



**THE SHAIKH AYAZ UNIVERSITY,**  
**SHIKARPUR**



**CONSTRUCTION OF GUEST HOUSE FOR  
THE PROJECT TITLED “PROVISION OF  
MISSING FACILITIES FOR THE SHAIKH  
AYAZ UNIVERSITY SHIKARPUR”**

**TENDER DOCUMENTS  
CONDITIONS OF CONTRACT**

**April, 2022**

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**BILL OF QUANTITIES**

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These Tender/Bid Documents are issued to M/s

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**CONSTRUCTION OF GUEST HOUSE FOR THE PROJECT  
TITLED “PROVISION OF MISSING FACILITIES FOR THE  
SHAIKH AYAZ UNIVERSITY SHIKARPUR”** as per  
Instructions to bidders, Conditions of Contract, Technical  
Specifications, Bill of Quantities, Drawings and Special  
Stipulations.

Dated:-

**INVITATION  
FOR  
BIDS**

1. The Shaikh Ayaz University, Shikarpur is the prestigious Institution imparting education invite Single Stage - One Envelope sealed tenders, on percentage/item rate basis bids for the work of **Construction of Guest House for the project titled “ Provision of missing facilities for The Shaikh Ayaz University Shikarpur”** tabulated hereunder, from the Contractors / Firms registered with Income Tax (who are Active on Taxpayers List & non-defaulter of Federal Board of Revenue & Sindh Board of Revenue), Contractor/Firms not black listed, having valid/active Electric License & having valid license of Pakistan Engineering Council, appropriate category & field of specialized PEC Codes mentioned below.

2. A complete set of Bidding Documents containing required details, may be purchased by an interested eligible bidder on submission of a written application supported with requisite documents from the office of the undersigned from **Date of Publication** up to **23<sup>rd</sup> May 2022** in office hours upon payment of a non-refundable fee of Rs: 3,000/- in favor of of Project titled **“Provision of Missing Facilities for The Shaikh Ayaz University”, Shikarpur** in shape of pay order. Bidding documents can also be downloaded from: [www.saus.edu.pk](http://www.saus.edu.pk) free of cost.

3. Bidders will submit one sealed envelope; the sealed bids shall comprise a single sealed envelope. Each sealed envelope shall contain separately the financial proposal and technical proposal as procedures specified in the PPRA rules. The company profile containing proof of relevant experience, annual turn-over of last three years, and registration with PEC or other authorities wherever applicable and information regarding litigation with government agencies, affidavit of not being blacklisted.

The financial proposal and technical proposal shall be opened at a same time, date and venue announced and communicated to the bidders in advance. The submission of bids to the office of the undersigned on or before **24-05-2022** up to 10:00 am, “FINANCIAL PROPOSAL” and “TECHNICAL PROPOSAL” will be opened at 10:30 p.m. on the same day in the presence of participants (who may choose to attend).

4. In accordance with PPRA Rule-25; Bid Security i.e., 2% of the estimated cost is required, in shape of CDR, Bank Draft in favor of Project titled **“Provision of Missing Facilities for The Shaikh Ayaz University”, Shikarpur**.

5. Following are details of work:

S.NO.	NAME OF WORK	ESTIMATED COST (Million)	PEC Category	Completion Period	PEC Codes
1.	Construction of Guest House for the project titled “ Provision of missing facilities for The Shaikh Ayaz University Shikarpur”	64.523	C-5 or above.	16 Months	CE-09, CE-10, EE-04, EE-06

6. No bidding document will be issued on the day of opening. The competent authority in accordance with PPRA Rule-33 may reject all bids / proposals at any time prior to the acceptance of a bid or proposal. Other terms and conditions in the bidding documents will apply mutatis mutandis. This advertisement is also available at [www.ppra.org.pk](http://www.ppra.org.pk).

**Engr. Abdul Ghani**  
**Project Director PMF TSAUS**  
**Address: The Shaikh Ayaz University, Shikarpur**  
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# **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 Employer as defined in the Bidding Data hereinafter called “the Employer” wishes to receive bids for the construction and completion of works as described in these Bidding Documents and summarized in the Bidding Data hereinafter referred to as the “Works”.
- 1.2 The successful bidder will be expected to complete the Works within the time specified in Appendix-A to Bid.

#### **IB.2 Source of Funds**

- 2.1 PSDP Funded HEC Project.

#### **IB.3 Eligible Bidders**

- 3.1 This Invitation for Bids is open to all bidders meeting the following mandatory requirements:
  - Contractors / Firms registered with Income Tax (who are Active on Taxpayers List & non-defaulter of Federal Board of Revenue & Sindh Board of Revenue).
  - Contractors/Firms have No litigation history.
  - Contractor/Firms No blacklisted.
  - Valid/active registration certificate of Pakistan Engineering Council (PEC) in the category C-5 or above and at least specialization in PEC codes CE-09, CE-10, EE-04, EE-06, is mandatory.

#### **IB.4 One Bid per Bidder**

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

#### **IB.5 Cost of Bidding**

- 5.1 The bidders shall bear all costs associated with the preparation and submission of their respective bids and the Employer 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 construction of the Works. All cost in this respect shall be at the bidder's own expense.
- 6.2 The bidders and any of their personnel or agents will be granted permission by the Employer 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 Employer, 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. Form of Bid & Appendices to Bid.
  - 6. Bill of Quantities (Appendix-D to Bid).
  - 7. Form of Bid Security.
  - 8. Form of Contract Agreement.
  - 9. Forms of Performance Security and Mobilization Advance Guarantee/Bond.
  - 10. Drawings.
- 7.2 The bidders are expected to carefully examine the contents of all the above documents. Failure to comply with the requirements of bid submission will be at the Bidder's own risk. Pursuant to Clause IB.26, bids which are not substantially responsive to the requirements of the Bidding Documents will be rejected.

**IB.8 Clarification of Bidding Documents**

- 8.1 Any prospective bidder requiring any clarification (s) in respect of the Bidding Documents may notify the Employer in writing at the Employer's address indicated in the Invitation for Bids. The Employer will respond to any request for clarification which he receives earlier than 07 days prior to the deadline for submission of bids.

Copies of the Employer's response will be forwarded to 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 Employer may, for any reason, whether at his own initiative or in response to a clarification requested by a prospective bidder, modify the Bidding Documents by issuing addendum.
- 9.2 Any addendum thus issued shall be part of the Bidding Documents pursuant to Sub-Clause 7.1 hereof and shall be communicated in writing to all purchasers of the Bidding Documents. Prospective bidders shall acknowledge receipt of each addendum in writing to the Employer.
- 9.3 To afford prospective bidders reasonable time in which to take an addendum into account in preparing their bids, the Employer may extend the deadline for submission of bids in accordance with Clause IB.20

### **C. PREPARATION OF BIDS**

#### **IB.10 Language of Bid**

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

#### **IB.11 Documents Accompanying the Bid**

- 11.1 Each bidder shall:
  - (a) Submit a written power of attorney authorizing the signatory of the bid to act for and on behalf of the bidder.
  - (b) Update the information indicated and listed in the Bidding Data and to meet the minimum criteria set out in this bidding 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.
- (iv) Current litigation information; and
- (v) Availability of critical equipment.

and

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

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

- 11.2 Bids submitted by a joint venture of two (2) or more firms shall comply with the following requirements:

- (a) the bid and in case of a successful bid, the Form of Contract Agreement shall be signed so as to be legally binding on all partners.
- (b) one of the joint venture partners shall be nominated as being in charge; and this authorization shall be evidenced by submitting a power of attorney signed by legally authorized signatories of all the joint venture partners.
- (c) the partner-in-charge shall always be duly authorized to deal with the Employer regarding all matters related with and/or incidental to the execution of Works as per the terms and Conditions of Contract and in this regard to incur any and all liabilities, receive instructions, give binding undertakings and receive payments on behalf of the joint venture.
- (d) all partners of the joint venture shall at all times and under all circumstances be liable jointly and severally for the execution of the Contract in accordance with the Contract terms and a statement to this effect shall be included in the authorization mentioned under Sub-Para (b) above as well as in the Form of Bid and in the Form of Contract Agreement (in case of a successful bid); and
- (e) a copy of the agreement entered into by the joint venture partners shall be submitted with the bid stating the conditions under which it will function, its period of duration, the persons authorized to represent and obligate it and which persons will be directly responsible for due performance of the Contract and can give valid receipts on behalf of the joint venture, the proportionate participation of the several firms forming the joint venture, and any other information necessary to permit a full appraisal of its functioning. No amendments / modifications whatsoever in the joint venture agreement shall be agreed to between the joint venture partner without prior written consent of the Employer.

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



**IB.12 Bid Prices**

- 12.1 Unless stated otherwise in the Bidding Documents, the Contract shall be for the whole of the Works as described in Sub-Clause 1.1 hereof, based on the unit rates and / or prices submitted by the bidder.
- 12.2 The bidders shall fill in rates and prices for all items of the Works described in the Bill of Quantities. Items against which no rate or price is entered by a bidder will not be paid for by the Employer when executed and shall be deemed covered by rates and prices for other items in the Bill of Quantities.
- 12.3 All duties, taxes and other levies payable by the Contractor under the Contract, or for any other cause, as on the date 07 days prior to the deadline for submission of bids shall be included in the rates and prices and the total Bid Price submitted by a bidder.
- Additional / reduced duties, taxes and levies due to subsequent additions or changes in legislation shall be reimbursed / deducted as per Sub-Clause 70.2 of the General Conditions of Contract Part-I.
- 12.4 The rates and prices quoted by the bidders are subject to adjustment during the performance of the Contract in accordance with the provisions of Clause 70 of the Conditions of Contract. The bidders shall furnish the prescribed information for the price adjustment formulae in Appendix-C to Bid and shall submit with their bids such other supporting information as required under the said Clause.

**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.
- 13.2 N/A.

**IB.14 Bid Validity**

- 14.1 Bids shall remain valid for the period stipulated in the Bidding Data after the Date of Bid Opening specified in Clause IB.23.
- 14.2 In exceptional circumstances, prior to expiry of the original bid validity period, the Employer may request that the bidders extend the period of validity for a specified additional period which shall in no case be more than the original bid validity period. The request and the responses thereto shall be made in writing. A bidder may refuse the request without forfeiting his Bid Security. A bidder agreeing to the request will not be required or permitted to modify his bid but will be required to extend the validity of his Bid Security for the period of the extension, and in compliance with Clause IB.15 in all respects.

**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.
- 15.2 The Bid Security shall be, at the option of the bidder, in the form of Deposit at Call or a Pay Order and Demand Draft.
- 15.3 Any bid not accompanied by an acceptable Bid Security shall be rejected by the Employer as non-responsive.
- 15.4 The bid securities of unsuccessful bidders will be returned as promptly as possible, but not later than 28 days after the expiration of the period of Bid Validity.
- 15.5 The Bid Security of the successful bidder will be returned when the bidder has furnished the required Performance Security and signed the Contract Agreement.
- 15.6 The Bid Security may be forfeited:
  - (a) if the bidder withdraws his bid except as provided in Sub-Clause 22.1.
  - (b) if the bidder does not accept the correction of his Bid Price pursuant to Sub-Clause 27.2 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 Alternate Proposals by Bidder**

- 16.1 Should any bidder consider that he can offer any advantages to the Employer by a modification to the designs, specifications or other conditions, he may, in addition to his bid to be submitted in strict compliance with the Bidding Documents, submit any Alternate Proposal(s) containing (a) relevant design calculations; (b) technical specifications; (c) proposed construction methodology; and (d) any other relevant details / conditions, provided always that the total sum entered on the Form of Bid shall be that which represents complete compliance with the Bidding Documents. The technical details and financial implication involved are to be submitted in a sealed envelope as to be followed in main bid proposals.
- 16.2 Alternate Proposal(s), if any, of the lowest evaluated responsive bidder only may be considered by the Employer as the basis for the award of Contract to such bidder.

#### **IB.17 Pre-Bid Meeting**

- 17.1 The Employer 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. The date, time and venue of pre-bid meeting, if convened, is as stipulated in the Bidding Data. All prospective bidders or their authorized representatives shall be invited to attend such a pre-bid meeting.
- 17.2 The bidders are requested to submit questions, if any, in writing so as to reach the Employer not later than seven (7) days before the proposed pre-bid meeting.
- 17.3 Minutes of the pre-bid meeting, including the text of the questions raised and the replies given, will be transmitted without delay to all purchasers of the Bidding Documents. Any modification of the Bidding Documents listed in Sub-Clause 7.1 hereof which may become necessary as a result of the pre-bid meeting shall be made by the Employer exclusively through the issue of an Addendum pursuant to Clause IB.9 and not through the minutes of the pre-bid meeting.
- 17.4 Absence at the pre-bid meeting will not be a cause for disqualification of a bidder.

**IB.18 Format and Signing of Bid**

- 18.1 Bidders are particularly directed that the amount entered on the Form of Bid shall be for performing the Contract strictly in accordance with the Bidding Documents.
- 18.2 All appendices to Bid are to be properly completed and signed.
- 18.3 No alteration is to be made in the Form of Bid nor in the Appendices thereto except in filling up the blanks as directed. If any such alterations be made or if these instructions be not fully complied with, the bid may be rejected.
- 18.4 Each bidder shall prepare by filling out the forms completely and without alterations one (1) original and number of copies, specified in the Bidding Data, of the documents comprising the bid as described in Clause IB.7 and clearly mark them "ORIGINAL" and "COPY" as appropriate. In the event of discrepancy between them, the original shall prevail.
- 18.5 The original and all copies of the bid shall be typed or written in indelible ink (in the case of copies, Photostats are also acceptable) and shall be signed by a person or persons duly authorized to sign on behalf of the bidder pursuant to Sub- Clause 11.1(a) hereof. All pages of the bid shall be initialed and stamped by the person or persons signing the bid.
- 18.6 The bid shall contain no alterations, omissions, or additions, except to comply with instructions issued by the Employer, or as are necessary to correct errors made by the bidder, in which case such corrections shall be initialed by the person or persons signing the bid.
- 18.7 Bidders shall indicate in the space provided in the Form of Bid their full and proper addresses at which notices may be legally served on them and to which all correspondence in connection with their bids and the Contract is to be sent.
- 18.8 Bidders should retain a copy of the Bidding Documents as their file copy.

**D. SUBMISSION OF BIDS****IB.19 Sealing and Marking of Bids**

- 19.1 Each bidder shall submit his bid as under:
  - (a) ORIGINAL and each copy of the Bid shall be separately sealed and put in separate envelopes and marked as such.
  - (b) The envelopes containing the ORIGINAL and copies will be put in one sealed envelope and addressed / identified as given in Sub- Clause 19.2 hereof.

19.2 The inner and outer envelopes shall:

- (a) Be addressed to the Employer at the address provided in the Bidding Data.
- (b) Bear the name and identification number of the contract as defined in the Bidding Data; and
- (c) Provide a warning not to open before the time and date for bid opening, as specified in the Bidding Data.

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

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

Note: Bidders are advised to read, understand and fill the unit rate, amount & unit of BOQ items carefully, Procuring Agency/Executing Agency no case shall be responsible for any claim after the award of contract.

## **IB.20 Deadline for Submission of Bids**

- 20.1 (a) Bids must be received by the Employer at the address specified no later than the time and date stipulated in the Bidding Data.
  - (b) Bids with charges payable will not be accepted, nor will arrangements be undertaken to collect the bids from any delivery point other than that specified above. Bidders shall bear all expenses incurred in the preparation and delivery of bids. No claims will be entertained for refund of such expenses.
  - (c) Where delivery of a bid is by mail and the bidder wishes to receive an acknowledgment of receipt of such bid, he shall make a request for such acknowledgment in a separate letter attached to but not included in the sealed bid package.
  - (d) Upon request, acknowledgment of receipt of bids will be provided to those making delivery in person or by messenger.
- 20.2 The Employer 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 Employer and the bidders previously subject to the original deadline will thereafter be subject to the deadline as extended.

**IB.21 Late Bids**

- 21.1 (a) Any bid received by the Employer after the deadline for submission of bids prescribed in Clause IB.20 will be returned unopened to such bidder.
- (b) Delays in the mail, delays of person in transit, or delivery of a bid to the wrong office shall not be accepted as an excuse for failure to deliver a bid at the proper place and time. It shall be the bidder's responsibility to determine the manner in which timely delivery of his bid will be accomplished either in person, by messenger or by mail.

**IB.22 Modification, Substitution and Withdrawal of Bids**

- 22.1 Any bidder may modify, substitute or withdraw his bid after bid submission provided that the modification, substitution or written notice of withdrawal is received by the Employer prior to the deadline for submission of bids.
- 22.2 The modification, substitution, or notice for withdrawal of any bid shall be prepared, sealed, marked and delivered in accordance with the provisions of Clause IB.19 with the outer and inner envelopes additionally marked "MODIFICATION", "SUBSTITUTION" or "WITHDRAWAL" as appropriate.
- 22.3 No bid may be modified by a bidder after the deadline for submission of bids except in accordance with Sub-Clauses 22.1 and 27.2.
- 22.4 Withdrawal of a bid during the interval between the deadline for submission of bids and the expiration of the period of bid validity specified in the Form of Bid may result in forfeiture of the Bid Security in pursuance to Clause IB.15.

**E. BID OPENING AND EVALUATION****IB.23 Bid Opening**

- 23.1 The Employer will open the bids, including withdrawals, substitution and modifications made pursuant to Clause IB.22, in the presence of bidders' representatives who choose to attend, at the time, date and location stipulated in the Bidding Data. The bidders' representatives who are present shall sign a register evidencing their attendance.
- 23.2 Envelopes marked "MODIFICATION", "SUBSTITUTION" or "WITHDRAWAL" shall be opened and read out first. Bids for which an acceptable notice of withdrawal has been submitted pursuant to Clause IB.22 shall not be opened.
- 23.3 The bidder's name, total Bid Price and price of any Alternate Proposal(s), any discounts, bid modifications, substitution and withdrawals, the presence or absence of Bid Security, and such other details as the Employer may consider appropriate, will be announced by the Employer at the opening of bids.

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

#### **IB.24 Process to be Confidential**

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

#### **IB.25 Clarification of Bids**

- 25.1 To assist in the examination, evaluation and comparison of bids, the Employer 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 Employer in the evaluation of the bids in accordance with Clause IB.28.

#### **IB.26 Examination of Bids and Determination of Responsiveness**

- 26.1 Prior to the detailed evaluation of bids, the Employer will determine whether each bid is substantially responsive to the requirements of the Bidding Documents.
- 26.2 A substantially responsive bid is one which (i) meets the eligibility criteria; (ii) has been properly signed; (iii) is accompanied by the required Bid Security; and (iv) conforms to all the terms, conditions and specifications of the Bidding Documents, without material deviation or reservation. A material deviation or reservation is one (i) which affect in any substantial way the scope, quality or performance of the Works; (ii) which limits in any substantial way, inconsistent with the Bidding Documents, the Employer'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.

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

#### **IB.27 Correction of Errors**

- 27.1 Bids determined to be substantially responsive will be checked by the Employer for any arithmetic errors. Errors will be corrected by the Employer as follows:
- (a) Where there is a discrepancy between the amounts in figures and in words, the amount in words will govern; and
  - (b) where there is a discrepancy between the unit rate and the line-item total resulting from multiplying the unit rate by the quantity, the unit rate as quoted will govern, unless in the opinion of the Employer there is an obviously gross misplacement of the decimal point in the unit rate, in which case the line-item total as quoted will govern and the unit rate will be corrected.
- 27.2 The amount stated in the Form of Bid will be adjusted by the Employer in accordance with the above procedure for the correction of errors and with the concurrence of the bidder, shall be considered as binding upon the bidder. If the bidder does not accept the corrected Bid Price, his Bid will be rejected, and the Bid Security shall be forfeited in accordance with Sub- Clause 15.6(b) hereof.

#### **IB.28 Evaluation and Comparison of Bids**

- 28.1 The Employer will evaluate and compare only the Bids determined to be substantially responsive in accordance with Clause IB.26.
- 28.2 In evaluating the Bids, the Employer will determine for each Bid the evaluated Bid Price by adjusting the Bid Price as follows:
- (a) Making any correction for errors pursuant to Clause IB.27.
  - (b) excluding Provisional Sums and the provision, if any, for contingencies in the Summary Bill of Quantities, but including competitively priced Daywork; and
  - (c) Making an appropriate adjustment for any other acceptable variation or deviation.
- 28.3 The estimated effect of the price adjustment provisions of the Conditions of Contract, applied over the period of execution of the Contract, shall not be taken into account in Bid evaluation.



- 28.4 If the Bid of the successful bidder is seriously unbalanced in relation to the Employer's estimate of the cost of work to be performed under the Contract, the Employer 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 Employer 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 Employer against financial loss in the event of default of the successful bidder under the Contract.

## **F. AWARD OF CONTRACT**

### **IB.29 Award**

- 29.1 Subject to Clauses IB.30 and IB.34, the Employer will award the Contract to the bidder whose bid has been determined to be substantially responsive to the Bidding Documents and who has offered the lowest evaluated Bid Price, provided that such bidder has been determined to be eligible in accordance with the provisions of Clause IB.3 and qualify pursuant to Sub-Clause IB 29.2.
- 29.2 The Employer, 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 therefor in writing. They shall form part of the records of that bid evaluation report.

### **IB.30 Employer's Right to accept any Bid and to reject any or all Bids**

- 30.1 Notwithstanding Clause IB.29, the Employer 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.31 Notification of Award**

- 31.1 Prior to expiration of the period of bid validity prescribed by the Employer, the Employer will notify the successful bidder in writing (“Letter of Acceptance”) that his Bid has been accepted. This letter shall name the sum which the Employer will pay the Contractor in consideration of the execution and completion of the Works by the Contractor as prescribed by the Contract (hereinafter and in the Conditions of Contract called the “Contract Price”).
- 31.2 No Negotiation with the bidder having evaluated as lowest responsive or any other bidder shall be permitted, however, Employer may have clarification meetings to get clarify any item in the bid evaluation report.
- 31.3 The notification of award and its acceptance by the bidder will constitute the formation of the Contract, binding the Employer and the bidder till signing of the formal Contract Agreement.
- 31.3 Upon furnishing by the successful bidder of a Performance Security, the Employer will promptly notify the other bidders that their Bids have been unsuccessful and return their bid securities.

**IB.32 Performance Security**

- 32.1 The successful bidder shall furnish to the Employer a Performance Security in the form and the amount stipulated in the Bidding Data and the Conditions of Contract within a period of 28 days after the receipt of Letter of Acceptance.
- 32.2 Failure of the successful bidder to comply with the requirements of Sub-Clause IB.32.1 or Clauses IB.33 or IB.35 shall constitute sufficient grounds for the annulment of the award and forfeiture of the Bid Security.

**IB.33 Signing of Contract Agreement**

- 33.1 Within 14 days from the date of furnishing of acceptable Performance Security under the Conditions of Contract, the Employer will send the successful bidder the Contract Agreement in the form provided in the Bidding Documents, incorporating all agreements between the parties.
- 33.2 The formal Agreement between the Employer and the successful bidder shall be executed within 14 days of the receipt of the Contract Agreement by the successful bidder from the Employer.

**IB.34 General Performance of the Bidders**

The Employer reserves the right to obtain information regarding performance of the bidders on their previously awarded contracts/works. The Employer may in case of consistent poor performance of any Bidder as reported by the employers of the previously awarded contracts, interalia, reject his bid and/or refer the case to the Pakistan Engineering Council (PEC). Upon such reference, PEC 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 blacklisting of such Bidder and debarring him from participation in future bidding for similar works.

**IB.35 Integrity Pact**

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

**IB.36 Instructions not Part of Contract**

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

# **BIDDING DATA**

## BIDDING DATA

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.

### 1.1 Name and address of the Employer:

The Shaikh Ayaz University, Shikarpur

Address: The Shaikh Ayaz University, Shikarpur

### 1.3 Name of the Project:

Construction of Guest House for the project titled “ Provision of missing facilities for The Shaikh Ayaz University Shikarpur”.

### 2.1 Name of the Borrower/Source of Financing/Funding Agency:

Public Sector Development Program (PSDP) Funded HEC Project.

### 2.2 Amount and type of financing:

Rs. 64.523 (M) Public Federal Financing.

### 3.1 Eligible Bidders

*Delete the text of clause 3.1(b) and replace with the following*

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

- Contractors / Firms registered with Income Tax (who are Active on Taxpayers List & non-defaulter of Federal Board of Revenue & Sindh Board of Revenue).
- Contractors/Firms have No litigation history.
- Contractor/Firms No blacklisted.
- Valid/active registration certificate of Pakistan Engineering Council (PEC) in the category C-5 or above and at least specialization in PEC codes CE-09, CE-10, EE-04, EE-06, is mandatory.
- Having Valid/active Electric License.

### 8.1 Time limits for clarification:

7 days before deadline of submission of bids

### 10.1 Bid language:

English.

### 11.1 Documents accompanying the Bid

*Delete the text of clause 11.1 (b) & (c) and replace with the following:*

The bid is being invited as per ‘**Single Stage - One Envelope**’ procedure. If the bidder fails to fulfill any of following mandatory requirements, his bid will be considered as non

responsive and will be rejected.

1. The bid shall comprise a single package containing one envelope. Each envelope shall comprise of two parts, the financial proposal, and the company profile.
2. The envelope parts shall be marked as **“FINANCIAL PROPOSAL”** and **“TECHNICAL PROPOSAL”** in bold and legible letters to avoid confusion.
3. The ‘Technical Proposal’ must contain the following as per the requirements of this document and criteria mentioned in clause 28.1(iv) of bidding data:
  - a. Name of firm/contractor with year of establishment along with Postal Address and telephone number.
  - b. No. of project of similar nature and general works in hand and completed. (Details should be given as mentioned in clause 28.1(iv) of bidding data)
  - c. Registration/Clearance from FBR and SRB
  - d. Detail of Court cases if any/arbitration cases etc.
  - e. Enlistment with concerned Government Departments.
  - f. Detail of financial soundness.
  - g. Undertaking on judicial paper that the firm was never blacklisted by any Government, Semi Govt. Organization.
  - h. Copy of Valid Registration with Pakistan Engineering Council. Any additional information with documents in addition to the above that the firm might like to furnish in support of their application.
  - i. Appendix-E to Bid                      Proposed Construction Schedule
  - j. Appendix-F to Bid                      Method of Performing the Work
  - k. Appendix-H to Bid                      Construction camp and housing facilities
  - l. Appendix-I to Bid                      List of Subcontractors
  - m. Appendix-K to Bid                      Organization Chart of the Supervisory Staff and Labour
  - n. Appendix-L to Bid                      Integrity Pact
4. The “Financial proposal” must contain following documents:
  - a. Priced BOQ  
 Bid Security @ 2% of estimated amount in the form of Bank Draft/Call Deposit/Pay Order from any scheduled bank of Pakistan in favour of of Project titled **“Provision of Missing Facilities for The Shaikh Ayaz University”, Shikarpur.**

## 11.2 Joint Venture (JV)

Following text is added:

11.2.1 Joint Venture must comply with the following requirements: -

- a) Following are minimum technical requirements: -
  - i) The lead partner shall meet not less than 50 percent of all technical evaluation criteria given in clause 28.1(iv)
  - ii) Each of the partners shall meet not less than 25 percent of all the technical evaluation criteria given in clause 28.1(iv)
  - iii) The joint venture must collectively satisfy the criteria of clause 28.1(iv) for which purpose the relevant figures for each of the partners shall be added together to arrive at the JV’s total capacity.

- b) Any change in technical bid of a JV after evaluation, shall be subject to the written approval of the Employer prior to the deadline for submission of bids. Such approval may be denied if: -
  - i) Partner(s) withdraw from a JV and remaining partners do not meet the technical requirements.
  - ii) The technical proposal of new partners to a JV are not accepted individually or as another JV; or
  - iii) In the opinion of the Employer, a substantial reduction in competition would result.
- c) Bid shall be signed by all members in the JV so as to legally bind all partners, jointly and severally, and any bid shall be submitted with a copy of the JV agreement providing the joint and several liabilities with respect to the contract.

11.2.2 The acceptance of technical proposal of a JV does not necessarily make eligible any of its partners individually or as a partner in any other JV or association. In case of dissolution of a JV, technical proposal of each one of the constituent firms may be accepted if they meet all the technical requirements and any partner of J.V has requested/shall request for the same and then the acceptance of his technical bid shall subject to the written approval of the Employer.

### **13.1 Currencies of Bid and Payment**

Bidders to quote entirely in Pak. Rupees

### **14.1 Period of Bid Validity:**

90 days.

### **15.1 Bid Security:**

#### **&15.2**

Bid Security @ 2% of estimated amount in the form of Bank Draft/Call Deposit/Pay Order from any scheduled bank of Pakistan in favour of of Project titled ‘**Provision of Missing Facilities for The Shaikh Ayaz University**’, Shikarpur.

### **16.0 Alternate Proposals by Bidder**

*Delete the text of clause 16.1 & 16.2 and replace with the following*

No Alternate bid is allowed

### **17.1 Venue, time, and date of the pre-Bid meeting:**

*Delete the text of clause 17.1 and replace with the following*

No Pre-Bid Meeting will be held.

### **18.4 Number of copies of the Bid to be completed and returned:**

One original and one copy.

**19.2(a) Employer's address for the purpose of Bid submission:**

The Shaikh Ayaz University, Shikarpur  
Address: The Shaikh Ayaz University, Shikarpur

**19.2(b) Name and Number of the Contract:**

Construction of Guest House for the project titled “ Provision of missing facilities for The Shaikh Ayaz University Shikarpur”

**20.1(a) Deadline for submission of bids:**

Bids will be received till 10:00 am of 24-05-2022 in sealed envelope.

**23.1 Venue, time, and date of Bid opening:**

Bids will be open at 10:30 am of 24-05-2022 at the address mentioned in advertisement.

**28.1 Evaluation and Comparison of Bids:**

*Add following text to clause 28.1*

- i. The envelope parts shall be marked “**FINANCIAL PROPOSAL**” and “**TECHNICAL PROPOSAL**” shall be opened at a time, date & venue announced and communicated to the bidders in advance, within the bid validity period.
- ii.
- iii. The procuring agency shall evaluate the company profile in a manner prescribed in tender document.
- iv. The procuring agency shall open in the presence of intending tenderers the financial proposal, at the same time, date & venue.
- v. The financial proposal of bids found technically non-responsive shall be returned unopened to the respective bidders; and the lowest evaluated bidder shall be awarded the work.
- vi. Verification and up-to-date information: Procuring agency can verify the previous experience and financial statements made by the bidders in their bids.
- vii. **Technical Evaluation Criteria**  
Technical proposal of contractors will be evaluated as per following criteria:

Sr. No.	Category	Weightage/Marks
1.	Experience Record	35
2.	Personnel Capabilities	15
3.	Equipment Capabilities	20
4.	Financial Soundness	20
5.	Technical Capabilities	05
6.	HSE Statement	05
	<b>Total:</b>	<b>100</b>

**Note:** Technical soundness shall be decided on the basis of Pass/Fail basis. The



*applicant must secure at least 50% score in each category and overall, 75% score.*

### Relevant Experience and PEC Requirement

Sr. No.	Type of Work	PEC Requirement
1.	Building Works	(PEC) in the category C-5 or above and at least specialization in PEC codes CE-09, CE-10, EE-04, EE-06.

#### a. General Experience

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

Sr. No.	Description	Maximum Points
i)	3 projects of similar nature and complexity completed over last 10 years (5 points for each project of 65 million or above of building works, Projects below 65 million will be awarded zero marks). (Supporting documents including work order and completion certificate duly signed by respective clients are mandatory)	15
ii)	2 project of similar nature and complexity in hand (5 points for 1 project of 65 million or above of building works, Project below 65 million will be awarded zero marks). (Supporting documents including work order duly signed by respective clients are mandatory)	10
iii)	General experience of 3 projects completed over last 10-years (1 point for each project of 65 million or above of any type of civil work, Projects below 65 million will be awarded zero marks). (Supporting documents including work order and completion certificate duly signed by respective clients are mandatory)	5
iv)	Status of enlistment with Govt. Organization & other agencies (2.5 marks for each).	5
	<b>Sub-total:</b>	<b>35</b>

#### b. Personnel Capabilities

Credit Marks shall be awarded under this category using the following Criteria:

Sr. No.	Description	Maximum Points
i)	Graduate Engineer (CV, PEC Reg. & Signed Affidavit is mandatory)	
	a) Number of Engineers (3-Marks for each Civil Engineer with building work experience)	6
	b) Experience of Civil Engineer: - experience in number of years (1.5 marks for 5-year experience)	3

Sr. No.	Description	Maximum Points
	in building work. Marks for less experience will be given proportionately).	
ii)	DAE Associate Engineer (Civil) (CV, Educational Docs. & Signed Affidavit is mandatory). a) Number of Engineers (2-Marks for each with building work experience. b) Experience of DAE Engineer: - experience in number of years (1 marks for 10-year experience in building work. Marks for less experience will be given proportionately).	4 2
	<b>Sub-total:</b>	<b>15</b>

**c. Equipment Capabilities**

Credit Marks shall be granted on the basis of the following criteria for various kinds of equipment, Proof of possession / lease affidavit is mandatory:

Sr. No.	Equipment Type and Characteristics	Maximum Marks
1.	Shuttering + Scaffolding (11260 Sft)	5
2.	Mixer Machine (2 bag) (5 nos.) Wheel Barrows (10 nos.)	5
3.	Concrete Vibrator + Plate Compactor (3+3 nos.)	4
4.	Tractor with blade + Water Tankers (2+2 nos.)	6
	<b>Sub-total:</b>	<b>20</b>

**d. Financial Soundness /Status:**

Credit Marks shall be awarded on the basis of the following criteria:

For Financial Status assessment, the Applicants may be required to submit Audited Financial Statements for the last five years or any other document which verifies their Financial Status. Where necessary, the Procuring Agency will make enquiries with the firm's/contractor's bankers.

Working Capital in hand for this project/work (Attach proof of Bank Statement/Credit Facilities)

Sr. No.	Description	Maximum Marks
i)	Audited Report of last 5-years showing Average Annual Turnover of 65 million will be awarded full marks but for less than 65 million no marks will be awarded.	10
ii)	Available Bank Credit line. Full marks for 15 million limit but for less than 15 million no marks will be awarded. (Mandatory)	5
iii)	Registration with FBR & SRB (Mandatory)	1
iv)	Litigation History in which Decision has been given against the firm. (In case the firm is involved in any litigation, no marks will be given and 2 points will be	2

Sr. No.	Description	Maximum Marks
	given in case affidavit of no litigation is attached).	
v)	Blacklisting from any agency. (In case the firm is blacklisted, no Marks will be given and 2 points will be given in case affidavit by the company that it has not been black listed is attached).	2
	<b>Sub-total:</b>	<b>20</b>

**e. Technical Capabilities**

Credit Marks shall be awarded on the basis of the following criteria:

Sr. No.	Description	Maximum Marks
i)	Appendix-E to Bid: Proposed Construction Schedule	1.5
ii)	Appendix-F to Bid: Method of Performing the Work	1.5
iii)	Appendix-H to Bid: Construction camp and housing facilities	1
iv)	Appendix-I to Bid: List of Subcontractors	1
	<b>Total Marks:</b>	<b>05</b>

**f. HSE Policy & Certification**

**05**

**TECHNICAL SPECIFICATIONS:**

CIVIL WORK

SCOPE OF WORK

The work covered by this section of the specifications consists of furnishing all plant, labour, equipment, appliances and materials and in performing all operations in connection with excavating filling and backfilling for building construction and other foundation complete in strict accordance with the applicable drawings and subject to the terms and conditions.

**1 EXCAVATION AND BACK FILLING**

As specified in the Bill of Quantities.

**(a) DISPOSAL OF SURPLUS EARTH AND RUBBISH**

All surplus earth and rubbish shall be disposed off by the Contractor at his cost as directed by the Consultants. The terms of disposal shall include all operations of loading, unloading, stacking, spreading filling depressions, consolidating & ramming in layers not exceeding 12" (300 mm) thickness.

**2 CONCRETE WORK**

SCOPE OF WORK

The work covered by this section of the specifications consists of furnishing all labour, equipment, appliances and materials and in performing all operations in connection with concrete work complete in strict accordance with the applicable drawing and the specifications set here in and subject to the terms and conditions

of the contract.

Electrical / Mechanical poker vibrator of suitable diameter shall be used for vibrating all concrete specially R.C.C. works.

a) Full cooperation shall be extended to other trades to install embedded items. Embedded items will be inspected and tests for concrete and other materials or for mechanical operations will be completed and approved before concrete is placed.

b) MATERIALS

i) WATER

Only clean water from the city supply, tube well installed at the site or from other sources approved by the Engineer In-charge shall be used in mixing concrete, Curing, Cleaning plant and tools. The water shall be tested according to B.S. 3148. When its suitability is doubtful.

The Engineer In-charge may refuse to permit water containing any sugar, excess, acid alkali or salt. As a guide the following concentrations represent the maximum permissible values:

- i. To neutralize 260 ml sample it should be required more than 2 ml of 0.1 normal NaOH.
- ii. To neutralize 200 ml sample it should not required more than 10 ml of 0.1 normal HCL.
- iii. Percentage of solids should not exceed the following.

*	Percentage
<b>Organic</b>	0.02
<b>Inorganic</b>	0.30
<b>Sulphates</b>	0.50
<b>Alkali chlorides</b>	0.10

*Table 4.3*

In case of doubt the Engineer In-charge may require that concrete mixed with water proposed to be used should not have a compressive strength lower than 90% of the strength of concrete.

ii) CEMENT:

In all the R.C.C. structure, sulphate resisting cement shall be used upto plinth level. (If Specified in Structural drawings).

In super structure ordinary grey Portland cement (local) shall be used. Use of imported cement is totally forbidden unless approved by the CONSULTANTS.

iii) The Contractor shall provide at his own cost on the site all necessary sheds which shall be perfectly dry and water tight for the storing of cement to be delivered to the works to ensure adequate supplies being available for site work.

iv) If at any time the Consultants consider that any batch of cement may have deteriorated on site during storage of any reason he will direct that tests shall be made and the batch of cement on the site which may be in question, shall not be used until it has been shown by test to be satisfactory. Any rejected cement shall be removed from the site by the Contractor without delay. Cement

reclaimed from cleaning bags or leaking containers shall not be used.

v) Cement shall be consumed in the sequence of receipt of shipment unless otherwise directed by the Consultants.

c) AGGREGATES

i. All fine and coarse aggregate to be used shall be supplied from approved source which shall not be changed without permission in writing from the Consultants. Aggregate shall conform to the test requirements of B.S. No. 812 or equivalent ASTM or Pakistan Standard 243:1963.

ii. Fine aggregate shall be approved sand to be obtained from approved source and shall be clean sharp, free from clay, earth, vegetable and organic matters, alkaline or acid reactions or other deleterious matter or impurities.

iii. Fine aggregates shall conform to British Standard specifications B.S. No. 882 and shall be graded as follows:

B.S. Sieve	Percentage (weight) Passing	
No.	(Grading Zone -1)	(Grading Zone - 2)
3/8" (10mm)	100	100
3/16" (5mm)	90 – 100	90 – 00
No. 7	60 – 110	75 – 100
No. 14	30 – 70	55 – 90
No. 25	15 – 34	35 – 59
No. 52	5 – 20	8 – 30
No. 100	0 – 10	0 – 10

iv. Locally available Coarse aggregate shall be crushed stone and shall be clean free from sand, dust, salt, lime, chalk, clay, organic impurities or other deleterious matter.

v. Coarse aggregate shall conform to the relevant British Standard specifications or ASTM Standard.

vi. If required, aggregate shall be washed and screened to the satisfaction of the Consultants before use by making proper screening and washing.

vii. Sieve analysis and other necessary tests of all aggregates shall be carried out as and when required by the Consultants. Sample for such tests shall be taken in the presence of the Consultants.

viii. All costs in connection with the tests shall be borne by the Contractor.

ix. All aggregates shall be subject to the approval of the Consultants. Any aggregates not found to the required standard shall be rejected by the Consultants and shall have to be removed from site without any delay. Concrete structures executed with rejected aggregates shall be dismantled and rebuilt at the contractor's expense.'

3. CLASSIFICATION OF CONCRETE

Classes of concrete to be used in various parts of the works shall be indicated on the drawings and concrete of various grades shall be proportioned as set out in Table-1 appended hereto.

Table-1 showing minimum required compressive strengths of 6 in. x 6 in. x 6 in. (150 x 150 x 150 mm) cubes and minimum quantity of cement required per 100 cubic feet of finished concrete for various mixes and under various conditions.

Class of Concrete	Nominal Mix-Ratio	Min. Qnty Bags per % cft.	Preliminary test Cubes strength.		Work test Cube strength.	
			p.s.i at 7 days	p.s.i at 28 days	p.s.i at 7 days	p.s.i at 28 days
A	1:1:2	30	4000	6000	3000	4500
B	1:1-1/2:3	24	3300	5000	2500	3750
C	1 : 2 : 4	17	2660	4000	2000	3000
D	1 : 3 : 6	13.5	1330	2000	1000	1500
E	1 : 4 : 8	10.0	900	1350	660	1000

The Mix-Ratio indicated in above table are only as guide line normally these ratios achieve the required strength but may vary due to quality of aggregates available in the area of work. The structural design is based on cube strength after 28 days. Therefore the strength should be achieved by design of mix.

To achieve the required strength is the sole responsibility of the Contractor. No Admixture is recommended for use in concrete for getting the required strength, if any Admixture is recommended by the Laboratory it may be used after approval from The Consultants at the entire RISK AND COST of the Contractor. No extra payment will be made in this regard even if the Admixture is approved by the Consultant.

#### 4. PROPORTIONING OF CONCRETE MIXES

All concrete shall be proportioned by volume unless specifically allowed by Consultants. This proportions given in Table-1 above are suitable only when the specific gravities of the aggregate are in the region of 2.5.

The Contractor shall submit to the consultant proposed mix designs for concrete to be used, based on preliminary laboratory test to determine proportion of cement, aggregate and water in the concrete conforming to the quality and strength requirement specified herein Preliminary test results of at least three different mixes of each class of concrete with varied water cement ratio shall be submitted. The results of 7 days and 28 days cube tests shall be used to establish the relation between 7 days and 28 days strengths.

The consultants may make adjustments in the mix for a certain work. Preliminary design of mixes and testing shall be a responsibility of the contractor. The proportions voids in the aggregate shall be controlled and if it exceeds 45%, sand and consequently the cement shall be increased by the contractor without any charge. If the proportion is less than 40%, sand shall be decreased but not the cement.

