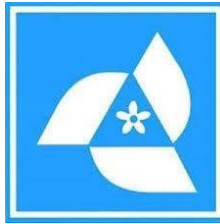


**STATE LIFE INSURANCE CORPORATION
OF PAKISTAN**



BIDDING DOCUMENT

For

**HIRING THE CONTRACTOR FOR SUPPLY, INSTALLATION, TESTING
AND COMMISSIONING OF FIRE FIGHTING / HYDRANT SYSTEM IN
STATE LIFE
BUILDING 11 DAVIS ROAD LAHORE**

AND

**BUILDING CHOWK NAWAN
SHAHERABDALI ROAD MULTAN**

SINGLE STAGE TWO ENVELOPE PROCEDURE

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**INVITATION
FOR BIDS**

INVITATION FOR BID

SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF FIRE FIGHTING / HYDRANT SYSTEM IN STATE LIFE INSURANCE CORPORATION OF PAKISTAN LAHORE & MULTAN

Tender No: RED-LHR-FFS-SLB (LHR-MUL)-04-2025

1. State Life Insurance Corporation of Pakistan (SLICP) invites quotations through **EPADS**, under **single stage two envelope procedure**, from the experienced firms / contractors of the field registered with Income Tax/GST Department & who are on Active Taxpayers List of the Federal Board of Revenue (**FBR**) having valid PEC Registration in (C5 Category) and above and are eligible to handle the work **HIRING THE CONTRACTOR FOR SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF FIRE FIGHTING / HYDRANT SYSTEM IN STATE LIFE INSURANCE CORPORATION OF PAKISTAN LAHORE & MULTAN**.
2. Interested eligible bidders may get the Bidding Documents, containing detailed terms and conditions etc. are available for download on EPADs website <http://eprocure.gov.pk> free of cost. This advertisement is also available on **State Life** website www.statelife.com.pk
3. **Single Stage Two Envelope** bidding procedure shall be applied. **Bids must be submitted Electronically** through **E-PADs**. Physical Bids will not be acceptable.
4. All bids (Technical & Financial Bids) must be accompanied by a Bid Security Rs. 1,000,000 in the format of a pay order / demand draft and hard Copy must be delivered to the office of AGM Real Estate Department, SLIC, Building No.11, 15-A Davis Road, Lahore on or before **30 May, 2025 11:00 AM**. and upload the same on E-PADs on or before. **11:00 AM**. Technical Bids will be opened at **11:30 hrs.** on the same day, in the presence of bidders/their representatives who choose to attend at the same address.
5. Any bid not accompanied by an acceptable Bid Security shall be rejected by the Employer as non-responsive.
6. **SLICP** will not be responsible for any cost or expense incurred by Bidders about the preparation or delivery or E-PAD submission of Bids. **Pre-bid meeting** will be held on **May 19, 2025** in conference room SLICP at **03:00 P.M.**
7. Date of opening of Financial Bids of Technically qualified bidders shall be notified at a later date after the Evaluation of the Technical Bids
8. **Note: All assessments and procuring procedure i.e. receiving, opening and awarding etc. shall be governed by the PPRA Rules 2004.**

**A.G.M/I/C (Real Estate)
State Life Building,
15- A Davis Road, Lahore
Ph # 99200396, 99203443**

**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 Firefighting / hydrant system 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 through State Life own funds in currencies towards the cost of the Project specified in the Bidding Data and it is intended that these Funds 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 C5 and above.
 - b. Duly registered with FBR for Income Tax 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.

IB.4 One Bid per Bidder

- 4.1 Single Stage Two Envelope bidding procedure shall be applied. Bids must be submitted electronically through the E-PADs. No Hard copy submission will be entertained.

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.

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 Firefighting / hydrant system 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.
 13. Integrity Pact
- 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.25, 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 through EPADs. The Procuring Entity will respond to any request for clarification which he receives through EPADs earlier than 07 days prior to the deadline for submission of bids.

Scan Copy of the Procuring Entities response will be uploaded at EPADs for all purchasers of the Bidding Documents, including a description of the enquiry but without identifying its 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 uploaded to EPADs for all purchasers of the Bidding Documents.
- 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 EPADs submission of bids in accordance with Clause IB.19.

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) The Original Bid security must be submitted at the office of AGM Real Estate Department, State Life Insurance Corporation Pakistan (SLICP), Building No. 11, 15-A Davis Road, Lahore before closing date. Failure to do so will result in disqualification and it is important to upload its soft copy on **EPADs** as well.
 - (b) Submit a soft form of power of attorney authorizing the signatory of the bid to act for and on behalf of the bidder;
 - (c) Update the information indicated and listed in the Bidding Data and previously submitted with the application on EPADs 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;
 - (v) Availability of critical equipment.

- (d) Furnish a technical proposal taking into account the various Appendices to Bid specially the following:

Appendix-E to Bid Proposed of Firefighting / hydrant system 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.

- 11.2 Bidders shall submit E-PAD 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.

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 via **E-PADs** 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 up to 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 through **E-PADs**.

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.22.
- 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 there to shall be uploaded on EPADs. 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, Pay Order / Demand Draft / Call Deposit in favor of state life insurance corporation of Pakistan 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 after the acceptance of bid by successful bidder.
- 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 21.1;
 - (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 26.2 hereof; or

(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 Pre-Bid Meeting

- 16.1 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.
- 16.2 The bidders are requested to submit questions, if any, through **E-PADs** so as to reach the Procuring Entity not later than seven (7) days before the proposed pre-bid meeting.
- 16.3 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 through EPADs. 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.
- 16.4 Absence at the pre-bid meeting will not be a cause for disqualification of a bidder.

IB.17 Format and Signing of Bid

- 17.1 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.
- 17.2 All appendices to Bid are to be properly completed and signed.
- 17.3 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.
- 17.4 Each bidder shall prepare by filling out the forms completely and without alterations, specified in the Bidding Data, of the documents comprising the bid as described in Clause IB.7.
- 17.5 All filled documents 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 person persons signing the bid. All filled and signed stamp documents are submitted through EPADs. No need to submit hard copies of documents.
- 17.6 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.
- 17.7 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.
- 17.8 Bidders should retain a copy of the Bidding Documents as their file copy.

D. SUBMISSION OF BIDS IB.18**Sealing and Marking of Bids**

- 18.1 Each bidder shall submit his bid through **E-PADs** as under:
 - (a) The Contractor/ bidder must bid for relevant Lot and shall quote composite rates basis against each lot where applicable. The Tender and all documents relating to the Tender, exchanged between the contractor and the procuring Agency, shall be in English. Any printed literature furnished by the Contractor in another language shall be accompanied by an English translation which shall govern for purposes of interpretation of the Tender.
 - (b) The Tender shall be filled in / accompanied by the prescribed Forms, Annexes, Schedules, Documents, Brochures, Literature, etc. which shall be

typed, completely filled in, stamped and signed by the contractor or his Authorized Representative. Signed and stamped documents will be submitted through EPADs. If volume of the bid contains various set (s) of documents the same must be properly numbered and tagged.

- (c) The Tender shall consist of proposals in one set i.e. the original Via EPADs.
- (d) Proposal Form
- (e) Undertaking (All terms & conditions and qualifications listed anywhere in this bidding /Bidding Documents has been satisfactorily vetted) and affidavit (Integrity Pact)
- (f) Covering letter duly signed and stamped by authorized representative
- (g) Certificate of Company / Firm Registration / Incorporation under the Laws of Pakistan
- (h) Evidence of eligibility of the Bidder / Contractor and the Services
- (i) Evidence of conformity of the Technical Compliance of Equipment/Services of Bidding /Bidding Documents
- (j) List of firm's major clientele
- (k) Submission of undertaking on legal valid and attested stamp paper that the firm is not blacklisted by any of Provincial Government Department, Agency, Organization or autonomous body or private sector organization anywhere in Pakistan.
- (l) Valid Registration Certificate for Income Tax & Sales Tax
- (m) Power of Attorney, if an authorized representative is appointed
- (n) Price Schedule

IB.19 Deadline for Submission of Bids

- 19.1 Bids must be uploaded on E-pads on or before closing date & time. Instead of physical bid, only original bid security must be submitted at AGM Real Estate Office before closing date. Soft copy of bid security must be uploaded at EPADs. Failure to do will result in disqualification or non-responsive.
- 19.2 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.20 Late Bids

- 20.1 Bid would not be uploaded after closing date and time. The mean the bidder is disqualified automatically. So, bidder should be uploaded their bids on EPADs before closing date and time

IB.21 Modification, Substitution and Withdrawal of Bids

- 21.1 Any bidder may modify, substitute or withdraw his bid after bid submission on EPADs before closing date and time, after dead line modification, substitution and withdrawal of bids will not be possible
- 21.2 No bid may be modified by a bidder after the deadline for submission of bids except in accordance with Sub-Clauses 21.1 and 26.2.
- 21.3 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.22 Bid Opening

- 22.1 The Procuring Entity will open first Technical Bids on E-PADs. Then the bids will be evaluated, and after bid evaluation process is completed then financial bids of technically qualified bidders will be opened on EPADs. The bidders' representatives who are present shall sign a register evidencing their attendance.
- 22.2 The bidder's name, total Bid Price, 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.
- 22.3 Procuring Entity shall prepare minutes of the bid opening including the information disclosed to those present.

IB.23 Process to be Confidential

- 23.1 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 fifteen (15) days prior to issue of Letter of Acceptance and place the same on its and Authority's Website. 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.24 Clarification of Bids

- 24.1 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.27.

IB.25 Examination of Bids and Determination of Responsiveness

- 25.1 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.
- 25.2 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.

- 25.3 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.26 Correction of Errors

- 26.1 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
- (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.

- 26.2 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.27 Evaluation and Comparison of Bids

- 27.1 The Procuring Entity will evaluate and compare only the bids determined to be substantially responsive in accordance with Clause IB.25.
- 27.2 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.26;

- (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.
- 27.3 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.
- 27.4 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.31 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.
 - a. 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.
 - b. 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 PPRA Rules)

F. AWARD OF CONTRACT IB.28

Award

- 28.1 Subject to Clauses IB.29 and IB.33, 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 28.2.
- 28.2 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.

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IB.29 Procuring Entity's Right to Accept any Bid and to Reject any or all Bids

- 29.1 Notwithstanding Clause IB.28, 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.

IB.30 Notification of Award

- 30.1 Prior to expiration of the period of bid validity prescribed by the Procuring Entity, the Procuring Entity will upload the Contractor All LOI, LOAs, Contract Agreements on EPADs as well and procuring entity will notify the successful bidder in written that his Bid has been accepted. This letter of acceptance 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").
- 30.2 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.
- 30.3 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.
- 30.4 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.31 Performance Security

- 31.1 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 07 days after the receipt of Letter of Acceptance. The Performance Security shall be of an amount equal to five percent (5%) of the Contract Price in the currency (i.e.) of the Contract at the option of the bidder, in the form of Pay order/ demand draft / Call Deposit Receipt (CDR) or Bank Guarantee from any Scheduled Bank in Pakistan excluding micro finance.
- 31.2 Failure of the successful bidder to comply with the requirements of Sub-Clause IB.31.1 or Clauses IB.32 or IB.34 shall constitute sufficient grounds for the annulment of the award and forfeiture of the Bid Security.

IB.32 Signing of Contract Agreement

- 32.1 The successful bidder shall receive an invitation in form of Letter of Acceptance/work order from office of AGM Real Estate Department, SLIC, Building No.11, 15-A Davis Road, Lahore with the aim to sign a Contract Agreement for Required Works as defined in bidding documents through EPADs.

The successful bidder shall, within Seven days (07) days of receipt of Letter of Acceptance/work order will sign the agreement.

In the event of a withdrawal by a successful bidder, Office of AGM Real Estate Departments may invite the next successful bidder to conclude a Contract Agreement for the Works.

If a successful bidder which was invited by Office of AGM Real Estate Departments to sign Contract Agreement withdraws from the Bidding Process, the Bid Security of the said successful bidder shall be forfeited by Building In charge SLIC.

- 32.2 The formal Agreement between the Procuring Entity and the successful bidder shall be executed within 7 days of the receipt of the Contract Agreement by the successful bidder from the Procuring Entity.

IB.33 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 Entities of the previously awarded contracts, inter alia, reject his bid and/or refer the case to the Pakistan Engineering Council (PEC) and PPRA. Upon such reference, PEC / PPRA 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.34 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 and uploaded on EPADs. Failure to provide such Integrity Pact shall make the bidder non-responsive.

IB.35 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.

IB.36 Services at Site

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 Firefighting / hydrant system 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

IB-37 Contractor's Camp/Temporary Areas and Offices/Site Office for Engineer

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

I-14

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 Entity

The Employer
State Life Insurance Corporation of Pakistan

The Employer Representative is:

Office of AGM Real Estate Department

1.1 Name of the Project & Summary of the Works:

Fire Fighting /Hydrant System in State Life Insurance Corporation of Pakistan Lahore & Multan.

Clause IB.2 Source of Funds

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

State Life Insurance Corporation of Pakistan

Clause IB.7 Contents of Bidding Documents

• Sub-Clause 7.1

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 procurement 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.

Clause IB 14 Bid validity

Sub clause 14.1 Period of Bid validity:

One hundred eighty (180) days

In exceptional circumstances, SLIC may solicit the Bidder's consent to an extension of the period of validity reasons shall 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 Each Bidder shall furnish, as part of his bid, a bid security Rs. 1,000,000/-

Clause IB 16. Pre-Bid Meeting

Sub-clause 16.1 Venue, time, and date of the pre-Bid meeting:

Pre-Bid Meeting will be held on before submission date mentioned in Tender advertisement at the office of AGM Real Estate Department. Prospective Bidder are encouraged to attend the meeting,

Invitation for Bids.

Class IB 17. Sub-Clause 17.4

Format and signing of Bid

Each bidder shall prepare by filling out the forms completely and without alterations, specified in the Bidding Data, of the documents comprising the bid as described in Clause IB.7

Sub-clause 17.5

All filled documents 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 person persons signing the bid. All filled and signed stamp documents are submitted through EPADs. No need to submit hard copies of documents.

Clause IB 18

Sealing and Marking of Bids

Sub-Clause 18.1

(c) the technical bid shall comprise of documents listed in IB 11.1(A) along 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

Sub-Clause 18.2

(a) Bidder should submit the Bid through E-Pad.

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

“Fire Fighting /Hydrant System in State Life Insurance Corporation of Pakistan Building Davis Road Lahore and Chowk Nawan Shaheerabdali Road Multan.”

Identification Number: SLIC-

Clause IB 19

Deadline for submission of Bids

Sub clause 19.1(a)

Bids should be submitted via E-Pad on or before Last Date -----

Clause-IB 22.

Sub-Clause 22.1

Bid Opening

Venue, time, and date of Bid opening.

Opening of Technical Proposals:

Venue: Online (E-PADs) / Office of AGM Real Estate Department, SLIC, Building No. 11, 15-A Davis Road Lahore.

Time: 11:30 AM

Date: 30 May 2025

Opening of Financial Proposals:

Venue: Online (E-PADs) / Office of AGM Real Estate Department, SLIC, Building No. 11, 15-A Davis Road Lahore.

Time: To be announced after Evaluation of Technical Bids.

Date: To be announced after Evaluation of Technical Bids.

Clause IB 27

Evaluation and comparison of Bids

Sub-clause 27.4

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.

- c. 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.
- d. 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 PPRA Rules)

Clause IB 31

Performance Security

Sub-clause 31.1

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 07 days after the receipt of Letter of Acceptance. The Performance Security shall be of an amount equal to five percent (5%) of the Contract Price in the currency (i.e.) of the Contract at the option of the bidder, in the form of Pay order/ demand draft / Call Deposit Receipt (CDR) or Bank Guarantee from any Scheduled Bank in Pakistan excluding micro finance.

Clause IB 32
Sub Clause 32.1

Signing of Contract Agreement

The successful bidder shall receive an invitation in form of Letter of Acceptance/work order from Office of AGM Real Estate Department SLIC with the aim to sign a Contract Agreement for Required Works as defined in bidding documents through EPADs. The successful bidder shall, within Seven days (07) days of receipt of Letter of Acceptance/work order will sign the agreement.

In the event of a withdrawal by a successful bidder, Building In charge SLIC may invite the next successful bidder to conclude a Contract Agreement for the Works.

If a successful bidder which was invited by Building In charge SLIC to sign Contract Agreement withdraws from the Bidding Process, the Bid Security of the said successful bidder shall be forfeited by Building In charge SLIC.

Clause IB.36

Services at Site

Sub-Clause 36.1

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 Firefighting / hydrant system 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-37

Contractor's Camp/Temporary Areas and Offices/Site Office for Engineer

Sub-Clause 37.1

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: “Fire Fighting /Hydrant System in State Life Insurance Corporation of Pakistan Building Davis Road Lahore.”

To:
Office of AGM Real Estate Department
State Life Insurance
Corporation of Pakistan
Davis Road Lahore.

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. “Fire Fighting /Hydrant System in State Life Insurance Corporation of Pakistan Building Davis Road Lahore and Chowk Nawan Shaherabdali Road Multan”
- c) Our Bid consisting of the Technical Bid and the Price Bid shall be valid for the period of one hundred eighty (180) 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,
- 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. "Fire Fighting /Hydrant System in State Life Insurance Corporation of Pakistan Building Davis Road Lahore and Chowk Nawan Shaherabdali Road Multan."

To:

Office of AGM Real Estate Department

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.

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.....

SPECIAL STIPULATIONS

Clause
Conditions of Contract

1.	Authority to issue Variation in Emergency	2.1	As determined by consultant and approved by employer.
2.	Amount of Bid security	15.1	Rs. 1,000,000/-
3.	Amount of Performance Security	31.1	05% of Contract Price stated in the Letter of Acceptance
4.	Bid Validity	14.1	180 days
5.	Time for Furnishing Program	14.1	Within 14 days from the date of receipt of Letter of Acceptance
6.	Time for Commencement	41.1	Within 14 days from date of receipt of Engineer's Notice to Commence which shall be issued within fourteen (14) days after signing of Contract Agreement.
7.	Time for Completion	43.1	180 days from the date of receipt of Engineer's Notice to Commence. (Extension may be granted by the competent authority).
8.	Amount of Liquidated Damages	47.1	Rs. <u>0.25%</u> 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
9.	Defects Liability Period	49.1	730 days from the effective date of Taking over Certificate.
10.	Percentage of Retention Money	60.2	5 % of the amount of Interim Payment Certificate, will be released after DLP
11.	Limit of Retention Money	60.2	5 % of the Contract Price stated in the Letter of Acceptance
12.	Minimum amount of Interim Payment Certificates (Running Bills)	60.2	As per milestones mentioned in Appendix-J
13.	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
14.	Mobilization Advance (Interest Free)	60.11	10-15% Mobilization Advance Payment against Bank Guarantee issued by Scheduled Bank in Pakistan

Authorized Signature and Official Stamp

Name

Date.....

**FOREIGN CURRENCY
REQUIREMENTS**

NOT USED

**PRICE ADJUSTMENT UNDER CLAUSE
70 OF CONDITION OF CONTRACT**

NOT APPLICABLE

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.....

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

BILL OF QUANTITIES
Firefighting Works

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

**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):

<u>Description</u>	<u>Time for Completion</u>
a “Fire Fighting /Hydrant System in State Life Insurance Corporation of Pakistan Building Davis Road Lahore and Chowk Nawan Shaherabdali Road Multan.”, <u>180 DAYS</u>	

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

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.....

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 (2 nos)	2
2.	Die set for cutting (1 nos)	1
3.	Grinders / Cutters (2 nos)	2
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 Firefighting / hydrant system

Authorized Signature and Official Stamp

Name

Date.....

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.....

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 for Firefighting / hydrant system, etc.).
2. Provision of Services.
 - a) Power (expected power load, etc.).
 - b) Water (required amount and system proposed).
 - c) Firefighting / hydrant system
3. Firefighting / hydrant system 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. Firefighting / hydrant system (detailed plans for carrying out this activity).
5. Other Items Proposed (Security services, etc.).

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

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 as per following criteria.

Particulars	Payment Detail	Amount (PKR)
Upon arrival of equipment at site	40% of contract value	
Upon Execution of work	30% of contract value	
Upon Testing and Commissioning	30% of contract value	
Total	100%	

Authorized Signature and Official Stamp.....

Name.....

Date.....

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. Mechanical Engineer with 10 years or above experience of similar nature project & registered with PEC.	15
2.	Mechanical Engineer B.Sc. Mechanical Engineer with 5 years or above experience of similar nature project & registered with PEC.	5
3.	Sub Engineer DAE Mechanical with 03 years of relevant experience.	2.5
4.	QA/QC Inspector DAE Mechanical with 03 years of relevant experience.	2.5
Sub-Total:		25

Authorized Signature and Official Stamp

Name

Date.....

(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 times the sum of any commission, gratification, bribe, finder's fee or kickback given by [name of Supplier] as aforesaid for the purpose of obtaining or inducing the procurement of any contract, right, interest, privilege or other obligation or benefit in whatsoever form from Government of Pakistan.

Name of Buyer:
Signature:
.....

[Seal]

Name of Seller/Supplier:
Signature:

[Seal]

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.
2. The firm/contractor must be register with PEC (Pakistan Engineering council) in category C5 & above having relevant codes ME02 & CE10. (Valid registration).
3. Applicant must be registered with FBR for Income Tax and reflected on Active Tax Payer (ATL) list of FBR for the mentioned work in BSD.
4. 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.
5. Integrity Pact on judicial Stamp Paper.

- **Note:** Bidders must fulfil aforementioned points. If any bidder fails to meet any point of mandatory criteria will be rejected instantaneously without evaluation of technical bid.

Technical Marks Weightage

Sr. No.	Category	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.

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 60 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. Mechanical Engineer with 10 years' or above experience of similar nature project & registered with PEC.	15
2.	Mechanical Engineer B.Sc. Mechanical Engineer with 5 years' or above experience of similar nature project & registered with PEC	5
3.	Sub Engineer DAE Mechanical with 03 years of relevant experience.	2.5

4.	QA/QC Inspector DAE Mechanical 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, Experience letters, 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)	2
2.	Die set for cutting (1 nos)	1
3.	Grinders / Cutters (1 nos)	2
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 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.	Average annual turnover of PKR 50 million in last Five (05) years	30
Sub-Total:		30

Note:

- 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.
A bidder having average annual turnover **Rs. 50 million** in the last five years will get full marks and if a bidder having average annual turnover in last five years is less than 50 million

than the marks will be given in accordance the formula in Annexure-A “evaluation criteria” below.

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 may result in rejection of the application.

1.7 Conflict of Interest

The applicant 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.

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 60 Million completed over the last five (05) years.	10	<ul style="list-style-type: none"> 10 Marks will be given if the contractor has completed at least three (03) project For less than three (03) $10 \times (A/3)$ A is no. of projects. 	<ul style="list-style-type: none"> 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.
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	<ul style="list-style-type: none"> 20 Marks will be given if the contractor has completed three (3) similar nature. For less than three similar $20 \times (A/3)$ A is no. of projects. 	<ul style="list-style-type: none"> 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. 25 million. No marks if similar project is not with Government /Semi Government/Autonomous body.
Total Marks Allocated (A1):		30		
3	a) Professional Staff	25	<ul style="list-style-type: none"> 15 Marks will be given for Project Manager (Mechanical) 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. 2.5 Marks will be given for Sub Engineer (Mechanical) with 3 years of experience of similar nature projects. 	Only those candidates would be considered for whom CVs duly signed by the applicants, Degrees, Experience letters, PEC Registration Certificates, and appointment letters are attached in the profile.

			<ul style="list-style-type: none"> 2.5 Marks will be given for QA/QC Inspector (Mechanical) with 3 years of experience of similar nature projects. 	
Total Marks Allocated (A2):		25		
5	Equipment Capabilities		<ul style="list-style-type: none"> Full marks will be given for following provisions of equipment/ machines: 	<ul style="list-style-type: none"> For less than specified, relative marks will be given.
a)	Welding Plant	2		Bidders shall submit a valid Affidavit on 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	2		
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	<ul style="list-style-type: none"> Maximum 30 Marks will be given in case of limit is Rs. 50 million or more. For the average annual turnover less than Rs. 50 million, use following weightage: $30 \times (A/250)$ A= average annual turnover in last five years in millions. 	<p>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.</p> <ul style="list-style-type: none"> 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**

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.

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

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.

We, _____ (the Guarantor), waiving all objections and defenses 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.

Witness:

1.

Corporate Secretary (Seal)

2. _____

Name, Title & Address

Guarantor (Bank)

Signature

Name _____

Title _____

Corporate Guarantor (Seal)

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.

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

(Seal)

Signature of Procuring Entity

(Seal)

Signed, Sealed and Delivered in the presence of:

Witness:

(Name, Title and Address)

Witness:

(Name, Title and Address)

**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 (Fédération Internationale des Ingénieurs - 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 Firefighting / hydrant system 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 INTERNATIONALE DES INGENIEURS-
CONSEILS**

CONDITIONS OF CONTRACT FOR WORKS OF FIRE FIGHTING / HYDRANT SYSTEM ENGINEERING

PART I GENERAL CONDITIONS WITH FORMS OF TENDER AND AGREEMENT

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:

FIDIC SECRETARIAT

P.O BOX NO. 86

1000 Lausanne 12

Switzerland e-mail fidic.pub@fidic.org-FIDIC.org/bookshop (69)

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

1.1 Definitions

- (a) (i) The Procuring Entity is State Life Insurance Corporation of Pakistan the legal successors and any assignee of such person.

.....

- (a) (iv) The Engineer is
..... nominated as
Engineer along with 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:**

Office of AGM Real Estate Department

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 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
- (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 20,22,23 & 24 “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 5% 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 (c) or any other form as describe in the PPRA

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

The following Sub-Clause 10.4 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) Labor 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 Firefighting / hydrant system 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 labor from sources within Punjab.

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 Punjab 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 Punjab
 - (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.

21.4 Exclusions

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.

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 Labor

The Contractor shall pay rates of wages and observe conditions of labor not less favorable 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 labor so established, the Contractor shall pay rates of wages and observe conditions of labor which are not less favorable 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 labor 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 Labor

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 labor, 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 labor 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 neighborhood 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.

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.

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 Punjab provided such materials, supplies, plant, equipment and services shall be of required standard.

41.1 Commencement of Works

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.

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.

54.5 Conditions of Hire of Contractor's Equipment

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.

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 Interim Payments/ Running Bills

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

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 Pumps, valves, fittings 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

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 PPRA.

65.2 Special Risks

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

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)

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.

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 labor 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 labor employed by them.

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.

