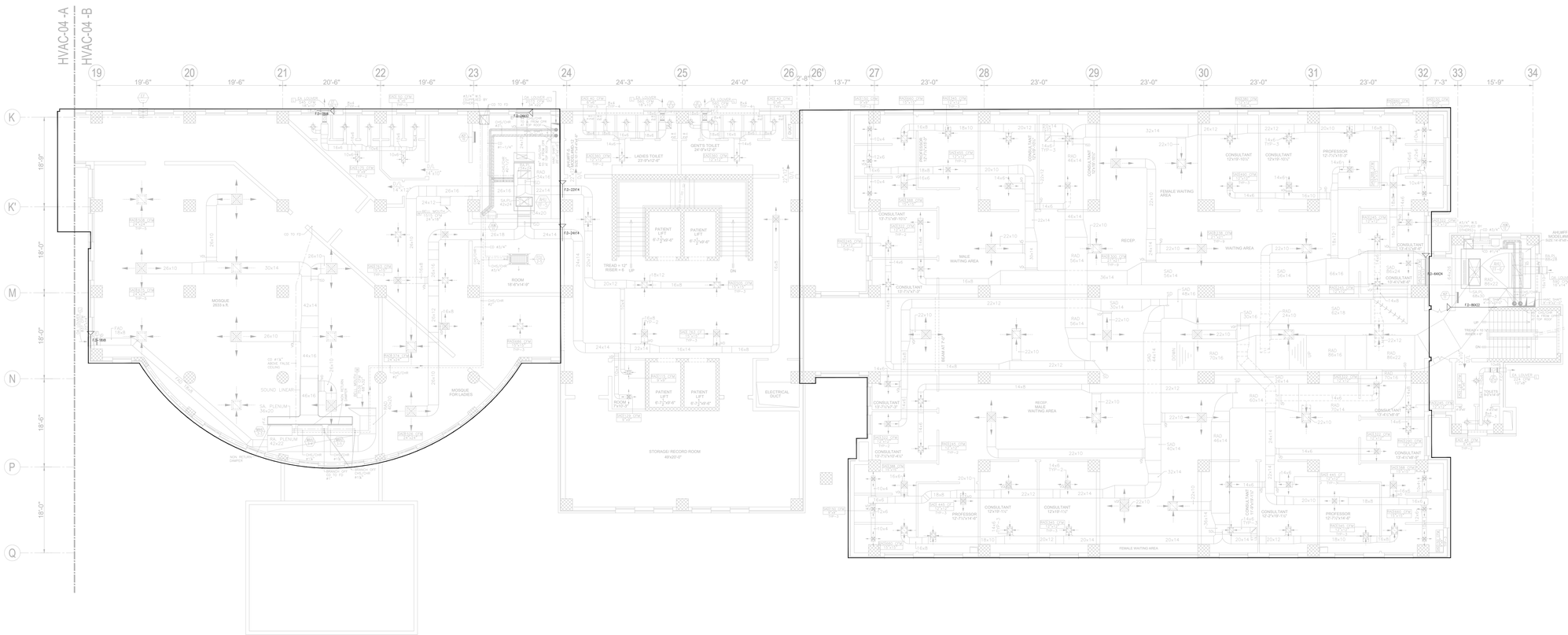
APPROVED MA

PROJECT
CONSULTANCY SERVICES FOR FIRE RISK ASSESSMENT, FEASIBILITY STUDY, DESIGN/LAYOUT & SUPERVISION

TITLE
PROPOSED FIRE DAMPER PLAN F.F

DATE	SCALE
12-07-2023	N.T.S

PROJECT NO.	DRAWING NUMBER	SHEET	SIZE	REV
VISP-L-E22-0313	V-0313-F-D-0041	01 OF 01	A1	A



NOTE:
ALL DIMENSIONS IN INCHES

FIRE DAMPER

ISSUE FOR TENDER

REV	DESCRIPTION	DATE	DRN	CHK	APP

TOTAL COVERED AREA

REVISION

CLIENT
PESHAWAR INSTITUTES OF CARDIOLOGY

CONSULTANT
VELOSI INTEGRITY & SAFETY PAK.(PVT).LTD
207-A, P-BRICK Gulberg III, Lahore, Pakistan
VELOSI Engineering For A Safer World

DRAWN BY; T.A

REVIEWED UA

CHECKED UA

APPROVED MA

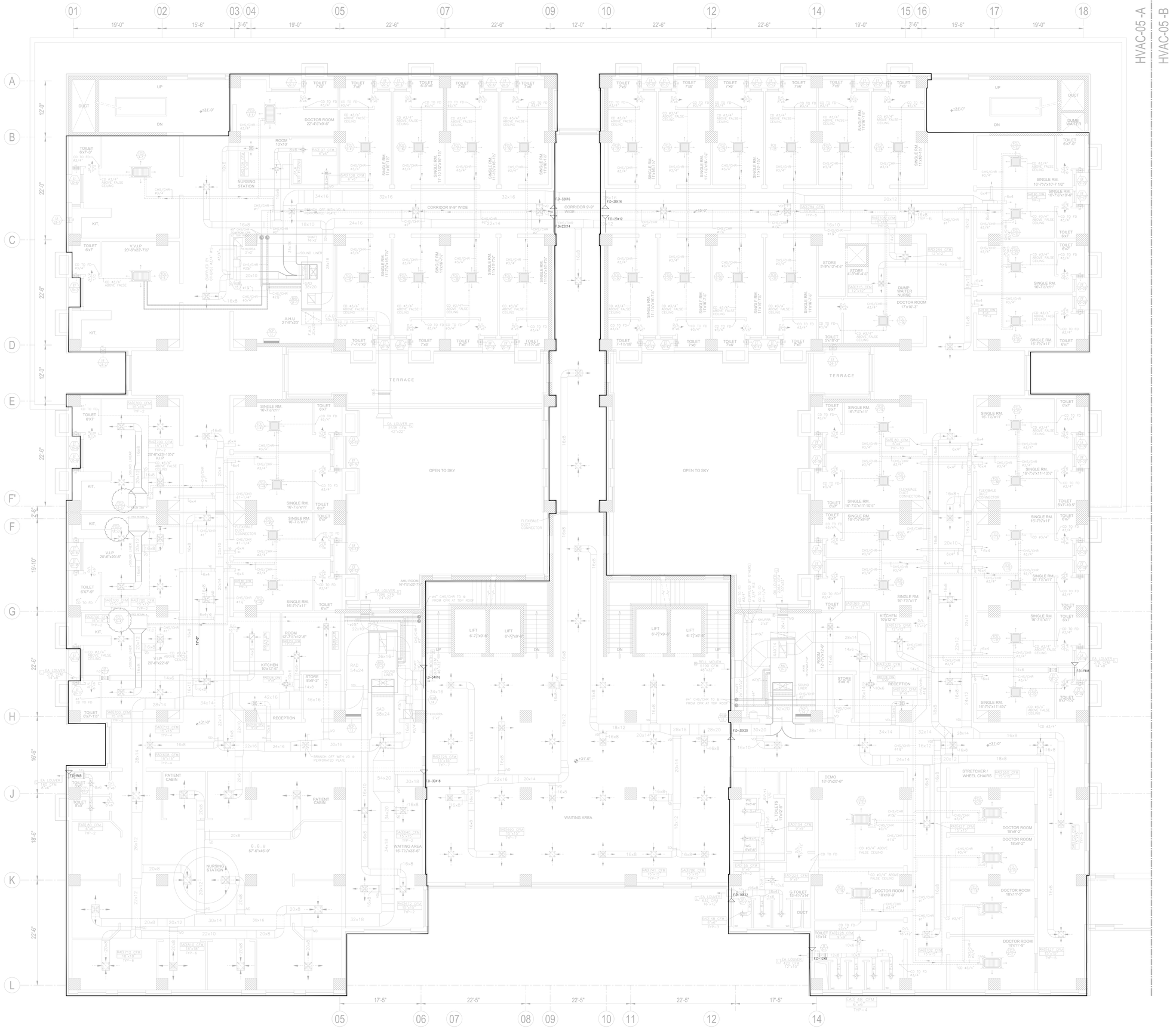
PROJECT
CONSULTANCY SERVICES FOR FIRE RISK ASSESSMENT, FEASIBILITY STUDY, DESIGN/LAYOUT & SUPERVISION