#### 5. WATER CEMENT RATIO

##### SLUMP TEST

A test of the plasticity and flow ability of concrete should be made in the field in presence of Representative of Owner during every concrete operation. The slump

cone is a sheet metal (or frustum of a cone) 12" high, 4" in diameter at the top and 8" in diameter at the bottom. After the mixer is fully emptied of a batch, the cone is filled in three layers, roding each layer 25 times with a 5/8" dia bullet pointed rod. The cone is then lifted and the slump is measured. The height of the pile will be less than 12". The allowable slump is generally defined in specifications.

#### MAXIMUM ALLOWABLE WATER CONTENT

All concrete specimens shall be made, cured and tested in accordance with British Standard or ASTM Standard. A curve representing the relation between the water content and the average 28 days compressive strength earlier strength at which the concrete is to receive its full working load shall be established for a range of value including all the compressive strength shown on the Plans. The curve shall be established by at least four points, each point representing average values for at least four test specimens. The maximum allowable water content for the concrete shall be as determined from this curve and shall correspond to a strength 15% greater than indicated on the plans. The slump for concrete shall be minimum of 1" (25mm) and a maximum of 2-1/2" (75 mm) provided the requisite strength is obtained. Corrective additions to remedy deficiencies in aggregate gradations shall be used only with the written approval of the Consultants. When such permissions are permitted the material shall be measured separately for each batch of concrete.

#### 6. SAMPLES AND TESTING

##### a. GENERAL

Test cubes concrete shall be provided and stored by the Contractor as and when directed by the Consultants. Test cubes shall be tested by the approved laboratory and the contractor shall bear the charges for the same.

b. Cement shall be tested as prescribed in British Standard or ASTM Standard, at the cost of Contractor.

##### c. AGGREGATES

Aggregates shall be tested at Contractor's cost as prescribed in British Standard 812. In additions, fine aggregates shall be tested for organic impurities in conformity with B.S. 812 or equal ASTM Standard.

##### d. TESTING OF CONCRETE

- i. All test cubes shall be 6 x 6 x 6 inch (150 x 150 x 150 mm) size.
- ii. Specimens shall be cured under laboratory conditions except that the Consultants may require curing under field conditions.
- iii. Three cubes of the set shall be tested at 7 (seven) days and 3 (three) shall be tested at 28 days or at such ages as directed by the Consultants.
- iv. All cube moulds shall be steel moulds perfectly true having all internal and the meeting faces machined to smooth surface as approved by the Consultants.
- v. If the strength tests of the laboratory controlled specimens for any portion of the work falls below the minimum allowable compressive strength at 28 days required for the class of concrete used in that portion the consultants shall have the right to order replacement of the affected work.

##### e. PLACING CONCRETE

i. All concrete shall be thoroughly compacted and consolidated by means of pneumatic mechanical or electrical vibrators or other approved compacting method. Care shall be taken to avoid segregation due to excessive vibration and placing /

dropping of concrete from a height of more than 7'-0". The contractor shall maintain on site at all times one or more stand-by vibrators.

ii. Compaction shall be done until the whole mass assumes a jelly like appearance and consistency, with the water just appearing on the surface. Concrete shall be sufficiently tamped and consolidated around the steel rods, care be taken that the vibrator does not as such touch steel or form work.

iii. Hardened concrete, debris and foreign materials shall be removed from interior of forms and from inner surface of mixing and conveying equipments.

iv. Constructions joints in concrete shall only be given at location indicated in the drawings or as approved by the Consultants. At the end of the day's work the concrete shall be finished off against a temporary shutter stop which shall be vertical and securely fixed.

v. Should any part of the exposed surface present a rough uneven or imperfect appearance when shuttering is removed, it shall be picked out to the such depth and refilled and properly resurfaced as per directions of the Consultants.

vi. Whole work is to be smooth, pleasing and to the entire satisfaction of the Consultants.

## 7. FORM WORK

### 1. GENERAL

The form work shall be inclusive of all labour, material, workmanship and alike. All formwork and supports thereto shall be designed by the contractor and relevant drawings shall be submitted to the Consultant for approval before the work is put in hand. Such an approval shall not relieve the contractor for all the obligations of the contract or give rise to any claims.

### 2. FORM WORK NOT TO INTERFERE AND INJURE WORK.

The form work shall be so designed and arranged as not be unduly interfere with concrete, during its placing, and easy to be removed without injuring the finished concrete edges, clamps, bolts and tie rods shall be used, when permitted and where practicable, in making the form work rigid and in holding it to true position.

### 3. OPENINGS IN FORM WORK.

Wherever the concreting is required to be carried out within forms of considerable depths, temporary openings in the side of the form shall be provided to facilitate the pouring and consolidation of the concrete. Small temporary openings shall be provided at the bottom of all forms to permit the removal of rubbish etc.

### 4. OPENINGS IN THE STRUCTURE AND OTHER DETAILS.

Provisions shall be kept in the form work for openings such as recesses, holes, packets, fillets etc. for housing services and other architectural details in the finished concrete or on its surface and edges as shown on drawings or as directed by the Consultants to fix all necessary inserts, dowels pipe, holdfast, etc. as shown on drawings or as directed.

### 5. JOINTS IN FORM WORK.

All joints in the form work shall be sufficiently water tight to prevent undue leakage or cement slurry from concrete surface not to be exposed in the finished work. The joints in the form work for all concrete surfaces to be exposed in the finished work shall



be water tight jointed and perfectly smooth so as not to allow any leakage of the cement slurry from the concrete.

#### 6. TREATMENT AFTER REMOVAL OF FORMS.

All honey combing or other irregularities are to be properly made good upon the removal of the form work and the surface made good to the satisfaction of the Consultants. All such defects must be inspected by the CONSULTANT before carrying out any remedial work.

7. No form work shall be measured and paid for separately and shall be deemed to be included in the units price of Concrete whether cast-in-situ or pre-cast and subsequently fixed in position.

#### 8. CLEARING AND REMOVAL OF RUBBISH

On completion of works herein the contractor shall remove all concrete debris, rubbish, shuttering materials, scraps etc. from the vicinity of the structures completed. All areas shall be cleaned to the satisfaction and approval of the Consultants.

#### 9 REINFORCEMENT STEEL

##### SCOPE OF WORK

The work covered by this section of the specifications consists of furnishing all materials, tools, labours and in performing all operations in connection with providing, straightening, cutting, bending, binding and fixing in strict accordance with this section of specifications, the applicable drawings, bar bending schedule, (to be prepared by the CONTRACTOR as per terms and conditions of the contract).

##### MATERIALS:

- i). Reinforcing steel to be new billet stock of deformed steel as specified on the drawings and shall conform to British Standard Specifications or equivalent ASTM or Pakistan Standard.
- ii). The Contractor shall furnish to Consultants, Manufacturer's mills certificate to guarantee that steel meets the standard, specifications, requirements and minimum certified yield stresses as follows:

ALL REINFORCEMENT STEEL SHALL CONFORM TO ASTM A-615 YIELD	
STRENGTH	60,000 Psi
ELONGATION	14 %

#### 10. BRICK MASONRY

##### SCOPE OF WORK

The work covered under this section of specifications consists of furnishing all labour, material tools and plants for the satisfactory completion of the works in accordance with the drawings as specified herein and subject to the terms and conditions of the contract.

GENERAL

Each finished brick shall not be less than 3" x 4½" x 9" in size and shall have a ¼" deep frog on the upper face. All the bricks shall be regular, of homogenous texture uniform in shape and size with sharp and square arises, parallel faces and deep red colour may vary by 1/8" from the standard size. When stuck, they should give a clear ringing sound. They shall not absorb more than 1/6<sup>th</sup> of their weight of water after being soaked for one hour, and shall show no sign of effervescence on drying. A good brick should not break when struck against another brick or when dropped flat from a height of 3'-0" to 4'-0" on the ground. It should have a surface so hard that it cannot be scratched by finger nail. The average compressive strength of five representative bricks shall not be less than 1,800 P.S.I.

EXECUTION

- a) Unless otherwise specified, bricks shall be laid in English Bond with the frogs upwards. Each brick shall be set with both bed and vertical joints filled with mortar and thoroughly bedded in by tapping with handles of the trowel. No half bricks or bats shall be used except where necessary to complete the Bond. Simple lipping with mortar at the edges shall not be permitted.
- b) All bricks work shall be taken up truly plumb and should be so done with a plumb and straight edge.
- c) Brick work shall be carried up all round at the same height and during construction one part of wall should not be more than 3'-0" higher than any other part.
- d) Brick work constructed shall be of best standard of workmanship obtainable and objectionable offsets in the brick work shall be removed by and at the expense of the contractor.
- e) Each course in the wall after being laid should be properly grouted to fill all of the voids in the area. The grout should be fluid enough to perform this function.

10 PLASTERING.SCOPE OF WORK.

The work covered under this section of specifications consist of furnishing all labour, material, tools and plants for the satisfactory completion of the works in accordance with the drawings, as specified herein and the terms and conditions of the Contract.

MATERIALS.a) CEMENT

Cement shall be as specified in the section of Plain and Reinforced Cement Concrete.

b) SAND

Sand shall be as specified in the section of concrete work except that the maximum size shall be restricted to that passing a No. 14 sieve for finishing coat and passing a No. 7 sieve for base coat (if any)

c) WATER

Water shall be as specified in the section of Concrete work.

MORTAR COMPOSITION

- a) Mortar for cement plaster shall be mixed in the properties as specified in the Bill of Quantities and shall be applied in one coat or two coats thickness as given in Bill of Quantities and relevant drawings.

#### MORTAR BATCHING

- a) Methods and equipment used for mixing mortar shall be such as will accurately determine and control the amount of such separate ingredient entering into mortar.
- b) The mortar shall be prepared by mixing the ingredients twice in a dry state, on a pucca platform or in trough and then mixing thoroughly after the addition of water.
- c) Mortar shall be mixed only in sufficient quantities for immediate use and all mortar not consumed within 30 minutes after the addition of water to the dry mix shall be rejected and the same will not be allowed to be used. Mixing troughs and pans shall be thoroughly cleaned and washed at the end of each day work.

#### PLASTERING

- a) The joints of Block Masonry, which is to be plastered, shall have ½" deep grooved joint which should be raked before the mortar sets each day.
- b) The concrete surfaces to receive plaster shall be properly roughened by dragging with wire brushes while the concrete has not hardened. In case of the hardened concrete, the surface shall be roughened.
- c) The surfaces to be plaster shall be kept damp for at least two hours and then treated with cement slurry before plastering.
- d) Level pegs shall be made for all plaster work and shall be got checked from the Engineer at least one day before the plastering work is carried out.
- e) The plaster shall be laid to a true and plumb bob and a straight edge not less than 10 feet in length. All horizontal lines and surfaces shall be tested with a level and all vertical lines and corners with a plumb bob as the work proceeds. The plaster shall be finished perfectly smooth and shall be without wavy surfaces. The edge and corners shall be rounded or chamfered if instructed by the Engineer.

### 12. GLAZED, MATT FINISH WALL AND FLOOR TILES

#### GENERAL

The contractor shall supply and fix tiles as described in B.O.Q.

#### LAYING

- i) All tiles should be soaked in water before laying in sufficient quantity to complete a day's work.
- ii) All tiles shall be set in bed of cement sand mortar to its correct level and line. The mortar shall be evenly spread on the full bottom of tiles.
- iii) Joints shall be grouted with white cement mixed with matching colour of tiles as approved by the Engineer Incharge.

### 13. PORCELAIN, TERRAZO AND MARBLE TILES

#### GENERAL

- a) The contractor shall submit samples of Marble and Porcelain Tiles for flooring and dado required in various locations. The finished floors and dados shall conform in all respects to the characteristics of approved sample by the CONSULTANT / OWNER.
- b) Marble tiles shall be of first quality, free from cracks chips or any other defects and shall be uniform in tone and colour, as selected by Consultant. Marble Tiles be ½” thick, on floors and ¾” thick on steps of staircases where specified.
- c) Marble Tiles in floor, steps and Risers be laid on a layer of pure white cement slurry over cement Concrete Bed.

#### LAYING

- i) Immediately prior to laying the tiles will be checked the lot and rejected tiles be replaced.
- ii) All Tiles shall be set in bed of cement / sand mortar to their correct lines and level and the mortar shall be spread evenly on the full bottom of tiles.
- iii) All Tiles should be set without joints (Butt joints) as approved by the Consultants.
- iv) Marble Tiles be polished and finished with chemical polish.

### 14. CARPENTRY, JOINERY AND HARDWARE

#### SCOPE OF WORK

The work covered by this section of the specifications consists of furnishing all plant, labour, equipment, appliances and materials and in performing all operations in connection with fabrication and installation of shelves, cupboards paneling, doors /

windows frames, shutters etc. as per size, thickness, dimension and details shown on the working drawings, compete schedule of Doors and Windows in strict accordance with this section of the specification and the applicable drawings, finishing schedule, instructions of the Engineer.

#### MATERIALS, FITTINGS & SAMPLES

##### (i) SOFT WOOD

The timber of trees belonging to the botanical group Gymnosperms, commercial timber deodar of this group, with best quality shall be used.

(ii) PLYWOOD

Shall comply in all respects with B.S.S. 1455: 1948. The plywood shall only be obtained from approved manufactures.

The plywood used for doors, paneling and the like shall be of the thickness as specified. The grade shall be first quality. The face and back shall be free from end-joints, dead-knots, overlaps, patches and other defects. Edge joints in veneers shall be well made. Isolated pinworm holes shall be permitted provided they do not run along with plane of the veneer. The face and back shall be free smooth for painting or polishing.

(iii) TEAK VENEER BOARD

Shall be first quality obtained from the manufacture approved by the Engineer / Consultant.

HARDWARE AND FITTINGS

Hardware and fittings shall be heavy duty hardware of approved quality and manufacture otherwise mentioned in the drawings and Bill of Quantities.

14.4 (i) LOCKS AND DOOR CLOSER

Shall be of the best quality available from the approved manufacturers according to the Samples approved by the Consultants.

(ii) HINGES

Shall of best quality (local) heavy duty steel hinges 3" (75 mm) in windows, 4" (100 mm) in single leaf doors and 5" (125 mm) in Main door every leaf should have 4 hinges fixed with steel screws.

(iii) All other fittings shall be best quality available from approved manufacturer. Samples shall be submitted to the consultants, for his approval. Cost of hardware shall be included in item of door and no separate payment will be made.

(iv) HARDWARE-SCHEDULE

Each flush door shutter shall be furnished with the following.

- Best quality (aluminum or bronze) Mortice lock / knobset (local)-1 No.
- Tower-bolts 8" (200 mm) long chromium plated / Aluminum (local)-2 Nos.  
Door closers (Japan) of approved Manufacturer where directed by the Engineer-1 No.
- Kick-plates / push plates of stainless steel 6" x 1/8" (150 mm x 3mm) where directed

by the Engineer-both sides. All material will be best quality as approved /specified by the owner.

(ii). HINGES

Shall of best quality (local) heavy duty steel hinges 3" (75 mm) in windows. 4" (100 mm) in single leaf doors and 5" (125 mm) in Main door every leaf should have 4 hinges fixed with steel screws.

(iii). All other fittings shall be best quality available from approved manufacturer. Samples shall be submitted to the consultants, for his approval. Cost of hardware shall be included in item of door and no separate payment will be made.

(iv). HARDWARE – SCHEDULE

Each flush door shutter shall be furnished with the following.

- Best quality (aluminum or bronze) Mortice lock / knobset (local) -1 No.
- Tower-bolts 8" (200 mm) long chromium plated / Aluminum (local) -2 Nos.  
Door closers (Japan) of approved Manufacturer where director by the Engineer-1 No.
- Kick-plates / push plates of stainless steel 6" x 1/8" (150 mm x 3mm) where directed by the Engineer-both sides. All material will be best quality as approved / specified by the owner of the time of installation.

#### 14.5 WOOD TREATMENTS

In addition to the prior seasoning treatment of timbers, ceilings frame joints, purlins, planks, all the door frames, furring strips blocking grounds, nailing strips in contact with concrete or masonry or wood or other materials, shall first be treated with the pesticides designated in relevant section on Termite control of these specifications and then with solignum or equally approved material in accordance with manufacturers / consultant's instructions.

#### FLUSH DOORS

Flush doors shall be solid cored as per description in Bill of Quantities covered on both side with commercial ply or Teak veneered block board as specified in drawing. The doors shall be lipped and edges fitted and hung to the frames. The flush door shall be obtained from the source approved by the consultant and shall be of uniform quality and texture.

#### FABRICATION

(a) The contractor shall perform all necessary groovings, notching, tonguening, housing, rebating and all other work necessary for the correct jointings. The contractor shall also provide all metal plates, screws, nails and other fixing that may be necessary for the proper execution of the joinery work specified. The contractor shall also required to carry out all works necessary for the proper construction of all framings, etc. and for their support and fixing in the building. All wood work shall be approved and initialled

be the consultant or Engineer before being fixed in position.

(b) Any joinery which may show signs of defects arising from the unsound materials or defective workmanship before the expiry of the maintenance period shall be cut out and replaced at contractor's own expense.

(c) All hold-fast are to be cut to size and shall be 1/8" thick M.S. flat iron as shown on the drawing.

(d) Solid wood frames as per BOQ or as shown on drawing are to be prepared with posts tenoned with the beads or as shown on the drawings.

(e) The shutters will be fixed to the frames with approved quality fittings. The frames will be secured with wrought iron clamps.

(f) All doors and windows shutters shall be fabricated in workman like manner in accordance with the drawings or as directed by the Engineer.

(g) All articles of ironmongery to be soundly and strongly made well finished and equal in quality to first grade articles of approved manufacturers.

(h) Steel fittings are to be furnished and oxidized on exposed surfaces. Aluminum fittings are to be anodized on exposed surfaces. Aluminum fittings are to be the best quality of their kind and shall have a base coat of brass or copper.

(i) Locks, or knob sets, handles, heavy handles etc. shall be as specified and approved by Engineer / Consultant.

(j) Paint and Polish shall be carried out as specified in relevant section.

(k) Anti-termite treatment of approved quality shall be applied to frames on the surface in contact with earth, or wall etc. as per directions of Engineer. Contractor's rates in BOQ for doors, windows shelves etc. shall include this item and no additional payment shall be made.

(l) (i) Three coats of Enamel paint should be applied on all wood work after preparing all surfaces.

(ii) Three coats of Enamel paint on all steel works over priming coat of Redoxide.

#### SHOP DRAWINGS AND SAMPLES

The contractor should submit the shop drawings for the approval of Consultants or should submit sample of one complete door and window for approval of Consultant / Owner.

#### 15. GLAZING

##### SCOPE OF WORK

The work covered under this section of specifications consists of furnishing all labour material, tools and plants and performing all operations in connection with fixing of

the glass to the doors windows, skylights etc in accordance with the drawings, as specified herein and subject to the terms and conditions of the contract.

#### GENERAL

(a) Size of glass indicated on drawings are only approximate actual sizes required shall be determined by measuring all panels. Glass shall be without wave, distortion or bulbs.

(b) For wooden Doors and Windows, where provided, glass shall be secured in place with Deodar wood beading.

(c) All glass shall be of manufacture and quality approved by the consultant or Engineer. 5 mm thick glass should be used in doors and windows and 3 mm thick glass should be used in ventilators.

#### ACCEPTANCE

Glass shall be protected against damage. After inspection any labels, paint smears and the glass shall be washed clean on both sides. Damaged or broken glasses shall be removed and replaced with new ones before acceptance at no additional cost.

#### ROOF WATER PROOFING AND INSULATION

Providing and Supplying Heat & U/V resistant Protective Liquid Membrane Roof water proofing water shield ZSAC-10/55 of M/s ZAHABIYA or MATRIX water stopper MT 22/6 in white colour etc. etc. complete as described in Nomenclature of BOQ.

#### 16. PAINTING AND FINISHING

##### SCOPE OF WORK

The work covered in this section of the specifications consists of furnishing all plants, labour, equipment, appliances and materials and in performing all operations in connection with protective and general painting and finishing complete in strict

accordance with this section of the specifications and applicable drawings and subject to the terms and conditions of the contract.

#### GENERAL

The terms "Paints" as used herein means enamel paints Emulsion Paint, primers, colour washes, chalk washes etc. All colours shall be subject to the approval of the Consultants / Owner.

All Paints shall be of first class quality product made by an approved manufacturer ICI or equivalent approved and shall conform to the requirements of current British Standards specifications or ASTM standards.

All colours and shades shall be as directed by the Consultants / Owner. The colour of each coat of paint shall not be of a different shade from the following coat.

#### 17. COOPERATION WITH OTHER TRADES

(a) All work under this section shall be coordinated with the work to be done as



specified under other sections of the specifications.

(b) The contractor shall drill, tap, cut and fit the work included herein as required, to accommodate work of other trades in conjunctions with it.

18. SAMPLE

Samples of materials specified shall be submitted for approval when required by the Consultant / Owner.

**29.1 Award of the Contract:**

*Delete the text of clause 29.1 & 29.2 and replace with the following:*

Subject to Clause IB.30 and IB.34, the Employer will award the Contract to the bidder whose bid has been determined to be substantially responsive to the Bidding Document, has met the technical requirement criteria as mentioned in clause 28.1(iv) and 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.

**32.1 Standard form and amount of Performance Security acceptable to the Employer:**

Up to 5% of the contract amount against bank guarantee from any scheduled bank of Pakistan.

**37.0 Price Adjustment:**

No price adjustment will be applicable on said project.

**FORM OF BID  
AND  
APPENDICES TO BID**

**FORM OF BID**

Bid Reference No. \_\_\_\_\_  
 (Name of Contract/Works)

To:

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

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.

8. 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 \_\_\_\_\_  
\_\_\_\_\_

**SPECIAL STIPULATIONS****Clause****Conditions of Contract**

1.	Engineer's Authority to issue Variation in emergency.	2.1	15% of the Contract Price stated in the Letter of Acceptance.
2.	Amount of Performance Security	10.1	Up to 5% of Contract Price stated in the Letter of Acceptance in shape of bank guarantee from any scheduled bank of Pakistan as per approved format.
3.	Time for Furnishing Program	14.1	Within 14 days from the date of receipt of Letter of Acceptance.
4.	Time for Commencement	41.1	Within 7 days from the date of receipt of Engineer's Notice to Commence which shall be issued within fourteen (14) days after signing of Contract Agreement.
5.	Time for Completion	43.1, 48.1	16 months.
6.	Amount of Liquidated Damages	47.1	Rs. 10,000/- 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.
7.	Defects Liability Period	49.1	365 days from the effective date of Taking Over Certificate.
8.	Percentage of Retention Money	60.2	5% of the amount of Interim Payment Certificate will be deducted upto the maximum limit specified
9.	Limit of Retention Money	60.2	10% of Contract Price stated in the Letter of Acceptance.
10.	Minimum amount of Interim Payment Certificates (Running Bills)	60.2	Rs. 4 million.
11.	Time of Payment from delivery of Engineer's Interim Payment Certificate to the Employer.	60.10	30 days. (Subjected to availability of funds).
12.	Mobilization Advance	60.12	Up to 10% of Contract Price stated in the Letter of Acceptance against bank guarantee from any scheduled bank of Pakistan as per approved format.
13.	Mobilization Advance Recovery	60.12	This advance shall be recovered in five equal installments starting from the second IPC.
14.	Secured Advance	60.11	Contractor can obtain the secured advance at non-perishable material subject to verification & with the approval of Employer.
15.	Secured Advance Recovery	60.11	This advance shall be recovered within (90) days even if unutilized.

### FOREIGN CURRENCY REQUIREMENTS

1. The Bidder may indicate here in below his requirements of foreign currency (if any), with reference to various inputs to the Works.
2. Foreign Currency Requirement as percentage of the Bid Price excluding Provisional Sums \_\_\_\_\_.%
3. Table of Exchange Rates

Unit of Currency	Equivalent in Pak. Rupees
Australian Dollar	-----
Euro	-----
Japanese Yen	-----
U.K. Pound	-----
U.S. Dollars	-----
-----	-----
-----	-----

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

The source of indices and the weightages or coefficients for use in the adjustment formula under Clause 70 shall be as follows:

(To be filled by the Employer)

Cost Element	Description	Weightages	Applicable index
1	2	3	4
(i)	Fixed Portion	0.350	
(ii)	Local Labour		Government of Pakistan (GP) Federal Bureau of Statistics (FBS) Monthly Statistical Bulletin.
(iii)	Cement – in bags		“ “ “
(iv)	Reinforcing Steel		“ “ “
(v)	High Speed Diesel (HSD)		“ “ “
(vi)	Bricks		“ “ “
(vii)	Bitumen		“ “ “
(viii)			
	Total	1.000	

**Notes:**

- 1) Indices for “(ii)” to “(vii)” are taken from the Government of Pakistan Federal Bureau of Statistics, Monthly Statistical Bulletin. The base cost indices or prices shall be those applying 28 days prior to the latest day for submission of bids. Current indices or prices shall be those applying 28 days prior to the last day of the billing period.
- 2) Any fluctuation in the indices or prices of materials other than those given above shall not be subject to adjustment of the Contract Price.
- 3) Fixed portion shown here is for typical road project, Employer to determine the weightage of Fixed Portion considering only those cost elements having cost impact of seven (7) percent or more on his specific project.

**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 Engineer 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 Engineer may fix as per the Contract.
3. The rates and prices entered in the priced Bill of Quantities shall, except insofar as it is otherwise provided under the Contract include all costs of Contractor's plant, labour, 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. A rate or price shall be entered against each item in the priced Bill of Quantities, whether quantities are stated or not. The cost of items against which the Contractor will have failed to enter a rate or price shall be deemed to be covered by other rates and prices entered in the Bill of Quantities.
5. 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.
6. General directions and description of work and materials are not necessarily repeated nor summarised in the Bill of Quantities. References to the relevant sections of the Bidding Documents shall be made before entering prices against each item in the priced Bill of Quantities.
7. 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.

**B. Work Items**

1. The Bill of Quantities are attached at the end of this document.



**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 in the bar chart (CPM, PERT or any other to be specified herein) 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 Employer’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) Whole Works	_____ days
b) Part-A	_____ days
c) Part-B	_____ days
d) _____	_____ days
e) _____	_____ days

**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.]

**LIST OF MAJOR EQUIPMENT – RELATED ITEMS**

The bidder will provide list of equipments as per the requirements of clause 28.1(vi) of bidding data along with details make, model etc. The bidder will also provide a signed affidavit (mandatory) that the mentioned equipment is in possession of the bidder.

**CONSTRUCTION CAMP AND HOUSING FACILITIES**

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

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

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

1. Site Preparation (clearing, land preparation, etc.).
2. Provision of Services.
  - a) Power (expected power load, etc.).
  - b) Water (required amount and system proposed).
  - c) Sanitation (sewage disposal system, etc.).
3. Construction of Facilities
  - a) Contractor's Office. Workshop and Work Areas (areas required and proposed layout, type of construction of buildings, etc.).
  - b) Warehouses and Storage Areas (area required, type of construction and layout).
  - c) Housing and Staff Facilities (Plans for housing for proposed staff, layout, type of construction, etc.).
4. Construction Equipment Assembly and Preparation (detailed plans for carrying out this activity).
5. Other Items Proposed (Security services, etc.).

**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.

<b>Part of Works (Give Details)</b>	<b>Subcontractor (With Complete Address)</b>
<b>1</b>	<b>2</b>

**ESTIMATED PROGRESS PAYMENTS**

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

<b>Quarter/ Year/ Period</b>	<b>Amounts (1,000 Rs.)</b>
<b>1</b>	<b>2</b>
Ist Quarter	
2 <sup>nd</sup> Quarter	
3 <sup>rd</sup> Quarter	
4 <sup>th</sup> Quarter	
5 <sup>th</sup> Quarter	
6 <sup>th</sup> Quarter	
7 <sup>th</sup> Quarter	
8 <sup>th</sup> Quarter	
9 <sup>th</sup> Quarter	
<b>Bid Price</b>	

**ORGANIZATION CHART  
FOR THE  
SUPERVISORY STAFF AND LABOUR**

**(INTEGRITY PACT)**

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

Contract No. \_\_\_\_\_ Dated \_\_\_\_\_

Contract Value: \_\_\_\_\_

Contract Title: \_\_\_\_\_

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

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

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

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

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

Name of Buyer: .....

Signature: .....

[Seal]

Name of Seller/Supplier: .....

Signature: .....

[Seal]



**FORMS**

**PERFORMANCE SECURITY  
CONTRACT AGREEMENT  
MOBILIZATION ADVANCE GUARANTEE/BOND**

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

Guarantee No. \_\_\_\_\_  
Executed on \_\_\_\_\_  
Expiry date \_\_\_\_\_

[Letter by the Guarantor to the Employer]

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 Employer) in the penal sum of the amount stated above for the payment of which sum well and truly to be made to the said Employer, we bind ourselves, our heirs, executors, administrators and successors, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that whereas the Principal has accepted the Employer'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 Employer, 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 defences under the Contract, do hereby irrevocably and independently guarantee to pay to the Employer without delay upon the Employer's first written demand without cavil or arguments and without requiring the Employer to prove or to show grounds or reasons for such demand any sum or sums up to the amount stated above, against the Employer'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 Employer's designated Bank & Account Number.

PROVIDED ALSO THAT the Employer 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 Employer 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 "Employer") of the one part and \_\_\_\_\_ (hereafter called the "Contractor") of the other part.

WHEREAS the Employer 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 witnessed 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 M).
  - (i) The Drawings.
  - (j) The Specifications.
3. In consideration of the payments to be made by the Employer to the Contractor as hereinafter mentioned, the Contractor hereby covenants with the Employer to execute and complete the Works and remedy defects therein in conformity and in all respects with the provisions of the Contract.
4. The Employer 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 Employer

\_\_\_\_\_  
(Seal)

Signed, Sealed and Delivered in the presence of:

Witness:

\_\_\_\_\_

(Name, Title and Address)

Witness:

\_\_\_\_\_

(Name, Title and Address)

# **MOBILIZATION ADVANCE GUARANTEE**

Guarantee No. \_\_\_\_\_ Date \_\_\_\_\_

WHEREAS \_\_\_\_\_ (hereinafter called the 'Employer') has entered into a Contract for

\_\_\_\_\_ (Particulars of Contract)  
with \_\_\_\_\_ (hereinafter called the "Contractor").

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

AND WHEREAS, the Employer has asked the Contractor to furnish Guarantee to secure the mobilization advance for the performance of his obligations under the said Contract.

AND WHEREAS, \_\_\_\_\_  
(Scheduled Bank in Pakistan)

(Hereinafter called the "Guarantor") at the request of the Contractor and in consideration of the Employer agreeing to make the above advance to the Contractor, has agreed to furnish the said Guarantee.

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

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

This Guarantee shall remain in force until the advance is fully adjusted against payments from the Interim Payment Certificates of the Contractor or until \_\_\_\_\_ whichever is earlier.

(Date)

The Guarantor's liability under this Guarantee shall not in any case exceed the sum of Rupees \_\_\_\_\_ (Rs \_\_\_\_\_).

This Guarantee shall remain valid up to the aforesaid date and shall be null and void after the aforesaid date or earlier if the advance made to the Contractor is fully adjusted against payments from Interim Payment Certificates of the Contractor provided that the Guarantor agrees that the aforesaid period of validity shall be deemed to be extended if on the above-mentioned date, the advance payment is not fully adjusted.

GUARANTOR

1. Signature \_\_\_\_\_
2. Name \_\_\_\_\_
3. Title \_\_\_\_\_

WITNESS

1. \_\_\_\_\_  
\_\_\_\_\_  
Corporate Secretary (Seal)

2. \_\_\_\_\_  
(Name Title & Address)

\_\_\_\_\_  
Corporate Guarantor (Seal)

## Part I - General Conditions of Contract



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## **PART I - GENERAL CONDITIONS**

### **Definitions and Interpretation**

#### **1.1 Definitions**

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

- (a) (i) "Employer" means the person named as such in Part II of these Conditions and the legal successors in title to such person, but not (except with the consent of the Contractor) any assignee of such person.
- (ii) "Contractor" means the person whose tender has been accepted by the Employer and the legal successors in title to such person, but not (except with the consent of the Employer) any assignee of such person.
- (iii) "Subcontractor" means any person named in the Contract as a Subcontractor for a part of the Works or any person to whom a part of the Works has been subcontracted with the consent of the Engineer and the legal successors in title to such person, but not any assignee of any such person.
- (iv) "Engineer" means the person appointed by the Employer to act as Engineer for the purposes of the Contract and named as such in Part II of these Conditions.
- (v) "Engineer's Representative" means a person appointed from time to time by the Engineer under Sub-Clause 2.2.
- (b) (i) "Contract" means these Conditions (Parts I and II), the Specification, the Drawings, the Bill of Quantities, the Tender, the Letter of Acceptance, the Contract Agreement (if completed) and such further documents as may be expressly incorporated in the Letter of Acceptance or Contract Agreement (if completed).
- (ii) "Specification" means the specification of the Works included in the Contract and any modification thereof or addition thereto made under Clause 51 or submitted by the Contractor and approved by the Engineer.
- (iii) "Drawings" means all drawings, calculations and technical information of a like nature provided by the Engineer to the Contractor under the Contract and all drawings, calculations, samples, patterns, models, operation and maintenance manuals and other technical information of a like nature submitted by the

Contractor and approved by the Engineer.

- (iv) "Bill of Quantities" means the priced and completed bill of quantities forming part of the Tender.
- (v) "Tender" means the Contractor's priced offer to the Employer for the execution and completion of the Works and the remedying of any defects therein in accordance with the provisions of the Contract, as accepted by the Letter of Acceptance.
- (vi) "Letter of Acceptance" means the formal acceptance by the Employer of the Tender.
- (vii) "Contract Agreement" means the contract agreement (if any) referred to in Sub-Clause 9.1.
- (viii) "Appendix to Tender" means the appendix comprised in the form of Tender annexed to these Conditions.
- (c) (i) "Commencement Date" means the date upon which the Contractor receives the notice to commence issued by the Engineer pursuant to Clause 41.
- (ii) "Time for Completion" means the time for completing the execution of and passing the Tests on Completion of the Works or any Section or part thereof as stated in the Contract (or as extended under Clause 44) calculated from the Commencement Date.
- (d) (i) "Tests on Completion" means the tests specified in the Contract or otherwise agreed by the Engineer and the Contractor which are to be made by the Contractor before the Works of any Section or part thereof are taken over by the Employer.
- (ii) "Taking-Over Certificate" means a certificate issued pursuant to Clause 48.
- (e) (i) "Contract Price" means the sum stated in the Letter of Acceptance as payable to the Contractor for the execution and completion of the Works and the remedying of any defects therein in accordance with the provisions of the Contract.
- (ii) "Retention Money" means the aggregate of all monies retained by the Employer pursuant to Sub-Clause 60.2(a).
- (iii) "Interim Payment Certificate" means any certificate of payment issued by the Engineer other than the Final Payment Certificate.
- (iv) "Final Payment Certificate" means the certificate of payment issued by the Engineer pursuant to Sub-Clause 60.8.



- (f) (i) "Works" means the Permanent Works and the Temporary Works or either of them as appropriate.
- (ii) "Permanent Works" means the permanent works to be executed (including Plant) in accordance with the Contract
- (iii) "Temporary Works" means all temporary works of every kind (other than Contractor's Equipment) required in or about the execution and completion of the Works and the remedying of any defects therein.
- (iv) "Plant" means machinery, apparatus and the like intended to form or forming part of the Permanent Works.
- (v) "Contractor's Equipment" means all appliances and things of whatsoever nature (other than Temporary Works) required for the execution and completion of the Works and the remedying of any defects therein, but does not include Plant, materials or other things intended to form or forming part of the Permanent Works.
- (vi) "Section" means a part of the Works specifically identified in the Contract as a Section.
- (vii) "Site" means the places provided by the Employer where the Works are to be executed and any other places as may be specifically designated in the Contract as forming part of the Site.
- (g) (i) "cost" means all expenditure properly incurred or to be incurred, whether, on or off the Site, including overhead and other charges properly allocable thereto but does not include any allowance for profit.
- (ii) "day" means calendar day.
- (iii) "foreign currency" means a currency of a country other than that in which the Works are to be located.
- (iv) "writing" means any hand-written, type-written, or printed communication, including telex, cable and facsimile transmission.

## 1.2 **Headings and Marginal Notes**

The headings and marginal notes in these Conditions shall not be deemed part thereof or be taken into consideration in the interpretation or construction thereof or of the Contract.

## 1.3 **Interpretation**

Words importing persons or parties shall include firms and corporations and any organization having legal capacity.

## 1.4 **Singular and Plural**

Words importing the singular only also include the plural and vice versa where the context requires.

## **1.5 Notices, Consents, Approvals, Certificates and Determinations**

Wherever in the Contract provision is made for the giving or issue of any notice, consent, approval, certificate or determination by any person, unless otherwise specified such notice, consent, approval, certificate or determination shall be in writing and the words "notify", "certify" or "determine" shall be construed accordingly. Any such consent, approval, certificate or determination shall not unreasonably be withheld or delayed.

## **Engineer and Engineer's Representative**

### **2.1 Engineer's Duties and Authority**

- (a) The Engineer shall carry out the duties specified in the Contract.
- (b) The Engineer may exercise the authority specified in or necessarily to be implied from the Contract, provided, however, that if the Engineer is required, under the terms of his appointment by the Employer, to obtain the specific approval of the Employer before exercising any such authority, particulars of such requirements shall be set out in Part II of these Conditions. Provided further that any requisite approval shall be deemed to have been given by the Employer for any such authority exercised by the Engineer.
- (c) Except as expressly stated in the Contract, the Engineer shall have no authority to relieve the Contractor of any of his obligations under the Contract.

### **2.2 Engineer's Representative**

The Engineer's Representative shall be appointed by and be responsible to the Engineer and shall carry out such duties and exercise such authority as may be delegated to him by the Engineer under Sub-Clause 2.3.

### **2.3 Engineer's Authority to Delegate**

The Engineer may from time-to-time delegate to the Engineer's Representative any of the duties and authorities vested in the Engineer and he may at any time revoke such delegation. Any such delegation or revocation shall be in writing and shall not take effect until a copy thereof has been delivered to the Employer and the Contractor.

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

- (a) any failure of the Engineer's Representative to disapprove any work, materials or Plant shall not prejudice the authority of the Engineer to disapprove such work, materials or Plant and to give instructions for the rectification thereof; and
- (b) if the Contractor questions any communication of the Engineer's Representative, he may refer the matter to the Engineer who shall confirm, reverse or vary the contents of such communication.

#### 2.4 **Appointment of Assistants**

The Engineer or the Engineer's Representative may appoint any number of persons to assist the Engineer's Representative in the carrying out of his duties under Sub-Clause 2.2. He shall notify to the Contractor the names, duties and scope of authority of such persons. Such assistants shall have no authority to issue any instructions to the Contractor save in so far as such instructions may be necessary to enable them to carry out their duties and to secure their acceptance of materials, Plant or workmanship as being in accordance with the Contract, and any instructions given by any of them for those purposes shall be deemed to have been given by the Engineer's Representative.

#### 2.5 **Instructions in Writing**

Instructions given by the Engineer shall be in writing, provided that if for any reason the Engineer considers it necessary to give any such instruction orally, the Contractor shall comply with such instruction. Confirmation in writing of such oral instruction given by the Engineer, whether before or after the carrying out of the instruction, shall be deemed to be an instruction within the meaning of this Sub-Clause. Provided further that if the Contractor, within 7 days, confirms in writing to the Engineer any oral instruction of the Engineer and such confirmation is not contradicted in writing within 7 days by the Engineer, it shall be deemed to be an instructions of the Engineer.

The provisions of this Sub-Clause shall equally apply to instructions given by the Engineer's Representative and any assistants of the Engineer or the Engineer's Representative appointed pursuant to Sub-Clause 2.4.

#### 2.6 **Engineer to Act Impartially**

Wherever, under the Contract, the Engineer is required to exercise his discretion by:

- (a) giving his decision, opinion or consent,
- (b) expressing his satisfaction or approval,
- (c) determining value, or
- (d) otherwise taking action which may affect the rights and obligations of the Employer or the Contractor

he shall exercise such discretion impartially within the terms of the Contract and

having regard to all the circumstances. Any such decision, opinion, consent expression of satisfaction, or approval, determination of value or action may be opened up, reviewed or revised as provided in Clause 67.

### **Assignment and Subcontracting**

#### **3.1 Assignment of Contract**

The Contractor shall not, without the prior consent of the Employer (which consent, notwithstanding the provisions of Sub-Clause 1.5, shall be at the sole discretion of the Employer), assign the Contract or any part thereof, or any benefit or interest therein or thereunder, otherwise than by:

- (a) a charge in favour of the Contractor's bankers of any monies due or to become due under the Contract, or
- (b) assignment to the Contractor's insurers (in cases where the insurers have discharged the Contractor's loss or liability) of the Contractor's right to obtain relief against any other party liable.

#### **4.1 Subcontracting**

The Contractor shall not subcontract the whole of the Works. Except where otherwise provided by the Contract, the Contractor shall not subcontract any part of the Works without the prior consent of the Engineer. Any such consent shall not relieve the Contractor from any liability or obligation under the Contract and he shall be responsible for the acts, defaults and neglects of any Subcontractor, his agents, servants or workmen as fully as if they were the acts, defaults or neglects of the Contractor, his agents' servants or workmen.

Provided that the Contractor shall not be required to obtain such consent for:

- (a) the provision of labour,
- (b) the purchase of materials which are in accordance with the standards specified in the Contract,
- (c) the subcontracting of any part of the Works for which the Subcontractor is named in the Contract.

#### **4.2 Assignment of Subcontractors' Obligations**

In the event of a Subcontractor having undertaken towards the Contractor in respect of the work executed, or the goods, materials, Plant or services supplied by such Subcontractor, any continuing obligation extending for a period exceeding that of the Defects Liability Period under the Contract, the Contractor shall at any time, after the expiration of such Period, assign to the Employer, at the Employer's request and cost, the benefit of such obligation for the unexpired duration thereof.

## **Contract Documents**

### **5.1 Language/s and Law**

There is stated in Part II of these Conditions:

- (a) the language or languages in which the Contract documents shall be drawn up, and
- (b) the country or state the law of which shall apply to the Contract and according to which the Contract shall be construed.

If the said documents are written in more than one language, the language according to which the Contract shall be construed and interpreted is also stated in Part II of these Conditions, being therein designated the "Ruling Language".

### **5.2 Priority of Contract Documents**

The several documents forming the Contract are to be taken as mutually explanatory of one another, but in case of ambiguities or discrepancies the same shall be explained and adjusted by the Engineer who shall thereupon issue to the Contractor instructions thereon and in such event, unless otherwise provided in the Contract, the priority of the documents forming the Contract shall be as follows:

- (1) The Contract Agreement (if completed).
- (2) The Letter of Acceptance.
- (3) The Tender.
- (4) Part II of these Conditions.
- (5) Part I of these Conditions; and
- (6) Any other document forming part of the Contract.