PART II –PARTICULAR CONDITIONS OF CONTRACT

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**SPECIFICATIONS-
SPECIAL PROVISIONS**

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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 of 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 nonconformance will leads to the withholding of partial payment being made to the Contractor.

TECHNICAL SPECIFICATIONS



FIRE FIGHTING /HYDRANT SYSTEM IN STATE LIFE
INSURANCE CARPORATION OF PAKISTAN BUILDING DAVIS
ROAD LAHORE



TECHNICAL SPECIFICATIONS

TECHNICAL SPECIFICATIONS **OF FIRE FIGHTING WORKS**



CLIENT:

STATE LIFE INSURANCE CARPORATION OF PAKISTAN

CONSULTANT:

VELOSI INTEGRITY & SAFETY PAKISTAN (PVT) LTD



**FIRE FIGHTING /HYDRANT SYSTEM IN STATE LIFE
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SECTION – 1

1. GENERAL

The Contractor shall be required to plan and execute the works in a manner such that the project is completed within the time specified in the Contract and in conformity with the provisions contained in the documents of Contract. The Contractor shall furnish a detailed construction programme along with a list of plant and equipment with capacities and capabilities for the approval of the Engineer. The Contractor shall also be required to submit a site supervisory/ management chart.

Mentioned herein or indicated on the drawings, of articles, products operations or methods, requires that the Contractor(s) provide each item mentioned or indicated, of quality or subject to qualifications stated, each operation prescribed and provide therefore all labor, products, equipment and services to complete the firefighting system.

Materials construction and installation methods of all piping, fittings and valves shall conform to the current acceptable standards of the authorities having jurisdiction.

Shop Drawings shall give hydraulic reference points to be designated by letter or -number and to correspond to the comparable reference point shown on the hydraulic calculation sheets the contractor shall submit complete hydraulic calculating including graph summary and detailed worksheets.

Type and location of hangers, pipe sizes and locations, valves and all additional information required for approval by the Authorities and Factory Mutual shall be shown on the shop drawings.

Contractor must visit the site and familiarize himself with the site to ensure that the equipment offered by him are of dimensions that they can be carried and planed in position without any difficulty.

2. SCOPE OF WORK

The scope of work in this subhead shall consist of furnishing all labour, materials, equipment and appliances necessary and required to completely do all work relating to the supply, installation, testing & commissioning of Fire Fighting System as described herein after and shown on the drawings.

Fabrication, supply erection, painting, testing and commissioning of the Fire Fighting System with mechanical and electrical equipment, instrumentation, pipes, valves, fittings, supports, all cables (power & control) etc. complete in all respects, and preparation & submission of drawings / calculations / training manuals / operation & maintenance manual / as-built drawings / shop drawings / other documents to concerned authorities & obtaining interim & final Approval / Sanction / NOC (No Objection Certificates) from Client / Consultant, during and after execution of work as required.



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Provide pressure and flow requirements at each and every design point and flushing/test connections on all the arrays that are required to meet the code requirements for the defined risk.

Provide power & control wiring to the pressure flow / water flow switch / Valve. Comply with the requirements of BS 7671 for the electrical and controls installations.

Packing, supply, testing, un-packing, loading/unloading, transportation to site, storage, handling of Fire Fighting System and its associated equipment's, piping and installation accessories.

Any planned shutdown of existing works shall be avoided if possible either by using an alternative method. Before a planned shutdown can take place, it must be agreed by all parties.

Any modifications or temporary works such as demolishing / restoration required, to make whole system functional, shall be carried out by the contractor and shall restore/reconstruct the site in workable condition.

Bidder will execute complete civil, mechanical/piping, electrical, instrumentation, other installation works and temporary civil, mechanical/piping, electrical and instrumentation works.

Supply, installation and commissioning of electrical sounder with flasher, pressure gauges, gate valves, drain valves, test points, fittings, supports, calibrated pressure/flow switched, piping, sprinkler, electrical cables (control, power).

Supply, installation, testing and commissioning of each items as specified herein below, in this document and drawings.

Contractor to accommodate cost of each item in price schedule for all hidden activities and also to foresee any activity which can be arise during installation works.

Contractor to execute all civil works related to system installation like foundations, pads, sleepers, demolishing, restoration, trenches, excavation, backfilling, sleeves, core cutting, etc. which are necessary to make system operational and contractor to accommodate cost of all in BOQ items.

3. SAMPLES

Submit samples of following;

- Each type of Fittings / Supports
- Each type of signs
- Each type of Piping

SECTION - 2

2. SYSTEM REQUIREMENTS

- Fabrication, Supply, Installation, testing and commissioning of firefighting systems in accordance with required and advisory provisions of above-mentioned codes.



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- Included with each system materials, accessories, and equipment inside and outside building to provide each system complete and ready for use.
- Provide each system to give full consideration to blind spaces, piping, electrical equipment, ducts, and other construction and equipment in accordance with detailed shop drawings.

2.1 Fire Pumps

- Supply and install a packaged fire pump set consisting of electrical motor driven fire pump, jockey pump, packaged diesel engine pump and control panels along with all control, power, instrumentation, piping, valves all factory installed on a suitable steel skid. The entire package shall be hydraulically tested at 150% of the operating pressure at the factory. All steel surfaces shall be sand blasted and painted with two coats of primer and finish paint of fire red color.
- The pump (s) shall be sized to provide a flow rate and total head as scheduled in specifications and BOQs. At 150% of the rated capacity the fire pump shall develop at least 65% of its rated head and shall not exceed 140% of its rated head at zero capacity. Each pump shall be furnished with a certified performance curve indicating pressure, capacity and horsepower requirements.
- Chamber shall be made of stain less steel 304.
- Impeller and chamber assembly shall be made of stain less steel 304.
- Pump shat shall be high strength stain less steel 304 to provide a minimum amount of deflection.
- Strap shall be of stain less steel 304.
- Bearings shall be of stain less steel 304.
- Pumps shall be in accordance with the requirements of NFPA, UL and FM. Pumps and panels shall be UI listed / FM approved.
- 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 and clarify any ambiguity.
- 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 this contractor's responsibility to locate and detail these obstructions as part of the scope of work thru shop drawings.
- During the construction phase the Contractor will coordinate between all trades and obstructions, and if any, and provide coordinate shop drawings.
- It is the contractor's responsibility to verify pump head requirements.
- Water supply header and main pipe up to hydrant/hose valve/landing valves shall be kept pressurized by the jockey pump which shall start automatically on receiving the impulse from



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the pressure switch in case of any pressure drop (8.5 bar) in the header. It shall stop at a preset pressure as soon as pressure builds up in the header.

- In the event of fire outbreak, opening of hydrant/hose valve/hose will result in fall of pressure (7.5 bar) 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.
- 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 (5.5 bar) and receiving impulse from pressure switch. The fire pump shall be stopped manually only.
- The setting of the pressure switches shall be done keeping the above sequence in consideration.
- Motor Driven Jockey Pump; Vertical mounted centrifugal pump UL Listed / FM Approved capable to deliver 65 gpm of clear water at minimum 9.5 bar, 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. Motor shall be IP 55 with class F insulation with maximum temperature rise of 80 °C in and ambient of 40 °C.
- Motor Driven Pump; End suction type, horizontally mounted centrifugal pump UL Listed / FM Approved capable to deliver 500 gpm of clear water at minimum 9 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. Motor shall be IP 55 with class F insulation with maximum temperature rise of 80 °C in and ambient of 40 °C.
- Engine Driven Pump; End suction type, horizontally mounted centrifugal pump UL Listed / FM Approved capable to deliver 500 gpm of clear water at minimum 9 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.

2.2 Hydrant System

1. Supply and Install Hydrants shall be approved of Class I type, having two 65mm hose connections and one connection of pumper nozzles.



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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.

2.3 Fire Hose Cabinets

1. Supply and install Fire hose cabinets, valves, hose and accessories shall be approved by and shall be in conformance with the requirements of NFPA.
2. Except as indicated in item below, all cabinets shall be 12 SWG stainless steel with 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 30m hose canvas with hose rack.
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.

2.4 Fire Hose Reel with Cabinet and Valves

1. Wall Mounted Indoor Fire Hose cabinet, made of Stainless steel Facia, Back box E.G. Sheet, suitable to accommodate one length of hoses reel of 100' long and one nozzle, as per approval of the engineer and finish with SS and 02 hours fire rated.
2. Hose Reel Lock Shield Valve: manufactured from material resistant to de-zincification, 25 mm, threaded.
3. Hose: Red rubber smooth, covered to BS31 69 Type 1, Class B; 25 mm and 30.5m long.



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4. Control Nozzle: Nylon lever operated jet/spray.
5. Pressure Reducing Valve: Dia 1" manufactured from material resistant to de-zincification threaded, inlet pressure 20 Bars, outlet pressure 1 – 4 bars.

2.5 Portable Fire Extinguishers

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

Fire extinguishers shall be as follows:

1. Providing dry chemical powder (DCP) fire extinguisher 5.0 Kg capacity, stored pressure type, equivalent including clamping/ brackets.
2. Providing Carbon Dioxide (CO₂) fire extinguisher 6 Kg capacity, stored pressure type, equivalent including clamping/ brackets.
3. Providing Foam (AFFF) fire extinguisher 10 Ltr capacity, stored pressure type, equivalent including clamping/ brackets.
4. Providing of Automatic Foam (AFFF) fire extinguisher 25 Ltr capacity, stored pressure type, equivalent including clamping/ brackets, piping, nozzles along with all services.

Fire extinguishers shall be located shown on drawings and as prescribed in the NFPA 10 standard and in accordance with Local Defense authorities.

2.6 Cabinet for Portable Fire Extinguishers

Wall Mounted Indoor Fire Extinguisher cabinet, made of Stainless-steel Facia, Back box E.G. Sheet, suitable to accommodate Two Extinguisher, as per approval of the engineer and finish with SS and 02 hours fire rated.

SECTION -3

3. FIRE PROTECTION PIPING & ACCESSORIES

3.1 Pipe and Fittings

For working pressures below 2000 kPa;

1. Where working pressure in the piping is below 2000 kPa pipes shall be M.S seamless ASTM A53 grade B, schedule 40.
2. All pipes outside the building 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. The underground steel pipes shall be protected by coating and wrapping.



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3. 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.
4. 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.

3.2 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. Saddle clamp shall be installed with rubber lining.
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.
5. All hangers / supports / threaded rods saddle clamps should be 02 hours fire rated.

3.3 Installation of Pipes

1. All pipes shall be adequately supported from ceiling or walls by structural clamps fabricated from M.S. structural e.g. rods, channels, angles and flats. All clamps shall be painted with one coat of primer and two coats of black enamel paint. The contractor shall provide inserts at the time of slab casting or provide suitable anchor fasteners.
2. The pipe supports or hangers shall be designed to withstand combined weight of pipe, pipes fittings, fluid in pipe and insulation. Pipe supports shall be of steel and coated with rust preventing paint and finished with two coats enamel paint. The maximum spacing for pipes supports shall be as below:

Pipe (MM)	Maximum Spacing	Drop Rod Size
Up to 25	2100 mm	8 mm



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32	2700 mm	10 mm
38	2700 mm	10mm
50	3000 mm	10 mm
63	3300 mm	12 mm
75	3600 mm	12 mm
100	4200 mm	16 mm
125	5200 mm	16 mm

- Pipes supports shall be spaced at maximum interval of 1.5 mtrs. on either side of heavy fittings and valves. Wherever piping passes through walls, pipes sleeves of diameter larger than that of piping shall be provided.
- Pipe sleeves shall be of steel or cast iron pipe. Install pipe sleeves of ample diameter at all points where pipes penetrate beams, floors or walls. Size and install so that sprinkler pipes are not stressed.
- The underground piping shall be supported with cement concrete blocks of suitable size and strength provided at an interval of 2.5 mtrs. The pipes shall be laid at 1 mtr. Depth (top of the pipe) and trench excavated for sufficient width. The rate of pipes shall include the scope of excavation / refilling the trench. 1:2:4 concrete thrust blocks are also to be provided at turning of pipe. The cost of installation includes concrete pedestals etc. as required and to be included in the item rate.

3.4 Air Vessel and Air Release Valve

Air vessel on top of wet riser piping shall be fabricated of at least 8mm thick steel to withstand the pressure, with dished ends and supporting legs. This shall be of 250mm dia and 1m high. This shall be complete with necessary flange connection to the wet riser piping and air release valve with necessary piping to meet the functional requirement of the system. The air vessel shall be of continuous welded construction and galvanized. This shall be tested for twice the working pressure.

3.5 Flow Alarm Switches

- 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.
- Each flow switch shall be completed with, supervised shut-off valve, drain valve and test valve and with sight glass.



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3.6 Fire Department Breeching Inlet Connection (Two Way)

1. Breeching Inlet (Two Way) connections shall be by an acceptable manufacturer. The unit shall be complete with two 65 mm threaded connections to suit type of thread on hose used by local fire department. Connections shall be completed with threaded caps, chained to body. All parts including valve body, chain and knox 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 Defence and NFPA requirements and as shown on drawings. Provide one check valve for each connection.

3.7 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.

3.8 Pressure Gauges

1. All pressure gauges shall be UL listed spring pressure gauges with 90 mm 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 and at the highest point of all hydrant risers.

3.9 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. Further, drain piping backfilling to fire water tank shall be from top of tank.

3.10 Identifications Tags

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



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3.11 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.

3.12 Painting

1. All fire protection piping shall be painted red in accordance with Civil Defence 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.



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SECTION -4

4. ELECTRICAL & CONTROL

Contractor to supply, install, testing and commissioning of all power cables, control cables, electrical accessories, electrical and control components and related works, terminations etc. at his own cost and to accommodate cost in BOQ items.

4.1 Controls

1. Electric Motor driven fire & jockey pumps & diesel engine driven fire pump shall start automatically through preset pressure switches in proper sequence as mentioned above.
2. Stopping of all fire pumps shall be manual only.
3. Audio visual alarm shall be sounded when fire pumps start/starts.
4. Power supply 'ON' indication shall be provided in the Fire Pump Control Panel.

4.2 AC Motors

All AC motors shall be approved type & totally enclosed fan cooled and shall have Class B insulation with degree of protection IP 55. All motors shall be suitable for both DOL and STAR/DELTA starting, as required. The motors shall have also two distinct terminals for Earthing. All the motors shall be suitable for 415 V (- 15% to + 5% variation) 3 phase 50 HZ plus minus 3% AC supply.

4.3 Motor Control Centre (MCC)

1. The MCC shall be made of sheet steel of thickness not less than 2 mm, totally enclosed, self-supporting, floor mounted dust and vermin proof cubicle type construction with multitier compartmental arrangement with degree of protection IP 54. It shall have a series of panels of uniform height placed side by side with front access for operation as well as cabling. MCC panel shall be completely front wired type having all device/termination etc, approachable from front without any requirement of back access for maintenance repairs and cabling. Provision of cable entry shall be from the top or bottom to match with cable layout of the pump room.



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2. The motor control circuit shall be provided with test facilities so that it is possible to test the control circuit with the main motor circuit disconnected. Control voltage shall be 240 V, A C single phase derived from an isolating transformer.
3. The main busbar of the MCC shall be of electrical grade copper and shall have continuous current rating as required but in no case less than the current rating of incoming switch fuse unit. The busbars shall be easily accessible from the front of the cubicle and shall be colour coded for phase identification. A copper earth busbar of adequate cross sectional area shall be provided in the bottom or top part of the cubicle and shall run for the entire length of the MCC.
4. Start/stop push button, auto/manual selector switch and indication shall be provided and the MCC for control of the motors.
5. Incomer cubicle shall incorporate voltmeter, ammeter with respective selector switches, power factor meter and phase indication lamps.
6. Each outgoing cubicles shall have ammeter with selector switch and on/off, trip indication lamps. Ammeters for incoming/outgoing cubicles, for motors it shall be suppressed scale type beyond full load rating up to 8 times of full load current for taking care of starting current kicks.
7. Pilot lamp to indicate circuit breaker closed and power available.
8. 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.
9. Alarm and signal devices in controller and in remote location to indicate trouble on controller and pumping unit.
10. Ammeter test link and voltmeter test studs.
11. Manual selector station, two positions, marked "Automatic" and "Non-Automatic".
12. Means on controller to operate alarm signal continuously while pump is running.
13. Mark "FIRE PUMP CONTROLLER".
14. Digital Display for
 - System frequency
 - Line-to-line voltages
 - Line-to-line amperages
 - Elapsed run time
 - Pressure system settings
 - Pump starting failure
 - Over current problem



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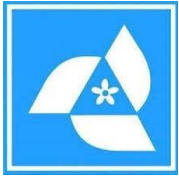
- Under current problem
- Pressure transmitter problem

15. Annunciator for

- Power available
- System trouble
- Phase reversal
- Low system pressure

4.4 Diesel Engine Control Panel

1. The control panel shall be made of sheet steel of thickness not less than 2 mm, totally enclosed, self-supporting, floor mounted, dust and vermin proof cubicle type with degree of protection IP 54.
2. The following features shall be incorporated in the control panel;
3. Contactors, relays, timers etc for applying automatic starting pulses to the diesel engine on receipt of a command signal from the pressure switch with starting sequence consisting of three electrical pulses of 5 second duration each spaced at second apart.
4. Main ON/OFF isolator with DC circuit fuses and main ON indication
5. Boost cum trickle automatic battery charger with fuse protection for AC charging circuit (trickle/boost), Auto/Manual selector switch for charging, charging current meter, volt meter etc.
6. Indication/Alarm for the pump "RUN" condition, Annunciation for engine fault condition, alarm cut off switch and reset switch for fault conditions.
7. Engine start switch, engine stop switch together with Auto/Manual switch for engine starting and indication showing failure to start on 'AUTO'
8. Engine RPM indication from in built tachometer with engine.
9. Pressure-switch transducer start.
10. Fire protection equipment start.
11. Main ac power failure relay connected either to start engine or to actuate remote trouble alarm.
12. Common local alarm bell and individual trouble lamps or annunciator to indicate:
 - Low oil pressure.
 - High cooling water temperature.
 - Engine failure to start.
 - Shut down from over speed.



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- Shut down from pump operation.
 - Shut down from trouble on controller or engine.
 - Shut down from loss of ac power.
 - Battery failure for each battery.
 - Battery charger failure.
 - Low suction
 - Low fuel level
 - Water reservoir low
 - Water reservoir empty
 - Low pump room temperature
 - High fuel level
 - Main switch in auto
 - Engine run
 - Failure when running
13. 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.
14. 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.
15. Provision for lock-out alarm if a battery is disconnected or becomes inoperative.
16. Selector switch to bypass relay circuits and provide for manual starting.
17. Provision for 10 s delayed start.
18. Sequential timing device.
19. Circuits for various engine mounted devices such as automatic chokes, anti-dieseling solenoid valve, cooling water line solenoid valve.
20. Timing relay for automatic stop.
21. Auto-manual, selector.
22. "Auto" position indicating lamp.
23. Manual, start-stop pushbuttons.
24. Two built-in automatic battery chargers.
25. NEMA 3R enclosure.
26. Mark "FIRE PUMP CONTROLLER".



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4.5 Cables

1. All power cables shall be multi core, 1100 V grade, PVC insulated, PVC sheathed, copper conductor cables manufactured and tested.
2. All control cables shall be multi core, 1100 V grade, PVC insulated and overall PVC sheathed with copper conductor manufactured and tested.
3. Armoured power and control cables shall be only considered.

4.6 Power supply

1. For MCC one 400 - 415 V, A C 3 phase and neutral 50 HZ feeder of adequate capacity shall be made available at the MCC incomer.
2. If the equipment is required to operate at any other voltage, necessary transformers & converters shall be included in the scope of the tenderer.



TECHNICAL SPECIFICATIONS

SECTION - 5

5. TESTING AND COMMISSIONING

5.1 General

Comply with the relevant clauses of BS EN / NFPA.

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.

The client shall be notified one week in advance of any testing so that the tests can be witnessed.

Defects that develop during the tests shall be promptly remedied and testing shall be reapplied to the satisfaction of the Client / Consultant. All related costs will be in contractor scope.

5.2 Particular Requirements

Carry out all tests and inspections to prove that the installation meets with the requirements of BS EN / NFPA.

Inspect and test the installation at agreed stages to ensure that the piping is properly secured and clear of obstructing debris and superfluous matter and that all work which is to be concealed is free from defects before it is finally enclosed.

Carry out a low-pressure air test, to establish whether open ends are present, prior to carrying out a hydraulic test on completion of the installation, or sections thereof.

All piping and attached appurtenances subjected to system working pressure shall be hydrostatically tested at gauge pressure of 200 psi (13.8 bar) or 50 psi (3.4 bar) in excess of the system working pressure, whichever is greater, and shall maintain that pressure at gauge pressure of ± 5 psi (0.34 bar) for 2 hours.

All flow-switch testing shall be completed using a water flow detector tester in accordance with FM1043.

Test all alarms and alarm connections associated with the sprinkler installation and prove all interlocks and links to other systems and remote locations.

Upon completion of the installation of the system carry out functional tests in the presence of all interested parties to demonstrate to the satisfaction of all present that the installation conforms to the required standards.

When these tests have been accepted by all parties as being satisfactory, issue a completion certificate.



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NOTE:

The system shall be handed over to the Purchaser/ Owner complete in all respects in good working condition along with records of the maintenance/ repair carried out.

SECTION - 6

6. SUBMITTALS

6.1 Product data

- Submit manufacturer's printed product literature, specifications and datasheet.

6.2 Shop Drawings & As-Built Drawings:

- Submit drawings stamped & signed and acceptable to the authority having jurisdiction.
 - Submit shop and As-built drawings
- Indicate:
 - Materials.
 - Finishes.
 - Method of anchorage
 - Number of anchors.
 - Supports.
 - Reinforcement.
 - Assembly details.
 - Accessories.

6.3 Quality Assurance Submittals

- Certificates: submit certificates signed by manufacturer certifying that materials comply with specified performance characteristics and physical properties.
- Instructions: submit manufacturer's installation instructions.

6.4 Operation and Maintenance Manuals:

- Provide detailed operation and maintenance manual.

6.5 Quality Assurance

- Installer: Persons having experience in wet sprinkler systems with 2-5 years documented experience.
- Health and Safety: Do construction occupational health and safety in accordance with relevant standards and owner's facility safety manual.



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TECHNICAL SPECIFICATIONS

6.6 Delivery, Storage and Handling

- Packing, shipping, handling, lifting, unpacking and unloading:
 - Deliver, store and handle materials in accordance with manufacturer's written instructions.
- Storage and Protection:
 - Store materials indoors in dry location.
 - Store and protect materials from exposure to harmful weather conditions and at temperature and humidity conditions recommended by manufacturer.
- Waste Management and Disposal:
 - Construction/demolition waste management and disposal to appropriate locations and as per owner's instructions.

SECTION - 7

7. WELDING

7.1 Welding Requirements:

- Welds between pipe and welding outlet fittings shall be permitted to be attached by full penetration welds, partial penetration groove welds, or fillet welds.
- The minimum throat thickness shall be not less than the thickness of the pipe, the thickness of the welding fitting, or 3/16 in. (5 mm), whichever is least.
- Circumferential butt joints shall be cut, beveled, and fit so that full penetration is achievable.
- Full penetration welding shall not be required.
- Where slip-on flanges are welded to pipe with a single fillet weld, the weld shall be on the hub side of the flange and the minimum throat weld thickness shall not be less than 1.25 times the pipe wall thickness or the hub thickness, whichever is less.
- Face welds on the internal face of the flange shall be permitted as a water seal in addition to the hub weld.
- Tabs for longitudinal earthquake bracing shall have minimum throat weld thickness not less than 1.25 times the pipe wall thickness and welded on both sides of the longest dimension.
- When welding is performed, the following shall apply:
 - i. Holes in piping for outlets shall be cut to the full inside diameter of fittings prior to welding in place of the fittings.
 - ii. Discs shall be retrieved.
 - iii. Openings cut into piping shall be smooth bore, and all internal slag and welding residue shall be removed.



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- iv. Fittings shall not penetrate the internal diameter of the piping.
 - v. Steel plates shall not be welded to the ends of piping or fittings.
 - vi. Fittings shall not be modified.
 - vii. Nuts, clips, eye rods, angle brackets, or other fasteners shall not be welded to pipe or fittings, except as permitted.
 - viii. Completed welds shall be free from cracks, incomplete fusion, surface porosity greater than 1/16 in. (1.6 mm) diameter, and undercut deeper than 25 percent of the wall thickness or 1/32 in. (0.8 mm), whichever is less.
 - ix. Completed circumferential butt weld reinforcement shall not exceed 3/32 in. (2.4 mm).
- Welders or welding machine operators shall, upon completion of each welded pipe, place their identifiable mark or label onto each piece adjacent to a weld.
 - Contractors or fabricators shall maintain certified records, which shall be available to the authority having jurisdiction, of the procedures used and the welders or welding machine operators employed by them, along with their welding identification.
 - Records shall show the date and the results of procedure and performance qualifications.

7.2 Qualification:

- A welding procedure shall be prepared and qualified by the contractor or fabricator before any welding is done.
- Qualification of the welding procedure to be used and the performance of all welders and welding operators shall be required and shall meet or exceed the requirements of AWS B2.1, Specification for Welding Procedure and Performance Qualification; ASME Boiler and Pressure Vessel Code, Section IX, "Welding and Brazing Qualifications"; or other applicable qualification standard as required by the authority having jurisdiction, except as permitted by section 6.5.2.5.3 of NFPA 13.
- Successful procedure qualification of complete joint penetration groove welds shall qualify partial joint penetration (groove/fillet) welds and fillet welds in accordance with the provisions of this standard.
- Welding procedures qualified under standards recognized by previous editions of this standard shall be permitted to be continued in use.
- Contractors or fabricators shall be responsible for all welding they produce.
- Each contractor or fabricator shall have available to the authority having jurisdiction an established written quality assurance procedure ensuring compliance with the requirements of 6.5.2.4 of NFPA 13.



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SECTION - 8

8. SPARES

Bidder will provide list of recommended spares for Pumps, Valve & fittings etc. operational use with cost as per NFPA and OEM.

8.1 Reserved Cabinet

Supply and install reserve cabinets, each containing spares and tools as mentioned above. The cabinet shall be spot welded construction, fabricated from low carbon steel sheet. The box and shelves shall be fabricated from minimum 0.030 inch thick material and the cover shall be fabricated from 0.042 inch thick material. The cabinet shall be painted bright red and enamel paint side and out and labels. The cabinet shall be rigidly attached to walls as specified by client / consultant.