TITLE
PROPOSED FIRE DAMPER PLAN F.F (OPD)

DATE 12-07-2023

SCALE N.T.S

PROJECT NO.	DRAWING NUMBER	SHEET	SIZE	REV
VISP-L-E22-0313	V-0313-F-D-0042	01 OF 01	A1	A



NOTE:
ALL DIMENSIONS IN INCHES

FIRE DAMPER

ISSUE FOR TENDER

REV	DESCRIPTION	DATE	DRN	CHK	APP

TOTAL COVERED AREA

REVISION

CLIENT
PESHAWAR INSTITUTES OF CARDIOLOGY

CONSULTANT
VELOSI INTEGRITY & SAFETY PAK.(PVT).LTD
207-A, P-BRICK Gulberg III, Lahore, Pakistan
VELOSI Engineering For A Safer World

DRAWN BY; T.A

REVIEWED UA

CHECKED UA

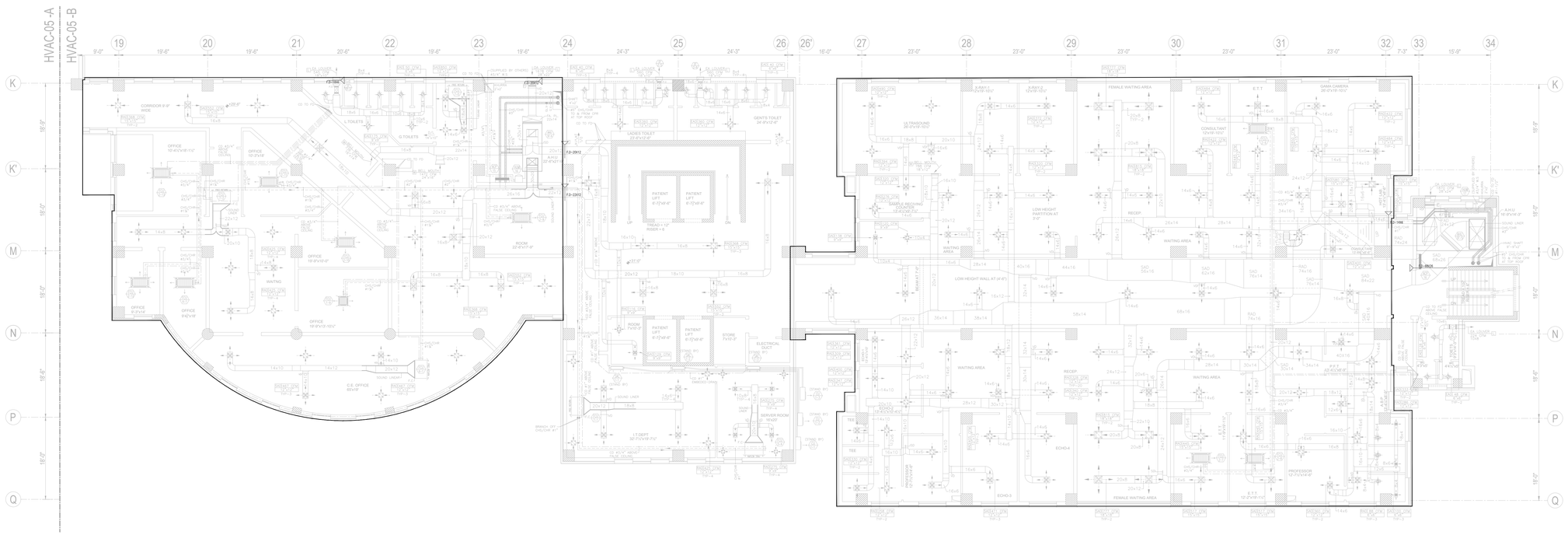
APPROVED MA

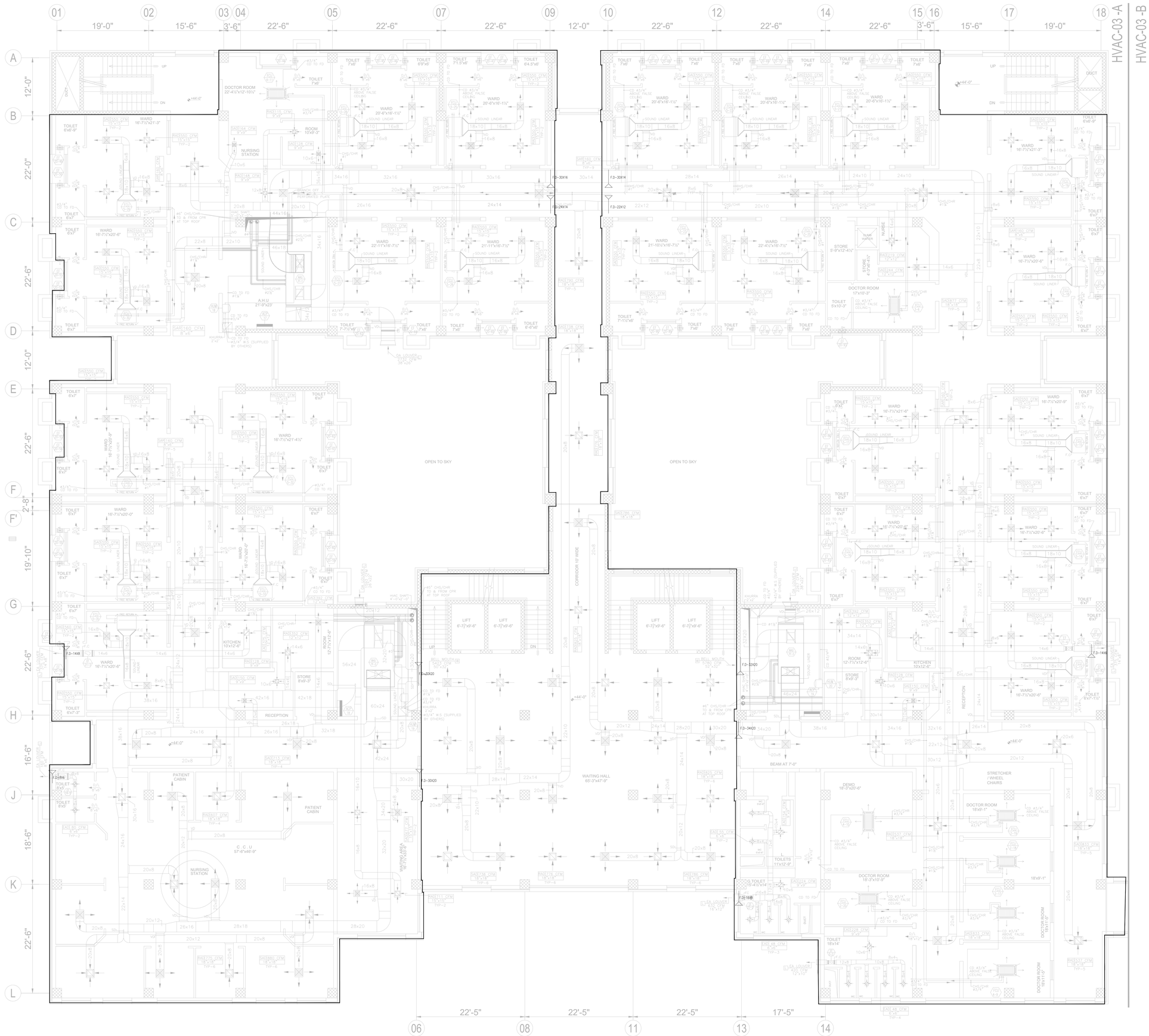
PROJECT
CONSULTANCY SERVICES FOR FIRE RISK ASSESSMENT, FEASIBILITY STUDY, DESIGN/LAYOUT & SUPERVISION

TITLE
PROPOSED FIRE & SMOKE DAMPER S.F

DATE	SCALE
12-07-2023	N.T.S

PROJECT NO.	DRAWING NUMBER	SHEET	SIZE	REV
VISP-L-E22-0313	V-0313-F-D-0043	01 OF 01	A1	A


HVAC-05 -A
HVAC-05 -B
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
K
K'
M
N
P
Q
CORRIDOR 9'-0" WIDE
OFFICE 10'-4"X15'-11½"
OFFICE 10'-0"X16'
OFFICE 19'-9"X10'-0"
OFFICE 19'-9"X18'-10½"
OFFICE 9'-3"X14'
OFFICE 9'-6"X18'
C.E. OFFICE 8'X18'
L.T.DEPT 32'-7½"X18'-7½"
ROOM 22'-9"X11'-3"
L.TOILETS
G.TOILETS
LADIES TOILET 21-6"X12'-6"
GENT'S TOILET 24'-9"X12'-6"
PATIENT LIFT 6'-0"X4'-6"
STORE 7'X18'-0"
ELECTRICAL DUCT
SERVER ROOM 16'X20'
A.H.U 10'-9"X4'-3"
FEMALE WAITING AREA
CONSULTANT 12'X18'-10½"
E.T.T
GAMA CAMERA 26'-0"X18'-10½"
LE TRASOUND 26'-0"X10'-10½"
X-RAY12 12'X18'-10½"
X-RAY13 12'X18'-10½"
SAMPLE RECEIVE COUNTER LE-RAD 2'0"
LOW HEIGHT PARTITION AT 3'-0"
RECEP
WAITING AREA
LOW HEIGHT WALL AT (4'-6")
SAD 58x16
SAD 60x16
SAD 76x14
SAD 76x16
SAD 84x22
SAD 76x14
SAD 76x16
SAD 76x14
SAD 76x16
SAD 84x22
SAD 58x16
SAD 62x16
SAD 76x14
SAD 76x16
SAD 84x22
ECHO-4
ECHO-3
E.E.G 12'-2"X18'-10½"
PROFESSOR 12'-2"X14'-6"
PFT 10'-0"X8'-6"
L.T.DEPT
TEE
P-BRICK
SOUND LINER
SOUND BFI
STONE BFI
FIRE DAMPER
SMOKE DAMPER
SAD 84x22
SAD 84x22
SAD 84x22



NOTE:
ALL DIMENSIONS IN INCHES

FIRE DAMPER

ISSUE FOR TENDER

REV	DESCRIPTION	DATE	DRN	CHK	APP

TOTAL COVERED AREA

REVISION

CLIENT
PESHAWAR INSTITUTES OF CARDIOLOGY

CONSULTANT
VELOSI INTEGRITY & SAFETY PAK.(PVT).LTD
207-A, P-BRICK Gulberg III, Lahore, Pakistan
VELOSI Engineering For A Safer World