### **6.1 Custody and Supply of Drawings and Documents**

The Drawings shall remain in the sole custody of the Engineer, but two copies thereof shall be provided to the Contractor free of charge. The Contractor shall make at his own cost any further copies required by him. Unless it is strictly necessary for the purposes of the Contract, the Drawings, Specification and other documents provided by the Employer or the Engineer shall not, without the consent of the Engineer, be used or communicated to a third party by the Contractor. Upon issue of the Defects Liability Certificate, the Contractor shall return to the Engineer all Drawings, Specification and other documents provided under the Contract.

The Contractor shall supply to the Engineer four copies of all Drawings, specification and other documents submitted by the Contractor and approved by the Engineer in accordance with Clause 7, together with a reproducible copy of

any material which cannot be reproduced to an equal standard by photocopying. In addition, the Contractor shall supply such further copies of such Drawings, Specification and other documents as the Engineer may request in writing for the use of the Employer, who shall pay the cost thereof.

## **6.2 One Copy of Drawings to be Kept on Site**

One copy of the Drawings, provided to or supplied by the Contractor as aforesaid, shall be kept by the Contractor on the Site and the same shall at all reasonable times be available for inspection and use by the Engineer and by any other person authorised by the Engineer in writing.

## **6.3 Disruption of Progress**

The Contractor shall give notice to the Engineer, with a copy to the Employer, whenever planning or execution of the Works is likely to be delayed or disrupted unless any further drawing or instruction is issued by the Engineer within a reasonable time. The notice shall include details of the drawing or instruction required and of why and by when it is required and of any delay or disruption likely to be suffered if it is late.

## **6.4 Delay and Cost of Delay of Drawings**

If, by reason of any failure or inability of the Engineer to issue, within a time reasonable in all the circumstances, any drawing or instruction for which notice has been given by the Contractor in accordance with Sub-Clause 6.3, the Contractor suffers delay and/or incurs costs then the Engineer shall, after due consultation with the Employer and the Contractor, determine:

- (a) any extension of time to which the Contractor is entitled under Clause 44, and
- (b) the amount of such costs, which shall be added to the Contract Price, and shall notify the Contractor accordingly, with a copy to the Employer.

## **6.5 Failure by Contractor to Submit Drawings**

If the failure or inability of the Engineer to issue any drawings or instructions is caused in whole or in part by the failure of the Contractor to submit Drawings, Specification or other documents which he is required to submit under the Contract, the Engineer shall take such failure by the Contractor into account when making his determination pursuant to Sub-Clause 6.4.

## **7.1 Supplementary Drawings and Instructions**

The Engineer shall have authority to issue to the Contractor, from time to time, such supplementary Drawings and instructions as shall be necessary for the purpose of the proper and adequate execution and completion of the Works and the remedying of any defects therein. The Contractor shall carry out and be

bound by the same.

## **7.2 Permanent Works Designed by Contractor**

Where the Contract expressly provides that part of the Permanent Works shall be designed by the Contractor, he shall submit to the Engineer, for approval:

- (a) such drawings, specifications, calculations and other information as shall be necessary to satisfy the Engineer as to the suitability and adequacy of that design, and
- (b) operation and maintenance manuals together with drawings of the Permanent Works as completed, in sufficient detail to enable the Employer to operate, maintain, dismantle, reassemble and adjust the Permanent Works incorporating that design. The Works shall not be considered to be completed for the purposes of taking over in accordance with Clause 48 until such operation and maintenance manuals together with drawings on completion have been submitted to and approved by the Engineer.

## **7.3 Responsibility Unaffected by Approval**

Approval by the Engineer, in accordance with Sub-Clause 7.2, shall not relieve the Contractor of any of his responsibilities under the Contract.

# **General Obligations**

## **8.1 Contractor's General Responsibilities**

The Contractor shall, with due care and diligence, design (to the extent provided for by the Contract), execute and complete the Works and remedy any defects therein in accordance with the provisions of the Contract. The Contractor shall provide all superintendence, labour, material, Plant, Contractor's Equipment and all other things, whether of a temporary or permanent nature, required in and for such design, execution, completion and remedying of any defects, so far as the necessity for providing the same is specified in or is reasonably to be inferred from the Contract.

## **8.2 Site Operations and Methods of Construction**

The Contractor shall take full responsibility for the adequacy, stability and safety of all Site operations and methods of construction. Provided that the Contractor shall not be responsible (except as stated hereunder or as may be otherwise agreed) for the design or specification of Permanent Works, or for the design or specification of any Temporary Works not prepared by the Contractor. Where the Contract expressly provides that part of the Permanent Works shall be designed by the Contractor, he shall be fully responsible for that part of such Works, notwithstanding any approval by the Engineer.

## **9.1 Contract Agreement**

The Contractor shall, if called upon so to do, enter into and execute the Contract Agreement, to be prepared and completed at the cost of the Employer, in the form annexed to these Conditions with such modification as may be necessary.

#### 10.1 **Performance Security**

If the Contract requires the Contractor to obtain security for his proper performance of the Contract, he shall obtain and provide to the Employer, such security within 28 days after the receipt of the Letter of Acceptance, in the sum stated in the Appendix to Tender. When providing such security to the Employer, the Contractor shall notify the Engineer of so doing. Such security shall be in the form annexed to these Conditions or in such other form as may be agreed between the Employer and the Contractor. The institution providing such security shall be subject to the approval of the Employer. The cost of complying with the requirements of this Clause shall be borne by the Contractor, unless the Contract otherwise provides.

#### 10.2 **Period of Validity of Performance Security**

The performance security shall be valid until the Contractor has executed and completed the Works and remedied any defects therein in accordance with the Contract. No claim shall be made against such security after the issue of the Defects Liability Certificate in accordance with Sub-Clause 62.1 and such security shall be returned to the Contractor within 14 days of the issue of the said Defects Liability Certificate.

#### 10.3 **Claims under Performance Security**

Prior to making a claim under the performance security the Employer shall, in every case, notify the Contractor stating the nature of the default in respect of which the claim is to be made.

#### 11.1 **Inspection of Site**

The Employer shall have made available to the Contractor, before the submission by the Contractor of the Tender, such data on hydrological and sub-surface conditions as have been obtained by or on behalf of the Employer from investigations undertaken relevant to the Works but the Contractor shall be responsible for his own interpretation thereof.

The Contractor shall be deemed to have inspected and examined the Site and its surroundings and information available in connection therewith and to have satisfied himself (so far as is practicable, having regard to considerations of cost and time) before submitting his Tender, as to:

- (a) the form and nature thereof, including the sub-surface conditions,
- (b) the hydrological and climatic conditions,



- (c) the extent and nature of work and materials necessary for the execution and completion of the Works and the remedying of any defects therein, and
- (d) the means of access to the Site and the accommodation he may require, and, in general, shall be deemed to have obtained all necessary information, subject as above mentioned, as to risks, contingencies and all other circumstances which may influence or affect his Tender.

The Contractor shall be deemed to have based his Tender on the data made available by the Employer and on his own inspection and examination, all as aforementioned.

#### 12.1 **Sufficiency of Tender**

The Contractor shall be deemed to have satisfied himself as to the correctness and sufficiency of the Tender and of the rates and prices stated in the Bill of Quantities, all of which shall, except insofar as it is otherwise provided in the Contract, cover all his obligations under the Contract (including those in respect of the supply of goods, materials, Plant or services or of contingencies for which there is a Provisional Sum) and all matters and things necessary for the proper execution and completion of the Works and the remedying of any defects therein.

#### 12.2 **Not Foreseeable Physical Obstructions or Conditions**

If, however, during the execution of the Works the Contractor encounters physical obstructions or physical conditions, other than climatic conditions on the Site, which obstructions or conditions were, in his opinion, not foreseeable by an experienced contractor, the Contractor shall forthwith give notice thereof to the Engineer, with a copy to the Employer. On receipt of such notice, the Engineer shall if in his opinion such obstructions or conditions could not have been reasonably foreseen by an experienced contractor, after due consultation with the Employer and the Contractor, determine:

- (a) any extension of time to which the Contractor is entitled under Clause 44, and
- (b) the amount of any costs which may have been incurred by the Contractor by reason of such obstructions or conditions having been encountered, which shall be added to the Contract Price,

and shall notify the Contractor accordingly, with a copy to the Employer. Such determination shall take account of any instruction which the Engineer may issue to the Contractor in connection therewith, and any proper and reasonable measures acceptable to the Engineer which the Contractor may take in the absence of specific instructions from the Engineer.

**13.1 Work to be in Accordance with Contract**

Unless it is legally or physically impossible, the Contractor shall execute and complete the Works and remedy any defects therein in strict accordance with the Contract to the satisfaction of the Engineer. The Contractor shall comply with and adhere strictly to the Engineer's instructions on any matter, whether mentioned in the Contract or not, touching or concerning the Works. The Contractor shall take instructions only from the Engineer (or his delegate).

**14.1 Program to be Submitted**

The Contractor shall, within the time stated in Part II of these Conditions after the date of the Letter of Acceptance, submit to the Engineer for his consent a Program, in such form and detail as the Engineer shall reasonably prescribe, for the execution of the Works. The Contractor shall, whenever required by the Engineer, also provide in writing for his information a general description of the arrangements and methods which the Contractor proposes to adopt for the execution of the Works.

**14.2 Revised Program**

If at any time it should appear to the Engineer that the actual progress of the Works does not conform to the Program to which consent has been given under Sub-Clause 14.1, the Contractor shall produce, at the request of the Engineer, a revised Program showing the modifications to such Program necessary to ensure completion of the Works within the Time for Completion.

**14.3 Cash Flow Estimate to be Submitted**

The Contractor shall, within the time stated in Part II of these Conditions after the date of the Letter of Acceptance, provide to the Engineer for his information a detailed cash flow estimate, in quarterly periods, of all payments to which the Contractor will be entitled under the Contract and the Contractor shall subsequently supply revised cash flow estimates at quarterly intervals, if required to do so by the Engineer.

**14.4 Contractor not Relieved of Duties or Responsibilities**

The submission to and consent by the Engineer of such Programs or the provision of such general descriptions or cash flow estimates shall not relieve the Contractor of any of his duties or responsibilities under the Contract.

**15.1 Contractor's Superintendence**

The Contractor shall provide all necessary superintendence during the execution of the Works and as long thereafter as the Engineer may consider necessary for the proper fulfilling of the Contractor's obligations under the Contract. The

Contractor, or a competent and authorised representative approved of by the Engineer, which approval may at any time be withdrawn, shall give his whole time to the superintendence of the Works. Such authorised representative shall receive, on behalf of the Contractor, instructions from the Engineer.

If approval of the representative is withdrawn by the Engineer, the Contractor shall, as soon as is practicable, having regard to the requirement of replacing him as hereinafter mentioned, after receiving notice of such withdrawal, remove the representative from the Works and shall not thereafter employ him again on the Works in any capacity and shall replace him by another representative approved by the Engineer.

#### **16.1 Contractor's Employees**

The Contractor shall provide on the Site in connection with the execution and completion of the Works and the remedying of any defects therein:

- (a) only such technical assistants as are skilled and experienced in their respective callings and such foremen and leading hands as are competent to give proper superintendence of the Works, and
- (b) such skilled, semi-skilled and unskilled labour as is necessary for the proper and timely fulfilling of the Contractor's obligations under the Contract.

#### **16.2 Engineer at Liberty to Object**

The Engineer shall be at liberty to object to and require the Contractor to remove forthwith from the Works any person provided by the Contractor who, in the opinion of the Engineer, misconducts himself, or is incompetent or negligent in the proper performance of his duties, or whose presence on Site is otherwise considered by the Engineer to be undesirable, and such person shall not be again allowed upon the Works without the consent of the Engineer. Any person so removed from the Works shall be replaced as soon as possible.

#### **17.1 Setting-out**

The Contractor shall be responsible for:

- (a) the accurate setting-out of the Works in relation to original points, lines and levels of reference given by the Engineer in writing,
- (b) the correctness, subject as above mentioned of the position, levels dimensions and alignment of all parts of the Works, and
- (c) the provision of all necessary instruments, appliances and labour in connection with the foregoing responsibilities.

If, at any time during the execution of the Works, any error appears in the position, levels, dimensions or alignment of any part of the Works, the Contractor, on being required so to do by the Engineer, shall, at his own cost, rectify such error to the satisfaction of the Engineer, unless such error is based on incorrect data supplied in writing by the Engineer, in which case the Engineer shall determine an addition to the Contract Price in accordance with Clause 52 and shall notify the Contractor accordingly, with a copy to the Employer.

The checking of any setting-out or of any line or level by the Engineer shall not in any way relieve the Contractor of his responsibility for the accuracy thereof and the Contractor shall carefully protect and preserve all benchmarks, sight-rails, pegs and other things used in setting-out the Works.

#### **18.1 Boreholes and Exploratory Excavation**

If, at any time during the execution of the Works, the Engineer requires the Contractor to make boreholes or to carry out exploratory excavation, such requirement shall be the subject of an instruction in accordance with Clause 51, unless an item or a Provisional Sum in respect of such work is included in the Bill of Quantities.

#### **19.1 Safety, Security and Protection of the Environment**

The Contractor shall, throughout the execution and completion of the Works and the remedying of any defects therein:

- (a) have full regard for the safety of all persons entitled to be upon the Site and keep the Site (so far as the same is under his control) and the Works (so far as the same are not completed or occupied by the Employer) in an orderly state appropriate to the avoidance of danger to such persons,
- (b) provide and maintain at his own cost all lights, guards, fencing, warning signs and watching, when and where necessary or required by the Engineer or by any duly constituted authority, for the protection of the Works or for the safety and convenience of the public or others, and
- (c) take all reasonable steps to protect the environment on and off the Site and to avoid damage or nuisance to persons or to property of the public or others resulting from pollution, noise or other causes arising as a consequence of his methods of operation.

#### **19.2 Employer's Responsibilities**

If under Clause 31 the Employer shall carry out work on the Site with his own workmen he shall, in respect of such work:

- (a) have full regard to the safety of all persons entitled to be upon the Site, and

- (b) keep the Site in an orderly state appropriate to the avoidance of danger to such persons.

If under Clause 31 the Employer shall employ other contractors on the Site, he shall require them to have the same regard for safety and avoidance of danger.

#### 20.1 **Care of Works**

The Contractor shall take full responsibility for the care of the Works and materials and Plant for incorporation therein from the Commencement Date until the date of issue of the Taking-Over Certificate for the whole of the Works, when the responsibility for the said care shall pass to the Employer. Provided that:

- (a) if the Engineer issues a Taking-Over Certificate for any Section or part of the Permanent Works the Contractor shall cease to be liable for the care of that Section or part from the date of issue of the Taking-Over Certificate, when the responsibility for the care of that Section or part shall pass to the Employer, and
- (b) the Contractor shall take full responsibility for the care of any outstanding Works and materials and Plant for incorporation therein which he undertakes to finish during the Defects Liability Period until such outstanding Works have been completed pursuant to Clause 49.

#### 20.2 **Responsibility to Rectify Loss or Damage**

If any loss or damage happens to the Works, or any part thereof, or materials or Plant for incorporation therein, during the period for which the Contractor is responsible for the care thereof, from any cause whatsoever, other than the risks defined in Sub-Clause 20.4, the Contractor shall, at his own cost, rectify such loss or damage so that the Permanent Works conform in every respect with the provisions of the Contract to the satisfaction of the Engineer. The Contractor shall also be liable for any loss or damage to the Works occasioned by him in the course of any operations carried out by him for the purpose of complying with his obligations under Clauses 49 and 50.

#### 20.3 **Loss or Damage Due to Employer's Risks**

In the event of any such loss or damage happening from any of the risks defined in Sub-Clause 20.4, or in combination with other risks, the Contractor shall, if and to the extent required by the Engineer, rectify the loss or damage and the Engineer shall determine an addition to the Contract Price in accordance with Clause 52 and shall notify the Contractor accordingly, with a copy to the Employer. In the case of a combination of risks causing loss or damage any such determination shall take into account the proportional responsibility of the Contractor and the Employer.

## 20.4 **Employer's Risks**

The Employer's risks are:

- (a) war, hostilities (whether war be declared or not), invasion, act of foreign enemies,
- (b) rebellion, revolution, insurrection, or military or usurped power, or civil war,
- (c) ionising radiations, or contamination by radioactivity from any nuclear fuel, or from any nuclear waste from the combustion of nuclear fuel, radio-active toxic explosive, or other hazardous properties of any explosive nuclear assembly or nuclear component thereof,
- (d) pressure waves caused by aircraft or other aerial devices travelling at sonic or supersonic speeds,
- (e) riot, commotion or disorder, unless solely restricted to employees of the Contractor or of his Subcontractor and arising from the conduct of the Works,
- (f) loss or damage due to the use or occupation by the Employer of any Section or part of the Permanent Works, except as may be provided for in the Contract,
- (g) 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
- (h) any operation of the forces of nature against which an experienced contractor could not reasonably have been expected to take precautions.

## 21.1 **Insurance of Works and Contractor's Equipment**

The Contractor shall, without limiting his or the Employer's obligations and responsibilities under Clause 20, insure:

- (a) the Works, together with materials and Plant for incorporation therein, to the full replacement cost (the term "cost" in this context shall include profit),
- (b) an additional sum of 15 per cent of such replacement cost, or as may be specified in Part II of these Conditions, to cover any additional costs of and incidental to the rectification of loss or damage including professional fees and the cost of demolishing and removing any part of the Works and of removing debris of whatsoever nature, and

- (c) the Contractor's Equipment and other things brought onto the Site by the Contractor, for a sum sufficient to provide for their replacement at the Site.

## 21.2 **Scope of Cover**

The insurance in paragraphs (a) and (b) of Sub-Clause 21.1 shall be in the joint names of the Contractor and the Employer and shall cover:

- (a) the Employer and the Contractor against all loss or damage from whatsoever cause arising, other than as provided in Sub-Clause 21.4, from the start of work at the Site until the date of issue of the relevant Taking-Over Certificate in respect of the Works or any Section or part thereof as the case may be, and
- (b) the Contractor for his liability:
  - (i) during the Defects Liability Period for loss or damage arising from a cause occurring prior to the commencement of the Defects Liability Periods, and
  - (ii) for loss or damage occasioned by the Contractor in the course of any operations carried out by him for the purpose of complying with his obligations under Clauses 49 and 50.

## 21.3 **Responsibility for Amounts not Recovered**

Any amounts not insured or not recovered from the insurers shall be borne by the Employer or the Contractor in accordance with their responsibilities under Clause 20.

## 21.4 **Exclusions**

There shall be no obligation for the insurances in Sub-Clause 21.1 to include loss or damage caused by:

- (a) war, hostilities (where war be declared or not), invasion, act of foreign enemies,
- (b) rebellion, revolution, insurrection, or military or usurped power, or civil war,
- (c) ionising, 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, or

- (d) pressure waves caused by aircraft or other aerial devices travelling at sonic or supersonic speeds.

#### 22.1 **Damage to Persons and Property**

The Contractor shall, except if and so far as the Contract provides otherwise, indemnify the Employer against all losses and claims in respect of:

- (a) death of or injury to any person, or
- (b) loss of or damage to any property (other than the Works),

which may arise out of or in consequence of the execution and completion of the Works and the remedying of any defects therein, and against all claims, proceedings, damages, costs, charges and expenses whatsoever in respect thereof or in relation thereto, subject to the exceptions defined in Sub-Clause 22.2.

#### 22.2 **Exceptions**

The "exceptions" referred to in Sub-Clause 22.1 are:

- (a) the permanent use or occupation of land by the Works, or any part thereof,
- (b) the right of the Employer to execute the Works, or any part thereof, on, over, under, is or through any land,
- (c) damage to property which is the unavoidable result of the execution and completion of the Works, or the remedying of any defects therein, in accordance with the Contract, and
- (d) death of or injury to persons or loss of or damage to property resulting from any act or neglect of the Employer, his agents servants or other contractors, not being employed by the Contractor, or in respect of any claims, proceedings, damages, costs, charges and expenses in respect thereof or in relation thereto or, where the injury or damage was contributed to by the Contractor, his servants or agents, such part of the said injury or damage as may be just and equitable having regard to the extent of the responsibility of the Employer, his servants or agents or other contractors for the injury or damage.

#### 22.3 **Indemnity by Employer**

The Employer shall indemnify the Contractor against all claims, proceedings, damages, costs, charges and expenses in respect of the matters referred to in the exceptions defined in Sub-Clause 22.2

#### 23.1 **Third Party Insurance (including Employer's Property)**

The Contractor shall, without limiting his or the Employer's obligation and



responsibilities under Clause 22, insure, in the joint names of the Contractor and the Employer, against liabilities for death of or injury to any person (other than as provided in Clause 24) or loss of or damage to any property (other than the Works) arising out of the performance of the Contract, other than the exceptions defined in paragraphs (a), (b) and (c) of Sub-Clause 22.2.

### **23.2 Minimum Amount of Insurance**

Such insurance shall be for at least the amount stated in the Appendix to Tender.

### **23.3 Cross Liabilities**

The insurance policy shall include a cross liability clause such that the insurance shall apply to the Contractor and to the Employer as separate insureds.

### **24.1 Accident or Injury to Workmen**

The Employer shall not be liable for or in respect of any damages or compensation payable to any workman or other person in the employment of the Contractor or any Subcontractor, other than death or injury resulting from any act or default of the Employer, his agents or servants. The Contractor shall indemnify and keep indemnified the Employer against all such damages and compensation, other than those for which the Employer is liable as aforesaid, and against all claims, proceedings, damages, costs, charges, and expenses whatsoever in respect thereof or in relation thereto.

### **24.2 Insurance Against Accident to Workmen**

The Contractor shall insure against such liability and shall continue such insurance during the whole of the time that any persons are employed by him on the Works. Provided that, in respect of any persons employed by any Subcontractor, the Contractor's obligations to insure as aforesaid under the Sub-Clause shall be satisfied if the Subcontractor shall have insured against the liability in respect of such persons in such manner that the Employer is indemnified under the policy, but the Contractor shall require such Subcontractor to produce to the Employer, when required, such policy of insurance and the receipt for the payment of the current premium.

### **25.1 Evidence and Terms of Insurances**

The Contractor shall provide evidence to the Employer prior to the start of work at the Site that the insurances required under the Contract have been affected and shall, within 84 days of the Commencement Date, provide the insurance policies to the Employer. When providing such evidence and such policies to the Employer, the Contractor shall notify the Engineer of so doing. Such insurance policies shall be consistent with the general terms agreed prior to the issue of the Letter of Acceptance. The Contractor shall affect all insurances for which he is responsible with insurers and in terms approved by the Employer.

## 25.2 **Adequacy of Insurances**

The Contractor shall notify the insurers of changes in the nature, extent or Program for the execution of the Works and ensure the adequacy of the insurances at all times in accordance with the terms of the Contract and shall, when required, produce to the Employer the insurance policies in force and the receipts for payment of the current premiums.

## 25.3 **Remedy on Contractor's Failure to Insure**

If the Contractor fails to effect and keep in force any of the insurances required under the Contract, or fails to provide the policies to the Employer within the period required by Sub-Clause 25.1, then and in any such case the Employer may effect and keep in force any such insurances and pay any premium as may be necessary for that purpose and from time to time deduct the amount so paid from any monies due or to become due to the Contractor, or recover the same as a debt due from the Contractor.

## 25.4 **Compliance with Policy Conditions**

In the event that the Contractor or the Employer fails to comply with conditions imposed by the insurance policies effected pursuant to the Contract, each shall indemnify the other against all losses and claims arising from such failure.

## 26.1 **Compliance with Statutes, Regulations**

The Contractor shall conform in all respects, including by the giving of all notices and the paying of all fees, with the provisions of:

- (a) any National or State Statute, Ordinance, or other Law, or any regulation, or byelaw of any local or other duly constituted authority in relation to the execution and completion of the Works and the remedying of any defects therein, and
- (b) the rules and regulations of all public bodies and companies whose property or rights are affected or may be affected in any way by the Works,

and the Contractor shall keep the Employer indemnified against all penalties and liability of every kind for breach of any such provisions. Provided always that the Employer shall be responsible for obtaining any planning, zoning or other similar permission required for the Works to proceed and shall indemnify the Contractor in accordance with Sub-Clause 22.3.

## 27.1 **Fossils**

All fossils, coins, articles of value or antiquity and structures and other remains or things of geological or archaeological interest discovered on the Site shall, as

between the Employer and the Contractor, be deemed to be the absolute property of the Employer. The Contractor shall take reasonable precautions to prevent his workmen or any other persons from removing or damaging any such article or thing and shall, immediately upon discovery thereof and before removal, acquaint the Engineer of such discovery and carry out the Engineer's instructions for dealing with the same. If, by reason of such instructions, the Contractor suffers delay and/or incurs costs then the Engineer shall, after due consultation with the Employer and the Contractor, determine:

- (a) any extension of time to which the Contractor is entitled under Clause 44, and
- (b) the amount of such costs, which shall be added to the Contract Price, and shall notify the Contractor accordingly, with a copy to the Employer.

#### 28.1 **Patent Rights**

The Contractor shall save harmless and indemnify the Employer from and against all claims and proceedings for or on account of infringement of any patent rights, design trademark or name or other protected rights in respect of any Contractor's Equipment, materials or Plant used for or in connection with or for incorporation in the Works and from and against all damages, costs, charges and expenses whatsoever in respect thereof or in relation thereto, except where such infringement results from compliance with the design or Specification provided by the Engineer.

#### 28.2 **Royalties**

Except where otherwise stated, the Contractor shall pay all tonnage and other royalties, rent and other payments or compensation, if any, for getting stone, sand, gravel, clay or other materials required for the Works.

#### 29.1 **Interference with Traffic and Adjoining Properties**

All operations necessary for the execution and completion of the Works and the remedying of any defects therein shall, so far as compliance with the requirements of the Contract permits, be carried on so as not to interfere unnecessarily or improperly with:

- (a) the convenience of the public, or
- (b) the access to, use and occupation of public or private roads and footpaths to or of properties whether in the possession of the Employer or of any other person.

The Contractor shall save harmless and indemnify the Employer in respect of all claims, proceedings, damages, costs, charges and expenses whatsoever arising out of, or in relation to, any such matters insofar as the Contractor is responsible, therefore.

### 30.1 **Avoidance of Damage to Roads**

The Contractor shall use every reasonable means to prevent any of the roads or bridges communicating with or on the routes to the Site from being damaged or injured by any traffic of the Contractor or any of his Subcontractors and, in particular, shall select routes, choose and use vehicles and restrict and distribute loads so that any such extraordinary traffic as will inevitably arise from the moving of materials, Plant, Contractor's Equipment or Temporary Works from and to the Site shall be limited, as far as reasonably possible, and so that no unnecessary damage or injury may be occasioned to such roads and bridges.

### 30.2 **Transport of Contractor's Equipment or Temporary Works**

Save insofar as the Contract otherwise provides, the Contractor shall be responsible for and shall pay the cost of strengthening any bridges or altering or improving any road communicating with or on the routes to the Site to facilitate the movement of Contractor's Equipment or Temporary Works and the Contractor shall indemnify and keep indemnified the Employer against all claims for damage to any such road or bridge caused by such movement, including such claims as may be made directly against the Employer, and shall negotiate and pay all claims arising solely out of such damage.

### 30.3 **Transport of Materials or Plant**

If, notwithstanding Sub-Clause 30.1, any damage occurs to any bridge or road communicating with or on the routes to the Site arising from the transport of materials or Plant, the Contractor shall notify the Engineer with a copy to the Employer, as soon as he becomes aware of such damage or as soon as he receives any claim from the authority entitled to make such claim. Where under any law or regulation the haulier of such materials or Plant is required to indemnify the road authority against damage the Employer shall not be liable for any costs, charges or expenses in respect thereof or in relation thereto. In other cases, the Employer shall negotiate the settlement of and pay all sums due in respect of such claim and shall indemnify the Contractor in respect thereof and in respect of all claims, proceedings damages, costs, charges and expenses in relation thereto. Provided that if and so far as any such claim or part thereof is, in the opinion of the Engineer, due to any failure on the part of the Contractor to observe and perform his obligations under Sub-Clause 30.1, then the amount determined by the Engineer, after due consultation with the Employer and the Contractor, to be due to such failure shall be recoverable from the Contractor by the Employer and may be deducted by the Employer from any monies due or to become due to the Contractor and the Engineer shall notify the Contractor accordingly, with a copy to the Employer. Provided also that the Employer shall notify the Contractor whenever a settlement is to be negotiated and, where any amount may be due from the Contractor, the Employer shall consult with the Contractor before such settlement is agreed.

### 30.4 **Waterborne Traffic**

Where the nature of the Works is such as to require the use by the Contractor of waterborne transport the foregoing provisions of this Clause shall be construed as though "road" included a lock, dock, sea wall or other structure related to a waterway and "vehicle" included craft and shall have effect accordingly.

### 31.1 **Opportunities for Other Contractors**

The Contractor shall, in accordance with the requirements of the Engineer, afford all reasonable opportunities for carrying out their work to:

- (a) any other contractors employed by the Employer and their workmen,
- (b) the workmen of the Employer, and
- (c) the workmen of any duly constituted authorities who may be employed in the execution on or near the Site of any work not included in the Contract or of any contract which the Employer may enter into in connection with or ancillary to the Works.

### 31.2 **Facilities for Other Contractors**

If, however, pursuant to Sub-Clause 31.1 the Contractor shall, on the written request of the Engineer:

- (a) make available to any other contractor, or to the Employer or any such authority, any roads or ways for the maintenance of which the Contractor is responsible,
- (b) permit the use, by any such, of Temporary Works or Contractor's Equipment on the Site, or
- (c) provide any other service of whatsoever nature for any such,

the Engineer shall determine an addition to the Contract Price in accordance with Clause 52 and shall notify the Contractor accordingly, with a copy to the Employer.

### 32.1 **Contractor to Keep Site Clear**

During the execution of the Works the Contractor shall keep the Site reasonably free from all unnecessary obstruction and shall store or dispose of any Contractor's Equipment and surplus materials and clear away and remove from the Site any wreckage, rubbish or Temporary Works no longer required.

### 33.1 **Clearance of Site on Completion**

Upon the issue of any Taking-Over Certificate the Contractor shall clear away and remove from that part of the Site to which such Taking-Over Certificate relates all Contractor's Equipment, surplus materials, rubbish and Temporary

Works of every kind, and leave such part of the Site and Works clean and in a workmanlike condition to the satisfaction of the Engineer. Provided that the Contractor shall be entitled to retain on Site, until the end of the Defects Liability Period, such materials, Contractor's Equipment and Temporary Works as are required by him for the purpose of fulfilling his obligations during the Defects Liability Period.

## **Labour**

### **34.1 Engagement of Staffs and Labour**

The Contractor shall, unless otherwise provided in the Contract, make his own arrangements for the engagement of all staff and labour, local or other, and for their payment, housing, feeding and transport.

### **35.1 Returns of Labour and Contractor's Equipment**

The Contractor shall, if required by the Engineer, deliver to the Engineer a return in detail, in such form and at such intervals as the Engineer may prescribe, showing the staff and the numbers of the several classes of labour from time to time employed by the Contractor on the Site and such information respecting Contractor's Equipment as the Engineer may require.

## **Materials, Plant and Workmanship**

### **36.1 Quality of Materials, Plant and Workmanship**

All materials, Plant and workmanship shall be:

- (a) of the respective kinds described in the Contract and in accordance with the Engineer's instructions, and
- (b) subjected from time to time to such tests as the Engineer may require at the place of manufacture, fabrication or preparation, or on the Site or at such other place or places as may be specified in the Contract, or at all or any of such places.

The Contractor shall provide such assistance, labour, electricity, fuels, stores, apparatus and instruments as are normally required for examining, measuring and testing any materials or Plant and shall supply samples of materials, before incorporation in the Works, for testing as may be selected and required by the Engineer.

### **36.2 Cost of Samples**

All samples shall be supplied by the Contractor at his own cost if the supply thereof is clearly intended by or provided for in the Contract.

### **36.3 Cost of Tests**

The cost of making any test shall be borne by the Contractor if such test is:

- (a) clearly intended by or provided for in the Contract, or
- (b) particularised in the Contract (in cases only for a test under load or of a test to ascertain whether the design of any finished or partially finished work is appropriate for the purposes which it was intended to fulfil) in sufficient detail to enable the Contractor to price or allow for the same in his Tender.

### **36.4 Cost of Tests not provided for**

If any test required by the Engineer which is:

- (a) not intended by or provided for,
- (b) (in the cases above mentioned) not so particularised, or
- (c) (through so intended or provided for) required by the Engineer to be carried out at any place other than the Site or the place of manufacture, fabrication or preparation of the materials or Plant tested,

shows the materials, Plant or workmanship not to be in accordance with the

provisions of the Contract to the satisfaction of the Engineer, then the cost of such test shall be borne by the Contractor, but in any other case Sub-Clause 36.5 shall apply.

#### **36.5 Engineer's Determination where Tests not Provided for**

Where, pursuant to Sub-Clause 36.4, this Sub-Clause applies the Engineer shall, after due consultation with the Employer and the Contractor, determine:

- (a) any extension of time of which the Contractor is entitled under Clause 44, and
- (b) the amount of such costs, which shall be added to the Contract Price,

and shall notify the Contractor accordingly, with a copy to the Employer.

#### **37.1 Inspection of Operations**

The Engineer, and any person authorised by him, shall at all reasonable times have access to the Site and to all workshops and places where materials or Plant are being manufactured, fabricated or prepared for the Works and the Contractor shall afford every facility for and every assistance in obtaining the right to such access.

#### **37.2 Inspection and Testing**

The Engineer shall be entitled, during manufacture, fabrication or preparation to inspect and test the materials and Plant to be supplied under the Contract. If materials or Plant are being manufactured, fabricated or prepared in workshops or places other than those of the Contractor, the Contractor shall obtain permission for the Engineer to carry out such inspection and testing in those workshops or places. Such inspection or testing shall not release the Contractor from any obligation under the Contract.

#### **37.3 Dates for Inspection and Testing**

The Contractor shall agree with the Engineer on the time and place for the inspection or testing of any materials or Plant as provided in the Contract. The Engineer shall give the Contractor not less than 24 hours notice of his intention to carry out the inspection or to attend the tests. If the Engineer, or his duly authorised representative, does not attend on the date agreed, the Contractor may, unless otherwise instructed by the Engineer, proceed with the tests, which shall be deemed to have been made in the presence of the Engineer. The Contractor shall forthwith forward to the Engineer duly certified copies of the test's readings. If the Engineer has not attended the tests, he shall accept the said readings as accurate.

#### **37.4 Rejection**



If, at the time and place agreed in accordance with Sub-Clause 37.3, the materials or Plant are not ready for inspection or testing or if, as a result of the inspection or testing referred to in this Clause, the Engineer determines that the materials or Plant are defective or otherwise not in accordance with the Contract, he may reject the materials or Plant and shall notify the Contractor thereof immediately. The notice shall state the Engineer's objections with reasons. The Contractor shall then promptly make good the defect or ensure that rejected materials or Plant comply with the Contract. If the Engineer so requests, the tests of rejected materials or Plant shall be made or repeated under the same terms and conditions. All costs incurred by the Employer by the repetition of the test shall after due consultation with the Employer and the Contractor, be determined by the Engineer and shall be recoverable from the Contractor by the Employer and may be deducted from any monies due or to become due to the Contractor and the Engineer shall notify the Contractor accordingly, with a copy to the Employer.

### **37.5 Independent Inspection**

The Engineer may delegate inspection and testing of materials or Plant to an independent inspector. Any such delegation shall be affected in accordance with Sub-Clause 2.4 and for this purpose such independent inspector shall be considered as an assistant of the Engineer. Notice of such appointment (not being less than 14 days) shall be given by the Engineer to the Contractor.

### **38.1 Examination of Work before Covering up**

No part of the works shall be covered up or put out of view without the approval of the Engineer and the Contractor shall afford full opportunity for the Engineer to examine and measure any such part of the Works which is about to be covered up or put out of view and to examine foundations before any part of the Works is placed thereon. The Contractor shall give notice to the Engineer whenever any such part of the Works or foundations is or are ready or about to be ready for examination and the Engineer shall, without unreasonable delay, unless he considers it unnecessary and advises the Contractor, accordingly, attend for the purpose of examining and measuring such part of the Works or of examining such foundations.

### **38.2 Uncovering and Making Openings**

The Contractor shall uncover any part of the Works or make openings in or through the same as the Engineer may from time to time instruct and shall reinstate and make good such part. If any such part has been covered up or put out of view after compliance with the requirement of Sub-Clause 38.1 and is found to be executed in accordance with the Contract, the Engineer shall, after due consultation with the Employer and the Contractor, determine the amount the Contractor's costs in respect of such of uncovering, making openings in or through, reinstating and making good the same, which shall be added to the Contract Price, and shall notify the Contractor accordingly, with a copy to the Employer. In any other case all costs shall be borne by the Contractor.

**39.1 Removal of Improper Work, Materials or Plant**

The Engineer shall have authority to issue instructions from time to time, for:

(a) the removal from the Site, within such time or times as may be specified in the instruction, of any materials or Plant which, in the opinion of the Engineer, are not in accordance with the Contract,

(b) the substitution of proper and suitable materials or Plant, and

(c) the removal and proper re-execution, notwithstanding any previous test thereof or interim payment therefor, of any work which, in respect of

(i) materials, Plant or workmanship, or

(ii) design by the Contractor or for which he is responsible,

is not, in the opinion of the Engineer, in accordance with the Contract.

**39.2 Default of Contractor in Compliance**

In case of default on the part of Contractor in carrying out such instruction within the time specified therein or, if none, within a reasonable time, the Employer shall be entitled to employ and pay other persons to carry out the same and all costs consequent thereon or incidental thereto shall, after due consultation with the Employer and the Contractor, be determined by the Engineer and shall be recoverable from the Contractor by the Employer, and may be deducted by the Employer from any monies due or to become due to the Contractor and the Engineer shall notify the Contractor accordingly, with a copy to the Employer.

**Suspension**

**40.1 Suspension of Work**

The Contractor shall, on the instructions of the Engineer, suspend the progress of the Works or any part thereof for such time and in such manner as the Engineer may consider necessary and shall, during such suspension, properly protect and secure the Works or such part thereof so far as is necessary in the opinion of the Engineer. Unless such suspension is:

(a) otherwise provided for in the Contract,

(b) necessary by reason of some default of or breach of contract by the Contractor or for which he is responsible,

(c) necessary by reason of climatic conditions of the Site, or

(d) necessary for the proper execution of the Works or for the safety of the

Works or any part thereof (save to the extent that such necessity arises from any act or default by the Engineer or the Employer or from any of the risks defined in Sub-Clause 20.4),

Sub-Clause 40.2 shall apply.

#### **40.2 Engineer's Determination following Suspension**

Where, pursuant to Sub-Clause 40.1, this Sub-Clause applies the Engineer shall, after due consultation with the Employer and the Contractor, determine:

(a) any extension of time to which the Contractor is entitled under Clause 44, and

(b) the amount, which shall be added to the Contract Price, in respect of the cost incurred by the Contractor by reason of such suspension,

and shall notify the Contractor accordingly, with a copy to the Employer.

#### **40.3 Suspension lasting more than 84 Days**

If the progress of the Works or any part thereof is suspended on the written instructions of the Engineer and if permission to resume work is not given by the Engineer within a period for 84 days from the date of suspension then, unless such suspension is within paragraph (a), (b), (c) or (d) of Sub-Clause 40.1, the Contractor may give notice to the Engineer requiring permission, within 28 days from the receipt thereof, to proceed with the Works or that part thereof in regard to which progress is suspended. If, within the said time, such permission is not granted, the Contractor may, but is not bound to, elect to treat the suspension, where it affects part only of the Works, as an omission of such part under Clause 51 by giving a further notice to the Engineer to that effect, or, where it affects the whole of the Works, treat the suspension as an event of default by the Employer and terminates his employment under the Contract in accordance with the provisions of Sub-Clause 69.1, whereupon the provisions of Sub-Clause 69.2 and 69.3 shall apply.

### **Commencement and Delays**

#### **41.1 Commencement of Works**

The Contractor shall commence the Works as soon as is reasonably possible after the receipt by him of notice to this effect from the Engineer, which notice shall be issued within the time stated in the Appendix to Tender after the date of the Letter of Acceptance. Thereafter, the Contractor shall proceed with the Works with due expedition and without delay.

#### **42.1 Possession of Site and Access Thereto**

Save insofar as the Contract may prescribe:

(a) the extent of portions of the Site of which the Contractor is to be given possession from time to time,

(b) the order in which such portions shall be made available to the Contractor,

and, subject to any requirement in the Contract as to the order in which the Works shall be executed, the Employer will, with the Engineer's notice to commence the Works, give to the Contractor possession of

(c) so much of the Site, and

(d) such access as, in accordance with the Contract, is to be provided by the Employer as may be required to enable the Contractor to commence and proceed with the execution of the Works in accordance with the Program referred to in Clause 14, if any, and otherwise in accordance with such reasonable proposals as the Contractor shall, by notice to the Engineer with a copy to the Employer, make. The Employer will, from time to time as the Works proceed, give to the Contractor possession of such further portions of the Site as may be required to enable the Contractor to proceed with the execution of the Works with due dispatch in accordance with such Program or proposals, as the case may be.

#### **42.2 Failure to Give Possession**

If the Contractor suffers delay and/or incurs costs from failure on the part of the Employer to give possession in accordance with the terms of Sub-Clause 42.1, the Engineer shall, after due consultation with the Employer and the Contractor, determine:

(a) any extension of time to which the Contractor is entitled under Clause 44, and

(b) the amount of such costs, which shall be added to the Contract Price,

and shall notify the Contractor accordingly, with a copy to the Employer.

#### **42.3 Rights of Way and Facilities**

The Contractor shall bear all costs and charges for special or temporary way leaves required by him in connection with access to the Site. The Contractor shall also provide at his own cost any additional facilities outside the Site required by him for the purposes of the Works.

#### **43.1 Time for Completion**

The whole of the Works and, if applicable, any Section required to be completed within a particular time as stated in the Appendix to Tender, shall be

completed, in accordance with the provisions of Clause 48, within the time stated in the Appendix to Tender for the whole of the Works or the Section (as the case may be), calculated from the Commencement Date, or such extended time as may be allowed under Clause 44.