SECTION - 9

9. WARRANTY

The bidder shall provide One (01) year warranty period from the date of commissioning for the offered products, and free of cost replacement/rectification of defected parts/equipment, labour, freight, transportation of part/equipment from - to site.



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TECHNICAL SPECIFICATIONS

TECHNICAL SPECIFICATIONS **OF FIRE FIGHTING WORKS**



CLIENT:

STATE LIFE INSURANCE CARPORATION OF PAKISTAN

CONSULTANT:

VELOSI INTEGRITY & SAFETY PAKISTAN (PVT) LTD



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SECTION – 1

1. GENERAL

The Contractor shall be required to plan and execute the works in a manner such that the project is completed within the time specified in the Contract and in conformity with the provisions contained in the documents of Contract. The Contractor shall furnish a detailed construction programme along with a list of plant and equipment with capacities and capabilities for the approval of the Engineer. The Contractor shall also be required to submit a site supervisory/ management chart.

Mentioned herein or indicated on the drawings, of articles, products operations or methods, requires that the Contractor(s) provide each item mentioned or indicated, of quality or subject to qualifications stated, each operation prescribed and provide therefore all labor, products, equipment and services to complete the firefighting system.

Materials construction and installation methods of all piping, fittings and valves shall conform to the current acceptable standards of the authorities having jurisdiction.

Shop Drawings shall give hydraulic reference points to be designated by letter or -number and to correspond to the comparable reference point shown on the hydraulic calculation sheets the contractor shall submit complete hydraulic calculating including graph summary and detailed worksheets.

Type and location of hangers, pipe sizes and locations, valves and all additional information required for approval by the Authorities and Factory Mutual shall be shown on the shop drawings.

Contractor must visit the site and familiarize himself with the site to ensure that the equipment offered by him are of dimensions that they can be carried and planed in position without any difficulty.

2. SCOPE OF WORK

The scope of work in this subhead shall consist of furnishing all labour, materials, equipment and appliances necessary and required to completely do all work relating to the supply, installation, testing & commissioning of Fire Fighting System as described herein after and shown on the drawings.

Fabrication, supply erection, painting, testing and commissioning of the Fire Fighting System with mechanical and electrical equipment, instrumentation, pipes, valves, fittings, supports, all cables (power & control) etc. complete in all respects, and preparation & submission of drawings / calculations / training manuals / operation & maintenance manual / as-built drawings / shop drawings / other documents to concerned authorities & obtaining interim & final Approval / Sanction / NOC (No Objection Certificates) from Client / Consultant, during and after execution of work as required.



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Provide pressure and flow requirements at each and every design point and flushing/test connections on all the arrays that are required to meet the code requirements for the defined risk.

Provide power & control wiring to the pressure flow / water flow switch / Valve. Comply with the requirements of BS 7671 for the electrical and controls installations.

Packing, supply, testing, un-packing, loading/unloading, transportation to site, storage, handling of Fire Fighting System and its associated equipment's, piping and installation accessories.

Any planned shutdown of existing works shall be avoided if possible either by using an alternative method. Before a planned shutdown can take place, it must be agreed by all parties.

Any modifications or temporary works such as demolishing / restoration required, to make whole system functional, shall be carried out by the contractor and shall restore/reconstruct the site in workable condition.

Bidder will execute complete civil, mechanical/piping, electrical, instrumentation, other installation works and temporary civil, mechanical/piping, electrical and instrumentation works.

Supply, installation and commissioning of electrical sounder with flasher, pressure gauges, gate valves, drain valves, test points, fittings, supports, calibrated pressure/flow switched, piping, sprinkler, electrical cables (control, power).

Supply, installation, testing and commissioning of each items as specified herein below, in this document and drawings.

Contractor to accommodate cost of each item in price schedule for all hidden activities and also to foresee any activity which can be arise during installation works.

Contractor to execute all civil works related to system installation like foundations, pads, sleepers, demolishing, restoration, trenches, excavation, backfilling, sleeves, core cutting, etc. which are necessary to make system operational and contractor to accommodate cost of all in BOQ items.

3. SAMPLES

Submit samples of following;

- Each type of Fittings / Supports
- Each type of signs
- Each type of Piping

SECTION - 2

2. SYSTEM REQUIREMENTS

- Fabrication, Supply, Installation, testing and commissioning of firefighting systems in accordance with required and advisory provisions of above-mentioned codes.



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- Included with each system materials, accessories, and equipment inside and outside building to provide each system complete and ready for use.
- Provide each system to give full consideration to blind spaces, piping, electrical equipment, ducts, and other construction and equipment in accordance with detailed shop drawings.

2.1 Fire Pumps

- Supply and install a packaged fire pump set consisting of electrical motor driven fire pump, jockey pump, packaged diesel engine pump and control panels along with all control, power, instrumentation, piping, valves all factory installed on a suitable steel skid. The entire package shall be hydraulically tested at 150% of the operating pressure at the factory. All steel surfaces shall be sand blasted and painted with two coats of primer and finish paint of fire red color.
- The pump (s) shall be sized to provide a flow rate and total head as scheduled in specifications and BOQs. At 150% of the rated capacity the fire pump shall develop at least 65% of its rated head and shall not exceed 140% of its rated head at zero capacity. Each pump shall be furnished with a certified performance curve indicating pressure, capacity and horsepower requirements.
- Chamber shall be made of stain less steel 304.
- Impeller and chamber assembly shall be made of stain less steel 304.
- Pump shat shall be high strength stain less steel 304 to provide a minimum amount of deflection.
- Strap shall be of stain less steel 304.
- Bearings shall be of stain less steel 304.
- Pumps shall be in accordance with the requirements of NFPA, UL and FM. Pumps and panels shall be UI listed / FM approved.
- 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 and clarify any ambiguity.
- 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 this contractor's responsibility to locate and detail these obstructions as part of the scope of work thru shop drawings.
- During the construction phase the Contractor will coordinate between all trades and obstructions, and if any, and provide coordinate shop drawings.
- It is the contractor's responsibility to verify pump head requirements.
- Water supply header and main pipe up to hydrant/hose valve/landing valves shall be kept pressurized by the jockey pump which shall start automatically on receiving the impulse from



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- the pressure switch in case of any pressure drop (8.5 bar) in the header. It shall stop at a preset pressure as soon as pressure builds up in the header.
- In the event of fire outbreak, opening of hydrant/hose valve/hose will result in fall of pressure (7.5 bar) 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.
 - 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 (5.5 bar) and receiving impulse from pressure switch. The fire pump shall be stopped manually only.
 - The setting of the pressure switches shall be done keeping the above sequence in consideration.
 - Motor Driven Jockey Pump; Vertical mounted centrifugal pump UL Listed / FM Approved capable to deliver 65 gpm of clear water at minimum 9.5 bar, 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. Motor shall be IP 55 with class F insulation with maximum temperature rise of 80 °C in and ambient of 40 °C.
 - Motor Driven Pump; End suction type, horizontally mounted centrifugal pump UL Listed / FM Approved capable to deliver 500 gpm of clear water at minimum 9 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. Motor shall be IP 55 with class F insulation with maximum temperature rise of 80 °C in and ambient of 40 °C.
 - Engine Driven Pump; End suction type, horizontally mounted centrifugal pump UL Listed / FM Approved capable to deliver 500 gpm of clear water at minimum 9 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.

2.2 Hydrant System

1. Supply and Install Hydrants shall be approved of Class I type, having two 65mm hose connections and one connection of pumper nozzles.



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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.

2.3 Fire Hose Cabinets

1. Supply and install Fire hose cabinets, valves, hose and accessories shall be approved by and shall be in conformance with the requirements of NFPA.
2. Except as indicated in item below, all cabinets shall be 12 SWG stainless steel with 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 30m hose canvas with hose rack.
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.

2.4 Fire Hose Reel with Cabinet and Valves

1. Wall Mounted Indoor Fire Hose cabinet, made of Stainless steel Facia, Back box E.G. Sheet, suitable to accommodate one length of hoses reel of 100' long and one nozzle, as per approval of the engineer and finish with SS and 02 hours fire rated.
2. Hose Reel Lock Shield Valve: manufactured from material resistant to de-zincification, 25 mm, threaded.
3. Hose: Red rubber smooth, covered to BS31 69 Type 1, Class B; 25 mm and 30.5m long.



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4. Control Nozzle: Nylon lever operated jet/spray.
5. Pressure Reducing Valve: Dia 1" manufactured from material resistant to de-zincification threaded, inlet pressure 20 Bars, outlet pressure 1 – 4 bars.

2.5 Portable Fire Extinguishers

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

Fire extinguishers shall be as follows:

1. Providing dry chemical powder (DCP) fire extinguisher 5.0 Kg capacity, stored pressure type, equivalent including clamping/ brackets.
2. Providing Carbon Dioxide (CO₂) fire extinguisher 6 Kg capacity, stored pressure type, equivalent including clamping/ brackets.
3. Providing Foam (AFFF) fire extinguisher 10 Ltr capacity, stored pressure type, equivalent including clamping/ brackets.
4. Providing of Automatic Foam (AFFF) fire extinguisher 25 Ltr capacity, stored pressure type, equivalent including clamping/ brackets, piping, nozzles along with all services.

Fire extinguishers shall be located shown on drawings and as prescribed in the NFPA 10 standard and in accordance with Local Defense authorities.

2.6 Cabinet for Portable Fire Extinguishers

Wall Mounted Indoor Fire Extinguisher cabinet, made of Stainless-steel Facia, Back box E.G. Sheet, suitable to accommodate Two Extinguisher, as per approval of the engineer and finish with SS and 02 hours fire rated.

SECTION -3

3. FIRE PROTECTION PIPING & ACCESSORIES

3.1 Pipe and Fittings

For working pressures below 2000 kPa;

1. Where working pressure in the piping is below 2000 kPa pipes shall be M.S seamless ASTM A53 grade B, schedule 40.
2. All pipes outside the building 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. The underground steel pipes shall be protected by coating and wrapping.



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3. 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.
4. 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.

3.2 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. Saddle clamp shall be installed with rubber lining.
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.
5. All hangers / supports / threaded rods saddle clamps should be 02 hours fire rated.

3.3 Installation of Pipes

1. All pipes shall be adequately supported from ceiling or walls by structural clamps fabricated from M.S. structural e.g. rods, channels, angles and flats. All clamps shall be painted with one coat of primer and two coats of black enamel paint. The contractor shall provide inserts at the time of slab casting or provide suitable anchor fasteners.
2. The pipe supports or hangers shall be designed to withstand combined weight of pipe, pipes fittings, fluid in pipe and insulation. Pipe supports shall be of steel and coated with rust preventing paint and finished with two coats enamel paint. The maximum spacing for pipes supports shall be as below:

Pipe (MM)	Maximum Spacing	Drop Rod Size
Up to 25	2100 mm	8 mm



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TECHNICAL SPECIFICATIONS

32	2700 mm	10 mm
38	2700 mm	10mm
50	3000 mm	10 mm
63	3300 mm	12 mm
75	3600 mm	12 mm
100	4200 mm	16 mm
125	5200 mm	16 mm

3. Pipes supports shall be spaced at maximum interval of 1.5 mtrs. on either side of heavy fittings and valves. Wherever piping passes through walls, pipes sleeves of diameter larger than that of piping shall be provided.
4. Pipe sleeves shall be of steel or cast iron pipe. Install pipe sleeves of ample diameter at all points where pipes penetrate beams, floors or walls. Size and install so that sprinkler pipes are not stressed.
5. The underground piping shall be supported with cement concrete blocks of suitable size and strength provided at an interval of 2.5 mtrs. The pipes shall be laid at 1 mtr. Depth (top of the pipe) and trench excavated for sufficient width. The rate of pipes shall include the scope of excavation / refilling the trench. 1:2:4 concrete thrust blocks are also to be provided at turning of pipe. The cost of installation includes concrete pedestals etc. as required and to be included in the item rate.

3.4 Air Vessel and Air Release Valve

Air vessel on top of wet riser piping shall be fabricated of at least 8mm thick steel to withstand the pressure, with dished ends and supporting legs. This shall be of 250mm dia and 1m high. This shall be complete with necessary flange connection to the wet riser piping and air release valve with necessary piping to meet the functional requirement of the system. The air vessel shall be of continuous welded construction and galvanized. This shall be tested for twice the working pressure.

3.5 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.



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TECHNICAL SPECIFICATIONS

3.6 Fire Department Breeching Inlet Connection (Two Way)

1. Breeching Inlet (Two Way) connections shall be by an acceptable manufacturer. The unit shall be complete with two 65 mm threaded connections to suit type of thread on hose used by local fire department. Connections shall be completed with threaded caps, chained to body. All parts including valve body, chain and knox 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 Defence and NFPA requirements and as shown on drawings. Provide one check valve for each connection.

3.7 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.

3.8 Pressure Gauges

1. All pressure gauges shall be UL listed spring pressure gauges with 90 mm 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 and at the highest point of all hydrant risers.

3.9 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. Further, drain piping backfilling to fire water tank shall be from top of tank.

3.10 Identifications Tags

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



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TECHNICAL SPECIFICATIONS

3.11 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.

3.12 Painting

1. All fire protection piping shall be painted red in accordance with Civil Defence 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.



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TECHNICAL SPECIFICATIONS

SECTION -4

4. ELECTRICAL & CONTROL

Contractor to supply, install, testing and commissioning of all power cables, control cables, electrical accessories, electrical and control components and related works, terminations etc. at his own cost and to accommodate cost in BOQ items.

4.1 Controls

1. Electric Motor driven fire & jockey pumps & diesel engine driven fire pump shall start automatically through preset pressure switches in proper sequence as mentioned above.
2. Stopping of all fire pumps shall be manual only.
3. Audio visual alarm shall be sounded when fire pumps start/starts.
4. Power supply 'ON' indication shall be provided in the Fire Pump Control Panel.

4.2 AC Motors

All AC motors shall be approved type & totally enclosed fan cooled and shall have Class B insulation with degree of protection IP 55. All motors shall be suitable for both DOL and STAR/DELTA starting, as required. The motors shall have also two distinct terminals for Earthing. All the motors shall be suitable for 415 V (- 15% to + 5% variation) 3 phase 50 HZ plus minus 3% AC supply.

4.3 Motor Control Centre (MCC)

1. The MCC shall be made of sheet steel of thickness not less than 2 mm, totally enclosed, self-supporting, floor mounted dust and vermin proof cubicle type construction with multitier compartmental arrangement with degree of protection IP 54. It shall have a series of panels of uniform height placed side by side with front access for operation as well as cabling. MCC panel shall be completely front wired type having all device/termination etc, approachable from front without any requirement of back access for maintenance repairs and cabling. Provision of cable entry shall be from the top or bottom to match with cable layout of the pump room.



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2. The motor control circuit shall be provided with test facilities so that it is possible to test the control circuit with the main motor circuit disconnected. Control voltage shall be 240 V, A C single phase derived from an isolating transformer.
3. The main busbar of the MCC shall be of electrical grade copper and shall have continuous current rating as required but in no case less than the current rating of incoming switch fuse unit. The busbars shall be easily accessible from the front of the cubicle and shall be colour coded for phase identification. A copper earth busbar of adequate cross sectional area shall be provided in the bottom or top part of the cubicle and shall run for the entire length of the MCC.
4. Start/stop push button, auto/manual selector switch and indication shall be provided and the MCC for control of the motors.
5. Incomer cubicle shall incorporate voltmeter, ammeter with respective selector switches, power factor meter and phase indication lamps.
6. Each outgoing cubicles shall have ammeter with selector switch and on/off, trip indication lamps. Ammeters for incoming/outgoing cubicles, for motors it shall be suppressed scale type beyond full load rating up to 8 times of full load current for taking care of starting current kicks.
7. Pilot lamp to indicate circuit breaker closed and power available.
8. 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.
9. Alarm and signal devices in controller and in remote location to indicate trouble on controller and pumping unit.
10. Ammeter test link and voltmeter test studs.
11. Manual selector station, two positions, marked "Automatic" and "Non-Automatic".
12. Means on controller to operate alarm signal continuously while pump is running.
13. Mark "FIRE PUMP CONTROLLER".
14. Digital Display for
 - System frequency
 - Line-to-line voltages
 - Line-to-line amperages
 - Elapsed run time
 - Pressure system settings
 - Pump starting failure
 - Over current problem



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TECHNICAL SPECIFICATIONS

- Under current problem
- Pressure transmitter problem

15. Annunciator for

- Power available
- System trouble
- Phase reversal
- Low system pressure

4.4 Diesel Engine Control Panel

1. The control panel shall be made of sheet steel of thickness not less than 2 mm, totally enclosed, self-supporting, floor mounted, dust and vermin proof cubicle type with degree of protection IP 54.
2. The following features shall be incorporated in the control panel;
3. Contactors, relays, timers etc for applying automatic starting pulses to the diesel engine on receipt of a command signal from the pressure switch with starting sequence consisting of three electrical pulses of 5 second duration each spaced at second apart.
4. Main ON/OFF isolator with DC circuit fuses and main ON indication
5. Boost cum trickle automatic battery charger with fuse protection for AC charging circuit (trickle/boost), Auto/Manual selector switch for charging, charging current meter, volt meter etc.
6. Indication/Alarm for the pump "RUN" condition, Annunciation for engine fault condition, alarm cut off switch and reset switch for fault conditions.
7. Engine start switch, engine stop switch together with Auto/Manual switch for engine starting and indication showing failure to start on 'AUTO'
8. Engine RPM indication from in built tachometer with engine.
9. Pressure-switch transducer start.
10. Fire protection equipment start.
11. Main ac power failure relay connected either to start engine or to actuate remote trouble alarm.
12. Common local alarm bell and individual trouble lamps or annunciator to indicate:
 - Low oil pressure.
 - High cooling water temperature.
 - Engine failure to start.
 - Shut down from over speed.

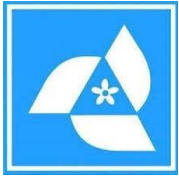


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TECHNICAL SPECIFICATIONS

- Shut down from pump operation.
 - Shut down from trouble on controller or engine.
 - Shut down from loss of ac power.
 - Battery failure for each battery.
 - Battery charger failure.
 - Low suction
 - Low fuel level
 - Water reservoir low
 - Water reservoir empty
 - Low pump room temperature
 - High fuel level
 - Main switch in auto
 - Engine run
 - Failure when running
13. 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.
14. 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.
15. Provision for lock-out alarm if a battery is disconnected or becomes inoperative.
16. Selector switch to bypass relay circuits and provide for manual starting.
17. Provision for 10 s delayed start.
18. Sequential timing device.
19. Circuits for various engine mounted devices such as automatic chokes, anti-dieseling solenoid valve, cooling water line solenoid valve.
20. Timing relay for automatic stop.
21. Auto-manual, selector.
22. "Auto" position indicating lamp.
23. Manual, start-stop pushbuttons.
24. Two built-in automatic battery chargers.
25. NEMA 3R enclosure.
26. Mark "FIRE PUMP CONTROLLER".



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TECHNICAL SPECIFICATIONS

4.5 Cables

1. All power cables shall be multi core, 1100 V grade, PVC insulated, PVC sheathed, copper conductor cables manufactured and tested.
2. All control cables shall be multi core, 1100 V grade, PVC insulated and overall PVC sheathed with copper conductor manufactured and tested.
3. Armoured power and control cables shall be only considered.

4.6 Power supply

1. For MCC one 400 - 415 V, A C 3 phase and neutral 50 HZ feeder of adequate capacity shall be made available at the MCC incomer.
2. If the equipment is required to operate at any other voltage, necessary transformers & converters shall be included in the scope of the tenderer.



TECHNICAL SPECIFICATIONS

SECTION - 5

5. TESTING AND COMMISSIONING

5.1 General

Comply with the relevant clauses of BS EN / NFPA.

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.

The client shall be notified one week in advance of any testing so that the tests can be witnessed.

Defects that develop during the tests shall be promptly remedied and testing shall be reapplied to the satisfaction of the Client / Consultant. All related costs will be in contractor scope.

5.2 Particular Requirements

Carry out all tests and inspections to prove that the installation meets with the requirements of BS EN / NFPA.

Inspect and test the installation at agreed stages to ensure that the piping is properly secured and clear of obstructing debris and superfluous matter and that all work which is to be concealed is free from defects before it is finally enclosed.

Carry out a low-pressure air test, to establish whether open ends are present, prior to carrying out a hydraulic test on completion of the installation, or sections thereof.

All piping and attached appurtenances subjected to system working pressure shall be hydrostatically tested at gauge pressure of 200 psi (13.8 bar) or 50 psi (3.4 bar) in excess of the system working pressure, whichever is greater, and shall maintain that pressure at gauge pressure of ± 5 psi (0.34 bar) for 2 hours.

All flow-switch testing shall be completed using a water flow detector tester in accordance with FM1043.

Test all alarms and alarm connections associated with the sprinkler installation and prove all interlocks and links to other systems and remote locations.

Upon completion of the installation of the system carry out functional tests in the presence of all interested parties to demonstrate to the satisfaction of all present that the installation conforms to the required standards.

When these tests have been accepted by all parties as being satisfactory, issue a completion certificate.



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TECHNICAL SPECIFICATIONS

NOTE:

The system shall be handed over to the Purchaser/ Owner complete in all respects in good working condition along with records of the maintenance/ repair carried out.

SECTION - 6

6. SUBMITTALS

6.1 Product data

- Submit manufacturer's printed product literature, specifications and datasheet.

6.2 Shop Drawings & As-Built Drawings:

- Submit drawings stamped & signed and acceptable to the authority having jurisdiction.
 - Submit shop and As-built drawings
- Indicate:
 - Materials.
 - Finishes.
 - Method of anchorage
 - Number of anchors.
 - Supports.
 - Reinforcement.
 - Assembly details.
 - Accessories.

6.3 Quality Assurance Submittals

- Certificates: submit certificates signed by manufacturer certifying that materials comply with specified performance characteristics and physical properties.
- Instructions: submit manufacturer's installation instructions.

6.4 Operation and Maintenance Manuals:

- Provide detailed operation and maintenance manual.

6.5 Quality Assurance

- Installer: Persons having experience in wet sprinkler systems with 2-5 years documented experience.
- Health and Safety: Do construction occupational health and safety in accordance with relevant standards and owner's facility safety manual.



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TECHNICAL SPECIFICATIONS

6.6 Delivery, Storage and Handling

- Packing, shipping, handling, lifting, unpacking and unloading:
 - Deliver, store and handle materials in accordance with manufacturer's written instructions.
- Storage and Protection:
 - Store materials indoors in dry location.
 - Store and protect materials from exposure to harmful weather conditions and at temperature and humidity conditions recommended by manufacturer.
- Waste Management and Disposal:
 - Construction/demolition waste management and disposal to appropriate locations and as per owner's instructions.

SECTION - 7

7. WELDING

7.1 Welding Requirements:

- Welds between pipe and welding outlet fittings shall be permitted to be attached by full penetration welds, partial penetration groove welds, or fillet welds.
- The minimum throat thickness shall be not less than the thickness of the pipe, the thickness of the welding fitting, or 3/16 in. (5 mm), whichever is least.
- Circumferential butt joints shall be cut, beveled, and fit so that full penetration is achievable.
- Full penetration welding shall not be required.
- Where slip-on flanges are welded to pipe with a single fillet weld, the weld shall be on the hub side of the flange and the minimum throat weld thickness shall not be less than 1.25 times the pipe wall thickness or the hub thickness, whichever is less.
- Face welds on the internal face of the flange shall be permitted as a water seal in addition to the hub weld.
- Tabs for longitudinal earthquake bracing shall have minimum throat weld thickness not less than 1.25 times the pipe wall thickness and welded on both sides of the longest dimension.
- When welding is performed, the following shall apply:
 - i. Holes in piping for outlets shall be cut to the full inside diameter of fittings prior to welding in place of the fittings.
 - ii. Discs shall be retrieved.
 - iii. Openings cut into piping shall be smooth bore, and all internal slag and welding residue shall be removed.



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TECHNICAL SPECIFICATIONS

- iv. Fittings shall not penetrate the internal diameter of the piping.
 - v. Steel plates shall not be welded to the ends of piping or fittings.
 - vi. Fittings shall not be modified.
 - vii. Nuts, clips, eye rods, angle brackets, or other fasteners shall not be welded to pipe or fittings, except as permitted.
 - viii. Completed welds shall be free from cracks, incomplete fusion, surface porosity greater than 1/16 in. (1.6 mm) diameter, and undercut deeper than 25 percent of the wall thickness or 1/32 in. (0.8 mm), whichever is less.
 - ix. Completed circumferential butt weld reinforcement shall not exceed 3/32 in. (2.4 mm).
- Welders or welding machine operators shall, upon completion of each welded pipe, place their identifiable mark or label onto each piece adjacent to a weld.
 - Contractors or fabricators shall maintain certified records, which shall be available to the authority having jurisdiction, of the procedures used and the welders or welding machine operators employed by them, along with their welding identification.
 - Records shall show the date and the results of procedure and performance qualifications.

7.2 Qualification:

- A welding procedure shall be prepared and qualified by the contractor or fabricator before any welding is done.
- Qualification of the welding procedure to be used and the performance of all welders and welding operators shall be required and shall meet or exceed the requirements of AWS B2.1, Specification for Welding Procedure and Performance Qualification; ASME Boiler and Pressure Vessel Code, Section IX, "Welding and Brazing Qualifications"; or other applicable qualification standard as required by the authority having jurisdiction, except as permitted by section 6.5.2.5.3 of NFPA 13.
- Successful procedure qualification of complete joint penetration groove welds shall qualify partial joint penetration (groove/fillet) welds and fillet welds in accordance with the provisions of this standard.
- Welding procedures qualified under standards recognized by previous editions of this standard shall be permitted to be continued in use.
- Contractors or fabricators shall be responsible for all welding they produce.
- Each contractor or fabricator shall have available to the authority having jurisdiction an established written quality assurance procedure ensuring compliance with the requirements of 6.5.2.4 of NFPA 13.



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TECHNICAL SPECIFICATIONS

SECTION - 8

8. SPARES

Bidder will provide list of recommended spares for Pumps, Valve & fittings etc. operational use with cost as per NFPA and OEM.

8.1 Reserved Cabinet

Supply and install reserve cabinets, each containing spares and tools as mentioned above. The cabinet shall be spot welded construction, fabricated from low carbon steel sheet. The box and shelves shall be fabricated from minimum 0.030 inch thick material and the cover shall be fabricated from 0.042 inch thick material. The cabinet shall be painted bright red and enamel paint side and out and labels. The cabinet shall be rigidly attached to walls as specified by client / consultant.

SECTION - 9

9. WARRANTY

The bidder shall provide One (01) year warranty period from the date of commissioning for the offered products, and free of cost replacement/rectification of defected parts/equipment, labour, freight, transportation of part/equipment from - to site.