DRAWN BY; T.A

REVIEWED UA

CHECKED UA

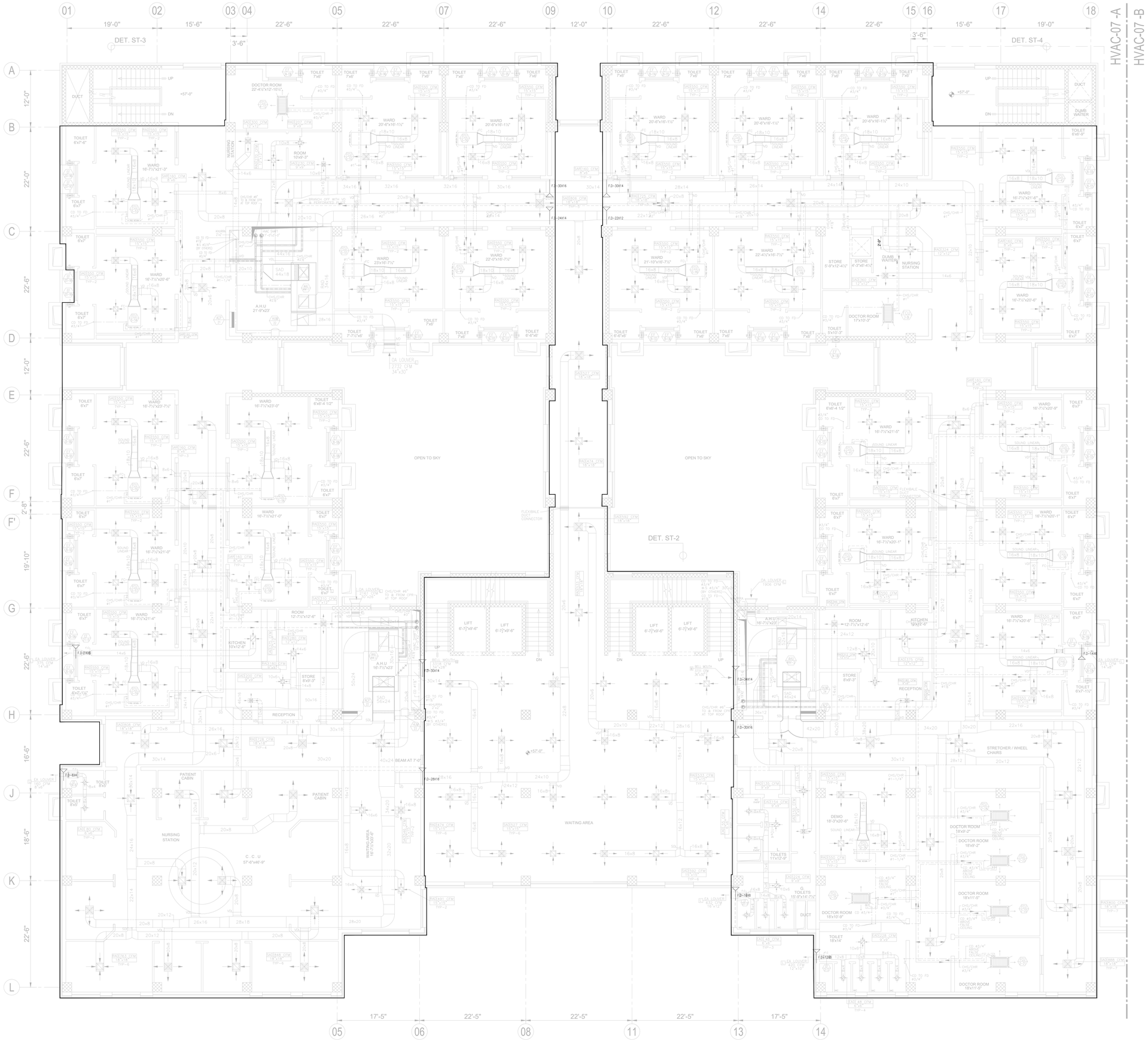
APPROVED MA

PROJECT
CONSULTANCY SERVICES FOR FIRE RISK ASSESSMENT, FEASIBILITY STUDY, DESIGN/LAYOUT & SUPERVISION

TITLE
PROPOSED FIRE & SMOKE DAMPER T.F

DATE 12-07-2023 | SCALE N.T.S

PROJECT NO.	DRAWING NUMBER	SHEET	SIZE	REV
VISP-L-E22-0313	V-0313-F-D-0045	01 OF 01	A1	A



NOTE:
ALL DIMENSIONS IN INCHES

FIRE DAMPER

ISSUE FOR TENDER

REV	DESCRIPTION	DATE	DRN	CHK	APP

TOTAL COVERED AREA

REVISION

CLIENT
PESHAWAR INSTITUTES OF CARDIOLOGY

CONSULTANT
VELOSI INTEGRITY & SAFETY PAK.(PVT).LTD
207-A, P-BRICK Guiberg III, Lahore, Pakistan
VELOSI Engineering For A Safer World