#### **44.1 Extension of Time for Completion**

In the event of:

- (a) the amount or nature of extra or additional work,
- (b) any cause of delay referred to in these Conditions,
- (c) exceptionally adverse climatic conditions,
- (d) any delay, impediment or prevention by the Employer, or
- (e) other special circumstances which may occur, other than through a default of or breach of contract by the Contractor or for which he is responsible,

being such as fairly to entitle the Contractor to an extension of the Time for Completion of the Works, or any Section or part thereof, the Engineer shall, after due consultation with the Employer and the Contractor, determine the amount of such extension and shall notify the Contractor accordingly, with a copy to the Employer.

#### **44.2 Contractor to Provide Notification and Detailed Particulars**

Provided that the Engineer is not bound to make any determination unless the Contractor has

- (a) within 28 days after such event has first arisen notified the Engineer with a copy to the Employer, and
- (b) within 28 days or such other reasonable time as may be agreed by the Engineer, after such notification submitted to the Engineer detailed particulars of any extension of time to which he may consider himself entitled in order that such submission may be investigated at the time.

#### **44.3 Interim Determination of Extension**

Provided also that where an event has a continuing effect such that it is not practicable for the Contractor to submit detailed particulars within the period of 28 days referred to in Sub-Clause 44.2(b), he shall nevertheless be entitled to an extension of time provided that he has submitted to the Engineer interim particulars at intervals of not more than 28 days and final particulars within 28 days of the end of the effects resulting from the event. On receipt of such interim particulars, the Engineer shall, without undue delay, make an interim determination of extension of time and, on receipt of the final particulars, the

Engineer shall review all the circumstances and shall determine an overall extension of time in regard to the event. In both such cases the Engineer shall make his determination after due consultation with the Employer and the Contractor and shall notify the Contractor of the determination, with a copy to the Employer. No final review shall result in a decrease of any extension of time already determined by the Engineer.

#### **45.1 Restriction on Working Hours**

Subject to any provision to the contrary contained in the Contract, none of the Works shall, save as hereinafter provided, be carried on during the night or on locally recognised days of rest without the consent of the Engineer, except when work is unavoidable or absolutely necessary for the saving of life or property or for the safety of the Works, in which case the Contractor shall immediately advise the Engineer. Provided that the provisions of this Clause shall not be applicable in the case of any work which it is customary to carry out by multiple shifts.

#### **46.1 Rate of Progress**

If for any reason, which does not entitle the Contractor to an extension of time, the rate of progress of the Works or any Section is at any time, in the opinion of the Engineer, too slow to comply with the Time for Completion, the Engineer shall so notify the Contractor who shall thereupon take such steps as are necessary, subject to the consent of the Engineer, to expedite progress so as to comply with the Time for Completion. The Contractor shall not be entitled to any additional payment for taking such steps. If, as a result of any notice given by the Engineer under this Clause, the Contractor considers that it is necessary to do any work at night or on locally recognised days of rest, he shall be entitled to seek the consent of the Engineer so to do. Provided that if any steps, taken by the Contractor in meeting his obligations under this Clause, involve the Employer in additional supervision costs, such cost shall, after due consultation with the Employer and the Contractor, be determined by the Engineer and shall be recoverable from the Contractor by the Employer, and may be deducted by the Employer from any monies due or to become due to the Contractor and the Engineer shall notify the Contractor accordingly, with a copy to the Employer.

#### **47.1 Liquidated Damages for Delay**

If the Contractor fails to comply with the Time for Completion in accordance with Clause 48, for the whole of the Works or, if applicable, any Section within the relevant time prescribed by Clause 43, then the Contractor shall pay to the Employer the relevant sum stated in the Appendix to Tender as liquidated damages for such default and not as a penalty (which sum shall be the only monies due from the Contractor for such default) for every day or part of a day which shall elapse between the relevant Time for Completion and the date stated in a Taking-Over Certificate of the whole of the Works or the relevant Section, subject to the applicable limit stated in the Appendix to Tender. The Employer may, without prejudice to any other method of recovery, deduct the

amount of such damages from any monies due or to become due to the Contractor. The payment or deduction of such damages shall not relieve the Contractor from his obligation to complete the Works, or from any other of his obligations and liabilities under the Contract.

#### **47.2 Reduction of Liquidated Damages**

If, before the Time for Completion of the whole of the Works or, if applicable, any Section, a Taking-Over Certificate has been issued for any part of the Works or of a Section, the liquidated damages for delay in completion of the remainder of the Works or of that Section shall, for any period of delay after the date stated in such Taking-Over Certificate, and in the absence of Alternative provisions in the Contract, be reduced in the proportion which the value of the part so certified bears to the value of the whole of the Works or Section, as applicable. The provisions of this Sub-Clause shall only apply to the rate of liquidated damages and shall not affect the limit thereof.

#### **48.1 Taking-Over Certificate**

When the whole of the Works has been substantially completed and have satisfactorily passed any Tests on Completion prescribed by the Contract, the Contractor may give a notice to that effect to the Engineer with a copy to the Employer, accompanied by a written undertaking to finish with due expedition any outstanding work during the Defects Liability Period. Such notice and undertaking shall be deemed to be a request by the Contractor for the Engineer to issue a Taking-Over Certificate in respect of the Works. The Engineer shall within 21 days of the date of delivery of such notice, either issue to the Contractor, with a copy to the Employer, a Taking-Over Certificate, stating the date on which, in his opinion, the Works were substantially completed in accordance with the Contract, or give instructions in writing to the Contractor specifying all the work which, in the Engineer's opinion, is required to be done by the Contractor before the issue of such Certificate. The Engineer shall also notify the Contractor of any defects in the Works affecting substantial completion that may appear after such instructions and before completion of the Works specified therein. The Contractor shall be entitled to receive such Taking-Over Certificate within 21 days of completion, to the satisfaction of the Engineer, of the Works so specified and remedying any defects so notified.

#### **48.2 Taking Over of Sections or Parts**

Similarly, in accordance with the procedure set out in Sub-Clause 48.1, the Contractor may request, and the Engineer shall issue a Taking-Over Certificate in respect of:

- (a) any Section in respect of which a separate Time for Completion is provided in the Appendix to Tender,

(b) any substantial part of the Permanent Works which has been both completed to the satisfaction of the Engineer and, otherwise than as provided for in the Contract, occupied or used by the Employer, or

(c) any part of the Permanent Works which the Employer has elected to occupy or use prior to completion (where such prior occupation or use is not provided for in the Contract or has not been agreed by the Contractor as a temporary measure).

#### **48.3 Substantial Completion of Parts**

If any part of the Permanent Works has been substantially completed and has satisfactorily passed any Tests on Completion prescribed by the Contractor, the Engineer may issue a Taking-Over Certificate in respect of that part of the Permanent Works before completion of the whole of the Works and, upon the issue of such Certificate, the Contractor shall be deemed to have undertaken to complete with due expedition any outstanding work in that part of the Permanent Works during the Defects Liability Period.

#### **48.4 Surfaces Requiring Reinstatement**

Provided that a Taking-Over Certificate given in respect of any Section or part of the Permanent Works before completion of the whole of the Works shall not be deemed to certify completion of any ground or surfaces requiring reinstatement, unless such Taking-Over Certificate shall expressly so state.

### **Defects Liability**

#### **49.1 Defects Liability Period**

In these Conditions the expression "Defects Liability Period" shall mean the defects liability period named in the Appendix to Tender, calculated from:

(a) the date of completion of the Works certified by the Engineer in accordance with Clause 48, or

(b) in the event of more than one certificate having issued by the Engineer under Clause 48, the respective dates so certified,

and in relation to the Defects Liability Period the expression "the Works" shall be construed accordingly.

#### **49.2 Completion of Outstanding Work and Remedying Defects**

To the intent that the Works shall, at or as soon as practicable after the expiration of the Defects Liability Period, be delivered to the Employer in the condition required by the Contract, fair wear and tear excepted, to the satisfaction of the Engineer, the Contractor shall:



(a) complete the work, if any, outstanding on the date stated in the Taking-Over Certificate as soon as practicable after such date, and

(b) execute all such work of amendment, reconstruction, and remedying defects, shrinkages or other faults as the Engineer may, during the Defects Liability Period or within 14 days after its expiration, as a result of an inspection made by or on behalf of the Engineer prior to its expiration, instruct the Contractor to execute.

#### **49.3 Cost of Remedying Defects**

All work referred to in Sub-Clause 49.2(b) shall be executed by the Contractor at his own cost if the necessity thereof is, in the opinion of the Engineer, due to:

- (a) the use of materials, Plant or workmanship not in accordance with the Contract,
- (b) where the Contractor is responsible for the design of part of the Permanent Works, any fault in such design, or
- (c) the neglect or failure on the part of the Contractor to comply with any obligation, expressed or implied, on the Contractor's part under the Contract.

If, in the opinion of the Engineer, such necessity is due to any other cause, he shall determine an addition to the Contract Price in accordance with Clause 52 and shall notify the Contractor accordingly, with a copy to the Employer.

#### **49.4 Contractor's Failure to Carry Out Instructions**

In case of default on the part of the Contractor in carrying out such instruction within a reasonable time, the Employer shall be entitled to employ and pay other persons to carry out the same and if such work is work which, in the opinion of the Engineer, the Contractor was liable to do at his own cost under the Contract, then all cost consequent thereon or incidental thereto shall, after due consultation with the Employer and the Contractor, be determined by the Engineer and shall be recoverable from the Contractor by the Employer, and may be deducted by the Employer from any monies due or to become due to the Contractor and the Engineer shall notify the Contractor accordingly, with a copy to the Employer.

#### **50.1 Contractor to Search**

If any defect, shrinkage or other fault in the Works appears at any time prior to the end of the Defects Liability Period, the Engineer may instruct the Contractor, with a copy to the Employer, to search under the directions of the Engineer for the cause thereof. Unless such defect, shrinkage or other fault is one for which the Contractor is liable under the Contract, the Engineer shall, after due consultation with the Employer and the Contractor, determine the amount in respect of the costs of such search incurred by the Contractor, which shall be added to the Contract Price and shall notify the Contractor accordingly, with a copy to the Employer. If such defect, shrinkage or other fault is one for

which the Contractor is liable, the cost of the work carried out in searching as aforesaid shall be borne by the Contractor and he shall in such case remedy such defect, shrinkage or other fault at his own cost in accordance with the provisions of Clause 49.

## **Alterations, Additions and Omissions**

### **51.1 Variations**

The Engineer shall make any variation of the form, quality or quantity of the Works or any part thereof that may, in his opinion, be necessary and for that purpose, or if for any other reason it shall, in his opinion, be appropriate, he shall have the authority to instruct the Contractor to do and the Contractor shall do any of the following:

- (a) increase or decrease the quantity of any work included in the Contract,
- (b) omit any such work (but not if the omitted work is to be carried out by the Employer or by another contractor),
- (c) change the character or quality or kind of any such work,
- (d) change the levels, lines, position and dimensions of any part of the Works,
- (e) execute additional work of any kind necessary for the completion of the Works, or
- (f) change any specified sequence or timing of construction of any part of the Works.

No such variation shall in any way vitiate or invalidate the Contract, but the effect, if any, of all such variations shall be valued in accordance with Clause 52. Provided that where the issue of an instruction to vary the Works is necessitated by some default of or breach of contract by the Contractor or for which he is responsible, any additional cost attributable to such default shall be borne by the Contractor.

### **51.2 Instructions for Variations**

The Contractor shall not make any such variation without an instruction of the Engineer. Provided that no instruction shall be required for increase or decrease in the quantity of any work where such increase or decrease is not the result of an instruction given under this Clause but is the result of the quantities exceeding or being less than those stated in the Bill of Quantities.

### **52.1 Valuation of Variations**

All variations referred to in Clause 51 and any additions to the Contract Price which are required to be determined in accordance with Clause 52 (for the purposes of this Clause referred to as "varied work"), shall be valued at the rates and prices set out in the Contract if, in the opinion of the Engineer, the same shall be applicable. If the Contract does not contain any rates or prices applicable to the varied work, the rates and prices in the Contract shall be used as the basis for valuation so far as may be reasonable, failing which, after due

consultation by the Engineer with the Employer and the Contractor, suitable rates or prices shall be agreed upon between the Engineer and the Contractor. In the event of disagreement, the Engineer shall fix such rates or prices as are, in his opinion, appropriate and shall notify the Contractor accordingly, with a copy to the Employer. Until such time as rates or prices are agreed or fixed, the Engineer shall determine provisional rates or prices to enable on-account payments to be included in certificates issued in accordance with Clause 60.

## **52.2 Power of Engineer to Fix Rates**

Provided that if the nature or amount of any varied work relative to the nature or amount of the whole of the Works or to any part thereof, is such that, in the opinion of the Engineer, the rate or price contained in the Contract for any item of the Works is, by reason of such varied work, rendered inappropriate or inapplicable, then, after due consultation by the Engineer with the Employer and the Contractor, a suitable rate or price shall be agreed upon between the Engineer and the Contractor. In the event of disagreement, the Engineer shall fix such other rate or price as is, in his opinion, appropriate and shall notify the Contractor accordingly, with a copy to the Employer. Until such time as rates or prices are agreed or fixed, the Engineer shall determine provisional rates or prices to enable on-account payments to be included in certificates issued in accordance with Clause 60.

Provided also that no varied work instructed to be done by the Engineer pursuant to Clause 51 shall be valued under Sub-Clause 52.1 or under this Sub-Clause unless, within 14 days of the date of such instruction and, other than in the case of omitted work, before the commencement of the varied work, notice shall have been given either:

- (a) by the Contractor to the Engineer of his intention to claim extra payment or a varied rate or price, or
- (b) by the Engineer to the Contractor of his intention to vary a rate or price.

## **52.3 Variations Exceeding 15 per cent**

If, on the issue of the Taking-Over Certificate for the whole of the Works, it is found that as a result of:

- (a) all varied work valued under Sub-Clauses 52.1 and 52.2, and
- (b) all adjustments upon measurement of the estimated quantities set out in the Bill of Quantities, excluding Provisional Sums, dayworks and adjustment of price made under Clause 70.

but not from any other cause, there have been additions to or deductions from the Contract Price which taken together are in excess of 15 per cent of the "Effective Contract Price" (which for the purposes of this Sub-Clause shall

mean the Contract Price, excluding Provisional Sums and allowance for dayworks, if any) then and in such event (subject to any action already taken under any other Sub-Clause of this Clause), after due consultation by the Engineer with the Employer and the Contractor, there shall be added to or deducted from the Contract Price such further sums as may be agreed between the Contractor and the Engineer or, failing agreement, determined by the Engineer having regard to the Contractor's Site and general overhead costs of the Contract. The Engineer shall notify the Contractor of any determination made under this Sub-Clause, with a copy to the Employer. Such sum shall be based only on the amount by which such additions or deductions shall be in excess of 15 per cent of the Effective Contract Price.

#### **52.4 Daywork**

The Engineer may, if in his opinion it is necessary or desirable, issue an instruction that any varied work shall be executed on a daywork basis. The Contractor shall then be paid for such varied work under the terms set out in the daywork schedule included in the Contract and at the rates and prices affixed thereto by him in the Tender.

The Contractor shall furnish to the Engineer such receipts or other vouchers as may be necessary to provide the amounts paid and, before ordering material, shall submit to the Engineer quotations for the same for his approval.

In respect of such of the Works executed on a daywork basis, the Contractor shall during the continuance of such work, deliver each day to the Engineer an exact list in duplicate of the names, occupation and time of all workmen employed on such work and a statement, also in duplicate, showing the description and quantity of all materials and Contractor's Equipment used thereon or therefore other than Contractor's Equipment which is included in the percentage addition in accordance with such daywork schedule. One copy of each list and statement will, if correct, or when agreed, be signed by the Engineer and returned to the Contractor.

At the end of each month the Contractor shall deliver to the Engineer a priced statement of the labour, materials and Contractor's Equipment, except as aforesaid, used and the Contractor shall not be entitled to any payment unless such lists and statements have been fully and punctually rendered. Provided always that if the Engineer considers that for any reason the sending of such lists or statements by the Contractor, in accordance with the foregoing provision, was impracticable he shall nevertheless be entitled to authorise payment for such work, either as daywork, on being satisfied as to the time employed and the labour, materials and Contractor's Equipment used on such work, or at such value therefore as shall, in his opinion, be fair and reasonable.

### **Procedure for Claims**

#### **53.1 Notice of Claims**

Notwithstanding any other provision of the Contract, if the Contractor intends to claim any additional payment pursuant to any Clause of these Conditions or otherwise, he shall give notice of his intention to the Engineer with a copy to the Employer, within 28 days after the event giving rise to the claim has first arisen.

### 53.2 **Contemporary Records**

Upon the happening of the event referred to in Sub-Clause 53.1, the Contractor shall keep such contemporary records as may reasonably be necessary to support any claim he may subsequently wish to make. Without necessarily admitting the Employer's liability, the Engineer shall, on receipt of a notice under Sub-Clause 53.1, inspect such contemporary records and may instruct the Contractor to keep any further contemporary records as are reasonable and may be material to the claim of which notice has been given. The Contractor shall permit the Engineer to inspect all records kept pursuant to this Sub-Clause and shall supply him with copies thereof as and when the Engineer so instructs.

### 53.3 **Substantiation of Claims**

Within 28 days, or such other reasonable time as may be agreed by the Engineer, of giving notice under Sub-Clause 53.1, the Contractor shall send to the Engineer an account giving detailed particulars of the amount claimed and the grounds upon which the claim is based. Where the event giving rise to the claim has a continuing effect, such account shall be considered to be an interim account and the Contractor shall, at such intervals as the Engineer may reasonably require, send further interim accounts giving the accumulated amount of the claim and any further grounds upon which it is based. In cases where interim accounts are sent to the Engineer, the Contractor shall send a final account within 28 days of the end of the effects resulting from the event. The Contractor shall, if required by the Engineer so to do, copy to the Employer all accounts sent to the Engineer pursuant to this Sub-Clause.

### 53.4 **Failure to Comply**

If the Contractor fails to comply with any of the provisions of this Clause in respect of any claim which he seeks to make, his entitlement to payment in respect thereof shall not exceed such amount as the Engineer or any arbitrator or arbitrators appointed pursuant to Sub-Clause 67.3 assessing the claim considers to be verified by contemporary records (whether or not such records were brought to the Engineer's notice as required under Sub-Clause 53.2 and 53.3).

### 53.5 **Payment of Claims**

The Contractor shall be entitled to have included in any interim payment certified by the Engineer pursuant to Clause 60 such amount in respect of any claim as the Engineer, after due consultation with the Employer and the Contractor, may consider due to the Contractor provided that the Contractor has

supplied sufficient particulars to enable the Engineer to determine the amount due. If such particulars are insufficient to substantiate the whole of the claim, the Contractor shall be entitled to payment in respect of such part of the claim as such particulars may substantiate to the satisfaction of the Engineer. The Engineer shall notify the Contractor of any determination made under this Sub-Clause, with a copy to the Employer.

### **Contractor's Equipment, Temporary Works and Materials**

#### **54.1 Contractor's Equipment, Temporary Works and Materials; Exclusive Use for the Works**

All Contractor's Equipment, Temporary Works and materials provided by the Contractor shall, when brought on to the Site, be deemed to be exclusively intended for the execution of the Works and the Contractor shall not remove the same or any part thereof, except for the purpose of moving it from one part of the Site to another, without the consent of the Engineer. Provided that consent shall not be required for vehicles engaged in transporting any staff, labour, Contractor's Equipment, Temporary Works, Plant or materials to or from the Site.

#### **54.2 Employer not Liable for Damage**

The Employer shall not at any time be liable, save as mentioned in Clauses 20 and 65, for the loss of or damage to any of the said Contractor's Equipment, Temporary Works or materials.

#### **54.3 Customs Clearance**

The Employer will use his best endeavours in assisting the Contractor, where required, in obtaining clearance through the Customs of Contractor's Equipment, materials and other things required for the Works.

#### **54.4 Re-export of Contractor's Equipment**

In respect of any Contractor's Equipment which the Contractor has imported for the purposes of the Works, the Employer will use his best endeavours to assist the Contractor, where required, in procuring any necessary Government consent to the re-export of such Contractor's Equipment by the Contractor upon the removal thereof pursuant to the terms of Contract.

#### **54.5 Conditions of Hire of Contractor's Equipment**

With a view to securing, in the event of termination under Clause 63, the continued availability, for the purpose of executing the Works, of any hired Contractor's Equipment, the Contractor shall not bring on to the Site any hired Contractor's Equipment unless there is an agreement for hire thereof (which agreement shall be deemed not to include an agreement for hire purchase) which contains a provision that the owner thereof will, on request in writing

made by the Employer within 7 days after the date on which any termination has become effective, and on the Employer undertaking to pay all hire charges in respect thereof from such date, hire such Contractor's Equipment to the Employer on the same terms in all respect as the same was hired to the Contractor save that the Employer shall be entitled to permit the use thereof by any other contractor employed by him for the purpose of execution and completing the Works and remedying any defects therein, under the terms of the said Clause 63.

**54.6 Costs for the Purpose of Clause 63**

In the event of the Employer entering into any agreement for the hire of Contractor's Equipment pursuant to Sub-Clause 54.5, all sums properly paid by the Employer under the provision of any such agreement and all costs incurred by him (including stamp duties) in entering into such agreement shall be deemed, for the purpose of Clause 63, to be part of the cost of executing and completing the Works and the remedying of any defects therein.

**54.7 Incorporation of Clause in Subcontracts**

The Contractor shall, where entering into any subcontract for the execution of any part of the Works, incorporate in such subcontract (by reference or otherwise) the provisions of this Clause in relation to Contractor's Equipment, Temporary Works or materials brought on to the Site by the Subcontractor.

**54.8 Approval of Materials not implied**

The operation of this Clause shall not be deemed to imply any approval by the Engineer of the materials or other matters referred to therein nor shall it prevent the rejection of any such materials at any time by the Engineer.

## **Measurement**

### **55.1 Quantities**

The quantities set out in the Bill of Quantities are the estimated quantities for the Works, and they are not to be taken as the actual and correct quantities of the Works to be executed by the Contractor in fulfillment of his obligations under the Contract.

### **56.1 Works to be Measured**

The Engineer shall, except as otherwise stated, ascertain and determine by measurement the value of the Works in accordance with the Contract and the Contractor shall be paid that value in accordance with Clause 60. The Engineer shall, when he requires any part of the Works to be measured, give reasonable notice to the Contractor's authorised agent, who shall:

- (a) forthwith attend or send a qualified representative to assist the Engineer in making such measurement, and
- (b) supply all particulars required by the Engineer.

Should the Contractor not attend, or neglect or omit to send such representative, then the measurement made by the Engineer or approved by him shall be taken to be the correct measurement of such part of the Works. For the purpose of measuring such Permanent Works as are to be measured by records and drawings, the Engineer shall prepare records and drawings as the work proceeds and the Contractor, as and when called upon to do so in writing, shall, within 14 days, attend to examine and agree such records and drawings with the Engineer and shall sign the same when so agreed. If the Contractor does not attend to examine and agree such records and drawings, they shall be taken to be correct. If, after examination of such records and drawings, the Contractor does not agree the same or does not sign the same as agreed, they shall nevertheless be taken to be correct, unless the Contractor, within 14 days of such examination, lodges with the Engineer notice of the respects in which such records and drawings are claimed by him to be incorrect. On receipt of such notice, the Engineer shall review the records and drawings and either confirm or vary them.

### **57.1 Method of Measurement**

The Works shall be measured net, notwithstanding any general or local custom, except where otherwise provided for in the Contract.

### **57.2 Breakdown of Lump Sum Items**

For the purposes of statements submitted in accordance with Sub-Clause 60.1, the Contractor shall submit to the Engineer, within 28 days after the receipt of the Letter of Acceptance, a breakdown for each of the lump sum items



contained in the Tender. Such breakdowns shall be subject to the approval of the Engineer.

## **Provisional Sums**

### **58.1 Definition of "Provisional Sum"**

"Provisional Sum" means a sum included in the Contract and so designated in the Bill of Quantities for the execution of any part of the Works or for the supply of goods, materials, Plant or services, or for contingencies, which sum may be used, in whole or in part, or not at all, on the instructions of the Engineer. The Contractor shall be entitled to only such amounts in respect of the work, supply or contingencies to which such Provisional Sums relate as the Engineer shall determine in accordance with this Clause. The Engineer shall notify the Contractor of any determination made under this Sub-Clause, with a copy to the Employer.

### **58.2 Use of Provisional Sums**

In respect of every Provisional Sum the Engineer shall have authority to issue instructions for the execution of work or for the supply of goods, material, Plant or services by:

- (a) the Contractor, in which case the Contractor shall be entitled to an amount equal to the value thereof determined in accordance with Clause 52, and
- (b) a nominated Subcontractor, as hereinafter defined, in which case the sum to be paid to the Contractor therefore shall be determined and paid in accordance with Sub-Clause 59.4.

### **58.3 Production of Vouchers**

The Contractor shall produce to the Engineer all quotations, invoices, vouchers and accounts or receipts in connection with expenditure in respect of Provisional Sums, except where work is valued in accordance with rates or prices set out in the Tender.

## **Nominated Subcontractors**

### **59.1 Definition of "Nominated Subcontractors"**

All specialists, merchants, tradesmen and others executing any work or supplying any goods, materials, Plant or services for which Provisional Sums are included in the Contract, who may have been or be nominated or selected or approved by the Employer or the Engineer, and all persons to whom by virtue of the provisions of the Contract the Contractor is required to subcontract shall, in the execution of such work or the supply of such goods, materials, Plant or services, be deemed to be subcontractors to the Contractor

and are referred to in this Contract as "nominated Subcontractors".

#### **59.2 Nominated Subcontractors, Objection to Nomination**

The Contractor shall not be required by the Employer or the Engineer, or be deemed to be under any obligation, to employ any nominated Subcontractor against whom the Contractor may raise reasonable objection, or who declines to enter into subcontract with the Contractor containing provisions:

(a) that in respect of the work, goods, materials, Plant or services the subject of the subcontract, the nominated Subcontractor will undertake towards the Contractor such obligations and liabilities as will enable the Contractor to discharge his own obligations and liabilities towards the Employer under the terms of the Contract and will save harmless and indemnify the Contractor from and against the same and from all claims, proceedings, damages, costs, charges and expenses whatsoever arising out of or in connection therewith, or arising out of or in connection with any failure to perform such obligations or to fulfill such liabilities, and

(b) that the nominated Subcontractor will save harmless and indemnify the Contractor from and against any negligence by the nominated Subcontractor, his agents, workmen and servants and from and against any misuse by him or them of any Temporary Works provided by the Contractor for the purposes of the Contract and from all claims as aforesaid.

#### **59.3 Design Requirements to be Expressly Stated**

If in connection with any Provisional Sum the services to be provided include any matter of design or specification of any part of the Permanent Works or of any Plant to be incorporated therein, such requirement shall be expressly stated in the Contract and shall be included in any nominated Subcontract. The nominated Subcontract shall specify that the nominated Subcontractor providing such services will save harmless and indemnify the Contractor from and against the same and from all claims, proceedings, damages, costs, charges and expenses whatsoever arising out of or in connection with any failure to perform such obligations or to fulfill such liabilities.

#### **59.4 Payments to Nominated Subcontractors**

For all work executed or goods, materials, Plant or services supplied by any nominated Subcontractor, the Contractor shall be entitled to:

(a) the actual price paid or due to be paid by the Contractor, on the instructions of the Engineer, and in accordance with the subcontract.

(b) in respect of labour supplied by the Contractor, the sum, if any, entered in the Bill of Quantities or, if instructed by the Engineer pursuant to paragraph (a) of Sub-Clause 58.2, as may be determined in accordance with Clause 52; and

(c) in respect of all other charges and profit, a sum being a percentage rate of the actual price paid or due to be paid calculated, where provision has been made in the Bill of Quantities for a rate to be set against the relevant Provisional Sum, at the rate inserted by the Contractor against that item or, where no such provision has been made, at the rate inserted by the Contractor in the Appendix to Tender and repeated where provision for such is made in a special item provided in the Bill of Quantities for such purpose.

#### 59.5 **Certification of Payments to Nominated Subcontractors**

Before issuing, under Clause 60 any certificate, which includes any payment in respect of work done or goods, materials, Plant or services supplied by any nominated Subcontractor, the Engineer shall be entitled to demand from the Contractor reasonable proof that all payments, less retentions, included in previous certificates in respect of the work or goods, materials, Plant or services of such nominated Subcontractor have been paid or discharged by the Contractor. If the Contractor fails to supply such proof, then, unless the Contractor:

(a) satisfies the Engineer in writing that he has reasonable cause for withholding or refusing to make such payment, and

(b) produces to the Engineer reasonable proof that he has so informed such nominated Subcontractor in writing,

the Employer shall be entitled to pay to such nominated Subcontractor direct, upon the certificate of the Engineer, all payments, less retention, provided for in the nominated Subcontract, which the Contractor has failed to make to such nominated Subcontractor and to deduct by way of set-off the amount so paid by the Employer from any sums due or to become due from the Employer to the Contractor.

Provided that, where the Engineer has certified and the Employer has paid direct as aforesaid, the Engineer shall in issuing any further certificate in favour of the Contractor, deduct from the amount thereof the amount so paid, direct as aforesaid, but shall not withhold or delay the issue of the certificate itself when due to be issued under the terms of the Contract.

### **Certificates and Payment**

#### 60.1 **Monthly Statements**

The Contractor shall submit to the Engineer after the end of each month six copies, each signed by the Contractor's representative approved by the Engineer in accordance with the Sub-Clause 15.1, of a statement, in such form as the Engineer may from time to time prescribe, showing the amounts to which, the Contractor considers himself to be entitled up to the end of the month in respect of:

- (a) the value of the Permanent Works executed,
- (b) any other items in the Bill of Quantities including those for Contractor's Equipment, Temporary Works, dayworks and the like,
- (c) the percentage of the invoice value of listed materials, all as stated in the Appendix to Tender, and Plant delivered by the Contractor on the Site for incorporation in the Permanent Works but not incorporated in such Works,
- (d) adjustments under Clause 70, and
- (e) any other sum to which the Contractor may be entitled under the Contract or otherwise.

## 60.2 **Monthly Payments**

The Engineer shall, within 28 days of receiving such statement, certify to the Employer the amount of payment to the Contractor which he considers due and payable in respect thereof, subject:

- (a) firstly, to the retention of the account calculated by applying the Percentage of Retention stated in the Appendix to Tender, to the amount to which the Contractor is entitled under paragraph (a), (b), (c) and (e) of Sub-Clause 60.1 until the amount so retained reaches the Limit of Retention Money stated in the Appendix to Tender, and
- (b) secondly, to the deduction, other than pursuant to Clause 47, of any sums which may have become due and payable by the Contractor to the Employer.

Provided that the Engineer shall not be bound to certify any payment under this Sub-Clause if the net amount thereof, after all retentions and deductions, would be less than the Minimum Amount of Interim Payment Certificates stated in the Appendix to Tender.

Notwithstanding the terms of this Clause or any other Clause of the Contract no amount will be certified by the Engineer for payment until the performance security, if required under the Contract, has been provided by the Contractor and approved by the Employer.

## 60.3 **Payment of Retention Money**

- (a) Upon the issue of the Taking-Over Certificate with respect to the whole of the Works, one half of the Retention Money, or upon the issue of a Taking-Over Certificate with respect to a Section or part of the Permanent

Works only such proportion thereof as the Engineer determines having regard to the relative value of such Section or part of the Permanent Works, shall be certified by the Engineer for payment to the Contractor.

(b) Upon the expiration of the Defects Liability Period for the Works the other half of the Retention Money shall be certified by the Engineer for payment to the Contractor. Provided that, in the event of different Defects Liability Periods having become applicable to different Sections or part of the Permanent Works pursuant to Clause 48, the expression "expiration of the Defects Liability Period" shall, for the purposes of this Sub-Clause, be deemed to mean the expiration of the latest of such periods. Provided also that if at such time, there shall remain to be executed by the Contractor any work instructed, pursuant to Clause 49 and 50, in respect of the Works, the Engineer shall be entitled to withhold certification until completion of such work of so much of the balance of the Retention Money as shall, in the opinion of the Engineer, represent the cost of the work remaining to be executed.

#### 60.4 **Correction of Certificates**

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

#### 60.5 **Statement at Completion**

Not later than 84 days after the issue of the Taking-Over Certificate in respect of the whole of the Works, the Contractor shall submit to the Engineer a Statement at Completion with supporting documents showing in detail, in the form approved by the Engineer:

- (a) The final value of all work done in accordance with the Contract up to the date stated in such Taking-Over Certificate,
- (b) Any further sums which the Contractor considers to be due, and
- (c) An estimate of amounts which the Contractor considers will become due to him under the Contract.

The estimated amounts shall be shown separately in such Statement at Completion. The Engineer shall verify payment in accordance with Sub-Clause 60.2.

#### 60.6 **Final Statement**

Not later than 56 days after the issue of the Defects Liability Certificate pursuant to Sub-Clause 62.1, the Contractor shall submit to the Engineer for consideration a draft final statement with supporting documents showing in detail, in the form approved by the Engineer:

- (a) the value of all work done in accordance with the Contract, and
- (b) any further sums which the Contractor considers to be due to him under the Contract.

If the Engineer disagrees with or cannot verify any part of the draft final statement, the Contractor shall submit such further information as the Engineer may reasonably require and shall make such changes in the draft as may be agreed between them. The Contractor shall then prepare and submit to the Engineer the final statement as agreed (for the purposes of these Conditions referred to as the "Final Statement").

If, following discussions between the Engineer and the Contractor and any changes to the draft final statement which may be agreed between them, it becomes evident that a dispute exists, the Engineer shall deliver to the Employer an Interim Payment Certificate for those parts of the draft final statement, if any, which are not in dispute. The dispute may then be settled in accordance with Clause 67.

#### **60.7 Discharge**

Upon submission of the Final Statement, the Contractor shall give to the Employer, with a copy to the Engineer, a written discharge confirming that the total of the Final Statement represents full and final settlement of all monies due to the Contractor arising out of or in respect of the Contract. Provided that such discharge shall become effective only after payment due under the Final Payment Certificate issued pursuant to Sub-Clause 60.8 has been made and the performance security referred to in Sub-Clause 10.1, if any, has been returned to the Contractor.

#### **60.8 Final Payment Certificate**

Within 28 days after receipt of the Final Statement, and the written discharge, the Engineer shall issue to the Employer (with a copy to the Contractor) a Final Payment Certificate stating:

- (a) the amount which, in the opinion of the Engineer, is finally due under the Contract or otherwise, and
- (b) after giving credit to the Employer for all amounts previously paid by the Employer and for all sums to which the Employer is entitled other than under Clause 47, the balance, if any, due from the Employer to the Contractor or from the Contractor to the Employer as the case may be.

#### **60.9 Cessation of Employer's Liability**

The Employer shall not be liable to the Contractor for any matter or thing arising out of or in connection with the Contract or execution of the Works, unless the Contractor shall have included a claim in respect thereof in his Final Statement and (except in respect of matters or things arising after the issue of the Taking-Over Certificate in respect of the whole of the Works) in

the Statement at Completion referred to in Sub-Clause 60.5.

**60.10 Time for Payment**

The amount due to the Contractor under any Interim Payment Certificate issued by the Engineer pursuant to this Clause, or to any other term of the Contract, shall, subject to Clause 47, be paid by the Employer to the Contractor within 28 days after such Interim Payment Certificate has been delivered to the Employer, or, in the case of the Final Payment Certificate referred to in Sub-Clause 60.8, within 56 days, after such Final Payment Certificate has been delivered to the Employer. In the event of the failure of the Employer to make payment within the times stated, the Employer shall pay to the Contractor interest at the rate stated in the Appendix to Tender upon all sums unpaid from the date by which the same should have been paid. The provisions of this Sub-Clause are without prejudice to the Contractor's entitlement under Clause 69 or otherwise.

**61.1 Approval only by Defects Liability Certificate**

Only the Defects Liability Certificate, referred to in Clause 62, shall be deemed to constitute approval of the Works.

**62.1 Defects Liability Certificate**

The Contract shall not be considered as completed until a Defects Liability Certificate shall have been signed by the Engineer and delivered to the Employer, with a copy to the Contractor, stating the date on which the Contractor shall have completed his obligations to execute and complete the Works and remedy any defects therein to the Engineer's satisfaction. The Defects Liability Certificate shall be given by the Engineer within 28 days after the expiration of the Defects Liability Period, or, if different defects liability periods shall become applicable to different Sections or parts of the Permanent Works, the expiration of the latest such period, or as soon thereafter as any works instructed, pursuant to Clause 49 and 50, have been completed to the satisfaction of the Engineer. Provided that the issue of the Defects Liability Certificate shall not be a condition precedent to payment to the Contractor of the second portion of the Retention Money in accordance with the conditions set out in Sub-Clause 60.3.

**62.2 Unfulfilled Obligations**

Notwithstanding the issue of the Defects Liability Certificate the Contractor and the Employer shall remain liable for the fulfillment of any obligation incurred under the provisions of the Contract prior to the issue of the Defects Liability Certificate which remains unperformed at the time of such Defects Liability Certificate is issued and, for the purposes of determining the nature and extent of any such obligation, the Contract shall be deemed to remain in

force between the parties to the Contract.

## **Remedies**

### **63.1 Default of Contractor**

If the Contractor is deemed by law unable to pay his debts as they fall due, or enters into voluntary or involuntary bankruptcy, liquidation or dissolution (other than a voluntary liquidation for the purposes of amalgamation or reconstruction), or becomes insolvent, or makes an arrangement with, or assignment in favour of, his creditors, or agrees to carry out the Contract under a committee of inspection of his creditors, or if a receiver, administrator, trustee or liquidator is appointed over any substantial part of his assets, or if, under any law or regulation relating to reorganization, arrangement or readjustment of debts, proceedings are commenced against the Contractor or resolutions passed in connection with dissolution or liquidation or if any steps are taken to enforce any security interest over a substantial part of the assets of the Contractor, or if any act is done or event occurs with respect to the Contractor or his assets which, under any applicable law has a substantially similar effect to any of the foregoing acts or events, or if the Contractor has contravened Sub-Clause 3.1, or has an execution levied on his goods, or Contract, if the Engineer certifies to the Employer, with a copy to the Contractor, that, in his opinion, the Contractor:

- (a) has repudiated the Contract, or
  - (b) without reasonable excuse has failed
    - (i) to commence the Works in accordance with Sub-Clause 41.1,
    - (ii) to proceed with the Works, or any Section thereof, within 28 days after receiving notice pursuant to Sub-Clause 46.1,
  - (c) has failed to comply with a notice issued pursuant to Sub-Clause 37.4 or an instruction issued pursuant to Sub-Clause 39.1 within 28 days after having received it
  - (d) despite previous warning from the Engineer, in writing, is otherwise persistently or flagrantly neglecting to comply with any of his obligations under the Contract, or
  - (e) has contravened Sub-Clause 4.1,
- then the Employer may, after giving 14 days' notice to the Contractor, enter upon the Site and the Works and terminate the employment of the Contractor without thereby releasing the Contractor from any of his obligations or liabilities under the Contract, or affecting the rights and authorities conferred on the Employer or the Engineer by the Contract, and may himself complete the Works or may employ any other contractor to complete the Works. The Employer or such other contractor may use for such completion so much of the Contractor's Equipment, Temporary Works and materials as he or they



may think proper.

#### **63.2 Valuation at Date of Termination**

The Engineer shall, as soon as may be practicable after any such entry and termination by the Employer, fix and determine ex parte, or by or after reference to the parties or after such investigation or enquiries as he may think fit to make or institute, and shall certify:

(a) what amount (if any) had, at the time of such entry and termination, been reasonably earned by or would reasonably accrue to the Contractor in respect of work then actually done by him under the Contract, and

(b) the value of any of the said unused or partially used materials, any Contractor's Equipment and any Temporary Works.

#### **63.3 Payment after Termination**

If the Employer terminates the Contractor's employment under this Clause, he shall not be liable to pay to the Contractor any further amount (including damages) in respect of the Contract until the expiration of the Defects Liability Period and thereafter until the costs of execution, completion and remedying of any defects, damages for delay in completion (if any) and all other expenses incurred by the Employer have been ascertained and the amount thereof certified by the Engineer. The Contractor shall then be entitled to receive only such sum (if any) as the Engineer may certify would have been payable to him upon due completion by him after deducting the said amount. If such amount exceeds the sum which would have been payable to the Contractor on due completion by him, then the Contractor shall, upon demand, pay to the Employer the amount of such excess and it shall be deemed a debt due by the Contractor to the Employer and shall be recoverable accordingly.

#### **63.4 Assignment of Benefit of Agreement**

Unless prohibited by law, the Contractor shall, if so, instructed by the Engineer within 14 days of such entry and termination referred to in Sub-Clause 63.1, assign to the Employer the benefit of any agreement for the supply of any goods or materials or services and/or for the execution of any work for the purposes of the Contract, which the Contractor may have entered into.

#### **64.1 Urgent Remedial Work**

If, by reason of any accident, or failure, or other event occurring to, in, or in connection with the Works, or any part thereof, either during the execution of the Works, or during the Defects Liability Period, any remedial or other work is, in the opinion of the Engineer, urgently necessary for the safety of the Works and the Contractor is unable or unwilling at once to do such work, the

Employer shall be entitled to employ and pay other persons to carry out such work as the Engineer may consider necessary. If the work or repair so done by the Employer is work which, in the opinion of the Engineer, the Contractor was liable to do at his own cost under the Contract, then all costs consequent thereon or incidental thereto shall, after due consultation with the Employer and the Contractor, be determined by the Engineer and shall be recoverable from the Contractor by the Employer, and may be deducted by the Employer from any monies due or to become due to the Contractor and the Engineer shall notify the Contractor accordingly, with a copy to the Employer. Provided that the Engineer shall, as soon after the occurrence of any such emergency as may be reasonably practicable, notify the Contractor thereof.

### **Special Risks**

#### **65.1 No Liability for Special Risks**

The Contractor shall be under no liability whatsoever in consequence of any of the special risks referred to in Sub-Clause 65.2, whether by way of indemnity or otherwise, for or in respect of:

- (a) destruction of or damage to the Works, save to work condemned under the provisions of Clause 39 prior to the occurrence of any of the said special risks,
- (b) destruction of or damage to property, whether of the Employer or third parties, or
- (c) injury or loss of life.

#### **65.2 Special Risks**

The Special Risks are:

- (a) the risks defined under paragraphs (a), (c), (d) and (e) of Sub-Clause 20.4, and
- (b) the risks defined under paragraph (b) of Sub-Clause 20.4 insofar as these relate to the country in which the Works are to be executed.