BILL OF QUANTITIES

**FIRE FIGHTING /HYDRANT SYSTEM IN STATE LIFE
INSURANCE CARPORATION OF PAKISTAN BUILDING DAVIS
ROAD LAHORE**



BILL OF QUANTITIES



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

SUMMARY OF COST

**FIRE FIGHTING /HYDRANT SYSTEM IN STATE LIFE
INSURANCE CORPORATION OF PAKISTAN BUILDING DAVIS
ROAD LAHORE**

S.NO	DESCRIPTION	COST (PKR)
1	Fire Fighting System	
TOTAL AMOUNT WITH ALL TAX (PKR)		

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 SLI 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 contractor will be responsible for ensuring the on site coordination with running MEP services.

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BILL OF QUANTITIES

Sr. #	Description	Unit	Quantity	Rate (PKR)	Amount (PKR)
	FIRE FIGHTING SYSTEM				
	Non-Schedule Items				
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. (Pipe Brand:, HUFFAZ or Approved equal), (Pipe support Brand: Hilti/Fischer/Index), (Paint Brand: Berger, ICI or Approved equal)				
a)	150 mm Diameter (6")	Rft	20.00		-
b)	100 mm Diameter (4")	Rft	950.00		-
c)	65 mm Diameter (2.5")	Rft	250.00		-
d)	40 mm Diameter (1.5")	Rft	75.00		-
2	Supply, installation, testing & commissioning of valves & equipment imported/ equivalent make as approved by the Engineer complete in all respects to their entire satisfaction including all accessories (flanges, bolts, gaskets, thread compounds, blind flanges at battery limit etc.) and jointing material complete in all respects and as per Specifications and Drawings. Also includes all labelling and signage of all fire fighting system. (Brand: Viking, Tyco, Shield or Approved equal) UL & FM Approved				
a)	150 mm Diameter (6") Gate Valve (GV)	Each	2.00		-
b)	100 mm Diameter (4") Gate Valve (GV)	Each	2.00		-
c)	40 mm Diameter (1.5") Gate Valve (GV)	Each	7.00		-
d)	100 mm Diameter (4") Non Return Valve (NRV)	Each	2.00		-
e)	150 mm Diameter (6") Strainer	Each	1.00		-
f)	40mm Diameter (1.5") Pressure Reducer Valve (PRV)	Each	3.00		-
g)	Pressure gauges (0-300PSI)	Each	3.00		-
3	Supply, Installation, testing and commissioning Fire Hydrant pillar 4" flanged type with two outlet (2 x2 1/2"), along with control valves, 2 brass nozzles for each hydrant, as per Firefighting system specification. (Brand:NAFFCO, SFFECO)	Each	4.00		-
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	4.00		-
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	7.00		-
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	1.00		-

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. <u>NFPA 20 Compliant</u> 1 Electric + 1 Diesel + 1 Jockey+ Skid Control Panel 350 GPM @ 7 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)	Each	1.00		-
8	Supply, Installation, Testing and Commissioning of Automatic Air Release Valve of 1" with all required necessities accessories complete in all respect as per drawings and instructed by the engineer incharge at site. (Brand :NAFFCO, SFFECO or Approved equal)	Each	1.00		-
9	Supply & Execution of material for Modifications or temporary works and pads, sleepers, demolishing, restoration, trenches, excavation, backfilling, sleeves, core cutting, etc. demolishing / restoration of Ceiling 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, ceiling and core cutting.	Lot	1.00		-
10	Supply & Execution of foundation works (including all material) of fire fighting pump skid, panels diesel tank any other related civil works.	Lot	1.00		-
11	Shop, As Built Drawing & signage on piping, valves and equipment	Job	1.00		-
12	Training to SLI personnel with Training Manual, O&M Manual and Guidelines As per fire fighting specifications.	Job	1.00		-
13	Supply of recommended spares and Spare cabinet as mentioned in specifications and as per OEM recommendations. Bidder to also provide separate item wise priced breakup of spares.	Lot	1.00		-
14	Flow and Pressure Testing of complete network.	Job	1.00		-
15	Supply, installation, testing & commissioning of controls, sensors and wiring for automatic filling of Underground and Overhead tanks complete in all respect.	Job	1.00		-
16	Operation & maintenance of Firefighting System for 2 years after Commissioning including required spare parts with 1 operator 24hr deployed at site.	Months	24.00		-
TOTAL AMOUNT (PKR.)					-

**FIRE FIGHTING /HYDRANT SYSTEM IN STATE LIFE
INSURANCE CARPORATION OF PAKISTAN BUILDING CHOWK NAWAN
SHAHERABDALI ROAD MULTAN**



BILL OF QUANTITIES



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

SUMMARY OF COST

**FIRE FIGHTING /HYDRANT SYSTEM IN STATE LIFE
INSURANCE CARPORATION OF PAKISTAN BUILDING CHOWK NAWAN
SHAHERABDALI ROAD MULTAN**

S.NO	DESCRIPTION	COST (PKR)
1	Fire Fighting System	
TOTAL AMOUNT WITH ALL TAX (PKR)		

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 SLI 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 contractor will be responsible for ensuring the on site coordination with running MEP services.

**FIRE FIGHTING /HYDRANT SYSTEM IN STATE LIFE
INSURANCE CARPORATION OF PAKISTAN BUILDING CHOWK NAWAN SHAHERABDALI ROAD
MULTAN**

BILL OF QUANTITIES

Sr. #	Description	Unit	Quantity	Rate (PKR)	Amount (PKR)
	FIRE FIGHTING SYSTEM				
	Non-Schedule Items:				
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. (Pipe Brand:, HUFFAZ or Approved equal), (Pipe support Brand: Hilti/Fischer/Index), (Paint Brand: Berger, ICI or Approved equal)				
a)	150 mm Diameter (6")	Rft	20.00		
b)	100 mm Diameter (4")	Rft	475.00		
c)	65 mm Diameter (2.5")	Rft	100.00		
d)	40 mm Diameter (1.5")	Rft	70.00		
2	Supply, installation, testing & commissioning of valves & equipment imported/ equivalent make as approved by the Engineer complete in all respects to their entire satisfaction including all accessories (flanges, bolts, gaskets, thread compounds, blind flanges at battery limit etc.) and jointing material complete in all respects and as per Specifications and Drawings. Also includes all labelling and signage of all fire fighting system. (Brand: Viking, Tyco, Shield or Approved equal) UL & FM Approved				
a)	150 mm Diameter (6") Gate Valve (GV)	Each	1.00		
b)	100 mm Diameter (4") Gate Valve (GV)	Each	2.00		
c)	40 mm Diameter (1.5") Gate Valve (GV)	Each	7.00		
d)	100 mm Diameter (4") Non Return Valve (NRV)	Each	1.00		
e)	150 mm Diameter (6") Strainer	Each	1.00		
f)	40mm Diameter (1.5") Pressure Reducer Valve (PRV)	Each	4.00		
g)	Pressure gauges (0-300PSI)	Each	8.00		
3	Supply, Installation, testing and commissioning Fire Hydrant pillar 4" flanged type with two outlet (2 x2 1/2"), along with control valves, 2 brass nozzles for each hydrant, as per Firefighting system specification. (Brand:NAFFCO, SFFECO)	Each	2.00		
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	2.00		
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	7.00		
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	1.00		

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. <u>NFPA 20 Compliant</u> 1 Electric + 1 Diesel + 1 Jockey+ Skid Control Panel 350 GPM @ 7 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)	Each	1.00		
8	Supply, Installation, Testing and Commissioning of Automatic Air Release Valve of 1" with all required necessities accessories complete in all respect as per drawings and instructed by the engineer incharge at site. (Brand :NAFFCO, SFFECO or Approved equal)	Each	1.00		
9	Supply & Execution of material for Modifications or temporary works and pads, sleepers, demolishing, restoration, trenches, excavation, backfilling, sleeves, core cutting, etc. demolishing / restoration of Ceiling 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, ceiling and core cutting.	Lot	1.00		
10	Supply & Execution of foundation works (including all material) of fire fighting pump skid, panels diesel tank any other related civil works.	Lot	1.00		
11	Shop, As Built Drawing & signage on piping, valves and equipment	Job	1.00		
12	Training to SLI personnel with Training Manual, O&M Manual and Guidelines As per fire fighting specifications.	Job	1.00		
13	Supply of recommended spares and Spare cabinet as mentioned in specifications and as per OEM recommendations. Bidder to also provide separate item wise priced breakup of spares.	Lot	1.00		
14	Flow and Pressure Testing of complete network.	Job	1.00		
15	Supply, installation, testing & commissioning of controls, sensors and wiring for automatic filling of Underground and Overhead tanks complete in all respect.	Job	1.00		
16	Dismantling of 3ft existing door, reinstalling it and any other related civil works for door installation including raised walls.	Job	1.00		
17	Operation & maintenance of Firefighting System for 2 years after Commissioning including required spare parts with 1 operator 24hr deployed at site.	Months	24.00		
Schedule Items:					
18	Supply and Erection of Shed consisting of 3 mm thick fiber glass sheet roof (3-layers) fixed / riveted on moulded curved frame of M.S box pipe 1-1/2"x1-1/2"x16-SWG supported on trusses of MS angle iron 1-1/2"x1-1/2"x3/16" all around duly supported on M.S sheet 6"x6"x1/4" welded on GI pipe post (Medium Quality) of specified diameter embedded in P:C:C (1:2:4) i/c the cost of excavation, cutting straightening assembling, bending as per design, welding / grinding of joints and painting three coats complete in all respect as approved and directed by the Engineer Incharge. (4" dia GI Pipe Supports) MRS Item : Chapter 26 Sr. # 46(i)	Sqft	64.00		
Civil work for Underground Water Tank					
19	Removing cement and lime plaster complete in all respect and instructed by engineer incharge.) MRS Item : Chapter 4 Sr. # 48	100Sqft	589.76		
20	Providing and laying of Cement plaster ratio 1:4 upto 20' (6.00 m) height:- b) 1/2" (13 mm) thick a) Ground Floor MRS Item : Chapter 11 Sr. # 7(b)	100Sqft	419.76		
21	Mosaic Flooring 1 1/2" (40mm) thick mosaic flooring, consisting of 1/2" (13mm) mosaic topping of one part of cement and marble powder in the ratio of 3:1 and two parts of marble chips, laid over 1" (25mm) thick floor of 1:2:4 cement concrete including rubbing and polishing complete with finishing :- (b) using grey cement MRS Item : Chapter 10 Sr. # 23(a)	100Sqft	170.00		

22	Mosaic dado Mosaic dado o skirting with one part of cement and marble powder in the ratio of 3:1 and two parts of marble chips, laid over ½" (13mm) thick cement plaster 1:3, including rubbing and polishing, complete with finishing: (a) using grey cement: ii) ½" (13 mm) thick MRS Item : Chapter 10 Sr. # 37	100Sqft	419.76		
Civil work for Overhead Water Tank					
23	Removing cement and lime plaster complete in all respect and instructed by engineer incharge.) MRS Item : Chapter 4 Sr. # 48	100Sqft	631.62		
24	Providing and laying of Cement plaster ratio 1:4 upto 20' (6.00 m) height:- b) ½" (13 mm) thick a) Ground Floor MRS Item : Chapter 11 Sr. # 7(b)	100Sqft	347.00		
25	Mosaic Flooring 1½" (40mm) thick mosaic flooring, consisting of ½" (13mm) mosaic topping of one part of cement and marble powder in the ratio of 3:1 and two parts of marble chips, laid over 1" (25mm) thick floor of 1:2:4 cement concrete including rubbing and polishing complete with finishing :- (b) using grey cement MRS Item : Chapter 10 Sr. # 23(a)	100Sqft	284.62		
26	Mosaic dado Mosaic dado o skirting with one part of cement and marble powder in the ratio of 3:1 and two parts of marble chips, laid over ½" (13mm) thick cement plaster 1:3, including rubbing and polishing, complete with finishing: (a) using grey cement: ii) ½" (13 mm) thick MRS Item : Chapter 10 Sr. # 37	100Sqft	347.00		
TOTAL AMOUNT (PKR.)					-

DRAWING

CLIENT

STATE LIFE INSURANCE CORPORATION OF PAKISTAN

FIRE FIGHTING/ HYDRANT SYSTEM DRAWING
(ISSUED FOR TENDER)



PROJECT

FIRE FIGHTING /HYDRANT SYSTEM IN STATE LIFE
BUILDING DAVIS ROAD, LAHORE

CONSULTANT












VELOSI INTEGRITY & SAFETY PAK.(PVT).LTD

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

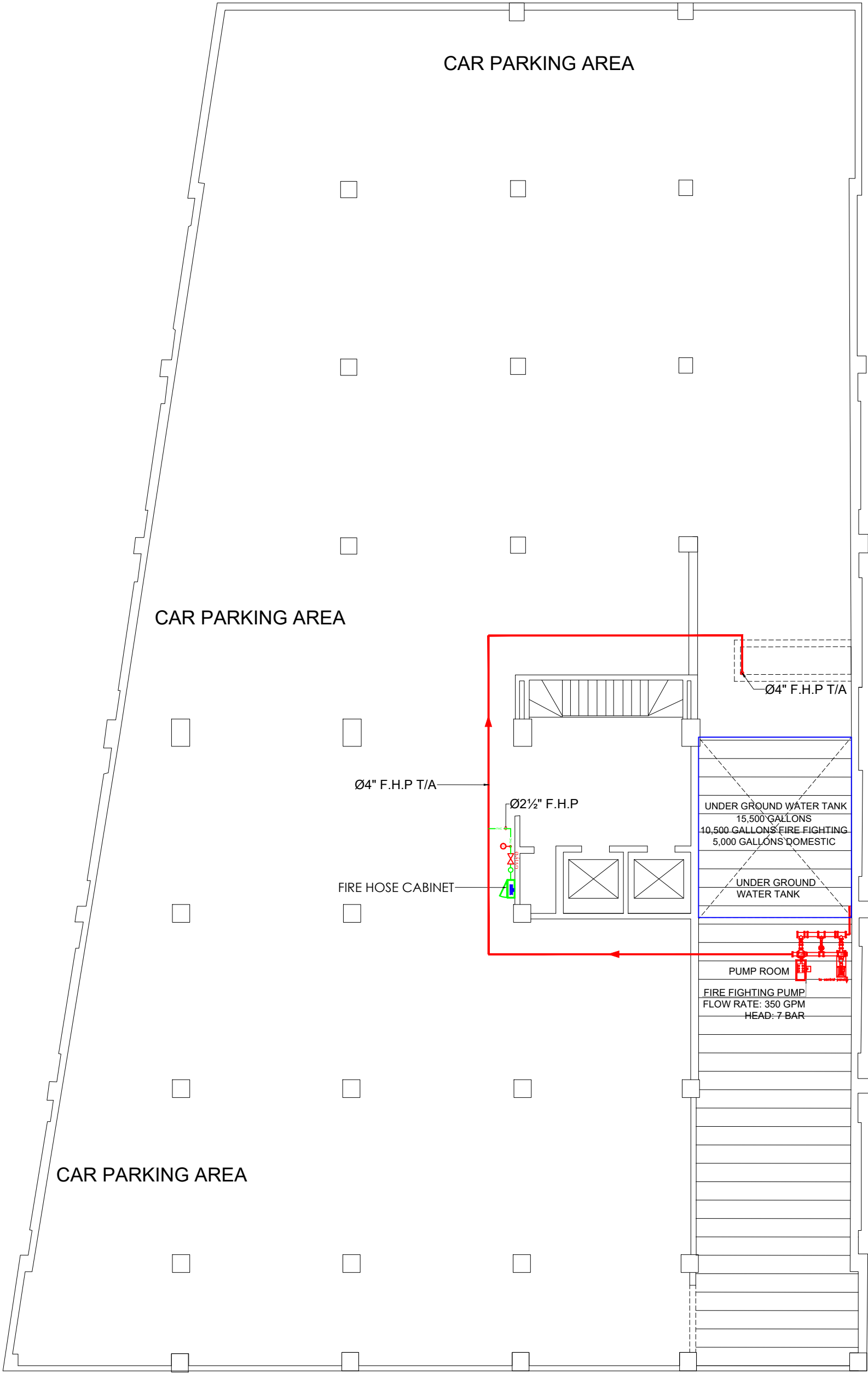


GENERAL NOTES

1. THE DESIGN, CONSTRUCTION AND TESTING FOR THE FIRE PROTECTION SYSTEM ARE IN ACCORDANCE WITH ALL THE LATEST RELEVANT CODES/STANDARDS FOR THE NATIONAL FIRE PROTECTION ASSOCIATION (NFPA).
2. THE FIRE PROTECTION/SPRINKLER SYSTEM DRAWINGS SHALL BE READ IN CONJUNCTION WITH THE CORRESPONDING ARCHITECTURAL, MECHANICAL, ELECTRICAL, SANITARY AND STRUCTURAL DRAWINGS. ANY DISCREPANCY SHALL BE BROUGHT TO THE CONSULTANT ENGINEER'S ATTENTION PRIOR TO CONSTRUCTION.
3. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE LOCATION FOR FIRE HOSE CABINETS & ALL PIPING FORMING PART FOR THIS CONTRACT IS COORDINATED WITH: a) ALL ARCHITECTURAL & REFLECTED CEILING PLANS b) ALL OTHER MEP SERVICES. c) STRUCTURAL MEMBERS
4. DO NOT SCALE THE DRAWINGS. ALL DIMENSIONS SHALL BE READ FROM THE DRAWINGS OR COMPUTED AT FIELD.
5. ALL EQUIPMENT AND DEVICES SHALL BE UL / FM APPROVED
6. ALL RISER TO HAVE DRAIN OUT CONNECTIONS AT LOW POINTS ALL PIPING AT LOWEST LEVELS TO BE PITCHED TOWARDS RISER.
7. (UNLESS OTHERWISE DETAILED) THE CONTRACTOR SHALL SUBMIT BEFORE CONSTRUCTION, COMPLETE WORK SHOP DRAWINGS (PLANS & SECTIONS ... ETC.) SHOWINGS ALL NECESSARY OPENINGS IN CONCRETE STRUCTURES (TO ACCOMMODATE THE MECHANICAL, ELECTRICAL, SANITARY, FIRE SAFETY & OTHER REQUIREMENTS) FOR THE ENGINEER'S APPROVAL.
8. SLEEVES FOR FIRE PROTECTION PIPES ...ETC. OPENINGS TO BE PLACED BEFORE CASTING CONCRETE. THESE SLEEVES TO FIT THE PIPES SIZES WITH SUITABLE TOLERANCE.
9. AFTER FIXING PIPES AND FITTINGS SPECIAL GROUTING TO BE USED TO WATER PROFOR THE OPENINGS.
10. FLEXIBLE EXPANSION COUPLING TO BE PROVIDED WHEREVER PIPING PASSES ACROSS BUILDING EXPANSION JOINTS.

LEGENDS	
SYMBOL	DESCRIPTION
	MAIN FIRE FIGHTING PIPE
	FIRE HOSE CABINET PIPE
	FIRE HOSE REEL CABINET
	GATE VALVE
	PRESSURE SAFETY VALVE
	AUTOMATIC AIR VENT
	VERTICAL RIESER Ø 4"
	PRESSURE REDUCING VALVE
	PRESSURE GUAGE
	FIRE HYDRANT
	BREECHING INLET WITH LANDING VALVE

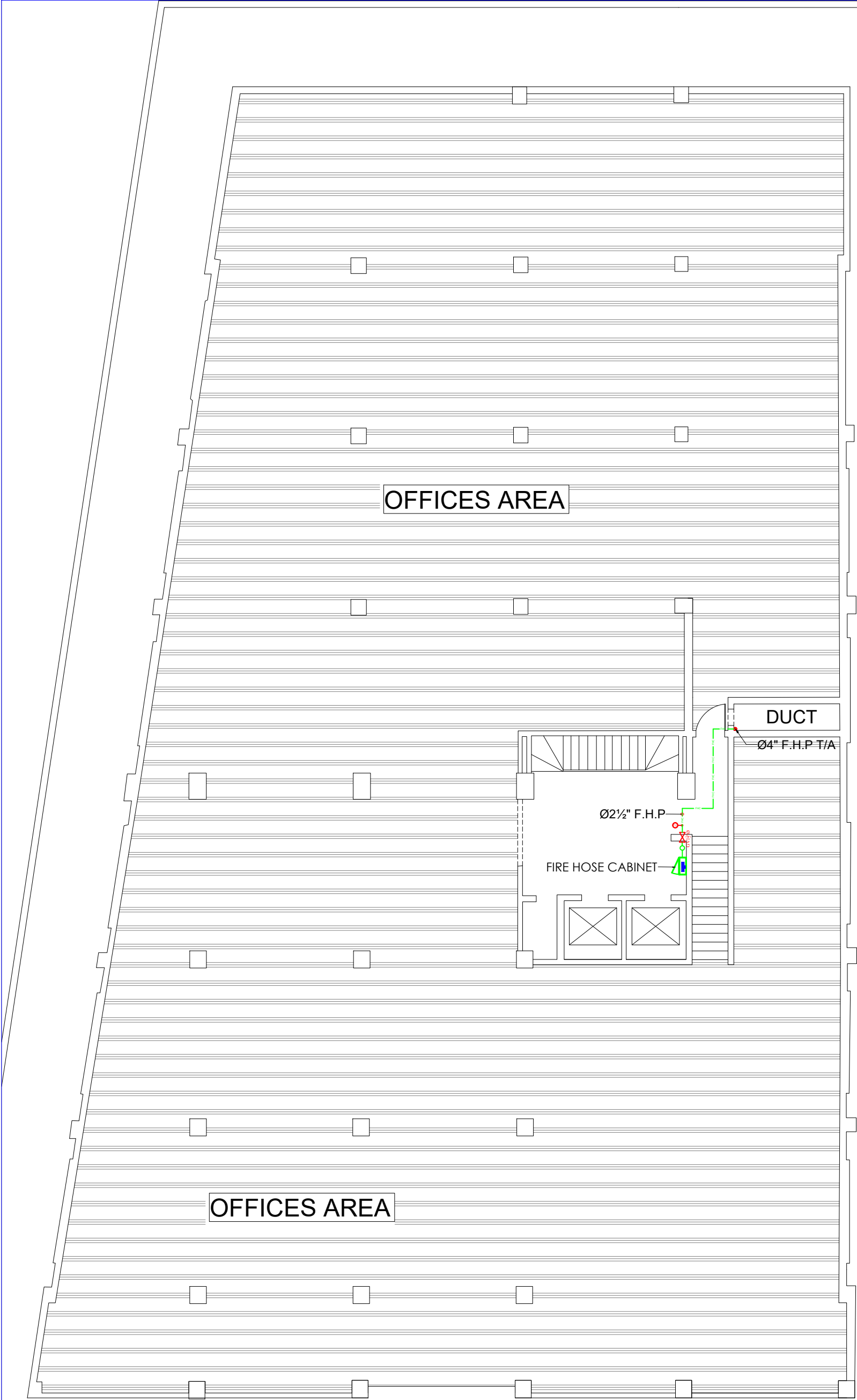
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CLIENT					
STATE LIFE INSURANCE CORPORATION OF PAKISTAN					
CONSULTANT					
VELOSI INTEGRITY & SAFETY PAK (PVT) LTD					
207-A, P-Block Gulberg III, Lahore, Pakistan					
PROJECT					
FIRE FIGHTING / HYDRANT SYSTEM IN STATE LIFE BUILDING DAVIS ROAD, LAHORE					
TITLE					
GENERAL NOTES & LEGEND					
DATE					
SCALE					
N.T.S					
APPROVED					
PROJECT NO.					
DRAWING NUMBER					
SHEET					
SIZE					
REV					
01 OF 01					
A3					
00					



BASEMENT FLOOR PLAN

LEGENDS	
SYMBOL	DESCRIPTION
	MAIN FIRE FIGHTING PIPE
	FIRE HOSE CABINET PIPE
	FIRE HOSE REEL CABINET
	GATE VALVE
	PRESSURE SAFETY VALVE
	AUTOMATIC AIR VENT
	VERTICAL RIESER Ø 4"
	PRESSURE REDUCING VALVE
	PRESSURE GUAGE
	FIRE HYDRANT
	BREECHING INLET WITH LANDING VALVE

REV	DESCRIPTION	DATE	DRN	CHK	APP
REVISION					
CLIENT					
STATE LIFE INSURANCE CORPORATION OF PAKISTAN					
CONSULTANT					
VELOSI INTEGRITY & SAFETY PAK (PVT) LTD					
207-A, P-Block Gulberg III, Lahore, Pakistan					
PROJECT					
FIRE FIGHTING / HYDRANT SYSTEM IN STATE LIFE BUILDING DAVIS ROAD, LAHORE					
TITLE					
BASEMENT FLOOR LAYOUT PLAN FIRE FIGHTING SYSTEM					
DATE					
04-04-2024					
SCALE					
N.T.S					
APPROVED					
PROJECT NO. VISP-L-E23-1202					
DRAWING NUMBER V-1202-M-F-002					
SHEET 01 OF 01					
SIZE A3					
REV 00					