DRAWN BY; T.A

REVIEWED UA

CHECKED UA

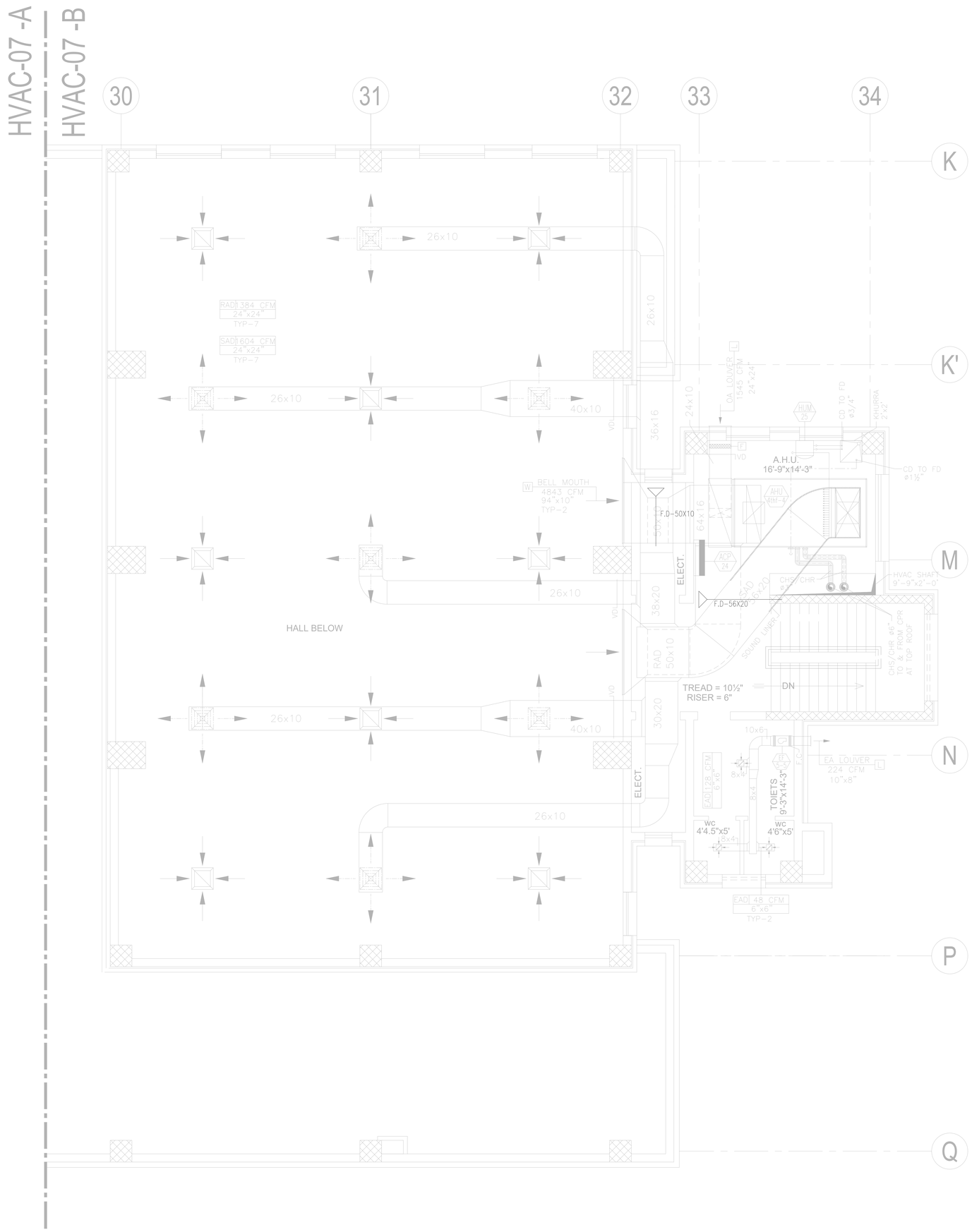
APPROVED MA

PROJECT
CONSULTANCY SERVICES FOR FIRE RISK ASSESSMENT, FEASIBILITY STUDY, DESIGN/LAYOUT & SUPERVISION

TITLE
PROPOSED FIRE & SMOKE DAMPER 4th.F

DATE	SCALE
12-07-2023	N.T.S

PROJECT NO.	DRAWING NUMBER	SHEET	SIZE	REV
VISP-L-E22-0313	V-0313-F-D-0046	01 OF 01	A1	A



NOTE:
ALL DIMENSIONS IN INCHES

FIRE DAMPER

ISSUE FOR TENDER

REV	DESCRIPTION	DATE	DRN	CHK	APP

TOTAL COVERED AREA

REVISION

CLIENT
PESHAWAR INSTITUTES OF CARDIOLOGY

CONSULTANT
VELOSI INTEGRITY & SAFETY PAK.(PVT).LTD
207-A, P-BRICK Gulberg III, Lahore, Pakistan
VELOSI Engineering For A Safer World

DRAWN BY; T.A

REVIEWED UA

CHECKED UA

APPROVED MA

PROJECT
CONSULTANCY SERVICES FOR FIRE RISK ASSESSMENT, FEASIBILITY STUDY, DESIGN/LAYOUT & SUPERVISION

TITLE
PROPOSED FIRE DAMPER PLAN 4th.F (OPD)

DATE	SCALE
12-07-2023	N.T.S

PROJECT NO.	DRAWING NUMBER	SHEET	SIZE	REV
VISP-L-E22-0313	V-0313-F-D-0047	01 OF 01	A1	A

CONSULTANCY SERVICES FOR FIRE RISK ASSESSMENT, FEASIBILITY STUDY, DESIGN/LAYOUT & SUPERVISION

TITLE

PROPOSED EVACUATION PLAN

CONSULTANT:

VELOSI
Engineering For A Safer World

VELOSI INTEGRITY & SAFETY PAK.(PVT).LTD
207-A, P-Block Gulberg III, Lahore, Pakistan

CLIENT:

PESHAWAR INSTITUTES OF CARDIOLOGY