#### **65.3 Damage to Works by Special Risks**

If the Works or any materials or Plant on or near or in transit to the Site, or any of the Contractor's Equipment, sustain destruction or damage by reason of any of the said special risks, the Contractor shall be entitled to payment in accordance with the Contract for any Permanent Works duly executed and for any materials or Plant so destroyed or damaged and, so far as may be required by the Engineer or as may be necessary for the completion of the Works, to payment for:

- (a) rectifying any such destruction or damage to the Works, and
- (b) replacing or rectifying such materials or Contractor's Equipment,

and the Engineer shall determine an addition to the Contract Price in accordance with Clause 52 (which shall in the case of the cost of replacement of Contractor's Equipment include the fair market value thereof as determined by the Engineer) and shall notify the Contractor accordingly, with a copy to the Employer.

**65.4 Projectile, Missile**

Destruction, damage, injury or loss of life caused by the explosion or impact, whenever and wherever occurring, of any mine, bomb, shell, grenade, or other projectile, missile, munition, or explosive of war, shall be deemed to be a consequence of the said special risks.

**65.5 Increased Costs arising from Special Risks**

Save to the extent that the Contractor is entitled to payment under any other provision of the Contract, the Employer shall repay to the Contractor any costs of the execution of the Work (other than such as may be attributable to the cost of reconstructing work condemned under the provisions of Clause 39 prior to the occurrence of any special risk) which are howsoever attributable to or consequent on or the result of or in any way whatsoever connected with the said special risks, subject however to the provisions in this Clause hereinafter contained in regard to outbreak of war, but the Contractor shall, as soon as any such cost comes to his knowledge, forthwith notify the Engineer thereof. The Engineer shall, after due consultation with the Employer and the Contractor, determine the amount of the Contractor's costs in respect thereof which shall be added to the Contract Price and shall notify the Contractor accordingly, with a copy to the Employer.

**65.6 Outbreak of War**

If, during the currency of the Contract, there is an outbreak of war, whether war is declared or not, in any part of the world which, whether financially or otherwise, materially affects the execution of the Works, the Contractor shall, unless and until the Contract is terminated under the provisions of this Clause, continue to use his best endeavor to complete the execution of the Works. Provided that the Employer shall be entitled, at any time after such outbreak of war, to terminate the Contract by giving notice to the Contractor and, upon such notice being given, the Contract shall, except as to the rights of the parties under this clause and Clause 67, terminate, but without prejudice to the rights of either party in respect of any antecedent breach thereof.

**65.7 Removal of Contractor's Equipment on Termination**

If the Contract is terminated under the provisions of Sub-Clause 65.6, the Contractor shall, with all reasonable dispatch, remove from the Site all Contractor's Equipment and shall give similar facilities to his Subcontractors to do so.

**65.8 Payment if Contract Terminated**

If the Contract is terminated as aforesaid, the Contractor shall be paid by the Employer, insofar as such amounts or items have not already been covered by payments on account made to the Contractor, for all work executed prior to the date of termination at the rates and prices provided in the Contract and in addition:

(a) the amounts payable in respect of any preliminary items referred to in the Bill of Quantities, so far as the work or service comprised therein has been carried out or performed, and a proper portion of any such items which have been partially carried out or performed.

(b) the cost of materials, Plant or goods reasonably ordered for the Works which have been delivered to the Contractor or of which the Contractor is legally liable to accept delivery, such materials, Plant or goods becoming the property of the Employer upon such payments being made by him.

(c) a sum being the amount of any expenditure reasonably incurred by the Contractor in the expectation of completing the whole of the Works insofar as such expenditure has not been covered by any other payments referred to in this Sub-Clause.

(d) any additional sum payable under the provisions of Sub-Clauses 65.3 and 65.5.

(e) such proportion of the cost as may be reasonable, taking into account payments made or to be made for work executed, of removal of Contractor's Equipment under Sub-Clause 65.7 and, if required by the Contractor, return thereof to the Contractor's main plant yard in his country of registration or to other destination, at no greater cost; and

(f) the reasonable cost of repatriation of all the Contractor's staff and workmen employed on or in connection with the Works at the time of such termination.

Provided that against any payment due from the Employer under this Sub-Clause, the Employer shall be entitled to be credited with any outstanding balances due from the Contractor for advances in respect of Contractor's Equipment, materials and Plant and any other sums which, at the date of termination, were recoverable by the Employer from the Contractor under the terms of Contract. Any sums payable under this Sub-Clause shall, after due consultation with the Employer and the Contractor, be determined by the Engineer who shall notify the Contractor accordingly, with a copy to the Employer.

**Release from Performance****66.1 Payment in Event of Release from Performance**

If any circumstance outside the control of both parties arises after the issue of the Letter of Acceptance which renders it impossible or unlawful for either party to fulfill his or their contractual obligations, or under the law governing the Contract the parties are released from further performance, then the parties shall be discharged from the Contract, except as to their rights under this Clause and Clause 67 and without prejudice to the rights of either party in respect of any antecedent breach of the Contract, and the sum payable by the Employer to the Contractor in respect of the work executed shall be the same as that which would have been payable under Clause 65 if the Contract had been terminated under the provisions of Clause 65.

## **Settlement of Disputes**

### **67.1 Engineer's Decision**

If a dispute of any kind whatsoever arises between the Employer and the Contractor in connection with, or arising out of, the Contract or the execution of the Works, whether during the execution of the Works or after their completion and whether before or after repudiation or other termination of the Contract, including any dispute as to any opinion, instruction, determination, certificate or valuation of the Engineer, the matter in dispute shall, in the first place, be referred in writing to the Engineer, with a copy to the other party. Such reference shall state that it is made pursuant to this Clause. No later than the eighty-fourth day after the day on which he received such reference the Engineer shall give notice of his decision to the Employer and the Contractor. Such decision shall state that it is made pursuant to this Clause.

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

If either the Employer or the Contractor be dissatisfied with any decision of the Engineer, or if the Engineer fails to give notice of his decision on or before the eighty-fourth day on which he received the reference, then either the Employer or the Contractor may, on or before the seventieth day after the day on which he received notice of such decision, or on or before the seventieth day after the day on which the said period of 84 days expired, as the case may be, give notice to the other party, with a copy for information to the Engineer, of his intention to commence arbitration, as hereinafter provided, as to the matter in dispute. Such notice shall establish the entitlement of the party giving the same to commence arbitration, as hereinafter provided, as to such dispute and, subject to Sub-Clause 67.4, no arbitration in respect thereof may be commenced unless such notice is given.

If the Engineer has given notice of his decision as to a matter in dispute to the Employer and the Contractor and no notice of intention to commence

arbitration as to such dispute has been given by either the Employer or the Contractor on or before the seventieth day after the day on which the parties received notice as to such decision from the Engineer, the said decision shall become final and binding upon the Employer and the Contractor.

#### **67.2 Amicable Settlement**

Where notice of intention to commence arbitration as to a dispute has been given in accordance with Sub-Clause 67.1, the parties shall attempt to settle such dispute amicably before the commencement of arbitration. Provided that, unless the parties otherwise agree, arbitration may be commenced on or after the fifty-sixth day after the day on which notice of intention to commence arbitration of such dispute was given, even if no attempt at amicable settlement thereof has been made.

#### **67.3 Arbitration**

Any dispute in respect of which:

- (a) the decision, if any, of the Engineer has not become final and binding pursuant to Sub-Clause 67.1, and
- (b) amicable settlement has not been reached within the period stated in Sub-Clause 67.2,

shall be finally settled, unless otherwise specified in the Contract, under the Rules of Conciliation and Arbitration of the International Chamber of Commerce by one or more arbitrators appointed under such Rules. The said arbitrator/s shall have full power to open up, review and revise any decision, opinion, instruction, determination, certificate or valuation of the Engineer related to the dispute.

Neither party shall be limited in the proceedings before such arbitrator/s to the evidence or arguments put before the Engineer for the purpose of obtaining his said decision pursuant to Sub-Clause 67.1. No such decision shall disqualify the Engineer from being called as a witness and giving evidence before the arbitrator/s on any matter whatsoever relevant to the dispute.

Arbitration may be commenced prior to or after completion of the Works, provided that the obligations of the Employer, the Engineer and the Contractor shall not be altered by reason of the arbitration being conducted during the progress of the Works.

#### **67.4 Failure to Comply with Engineer's Decision**

Where neither the Employer nor the Contractor has given notice of intention to commence arbitration of a dispute within the period stated in Sub-Clause 67.1 and the related decision has become final and binding, either party may, if the other party fails to comply with such decision, and without prejudice to any other rights it may have, refer the failure to arbitration in accordance with Sub-Clause 67.3. The provisions of Sub-Clause 67.1 and 67.2 shall not apply

to any such reference.

## **Notices**

### **68.1 Notice to Contractor**

All certificates, notices or instructions to be given to the Contractor by the Employer or the Engineer under the terms of the Contract shall be sent by post, cable, telex or facsimile transmission to or left at the Contractor's principal place of business or such other address as the Contractor shall nominate for that purpose.

### **68.2 Notice to Employer and Engineer**

Any notice to be given to the Employer or to the Engineer under the terms of the Contract shall be sent by post, cable, telex or facsimile transmission to or left at the respective addresses nominated for that purpose in Part II of these Conditions.

### **68.3 Change of Address**

Either party may change a nominated address to another address in the country where the Works are being executed by prior notice to the other party, with a copy to the Engineer, and the Engineer may do so by prior notice to both parties.

## **Default of Employer**

### **69.1 Default of Employer**

In the event of the Employer:

(a) failing to pay to the Contractor the amount due under any certificate of the Engineer within 28 days after the expiry of the time stated in Sub-Clause 60.10 within which payment is to be made, subject to any deduction that the Employer is entitled to make under the Contract,

(b) interfering with or obstructing or refusing any required approval to the issue of any such certificate,

(c) becoming bankrupt or, being a company, going into liquidation, other than for the purpose of a scheme of reconstruction or amalgamation, or

(d) giving notice to the Contractor that for economic reasons it is impossible for him to continue to meet his contractual obligations,

the Contractor shall be entitled to terminate his employment under the Contract by giving notice to the Employer, with a copy to the Engineer. Such termination shall take effect 14 days after the giving of the notice.

**69.2 Removal of Contractor's Equipment**

Upon the expiry of the 14 days' notice referred to in Sub-Clause 69.1, the Contractor shall, notwithstanding the provisions of Sub-Clause 54.1, with all reasonable despatch, remove from the Site all Contractor's Equipment brought by him thereon.

**69.3 Payment on Termination**

In the event of such termination the Employer shall be under the same obligations to the Contractor in regard to payment as if the Contract had been terminated under the provisions of Clause 65, but in addition to the payments specified in Sub-Clause 65.8, the Employer shall pay to the Contractor the amount of any loss or damage to the Contractor arising out of or in connection with or by consequence of such termination.

**69.4 Contractor's Entitlement to Suspend Work**

Without prejudice to the Contractor's entitlement to interest under Sub-Clause 60.10 and to terminate under Sub-Clause 69.1, the Contractor may, if the Employer fails to pay the Contractor the amount due under any certificate of the Engineer within 28 days after the expiry of the time stated in Sub-Clause 60.10 within which payment is to be made, subject to any deduction that the Employer is entitled to make under the Contract, after giving 28 days' prior notice to the Employer, with a copy to the Engineer, suspend work or reduce the rate of work.

If the Contractor suspends work or reduces the rate of work in accordance with the provisions of this Sub-Clause and thereby suffers delay or incurs costs the Engineer shall, after due consultation with the Employer and the Contractor, determine:

- (a) any extension of time to which the Contractor is entitled under Clause 44, and
- (b) the amount of such costs, which shall be added to the Contract Price,

and shall notify the Contractor accordingly, with a copy to the Employer.

**69.5 Resumption of Work**

Where the Contractor suspends work or reduces the rate of work, having given notice in accordance with Sub-Clause 69.4, and the Employer subsequently pays the amount due, including interest pursuant to Sub-Clause 60.10, the Contractor's entitlement under Sub-Clause 69.1 shall, if notice of termination has not been given, lapse and the Contractor shall resume normal working as soon as is reasonably possible.

**Changes in Cost and Legislation**



**70.1 Increase or Decrease of Cost**

There shall be added to or deducted from the Contract Price such sums in respect of rise or fall in the cost of labour and/or materials or any other matters affecting the cost of the execution of the Works as may be determined in accordance with part II of these Conditions.

**70.2 Subsequent Legislation**

If, after the date 28 days prior to the latest date for submission of tenders for the Contract there occur in the country in which the Works are being or are to be executed changes to any National or State Statute, Ordinance, Decree or other Law or any regulation or bye-law of any local or other duly constituted authority, or the introduction of any such State Statute, Ordinance, Decree, Law, regulation or bye-law which causes additional or reduced cost to the Contractor, other than under Sub-Clause 70.1, in the execution of the Contract, such additional or reduced cost shall, after due consultation with the Employer and the Contractor, be determined by the Engineer and shall be added to or deducted from the Contract Price and the Engineer shall notify the Contractor accordingly, with a copy to the Employer.

**Currency and Rates of Exchange****71.1 Currency Restrictions**

If, after the date 28 days prior to the latest date for submission of tenders for the Contract, the Government or authorized agency of the Government of the country in which the Works are being or are to be executed imposes currency restrictions and/or transfer of currency restrictions in relation to the currency or currencies in which the Contract Price is to be paid, the Employer shall reimburse any loss or damage to the Contractor arising therefrom, without prejudice to the right of the Contractor to exercise any other rights or remedies to which he is entitled in such event.

**72.1 Rates of Exchange**

Where the Contract provides for payment in whole or in part to be made to the Contractor in foreign currency or currencies, such payment shall not be subject to variations in the rate or rates of exchange between such specified foreign currency or currencies and the currency of the country in which the Works are to be executed.

**72.2 Currency Proportions**

Where the Employer has required the Tender to be expressed in a single currency but with payment to be made in more than one currency and the Contractor has stated the proportions or amounts of other currency or currencies in which he requires payment to be made, the rate or rates of

exchange applicable for calculating the payment of such proportions or amounts shall, unless otherwise stated in Part II of these Conditions, be those prevailing, as determined by the Central Bank of the country in which the Works are to be executed, on the date 28 days prior to the latest date for the submission of tenders for the Contract, as has been notified to the Contractor by the Employer prior to the submission of tenders or as provided for in the Tender.

**72.3 Currencies of Payment for Provisional Sums**

Where the Contract provides for payment in more than one currency, the proportions or amounts to be paid in foreign currencies in respect of Provisional Sums shall be determined in accordance with the principles set forth in Sub-Clauses 72.1 and 72.2 as and when these sums are utilised in whole or in part in accordance with the provisions of Clauses 58 and 59.

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## PART II - PARTICULAR CONDITIONS OF CONTRACT

### 1.1 Definitions

(a) (i) The Employer is **The Shaikh Ayaz University, Shikarpur**

(a) (iv) The \_\_\_\_\_ Engineer \_\_\_\_\_ is

\_\_\_\_\_, or any other competent person appointed by the Employer, 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) “Bidder or Tenderer” means any person or persons, company, corporation, firm or joint venture submitting a Bid or Tender.

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

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

The following paragraph is added:

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

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

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

### 2.1 Engineer's Duties and Authority

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

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

- (i) Consenting to the sub-letting of any part of the Works under Sub-Clause 4.1 “Subcontracting”.
- (ii) Certifying additional cost determined under Sub-Clause 12.2 “Not Foreseeable Physical Obstructions or Conditions”.

- (iii) Any action under Clause 10 “Performance Security” and Clauses 21,23,24 & 25 “Insurance” of sorts.
- (iv) Any action under Clause 40 “Suspension”.
- (v) Any action under Clause 44 “Extension of Time for Completion”.
- (vi) Any action under Clause 47 “Liquidated Damages for Delay” or Payment of Bonus for Early Completion of Works (PCC Sub-Clause 47.3).
- (vii) Issuance of “Taking Over Certificate” under Clause 48.
- (viii) Issuing a Variation Order under Clause 51, except:
  - a) in an emergency\* situation, as stated herebelow, 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: Employer 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 Employer.)

## **2.2 Engineer’s Representative**

The following paragraph is added:

The Employer 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 Employer intends to replace the Engineer, the Employer 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 Employer shall not replace the Engineer with a person against whom the Contractor raises reasonable objection by notice to the Employer, 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:

- (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) Special Provisions
- (h) Appendices to Bid (B to L),
- (i) The Priced Bill of Quantities
- (j) The Specifications, Technical Provisions
- (k) The Drawings

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 text is deleted and substituted with the following:

The Contractor shall provide Performance Security to the Employer in the prescribed form. The said Security shall be furnished or caused to be furnished by the Contractor within 14 days after the receipt of the Letter of Acceptance. The Performance Security shall be of an amount equal up to 10% of the Contract Price stated in the Letter of Acceptance. Such Security shall be in the form of bank guarantee from any Scheduled Bank in Pakistan

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 14 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.  
(Employer to select appropriate one)

**14.3 Cash Flow Estimate to be Submitted**

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

The following Sub-Clause 14.5 is added:

**14.5 Detailed Program and Monthly Progress Report**

- a) For purposes of Sub-Clause 14.1, the Contractor shall submit to the Engineer detailed Program for the following:
  - (1) Execution of Works.
  - (2) Labour Employment.
  - (3) Local Material Procurement.
  - (4) Material Imports, if any; and
  - (5) Other details as required by the Engineer.
- (b) During the period of the Contract, the Contractor shall submit to the Engineer not later than the 8<sup>th</sup> day of the following month, 10 copies each of Monthly Progress Reports covering:
  - (1) A Construction Schedule indicating the monthly progress in percentage.
  - (2) Description of all work carried out since the last report.
  - (3) Description of the work planned for the next 56 days sufficiently detailed to enable the Engineer to determine his Program of inspection and testing.
  - (4) Monthly summary of daily job record.
  - (5) Photographs to illustrate progress; and
  - (6) Information about problems and difficulties encountered, if any, and proposals to overcome the same.
- (c) During the period of the Contract, the Contractor shall keep a daily record of the work progress, which shall be made available to the Engineer as and when requested. The daily record shall include particulars of weather conditions, number of men working, deliveries of materials, quantity, location and assignment of Contractor's equipment.

The following Sub-Clauses 15.2 and 15.3 are added:

**15.2 Language Ability of Contractor's Representative**

The Contractor's authorised 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.

### **15.3 Contractor's Representative**

The Contractor's authorised representative and his other professional engineers working at Site shall register themselves with the Pakistan Engineering Council.

The Contractor's authorised representative at Site shall be authorised 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.

### **16.4 Employment of Local Personnel**

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

The following Sub-Clauses 19.3 is added:

### **19.3 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 Employer's Risks**

The Employer's risks are:

Delete the text and substitute with the following:

- (a) insofar as they directly affect the execution of the Works in Pakistan:
  - (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 Employer 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**

The text is deleted and substituted with the following:

There shall be no obligation for the insurances in Sub-Clause 21.1 to include loss or damage caused by the risks listed under Sub-Clause 20.4 paras (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 Employer.

Costs of such insurances shall be borne by the Contractor.

The following Sub-Clause 31.3 is added:

#### **31.3 Co-operation with other Contractors**

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

The following Sub-Clauses 34.2 to 34.12 are added:

**34.2 Rates of Wages and Conditions of Labour**

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

**34.3 Employment of Persons in the Service of Others**

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

**34.4 Housing for Labour**

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

**34.5 Health and Safety**

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

**34.6 Epidemics**

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

**34.7 Supply of Water**

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

**34.8 Alcoholic Liquor or Drugs**

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

**34.9 Arms and Ammunition**

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

**34.10 Festivals and Religious Customs**

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

**34.11 Disorderly Conduct**

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

**34.12 Compliance by Subcontractors**

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

The following Sub-Clauses 35.2 and 35.3 are added:

**35.2 Records of Safety and Health**

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

**35.3 Reporting of Accidents**

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

The following Sub-Clause 36.6 is added:

**36.6 Use of Pakistani Materials and Services**

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

**41.1 Commencement of Works**

The text is deleted and substituted with the following:

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

The following Sub-Clause 47.3 is added:

**47.3 Bonus for Early Completion of Works**

No bonus for early completion of work

**48.2 Taking Over of Sections or Parts**

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

**51.2 Instructions for Variations**

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

**52.1 Valuation of Variations**

In the tenth line, after the words "Engineer shall" the following is added: within a period not exceeding one-eighth of the completion time subject to a minimum of 56 days from the date of disagreement whichever is later.

**53.4 Failure to Comply**

This Sub-Clause is deleted in its entirety.

**54.3 Customs Clearance**

The following text is added:

However, all the expenses and activities related to custom clearance is responsibility of the Contractor

**54.5 Conditions of Hire of Contractor's Equipment**

The following paragraph is added:

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

The following Sub-Clauses 59.4 & 59.5 are added:

#### **59.4 Payments to Nominated Subcontractors**

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

#### **59.5 Certification of Payments & Nominated Subcontractors**

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

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

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

#### **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-Clause 60.11 (a)(6) hereof".  
(In case Clause 60.11 is applicable)

#### **60.10 Time for Payment**

The text is deleted and substituted with the following:



The amount due to the Contractor under any Interim Payment Certificate issued by the Engineer pursuant to this Clause, or to any other terms of the Contract, shall , subject to Clause 47, be paid by the Employer to the Contractor within 30 days after such Interim Payment Certificate has been jointly verified by Consultant/Employer and Contractor, or, in the case of the Final Certificate referred to in Sub Clause 60.8, within 60 days after such Final Payment Certificate has been jointly verified by Consultant/Employer and Contractor.

The following Sub-Clause 60.11, 60.12 & 60.13 is added:

#### **60.11 Secured Advance on Materials**

- a) The Contractor shall be entitled to receive from the Employer Secured Advance against an indemnity bond acceptable to the Employer of such sum as the Engineer may consider proper in respect of non-perishable materials brought at the Site but not yet incorporated in the Permanent Works provided that:
  - (1) The materials are in accordance with the Specifications for the Permanent Works.
  - (2) Such materials have been delivered to the Site and are properly stored and protected against loss or damage or deterioration to the satisfaction of the Engineer but at the risk and cost of the Contractor.
  - (3) The Contractor's records of the requirements, orders, receipts and use of materials are kept in a form approved by the Engineer, and such records shall be available for inspection by the Engineer.
  - (4) The Contractor shall submit with his monthly statement the estimated value of the materials on Site together with such documents as may be required by the Engineer for the purpose of valuation of materials and providing evidence of ownership and payment therefor.
  - (5) Ownership of such materials shall be deemed to vest in the Employer and these materials shall not be removed from the Site or otherwise disposed of without written permission of the Employer; and
  - (6) The sum payable for such materials on Site shall not exceed 75 % of the (i) landed cost of imported materials, or (ii) ex-factory / ex-warehouse price of locally manufactured or produced materials, or (iii) market price of other materials.
- (b) The recovery of Secured Advance paid to the Contractor under the above provisions shall be affected from the monthly payments on actual consumption basis or within 90 days.

#### **60.12 Financial Assistance to Contractor**

**Mobilization Advance**

- (a) An interest-free Mobilization Advance up to 10 % of the Contract Price stated in the Letter of Acceptance shall be paid by the Employer to the Contractor in two equal parts upon submission by the Contractor of a Mobilization Advance Guarantee/Bond 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 four equal instalments from first four IPCs.

**60.13 Mode of Payment**

The payments shall be released by the Employer to the Contractor, at Employer's choice, either in the form of Cheque/(s) drawn in the favour of the Contractor or in the form of Irrevocable Inland Letter of Credit (LC) opened in the favour of Contractor. If letter of credit is opened in favour of contractor, the cost (commission and bank charges) of L/C shall be the responsibility of the Contractor

**63.1 Default of Contractor**

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

Provided further that in addition to the action taken by the Employer against the Contractor under this Clause, the Employer 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 Byelaws 1987, as amended from time to time.

**65.2 Special Risks**

The text is deleted and substituted with the following:

The Special Risks are the risks defined under Sub-Clause 20.4 sub paragraphs (a) (i) to (a) (v).

**67.3 Arbitration**

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

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

The following paragraph is added:

The place of arbitration shall be Shikarpur, Pakistan.

#### **68.1 Notice to Contractor**

The following paragraph is added:

For the purposes of this Sub-Clause, the Contractor shall, immediately after receipt of Letter of Acceptance, intimate in writing to the Employer 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.

#### **68.2 Notice to Employer and Engineer**

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

a) The Employer:

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b) The Engineer:

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#### **70.1 Increase or Decrease of Cost**

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

Price adjustment is not applicable to this project.

#### **71.0 Currency and Rates of Exchange**

Sub-Clauses 71.1, 72.1, 72.2 and 72.3 are deleted entirely and substituted with the following:

Contract is based on Pakistani Rupees (PKR) and payments will be made only in Pakistani Rupees (PKR)

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

#### **73.1 Payment of Income Tax**

The Contractor, Subcontractors and their employees shall be responsible for payment of all their income tax, super tax and other taxes on income arising out of the Contract and the rates and prices stated in the Contract shall be deemed to cover all such taxes as per prevailing laws.

#### **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 Employer 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 Employer 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 Employer under Sub-Para (a) and (c) of this Sub-Clause.

#### **75.1 Termination of Contract for Employer's Convenience**

The Employer shall be entitled to terminate the Contract at any time for the Employer'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 Employer as provided in Sub-Clause 65.8 hereof.

#### **76.1 Liability of Contractor**

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

#### **77.1 Joint and Several Liability**

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

#### **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 Employer or the Engineer. If any dispute arises as to the necessity of any publication or disclosure for the purpose of the Contract, the same shall be referred to the decision of the Engineer whose award shall be final.

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**THE SHAIKH AYAZ UNIVERSITY,**  
**SHIKARPUR**



**CONSTRUCTION OF VICE CHANCELLOR  
RESIDENCE FOR THE PROJECT TITLED  
“PROVISION OF MISSING FACILITIES FOR  
THE SHAIKH AYAZ UNIVERSITY  
SHIKARPUR”**

**TENDER DOCUMENTS  
CONDITIONS OF CONTRACT**

**April, 2022**

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These Tender/Bid Documents are issued to M/s

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\_\_\_\_\_ for bidding purpose for the

**CONSTRUCTION OF VICE CHANCELLOR RESIDENCE  
FOR THE PROJECT TITLED “PROVISION OF MISSING  
FACILITIES FOR THE SHAIKH AYAZ UNIVERSITY  
SHIKARPUR”** as per Instructions to bidders, Conditions of  
Contract, Technical Specifications, Bill of Quantities, Drawings  
and Special Stipulations.

Dated:-

**INVITATION  
FOR  
BIDS**

1. The Shaikh Ayaz University, Shikarpur is the prestigious Institution imparting education invite Single Stage - One Envelope sealed tenders, on percentage/item rate basis bids for the work of **Construction of Vice Chancellor Residence for the project titled “ Provision of missing facilities for The Shaikh Ayaz University Shikarpur”** tabulated hereunder, from the Contractors / Firms registered with Income Tax (who are Active on Taxpayers List & non-defaulter of Federal Board of Revenue & Sindh Board of Revenue), Contractor/Firms not black listed, having valid/active Electric License & having valid license of Pakistan Engineering Council, appropriate category & field of specialized PEC Codes mentioned below.

2. A complete set of Bidding Documents containing required details, may be purchased by an interested eligible bidder on submission of a written application supported with requisite documents from the office of the undersigned from **Date of Publication** up to **23<sup>rd</sup> May 2022** in office hours upon payment of a non-refundable fee of Rs: 3,000/- in favor of Project titled **“Provision of Missing Facilities for The Shaikh Ayaz University” Shikarpur** in shape of pay order. Bidding documents can also be downloaded from: [www.saus.edu.pk](http://www.saus.edu.pk) free of cost.

3. Bidders will submit one sealed envelope; the sealed bids shall comprise a single sealed envelope. Each sealed envelope shall contain separately the financial proposal and technical proposal as procedures specified in the PPRA rules. The company profile containing proof of relevant experience, annual turn-over of last three years, and registration with PEC or other authorities wherever applicable and information regarding litigation with government agencies, affidavit of not being blacklisted.

The financial proposal and technical proposal shall be opened at a same time, date and venue announced and communicated to the bidders in advance. The submission of bids to the office of the undersigned on or before 24-05-2022 up to 10:00 am, “FINANCIAL PROPOSAL” and “TECHNICAL PROPOSAL” will be opened at 10:30 p.m. on the same day in the presence of participants (who may choose to attend).

4. In accordance with PPRA Rule-25; Bid Security i.e., 2% of the estimated cost is required, in shape of CDR, Bank Draft in favor of Project titled **“Provision of Missing Facilities for The Shaikh Ayaz University”, Shikarpur**.

5. Following are details of work:

S.NO.	NAME OF WORK	ESTIMATED COST (Million)	PEC Category	Completion Period	PEC Codes
1.	Construction of Vice Chancellor Residence for the project titled “ Provision of missing facilities for The Shaikh Ayaz University Shikarpur”	22.723	C-5 or above.	12 Months	CE-09, CE-10, EE-04, EE-06,

6. No bidding document will be issued on the day of opening. The competent authority in accordance with PPRA Rule-33 may reject all bids / proposals at any time prior to the acceptance of a bid or proposal. Other terms and conditions in the bidding documents will apply mutatis mutandis. This advertisement is also available at [www.ppra.org.pk](http://www.ppra.org.pk).

**Engr. Abdul Ghani**  
**Project Director PMF TSAUS**  
**Address: The Shaikh Ayaz University, Shikarpur**  
**Ph: +92-726-920371 Email: ghanislaus@gmail.com**

# **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 Employer as defined in the Bidding Data hereinafter called “the Employer” wishes to receive bids for the construction and completion of works as described in these Bidding Documents and summarized in the Bidding Data hereinafter referred to as the “Works”.
- 1.2 The successful bidder will be expected to complete the Works within the time specified in Appendix-A to Bid.

#### **IB.2 Source of Funds**

- 2.1 PSDP Funded HEC Project.

#### **IB.3 Eligible Bidders**

- 3.1 This Invitation for Bids is open to all bidders meeting the following mandatory requirements:
  - Contractors / Firms registered with Income Tax (who are Active on Taxpayers List & non-defaulter of Federal Board of Revenue & Sindh Board of Revenue).
  - Contractors/Firms have No litigation history.
  - Contractor/Firms No blacklisted.
  - Valid/active registration certificate of Pakistan Engineering Council (PEC) in the category C-5 or above and at least specialization in PEC codes CE-09, CE-10, EE-04, EE-06 is mandatory.

#### **IB.4 One Bid per Bidder**

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

#### **IB.5 Cost of Bidding**

- 5.1 The bidders shall bear all costs associated with the preparation and submission of their respective bids and the Employer 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 construction of the Works. All cost in this respect shall be at the bidder's own expense.
- 6.2 The bidders and any of their personnel or agents will be granted permission by the Employer 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 Employer, 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. Form of Bid & Appendices to Bid.
  - 6. Bill of Quantities (Appendix-D to Bid).
  - 7. Form of Bid Security.
  - 8. Form of Contract Agreement.
  - 9. Forms of Performance Security and Mobilization Advance Guarantee/Bond.
  - 10. Drawings.
- 7.2 The bidders are expected to carefully examine the contents of all the above documents. Failure to comply with the requirements of bid submission will be at the Bidder's own risk. Pursuant to Clause IB.26, bids which are not substantially responsive to the requirements of the Bidding Documents will be rejected.

**IB.8 Clarification of Bidding Documents**

- 8.1 Any prospective bidder requiring any clarification (s) in respect of the Bidding Documents may notify the Employer in writing at the Employer's address indicated in the Invitation for Bids. The Employer will respond to any request for clarification which he receives earlier than 07 days prior to the deadline for submission of bids.

Copies of the Employer's response will be forwarded to 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 Employer may, for any reason, whether at his own initiative or in response to a clarification requested by a prospective bidder, modify the Bidding Documents by issuing addendum.
- 9.2 Any addendum thus issued shall be part of the Bidding Documents pursuant to Sub-Clause 7.1 hereof and shall be communicated in writing to all purchasers of the Bidding Documents. Prospective bidders shall acknowledge receipt of each addendum in writing to the Employer.
- 9.3 To afford prospective bidders reasonable time in which to take an addendum into account in preparing their bids, the Employer may extend the deadline for submission of bids in accordance with Clause IB.20

### **C. PREPARATION OF BIDS**

#### **IB.10 Language of Bid**

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

#### **IB.11 Documents Accompanying the Bid**

- 11.1 Each bidder shall:
  - (a) Submit a written power of attorney authorizing the signatory of the bid to act for and on behalf of the bidder.
  - (b) Update the information indicated and listed in the Bidding Data and to meet the minimum criteria set out in this bidding 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.
- (iv) Current litigation information; and
- (v) Availability of critical equipment.

and

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

Appendix-E to Bid	Proposed Construction Schedule
Appendix-F to Bid	Method of Performing the Work
Appendix-G to Bid	List of Major Equipment
Appendix-K to Bid	Organization Chart for Supervisory Staff

 and other pertinent information such as mobilization program etc.

11.2 Bids submitted by a joint venture of two (2) or more firms shall comply with the following requirements:

- (a) the bid and in case of a successful bid, the Form of Contract Agreement shall be signed so as to be legally binding on all partners.
- (b) one of the joint venture partners shall be nominated as being in charge; and this authorization shall be evidenced by submitting a power of attorney signed by legally authorized signatories of all the joint venture partners.
- (c) the partner-in-charge shall always be duly authorized to deal with the Employer regarding all matters related with and/or incidental to the execution of Works as per the terms and Conditions of Contract and in this regard to incur any and all liabilities, receive instructions, give binding undertakings and receive payments on behalf of the joint venture.
- (d) all partners of the joint venture shall at all times and under all circumstances be liable jointly and severally for the execution of the Contract in accordance with the Contract terms and a statement to this effect shall be included in the authorization mentioned under Sub-Para (b) above as well as in the Form of Bid and in the Form of Contract Agreement (in case of a successful bid); and
- (e) a copy of the agreement entered into by the joint venture partners shall be submitted with the bid stating the conditions under which it will function, its period of duration, the persons authorized to represent and obligate it and which persons will be directly responsible for due performance of the Contract and can give valid receipts on behalf of the joint venture, the proportionate participation of the several firms forming the joint venture, and any other information necessary to permit a full appraisal of its functioning. No amendments / modifications whatsoever in the joint venture agreement shall be agreed to between the joint venture partner without prior written consent of the Employer.

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

**IB.12 Bid Prices**

- 12.1 Unless stated otherwise in the Bidding Documents, the Contract shall be for the whole of the Works as described in Sub-Clause 1.1 hereof, based on the unit rates and / or prices submitted by the bidder.
- 12.2 The bidders shall fill in rates and prices for all items of the Works described in the Bill of Quantities. Items against which no rate or price is entered by a bidder will not be paid for by the Employer when executed and shall be deemed covered by rates and prices for other items in the Bill of Quantities.
- 12.3 All duties, taxes and other levies payable by the Contractor under the Contract, or for any other cause, as on the date 07 days prior to the deadline for submission of bids shall be included in the rates and prices and the total Bid Price submitted by a bidder.
- Additional / reduced duties, taxes and levies due to subsequent additions or changes in legislation shall be reimbursed / deducted as per Sub-Clause 70.2 of the General Conditions of Contract Part-I.
- 12.4 The rates and prices quoted by the bidders are subject to adjustment during the performance of the Contract in accordance with the provisions of Clause 70 of the Conditions of Contract. The bidders shall furnish the prescribed information for the price adjustment formulae in Appendix-C to Bid and shall submit with their bids such other supporting information as required under the said Clause.

**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.
- 13.2 N/A.

**IB.14 Bid Validity**

- 14.1 Bids shall remain valid for the period stipulated in the Bidding Data after the Date of Bid Opening specified in Clause IB.23.
- 14.2 In exceptional circumstances, prior to expiry of the original bid validity period, the Employer may request that the bidders extend the period of validity for a specified additional period which shall in no case be more than the original bid validity period. The request and the responses thereto shall be made in writing. A bidder may refuse the request without forfeiting his Bid Security. A bidder agreeing to the request will not be required or permitted to modify his bid but will be required to extend the validity of his Bid Security for the period of the extension, and in compliance with Clause IB.15 in all respects.

**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.
- 15.2 The Bid Security shall be, at the option of the bidder, in the form of Deposit at Call or a Pay Order and Demand Draft.
- 15.3 Any bid not accompanied by an acceptable Bid Security shall be rejected by the Employer as non-responsive.
- 15.4 The bid securities of unsuccessful bidders will be returned as promptly as possible, but not later than 28 days after the expiration of the period of Bid Validity.
- 15.5 The Bid Security of the successful bidder will be returned when the bidder has furnished the required Performance Security and signed the Contract Agreement.
- 15.6 The Bid Security may be forfeited:
  - (a) if the bidder withdraws his bid except as provided in Sub-Clause 22.1.
  - (b) if the bidder does not accept the correction of his Bid Price pursuant to Sub-Clause 27.2 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 Alternate Proposals by Bidder**

- 16.1 Should any bidder consider that he can offer any advantages to the Employer by a modification to the designs, specifications or other conditions, he may, in addition to his bid to be submitted in strict compliance with the Bidding Documents, submit any Alternate Proposal(s) containing (a) relevant design calculations; (b) technical specifications; (c) proposed construction methodology; and (d) any other relevant details / conditions, provided always that the total sum entered on the Form of Bid shall be that which represents complete compliance with the Bidding Documents. The technical details and financial implication involved are to be submitted in a sealed envelope as to be followed in main bid proposals.
- 16.2 Alternate Proposal(s), if any, of the lowest evaluated responsive bidder only may be considered by the Employer as the basis for the award of Contract to such bidder.

#### **IB.17 Pre-Bid Meeting**

- 17.1 The Employer 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. The date, time and venue of pre-bid meeting, if convened, is as stipulated in the Bidding Data. All prospective bidders or their authorized representatives shall be invited to attend such a pre-bid meeting.
- 17.2 The bidders are requested to submit questions, if any, in writing so as to reach the Employer not later than seven (7) days before the proposed pre-bid meeting.
- 17.3 Minutes of the pre-bid meeting, including the text of the questions raised and the replies given, will be transmitted without delay to all purchasers of the Bidding Documents. Any modification of the Bidding Documents listed in Sub-Clause 7.1 hereof which may become necessary as a result of the pre-bid meeting shall be made by the Employer exclusively through the issue of an Addendum pursuant to Clause IB.9 and not through the minutes of the pre-bid meeting.
- 17.4 Absence at the pre-bid meeting will not be a cause for disqualification of a bidder.

**IB.18 Format and Signing of Bid**

- 18.1 Bidders are particularly directed that the amount entered on the Form of Bid shall be for performing the Contract strictly in accordance with the Bidding Documents.
- 18.2 All appendices to Bid are to be properly completed and signed.
- 18.3 No alteration is to be made in the Form of Bid nor in the Appendices thereto except in filling up the blanks as directed. If any such alterations be made or if these instructions be not fully complied with, the bid may be rejected.
- 18.4 Each bidder shall prepare by filling out the forms completely and without alterations one (1) original and number of copies, specified in the Bidding Data, of the documents comprising the bid as described in Clause IB.7 and clearly mark them "ORIGINAL" and "COPY" as appropriate. In the event of discrepancy between them, the original shall prevail.
- 18.5 The original and all copies of the bid shall be typed or written in indelible ink (in the case of copies, Photostats are also acceptable) and shall be signed by a person or persons duly authorized to sign on behalf of the bidder pursuant to Sub- Clause 11.1(a) hereof. All pages of the bid shall be initialed and stamped by the person or persons signing the bid.
- 18.6 The bid shall contain no alterations, omissions, or additions, except to comply with instructions issued by the Employer, or as are necessary to correct errors made by the bidder, in which case such corrections shall be initialed by the person or persons signing the bid.
- 18.7 Bidders shall indicate in the space provided in the Form of Bid their full and proper addresses at which notices may be legally served on them and to which all correspondence in connection with their bids and the Contract is to be sent.
- 18.8 Bidders should retain a copy of the Bidding Documents as their file copy.

**D. SUBMISSION OF BIDS****IB.19 Sealing and Marking of Bids**

- 19.1 Each bidder shall submit his bid as under:
  - (a) ORIGINAL and each copy of the Bid shall be separately sealed and put in separate envelopes and marked as such.
  - (b) The envelopes containing the ORIGINAL and copies will be put in one sealed envelope and addressed / identified as given in Sub- Clause 19.2 hereof.



19.2 The inner and outer envelopes shall:

- (a) Be addressed to the Employer at the address provided in the Bidding Data.
- (b) Bear the name and identification number of the contract as defined in the Bidding Data; and
- (c) Provide a warning not to open before the time and date for bid opening, as specified in the Bidding Data.

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

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

Note: Bidders are advised to read, understand and fill the unit rate, amount & unit of BOQ items carefully, Procuring Agency/Executing Agency no case shall be responsible for any claim after the award of contract.

## **IB.20 Deadline for Submission of Bids**

- 20.1 (a) Bids must be received by the Employer at the address specified no later than the time and date stipulated in the Bidding Data.
  - (b) Bids with charges payable will not be accepted, nor will arrangements be undertaken to collect the bids from any delivery point other than that specified above. Bidders shall bear all expenses incurred in the preparation and delivery of bids. No claims will be entertained for refund of such expenses.
  - (c) Where delivery of a bid is by mail and the bidder wishes to receive an acknowledgment of receipt of such bid, he shall make a request for such acknowledgment in a separate letter attached to but not included in the sealed bid package.
  - (d) Upon request, acknowledgment of receipt of bids will be provided to those making delivery in person or by messenger.
- 20.2 The Employer 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 Employer and the bidders previously subject to the original deadline will thereafter be subject to the deadline as extended.

**IB.21 Late Bids**

- 21.1 (a) Any bid received by the Employer after the deadline for submission of bids prescribed in Clause IB.20 will be returned unopened to such bidder.
- (b) Delays in the mail, delays of person in transit, or delivery of a bid to the wrong office shall not be accepted as an excuse for failure to deliver a bid at the proper place and time. It shall be the bidder's responsibility to determine the manner in which timely delivery of his bid will be accomplished either in person, by messenger or by mail.

**IB.22 Modification, Substitution and Withdrawal of Bids**

- 22.1 Any bidder may modify, substitute or withdraw his bid after bid submission provided that the modification, substitution or written notice of withdrawal is received by the Employer prior to the deadline for submission of bids.
- 22.2 The modification, substitution, or notice for withdrawal of any bid shall be prepared, sealed, marked and delivered in accordance with the provisions of Clause IB.19 with the outer and inner envelopes additionally marked "MODIFICATION", "SUBSTITUTION" or "WITHDRAWAL" as appropriate.
- 22.3 No bid may be modified by a bidder after the deadline for submission of bids except in accordance with Sub-Clauses 22.1 and 27.2.
- 22.4 Withdrawal of a bid during the interval between the deadline for submission of bids and the expiration of the period of bid validity specified in the Form of Bid may result in forfeiture of the Bid Security in pursuance to Clause IB.15.