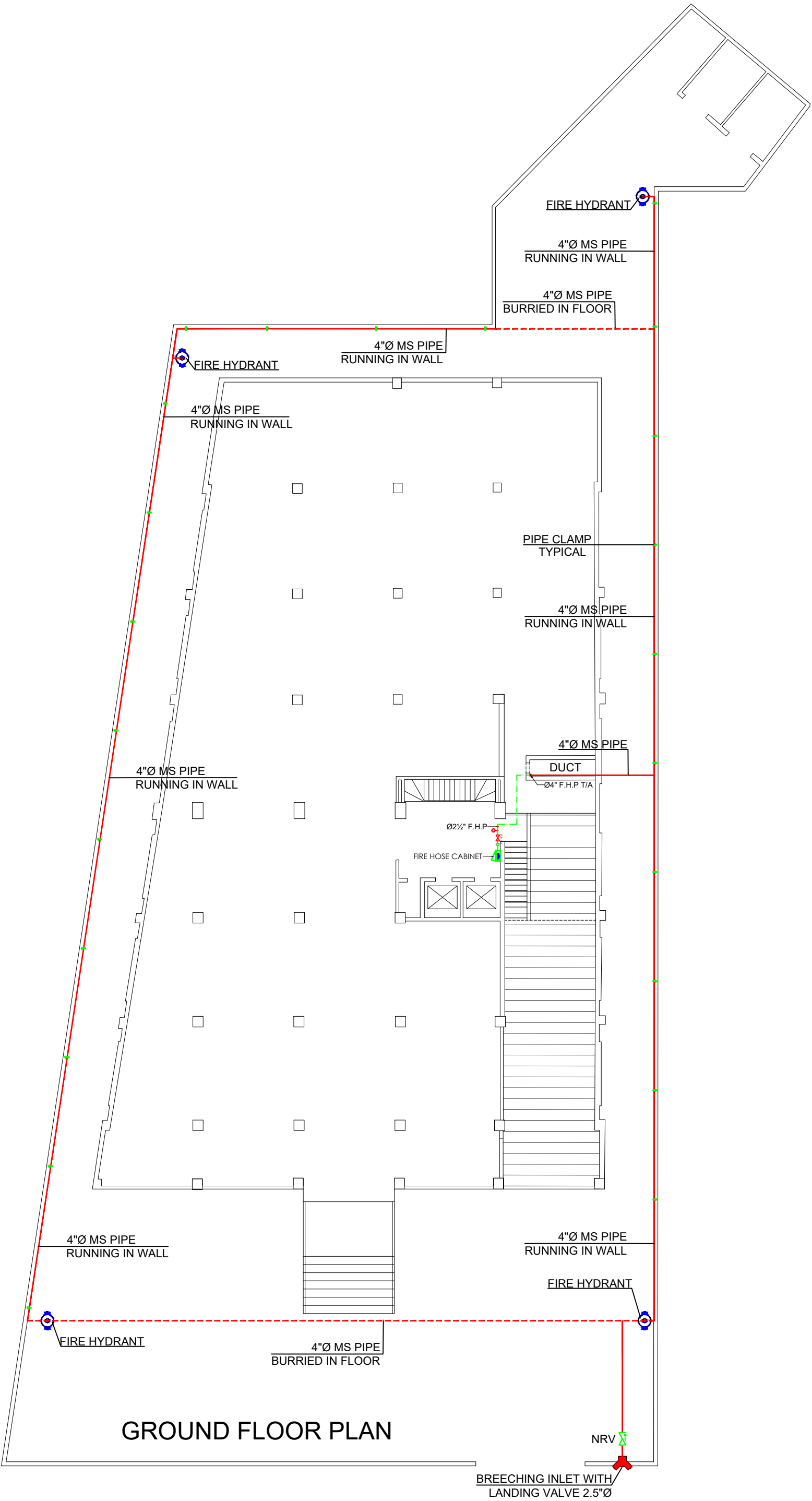


LEGENDS	
SYMBOL	DESCRIPTION
	MAIN FIRE FIGHTING PIPE
	FIRE HOSE CABINET PIPE
	FIRE HOSE REEL CABINET
	GATE VALVE
	PRESSURE SAFETY VALVE
	AUTOMATIC AIR VENT
	VERTICAL RIESER Ø 4"
	PRESSURE REDUCING VALVE
	PRESSURE GUAGE
	FIRE HYDRANT
	BREECHING INLET WITH LANDING VALVE

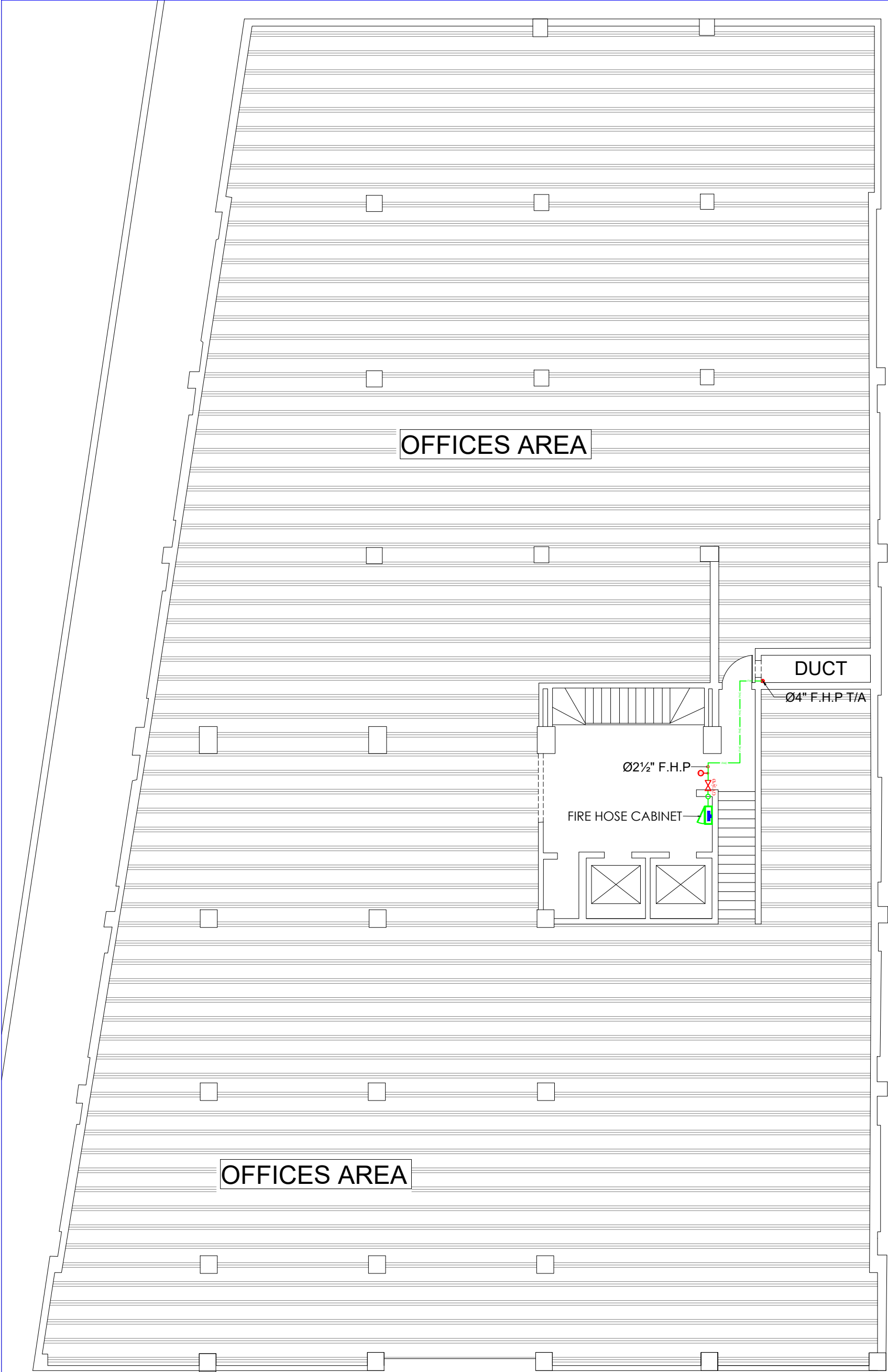
LOWER GROUND PLAN

REV	DESCRIPTION	DATE	DRN	CHK	APP
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CONSULTANT					
VELOSI INTEGRITY & SAFETY PAK (PVT) LTD					
PROJECT					
FIRE FIGHTING / HYDRANT SYSTEM IN STATE LIFE BUILDING DAVIS ROAD, LAHORE					
TITLE					
LOWER GROUND FLOOR LAYOUT PLAN FIRE FIGHTING SYSTEM					
DATE					
SCALE					
N.T.S					
APPROVED					
PROJECT NO. 04-04-2024					
DRAWING NUMBER V-1202-M-F-003					
SHEET 01 OF 01					
SIZE A3					
REV 00					

LEGENDS	
SYMBOL	DESCRIPTION
	MAIN FIRE FIGHTING PIPE
	FIRE HOSE CABINET PIPE
	FIRE HOSE REEL CABINET
	GATE VALVE
	PRESSURE SAFETY VALVE
	AUTOMATIC AIR VENT
	VERTICAL RIESER Ø 4"
	PRESSURE REDUCING VALVE
	PRESSURE GUAGE
	FIRE HYDRANT
	BREECHING INLET WITH LANDING VALVE



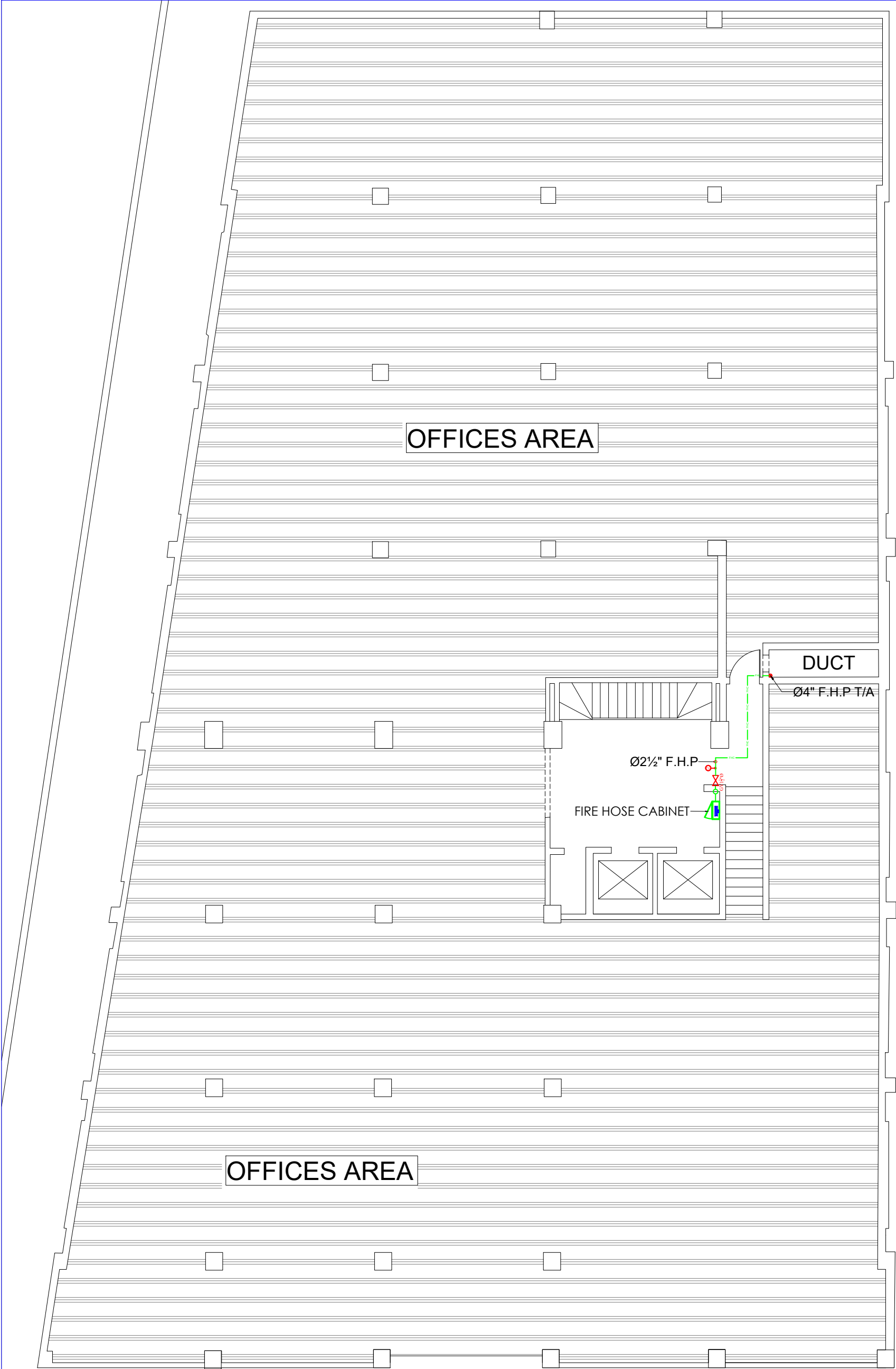
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CONSULTANT					
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PROJECT					
FIRE FIGHTING / HYDRANT SYSTEM IN STATE LIFE BUILDING DAVIS ROAD, LAHORE					
TITLE					
GROUND FLOOR LAYOUT PLAN FIRE FIGHTING SYSTEM					
DATE					
SCALE					
N.T.S					
APPROVED					
PROJECT NO.		DRAWING NUMBER		SHEET	
VISP-L-E23-1202		V-1202-M-F-004		01 OF 01	
M.A		A3		REV	
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1ST FLOOR PLAN

LEGENDS	
SYMBOL	DESCRIPTION
	MAIN FIRE FIGHTING PIPE
	FIRE HOSE CABINET PIPE
	FIRE HOSE REEL CABINET
	GATE VALVE
	PRESSURE SAFETY VALVE
	AUTOMATIC AIR VENT
	VERTICAL RIESER Ø 4"
	PRESSURE REDUCING VALVE
	PRESSURE GUAGE
	FIRE HYDRANT
	BREECHING INLET WITH LANDING VALVE

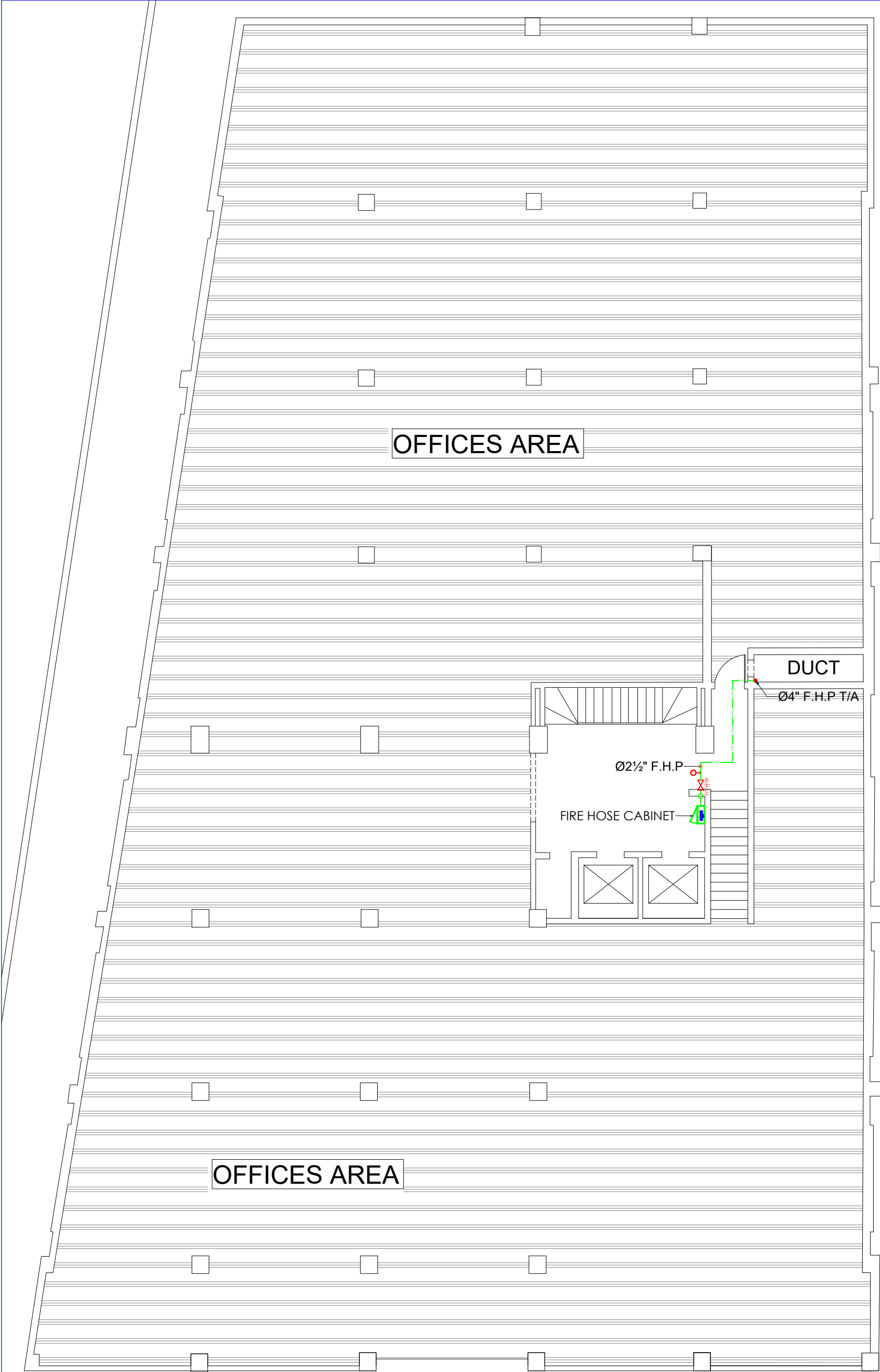
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PROJECT					
FIRE FIGHTING / HYDRANT SYSTEM IN STATE LIFE BUILDING DAVIS ROAD, LAHORE					
TITLE					
1ST FLOOR LAYOUT PLAN FIRE FIGHTING SYSTEM					
DATE					
SCALE					
N.T.S					
APPROVED					
PROJECT NO.		DRAWING NUMBER		SHEET	
VISP-L-E23-1202		V-1202-M-F-005		01 OF 01	
M.A		A3		00	



2ND FLOOR PLAN

LEGENDS	
SYMBOL	DESCRIPTION
	MAIN FIRE FIGHTING PIPE
	FIRE HOSE CABINET PIPE
	FIRE HOSE REEL CABINET
	GATE VALVE
	PRESSURE SAFETY VALVE
	AUTOMATIC AIR VENT
	VERTICAL RIESER Ø 4"
	PRESSURE REDUCING VALVE
	PRESSURE GUAGE
	FIRE HYDRANT
	BREECHING INLET WITH LANDING VALVE

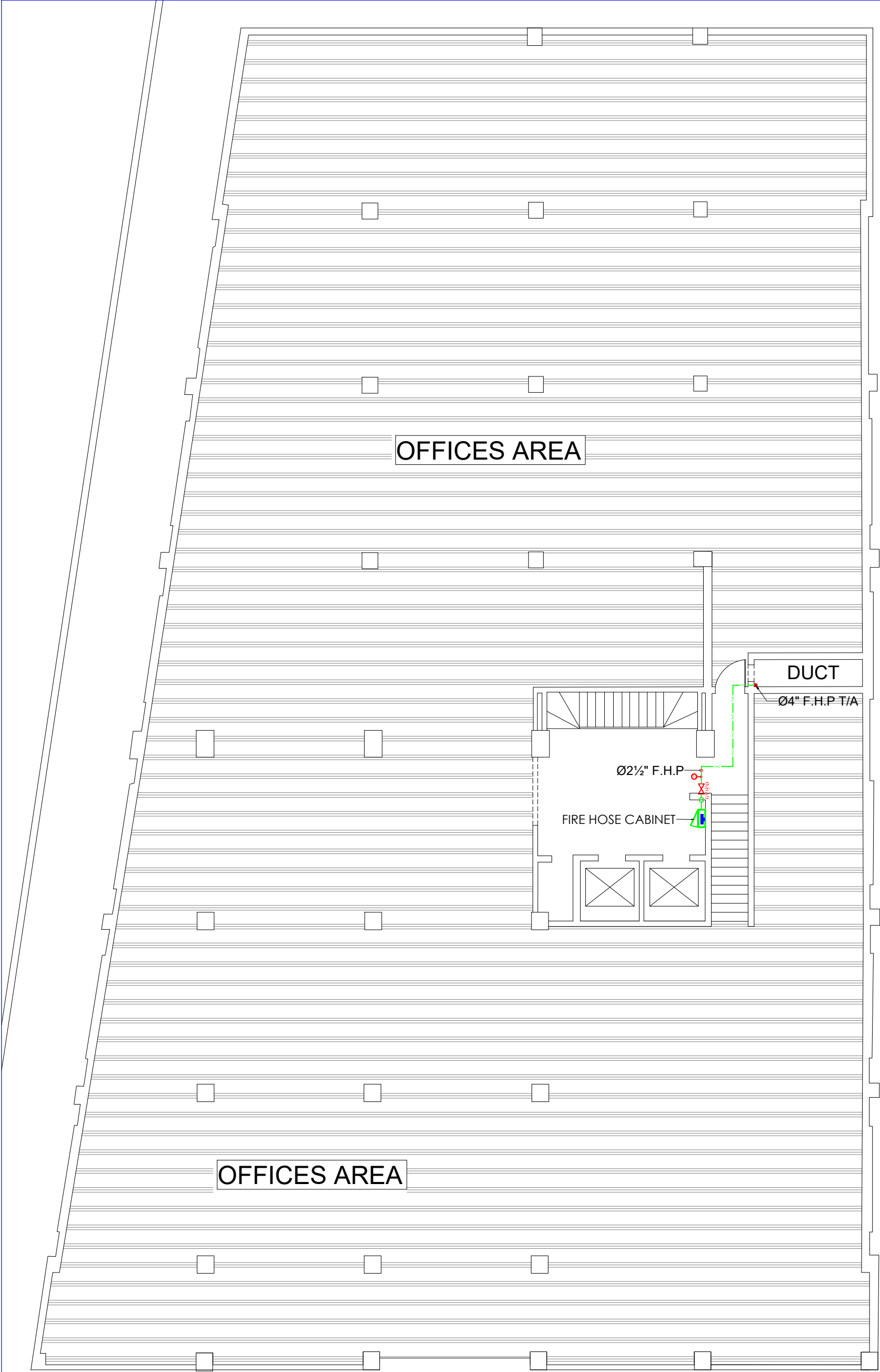
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CLIENT					
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CONSULTANT					
VELOSI INTEGRITY & SAFETY PAK.(PVT).LTD					
PROJECT					
FIRE FIGHTING / HYDRANT SYSTEM IN STATE LIFE BUILDING DAVIS ROAD, LAHORE					
TITLE					
2ND FLOOR LAYOUT PLAN FIRE FIGHTING SYSTEM					
DATE					
SCALE					
N.T.S					
APPROVED					
PROJECT NO.		DRAWING NUMBER		SHEET	
VISP-L-E23-1202		V-1202-M-F-006		01 OF 01	
M.A		A3		00	



LEGENDS	
SYMBOL	DESCRIPTION
	MAIN FIRE FIGHTING PIPE
	FIRE HOSE CABINET PIPE
	FIRE HOSE REEL CABINET
	GATE VALVE
	PRESSURE SAFETY VALVE
	AUTOMATIC AIR VENT
	VERTICAL RIESER Ø 4"
	PRESSURE REDUCING VALVE
	PRESSURE GUAGE
	FIRE HYDRANT
	BREECHING INLET WITH LANDING VALVE

3RD FLOOR PLAN

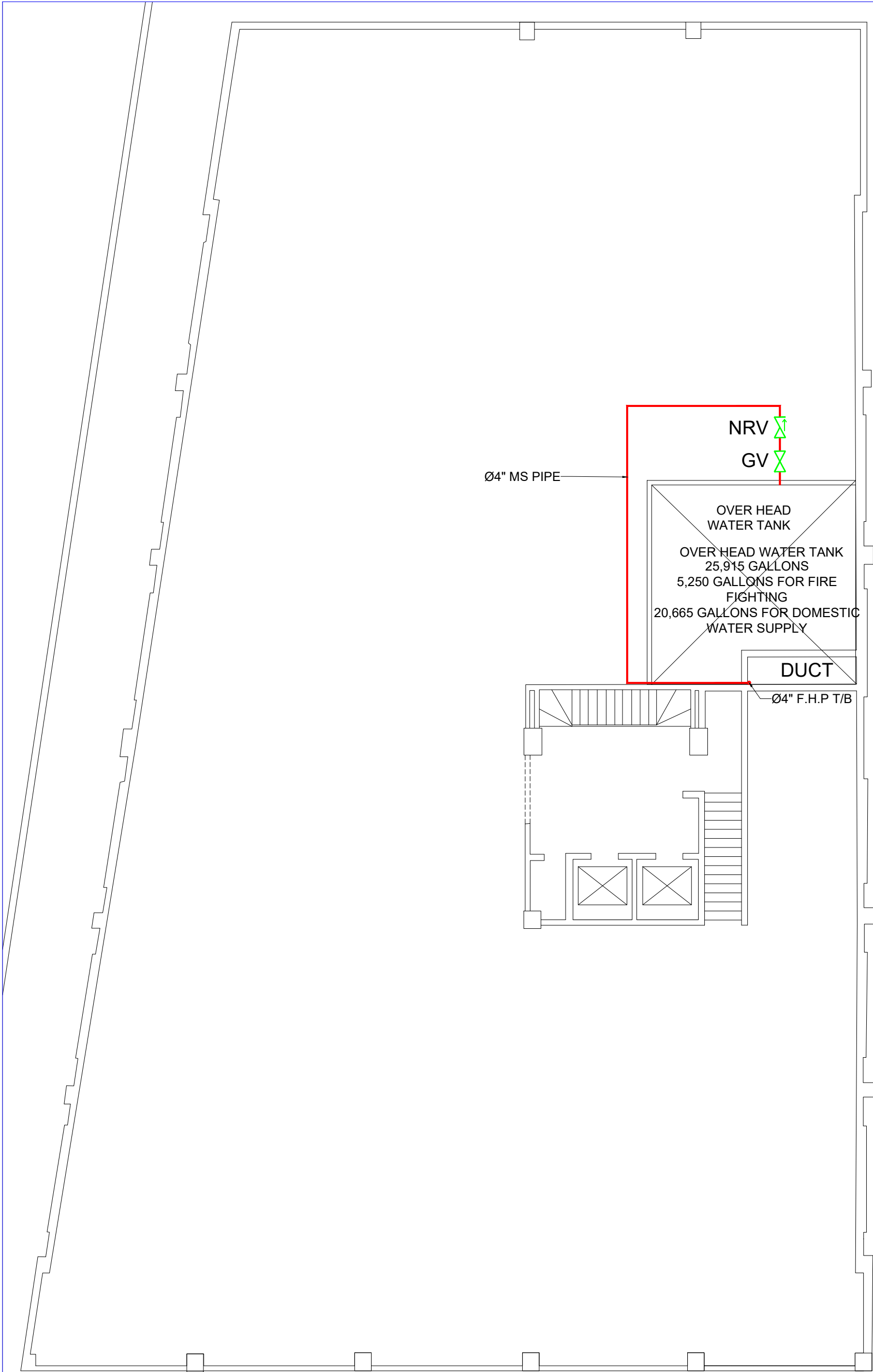
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CLIENT					
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CONSULTANT					
VELOSI INTEGRITY & SAFETY PAK (PVT) LTD					
PROJECT					
FIRE FIGHTING / HYDRANT SYSTEM IN STATE LIFE BUILDING DAVIS ROAD, LAHORE					
TITLE					
3RD FLOOR LAYOUT PLAN FIRE FIGHTING SYSTEM					
DATE					
04-04-2024					
SCALE					
N.T.S					
APPROVED					
PROJECT NO. 04-04-2024					
DRAWING NUMBER V-1202-M-F-007					
SHEET 01 OF 01					
SIZE A3					
REV 00					