BASEMENT PLAN

LEGENDS

SYMBOL	DESCRIPTION
	EXIT LIGHT
	CO2 & DRY POWDER FIRE EXTINGUISHER
	FIRE BLANKET

ISSUE FOR TENDER

REV	DESCRIPTION	DATE	DRN	CHK	APP
TOTAL COVERED AREA					

REVISION

CLIENT
PESHAWAR INSTITUTES OF CARDIOLOGY

CONSULTANT
VELOSI INTEGRITY & SAFETY PAK.(PVT).LTD
207-A, P-BRICK Gulberg III, Lahore, Pakistan
VELOSI Engineering For A Safer World

DRAWN BY; T.A

REVIEWED UA

CHECKED UA

APPROVED MA

PROJECT
CONSULTANCY SERVICES FOR FIRE RISK ASSESSMENT, FEASIBILITY STUDY, DESIGN/LAYOUT & SUPERVISION

TITLE
PROPOSED EVACUATION PLAN B.F

DATE 12-07-2023 | SCALE N.T.S

PROJECT NO.	DRAWING NUMBER	SHEET	SIZE	REV
VISP-L-E22-0313	V-0313-F-D-0048	01 OF 01	A1	A

GROUND FLOOR PLAN

LEGENDS

SYMBOL	DESCRIPTION
	EXIT LIGHT
	CO2 & DRY POWDER FIRE EXTINGUISHER
	FIRE BLANKET

ISSUE FOR TENDER

REV	DESCRIPTION	DATE	DRN	CHK	APP

TOTAL COVERED AREA

REVISION

CLIENT

PESHAWAR INSTITUTES OF CARDIOLOGY

CONSULTANT

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207-A, P-BRICK Gulberg III, Lahore, Pakistan

VELOSI
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REVIEWED UA

CHECKED UA

APPROVED MA

PROJECT

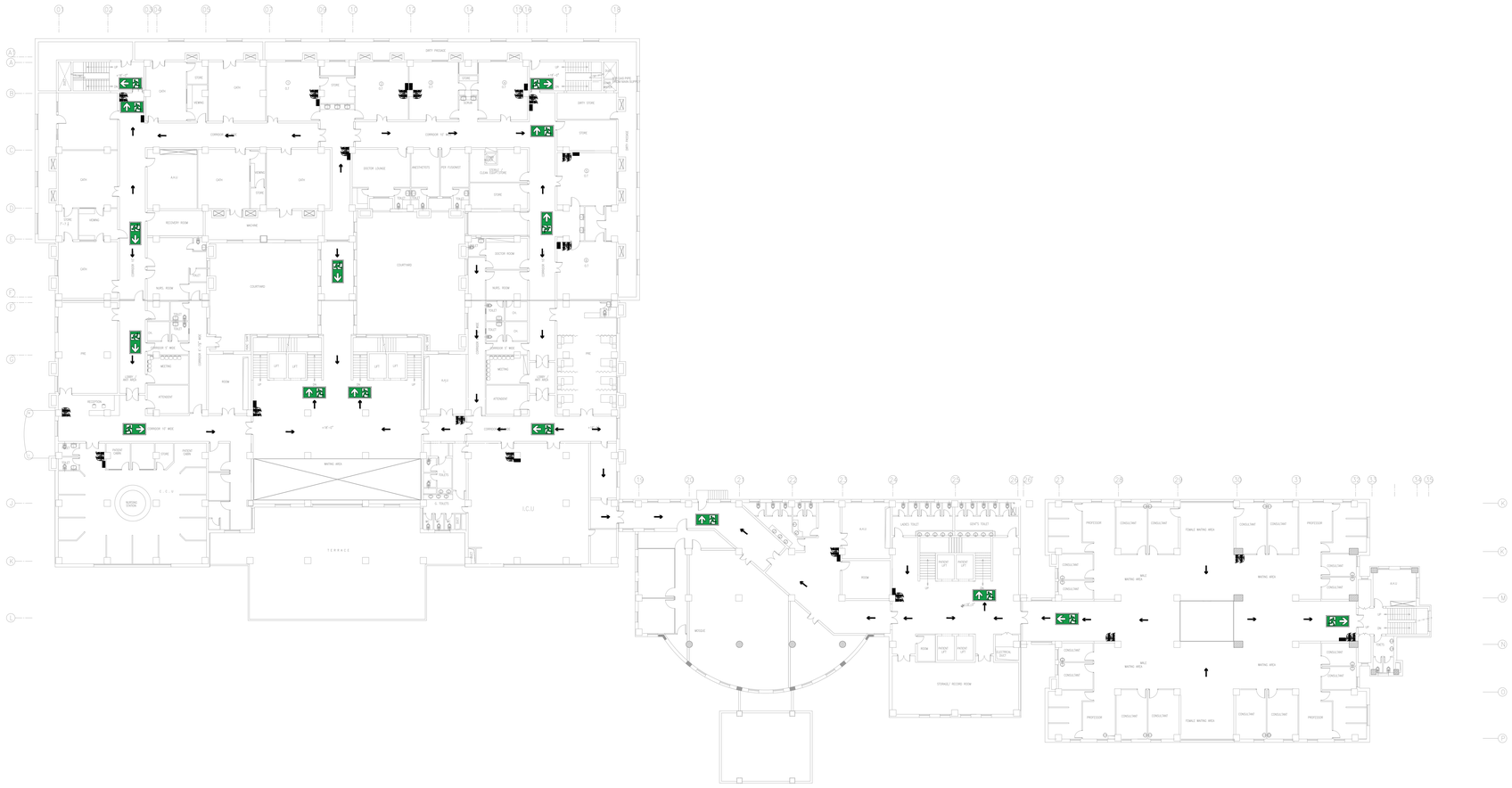
CONSULTANCY SERVICES FOR FIRE RISK ASSESSMENT, FEASIBILITY STUDY, DESIGN/LAYOUT & SUPERVISION