**E. BID OPENING AND EVALUATION****IB.23 Bid Opening**

- 23.1 The Employer will open the bids, including withdrawals, substitution and modifications made pursuant to Clause IB.22, in the presence of bidders' representatives who choose to attend, at the time, date and location stipulated in the Bidding Data. The bidders' representatives who are present shall sign a register evidencing their attendance.
- 23.2 Envelopes marked "MODIFICATION", "SUBSTITUTION" or "WITHDRAWAL" shall be opened and read out first. Bids for which an acceptable notice of withdrawal has been submitted pursuant to Clause IB.22 shall not be opened.
- 23.3 The bidder's name, total Bid Price and price of any Alternate Proposal(s), any discounts, bid modifications, substitution and withdrawals, the presence or absence of Bid Security, and such other details as the Employer may consider appropriate, will be announced by the Employer at the opening of bids.

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

#### **IB.24 Process to be Confidential**

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

#### **IB.25 Clarification of Bids**

- 25.1 To assist in the examination, evaluation and comparison of bids, the Employer 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 Employer in the evaluation of the bids in accordance with Clause IB.28.

#### **IB.26 Examination of Bids and Determination of Responsiveness**

- 26.1 Prior to the detailed evaluation of bids, the Employer will determine whether each bid is substantially responsive to the requirements of the Bidding Documents.
- 26.2 A substantially responsive bid is one which (i) meets the eligibility criteria; (ii) has been properly signed; (iii) is accompanied by the required Bid Security; and (iv) conforms to all the terms, conditions and specifications of the Bidding Documents, without material deviation or reservation. A material deviation or reservation is one (i) which affect in any substantial way the scope, quality or performance of the Works; (ii) which limits in any substantial way, inconsistent with the Bidding Documents, the Employer'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.

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

#### **IB.27 Correction of Errors**

- 27.1 Bids determined to be substantially responsive will be checked by the Employer for any arithmetic errors. Errors will be corrected by the Employer as follows:
- (a) Where there is a discrepancy between the amounts in figures and in words, the amount in words will govern; and
  - (b) where there is a discrepancy between the unit rate and the line-item total resulting from multiplying the unit rate by the quantity, the unit rate as quoted will govern, unless in the opinion of the Employer there is an obviously gross misplacement of the decimal point in the unit rate, in which case the line-item total as quoted will govern and the unit rate will be corrected.
- 27.2 The amount stated in the Form of Bid will be adjusted by the Employer in accordance with the above procedure for the correction of errors and with the concurrence of the bidder, shall be considered as binding upon the bidder. If the bidder does not accept the corrected Bid Price, his Bid will be rejected, and the Bid Security shall be forfeited in accordance with Sub- Clause 15.6(b) hereof.

#### **IB.28 Evaluation and Comparison of Bids**

- 28.1 The Employer will evaluate and compare only the Bids determined to be substantially responsive in accordance with Clause IB.26.
- 28.2 In evaluating the Bids, the Employer will determine for each Bid the evaluated Bid Price by adjusting the Bid Price as follows:
- (a) Making any correction for errors pursuant to Clause IB.27.
  - (b) excluding Provisional Sums and the provision, if any, for contingencies in the Summary Bill of Quantities, but including competitively priced Daywork; and
  - (c) Making an appropriate adjustment for any other acceptable variation or deviation.
- 28.3 The estimated effect of the price adjustment provisions of the Conditions of Contract, applied over the period of execution of the Contract, shall not be taken into account in Bid evaluation.

- 28.4 If the Bid of the successful bidder is seriously unbalanced in relation to the Employer's estimate of the cost of work to be performed under the Contract, the Employer 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 Employer 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 Employer against financial loss in the event of default of the successful bidder under the Contract.

## **F. AWARD OF CONTRACT**

### **IB.29 Award**

- 29.1 Subject to Clauses IB.30 and IB.34, the Employer will award the Contract to the bidder whose bid has been determined to be substantially responsive to the Bidding Documents and who has offered the lowest evaluated Bid Price, provided that such bidder has been determined to be eligible in accordance with the provisions of Clause IB.3 and qualify pursuant to Sub-Clause IB 29.2.
- 29.2 The Employer, 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 therefor in writing. They shall form part of the records of that bid evaluation report.

### **IB.30 Employer's Right to accept any Bid and to reject any or all Bids**

- 30.1 Notwithstanding Clause IB.29, the Employer 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.31 Notification of Award**

- 31.1 Prior to expiration of the period of bid validity prescribed by the Employer, the Employer will notify the successful bidder in writing ("Letter of Acceptance") that his Bid has been accepted. This letter shall name the sum which the Employer will pay the Contractor in consideration of the execution and completion of the Works by the Contractor as prescribed by the Contract (hereinafter and in the Conditions of Contract called the "Contract Price").
- 31.2 No Negotiation with the bidder having evaluated as lowest responsive or any other bidder shall be permitted, however, Employer may have clarification meetings to get clarify any item in the bid evaluation report.
- 31.3 The notification of award and its acceptance by the bidder will constitute the formation of the Contract, binding the Employer and the bidder till signing of the formal Contract Agreement.
- 31.3 Upon furnishing by the successful bidder of a Performance Security, the Employer will promptly notify the other bidders that their Bids have been unsuccessful and return their bid securities.

**IB.32 Performance Security**

- 32.1 The successful bidder shall furnish to the Employer a Performance Security in the form and the amount stipulated in the Bidding Data and the Conditions of Contract within a period of 28 days after the receipt of Letter of Acceptance.
- 32.2 Failure of the successful bidder to comply with the requirements of Sub-Clause IB.32.1 or Clauses IB.33 or IB.35 shall constitute sufficient grounds for the annulment of the award and forfeiture of the Bid Security.

**IB.33 Signing of Contract Agreement**

- 33.1 Within 14 days from the date of furnishing of acceptable Performance Security under the Conditions of Contract, the Employer will send the successful bidder the Contract Agreement in the form provided in the Bidding Documents, incorporating all agreements between the parties.
- 33.2 The formal Agreement between the Employer and the successful bidder shall be executed within 14 days of the receipt of the Contract Agreement by the successful bidder from the Employer.

**IB.34 General Performance of the Bidders**

The Employer reserves the right to obtain information regarding performance of the bidders on their previously awarded contracts/works. The Employer may in case of consistent poor performance of any Bidder as reported by the employers of the previously awarded contracts, interalia, reject his bid and/or refer the case to the Pakistan Engineering Council (PEC). Upon such reference, PEC 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 blacklisting of such Bidder and debarring him from participation in future bidding for similar works.

**IB.35 Integrity Pact**

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

**IB.36 Instructions not Part of Contract**

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

# **BIDDING DATA**



## BIDDING DATA

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.

### 1.1 Name and address of the Employer:

The Shaikh Ayaz University, Shikarpur

Address: The Shaikh Ayaz University, Shikarpur

### 1.3 Name of the Project:

Construction of Vice Chancellor Residence for the project titled “Provision of missing facilities for The Shaikh Ayaz University Shikarpur”.

### 2.1 Name of the Borrower/Source of Financing/Funding Agency:

Public Sector Development Program (PSDP) Funded HEC Project.

### 2.2 Amount and type of financing:

Rs. 22.723 (M) Public Federal Financing.

### 3.1 Eligible Bidders

*Delete the text of clause 3.1(b) and replace with the following*

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

- Contractors / Firms registered with Income Tax (who are Active on Taxpayers List & non-defaulter of Federal Board of Revenue & Sindh Board of Revenue).
- Contractors/Firms have No litigation history.
- Contractor/Firms No blacklisted.
- Valid/active registration certificate of Pakistan Engineering Council (PEC) in the category C-5 or above and at least specialization in PEC codes CE-09, CE-10, EE-04, EE-06, is mandatory.
- Having Valid/active Electric License.

### 8.1 Time limits for clarification:

7 days before deadline of submission of bids

### 10.1 Bid language:

English.

### 11.1 Documents accompanying the Bid

*Delete the text of clause 11.1 (b) & (c) and replace with the following:*

The bid is being invited as per ‘**Single Stage - One Envelope**’ procedure. If the bidder fails to fulfill any of following mandatory requirements, his bid will be considered as nonresponsive and will be rejected.

1. The bid shall comprise a single package containing one envelope. Each envelope shall comprise of two parts, the financial proposal, and the company profile.
2. The envelope parts shall be marked as “**FINANCIAL PROPOSAL**” and “**TECHNICAL PROPOSAL**” in bold and legible letters to avoid confusion.
3. The ‘Technical Proposal’ must contain the following as per the requirements of this document and criteria mentioned in clause 28.1(iv) of bidding data:
  - a. Name of firm/contractor with year of establishment along with Postal Address and telephone number.
  - b. No. of project of similar nature and general works in hand and completed. (Details should be given as mentioned in clause 28.1(iv) of bidding data)
  - c. Registration/Clearance from FBR and SRB
  - d. Detail of Court cases if any/arbitration cases etc.
  - e. Enlistment with concerned Government Departments.
  - f. Detail of financial soundness.
  - g. Undertaking on judicial paper that the firm was never blacklisted by any Government, Semi Govt. Organization.
  - h. Copy of Valid Registration with Pakistan Engineering Council. Any additional information with documents in addition to the above that the firm might like to furnish in support of their application.
  - i. Appendix-E to Bid                      Proposed Construction Schedule
  - j. Appendix-F to Bid                      Method of Performing the Work
  - k. Appendix-H to Bid                      Construction camp and housing facilities
  - l. Appendix-I to Bid                      List of Subcontractors
  - m. Appendix-K to Bid                      Organization Chart of the Supervisory Staff and Labour
  - n. Appendix-L to Bid                      Integrity Pact
4. The “Financial proposal” must contain following documents:
  - a. Priced BOQ
  - Bid Security @ 2% of estimated amount in the form of Bank Draft/Call Deposit/Pay Order from any scheduled bank of Pakistan in favour of Project titled “**Provision of Missing Facilities for The Shaikh Ayaz University**”, Shikarpur

### 11.2 Joint Venture (JV)

Following text is added:

11.2.1 Joint Venture must comply with the following requirements: -

- a) Following are minimum technical requirements: -
  - i) The lead partner shall meet not less than 50 percent of all technical evaluation criteria given in clause 28.1(iv)

- ii) Each of the partners shall meet not less than 25 percent of all the technical evaluation criteria given in clause 28.1(iv)
  - iii) The joint venture must collectively satisfy the criteria of clause 28.1(iv) for which purpose the relevant figures for each of the partners shall be added together to arrive at the JV's total capacity.
  - b) Any change in technical bid of a JV after evaluation, shall be subject to the written approval of the Employer prior to the deadline for submission of bids. Such approval may be denied if: -
    - i) Partner(s) withdraw from a JV and remaining partners do not meet the technical requirements.
    - ii) The technical proposal of new partners to a JV are not accepted individually or as another JV; or
    - iii) In the opinion of the Employer, a substantial reduction in competition would result.
  - c) Bid shall be signed by all members in the JV so as to legally bind all partners, jointly and severally, and any bid shall be submitted with a copy of the JV agreement providing the joint and several liabilities with respect to the contract.
- 11.2.2 The acceptance of technical proposal of a JV does not necessarily make eligible any of its partners individually or as a partner in any other JV or association. In case of dissolution of a JV, technical proposal of each one of the constituent firms may be accepted if they meet all the technical requirements and any partner of JV has requested/shall request for the same and then the acceptance of his technical bid shall subject to the written approval of the Employer.

### **13.1 Currencies of Bid and Payment**

Bidders to quote entirely in Pak. Rupees

### **14.1 Period of Bid Validity:**

90 days.

### **15.1 Bid Security: &15.2**

Bid Security @ 2% of estimated amount in the form of Bank Draft/Call Deposit/Pay Order from any scheduled bank of Pakistan in favour Project titled “**Provision of Missing Facilities for The Shaikh Ayaz University**”, Shikarpur.

### **16.0 Alternate Proposals by Bidder**

*Delete the text of clause 16.1 & 16.2 and replace with the following*

No Alternate bid is allowed

**17.1 Venue, time, and date of the pre-Bid meeting:**

*Delete the text of clause 17.1 and replace with the following*

No Pre-Bid Meeting will be held.

**18.4 Number of copies of the Bid to be completed and returned:**

One original and one copy.

**19.2(a) Employer's address for the purpose of Bid submission:**

The Shaikh Ayaz University, Shikarpur  
Address: The Shaikh Ayaz University, Shikarpur

**19.2(b) Name and Number of the Contract:**

Construction of Vice Chancellor Residence for the project titled “Provision of missing facilities for The Shaikh Ayaz University Shikarpur”

**20.1(a) Deadline for submission of bids:**

Bids will be received till 10:00 am of 24-05-2022 in sealed envelope.

**23.1 Venue, time, and date of Bid opening:**

Bids will be open at 10:30 am of 24-05-2022 at the address mentioned in advertisement.

**28.1 Evaluation and Comparison of Bids:**

*Add following text to clause 28.1*

- i. The envelope parts shall be marked “**FINANCIAL PROPOSAL**” and “**TECHNICAL PROPOSAL**” shall be opened at a time, date & venue announced and communicated to the bidders in advance, within the bid validity period.
- ii.
- iii. The procuring agency shall evaluate the company profile in a manner prescribed in tender document.
- iv. The procuring agency shall open in the presence of intending tenderers the financial proposal, at the same time, date & venue.
- v. The financial proposal of bids found technically non-responsive shall be returned unopened to the respective bidders; and the lowest evaluated bidder shall be awarded the work.
- vi. Verification and up-to-date information: Procuring agency can verify the previous experience and financial statements made by the bidders in their bids.

vii. **Technical Evaluation Criteria**

Technical proposal of contractors will be evaluated as per following criteria:

Sr. No.	Category	Weightage/Marks
1.	Experience Record	35
2.	Personnel Capabilities	15
3.	Equipment Capabilities	20
4.	Financial Soundness	20
5.	Technical Capabilities	05
6.	HSE Statement	05
	<b>Total:</b>	<b>100</b>

*Note: Technical soundness shall be decided on the basis of Pass/Fail basis. The applicant must secure at least 50% score in each category and overall, 75% score.*

**Relevant Experience and PEC Requirement**

Sr. No.	Type of Work	PEC Requirement
1.	Building Works	(PEC) in the category C-5 or above and at least specialization in PEC codes CE-09, CE-10, EE-04, EE-06,

a. **General Experience**

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

Sr. No.	Description	Maximum Points
i)	3 projects of similar nature and complexity completed over last 10 years (5 points for each project of 25 million or above of building works, Projects below 25 million will be awarded zero marks). (Supporting documents including work order and completion certificate duly signed by respective clients are mandatory)	15
ii)	2 project of similar nature and complexity in hand (5 points for 1 project of 25 million or above of building works, Project below 25 million will be awarded zero marks). (Supporting documents including work order duly signed by respective clients are mandatory)	10
iii)	General experience of 3 projects completed over last 10-years (1 point for each project of 25 million or above of any type of civil work, Projects below 25 million will be awarded zero marks). (Supporting documents including work order and completion certificate duly signed by respective clients are mandatory)	5
iv)	Status of enlistment with Govt. Organization & other	5

	agencies (2.5 marks for each).	
	<b>Sub-total:</b>	<b>35</b>

**b. Personnel Capabilities**

Credit Marks shall be awarded under this category using the following

Criteria:

<b>Sr. No.</b>	<b>Description</b>	<b>Maximum Points</b>
i)	Graduate Engineer (CV, PEC Reg. & Signed Affidavit is mandatory)	
	a) Number of Engineers (3-Marks for each Civil Engineer with building work experience)	6
	b) Experience of Civil Engineer: - experience in number of years (1.5 marks for 5-year experience in building work. Marks for less experience will be given proportionately).	3
ii)	DAE Associate Engineer (Civil) (CV, Educational Docs. & Signed Affidavit is mandatory).	
	a) Number of Engineers (2-Marks for each with building work experience.	4
	b) Experience of DAE Engineer: - experience in number of years (1 mark for 10-year experience in building work. Marks for less experience will be given proportionately).	2
	<b>Sub-total:</b>	<b>15</b>

**c. Equipment Capabilities**

Credit Marks shall be granted on the basis of the following criteria for various kinds of equipment, Proof of possession / lease affidavit is mandatory:

<b>Sr. No.</b>	<b>Equipment Type and Characteristics</b>	<b>Maximum Marks</b>
1.	Shuttering + Scaffolding (4000 Sft)	5
2.	Mixer Machine (2 bag) (5 nos.) Wheel Barrows (10 nos.)	5
3.	Concrete Vibrator + Plate Compactor (3+3 nos.)	4
4.	Tractor with blade + Water Tankers (2+2 nos.)	6
	<b>Sub-total:</b>	<b>20</b>

**d. Financial Soundness /Status:**

Credit Marks shall be awarded on the basis of the following criteria:

For Financial Status assessment, the Applicants may be required to submit Audited Financial Statements for the last five years or any other document which verifies their Financial Status. Where necessary, the Procuring Agency will make enquiries with the firm's/contractor's bankers.

Working Capital in hand for this project/work (Attach proof of Bank Statement/Credit Facilities)

<b>Sr. No.</b>	<b>Description</b>	<b>Maximum Marks</b>
i)	Audited Report of last 5-years showing Average Annual Turnover of 25 million will be awarded full marks but for less than 25 million no marks will be awarded.	10
ii)	Available Bank Credit line. Full marks for 5 million limit but for less than 5 million no marks will be awarded. (Mandatory)	5
iii)	Registration with FBR & SRB (Mandatory)	1
iv)	Litigation History in which Decision has been given against the firm. (In case the firm is involved in any litigation, no marks will be given and 2 points will be given in case affidavit of no litigation is attached).	2
v)	Blacklisting from any agency. (In case the firm is blacklisted, no Marks will be given and 2 points will be given in case affidavit by the company that it has not been black listed is attached).	2
	<b>Sub-total:</b>	<b>20</b>

**e. Technical Capabilities**

Credit Marks shall be awarded on the basis of the following criteria:

<b>Sr. No.</b>	<b>Description</b>	<b>Maximum Marks</b>
i)	Appendix-E to Bid: Proposed Construction Schedule	1.5
ii)	Appendix-F to Bid: Method of Performing the Work	1.5
iii)	Appendix-H to Bid: Construction camp and housing facilities	1
iv)	Appendix-I to Bid: List of Subcontractors	1
	<b>Total Marks:</b>	<b>05</b>

**f. HSE Policy & Certification**

**05**

**TECHNICAL SPECIFICATIONS:**

CIVIL WORK

SCOPE OF WORK

The work covered by this section of the specifications consists of furnishing all plant, labour, equipment, appliances and materials and in performing all operations in connection with excavating filling and backfilling for building construction and other foundation complete in strict accordance with the applicable drawings and subject to the terms and conditions.

1 EXCAVATION AND BACK FILLING

As specified in the Bill of Quantities.

(a) DISPOSAL OF SURPLUS EARTH AND RUBBISH

All surplus earth and rubbish shall be disposed off by the Contractor at his cost as directed by the Consultants. The terms of disposal shall include all operations of loading, unloading, stacking, spreading filling depressions, consolidating & ramming in layers not exceeding 12" (300 mm) thickness.

2 CONCRETE WORKSCOPE OF WORK

The work covered by this section of the specifications consists of furnishing all labour, equipment, appliances and materials and in performing all operations in connection with concrete work complete in strict accordance with the applicable drawing and the specifications set here in and subject to the terms and conditions of the contract.

Electrical / Mechanical poker vibrator of suitable diameter shall be used for vibrating all concrete specially R.C.C. works.

a) Full cooperation shall be extended to other trades to install embedded items. Embedded items will be inspected and tests for concrete and other materials or for mechanical operations will be completed and approved before concrete is placed.

b) MATERIALSi) WATER

Only clean water from the city supply, tube well installed at the site or from other sources approved by the Engineer In-charge shall be used in mixing concrete, Curing, Cleaning plant and tools. The water shall be tested according to B.S. 3148. When its suitability is doubtful.

The Engineer In-charge may refuse to permit water containing any sugar, excess, acid alkali or salt. As a guide the following concentrations represent the maximum permissible values:

- i. To neutralize 260 ml sample it should be required more than 2 ml of 0.1 normal NaOH.
- ii. To neutralize 200 ml sample it should not required more than 10 ml of 0.1 normal HCL.
- iii. Percentage of solids should not exceed the following.

*	Percentage
<b>Organic</b>	0.02
<b>Inorganic</b>	0.30
<b>Sulphates</b>	0.50
<b>Alkali chlorides</b>	0.10

Table 4.3

In case of doubt the Engineer In-charge may require that concrete mixed with



water proposed to be used should not have a compressive strength lower than 90% of the strength of concrete.

ii) CEMENT:

In all the R.C.C. structure, sulphate resisting cement shall be used upto plinth level. (If Specified in Structural drawings).

In super structure ordinary grey Portland cement (local) shall be used. Use of imported cement is totally forbidden unless approved by the CONSULTANTS.

iii) The Contractor shall provide at his own cost on the site all necessary sheds which shall be perfectly dry and water tight for the storing of cement to be delivered to the works to ensure adequate supplies being available for site work.

iv) If at any time the Consultants consider that any batch of cement may have deteriorated on site during storage of any reason he will direct that tests shall be made and the batch of cement on the site which may be in question, shall not be used until it has been shown by test to be satisfactory. Any rejected cement shall be removed from the site by the Contractor without delay. Cement reclaimed from cleaning bags or leaking containers shall not be used.

v) Cement shall be consumed in the sequence of receipt of shipment unless otherwise directed by the Consultants.

c) AGGREGATES

i. All fine and coarse aggregate to be used shall be supplied from approved source which shall not be changed without permission in writing from the Consultants. Aggregate shall conform to the test requirements of B.S. No. 812 or equivalent ASTM or Pakistan Standard 243:1963.

ii. Fine aggregate shall be approved sand to be obtained from approved source and shall be clean sharp, free from clay, earth, vegetable and organic matters, alkaline or acid reactions or other deleterious matter or impurities.

iii. Fine aggregates shall conform to British Standard specifications B.S. No. 882 and shall be graded as follows:

B.S. Sieve	Percentage (weight) Passing	
No.	(Grading Zone -1)	(Grading Zone - 2)
3/8" (10mm)	100	100
3/16" (5mm)	90 – 100	90 – 00
No. 7	60 – 110	75 – 100
No. 14	30 – 70	55 – 90
No. 25	15 – 34	35 – 59
No. 52	5 – 20	8 – 30
No. 100	0 – 10	0 – 10

iv. Locally available Coarse aggregate shall be crushed stone and

shall be clean free from sand, dust, salt, lime, chalk, clay, organic impurities or other deleterious matter.

v. Coarse aggregate shall conform to the relevant British Standard specifications or ASTM Standard.

vi. If required, aggregate shall be washed and screened to the satisfaction of the Consultants before use by making proper screening and washing.

vii. Sieve analysis and other necessary tests of all aggregates shall be carried out as and when required by the Consultants. Sample for such tests shall be taken in the presence of the Consultants.

viii. All costs in connection with the tests shall be borne by the Contractor.

ix. All aggregates shall be subject to the approval of the Consultants. Any aggregates not found to the required standard shall be rejected by the Consultants and shall have to be removed from site without any delay. Concrete structures executed with rejected aggregates shall be dismantled and rebuilt at the contractor's expense.'

### 3. CLASSIFICATION OF CONCRETE

Classes of concrete to be used in various parts of the works shall be indicated on the drawings and concrete of various grades shall be proportioned as set out in Table-1 appended hereto.

Table-1 showing minimum required compressive strengths of 6 in. x 6 in. x 6 in. (150 x 150 x 150 mm) cubes and minimum quantity of cement required per 100 cubic feet of finished concrete for various mixes and under various conditions.

Class of Concrete	Nominal Mix-Ratio	Min. Qnty Bags per % cft.	Preliminary test Cubes strength.		Work test Cube strength.	
			p.s.i at 7 days	p.s.i at 28 days	p.s.i at 7 days	p.s.i at 28 days
A	1:1:2	30	4000	6000	3000	4500
B	1:1-1/2:3	24	3300	5000	2500	3750
C	1 : 2 : 4	17	2660	4000	2000	3000
D	1 : 3 : 6	13.5	1330	2000	1000	1500
E	1 : 4 : 8	10.0	900	1350	660	1000

The Mix-Ratio indicated in above table are only as guide line normally these ratios achieve the required strength but may vary due to quality of aggregates available in the area of work. The structural design is based on cube strength after 28 days. Therefore the strength should be achieved by design of mix.

To achieve the required strength is the sole responsibility of the Contractor. No Admixture is recommended for use in concrete for getting the required strength, if any Admixture is recommended by the Laboratory it may be used after approval from The Consultants at the entire RISK AND COST of the

Contractor. No extra payment will be made in this regard even if the Admixture is approved by the Consultant.

#### 4. PROPORTIONING OF CONCRETE MIXES

All concrete shall be proportioned by volume unless specifically allowed by Consultants. The proportions given in Table-1 above are suitable only when the specific gravities of the aggregate are in the region of 2.5.

The Contractor shall submit to the consultant proposed mix designs for concrete to be used, based on preliminary laboratory test to determine proportion of cement, aggregate and water in the concrete conforming to the quality and strength requirement specified herein. Preliminary test results of at least three different mixes of each class of concrete with varied water cement ratio shall be submitted. The results of 7 days and 28 days cube tests shall be used to establish the relation between 7 days and 28 days strengths.

The consultants may make adjustments in the mix for a certain work. Preliminary design of mixes and testing shall be a responsibility of the contractor. The proportions voids in the aggregate shall be controlled and if it exceeds 45%, sand and consequently the cement shall be increased by the contractor without any charge. If the proportion is less than 40%, sand shall be decreased but not the cement.

#### 5. WATER CEMENT RATIO

##### SLUMP TEST

A test of the plasticity and flow ability of concrete should be made in the field in presence of Representative of Owner during every concrete operation. The slump cone is a sheet metal (or frustum of a cone) 12" high, 4" in diameter at the top and 8" in diameter at the bottom. After the mixer is fully emptied of a batch, the cone is filled in three layers, roding each layer 25 times with a 5/8" dia bullet pointed rod. The cone is then lifted and the slump is measured. The height of the pile will be less than 12". The allowable slump is generally defined in specifications.

#### MAXIMUM ALLOWABLE WATER CONTENT

All concrete specimens shall be made, cured and tested in accordance with British Standard or ASTM Standard. A curve representing the relation between the water content and the average 28 days compressive strength earlier strength at which the concrete is to receive its full working load shall be established for a range of value including all the compressive strength shown on the Plans. The curve shall be established by at least four points, each point representing average values for at least four test specimens. The maximum allowable water content for the concrete shall be as determined from this curve and shall correspond to a strength 15% greater than indicated on the plans. The slump for concrete shall be minimum of 1" (25mm) and a maximum of 2-1/2" (75 mm) provided the requisite strength is obtained. Corrective additions to remedy deficiencies in aggregate gradations shall be used only with the written approval of the Consultants. When such permissions are permitted the material shall be measured separately for each batch of concrete.

#### 6. SAMPLES AND TESTING

a. GENERAL

Test cubes concrete shall be provided and stored by the Contractor as and when directed by the Consultants. Test cubes shall be tested by the approved laboratory and the contractor shall bear the charges for the same.

b. Cement shall be tested as prescribed in British Standard or ASTM Standard, at the cost of Contractor.

c. AGGREGATES

Aggregates shall be tested at Contractor's cost as prescribed in British Standard 812. In additions, fine aggregates shall be tested for organic impurities in conformity with B.S. 812 or equal ASTM Standard.

d. TESTING OF CONCRETE

- i. All test cubes shall be 6 x 6 x 6 inch (150 x 150 x 150 mm) size.
- ii. Specimens shall be cured under laboratory conditions except that the Consultants may require curing under field conditions.
- iii. Three cubes of the set shall be tested at 7 (seven) days and 3 (three) shall be tested at 28 days or at such ages as directed by the Consultants.
- iv. All cube moulds shall be steel moulds perfectly true having all internal and the meeting faces machined to smooth surface as approved by the Consultants.
- v. If the strength tests of the laboratory controlled specimens for any portion of the work falls below the minimum allowable compressive strength at 28 days required for the class of concrete used in that portion the consultants shall have the right to order replacement of the affected work.

e. PLACING CONCRETE

- i. All concrete shall be thoroughly compacted and consolidated by means of pneumatic mechanical or electrical vibrators or other approved compacting method. Care shall be taken to avoid segregation due to excessive vibration and placing / dropping of concrete from a height of more than 7'-0". The contractor shall maintain on site at all times one or more stand-by vibrators.
- ii. Compaction shall be done until the whole mass assumes a jelly like appearance and consistency, with the water just appearing on the surface. Concrete shall be sufficiently tamped and consolidated around the steel rods, care be taken that the vibrator does not as such touch steel or form work.
- iii. Hardened concrete, debris and foreign materials shall be removed from interior of forms and from inner surface of mixing and conveying equipments.
- iv. Constructions joints in concrete shall only be given at location indicated in the drawings or as approved by the Consultants. At the end of the day's work the concrete shall be finished off against a temporary shutter stop which shall be vertical and securely fixed.
- v. Should any part of the exposed surface present a rough uneven or imperfect appearance when shuttering is removed, it shall be picked out to the such depth and refilled and properly resurfaced as per directions of the Consultants.
- vi. Whole work is to be smooth, pleasing and to the entire satisfaction of the Consultants.

## 7. FORM WORK

### 1. GENERAL

The form work shall be inclusive of all labour, material, workmanship and alike. All formwork and supports thereto shall be designed by the contractor and relevant drawings shall be submitted to the Consultant for approval before the work is put in hand. Such an approval shall not relieve the contractor for all the obligations of the contract or give rise to any claims.

### 2. FORM WORK NOT TO INTERFERE AND INJURE WORK.

The form work shall be so designed and arranged as not be unduly interfere with concrete, during its placing, and easy to be removed without injuring the finished concrete edges, clamps, bolts and tie rods shall be used, when permitted and where practicable, in making the form work rigid and in holding it to true position.

### 3. OPENINGS IN FORM WORK.

Wherever the concreting is required to be carried out within forms of considerable depths, temporary openings in the side of the form shall be provided to facilitate the pouring and consolidation of the concrete. Small temporary openings shall be provided at the bottom of all forms to permit the removal of rubbish etc.

### 4. OPENINGS IN THE STRUCTURE AND OTHER DETAILS.

Provisions shall be kept in the form work for openings such as recesses, holes, packets, fillets etc. for housing services and other architectural details in the finished concrete or on its surface and edges as shown on drawings or as directed by the Consultants to fix all necessary inserts, dowels pipe, holdfast, etc. as shown on drawings or as directed.

### 5. JOINTS IN FORM WORK.

All joints in the form work shall be sufficiently water tight to prevent undue leakage or cement slurry from concrete surface not to be exposed in the finished work. The joints in the form work for all concrete surfaces to be exposed in the finished work shall be water tight jointed and perfectly smooth so as not to allow any leakage of the cement slurry from the concrete.

### 6. TREATMENT AFTER REMOVAL OF FORMS.

All honey combing or other irregularities are to be properly made good upon the removal of the form work and the surface made good to the satisfaction of the Consultants. All such defects must be inspected by the CONSULTANT before carrying out any remedial work.

7. No form work shall be measured and paid for separately and shall be deemed to be included in the units price of Concrete whether cast-in-situ or pre-cast and subsequently fixed in position.

### 8. CLEARING AND REMOVAL OF RUBBISH

On completion of works herein the contractor shall remove all concrete debris, rubbish, shuttering materials, scraps etc. from the vicinity of the structures

completed. All areas shall be cleaned to the satisfaction and approval of the Consultants.

## 9 REINFORCEMENT STEEL

### SCOPE OF WORK

The work covered by this section of the specifications consists of furnishing all materials, tools, labours and in performing all operations in connection with providing, straightening, cutting, bending, binding and fixing in strict accordance with this section of specifications, the applicable drawings, bar bending schedule, (to be prepared by the CONTRACTOR as per terms and conditions of the contract).

### MATERIALS:

- i). Reinforcing steel to be new billet stock of deformed steel as specified on the drawings and shall conform to British Standard Specifications or equivalent ASTM or Pakistan Standard.
- ii). The Contractor shall furnish to Consultants, Manufacturer's mills certificate to guarantee that steel meets the standard, specifications, requirements and minimum certified yield stresses as follows:

ALL REINFORCEMENT STEEL SHALL CONFORM TO ASTM A-615 YIELD	
STRENGTH	60,000 Psi
ELONGATION	14 %

## 10. BRICK MASONRY

### SCOPE OF WORK

The work covered under this section of specifications consists of furnishing all labour, material tools and plants for the satisfactory completion of the works in accordance with the drawings as specified herein and subject to the terms and conditions of the contract.

### GENERAL

Each finished brick shall not be less than 3" x 4½" x 9" in size and shall have a ¼" deep frog on the upper face. All the bricks shall be regular, of homogenous texture uniform in shape and size with sharp and square arises, parallel faces and deep red colour may vary by 1/8" from the standard size. When struck, they should give a clear ringing sound. They shall not absorb more than 1/6<sup>th</sup> of their weight of water after being soaked for one hour, and shall show no sign of effervescence on drying. A good brick should not break when struck against another brick or when dropped flat from a height of 3'-0" to 4'-0" on the ground. It should have a surface so hard that it cannot be scratched by finger nail. The average compressive strength of five representative bricks shall not be less than 1,800 P.S.I.

### EXECUTION

- a) Unless otherwise specified, bricks shall be laid in English Bond with the frogs upwards. Each brick shall be set with both bed and vertical joints filled with mortar and thoroughly bedded in by tapping with handles of the trowel. No half bricks or bats shall be used except where necessary to complete the Bond. Simple lipping with mortar at the edges shall not be permitted.
- b) All bricks work shall be taken up truly plumb and should be so done with a plumb and straight edge.
- c) Brick work shall be carried up all round at the same height and during construction one part of wall should not be more than 3'-0" higher than any other part.
- d) Brick work constructed shall be of best standard of workmanship obtainable and objectionable offsets in the brick work shall be removed by and at the expense of the contractor.
- e) Each course in the wall after being laid should be properly grouted to fill all of the voids in the area. The grout should be fluid enough to perform this function.

## 10 PLASTERING.

### SCOPE OF WORK.

The work covered under this section of specifications consist of furnishing all labour, material, tools and plants for the satisfactory completion of the works in accordance with the drawings, as specified herein and the terms and conditions of the Contract.

### MATERIALS.

#### a) CEMENT

Cement shall be as specified in the section of Plain and Reinforced Cement Concrete.

#### b) SAND

Sand shall be as specified in the section of concrete work except that the maximum size shall be restricted to that passing a No. 14 sieve for finishing coat and passing a No. 7 sieve for base coat (if any)

#### c) WATER

Water shall be as specified in the section of Concrete work.

### MORTAR COMPOSITION

- a) Mortar for cement plaster shall be mixed in the properties as specified in the Bill of Quantities and shall be applied in one coat or two coats thickness as given in Bill of Quantities and relevant drawings.

### MORTAR BATCHING

- a) Methods sand equipment used for mixing mortar shall be such as will accurately determine and control the amount of such separate ingredient entering into mortar.
- b) The mortar shall be prepared by mixing the ingredients twice in a dry state, on a pucca platform or in trough and then mixing thoroughly after the

addition of water.

- c) Mortar shall be mixed only in sufficient quantities for immediate use and all mortar not consumed within 30 minutes after the addition of water to the dry mix shall be rejected and the same will not be allowed to be used. Mixing troughs and pans shall be thoroughly cleaned and washed at the end of each day work.

### PLASTERING

- a) The joints of Block Masonry, which in to be plastered, shall have ½“ deep grooved joint which should be raked before the mortar sets each day.
- b) The concrete surfaces to receive plaster shall be properly roughened by dragging with wire brushes while the concrete has not hardened. In case of the hardened concrete, the surface shall be roughened.
- c) The surfaces to be plaster shall be kept damp for at least two hours and then treated with cement slurry before plastering.
- d) Level pegs shall be made for all plaster work and shall be got checked from the Engineer at least one day before the plastering work is carried out.
- e) The plaster shall be laid to a true and plumb bob and a straight edge not less than 10 feet in length. All horizontal lines and surfaces shall be tested with a level and all vertical lines and corners with a plumb bob as the work proceeds. The plaster shall be finished perfectly smooth and shall be without wavy surfaces. The edge and corners shall be rounded or chamfered if instructed by the Engineer.

## 12. GLAZED, MATT FINISH WALL AND FLOOR TILES

### GENERAL

The contractor shall supply and fix tiles as described in B.O.Q.

### LAYING

- i) All tiles should be soaked in water before laying in sufficient quantity to complete a days work.
- ii) All tiles shall be set in bed of cement sand mortar to its correct level and line the mortar shall be evenly spread on the full bottom of tiles.
- iii) Joints shall be grouted with white cement mixed with matching colour of tiles as approved by the Engineer Incharge.

## 13. PORCELAIN, TERRAZO AND MARBLE TILES

### GENERAL

- a) The contractor shall submit samples of Marble and Porcelain Tiles for flooring and dado required in various locations. The finished floors and dados shall



conform in all respects to the characteristics of approved sample by the CONSULTANT / OWNER.

b) Marble tiles shall be of first quality, free from cracks chips or any other defects and shall be uniform in tone and colour, as selected by Consultant. Marble Tiles be ½” thick, on floors and ¾” thick on steps of staircases where specified.

c) Marble Tiles in floor, steps and Risers be laid on a layer of pure white cement slurry over cement Concrete Bed.

#### LAYING

i) Immediately prior to laying the tiles will be checked the lot and rejected tiles be replaced.

ii) All Tiles shall be set in bed of cement / sand mortar to their correct lines and level and the mortar shall be spread evenly on the full bottom of tiles.

iii) All Tiles should be set without joints (Butt joints) as approved by the Consultants.

iv) Marble Tiles be polished and finished with chemical polish.

### 14. CARPENTRY, JOINERY AND HARDWARE

#### SCOPE OF WORK

The work covered by this section of the specifications consists of furnishing all plant, labour, equipment, appliances and materials and in performing all operations in connection with fabrication and installation of shelves, cupboards paneling, doors /

windows frames, shutters etc. as per size, thickness, dimension and details shown on the working drawings, compete schedule of Doors and Windows in strict accordance with this section of the specification and the applicable drawings, finishing schedule, instructions of the Engineer.

#### MATERIALS, FITTINGS & SAMPLES

##### (i) SOFT WOOD

The timber of trees belonging to the botanical group Gymnosperms, commercial timber deodar of this group, with best quality shall be used.

##### (ii) PLYWOOD

Shall comply in all respects with B.S.S. 1455: 1948. The plywood shall only be

obtained from approved manufactures.

The plywood used for doors, paneling and the like shall be of the thickness as specified. The grade shall be first quality. The face and back shall be free from end-joints, dead-knots, overlaps, patches and other defects. Edge joints in veneers shall be well made. Isolated pinworm holes shall be permitted provided they do not run along with plane of the veneer. The face and back shall be free smooth for painting or polishing.

(iii) TEAK VENEER BOARD

Shall be first quality obtained from the manufacture approved by the Engineer / Consultant.

HARDWARE AND FITTINGS

Hardware and fittings shall be heavy duty hardware of approved quality and manufacture otherwise mentioned in the drawings and Bill of Quantities.

14.4 (i) LOCKS AND DOOR CLOSER

Shall be of the best quality available from the approved manufacturers according to the Samples approved by the Consultants.

(ii) HINGES

Shall of best quality (local) heavy duty steel hinges 3" (75 mm) in windows, 4" (100 mm) in single leaf doors and 5" (125 mm) in Main door every leaf should have 4 hinges fixed with steel screws.

(iii) All other fittings shall be best quality available from approved manufacturer. Samples shall be submitted to the consultants, for his approval. Cost of hardware shall be included in item of door and no separate payment will be made.

(iv) HARDWARE-SCHEDULE

Each flush door shutter shall be furnished with the following.

- Best quality (aluminum or bronze) Mortice lock / knobset (local)-1 No.
- Tower-bolts 8" (200 mm) long chromium plated / Aluminum (local)-2 Nos.  
Door closers (Japan) of approved Manufacturer where directed by the Engineer-1 No.
- Kick-plates / push plates of stainless steel 6" x 1/8" (150 mm x 3mm) where directed  
by the Engineer-both sides. All material will be best quality as approved / specified

by the owner.

(ii). HINGES

Shall of best quality (local) heavy duty steel hinges 3" (75 mm) in windows. 4" (100 mm) in single leaf doors and 5" (125 mm) in Main door every leaf should have 4 hinges fixed with steel screws.

(iii). All other fittings shall be best quality available from approved manufacturer. Samples shall be submitted to the consultants, for his approval. Cost of hardware shall be included in item of door and no separate payment will be made.

(iv). HARDWARE – SCHEDULE

Each flush door shutter shall be furnished with the following.

- Best quality (aluminum or bronze) Mortice lock / knobset (local) -1 No.
- Tower-bolts 8" (200 mm) long chromium plated / Aluminum (local) -2 Nos.  
Door closers (Japan) of approved Manufacturer where director by the Engineer-1 No.
- Kick-plates / push plates of stainless steel 6" x 1/8" (150 mm x 3mm) where directed by the Engineer-both sides. All material will be best quality as approved / specified by the owner of the time of installation.

#### 14.5 WOOD TREATMENTS

In addition to the prior seasoning treatment of timbers, ceilings frame joints, purlins, planks, all the door frames, furring strips blocking grounds, nailing strips in contact with concrete or masonry or wood or other materials, shall first be treated with the pesticides designated in relevant section on Termite control of these specifications and then with solignum or equally approved material in accordance with manufacturers / consultant's instructions.

#### FLUSH DOORS

Flush doors shall be solid cored as per description in Bill of Quantities covered on both side with commercial ply or Teak veneered block board as specified in drawing. The doors shall be lipped and edges fitted and hung to the frames. The flush door shall be obtained from the source approved by the consultant and shall be of uniform quality and texture.

#### FABRICATION

(a) The contractor shall perform all necessary groovings, notching, tonguening, housing, rebating and all other work necessary for the correct jointings. The contractor shall also provide all metal plates, screws, nails and other fixing that may be necessary for the proper execution of the joinery work specified. The contractor shall also required to carry out all works necessary for the proper construction of all framings, etc. and for their support and fixing in the building. All

wood work shall be approved and initialled by the consultant or Engineer before being fixed in position.

(b) Any joinery which may show signs of defects arising from the unsound materials or defective workmanship before the expiry of the maintenance period shall be cut out and replaced at contractor's own expense.