4TH FLOOR PLAN

LEGENDS	
SYMBOL	DESCRIPTION
	MAIN FIRE FIGHTING PIPE
	FIRE HOSE CABINET PIPE
	FIRE HOSE REEL CABINET
	GATE VALVE
	PRESSURE SAFETY VALVE
	AUTOMATIC AIR VENT
	VERTICAL RIESER Ø 4"
	PRESSURE REDUCING VALVE
	PRESSURE GUAGE
	FIRE HYDRANT
	BREECHING INLET WITH LANDING VALVE

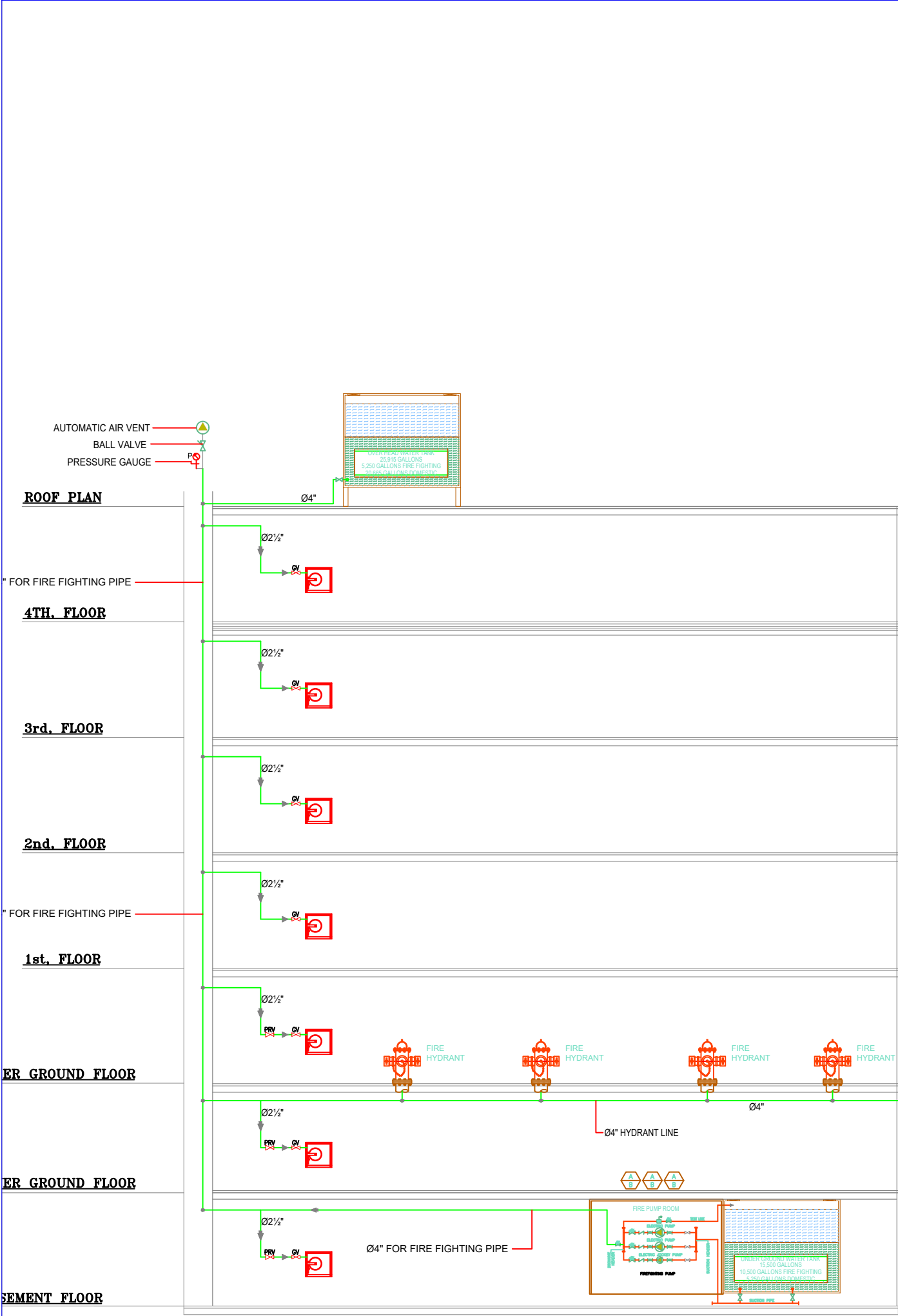
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CLIENT					
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CONSULTANT					
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PROJECT					
FIRE FIGHTING / HYDRANT SYSTEM IN STATE LIFE BUILDING DAVIS ROAD, LAHORE					
TITLE					
4TH FLOOR LAYOUT PLAN FIRE FIGHTING SYSTEM					
DATE					
04-04-2024					
SCALE					
N.T.S					
APPROVED					
PROJECT NO. 04-04-2024					
DRAWING NUMBER V-1202-M-F-008					
SHEET 01 OF 01					
SIZE A3					
REV 00					



ROOF FLOOR PLAN

LEGENDS	
SYMBOL	DESCRIPTION
	MAIN FIRE FIGHTING PIPE
	FIRE HOSE CABINET PIPE
	FIRE HOSE REEL CABINET
	GATE VALVE
	PRESSURE SAFETY VALVE
	AUTOMATIC AIR VENT
	VERTICAL RIESER Ø 4"
	PRESSURE REDUCING VALVE
	PRESSURE GUAGE
	FIRE HYDRANT
	BREECHING INLET WITH LANDING VALVE

REV	DESCRIPTION	DATE	DRN	CHK	APP
REVISION					
CLIENT					
STATE LIFE INSURANCE CORPORATION OF PAKISTAN					
CONSULTANT					
VELOSI INTEGRITY & SAFETY PAK (PVT) LTD					
DRAWN BY:					
T.A					
DESIGN					
U.A					
CHECKED					
U.A					
APPROVED					
M.A					
PROJECT		DATE		SCALE	
FIRE FIGHTING / HYDRANT SYSTEM IN STATE LIFE BUILDING DAVIS ROAD, LAHORE		04-04-2024		N.T.S	
TITLE		PROJECT NO.		DRAWING NUMBER	
ROOF FLOOR LAYOUT PLAN FIRE FIGHTING SYSTEM		VISP-L-E23-1202		V-1202-M-F-009	
DATE		SHEET		SIZE	
04-04-2024		01 OF 01		A3	
REV		REV		REV	
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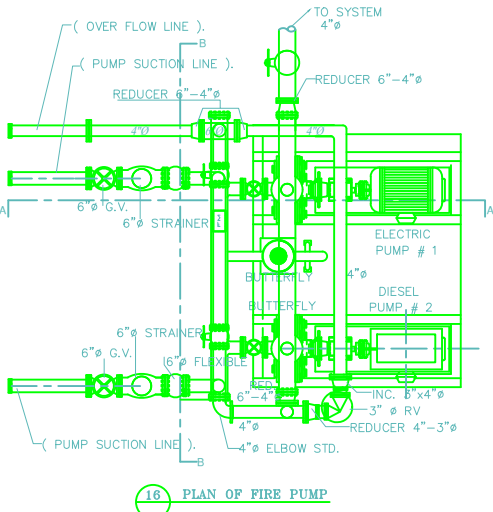
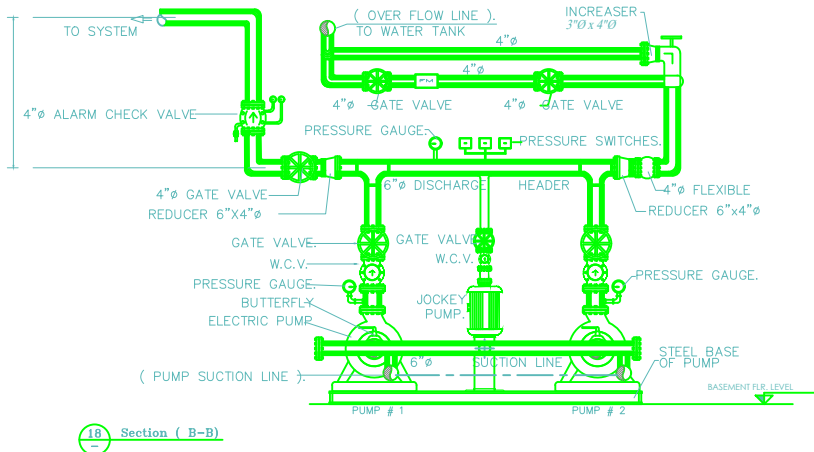
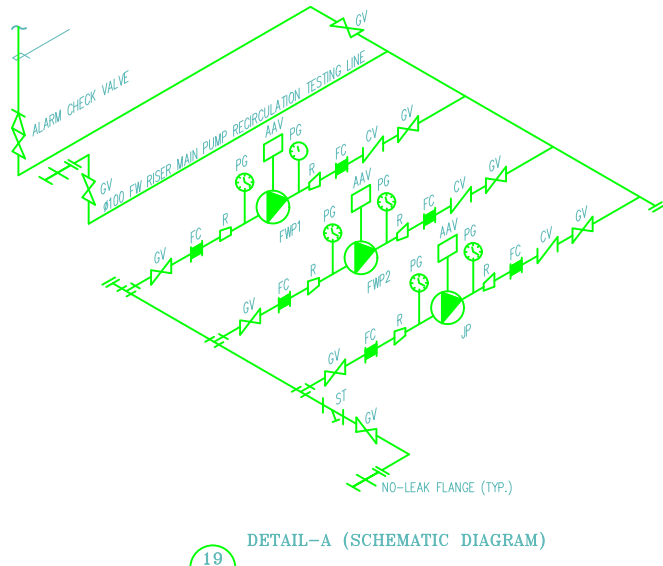
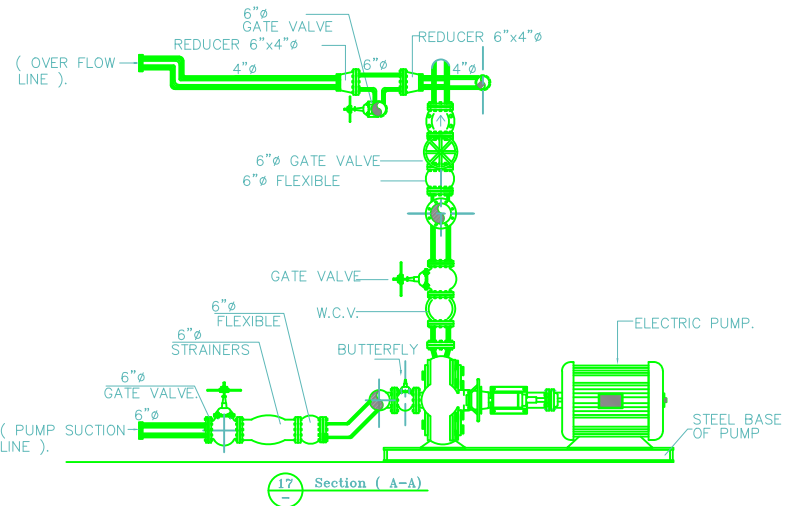


FIRE FIGHTING SYSTEM SCHEMATIC

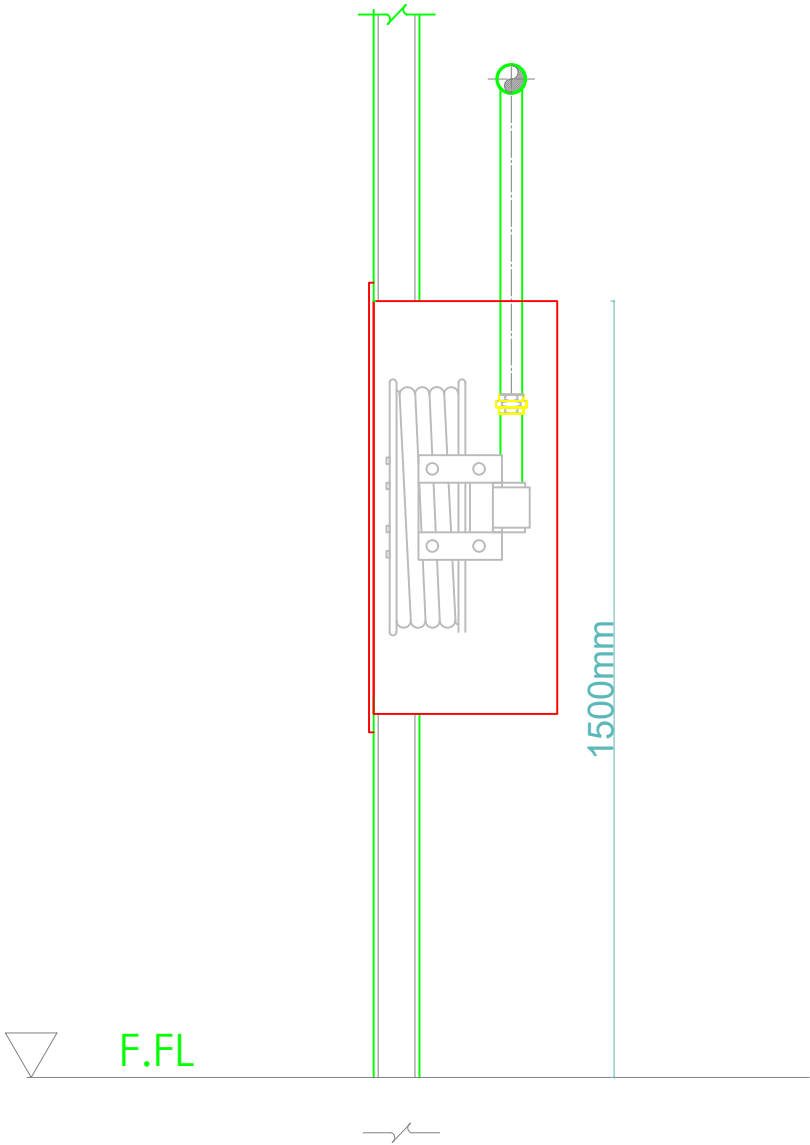
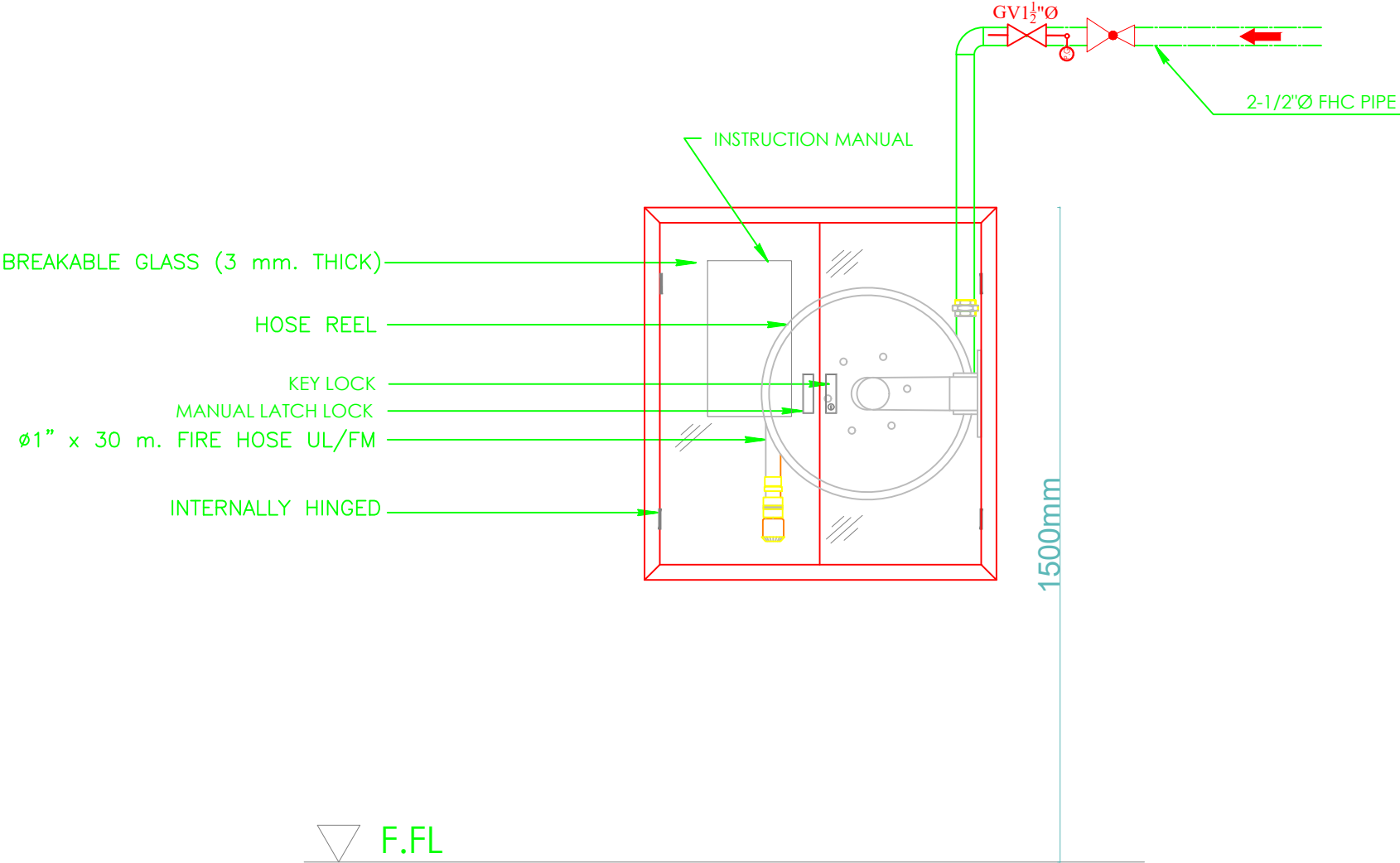
LEGENDS	
SYMBOL	DESCRIPTION
	MAIN FIRE FIGHTING PIPE
	FIRE HOSE CABINET PIPE
	FIRE HOSE REEL CABINET
	GATE VALVE
	PRESSURE SAFETY VALVE
	AUTOMATIC AIR VENT
	VERTICAL RIESER Ø 4"
	PRESSURE REDUCING VALVE
	PRESSURE GAUGE
	FIRE HYDRANT
	BREECHING INLET WITH LANDING VALVE

LEGEND:	
FIRE FIGHTING CABINET	
FIRE HYDRANT	
BREECHING INLET	

REV	DESCRIPTION	DATE	DRN	CHK	APP
REVISION					
CLIENT					
STATE LIFE INSURANCE CORPORATION OF PAKISTAN					
CONSULTANT					
VELOSI INTEGRITY & SAFETY PAK.(PVT).LTD 207-A, P-Block Gulberg III, Lahore, Pakistan					
PROJECT					
FIRE FIGHTING / HYDRANT SYSTEM IN STATE LIFE BUILDING DAVIS ROAD, LAHORE					
TITLE					
SCHEMATIC DRAWING FIRE FIGHTING SYSTEM					
DATE					
04-04-2024					
SCALE					
N.T.S					
APPROVED					
PROJECT NO. DATE DRAWING NUMBER SHEET SIZE REV					
VISP-L-E23-1202 V-1202-M-F-010 01 OF 01 A3 00					



REV	DESCRIPTION	DATE	DRN	CHK	APP
REVISION					
CLIENT					
STATE LIFE INSURANCE CORPORATION OF PAKISTAN					
CONSULTANT					
VELOSI INTEGRITY & SAFETY PAK.(PVT).LTD 207-A, P-Block Gulberg III, Lahore, Pakistan					
PROJECT					
FIRE FIGHTING / HYDRANT SYSTEM IN STATE LIFE BUILDING DAVIS ROAD, LAHORE					
TITLE					
STANDARD INSTALLATION DETAILS FIRE FIGHTING SYSTEM					
DATE					
SCALE					
N.T.S					
APPROVED					
PROJECT NO. DRAWING NUMBER SHEET SIZE REV					
VISP-L-E23-1202 V-1202-M-F-011 01 OF 01 A3 00					



11 — DETAIL FIRE HOSE CABINET

REV	DESCRIPTION	DATE	DRN	CHK	APP
REVISION					
CLIENT					
STATE LIFE INSURANCE CORPORATION OF PAKISTAN					
CONSULTANT					
VELOSI INTEGRITY & SAFETY PAK.(PVT).LTD					
207-A, P-Block Gulberg III, Lahore, Pakistan					
DRAWN BY:					
T.A					
DESIGN					
U.A					
CHECKED					
U.A					
APPROVED					
M.A					
PROJECT		DATE		SCALE	
FIRE FIGHTING / HYDRANT SYSTEM IN STATE LIFE BUILDING DAVIS ROAD, LAHORE		04-04-2024		N.T.S	
TITLE		SHEET		REV	
STANDARD INSTALLATION DETAILS FIRE FIGHTING SYSTEM		01 OF 01		A3	
PROJECT NO.		DRAWING NUMBER		SIZE	
VISPL-E23-1202		V-1202-M-F-012		00	

CLIENT

STATE LIFE INSURANCE CORPORATION OF PAKISTAN

FIRE FIGHTING/ HYDRANT SYSTEM DRAWING
(ISSUED FOR TENDER)



PROJECT

FIRE FIGHTING /HYDRANT SYSTEM IN STATE LIFE
BUILDING CHOWK NAWAN SHAHERABDALI ROAD MULTAN

CONSULTANT














VELOSI INTEGRITY & SAFETY PAK.(PVT).LTD



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



GENERAL NOTES

1. THE DESIGN, CONSTRUCTION AND TESTING FOR THE FIRE PROTECTION SYSTEM ARE IN ACCORDANCE WITH ALL THE LATEST RELEVANT CODES/STANDARDS FOR THE NATIONAL FIRE PROTECTION ASSOCIATION (NFPA).
2. THE FIRE PROTECTION/SPRINKLER SYSTEM DRAWINGS SHALL BE READ IN CONJUNCTION WITH THE CORRESPONDING ARCHITECTURAL, MECHANICAL, ELECTRICAL, SANITARY AND STRUCTURAL DRAWINGS. ANY DISCREPANCY SHALL BE BROUGHT TO THE CONSULTANT ENGINEER'S ATTENTION PRIOR TO CONSTRUCTION.
3. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE LOCATION FOR FIRE HOSE CABINETS & ALL PIPING FORMING PART FOR THIS CONTRACT IS COORDINATED WITH: a) ALL ARCHITECTURAL & REFLECTED CEILING PLANS b) ALL OTHER MEP SERVICES. c) STRUCTURAL MEMBERS
4. DO NOT SCALE THE DRAWINGS. ALL DIMENSIONS SHALL BE READ FROM THE DRAWINGS OR COMPUTED AT FIELD.
5. ALL EQUIPMENT AND DEVICES SHALL BE UL / FM APPROVED
6. ALL RISER TO HAVE DRAIN OUT CONNECTIONS AT LOW POINTS ALL PIPING AT LOWEST LEVELS TO BE PITCHED TOWARDS RISER.
7. (UNLESS OTHERWISE DETAILED) THE CONTRACTOR SHALL SUBMIT BEFORE CONSTRUCTION, COMPLETE WORK SHOP DRAWINGS (PLANS & SECTIONS ... ETC.) SHOWINGS ALL NECESSARY OPENINGS IN CONCRETE STRUCTURES (TO ACCOMMODATE THE MECHANICAL, ELECTRICAL, SANITARY, FIRE SAFETY & OTHER REQUIREMENTS) FOR THE ENGINEER'S APPROVAL.
8. SLEEVES FOR FIRE PROTECTION PIPES ...ETC. OPENINGS TO BE PLACED BEFORE CASTING CONCRETE. THESE SLEEVES TO FIT THE PIPES SIZES WITH SUITABLE TOLERANCE.
9. AFTER FIXING PIPES AND FITTINGS SPECIAL GROUTING TO BE USED TO WATER PROFOR THE OPENINGS.
10. FLEXIBLE EXPANSION COUPLING TO BE PROVIDED WHEREVER PIPING PASSES ACROSS BUILDING EXPANSION JOINTS.