TITLE

PROPOSED EVACUATION PLAN G.F

DATE	SCALE
12-07-2023	N.T.S

PROJECT NO.	DRAWING NUMBER	SHEET	SIZE	REV
VISP-L-E22-0313	V-0313-F-D-0049	01 OF 01	A1	A



1st FLOOR PLAN

LEGENDS

SYMBOL	DESCRIPTION
	EXIT LIGHT
	CO2 & DRY POWDER FIRE EXTINGUISHER
	FIRE BLANKET

ISSUE FOR TENDER

REV	DESCRIPTION	DATE	DRN	CHK	APP

TOTAL COVERED AREA

REVISION

CLIENT

PESHAWAR INSTITUTES OF CARDIOLOGY

CONSULTANT

VELOSI INTEGRITY & SAFETY PAK.(PVT).LTD
207-A, P-BRICK Gulberg III, Lahore, Pakistan

VELOSI
Engineering For A Safer World

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REVIEWED UA

CHECKED UA

APPROVED MA

PROJECT
CONSULTANCY SERVICES FOR FIRE RISK ASSESSMENT, FEASIBILITY STUDY, DESIGN/LAYOUT & SUPERVISION

TITLE
PROPOSED EVACUATION PLAN F.F

DATE	SCALE
12-07-2023	N.T.S

PROJECT NO.	DRAWING NUMBER	SHEET	SIZE	REV
VISP-L-E22-0313	V-0313-F-D-0050	01 OF 01	A1	A

2nd FLOOR PLAN

LEGENDS

SYMBOL	DESCRIPTION
	EXIT LIGHT
	CO2 & DRY POWDER FIRE EXTINGUISHER
	FIRE BLANKET

ISSUE FOR TENDER

REV	DESCRIPTION	DATE	DRN	CHK	APP

TOTAL COVERED AREA

REVISION

CLIENT

PESHAWAR INSTITUTES OF CARDIOLOGY

CONSULTANT

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207-A, P-BRICK Gulberg III, Lahore, Pakistan
VELOSI Engineering For A Safer World

DRAWN BY; T.A

REVIEWED UA

CHECKED UA

APPROVED MA

PROJECT
CONSULTANCY SERVICES FOR FIRE RISK ASSESSMENT, FEASIBILITY STUDY, DESIGN/LAYOUT & SUPERVISION

TITLE
PROPOSED EVACUATION PLAN 2.F

DATE	SCALE
12-07-2023	N.T.S

PROJECT NO.	DRAWING NUMBER	SHEET	SIZE	REV
VISP-L-E22-0313	V-0313-F-D-0051	01 OF 01	A1	A

3rd FLOOR PLAN

LEGENDS

SYMBOL	DESCRIPTION
	EXIT LIGHT
	CO2 & DRY POWDER FIRE EXTINGUISHER
	FIRE BLANKET

ISSUE FOR TENDER

REV	DESCRIPTION	DATE	DRN	CHK	APP

TOTAL COVERED AREA

REVISION

CLIENT

PESHAWAR INSTITUTES OF CARDIOLOGY

CONSULTANT

VELOSI INTEGRITY & SAFETY PAK.(PVT).LTD
207-A, P-BRICK Gulberg III, Lahore, Pakistan