(c) All hold-fast are to be cut to size and shall be 1/8" thick M.S. flat iron as shown on the drawing.

(d) Solid wood frames as per BOQ or as shown on drawing are to be prepared with posts tenoned with the beads or as shown on the drawings.

(e) The shutters will be fixed to the frames with approved quality fittings. The frames will be secured with wrought iron clamps.

(f) All doors and windows shutters shall be fabricated in workman like manner in accordance with the drawings or as directed by the Engineer.

(g) All articles of ironmongery to be soundly and strongly made well finished and equal in quality to first grade articles of approved manufacturers.

(h) Steel fittings are to be furnished and oxidized on exposed surfaces. Aluminum fittings are to be anodized on exposed surfaces. Aluminum fittings are to be the best quality of their kind and shall have a base coat of brass or copper.

(i) Locks, or knob sets, handles, heavy handles etc. shall be as specified and approved by Engineer / Consultant.

(j) Paint and Polish shall be carried out as specified in relevant section.

(k) Anti-termite treatment of approved quality shall be applied to frames on the surface in contact with earth, or wall etc. as per directions of Engineer. Contractor's rates in BOQ for doors, windows shelves etc. shall include this item and no additional payment shall be made.

(l) (i) Three coats of Enamel paint should be applied on all wood work after preparing all surfaces.

(ii) Three coats of Enamel paint on all steel works over priming coat of Red oxide.

#### SHOP DRAWINGS AND SAMPLES

The contractor should submit the shop drawings for the approval of Consultants or should submit sample of one complete door and window for approval of Consultant / Owner.

#### 15. GLAZING

SCOPE OF WORK

The work covered under this section of specifications consists of furnishing all labour material, tools and plants and performing all operations in connection with fixing of the glass to the doors windows, skylights etc in accordance with the drawings, as specified herein and subject to the terms and conditions of the contract.

GENERAL

(a) Size of glass indicated on drawings are only approximate actual sizes required shall be determined by measuring all panels. Glass shall be without wave, distortion or bulbs.

(b) For wooden Doors and Windows, where provided, glass shall be secured in place with Deodar wood beading.

(c) All glass shall be of manufacture and quality approved by the consultant or Engineer. 5 mm thick glass should be used in doors and windows and 3 mm thick glass should be used in ventilators.

ACCEPTANCE

Glass shall be protected against damage. After inspection any labels, paint smears and the glass shall be washed clean on both sides. Damaged or broken glasses shall be removed and replaced with new ones before acceptance at no additional cost.

ROOF WATER PROOFING AND INSULATION

Providing and Supplying Heat & U/V resistant Protective Liquid Membrane Roof water proofing water shield ZSAC-10/55 of M/s ZAHABIYA or MATRIX water stopper MT 22/6 in white colour etc. etc. complete as described in Nomenclature of BOQ.

16. PAINTING AND FINISHINGSCOPE OF WORK

The work covered in this section of the specifications consists of furnishing all plants, labour, equipment, appliances and materials and in performing all operations in connection with protective and general painting and finishing complete in strict

accordance with this section of the specifications and applicable drawings and subject to the terms and conditions of the contract.

GENERAL

The terms "Paints" as used herein means enamel paints Emulsion Paint, primers, colour washes, chalk washes etc. All colours shall be subject to the approval of the Consultants / Owner.

All Paints shall be of first class quality product made by an approved manufacturer ICI or equivalent approved and shall conform to the requirements of current British Standards specifications or ASTM standards.

All colours and shades shall be as directed by the Consultants / Owner. The

colour of  
each coat of paint shall not be of a different shade from the following coat.

17. COOPERATION WITH OTHER TRADES

(a) All work under this section shall be coordinated with the work to be done as specified under other sections of the specifications.

(b) The contractor shall drill, tap, cut and fit the work included herein as required, to accommodate work of other trades in conjunctions with it.

18. SAMPLE

Samples of materials specified shall be submitted for approval when required by the Consultant / Owner.

**29.1 Award of the Contract:**

*Delete the text of clause 29.1 & 29.2 and replace with the following:*

Subject to Clause IB.30 and IB.34, the Employer will award the Contract to the bidder whose bid has been determined to be substantially responsive to the Bidding Document, has met the technical requirement criteria as mentioned in clause 28.1(iv) and 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.

**32.1 Standard form and amount of Performance Security acceptable to the Employer:**

Up to 10% of the contract amount against bank guarantee from any scheduled bank of Pakistan.

**37.0 Price Adjustment:**

No price adjustment will be applicable on said project.

**FORM OF BID  
AND  
APPENDICES TO BID**

**FORM OF BID**

Bid Reference No. \_\_\_\_\_  
 (Name of Contract/Works)

To:

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

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.



8. 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 \_\_\_\_\_  
\_\_\_\_\_

**SPECIAL STIPULATIONS****Clause****Conditions of Contract**

1.	Engineer's Authority to issue Variation in emergency.	2.1	15% of the Contract Price stated in the Letter of Acceptance.
2.	Amount of Performance Security	10.1	Up to 5% of Contract Price stated in the Letter of Acceptance in shape of bank guarantee from any scheduled bank of Pakistan as per approved format.
3.	Time for Furnishing Program	14.1	Within 14 days from the date of receipt of Letter of Acceptance.
4.	Time for Commencement	41.1	Within 7 days from the date of receipt of Engineer's Notice to Commence which shall be issued within fourteen (14) days after signing of Contract Agreement.
5.	Time for Completion	43.1, 48.1	12 months.
6.	Amount of Liquidated Damages	47.1	Rs. 10,000/- 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.
7.	Defects Liability Period	49.1	365 days from the effective date of Taking Over Certificate.
8.	Percentage of Retention Money	60.2	5% of the amount of Interim Payment Certificate will be deducted upto the maximum limit specified
9.	Limit of Retention Money	60.2	10% of Contract Price stated in the Letter of Acceptance.
10.	Minimum amount of Interim Payment Certificates (Running Bills)	60.2	Rs. 2 million.
11.	Time of Payment from delivery of Engineer's Interim Payment Certificate to the Employer.	60.10	30 days. (Subjected to availability of funds).
12.	Mobilization Advance	60.12	Up to 10% of Contract Price stated in the Letter of Acceptance against bank guarantee from any scheduled bank of Pakistan as per approved format.
13.	Mobilization Advance Recovery	60.12	This advance shall be recovered in five equal installments starting from the second IPC.
14.	Secured Advance	60.11	Contractor can obtain the secured advance at non-perishable material subject to verification & with the approval of Employer.
15.	Secured Advance Recovery	60.11	This advance shall be recovered within (90) days even if unutilized.

### FOREIGN CURRENCY REQUIREMENTS

1. The Bidder may indicate here in below his requirements of foreign currency (if any), with reference to various inputs to the Works.
2. Foreign Currency Requirement as percentage of the Bid Price excluding Provisional Sums \_\_\_\_\_.%
3. Table of Exchange Rates

Unit of Currency	Equivalent in Pak. Rupees
Australian Dollar	-----
Euro	-----
Japanese Yen	-----
U.K. Pound	-----
U.S. Dollars	-----
-----	-----
-----	-----

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

The source of indices and the weightages or coefficients for use in the adjustment formula under Clause 70 shall be as follows:

(To be filled by the Employer)

Cost Element	Description	Weightages	Applicable index
1	2	3	4
(i)	Fixed Portion	0.350	
(ii)	Local Labour		Government of Pakistan (GP) Federal Bureau of Statistics (FBS) Monthly Statistical Bulletin.
(iii)	Cement – in bags		“ “ “
(iv)	Reinforcing Steel		“ “ “
(v)	High Speed Diesel (HSD)		“ “ “
(vi)	Bricks		“ “ “
(vii)	Bitumen		“ “ “
(viii)			
	Total	1.000	

**Notes:**

- 1) Indices for “(ii)” to “(vii)” are taken from the Government of Pakistan Federal Bureau of Statistics, Monthly Statistical Bulletin. The base cost indices or prices shall be those applying 28 days prior to the latest day for submission of bids. Current indices or prices shall be those applying 28 days prior to the last day of the billing period.
- 2) Any fluctuation in the indices or prices of materials other than those given above shall not be subject to adjustment of the Contract Price.
- 3) Fixed portion shown here is for typical road project, Employer to determine the weightage of Fixed Portion considering only those cost elements having cost impact of seven (7) percent or more on his specific project.

**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 Engineer 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 Engineer may fix as per the Contract.
3. The rates and prices entered in the priced Bill of Quantities shall, except insofar as it is otherwise provided under the Contract include all costs of Contractor's plant, labour, 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. A rate or price shall be entered against each item in the priced Bill of Quantities, whether quantities are stated or not. The cost of items against which the Contractor will have failed to enter a rate or price shall be deemed to be covered by other rates and prices entered in the Bill of Quantities.
5. 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.
6. General directions and description of work and materials are not necessarily repeated nor summarised in the Bill of Quantities. References to the relevant sections of the Bidding Documents shall be made before entering prices against each item in the priced Bill of Quantities.
7. 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.

**B. Work Items**

1. The Bill of Quantities are attached at the end of this document.

**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 in the bar chart (CPM, PERT or any other to be specified herein) 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 Employer’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) Whole Works	_____ days
b) Part-A	_____ days
c) Part-B	_____ days
d) _____	_____ days
e) _____	_____ days

**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.]

**LIST OF MAJOR EQUIPMENT – RELATED ITEMS**

The bidder will provide list of equipments as per the requirements of clause 28.1(vi) of bidding data along with details make, model etc. The bidder will also provide a signed affidavit (mandatory) that the mentioned equipment is in possession of the bidder.



**CONSTRUCTION CAMP AND HOUSING FACILITIES**

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

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

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

1. Site Preparation (clearing, land preparation, etc.).
2. Provision of Services.
  - a) Power (expected power load, etc.).
  - b) Water (required amount and system proposed).
  - c) Sanitation (sewage disposal system, etc.).
3. Construction of Facilities
  - a) Contractor's Office. Workshop and Work Areas (areas required and proposed layout, type of construction of buildings, etc.).
  - b) Warehouses and Storage Areas (area required, type of construction and layout).
  - c) Housing and Staff Facilities (Plans for housing for proposed staff, layout, type of construction, etc.).
4. Construction Equipment Assembly and Preparation (detailed plans for carrying out this activity).
5. Other Items Proposed (Security services, etc.).

**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.

<b>Part of Works (Give Details)</b>	<b>Subcontractor (With Complete Address)</b>
<b>1</b>	<b>2</b>

**ESTIMATED PROGRESS PAYMENTS**

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

<b>Quarter/ Year/ Period</b>	<b>Amounts (1,000 Rs.)</b>
<b>1</b>	<b>2</b>
Ist Quarter	
2 <sup>nd</sup> Quarter	
3 <sup>rd</sup> Quarter	
4 <sup>th</sup> Quarter	
5 <sup>th</sup> Quarter	
6 <sup>th</sup> Quarter	
7 <sup>th</sup> Quarter	
8 <sup>th</sup> Quarter	
9 <sup>th</sup> Quarter	
<b>Bid Price</b>	

**ORGANIZATION CHART  
FOR THE  
SUPERVISORY STAFF AND LABOUR**

**(INTEGRITY PACT)**

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

Contract No. \_\_\_\_\_ Dated \_\_\_\_\_

Contract Value: \_\_\_\_\_

Contract Title: \_\_\_\_\_

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

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

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

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

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

Name of Buyer: .....

Signature: .....

[Seal]

Name of Seller/Supplier: .....

Signature: .....

[Seal]

**FORMS**

**PERFORMANCE SECURITY  
CONTRACT AGREEMENT  
MOBILIZATION ADVANCE GUARANTEE/BOND**

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

Guarantee No. \_\_\_\_\_  
Executed on \_\_\_\_\_  
Expiry date \_\_\_\_\_

[Letter by the Guarantor to the Employer]

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 Employer) in the penal sum of the amount stated above for the payment of which sum well and truly to be made to the said Employer, we bind ourselves, our heirs, executors, administrators and successors, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that whereas the Principal has accepted the Employer'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 Employer, 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 defences under the Contract, do hereby irrevocably and independently guarantee to pay to the Employer without delay upon the Employer's first written demand without cavil or arguments and without requiring the Employer to prove or to show grounds or reasons for such demand any sum or sums up to the amount stated above, against the Employer'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 Employer's designated Bank & Account Number.

PROVIDED ALSO THAT the Employer 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 Employer 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 "Employer") of the one part and \_\_\_\_\_ (hereafter called the "Contractor") of the other part.

WHEREAS the Employer 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 witnessed 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 M).
  - (i) The Drawings.
  - (j) The Specifications.
3. In consideration of the payments to be made by the Employer to the Contractor as hereinafter mentioned, the Contractor hereby covenants with the Employer to execute and complete the Works and remedy defects therein in conformity and in all respects with the provisions of the Contract.
4. The Employer 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 Employer

\_\_\_\_\_  
(Seal)

Signed, Sealed and Delivered in the presence of:

Witness:

\_\_\_\_\_

(Name, Title and Address)

Witness:

\_\_\_\_\_

(Name, Title and Address)

**MOBILIZATION ADVANCE GUARANTEE**

Guarantee No. \_\_\_\_\_ Date \_\_\_\_\_

WHEREAS \_\_\_\_\_ (hereinafter called the 'Employer') has entered into a Contract for

\_\_\_\_\_ (Particulars of Contract)  
with \_\_\_\_\_ (hereinafter called the "Contractor").

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

AND WHEREAS, the Employer has asked the Contractor to furnish Guarantee to secure the mobilization advance for the performance of his obligations under the said Contract.

AND WHEREAS, \_\_\_\_\_  
(Scheduled Bank in Pakistan)

(Hereinafter called the "Guarantor") at the request of the Contractor and in consideration of the Employer agreeing to make the above advance to the Contractor, has agreed to furnish the said Guarantee.

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

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

This Guarantee shall remain in force until the advance is fully adjusted against payments from the Interim Payment Certificates of the Contractor or until \_\_\_\_\_ whichever is earlier.

(Date)

The Guarantor's liability under this Guarantee shall not in any case exceed the sum of Rupees \_\_\_\_\_ (Rs \_\_\_\_\_).

This Guarantee shall remain valid up to the aforesaid date and shall be null and void after the aforesaid date or earlier if the advance made to the Contractor is fully adjusted against payments from Interim Payment Certificates of the Contractor provided that the Guarantor agrees that the aforesaid period of validity shall be deemed to be extended if on the above-mentioned date, the advance payment is not fully adjusted.

GUARANTOR

1. Signature \_\_\_\_\_
2. Name \_\_\_\_\_
3. Title \_\_\_\_\_

WITNESS

1. \_\_\_\_\_  
\_\_\_\_\_  
Corporate Secretary (Seal)

2. \_\_\_\_\_  
(Name Title & Address)

\_\_\_\_\_  
Corporate Guarantor (Seal)

## Part I - General Conditions of Contract

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### PART I: GENERAL CONDITIONS

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## PART I - GENERAL CONDITIONS

### Definitions and Interpretation

#### 1.1 Definitions

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

- (a) (i) "Employer" means the person named as such in Part II of these Conditions and the legal successors in title to such person, but not (except with the consent of the Contractor) any assignee of such person.
- (ii) "Contractor" means the person whose tender has been accepted by the Employer and the legal successors in title to such person, but not (except with the consent of the Employer) any assignee of such person.
- (iii) "Subcontractor" means any person named in the Contract as a Subcontractor for a part of the Works or any person to whom a part of the Works has been subcontracted with the consent of the Engineer and the legal successors in title to such person, but not any assignee of any such person.
- (iv) "Engineer" means the person appointed by the Employer to act as Engineer for the purposes of the Contract and named as such in Part II of these Conditions.
- (v) "Engineer's Representative" means a person appointed from time to time by the Engineer under Sub-Clause 2.2.
- (b) (i) "Contract" means these Conditions (Parts I and II), the Specification, the Drawings, the Bill of Quantities, the Tender, the Letter of Acceptance, the Contract Agreement (if completed) and such further documents as may be expressly incorporated in the Letter of Acceptance or Contract Agreement (if completed).
- (ii) "Specification" means the specification of the Works included in the Contract and any modification thereof or addition thereto made under Clause 51 or submitted by the Contractor and approved by the Engineer.
- (iii) "Drawings" means all drawings, calculations and technical information of a like nature provided by the Engineer to the Contractor under the Contract and all drawings, calculations, samples, patterns, models, operation and maintenance manuals and other technical information of a like nature submitted by the

Contractor and approved by the Engineer.

- (iv) "Bill of Quantities" means the priced and completed bill of quantities forming part of the Tender.
- (v) "Tender" means the Contractor's priced offer to the Employer for the execution and completion of the Works and the remedying of any defects therein in accordance with the provisions of the Contract, as accepted by the Letter of Acceptance.
- (vi) "Letter of Acceptance" means the formal acceptance by the Employer of the Tender.
- (vii) "Contract Agreement" means the contract agreement (if any) referred to in Sub-Clause 9.1.
- (viii) "Appendix to Tender" means the appendix comprised in the form of Tender annexed to these Conditions.
- (c) (i) "Commencement Date" means the date upon which the Contractor receives the notice to commence issued by the Engineer pursuant to Clause 41.
- (ii) "Time for Completion" means the time for completing the execution of and passing the Tests on Completion of the Works or any Section or part thereof as stated in the Contract (or as extended under Clause 44) calculated from the Commencement Date.
- (d) (i) "Tests on Completion" means the tests specified in the Contract or otherwise agreed by the Engineer and the Contractor which are to be made by the Contractor before the Works of any Section or part thereof are taken over by the Employer.
- (ii) "Taking-Over Certificate" means a certificate issued pursuant to Clause 48.
- (e) (i) "Contract Price" means the sum stated in the Letter of Acceptance as payable to the Contractor for the execution and completion of the Works and the remedying of any defects therein in accordance with the provisions of the Contract.
- (ii) "Retention Money" means the aggregate of all monies retained by the Employer pursuant to Sub-Clause 60.2(a).
- (iii) "Interim Payment Certificate" means any certificate of payment issued by the Engineer other than the Final Payment Certificate.
- (iv) "Final Payment Certificate" means the certificate of payment issued by the Engineer pursuant to Sub-Clause 60.8.

- (f) (i) "Works" means the Permanent Works and the Temporary Works or either of them as appropriate.
- (ii) "Permanent Works" means the permanent works to be executed (including Plant) in accordance with the Contract
- (iii) "Temporary Works" means all temporary works of every kind (other than Contractor's Equipment) required in or about the execution and completion of the Works and the remedying of any defects therein.
- (iv) "Plant" means machinery, apparatus and the like intended to form or forming part of the Permanent Works.
- (v) "Contractor's Equipment" means all appliances and things of whatsoever nature (other than Temporary Works) required for the execution and completion of the Works and the remedying of any defects therein, but does not include Plant, materials or other things intended to form or forming part of the Permanent Works.
- (vi) "Section" means a part of the Works specifically identified in the Contract as a Section.
- (vii) "Site" means the places provided by the Employer where the Works are to be executed and any other places as may be specifically designated in the Contract as forming part of the Site.
- (g) (i) "cost" means all expenditure properly incurred or to be incurred, whether, on or off the Site, including overhead and other charges properly allocable thereto but does not include any allowance for profit.
- (ii) "day" means calendar day.
- (iii) "foreign currency" means a currency of a country other than that in which the Works are to be located.
- (iv) "writing" means any hand-written, type-written, or printed communication, including telex, cable and facsimile transmission.

## 1.2 **Headings and Marginal Notes**

The headings and marginal notes in these Conditions shall not be deemed part thereof or be taken into consideration in the interpretation or construction thereof or of the Contract.

## 1.3 **Interpretation**

Words importing persons or parties shall include firms and corporations and any organization having legal capacity.

## 1.4 **Singular and Plural**

Words importing the singular only also include the plural and vice versa where the context requires.

## **1.5 Notices, Consents, Approvals, Certificates and Determinations**

Wherever in the Contract provision is made for the giving or issue of any notice, consent, approval, certificate or determination by any person, unless otherwise specified such notice, consent, approval, certificate or determination shall be in writing and the words "notify", "certify" or "determine" shall be construed accordingly. Any such consent, approval, certificate or determination shall not unreasonably be withheld or delayed.

## **Engineer and Engineer's Representative**

### **2.1 Engineer's Duties and Authority**

- (a) The Engineer shall carry out the duties specified in the Contract.
- (b) The Engineer may exercise the authority specified in or necessarily to be implied from the Contract, provided, however, that if the Engineer is required, under the terms of his appointment by the Employer, to obtain the specific approval of the Employer before exercising any such authority, particulars of such requirements shall be set out in Part II of these Conditions. Provided further that any requisite approval shall be deemed to have been given by the Employer for any such authority exercised by the Engineer.
- (c) Except as expressly stated in the Contract, the Engineer shall have no authority to relieve the Contractor of any of his obligations under the Contract.

### **2.2 Engineer's Representative**

The Engineer's Representative shall be appointed by and be responsible to the Engineer and shall carry out such duties and exercise such authority as may be delegated to him by the Engineer under Sub-Clause 2.3.

### **2.3 Engineer's Authority to Delegate**

The Engineer may from time-to-time delegate to the Engineer's Representative any of the duties and authorities vested in the Engineer and he may at any time revoke such delegation. Any such delegation or revocation shall be in writing and shall not take effect until a copy thereof has been delivered to the Employer and the Contractor.

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

- (a) any failure of the Engineer's Representative to disapprove any work, materials or Plant shall not prejudice the authority of the Engineer to disapprove such work, materials or Plant and to give instructions for the rectification thereof; and
- (b) if the Contractor questions any communication of the Engineer's Representative, he may refer the matter to the Engineer who shall confirm, reverse or vary the contents of such communication.

#### 2.4 **Appointment of Assistants**

The Engineer or the Engineer's Representative may appoint any number of persons to assist the Engineer's Representative in the carrying out of his duties under Sub-Clause 2.2. He shall notify to the Contractor the names, duties and scope of authority of such persons. Such assistants shall have no authority to issue any instructions to the Contractor save in so far as such instructions may be necessary to enable them to carry out their duties and to secure their acceptance of materials, Plant or workmanship as being in accordance with the Contract, and any instructions given by any of them for those purposes shall be deemed to have been given by the Engineer's Representative.

#### 2.5 **Instructions in Writing**

Instructions given by the Engineer shall be in writing, provided that if for any reason the Engineer considers it necessary to give any such instruction orally, the Contractor shall comply with such instruction. Confirmation in writing of such oral instruction given by the Engineer, whether before or after the carrying out of the instruction, shall be deemed to be an instruction within the meaning of this Sub-Clause. Provided further that if the Contractor, within 7 days, confirms in writing to the Engineer any oral instruction of the Engineer and such confirmation is not contradicted in writing within 7 days by the Engineer, it shall be deemed to be an instructions of the Engineer.

The provisions of this Sub-Clause shall equally apply to instructions given by the Engineer's Representative and any assistants of the Engineer or the Engineer's Representative appointed pursuant to Sub-Clause 2.4.

#### 2.6 **Engineer to Act Impartially**

Wherever, under the Contract, the Engineer is required to exercise his discretion by:

- (a) giving his decision, opinion or consent,
- (b) expressing his satisfaction or approval,
- (c) determining value, or
- (d) otherwise taking action which may affect the rights and obligations of the Employer or the Contractor

he shall exercise such discretion impartially within the terms of the Contract and



having regard to all the circumstances. Any such decision, opinion, consent expression of satisfaction, or approval, determination of value or action may be opened up, reviewed or revised as provided in Clause 67.

### **Assignment and Subcontracting**

#### **3.1 Assignment of Contract**

The Contractor shall not, without the prior consent of the Employer (which consent, notwithstanding the provisions of Sub-Clause 1.5, shall be at the sole discretion of the Employer), assign the Contract or any part thereof, or any benefit or interest therein or thereunder, otherwise than by:

- (a) a charge in favour of the Contractor's bankers of any monies due or to become due under the Contract, or
- (b) assignment to the Contractor's insurers (in cases where the insurers have discharged the Contractor's loss or liability) of the Contractor's right to obtain relief against any other party liable.

#### **4.1 Subcontracting**

The Contractor shall not subcontract the whole of the Works. Except where otherwise provided by the Contract, the Contractor shall not subcontract any part of the Works without the prior consent of the Engineer. Any such consent shall not relieve the Contractor from any liability or obligation under the Contract and he shall be responsible for the acts, defaults and neglects of any Subcontractor, his agents, servants or workmen as fully as if they were the acts, defaults or neglects of the Contractor, his agents' servants or workmen.

Provided that the Contractor shall not be required to obtain such consent for:

- (a) the provision of labour,
- (b) the purchase of materials which are in accordance with the standards specified in the Contract,
- (c) the subcontracting of any part of the Works for which the Subcontractor is named in the Contract.

#### **4.2 Assignment of Subcontractors' Obligations**

In the event of a Subcontractor having undertaken towards the Contractor in respect of the work executed, or the goods, materials, Plant or services supplied by such Subcontractor, any continuing obligation extending for a period exceeding that of the Defects Liability Period under the Contract, the Contractor shall at any time, after the expiration of such Period, assign to the Employer, at the Employer's request and cost, the benefit of such obligation for the unexpired duration thereof.

## **Contract Documents**

### **5.1 Language/s and Law**

There is stated in Part II of these Conditions:

- (a) the language or languages in which the Contract documents shall be drawn up, and
- (b) the country or state the law of which shall apply to the Contract and according to which the Contract shall be construed.

If the said documents are written in more than one language, the language according to which the Contract shall be construed and interpreted is also stated in Part II of these Conditions, being therein designated the "Ruling Language".

### **5.2 Priority of Contract Documents**

The several documents forming the Contract are to be taken as mutually explanatory of one another, but in case of ambiguities or discrepancies the same shall be explained and adjusted by the Engineer who shall thereupon issue to the Contractor instructions thereon and in such event, unless otherwise provided in the Contract, the priority of the documents forming the Contract shall be as follows:

- (1) The Contract Agreement (if completed).
- (2) The Letter of Acceptance.
- (3) The Tender.
- (4) Part II of these Conditions.
- (5) Part I of these Conditions; and
- (6) Any other document forming part of the Contract.

### **6.1 Custody and Supply of Drawings and Documents**

The Drawings shall remain in the sole custody of the Engineer, but two copies thereof shall be provided to the Contractor free of charge. The Contractor shall make at his own cost any further copies required by him. Unless it is strictly necessary for the purposes of the Contract, the Drawings, Specification and other documents provided by the Employer or the Engineer shall not, without the consent of the Engineer, be used or communicated to a third party by the Contractor. Upon issue of the Defects Liability Certificate, the Contractor shall return to the Engineer all Drawings, Specification and other documents provided under the Contract.

The Contractor shall supply to the Engineer four copies of all Drawings, specification and other documents submitted by the Contractor and approved by the Engineer in accordance with Clause 7, together with a reproducible copy of

any material which cannot be reproduced to an equal standard by photocopying. In addition, the Contractor shall supply such further copies of such Drawings, Specification and other documents as the Engineer may request in writing for the use of the Employer, who shall pay the cost thereof.

## **6.2 One Copy of Drawings to be Kept on Site**

One copy of the Drawings, provided to or supplied by the Contractor as aforesaid, shall be kept by the Contractor on the Site and the same shall at all reasonable times be available for inspection and use by the Engineer and by any other person authorised by the Engineer in writing.

## **6.3 Disruption of Progress**

The Contractor shall give notice to the Engineer, with a copy to the Employer, whenever planning or execution of the Works is likely to be delayed or disrupted unless any further drawing or instruction is issued by the Engineer within a reasonable time. The notice shall include details of the drawing or instruction required and of why and by when it is required and of any delay or disruption likely to be suffered if it is late.

## **6.4 Delay and Cost of Delay of Drawings**

If, by reason of any failure or inability of the Engineer to issue, within a time reasonable in all the circumstances, any drawing or instruction for which notice has been given by the Contractor in accordance with Sub-Clause 6.3, the Contractor suffers delay and/or incurs costs then the Engineer shall, after due consultation with the Employer and the Contractor, determine:

- (a) any extension of time to which the Contractor is entitled under Clause 44, and
- (b) the amount of such costs, which shall be added to the Contract Price, and shall notify the Contractor accordingly, with a copy to the Employer.

## **6.5 Failure by Contractor to Submit Drawings**

If the failure or inability of the Engineer to issue any drawings or instructions is caused in whole or in part by the failure of the Contractor to submit Drawings, Specification or other documents which he is required to submit under the Contract, the Engineer shall take such failure by the Contractor into account when making his determination pursuant to Sub-Clause 6.4.

## **7.1 Supplementary Drawings and Instructions**

The Engineer shall have authority to issue to the Contractor, from time to time, such supplementary Drawings and instructions as shall be necessary for the purpose of the proper and adequate execution and completion of the Works and the remedying of any defects therein. The Contractor shall carry out and be

bound by the same.

## **7.2 Permanent Works Designed by Contractor**

Where the Contract expressly provides that part of the Permanent Works shall be designed by the Contractor, he shall submit to the Engineer, for approval:

- (a) such drawings, specifications, calculations and other information as shall be necessary to satisfy the Engineer as to the suitability and adequacy of that design, and
- (b) operation and maintenance manuals together with drawings of the Permanent Works as completed, in sufficient detail to enable the Employer to operate, maintain, dismantle, reassemble and adjust the Permanent Works incorporating that design. The Works shall not be considered to be completed for the purposes of taking over in accordance with Clause 48 until such operation and maintenance manuals together with drawings on completion have been submitted to and approved by the Engineer.

## **7.3 Responsibility Unaffected by Approval**

Approval by the Engineer, in accordance with Sub-Clause 7.2, shall not relieve the Contractor of any of his responsibilities under the Contract.

# **General Obligations**

## **8.1 Contractor's General Responsibilities**

The Contractor shall, with due care and diligence, design (to the extent provided for by the Contract), execute and complete the Works and remedy any defects therein in accordance with the provisions of the Contract. The Contractor shall provide all superintendence, labor, material, Plant, Contractor's Equipment and all other things, whether of a temporary or permanent nature, required in and for such design, execution, completion and remedying of any defects, so far as the necessity for providing the same is specified in or is reasonably to be inferred from the Contract.

## **8.2 Site Operations and Methods of Construction**

The Contractor shall take full responsibility for the adequacy, stability and safety of all Site operations and methods of construction. Provided that the Contractor shall not be responsible (except as stated hereunder or as may be otherwise agreed) for the design or specification of Permanent Works, or for the design or specification of any Temporary Works not prepared by the Contractor. Where the Contract expressly provides that part of the Permanent Works shall be designed by the Contractor, he shall be fully responsible for that part of such Works, notwithstanding any approval by the Engineer.

## **9.1 Contract Agreement**

The Contractor shall, if called upon so to do, enter into and execute the Contract Agreement, to be prepared and completed at the cost of the Employer, in the form annexed to these Conditions with such modification as may be necessary.

#### 10.1 **Performance Security**

If the Contract requires the Contractor to obtain security for his proper performance of the Contract, he shall obtain and provide to the Employer, such security within 28 days after the receipt of the Letter of Acceptance, in the sum stated in the Appendix to Tender. When providing such security to the Employer, the Contractor shall notify the Engineer of so doing. Such security shall be in the form annexed to these Conditions or in such other form as may be agreed between the Employer and the Contractor. The institution providing such security shall be subject to the approval of the Employer. The cost of complying with the requirements of this Clause shall be borne by the Contractor, unless the Contract otherwise provides.

#### 10.2 **Period of Validity of Performance Security**

The performance security shall be valid until the Contractor has executed and completed the Works and remedied any defects therein in accordance with the Contract. No claim shall be made against such security after the issue of the Defects Liability Certificate in accordance with Sub-Clause 62.1 and such security shall be returned to the Contractor within 14 days of the issue of the said Defects Liability Certificate.

#### 10.3 **Claims under Performance Security**

Prior to making a claim under the performance security the Employer shall, in every case, notify the Contractor stating the nature of the default in respect of which the claim is to be made.

#### 11.1 **Inspection of Site**

The Employer shall have made available to the Contractor, before the submission by the Contractor of the Tender, such data on hydrological and sub-surface conditions as have been obtained by or on behalf of the Employer from investigations undertaken relevant to the Works but the Contractor shall be responsible for his own interpretation thereof.

The Contractor shall be deemed to have inspected and examined the Site and its surroundings and information available in connection therewith and to have satisfied himself (so far as is practicable, having regard to considerations of cost and time) before submitting his Tender, as to:

- (a) the form and nature thereof, including the sub-surface conditions,
- (b) the hydrological and climatic conditions,

- (c) the extent and nature of work and materials necessary for the execution and completion of the Works and the remedying of any defects therein, and
- (d) the means of access to the Site and the accommodation he may require, and, in general, shall be deemed to have obtained all necessary information, subject as above mentioned, as to risks, contingencies and all other circumstances which may influence or affect his Tender.

The Contractor shall be deemed to have based his Tender on the data made available by the Employer and on his own inspection and examination, all as aforementioned.

#### 12.1 **Sufficiency of Tender**

The Contractor shall be deemed to have satisfied himself as to the correctness and sufficiency of the Tender and of the rates and prices stated in the Bill of Quantities, all of which shall, except insofar as it is otherwise provided in the Contract, cover all his obligations under the Contract (including those in respect of the supply of goods, materials, Plant or services or of contingencies for which there is a Provisional Sum) and all matters and things necessary for the proper execution and completion of the Works and the remedying of any defects therein.

#### 12.2 **Not Foreseeable Physical Obstructions or Conditions**

If, however, during the execution of the Works the Contractor encounters physical obstructions or physical conditions, other than climatic conditions on the Site, which obstructions or conditions were, in his opinion, not foreseeable by an experienced contractor, the Contractor shall forthwith give notice thereof to the Engineer, with a copy to the Employer. On receipt of such notice, the Engineer shall if in his opinion such obstructions or conditions could not have been reasonably foreseen by an experienced contractor, after due consultation with the Employer and the Contractor, determine:

- (a) any extension of time to which the Contractor is entitled under Clause 44, and
- (b) the amount of any costs which may have been incurred by the Contractor by reason of such obstructions or conditions having been encountered, which shall be added to the Contract Price,

and shall notify the Contractor accordingly, with a copy to the Employer. Such determination shall take account of any instruction which the Engineer may issue to the Contractor in connection therewith, and any proper and reasonable measures acceptable to the Engineer which the Contractor may take in the absence of specific instructions from the Engineer.

**13.1 Work to be in Accordance with Contract**

Unless it is legally or physically impossible, the Contractor shall execute and complete the Works and remedy any defects therein in strict accordance with the Contract to the satisfaction of the Engineer. The Contractor shall comply with and adhere strictly to the Engineer's instructions on any matter, whether mentioned in the Contract or not, touching or concerning the Works. The Contractor shall take instructions only from the Engineer (or his delegate).

**14.1 Program to be Submitted**

The Contractor shall, within the time stated in Part II of these Conditions after the date of the Letter of Acceptance, submit to the Engineer for his consent a Program, in such form and detail as the Engineer shall reasonably prescribe, for the execution of the Works. The Contractor shall, whenever required by the Engineer, also provide in writing for his information a general description of the arrangements and methods which the Contractor proposes to adopt for the execution of the Works.

**14.2 Revised Program**

If at any time it should appear to the Engineer that the actual progress of the Works does not conform to the Program to which consent has been given under Sub-Clause 14.1, the Contractor shall produce, at the request of the Engineer, a revised Program showing the modifications to such Program necessary to ensure completion of the Works within the Time for Completion.

**14.3 Cash Flow Estimate to be Submitted**

The Contractor shall, within the time stated in Part II of these Conditions after the date of the Letter of Acceptance, provide to the Engineer for his information a detailed cash flow estimate, in quarterly periods, of all payments to which the Contractor will be entitled under the Contract and the Contractor shall subsequently supply revised cash flow estimates at quarterly intervals, if required to do so by the Engineer.

**14.4 Contractor not Relieved of Duties or Responsibilities**

The submission to and consent by the Engineer of such Programs or the provision of such general descriptions or cash flow estimates shall not relieve the Contractor of any of his duties or responsibilities under the Contract.

**15.1 Contractor's Superintendence**

The Contractor shall provide all necessary superintendence during the execution of the Works and as long thereafter as the Engineer may consider necessary for the proper fulfilling of the Contractor's obligations under the Contract. The

Contractor, or a competent and authorised representative approved of by the Engineer, which approval may at any time be withdrawn, shall give his whole time to the superintendence of the Works. Such authorised representative shall receive, on behalf of the Contractor, instructions from the Engineer.

If approval of the representative is withdrawn by the Engineer, the Contractor shall, as soon as is practicable, having regard to the requirement of replacing him as hereinafter mentioned, after receiving notice of such withdrawal, remove the representative from the Works and shall not thereafter employ him again on the Works in any capacity and shall replace him by another representative approved by the Engineer.

#### **16.1 Contractor's Employees**

The Contractor shall provide on the Site in connection with the execution and completion of the Works and the remedying of any defects therein:

- (a) only such technical assistants as are skilled and experienced in their respective callings and such foremen and leading hands as are competent to give proper superintendence of the Works, and
- (b) such skilled, semi-skilled and unskilled labour as is necessary for the proper and timely fulfilling of the Contractor's obligations under the Contract.

#### **16.2 Engineer at Liberty to Object**

The Engineer shall be at liberty to object to and require the Contractor to remove forthwith from the Works any person provided by the Contractor who, in the opinion of the Engineer, misconducts himself, or is incompetent or negligent in the proper performance of his duties, or whose presence on Site is otherwise considered by the Engineer to be undesirable, and such person shall not be again allowed upon the Works without the consent of the Engineer. Any person so removed from the Works shall be replaced as soon as possible.

#### **17.1 Setting-out**

The Contractor shall be responsible for:

- (a) the accurate setting-out of the Works in relation to original points, lines and levels of reference given by the Engineer in writing,
- (b) the correctness, subject as above mentioned of the position, levels dimensions and alignment of all parts of the Works, and
- (c) the provision of all necessary instruments, appliances and labour in connection with the foregoing responsibilities.



If, at any time during the execution of the Works, any error appears in the position, levels, dimensions or alignment of any part of the Works, the Contractor, on being required so to do by the Engineer, shall, at his own cost, rectify such error to the satisfaction of the Engineer, unless such error is based on incorrect data supplied in writing by the Engineer, in which case the Engineer shall determine an addition to the Contract Price in accordance with Clause 52 and shall notify the Contractor accordingly, with a copy to the Employer.

The checking of any setting-out or of any line or level by the Engineer shall not in any way relieve the Contractor of his responsibility for the accuracy thereof and the Contractor shall carefully protect and preserve all benchmarks, sight-rails, pegs and other things used in setting-out the Works.

#### **18.1 Boreholes and Exploratory Excavation**

If, at any time during the execution of the Works, the Engineer requires the Contractor to make boreholes or to carry out exploratory excavation, such requirement shall be the subject of an instruction in accordance with Clause 51, unless an item or a Provisional Sum in respect of such work is included in the Bill of Quantities.

#### **19.1 Safety, Security and Protection of the Environment**

The Contractor shall, throughout the execution and completion of the Works and the remedying of any defects therein:

- (a) have full regard for the safety of all persons entitled to be upon the Site and keep the Site (so far as the same is under his control) and the Works (so far as the same are not completed or occupied by the Employer) in an orderly state appropriate to the avoidance of danger to such persons,
- (b) provide and maintain at his own cost all lights, guards, fencing, warning signs and watching, when and where necessary or required by the Engineer or by any duly constituted authority, for the protection of the Works or for the safety and convenience of the public or others, and
- (c) take all reasonable steps to protect the environment on and off the Site and to avoid damage or nuisance to persons or to property of the public or others resulting from pollution, noise or other causes arising as a consequence of his methods of operation.

#### **19.2 Employer's Responsibilities**

If under Clause 31 the Employer shall carry out work on the Site with his own workmen he shall, in respect of such work:

- (a) have full regard to the safety of all persons entitled to be upon the Site, and

- (b) keep the Site in an orderly state appropriate to the avoidance of danger to such persons.

If under Clause 31 the Employer shall employ other contractors on the Site, he shall require them to have the same regard for safety and avoidance of danger.

#### 20.1 **Care of Works**

The Contractor shall take full responsibility for the care of the Works and materials and Plant for incorporation therein from the Commencement Date until the date of issue of the Taking-Over Certificate for the whole of the Works, when the responsibility for the said care shall pass to the Employer. Provided that:

- (a) if the Engineer issues a Taking-Over Certificate for any Section or part of the Permanent Works the Contractor shall cease to be liable for the care of that Section or part from the date of issue of the Taking-Over Certificate, when the responsibility for the care of that Section or part shall pass to the Employer, and
- (b) the Contractor shall take full responsibility for the care of any outstanding Works and materials and Plant for incorporation therein which he undertakes to finish during the Defects Liability Period until such outstanding Works have been completed pursuant to Clause 49.

#### 20.2 **Responsibility to Rectify Loss or Damage**

If any loss or damage happens to the Works, or any part thereof, or materials or Plant for incorporation therein, during the period for which the Contractor is responsible for the care thereof, from any cause whatsoever, other than the risks defined in Sub-Clause 20.4, the Contractor shall, at his own cost, rectify such loss or damage so that the Permanent Works conform in every respect with the provisions of the Contract to the satisfaction of the Engineer. The Contractor shall also be liable for any loss or damage to the Works occasioned by him in the course of any operations carried out by him for the purpose of complying with his obligations under Clauses 49 and 50.

#### 20.3 **Loss or Damage Due to Employer's Risks**

In the event of any such loss or damage happening from any of the risks defined in Sub-Clause 20.4, or in combination with other risks, the Contractor shall, if and to the extent required by the Engineer, rectify the loss or damage and the Engineer shall determine an addition to the Contract Price in accordance with Clause 52 and shall notify the Contractor accordingly, with a copy to the Employer. In the case of a combination of risks causing loss or damage any such determination shall take into account the proportional responsibility of the Contractor and the Employer.

## 20.4 **Employer's Risks**

The Employer's risks are:

- (a) war, hostilities (whether war be declared or not), invasion, act of foreign enemies,
- (b) rebellion, revolution, insurrection, or military or usurped power, or civil war,
- (c) ionising radiations, or contamination by radioactivity from any nuclear fuel, or from any nuclear waste from the combustion of nuclear fuel, radio-active toxic explosive, or other hazardous properties of any explosive nuclear assembly or nuclear component thereof,
- (d) pressure waves caused by aircraft or other aerial devices travelling at sonic or supersonic speeds,
- (e) riot, commotion or disorder, unless solely restricted to employees of the Contractor or of his Subcontractor and arising from the conduct of the Works,
- (f) loss or damage due to the use or occupation by the Employer of any Section or part of the Permanent Works, except as may be provided for in the Contract,
- (g) 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
- (h) any operation of the forces of nature against which an experienced contractor could not reasonably have been expected to take precautions.