LEGENDS	
SYMBOL	DESCRIPTION
	MAIN FIRE FIGHTING PIPE
	FIRE HOSE CABINET PIPE
	FIRE HOSE REEL CABINET
	GATE VALVE
	PRESSURE SAFETY VALVE
	AUTOMATIC AIR VENT
	VERTICAL RIESER Ø 4"
	PRESSURE REDUCING VALVE
	PRESSURE GUAGE
	FIRE HYDRANT
	BREECHING INLET WITH LANDING VALVE
	FLOAT VALVE
	FOOT VALVE

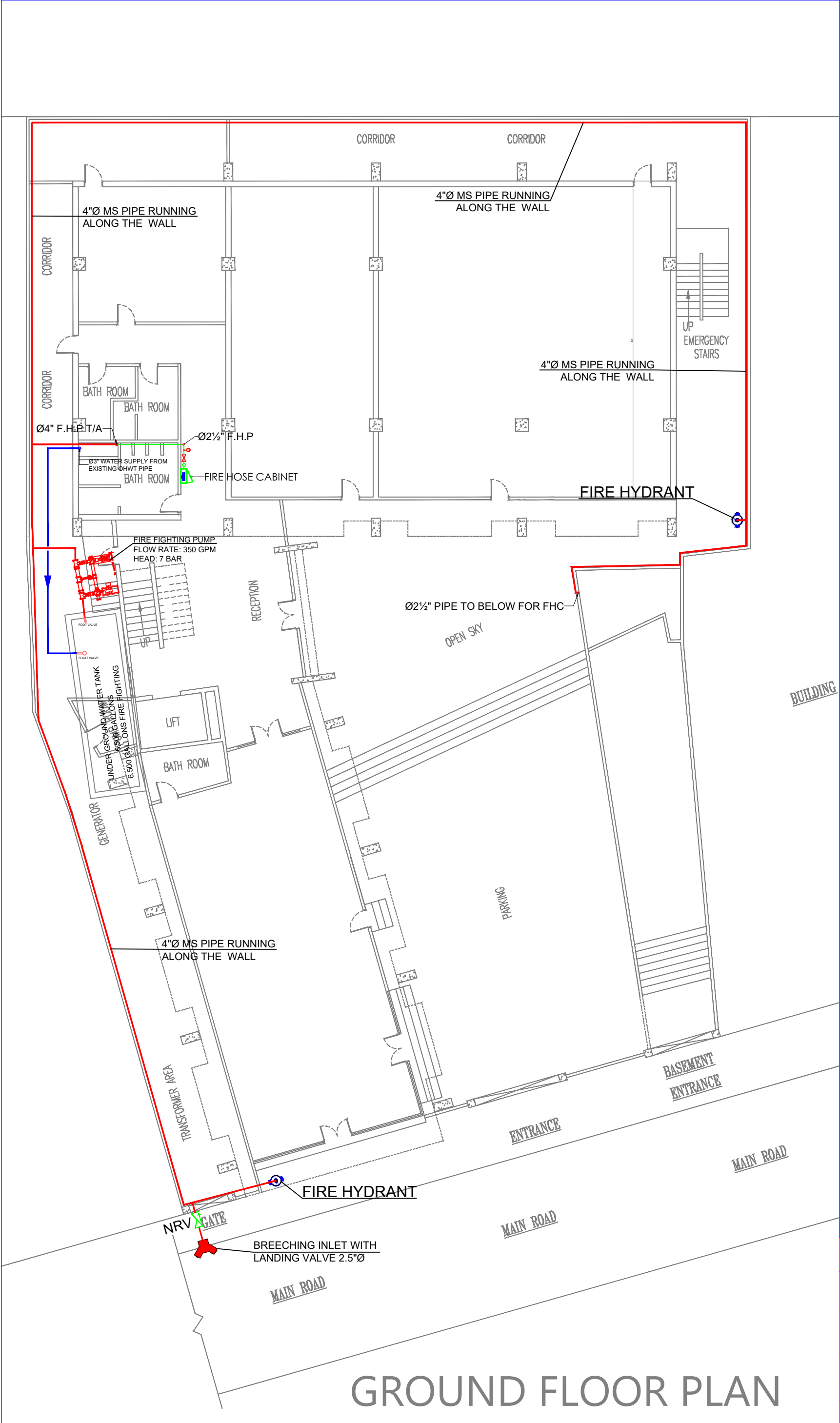
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REVISION					
CLIENT					
STATE LIFE INSURANCE CORPORATION OF PAKISTAN					
CONSULTANT					
VELOSI INTEGRITY & SAFETY PAK (PVT) LTD 207-A, P-Block Gulberg III, Lahore, Pakistan					
DRAWN BY:	PROJECT	FIRE FIGHTING / HYDRANT SYSTEM IN STATE LIFE BUILDING CHOWK NAWAN SHAHERABDALI ROAD MULTAN			
DESIGN	T.A.	TITLE			
	U.A.	BASEMENT FLOOR LAYOUT PLAN FIRE FIGHTING SYSTEM			
CHECKED	DATE	SCALE	N.T.S		
	U.A.	19-04-2024			
APPROVED	PROJECT NO.	DRAWING NUMBER	SHEET	SIZE	REV
	M.A.	VISP-L-E23-1203	V-1203-M-F-000	01 OF 01	A3 00



LEGENDS	
SYMBOL	DESCRIPTION
	MAIN FIRE FIGHTING PIPE
	FIRE HOSE CABINET PIPE
	FIRE HOSE REEL CABINET
	GATE VALVE
	PRESSURE SAFETY VALVE
	AUTOMATIC AIR VENT
	VERTICAL RIESER Ø 4"
	PRESSURE REDUCING VALVE
	PRESSURE GUAGE
	FIRE HYDRANT
	BREECHING INLET WITH LANDING VALVE
	FLOAT VALVE
	FOOT VALVE

BASEMENT FLOOR PLAN

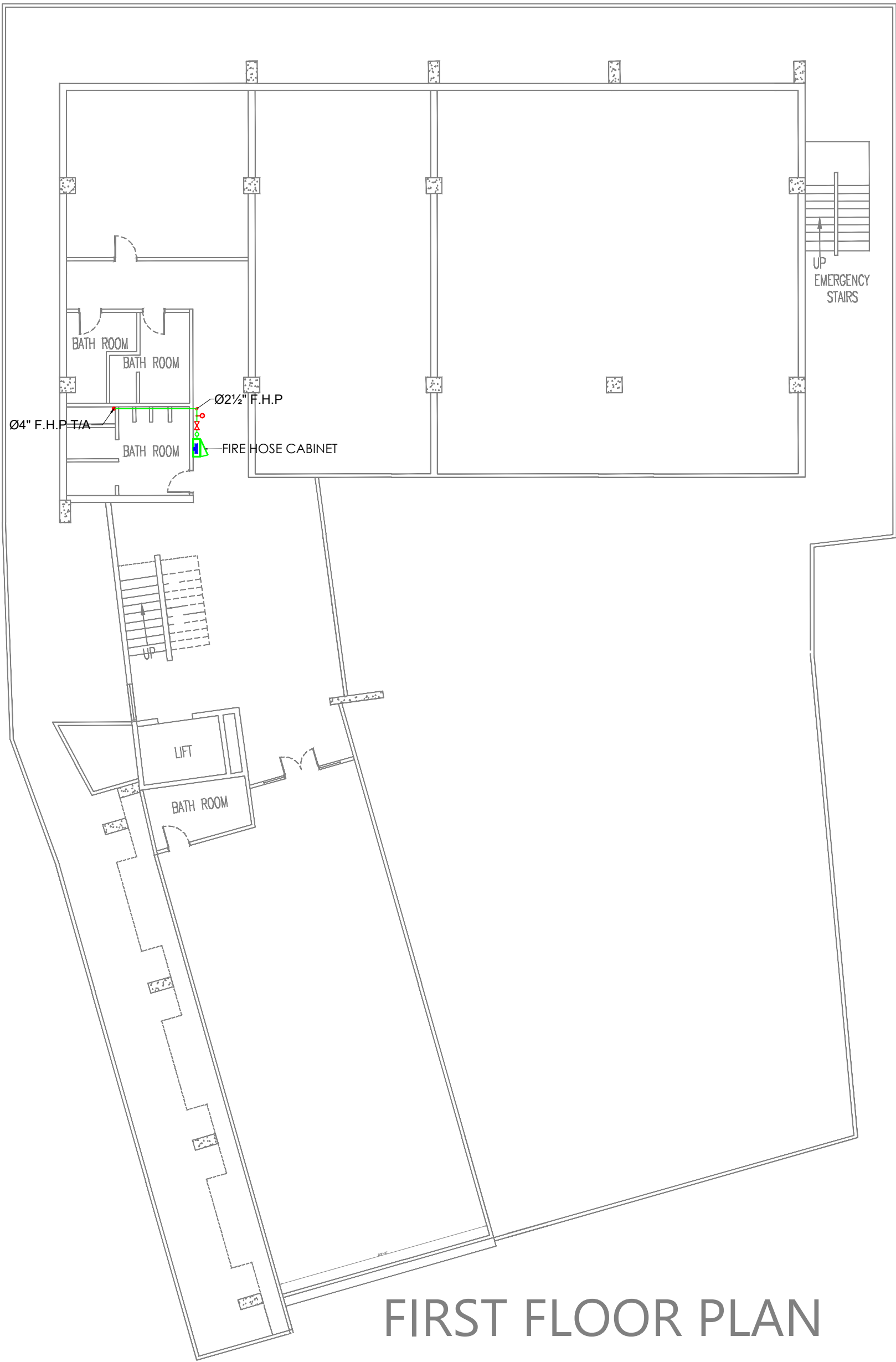
REV	DESCRIPTION	DATE	DRN	CHK	APP
REVISION					
CLIENT					
STATE LIFE INSURANCE CORPORATION OF PAKISTAN					
CONSULTANT					
VELOSI INTEGRITY & SAFETY PAK (PVT) LTD 207-A, P-Block Gulberg III, Lahore, Pakistan					
PROJECT					
FIRE FIGHTING / HYDRANT SYSTEM IN STATE LIFE BUILDING CHOWK NAWAN SHAHERABDALI ROAD MULTAN					
TITLE					
BASEMENT FLOOR LAYOUT PLAN FIRE FIGHTING SYSTEM					
DATE					
19-04-2024					
SCALE					
N.T.S					
APPROVED					
PROJECT NO. VISP-L-E23-1203					
DRAWING NUMBER V-1203-M-F-001					
SHEET 01 OF 01					
SIZE A3					
REV 00					



LEGENDS	
SYMBOL	DESCRIPTION
	MAIN FIRE FIGHTING PIPE
	FIRE HOSE CABINET PIPE
	FIRE HOSE REEL CABINET
	GATE VALVE
	PRESSURE SAFETY VALVE
	AUTOMATIC AIR VENT
	VERTICAL RIESER Ø 4"
	PRESSURE REDUCING VALVE
	PRESSURE GUAGE
	FIRE HYDRANT
	BREECHING INLET WITH LANDING VALVE
	FLOAT VALVE
	FOOT VALVE

GROUND FLOOR PLAN

REV	DESCRIPTION	DATE	DRN	CHK	APP
REVISION					
CLIENT					
STATE LIFE INSURANCE CORPORATION OF PAKISTAN					
CONSULTANT					
VELOSI INTEGRITY & SAFETY PAK (PVT) LTD 207-A, P-Block Gulberg III, Lahore, Pakistan					
DRAWN BY:					
PROJECT					
FIRE FIGHTING / HYDRANT SYSTEM IN STATE LIFE BUILDING CHOWK NAWAN SHAHERABDALI ROAD MULTAN					
DESIGN					
TITLE					
GROUND FLOOR LAYOUT PLAN FIRE FIGHTING SYSTEM					
CHECKED					
DATE					
SCALE					
N.T.S					
APPROVED					
PROJECT NO.					
DRAWING NUMBER					
SHEET					
SIZE					
REV					
01 OF 01					
A3					
00					

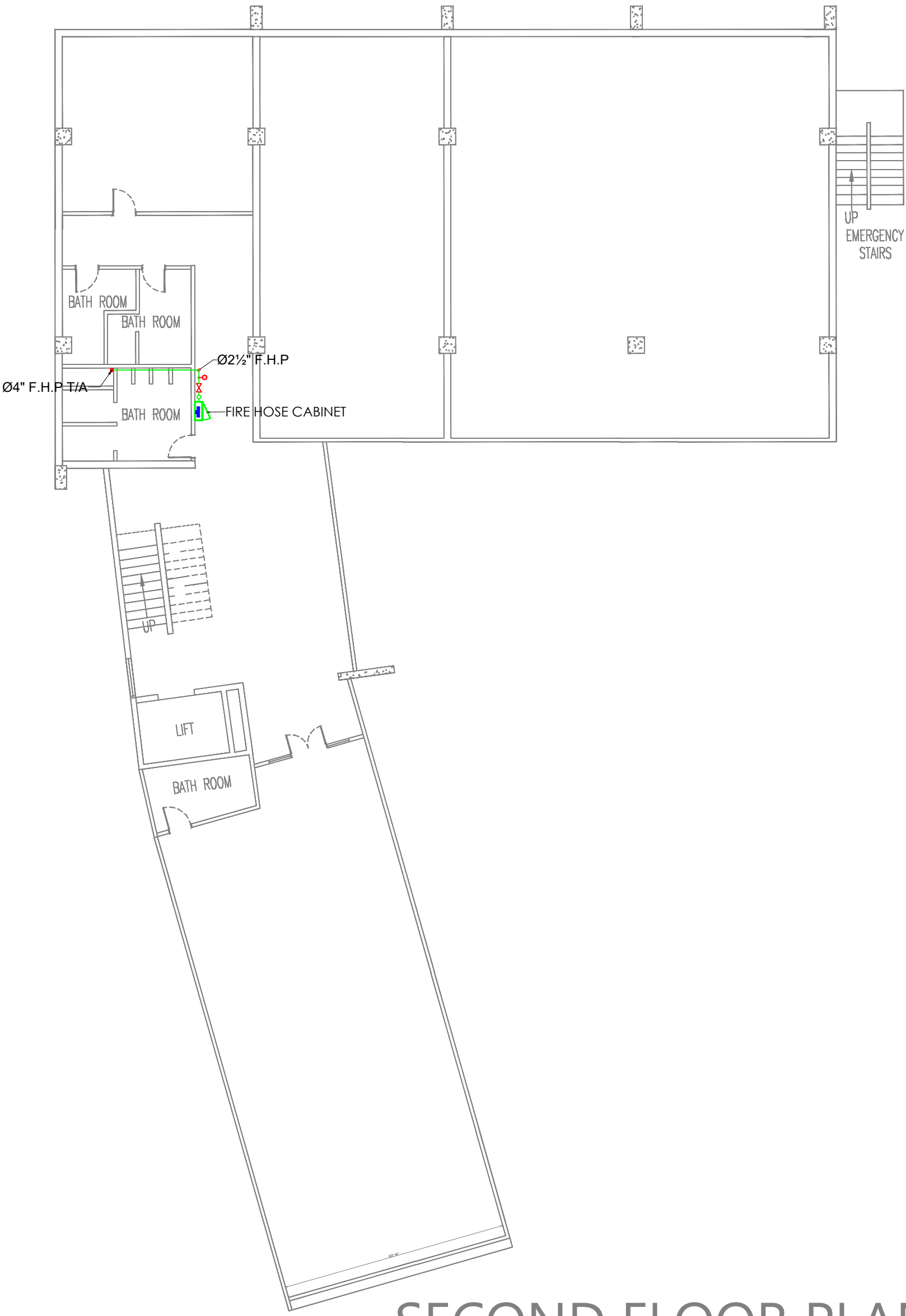


FIRST FLOOR PLAN

LEGENDS

SYMBOL	DESCRIPTION
	MAIN FIRE FIGHTING PIPE
	FIRE HOSE CABINET PIPE
	FIRE HOSE REEL CABINET
	GATE VALVE
	PRESSURE SAFETY VALVE
	AUTOMATIC AIR VENT
	VERTICAL RIESER Ø 4"
	PRESSURE REDUCING VALVE
	PRESSURE GUAGE
	FIRE HYDRANT
	BREECHING INLET WITH LANDING VALVE
	FLOAT VALVE
	FOOT VALVE

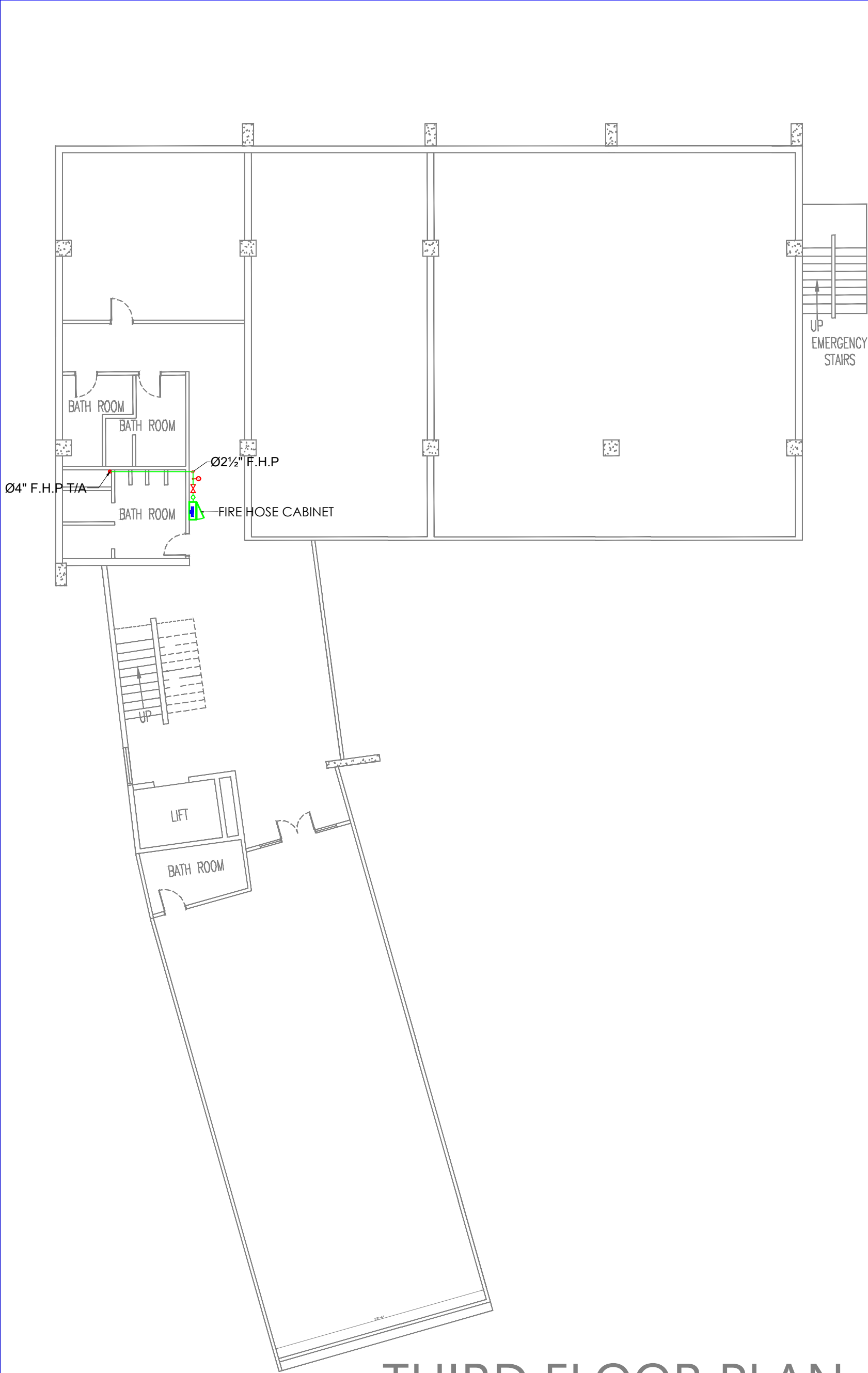
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REVISION					
CLIENT					
STATE LIFE INSURANCE CORPORATION OF PAKISTAN					
CONSULTANT					
VELOSI INTEGRITY & SAFETY PAK (PVT) LTD					
PROJECT					
FIRE FIGHTING / HYDRANT SYSTEM IN STATE LIFE BUILDING CHOWK NAWAN SHAHERABDALI ROAD MULTAN					
TITLE					
1ST FLOOR LAYOUT PLAN FIRE FIGHTING SYSTEM					
DATE					
SCALE					
N.T.S					
APPROVED					
PROJECT NO. DATE DRAWING NUMBER SHEET SIZE REV					
VISP-L-E23-1203 19-04-2024 V-1203-M-F-003 01 OF 01 A3 00					



SECOND FLOOR PLAN

LEGENDS	
SYMBOL	DESCRIPTION
	MAIN FIRE FIGHTING PIPE
	FIRE HOSE CABINET PIPE
	FIRE HOSE REEL CABINET
	GATE VALVE
	PRESSURE SAFETY VALVE
	AUTOMATIC AIR VENT
	VERTICAL RIESER Ø 4"
	PRESSURE REDUCING VALVE
	PRESSURE GUAGE
	FIRE HYDRANT
	BREECHING INLET WITH LANDING VALVE
	FLOAT VALVE
	FOOT VALVE

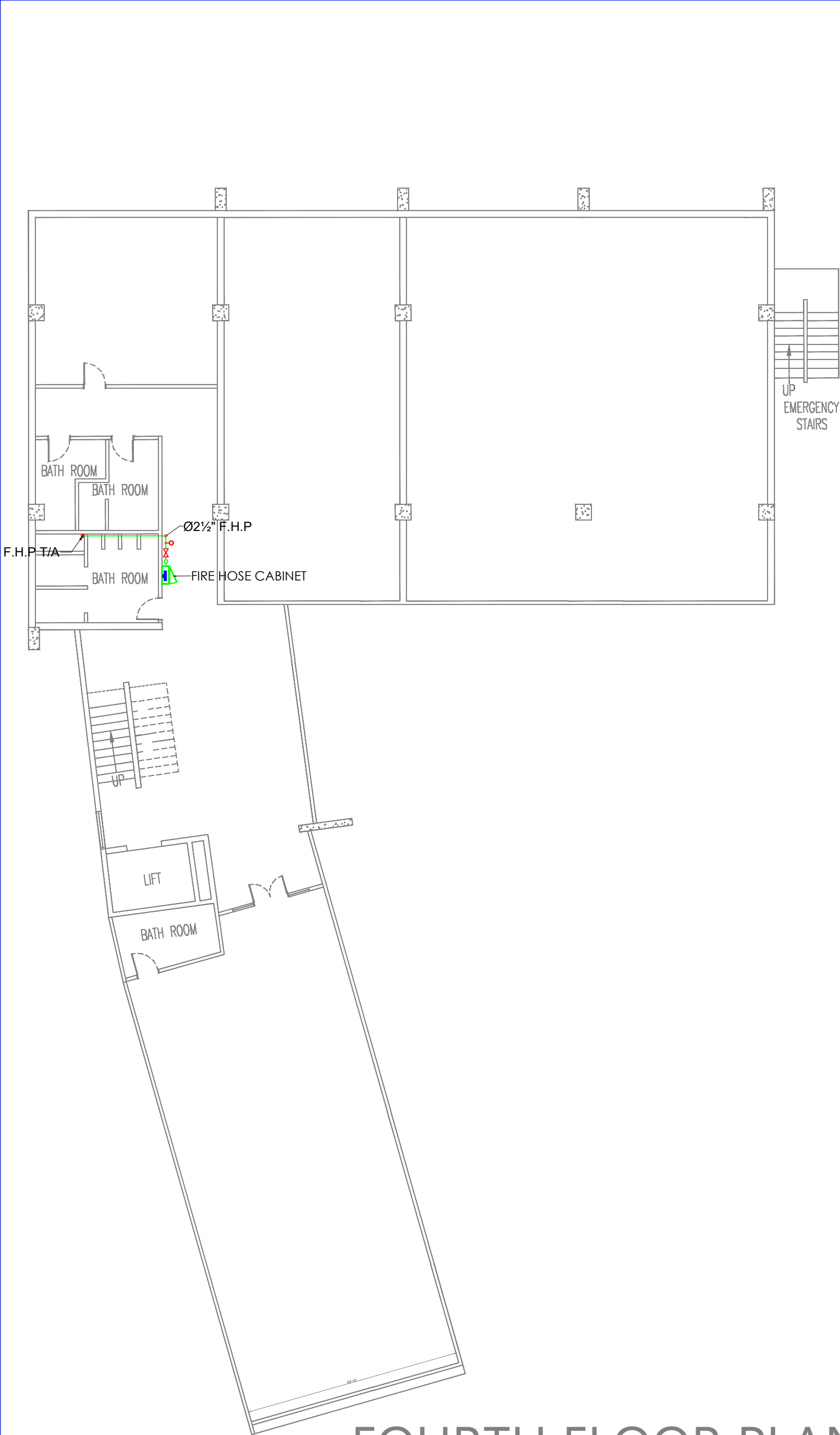
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REVISION					
CLIENT					
STATE LIFE INSURANCE CORPORATION OF PAKISTAN					
CONSULTANT					
VELOSI INTEGRITY & SAFETY PAK (PVT) LTD					
PROJECT					
FIRE FIGHTING / HYDRANT SYSTEM IN STATE LIFE BUILDING CHOWK NAWAN SHAHERABDALI ROAD MULTAN					
TITLE					
2ND FLOOR LAYOUT PLAN FIRE FIGHTING SYSTEM					
DATE					
SCALE					
N.T.S					
APPROVED					
PROJECT NO. DRAWING NUMBER SHEET SIZE REV					
VISP-L-E23-1203 V-1203-M-F-004 01 OF 01 A3 00					



THIRD FLOOR PLAN

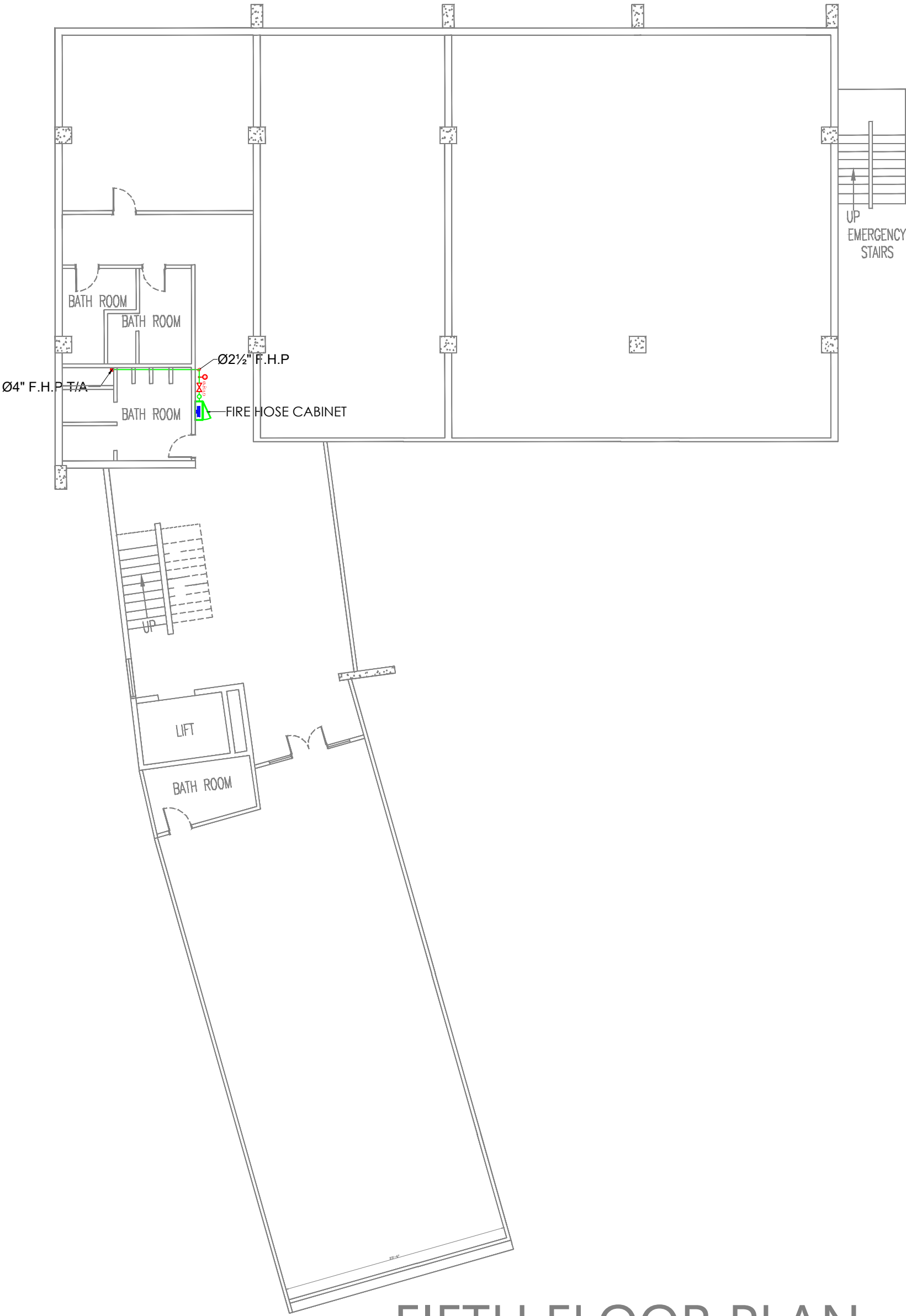
LEGENDS	
SYMBOL	DESCRIPTION
	MAIN FIRE FIGHTING PIPE
	FIRE HOSE CABINET PIPE
	FIRE HOSE REEL CABINET
	GATE VALVE
	PRESSURE SAFETY VALVE
	AUTOMATIC AIR VENT
	VERTICAL RIESER Ø 4"
	PRESSURE REDUCING VALVE
	PRESSURE GUAGE
	FIRE HYDRANT
	BREECHING INLET WITH LANDING VALVE
	FLOAT VALVE
	FOOT VALVE