VELOSI
Engineering For A Safer World

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REVIEWED UA

CHECKED UA

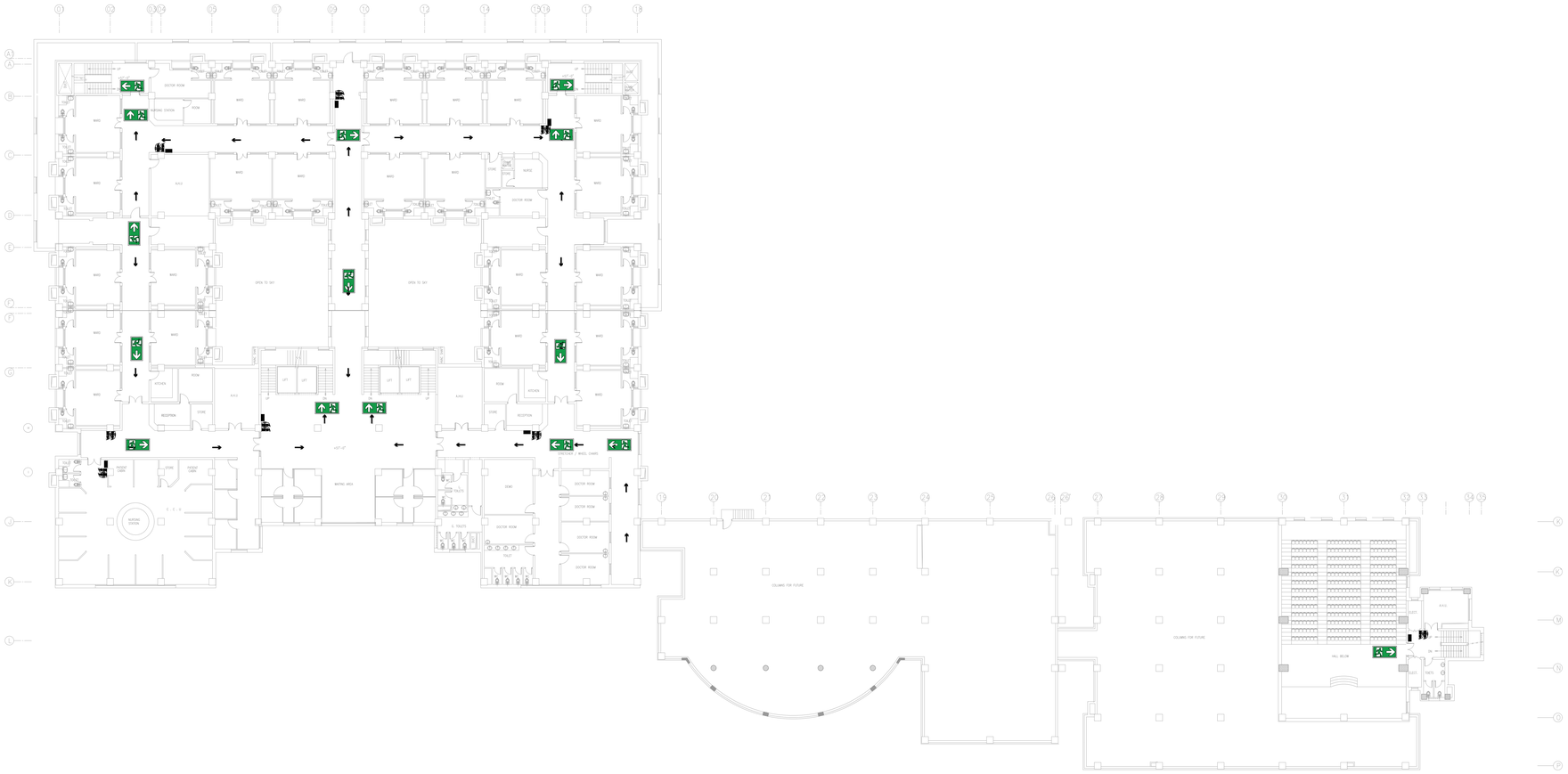
APPROVED MA

PROJECT
CONSULTANCY SERVICES FOR FIRE RISK ASSESSMENT, FEASIBILITY STUDY, DESIGN/LAYOUT & SUPERVISION

TITLE
PROPOSED EVACUATION PLAN 3.F

DATE	SCALE
12-07-2023	N.T.S

PROJECT NO.	DRAWING NUMBER	SHEET	SIZE	REV
VISP-L-E22-0313	V-0313-F-D-0052	01 OF 01	A1	A



4th FLOOR PLAN

LEGENDS

SYMBOL	DESCRIPTION
	EXIT LIGHT
	CO2 & DRY POWDER FIRE EXTINGUISHER
	FIRE BLANKET

ISSUE FOR TENDER

REV	DESCRIPTION	DATE	DRN	CHK	APP

TOTAL COVERED AREA

REVISION

CLIENT
PESHAWAR INSTITUTES OF CARDIOLOGY

CONSULTANT
VELOSI INTEGRITY & SAFETY PAK.(PVT).LTD
207-A, P-BRICK Gulberg III, Lahore, Pakistan
VELOSI Engineering For A Safer World