REV	DESCRIPTION	DATE	DRN	CHK	APP
REVISION					
CLIENT					
STATE LIFE INSURANCE CORPORATION OF PAKISTAN					
CONSULTANT					
VELOSI INTEGRITY & SAFETY PAK (PVT) LTD					
PROJECT					
FIRE FIGHTING / HYDRANT SYSTEM IN STATE LIFE BUILDING CHOWK NAWAN SHAHERABDALI ROAD MULTAN					
TITLE					
3RD FLOOR LAYOUT PLAN FIRE FIGHTING SYSTEM					
DATE					
19-04-2024					
SCALE					
N.T.S					
APPROVED					
PROJECT NO. VISP-L-E23-1203					
DRAWING NUMBER V-1203-M-F-005					
SHEET 01 OF 01					
SIZE A3					
REV 00					



LEGENDS	
SYMBOL	DESCRIPTION
	MAIN FIRE FIGHTING PIPE
	FIRE HOSE CABINET PIPE
	FIRE HOSE REEL CABINET
	GATE VALVE
	PRESSURE SAFETY VALVE
	AUTOMATIC AIR VENT
	VERTICAL RIESER Ø 4"
	PRESSURE REDUCING VALVE
	PRESSURE GUAGE
	FIRE HYDRANT
	BREECHING INLET WITH LANDING VALVE
	FLOAT VALVE
	FOOT VALVE

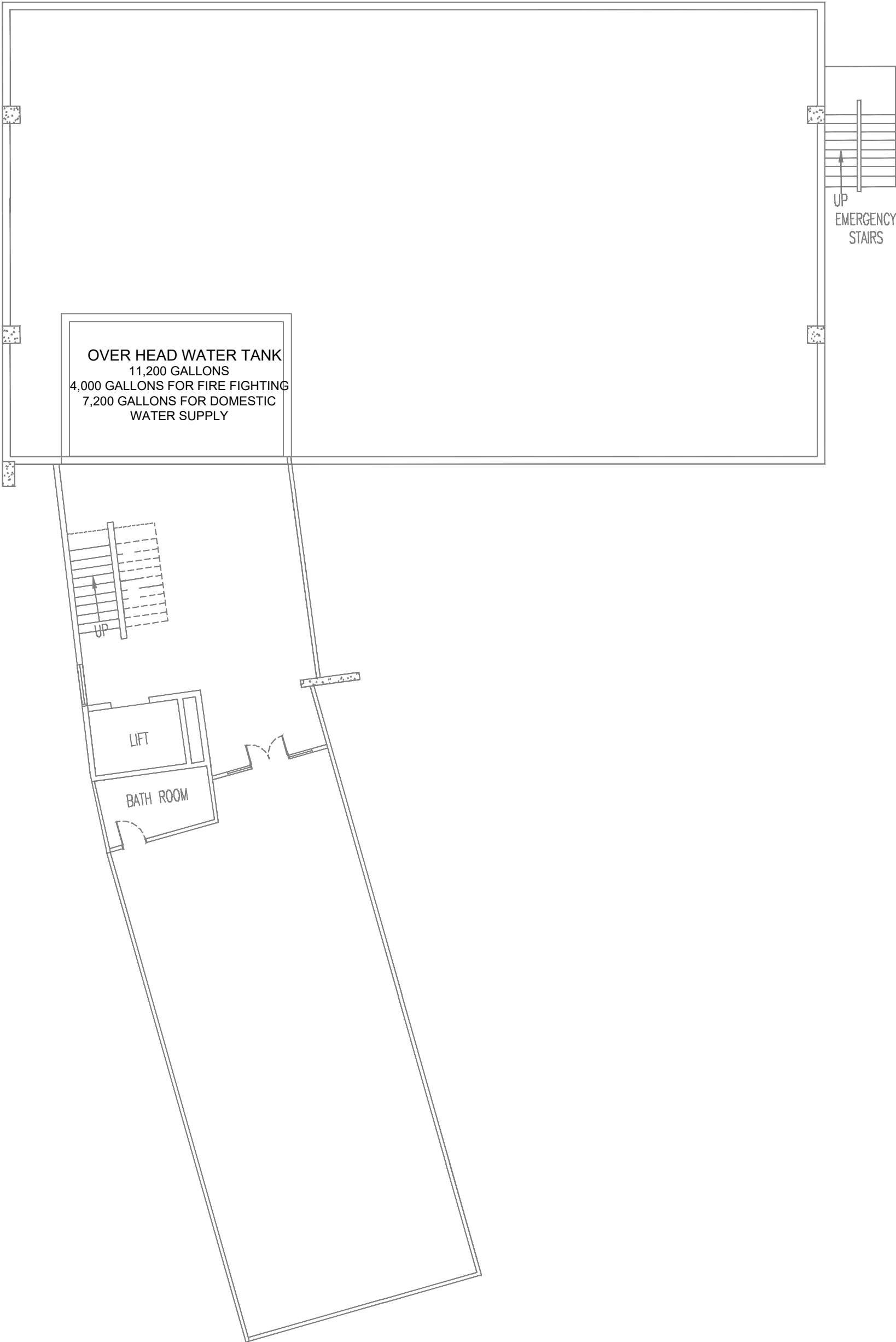
REV	DESCRIPTION	DATE	DRN	CHK	APP
REVISION					
CLIENT					
STATE LIFE INSURANCE CORPORATION OF PAKISTAN					
CONSULTANT					
VELOSI INTEGRITY & SAFETY PAK (PVT) LTD					
PROJECT					
FIRE FIGHTING / HYDRANT SYSTEM IN STATE LIFE BUILDING CHOWK NAWAN SHAHERABDALI ROAD MULTAN					
TITLE					
4TH FLOOR LAYOUT PLAN FIRE FIGHTING SYSTEM					
DATE					
19-04-2024					
SCALE					
N.T.S					
APPROVED					
PROJECT NO. VISP-L-E23-1203					
DRAWING NUMBER V-1203-M-F-006					
SHEET 01 OF 01					
SIZE A3					
REV 00					



FIFTH FLOOR PLAN

LEGENDS	
SYMBOL	DESCRIPTION
	MAIN FIRE FIGHTING PIPE
	FIRE HOSE CABINET PIPE
	FIRE HOSE REEL CABINET
	GATE VALVE
	PRESSURE SAFETY VALVE
	AUTOMATIC AIR VENT
	VERTICAL RIESER Ø 4"
	PRESSURE REDUCING VALVE
	PRESSURE GUAGE
	FIRE HYDRANT
	BREECHING INLET WITH LANDING VALVE
	FLOAT VALVE
	FOOT VALVE

REV	DESCRIPTION	DATE	DRN	CHK	APP
REVISION					
CLIENT					
STATE LIFE INSURANCE CORPORATION OF PAKISTAN					
CONSULTANT					
VELOSI INTEGRITY & SAFETY PAK (PVT) LTD 207-A, P-Block Gulberg III, Lahore, Pakistan					
PROJECT					
FIRE FIGHTING / HYDRANT SYSTEM IN STATE LIFE BUILDING CHOWK NAWAN SHAHERABDALI ROAD MULTAN					
TITLE					
5TH FLOOR LAYOUT PLAN FIRE FIGHTING SYSTEM					
DATE					
19-04-2024					
SCALE					
N.T.S					
APPROVED					
PROJECT NO. VISP-L-E23-1203					
DRAWING NUMBER V-1203-M-F-007					
SHEET 01 OF 01					
SIZE A3					
REV 00					

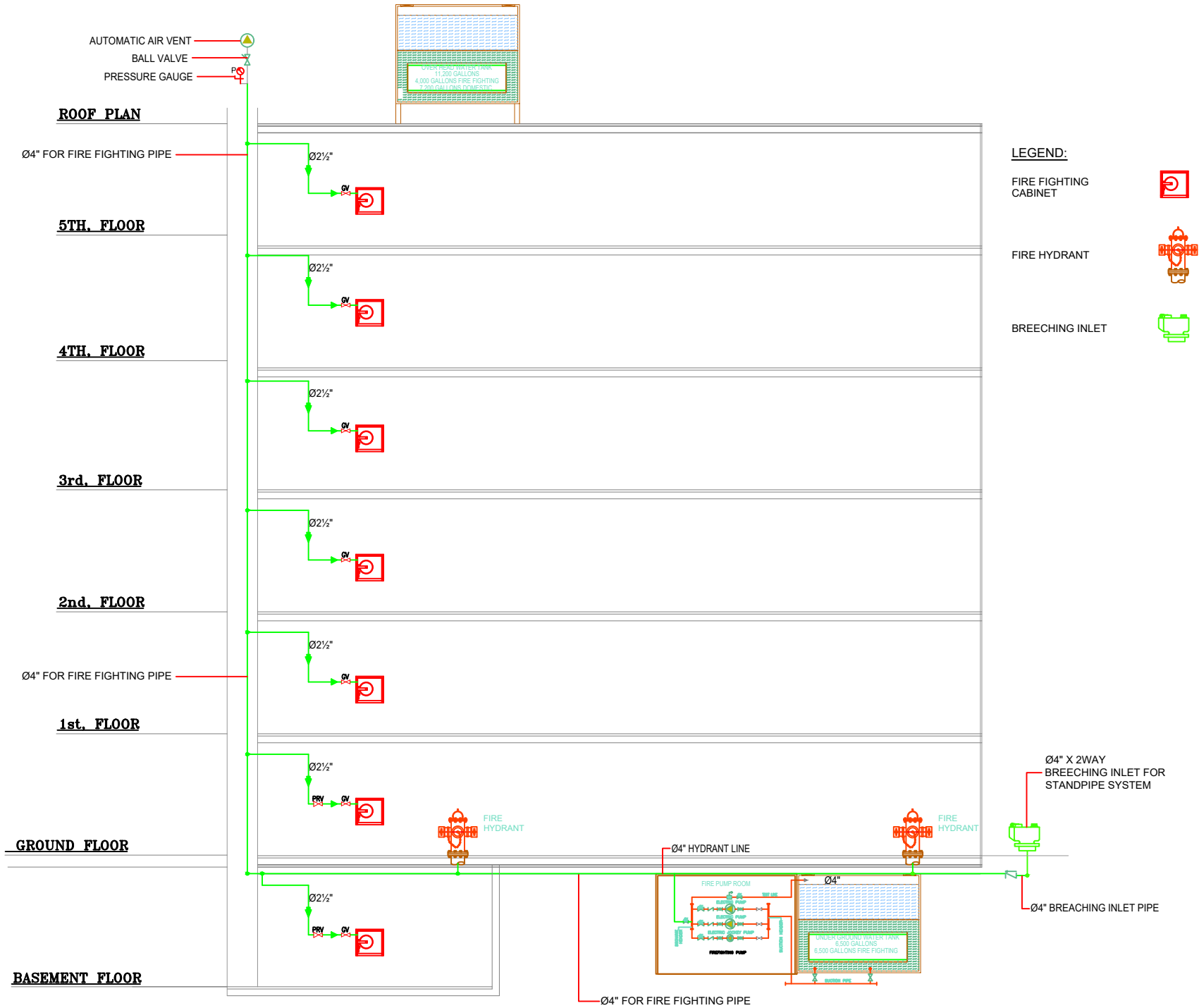


ROOF FLOOR PLAN

LEGENDS	
SYMBOL	DESCRIPTION
	MAIN FIRE FIGHTING PIPE
	FIRE HOSE CABINET PIPE
	FIRE HOSE REEL CABINET
	GATE VALVE
	PRESSURE SAFETY VALVE
	AUTOMATIC AIR VENT
	VERTICAL RIESER Ø 4"
	PRESSURE REDUCING VALVE
	PRESSURE GUAGE
	FIRE HYDRANT
	BREECHING INLET WITH LANDING VALVE
	FLOAT VALVE
	FOOT VALVE

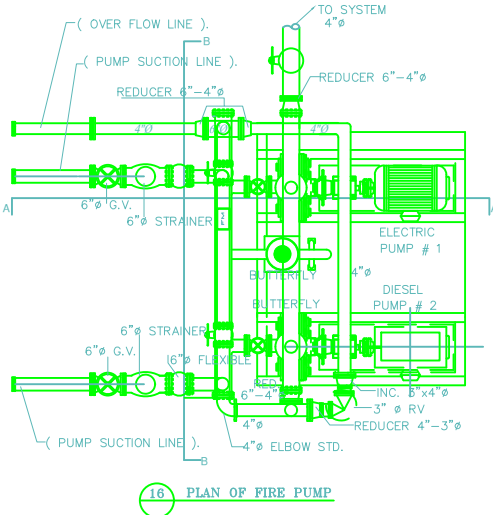
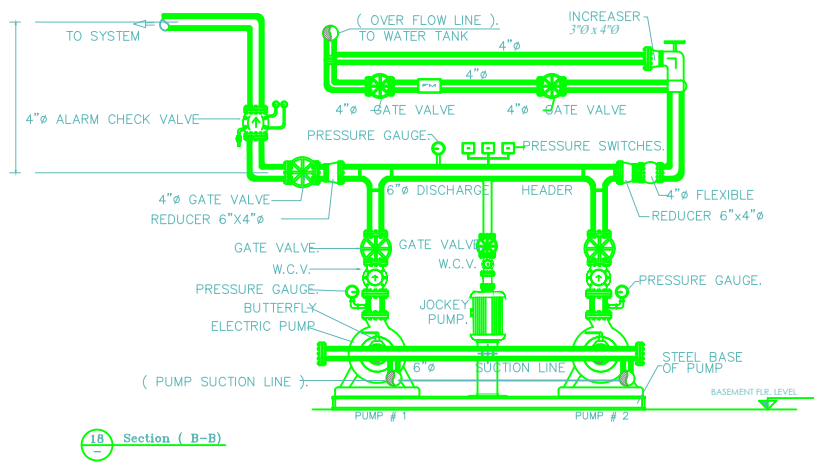
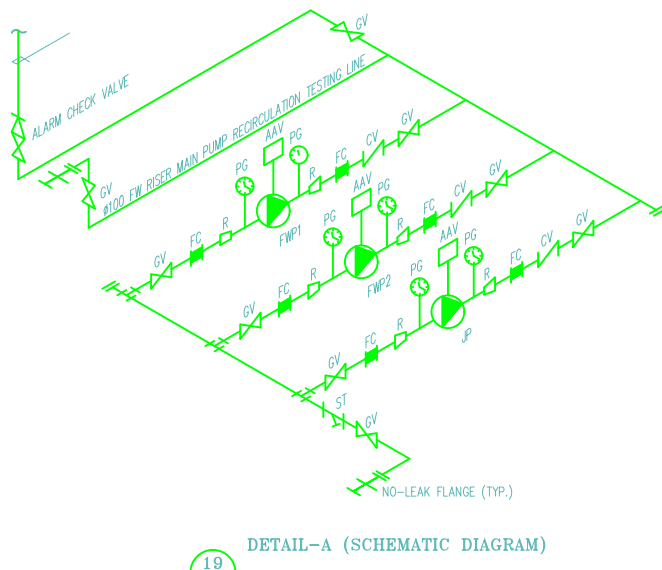
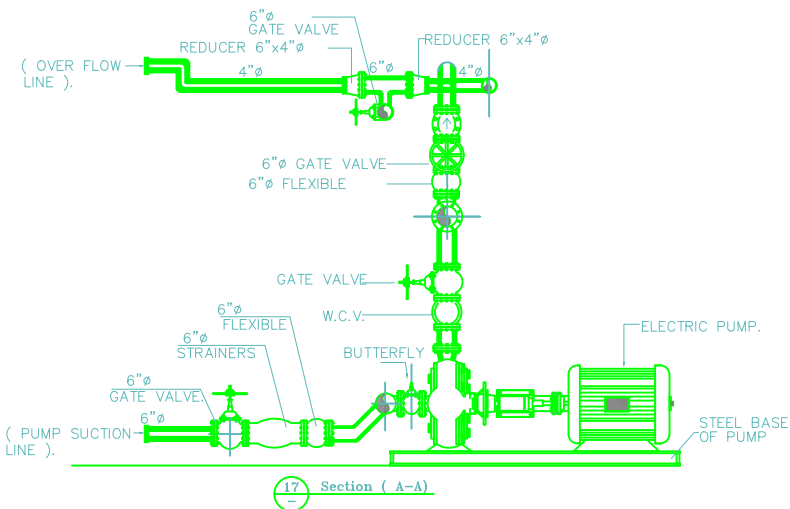
REV	DESCRIPTION	DATE	DRN	CHK	APP
REVISION					
CLIENT					
STATE LIFE INSURANCE CORPORATION OF PAKISTAN					
CONSULTANT					
VELOSI INTEGRITY & SAFETY PAK (PVT) LTD					
PROJECT					
FIRE FIGHTING / HYDRANT SYSTEM IN STATE LIFE BUILDING CHOWK NAWAN SHAHERABDALI ROAD MULTAN					
TITLE					
ROOF FLOOR LAYOUT PLAN FIRE FIGHTING SYSTEM					
DATE					
SCALE					
N.T.S					
APPROVED					
PROJECT NO. DRAWING NUMBER SHEET SIZE REV					
VISP-L-E23-1203 V-1203-M-F-008 01 OF 01 A3 00					

LEGENDS	
SYMBOL	DESCRIPTION
	MAIN FIRE FIGHTING PIPE
	FIRE HOSE CABINET PIPE
	FIRE HOSE REEL CABINET
	GATE VALVE
	PRESSURE SAFETY VALVE
	AUTOMATIC AIR VENT
	VERTICAL RIESER Ø 4"
	PRESSURE REDUCING VALVE
	PRESSURE GUAGE
	FIRE HYDRANT
	BREECHING INLET WITH LANDING VALVE
	FLOAT VALVE
	FOOT VALVE

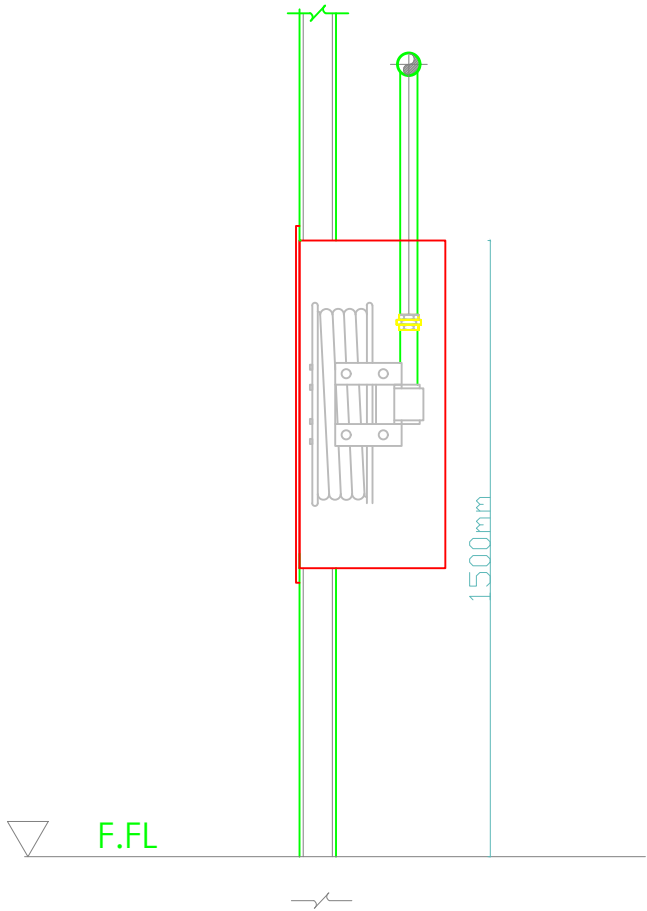
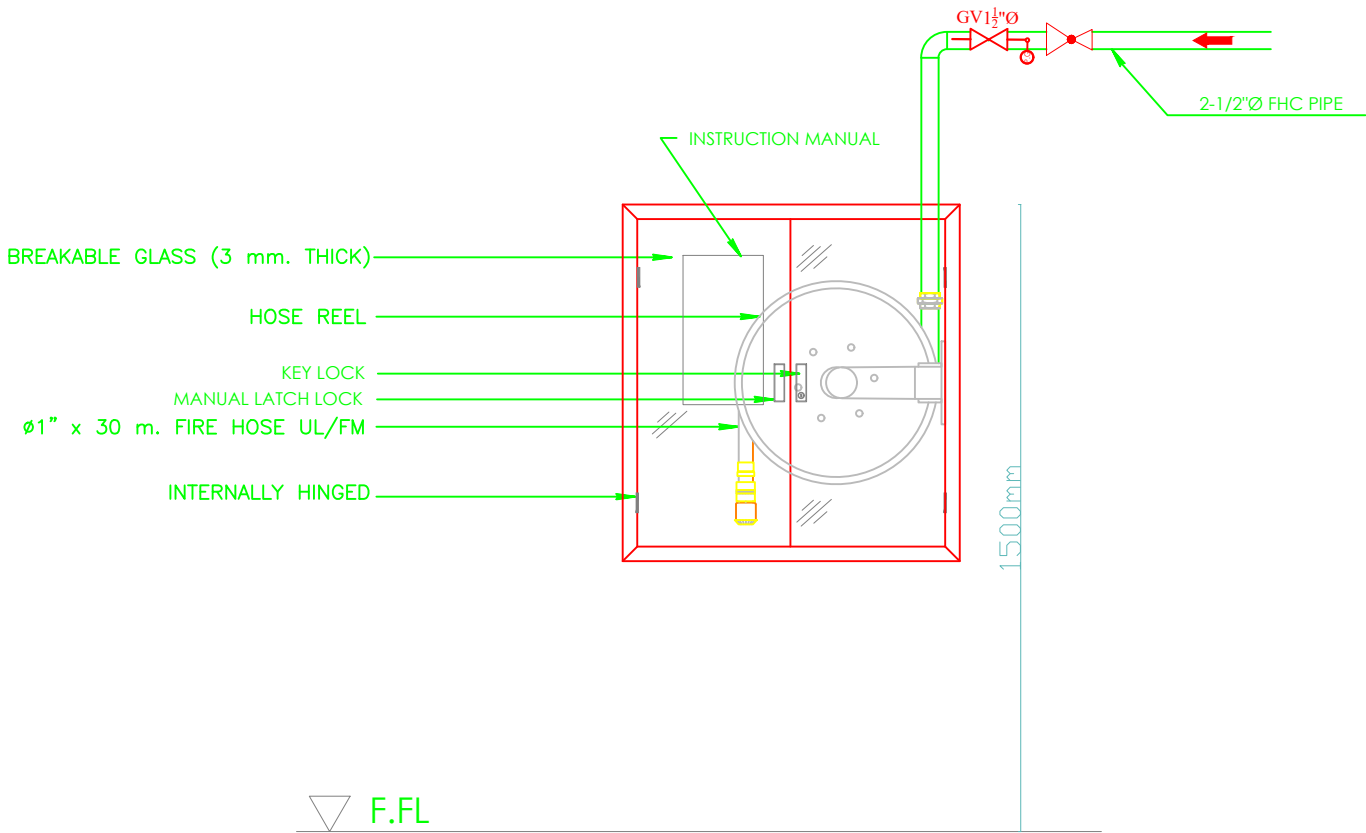


FIRE FIGHTING SYSTEM SCHEMATIC

REV	DESCRIPTION	DATE	DRN	CHK	APP
REVISION					
CLIENT					
STATE LIFE INSURANCE CORPORATION OF PAKISTAN					
CONSULTANT					
VELOSI INTEGRITY & SAFETY PAK (PVT) LTD 207-A, P-Block Gulberg III, Lahore, Pakistan					
DRAWN BY:					
PROJECT					
T.A. FIRE FIGHTING / HYDRANT SYSTEM IN STATE LIFE					
DESIGN					
U.A. BUILDING CHOWK NAWAN SHAHERABDALI ROAD MULTAN					
CHECKED					
U.A. TITLE					
SCHEMATIC DRAWING					
DATE					
19-04-2024					
SCALE					
N.T.S					
APPROVED					
M.A. PROJECT NO.					
VISP-L-E23-1203					
DRAWING NUMBER					
V-1203-M-F-009					
SHEET					
01 OF 01					
SIZE					
A3					
REV					
00					



REV	DESCRIPTION	DATE	DRN	CHK	APP
REVISION					
CLIENT					
STATE LIFE INSURANCE CORPORATION OF PAKISTAN					
CONSULTANT					
VELOSI INTEGRITY & SAFETY PAK.(PVT).LTD 207-A, P-Block Gulberg III, Lahore, Pakistan					
PROJECT					
FIRE FIGHTING / HYDRANT SYSTEM IN STATE LIFE BUILDING CHOWK NAWAN SHAHERABDALI ROAD MULTAN					
TITLE					
STANDARD INSTALLATION DETAILS FIRE FIGHTING SYSTEM					
CHECKED		DATE	SCALE	N.T.S	
U.A		19-04-2024			
APPROVED		PROJECT NO.	DRAWING NUMBER	SHEET	SIZE REV
M.A		VISP-L-E23-1203	V-1203-M-F-010	01 OF 01	A3 00



11 — DETAIL FIRE HOSE CABINET

REV	DESCRIPTION	DATE	DRN	CHK	APP
REVISION					
CLIENT					
STATE LIFE INSURANCE CORPORATION OF PAKISTAN					
CONSULTANT					
VELOSI INTEGRITY & SAFETY PAK.(PVT).LTD					
PROJECT					
FIRE FIGHTING / HYDRANT SYSTEM IN STATE LIFE BUILDING CHOWK NAWAN SHAHERABDALI ROAD MULTAN					
TITLE					
STANDARD INSTALLATION DETAILS FIRE FIGHTING SYSTEM					
DATE					
SCALE					
N.T.S					
APPROVED					
PROJECT NO. DRAWING NUMBER SHEET SIZE REV					
VISP-L-E23-1203 V-1203-M-F-011 01 OF 01 A3 00					