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REVIEWED UA

CHECKED UA

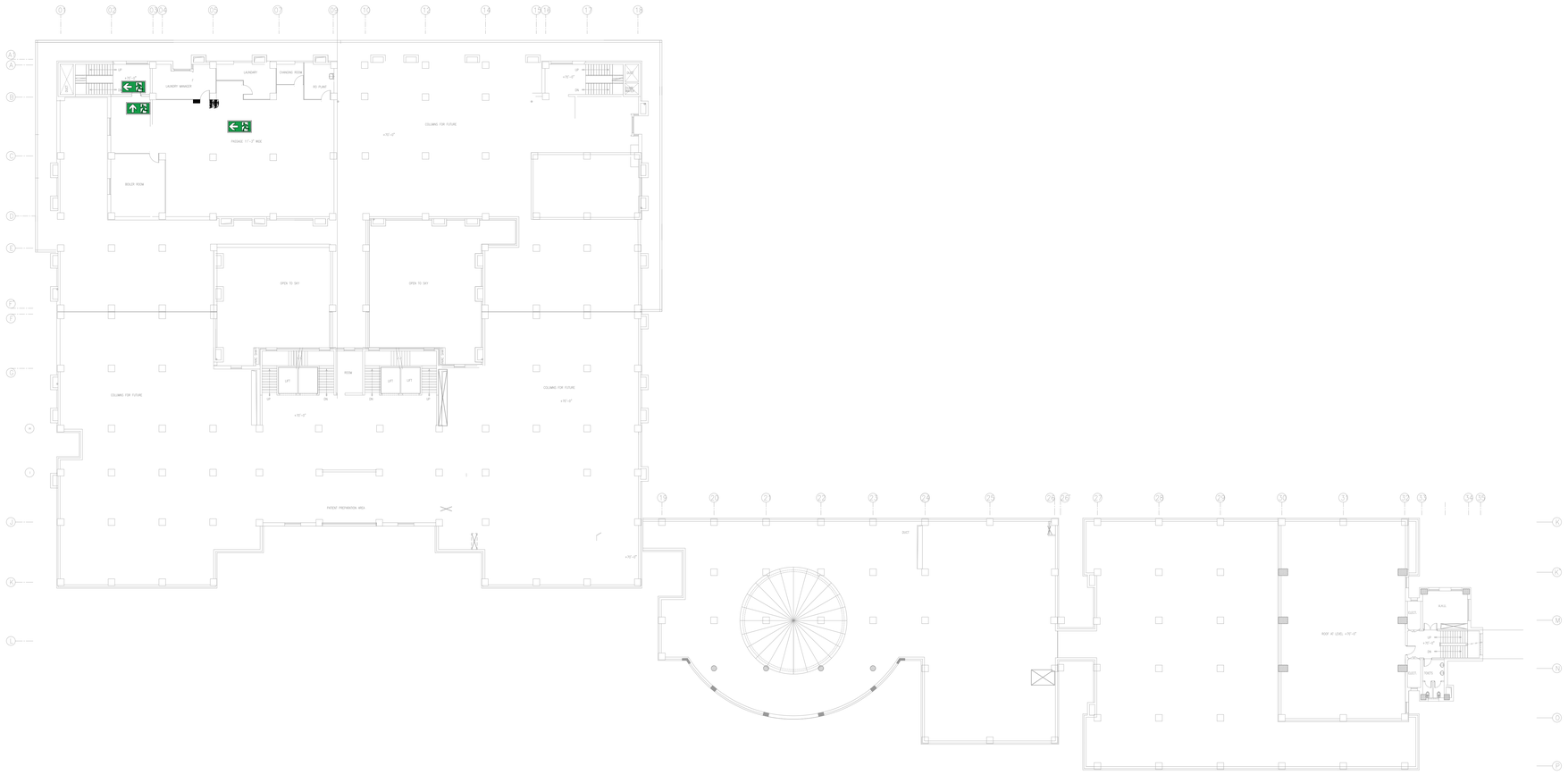
APPROVED MA

PROJECT
CONSULTANCY SERVICES FOR FIRE RISK ASSESSMENT, FEASIBILITY STUDY, DESIGN/LAYOUT & SUPERVISION

TITLE
PROPOSED EVACUATION PLAN 4.F

DATE	SCALE
12-07-2023	N.T.S

PROJECT NO.	DRAWING NUMBER	SHEET	SIZE	REV
VISP-L-E22-0313	V-0313-F-D-0053	01 OF 01	A1	A



5th. FLOOR PLAN

LEGENDS

SYMBOL	DESCRIPTION
	EXIT LIGHT
	CO2 & DRY POWDER FIRE EXTINGUISHER
	FIRE BLANKET

ISSUE FOR TENDER

REV	DESCRIPTION	DATE	DRN	CHK	APP
TOTAL COVERED AREA					

REVISION

CLIENT

PESHAWAR INSTITUTES OF CARDIOLOGY

CONSULTANT

VELOSI INTEGRITY & SAFETY PAK.(PVT).LTD
207-A, P-BRICK Gulberg III, Lahore, Pakistan

VELOSI
Engineering For A Safer World

DRAWN BY; T.A

REVIEWED UA

CHECKED UA

APPROVED MA

PROJECT

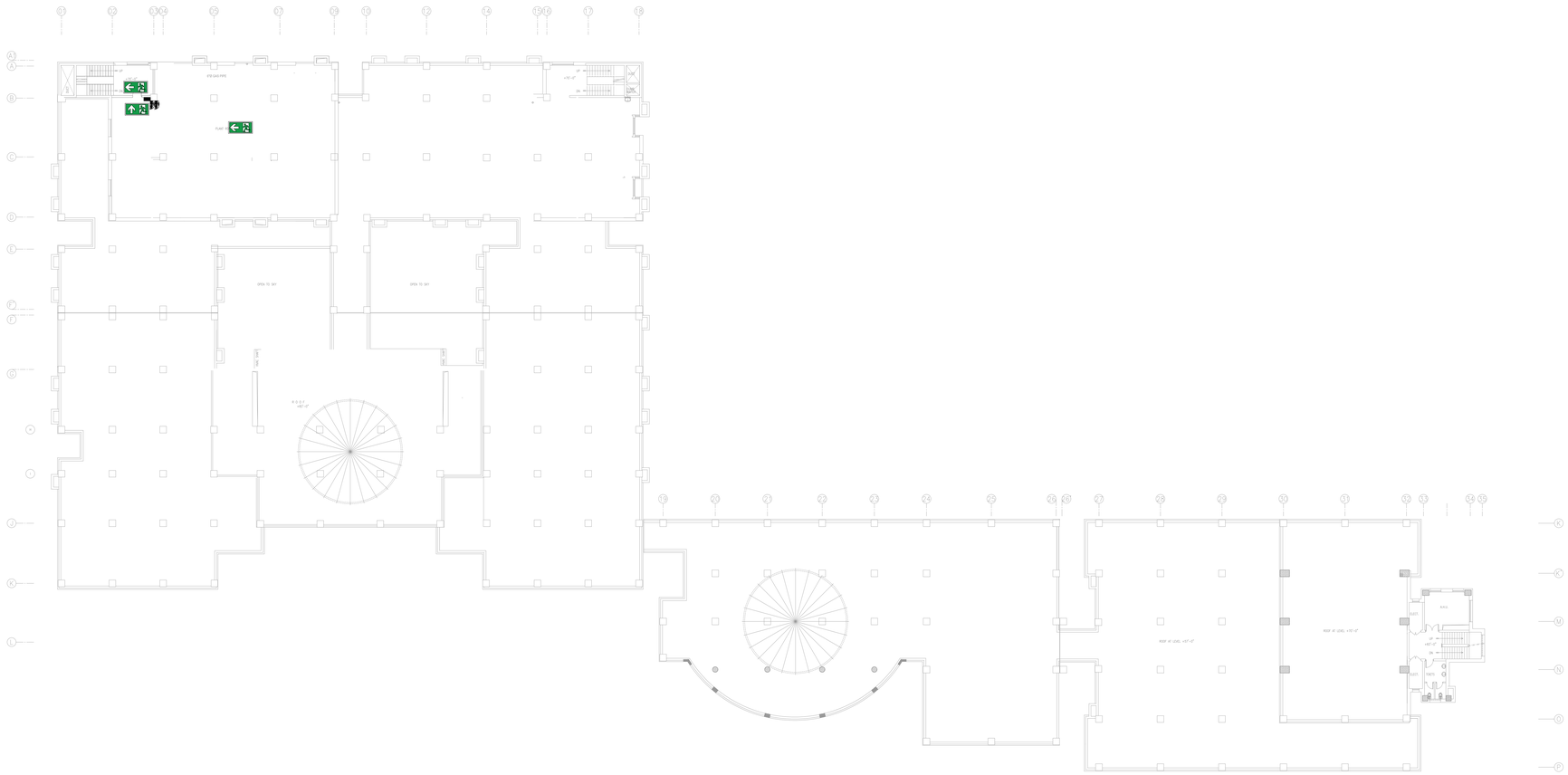
CONSULTANCY SERVICES FOR FIRE RISK ASSESSMENT, FEASIBILITY STUDY, DESIGN/LAYOUT & SUPERVISION

TITLE

PROPOSED EVACUATION PLAN 5.F

DATE	SCALE
12-07-2023	N.T.S

PROJECT NO.	DRAWING NUMBER	SHEET	SIZE	REV
VISP-L-E22-0313	V-0313-F-D-0054	01 OF 01	A1	A



6TH FLOOR PLAN

LEGENDS

SYMBOL	DESCRIPTION
	EXIT LIGHT
	CO2 & DRY POWDER FIRE EXTINGUISHER
	FIRE BLANKET

ISSUE FOR TENDER

REV	DESCRIPTION	DATE	DRN	CHK	APP

TOTAL COVERED AREA

REVISION

CLIENT

PESHAWAR INSTITUTES OF CARDIOLOGY

CONSULTANT

VELOSI INTEGRITY & SAFETY PAK.(PVT).LTD
207-A, P-BRICK Gulberg III, Lahore, Pakistan

VELOSI
Engineering For A Safer World

DRAWN BY; T.A

REVIEWED UA

CHECKED UA

APPROVED MA

PROJECT
CONSULTANCY SERVICES FOR FIRE RISK ASSESSMENT, FEASIBILITY STUDY, DESIGN/LAYOUT & SUPERVISION

TITLE
PROPOSED EVACUATION PLAN 6.F

DATE	SCALE
12-07-2023	N.T.S

PROJECT NO.	DRAWING NUMBER	SHEET	SIZE	REV
VISP-L-E22-0313	V-0313-F-D-0055	01 OF 01	A1	A