## 21.1 **Insurance of Works and Contractor's Equipment**

The Contractor shall, without limiting his or the Employer's obligations and responsibilities under Clause 20, insure:

- (a) the Works, together with materials and Plant for incorporation therein, to the full replacement cost (the term "cost" in this context shall include profit),
- (b) an additional sum of 15 per cent of such replacement cost, or as may be specified in Part II of these Conditions, to cover any additional costs of and incidental to the rectification of loss or damage including professional fees and the cost of demolishing and removing any part of the Works and of removing debris of whatsoever nature, and

- (c) the Contractor's Equipment and other things brought onto the Site by the Contractor, for a sum sufficient to provide for their replacement at the Site.

## 21.2 **Scope of Cover**

The insurance in paragraphs (a) and (b) of Sub-Clause 21.1 shall be in the joint names of the Contractor and the Employer and shall cover:

- (a) the Employer and the Contractor against all loss or damage from whatsoever cause arising, other than as provided in Sub-Clause 21.4, from the start of work at the Site until the date of issue of the relevant Taking-Over Certificate in respect of the Works or any Section or part thereof as the case may be, and
- (b) the Contractor for his liability:
  - (i) during the Defects Liability Period for loss or damage arising from a cause occurring prior to the commencement of the Defects Liability Periods, and
  - (ii) for loss or damage occasioned by the Contractor in the course of any operations carried out by him for the purpose of complying with his obligations under Clauses 49 and 50.

## 21.3 **Responsibility for Amounts not Recovered**

Any amounts not insured or not recovered from the insurers shall be borne by the Employer or the Contractor in accordance with their responsibilities under Clause 20.

## 21.4 **Exclusions**

There shall be no obligation for the insurances in Sub-Clause 21.1 to include loss or damage caused by:

- (a) war, hostilities (where war be declared or not), invasion, act of foreign enemies,
- (b) rebellion, revolution, insurrection, or military or usurped power, or civil war,
- (c) ionising, 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, or

- (d) pressure waves caused by aircraft or other aerial devices travelling at sonic or supersonic speeds.

#### 22.1 **Damage to Persons and Property**

The Contractor shall, except if and so far as the Contract provides otherwise, indemnify the Employer against all losses and claims in respect of:

- (a) death of or injury to any person, or
- (b) loss of or damage to any property (other than the Works),

which may arise out of or in consequence of the execution and completion of the Works and the remedying of any defects therein, and against all claims, proceedings, damages, costs, charges and expenses whatsoever in respect thereof or in relation thereto, subject to the exceptions defined in Sub-Clause 22.2.

#### 22.2 **Exceptions**

The "exceptions" referred to in Sub-Clause 22.1 are:

- (a) the permanent use or occupation of land by the Works, or any part thereof,
- (b) the right of the Employer to execute the Works, or any part thereof, on, over, under, is or through any land,
- (c) damage to property which is the unavoidable result of the execution and completion of the Works, or the remedying of any defects therein, in accordance with the Contract, and
- (d) death of or injury to persons or loss of or damage to property resulting from any act or neglect of the Employer, his agents servants or other contractors, not being employed by the Contractor, or in respect of any claims, proceedings, damages, costs, charges and expenses in respect thereof or in relation thereto or, where the injury or damage was contributed to by the Contractor, his servants or agents, such part of the said injury or damage as may be just and equitable having regard to the extent of the responsibility of the Employer, his servants or agents or other contractors for the injury or damage.

#### 22.3 **Indemnity by Employer**

The Employer shall indemnify the Contractor against all claims, proceedings, damages, costs, charges and expenses in respect of the matters referred to in the exceptions defined in Sub-Clause 22.2

#### 23.1 **Third Party Insurance (including Employer's Property)**

The Contractor shall, without limiting his or the Employer's obligation and

responsibilities under Clause 22, insure, in the joint names of the Contractor and the Employer, against liabilities for death of or injury to any person (other than as provided in Clause 24) or loss of or damage to any property (other than the Works) arising out of the performance of the Contract, other than the exceptions defined in paragraphs (a), (b) and (c) of Sub-Clause 22.2.

### **23.2 Minimum Amount of Insurance**

Such insurance shall be for at least the amount stated in the Appendix to Tender.

### **23.3 Cross Liabilities**

The insurance policy shall include a cross liability clause such that the insurance shall apply to the Contractor and to the Employer as separate insureds.

### **24.1 Accident or Injury to Workmen**

The Employer shall not be liable for or in respect of any damages or compensation payable to any workman or other person in the employment of the Contractor or any Subcontractor, other than death or injury resulting from any act or default of the Employer, his agents or servants. The Contractor shall indemnify and keep indemnified the Employer against all such damages and compensation, other than those for which the Employer is liable as aforesaid, and against all claims, proceedings, damages, costs, charges, and expenses whatsoever in respect thereof or in relation thereto.

### **24.2 Insurance Against Accident to Workmen**

The Contractor shall insure against such liability and shall continue such insurance during the whole of the time that any persons are employed by him on the Works. Provided that, in respect of any persons employed by any Subcontractor, the Contractor's obligations to insure as aforesaid under the Sub-Clause shall be satisfied if the Subcontractor shall have insured against the liability in respect of such persons in such manner that the Employer is indemnified under the policy, but the Contractor shall require such Subcontractor to produce to the Employer, when required, such policy of insurance and the receipt for the payment of the current premium.

### **25.1 Evidence and Terms of Insurances**

The Contractor shall provide evidence to the Employer prior to the start of work at the Site that the insurances required under the Contract have been effected and shall, within 84 days of the Commencement Date, provide the insurance policies to the Employer. When providing such evidence and such policies to the Employer, the Contractor shall notify the Engineer of so doing. Such insurance policies shall be consistent with the general terms agreed prior to the issue of the Letter of Acceptance. The Contractor shall affect all insurances for which he is responsible with insurers and in terms approved by the Employer.

## 25.2 **Adequacy of Insurances**

The Contractor shall notify the insurers of changes in the nature, extent or Program for the execution of the Works and ensure the adequacy of the insurances at all times in accordance with the terms of the Contract and shall, when required, produce to the Employer the insurance policies in force and the receipts for payment of the current premiums.

## 25.3 **Remedy on Contractor's Failure to Insure**

If the Contractor fails to effect and keep in force any of the insurances required under the Contract, or fails to provide the policies to the Employer within the period required by Sub-Clause 25.1, then and in any such case the Employer may effect and keep in force any such insurances and pay any premium as may be necessary for that purpose and from time to time deduct the amount so paid from any monies due or to become due to the Contractor, or recover the same as a debt due from the Contractor.

## 25.4 **Compliance with Policy Conditions**

In the event that the Contractor or the Employer fails to comply with conditions imposed by the insurance policies effected pursuant to the Contract, each shall indemnify the other against all losses and claims arising from such failure.

## 26.1 **Compliance with Statutes, Regulations**

The Contractor shall conform in all respects, including by the giving of all notices and the paying of all fees, with the provisions of:

- (a) any National or State Statute, Ordinance, or other Law, or any regulation, or byelaw of any local or other duly constituted authority in relation to the execution and completion of the Works and the remedying of any defects therein, and
- (b) the rules and regulations of all public bodies and companies whose property or rights are affected or may be affected in any way by the Works,

and the Contractor shall keep the Employer indemnified against all penalties and liability of every kind for breach of any such provisions. Provided always that the Employer shall be responsible for obtaining any planning, zoning or other similar permission required for the Works to proceed and shall indemnify the Contractor in accordance with Sub-Clause 22.3.

## 27.1 **Fossils**

All fossils, coins, articles of value or antiquity and structures and other remains or things of geological or archaeological interest discovered on the Site shall, as

between the Employer and the Contractor, be deemed to be the absolute property of the Employer. The Contractor shall take reasonable precautions to prevent his workmen or any other persons from removing or damaging any such article or thing and shall, immediately upon discovery thereof and before removal, acquaint the Engineer of such discovery and carry out the Engineer's instructions for dealing with the same. If, by reason of such instructions, the Contractor suffers delay and/or incurs costs then the Engineer shall, after due consultation with the Employer and the Contractor, determine:

- (a) any extension of time to which the Contractor is entitled under Clause 44, and
- (b) the amount of such costs, which shall be added to the Contract Price, and shall notify the Contractor accordingly, with a copy to the Employer.

#### 28.1 **Patent Rights**

The Contractor shall save harmless and indemnify the Employer from and against all claims and proceedings for or on account of infringement of any patent rights, design trademark or name or other protected rights in respect of any Contractor's Equipment, materials or Plant used for or in connection with or for incorporation in the Works and from and against all damages, costs, charges and expenses whatsoever in respect thereof or in relation thereto, except where such infringement results from compliance with the design or Specification provided by the Engineer.

#### 28.2 **Royalties**

Except where otherwise stated, the Contractor shall pay all tonnage and other royalties, rent and other payments or compensation, if any, for getting stone, sand, gravel, clay or other materials required for the Works.

#### 29.1 **Interference with Traffic and Adjoining Properties**

All operations necessary for the execution and completion of the Works and the remedying of any defects therein shall, so far as compliance with the requirements of the Contract permits, be carried on so as not to interfere unnecessarily or improperly with:

- (a) the convenience of the public, or
- (b) the access to, use and occupation of public or private roads and footpaths to or of properties whether in the possession of the Employer or of any other person.

The Contractor shall save harmless and indemnify the Employer in respect of all claims, proceedings, damages, costs, charges and expenses whatsoever arising out of, or in relation to, any such matters insofar as the Contractor is responsible, therefore.



### 30.1 **Avoidance of Damage to Roads**

The Contractor shall use every reasonable means to prevent any of the roads or bridges communicating with or on the routes to the Site from being damaged or injured by any traffic of the Contractor or any of his Subcontractors and, in particular, shall select routes, choose and use vehicles and restrict and distribute loads so that any such extraordinary traffic as will inevitably arise from the moving of materials, Plant, Contractor's Equipment or Temporary Works from and to the Site shall be limited, as far as reasonably possible, and so that no unnecessary damage or injury may be occasioned to such roads and bridges.

### 30.2 **Transport of Contractor's Equipment or Temporary Works**

Save insofar as the Contract otherwise provides, the Contractor shall be responsible for and shall pay the cost of strengthening any bridges or altering or improving any road communicating with or on the routes to the Site to facilitate the movement of Contractor's Equipment or Temporary Works and the Contractor shall indemnify and keep indemnified the Employer against all claims for damage to any such road or bridge caused by such movement, including such claims as may be made directly against the Employer, and shall negotiate and pay all claims arising solely out of such damage.

### 30.3 **Transport of Materials or Plant**

If, notwithstanding Sub-Clause 30.1, any damage occurs to any bridge or road communicating with or on the routes to the Site arising from the transport of materials or Plant, the Contractor shall notify the Engineer with a copy to the Employer, as soon as he becomes aware of such damage or as soon as he receives any claim from the authority entitled to make such claim. Where under any law or regulation the haulier of such materials or Plant is required to indemnify the road authority against damage the Employer shall not be liable for any costs, charges or expenses in respect thereof or in relation thereto. In other cases, the Employer shall negotiate the settlement of and pay all sums due in respect of such claim and shall indemnify the Contractor in respect thereof and in respect of all claims, proceedings damages, costs, charges and expenses in relation thereto. Provided that if and so far as any such claim or part thereof is, in the opinion of the Engineer, due to any failure on the part of the Contractor to observe and perform his obligations under Sub-Clause 30.1, then the amount determined by the Engineer, after due consultation with the Employer and the Contractor, to be due to such failure shall be recoverable from the Contractor by the Employer and may be deducted by the Employer from any monies due or to become due to the Contractor and the Engineer shall notify the Contractor accordingly, with a copy to the Employer. Provided also that the Employer shall notify the Contractor whenever a settlement is to be negotiated and, where any amount may be due from the Contractor, the Employer shall consult with the Contractor before such settlement is agreed.

### 30.4 **Waterborne Traffic**

Where the nature of the Works is such as to require the use by the Contractor of waterborne transport the foregoing provisions of this Clause shall be construed as though "road" included a lock, dock, sea wall or other structure related to a waterway and "vehicle" included craft and shall have effect accordingly.

### 31.1 **Opportunities for Other Contractors**

The Contractor shall, in accordance with the requirements of the Engineer, afford all reasonable opportunities for carrying out their work to:

- (a) any other contractors employed by the Employer and their workmen,
- (b) the workmen of the Employer, and
- (c) the workmen of any duly constituted authorities who may be employed in the execution on or near the Site of any work not included in the Contract or of any contract which the Employer may enter into in connection with or ancillary to the Works.

### 31.2 **Facilities for Other Contractors**

If, however, pursuant to Sub-Clause 31.1 the Contractor shall, on the written request of the Engineer:

- (a) make available to any other contractor, or to the Employer or any such authority, any roads or ways for the maintenance of which the Contractor is responsible,
- (b) permit the use, by any such, of Temporary Works or Contractor's Equipment on the Site, or
- (c) provide any other service of whatsoever nature for any such,

the Engineer shall determine an addition to the Contract Price in accordance with Clause 52 and shall notify the Contractor accordingly, with a copy to the Employer.

### 32.1 **Contractor to Keep Site Clear**

During the execution of the Works the Contractor shall keep the Site reasonably free from all unnecessary obstruction and shall store or dispose of any Contractor's Equipment and surplus materials and clear away and remove from the Site any wreckage, rubbish or Temporary Works no longer required.

### 33.1 **Clearance of Site on Completion**

Upon the issue of any Taking-Over Certificate the Contractor shall clear away and remove from that part of the Site to which such Taking-Over Certificate relates all Contractor's Equipment, surplus materials, rubbish and Temporary

Works of every kind, and leave such part of the Site and Works clean and in a workmanlike condition to the satisfaction of the Engineer. Provided that the Contractor shall be entitled to retain on Site, until the end of the Defects Liability Period, such materials, Contractor's Equipment and Temporary Works as are required by him for the purpose of fulfilling his obligations during the Defects Liability Period.

## **Labour**

### **34.1 Engagement of Staffs and Labour**

The Contractor shall, unless otherwise provided in the Contract, make his own arrangements for the engagement of all staff and labour, local or other, and for their payment, housing, feeding and transport.

### **35.1 Returns of Labour and Contractor's Equipment**

The Contractor shall, if required by the Engineer, deliver to the Engineer a return in detail, in such form and at such intervals as the Engineer may prescribe, showing the staff and the numbers of the several classes of labour from time to time employed by the Contractor on the Site and such information respecting Contractor's Equipment as the Engineer may require.

## **Materials, Plant and Workmanship**

### **36.1 Quality of Materials, Plant and Workmanship**

All materials, Plant and workmanship shall be:

- (a) of the respective kinds described in the Contract and in accordance with the Engineer's instructions, and
- (b) subjected from time to time to such tests as the Engineer may require at the place of manufacture, fabrication or preparation, or on the Site or at such other place or places as may be specified in the Contract, or at all or any of such places.

The Contractor shall provide such assistance, labour, electricity, fuels, stores, apparatus and instruments as are normally required for examining, measuring and testing any materials or Plant and shall supply samples of materials, before incorporation in the Works, for testing as may be selected and required by the Engineer.

### **36.2 Cost of Samples**

All samples shall be supplied by the Contractor at his own cost if the supply thereof is clearly intended by or provided for in the Contract.

### **36.3 Cost of Tests**

The cost of making any test shall be borne by the Contractor if such test is:

- (a) clearly intended by or provided for in the Contract, or
- (b) particularised in the Contract (in cases only for a test under load or of a test to ascertain whether the design of any finished or partially finished work is appropriate for the purposes which it was intended to fulfil) in sufficient detail to enable the Contractor to price or allow for the same in his Tender.

### **36.4 Cost of Tests not provided for**

If any test required by the Engineer which is:

- (a) not intended by or provided for,
- (b) (in the cases above mentioned) not so particularised, or
- (c) (though so intended or provided for) required by the Engineer to be carried out at any place other than the Site or the place of manufacture, fabrication or preparation of the materials or Plant tested,

shows the materials, Plant or workmanship not to be in accordance with the

provisions of the Contract to the satisfaction of the Engineer, then the cost of such test shall be borne by the Contractor, but in any other case Sub-Clause 36.5 shall apply.

### **36.5 Engineer's Determination where Tests not Provided for**

Where, pursuant to Sub-Clause 36.4, this Sub-Clause applies the Engineer shall, after due consultation with the Employer and the Contractor, determine:

- (a) any extension of time of which the Contractor is entitled under Clause 44, and
- (b) the amount of such costs, which shall be added to the Contract Price,

and shall notify the Contractor accordingly, with a copy to the Employer.

### **37.1 Inspection of Operations**

The Engineer, and any person authorised by him, shall at all reasonable times have access to the Site and to all workshops and places where materials or Plant are being manufactured, fabricated or prepared for the Works and the Contractor shall afford every facility for and every assistance in obtaining the right to such access.

### **37.2 Inspection and Testing**

The Engineer shall be entitled, during manufacture, fabrication or preparation to inspect and test the materials and Plant to be supplied under the Contract. If materials or Plant are being manufactured, fabricated or prepared in workshops or places other than those of the Contractor, the Contractor shall obtain permission for the Engineer to carry out such inspection and testing in those workshops or places. Such inspection or testing shall not release the Contractor from any obligation under the Contract.

### **37.3 Dates for Inspection and Testing**

The Contractor shall agree with the Engineer on the time and place for the inspection or testing of any materials or Plant as provided in the Contract. The Engineer shall give the Contractor not less than 24 hours notice of his intention to carry out the inspection or to attend the tests. If the Engineer, or his duly authorised representative, does not attend on the date agreed, the Contractor may, unless otherwise instructed by the Engineer, proceed with the tests, which shall be deemed to have been made in the presence of the Engineer. The Contractor shall forthwith forward to the Engineer duly certified copies of the test's readings. If the Engineer has not attended the tests, he shall accept the said readings as accurate.

### **37.4 Rejection**

If, at the time and place agreed in accordance with Sub-Clause 37.3, the materials or Plant are not ready for inspection or testing or if, as a result of the inspection or testing referred to in this Clause, the Engineer determines that the materials or Plant are defective or otherwise not in accordance with the Contract, he may reject the materials or Plant and shall notify the Contractor thereof immediately. The notice shall state the Engineer's objections with reasons. The Contractor shall then promptly make good the defect or ensure that rejected materials or Plant comply with the Contract. If the Engineer so requests, the tests of rejected materials or Plant shall be made or repeated under the same terms and conditions. All costs incurred by the Employer by the repetition of the test shall after due consultation with the Employer and the Contractor, be determined by the Engineer and shall be recoverable from the Contractor by the Employer and may be deducted from any monies due or to become due to the Contractor and the Engineer shall notify the Contractor accordingly, with a copy to the Employer.

### **37.5 Independent Inspection**

The Engineer may delegate inspection and testing of materials or Plant to an independent inspector. Any such delegation shall be affected in accordance with Sub-Clause 2.4 and for this purpose such independent inspector shall be considered as an assistant of the Engineer. Notice of such appointment (not being less than 14 days) shall be given by the Engineer to the Contractor.

### **38.1 Examination of Work before Covering up**

No part of the works shall be covered up or put out of view without the approval of the Engineer and the Contractor shall afford full opportunity for the Engineer to examine and measure any such part of the Works which is about to be covered up or put out of view and to examine foundations before any part of the Works is placed thereon. The Contractor shall give notice to the Engineer whenever any such part of the Works or foundations is or are ready or about to be ready for examination and the Engineer shall, without unreasonable delay, unless he considers it unnecessary and advises the Contractor, accordingly, attend for the purpose of examining and measuring such part of the Works or of examining such foundations.

### **38.2 Uncovering and Making Openings**

The Contractor shall uncover any part of the Works or make openings in or through the same as the Engineer may from time to time instruct and shall reinstate and make good such part. If any such part has been covered up or put out of view after compliance with the requirement of Sub-Clause 38.1 and is found to be executed in accordance with the Contract, the Engineer shall, after due consultation with the Employer and the Contractor, determine the amount the Contractor's costs in respect of such of uncovering, making openings in or through, reinstating and making good the same, which shall be added to the Contract Price, and shall notify the Contractor accordingly, with a copy to the Employer. In any other case all costs shall be borne by the Contractor.

### 39.1 **Removal of Improper Work, Materials or Plant**

The Engineer shall have authority to issue instructions from time to time, for:

(a) the removal from the Site, within such time or times as may be specified in the instruction, of any materials or Plant which, in the opinion of the Engineer, are not in accordance with the Contract,

(b) the substitution of proper and suitable materials or Plant, and

(c) the removal and proper re-execution, notwithstanding any previous test thereof or interim payment therefor, of any work which, in respect of

(i) materials, Plant or workmanship, or

(ii) design by the Contractor or for which he is responsible,

is not, in the opinion of the Engineer, in accordance with the Contract.

### 39.2 **Default of Contractor in Compliance**

In case of default on the part of Contractor in carrying out such instruction within the time specified therein or, if none, within a reasonable time, the Employer shall be entitled to employ and pay other persons to carry out the same and all costs consequent thereon or incidental thereto shall, after due consultation with the Employer and the Contractor, be determined by the Engineer and shall be recoverable from the Contractor by the Employer, and may be deducted by the Employer from any monies due or to become due to the Contractor and the Engineer shall notify the Contractor accordingly, with a copy to the Employer.

## **Suspension**

### 40.1 **Suspension of Work**

The Contractor shall, on the instructions of the Engineer, suspend the progress of the Works or any part thereof for such time and in such manner as the Engineer may consider necessary and shall, during such suspension, properly protect and secure the Works or such part thereof so far as is necessary in the opinion of the Engineer. Unless such suspension is:

(a) otherwise provided for in the Contract,

(b) necessary by reason of some default of or breach of contract by the Contractor or for which he is responsible,

(c) necessary by reason of climatic conditions of the Site, or

(d) necessary for the proper execution of the Works or for the safety of the

Works or any part thereof (save to the extent that such necessity arises from any act or default by the Engineer or the Employer or from any of the risks defined in Sub-Clause 20.4),

Sub-Clause 40.2 shall apply.

#### **40.2 Engineer's Determination following Suspension**

Where, pursuant to Sub-Clause 40.1, this Sub-Clause applies the Engineer shall, after due consultation with the Employer and the Contractor, determine:

(a) any extension of time to which the Contractor is entitled under Clause 44, and

(b) the amount, which shall be added to the Contract Price, in respect of the cost incurred by the Contractor by reason of such suspension,

and shall notify the Contractor accordingly, with a copy to the Employer.

#### **40.3 Suspension lasting more than 84 Days**

If the progress of the Works or any part thereof is suspended on the written instructions of the Engineer and if permission to resume work is not given by the Engineer within a period for 84 days from the date of suspension then, unless such suspension is within paragraph (a), (b), (c) or (d) of Sub-Clause 40.1, the Contractor may give notice to the Engineer requiring permission, within 28 days from the receipt thereof, to proceed with the Works or that part thereof in regard to which progress is suspended. If, within the said time, such permission is not granted, the Contractor may, but is not bound to, elect to treat the suspension, where it affects part only of the Works, as an omission of such part under Clause 51 by giving a further notice to the Engineer to that effect, or, where it affects the whole of the Works, treat the suspension as an event of default by the Employer and terminates his employment under the Contract in accordance with the provisions of Sub-Clause 69.1, whereupon the provisions of Sub-Clause 69.2 and 69.3 shall apply.

### **Commencement and Delays**

#### **41.1 Commencement of Works**

The Contractor shall commence the Works as soon as is reasonably possible after the receipt by him of notice to this effect from the Engineer, which notice shall be issued within the time stated in the Appendix to Tender after the date of the Letter of Acceptance. Thereafter, the Contractor shall proceed with the Works with due expedition and without delay.

#### **42.1 Possession of Site and Access Thereto**

Save insofar as the Contract may prescribe:



(a) the extent of portions of the Site of which the Contractor is to be given possession from time to time,

(b) the order in which such portions shall be made available to the Contractor,

and, subject to any requirement in the Contract as to the order in which the Works shall be executed, the Employer will, with the Engineer's notice to commence the Works, give to the Contractor possession of

(c) so much of the Site, and

(d) such access as, in accordance with the Contract, is to be provided by the Employer as may be required to enable the Contractor to commence and proceed with the execution of the Works in accordance with the Program referred to in Clause 14, if any, and otherwise in accordance with such reasonable proposals as the Contractor shall, by notice to the Engineer with a copy to the Employer, make. The Employer will, from time to time as the Works proceed, give to the Contractor possession of such further portions of the Site as may be required to enable the Contractor to proceed with the execution of the Works with due dispatch in accordance with such Program or proposals, as the case may be.

#### **42.2 Failure to Give Possession**

If the Contractor suffers delay and/or incurs costs from failure on the part of the Employer to give possession in accordance with the terms of Sub-Clause 42.1, the Engineer shall, after due consultation with the Employer and the Contractor, determine:

(a) any extension of time to which the Contractor is entitled under Clause 44, and

(b) the amount of such costs, which shall be added to the Contract Price,

and shall notify the Contractor accordingly, with a copy to the Employer.

#### **42.3 Rights of Way and Facilities**

The Contractor shall bear all costs and charges for special or temporary way leaves required by him in connection with access to the Site. The Contractor shall also provide at his own cost any additional facilities outside the Site required by him for the purposes of the Works.

#### **43.1 Time for Completion**

The whole of the Works and, if applicable, any Section required to be completed within a particular time as stated in the Appendix to Tender, shall be

completed, in accordance with the provisions of Clause 48, within the time stated in the Appendix to Tender for the whole of the Works or the Section (as the case may be), calculated from the Commencement Date, or such extended time as may be allowed under Clause 44.

#### **44.1 Extension of Time for Completion**

In the event of:

- (a) the amount or nature of extra or additional work,
- (b) any cause of delay referred to in these Conditions,
- (c) exceptionally adverse climatic conditions,
- (d) any delay, impediment or prevention by the Employer, or
- (e) other special circumstances which may occur, other than through a default of or breach of contract by the Contractor or for which he is responsible,

being such as fairly to entitle the Contractor to an extension of the Time for Completion of the Works, or any Section or part thereof, the Engineer shall, after due consultation with the Employer and the Contractor, determine the amount of such extension and shall notify the Contractor accordingly, with a copy to the Employer.

#### **44.2 Contractor to Provide Notification and Detailed Particulars**

Provided that the Engineer is not bound to make any determination unless the Contractor has

- (a) within 28 days after such event has first arisen notified the Engineer with a copy to the Employer, and
- (b) within 28 days or such other reasonable time as may be agreed by the Engineer, after such notification submitted to the Engineer detailed particulars of any extension of time to which he may consider himself entitled in order that such submission may be investigated at the time.

#### **44.3 Interim Determination of Extension**

Provided also that where an event has a continuing effect such that it is not practicable for the Contractor to submit detailed particulars within the period of 28 days referred to in Sub-Clause 44.2(b), he shall nevertheless be entitled to an extension of time provided that he has submitted to the Engineer interim particulars at intervals of not more than 28 days and final particulars within 28 days of the end of the effects resulting from the event. On receipt of such interim particulars, the Engineer shall, without undue delay, make an interim determination of extension of time and, on receipt of the final particulars, the

Engineer shall review all the circumstances and shall determine an overall extension of time in regard to the event. In both such cases the Engineer shall make his determination after due consultation with the Employer and the Contractor and shall notify the Contractor of the determination, with a copy to the Employer. No final review shall result in a decrease of any extension of time already determined by the Engineer.

#### **45.1 Restriction on Working Hours**

Subject to any provision to the contrary contained in the Contract, none of the Works shall, save as hereinafter provided, be carried on during the night or on locally recognised days of rest without the consent of the Engineer, except when work is unavoidable or absolutely necessary for the saving of life or property or for the safety of the Works, in which case the Contractor shall immediately advise the Engineer. Provided that the provisions of this Clause shall not be applicable in the case of any work which it is customary to carry out by multiple shifts.

#### **46.1 Rate of Progress**

If for any reason, which does not entitle the Contractor to an extension of time, the rate of progress of the Works or any Section is at any time, in the opinion of the Engineer, too slow to comply with the Time for Completion, the Engineer shall so notify the Contractor who shall thereupon take such steps as are necessary, subject to the consent of the Engineer, to expedite progress so as to comply with the Time for Completion. The Contractor shall not be entitled to any additional payment for taking such steps. If, as a result of any notice given by the Engineer under this Clause, the Contractor considers that it is necessary to do any work at night or on locally recognised days of rest, he shall be entitled to seek the consent of the Engineer so to do. Provided that if any steps, taken by the Contractor in meeting his obligations under this Clause, involve the Employer in additional supervision costs, such cost shall, after due consultation with the Employer and the Contractor, be determined by the Engineer and shall be recoverable from the Contractor by the Employer, and may be deducted by the Employer from any monies due or to become due to the Contractor and the Engineer shall notify the Contractor accordingly, with a copy to the Employer.

#### **47.1 Liquidated Damages for Delay**

If the Contractor fails to comply with the Time for Completion in accordance with Clause 48, for the whole of the Works or, if applicable, any Section within the relevant time prescribed by Clause 43, then the Contractor shall pay to the Employer the relevant sum stated in the Appendix to Tender as liquidated damages for such default and not as a penalty (which sum shall be the only monies due from the Contractor for such default) for every day or part of a day which shall elapse between the relevant Time for Completion and the date stated in a Taking-Over Certificate of the whole of the Works or the relevant Section, subject to the applicable limit stated in the Appendix to Tender. The Employer may, without prejudice to any other method of recovery, deduct the

amount of such damages from any monies due or to become due to the Contractor. The payment or deduction of such damages shall not relieve the Contractor from his obligation to complete the Works, or from any other of his obligations and liabilities under the Contract.

#### **47.2 Reduction of Liquidated Damages**

If, before the Time for Completion of the whole of the Works or, if applicable, any Section, a Taking-Over Certificate has been issued for any part of the Works or of a Section, the liquidated damages for delay in completion of the remainder of the Works or of that Section shall, for any period of delay after the date stated in such Taking-Over Certificate, and in the absence of Alternative provisions in the Contract, be reduced in the proportion which the value of the part so certified bears to the value of the whole of the Works or Section, as applicable. The provisions of this Sub-Clause shall only apply to the rate of liquidated damages and shall not affect the limit thereof.

#### **48.1 Taking-Over Certificate**

When the whole of the Works has been substantially completed and have satisfactorily passed any Tests on Completion prescribed by the Contract, the Contractor may give a notice to that effect to the Engineer with a copy to the Employer, accompanied by a written undertaking to finish with due expedition any outstanding work during the Defects Liability Period. Such notice and undertaking shall be deemed to be a request by the Contractor for the Engineer to issue a Taking-Over Certificate in respect of the Works. The Engineer shall within 21 days of the date of delivery of such notice, either issue to the Contractor, with a copy to the Employer, a Taking-Over Certificate, stating the date on which, in his opinion, the Works were substantially completed in accordance with the Contract, or give instructions in writing to the Contractor specifying all the work which, in the Engineer's opinion, is required to be done by the Contractor before the issue of such Certificate. The Engineer shall also notify the Contractor of any defects in the Works affecting substantial completion that may appear after such instructions and before completion of the Works specified therein. The Contractor shall be entitled to receive such Taking-Over Certificate within 21 days of completion, to the satisfaction of the Engineer, of the Works so specified and remedying any defects so notified.

#### **48.2 Taking Over of Sections or Parts**

Similarly, in accordance with the procedure set out in Sub-Clause 48.1, the Contractor may request, and the Engineer shall issue a Taking-Over Certificate in respect of:

- (a) any Section in respect of which a separate Time for Completion is provided in the Appendix to Tender,

(b) any substantial part of the Permanent Works which has been both completed to the satisfaction of the Engineer and, otherwise than as provided for in the Contract, occupied or used by the Employer, or

(c) any part of the Permanent Works which the Employer has elected to occupy or use prior to completion (where such prior occupation or use is not provided for in the Contract or has not been agreed by the Contractor as a temporary measure).

#### 48.3 **Substantial Completion of Parts**

If any part of the Permanent Works has been substantially completed and has satisfactorily passed any Tests on Completion prescribed by the Contractor, the Engineer may issue a Taking-Over Certificate in respect of that part of the Permanent Works before completion of the whole of the Works and, upon the issue of such Certificate, the Contractor shall be deemed to have undertaken to complete with due expedition any outstanding work in that part of the Permanent Works during the Defects Liability Period.

#### 48.4 **Surfaces Requiring Reinstatement**

Provided that a Taking-Over Certificate given in respect of any Section or part of the Permanent Works before completion of the whole of the Works shall not be deemed to certify completion of any ground or surfaces requiring reinstatement, unless such Taking-Over Certificate shall expressly so state.

### **Defects Liability**

#### 49.1 **Defects Liability Period**

In these Conditions the expression "Defects Liability Period" shall mean the defects liability period named in the Appendix to Tender, calculated from:

(a) the date of completion of the Works certified by the Engineer in accordance with Clause 48, or

(b) in the event of more than one certificate having issued by the Engineer under Clause 48, the respective dates so certified,

and in relation to the Defects Liability Period the expression "the Works" shall be construed accordingly.

#### 49.2 **Completion of Outstanding Work and Remedying Defects**

To the intent that the Works shall, at or as soon as practicable after the expiration of the Defects Liability Period, be delivered to the Employer in the condition required by the Contract, fair wear and tear excepted, to the satisfaction of the Engineer, the Contractor shall:

(a) complete the work, if any, outstanding on the date stated in the Taking-Over Certificate as soon as practicable after such date, and

(b) execute all such work of amendment, reconstruction, and remedying defects, shrinkages or other faults as the Engineer may, during the Defects Liability Period or within 14 days after its expiration, as a result of an inspection made by or on behalf of the Engineer prior to its expiration, instruct the Contractor to execute.

#### **49.3 Cost of Remedying Defects**

All work referred to in Sub-Clause 49.2(b) shall be executed by the Contractor at his own cost if the necessity thereof is, in the opinion of the Engineer, due to:

- (a) the use of materials, Plant or workmanship not in accordance with the Contract,
- (b) where the Contractor is responsible for the design of part of the Permanent Works, any fault in such design, or
- (c) the neglect or failure on the part of the Contractor to comply with any obligation, expressed or implied, on the Contractor's part under the Contract.

If, in the opinion of the Engineer, such necessity is due to any other cause, he shall determine an addition to the Contract Price in accordance with Clause 52 and shall notify the Contractor accordingly, with a copy to the Employer.

#### **49.4 Contractor's Failure to Carry Out Instructions**

In case of default on the part of the Contractor in carrying out such instruction within a reasonable time, the Employer shall be entitled to employ and pay other persons to carry out the same and if such work is work which, in the opinion of the Engineer, the Contractor was liable to do at his own cost under the Contract, then all cost consequent thereon or incidental thereto shall, after due consultation with the Employer and the Contractor, be determined by the Engineer and shall be recoverable from the Contractor by the Employer, and may be deducted by the Employer from any monies due or to become due to the Contractor and the Engineer shall notify the Contractor accordingly, with a copy to the Employer.

#### **50.1 Contractor to Search**

If any defect, shrinkage or other fault in the Works appears at any time prior to the end of the Defects Liability Period, the Engineer may instruct the Contractor, with a copy to the Employer, to search under the directions of the Engineer for the cause thereof. Unless such defect, shrinkage or other fault is one for which the Contractor is liable under the Contract, the Engineer shall, after due consultation with the Employer and the Contractor, determine the amount in respect of the costs of such search incurred by the Contractor, which shall be added to the Contract Price and shall notify the Contractor accordingly, with a copy to the Employer. If such defect, shrinkage or other fault is one for

which the Contractor is liable, the cost of the work carried out in searching as aforesaid shall be borne by the Contractor and he shall in such case remedy such defect, shrinkage or other fault at his own cost in accordance with the provisions of Clause 49.

## **Alterations, Additions and Omissions**

### **51.1 Variations**

The Engineer shall make any variation of the form, quality or quantity of the Works or any part thereof that may, in his opinion, be necessary and for that purpose, or if for any other reason it shall, in his opinion, be appropriate, he shall have the authority to instruct the Contractor to do and the Contractor shall do any of the following:

- (a) increase or decrease the quantity of any work included in the Contract,
- (b) omit any such work (but not if the omitted work is to be carried out by the Employer or by another contractor),
- (c) change the character or quality or kind of any such work,
- (d) change the levels, lines, position and dimensions of any part of the Works,
- (e) execute additional work of any kind necessary for the completion of the Works, or
- (f) change any specified sequence or timing of construction of any part of the Works.

No such variation shall in any way vitiate or invalidate the Contract, but the effect, if any, of all such variations shall be valued in accordance with Clause 52. Provided that where the issue of an instruction to vary the Works is necessitated by some default of or breach of contract by the Contractor or for which he is responsible, any additional cost attributable to such default shall be borne by the Contractor.

### **51.2 Instructions for Variations**

The Contractor shall not make any such variation without an instruction of the Engineer. Provided that no instruction shall be required for increase or decrease in the quantity of any work where such increase or decrease is not the result of an instruction given under this Clause but is the result of the quantities exceeding or being less than those stated in the Bill of Quantities.

### **52.1 Valuation of Variations**

All variations referred to in Clause 51 and any additions to the Contract Price which are required to be determined in accordance with Clause 52 (for the purposes of this Clause referred to as "varied work"), shall be valued at the rates and prices set out in the Contract if, in the opinion of the Engineer, the same shall be applicable. If the Contract does not contain any rates or prices applicable to the varied work, the rates and prices in the Contract shall be used as the basis for valuation so far as may be reasonable, failing which, after due

consultation by the Engineer with the Employer and the Contractor, suitable rates or prices shall be agreed upon between the Engineer and the Contractor. In the event of disagreement, the Engineer shall fix such rates or prices as are, in his opinion, appropriate and shall notify the Contractor accordingly, with a copy to the Employer. Until such time as rates or prices are agreed or fixed, the Engineer shall determine provisional rates or prices to enable on-account payments to be included in certificates issued in accordance with Clause 60.

## **52.2 Power of Engineer to Fix Rates**

Provided that if the nature or amount of any varied work relative to the nature or amount of the whole of the Works or to any part thereof, is such that, in the opinion of the Engineer, the rate or price contained in the Contract for any item of the Works is, by reason of such varied work, rendered inappropriate or inapplicable, then, after due consultation by the Engineer with the Employer and the Contractor, a suitable rate or price shall be agreed upon between the Engineer and the Contractor. In the event of disagreement, the Engineer shall fix such other rate or price as is, in his opinion, appropriate and shall notify the Contractor accordingly, with a copy to the Employer. Until such time as rates or prices are agreed or fixed, the Engineer shall determine provisional rates or prices to enable on-account payments to be included in certificates issued in accordance with Clause 60.

Provided also that no varied work instructed to be done by the Engineer pursuant to Clause 51 shall be valued under Sub-Clause 52.1 or under this Sub-Clause unless, within 14 days of the date of such instruction and, other than in the case of omitted work, before the commencement of the varied work, notice shall have been given either:

- (a) by the Contractor to the Engineer of his intention to claim extra payment or a varied rate or price, or
- (b) by the Engineer to the Contractor of his intention to vary a rate or price.

## **52.3 Variations Exceeding 15 per cent**

If, on the issue of the Taking-Over Certificate for the whole of the Works, it is found that as a result of:

- (a) all varied work valued under Sub-Clauses 52.1 and 52.2, and
- (b) all adjustments upon measurement of the estimated quantities set out in the Bill of Quantities, excluding Provisional Sums, dayworks and adjustment of price made under Clause 70.

but not from any other cause, there have been additions to or deductions from the Contract Price which taken together are in excess of 15 per cent of the "Effective Contract Price" (which for the purposes of this Sub-Clause shall



mean the Contract Price, excluding Provisional Sums and allowance for dayworks, if any) then and in such event (subject to any action already taken under any other Sub-Clause of this Clause), after due consultation by the Engineer with the Employer and the Contractor, there shall be added to or deducted from the Contract Price such further sums as may be agreed between the Contractor and the Engineer or, failing agreement, determined by the Engineer having regard to the Contractor's Site and general overhead costs of the Contract. The Engineer shall notify the Contractor of any determination made under this Sub-Clause, with a copy to the Employer. Such sum shall be based only on the amount by which such additions or deductions shall be in excess of 15 per cent of the Effective Contract Price.

#### **52.4 Daywork**

The Engineer may, if in his opinion it is necessary or desirable, issue an instruction that any varied work shall be executed on a daywork basis. The Contractor shall then be paid for such varied work under the terms set out in the daywork schedule included in the Contract and at the rates and prices affixed thereto by him in the Tender.

The Contractor shall furnish to the Engineer such receipts or other vouchers as may be necessary to provide the amounts paid and, before ordering material, shall submit to the Engineer quotations for the same for his approval.

In respect of such of the Works executed on a daywork basis, the Contractor shall during the continuance of such work, deliver each day to the Engineer an exact list in duplicate of the names, occupation and time of all workmen employed on such work and a statement, also in duplicate, showing the description and quantity of all materials and Contractor's Equipment used thereon or therefore other than Contractor's Equipment which is included in the percentage addition in accordance with such daywork schedule. One copy of each list and statement will, if correct, or when agreed, be signed by the Engineer and returned to the Contractor.

At the end of each month the Contractor shall deliver to the Engineer a priced statement of the labour, materials and Contractor's Equipment, except as aforesaid, used and the Contractor shall not be entitled to any payment unless such lists and statements have been fully and punctually rendered. Provided always that if the Engineer considers that for any reason the sending of such lists or statements by the Contractor, in accordance with the foregoing provision, was impracticable he shall nevertheless be entitled to authorise payment for such work, either as daywork, on being satisfied as to the time employed and the labour, materials and Contractor's Equipment used on such work, or at such value therefore as shall, in his opinion, be fair and reasonable.

### **Procedure for Claims**

#### **53.1 Notice of Claims**

Notwithstanding any other provision of the Contract, if the Contractor intends to claim any additional payment pursuant to any Clause of these Conditions or otherwise, he shall give notice of his intention to the Engineer with a copy to the Employer, within 28 days after the event giving rise to the claim has first arisen.

### **53.2 Contemporary Records**

Upon the happening of the event referred to in Sub-Clause 53.1, the Contractor shall keep such contemporary records as may reasonably be necessary to support any claim he may subsequently wish to make. Without necessarily admitting the Employer's liability, the Engineer shall, on receipt of a notice under Sub-Clause 53.1, inspect such contemporary records and may instruct the Contractor to keep any further contemporary records as are reasonable and may be material to the claim of which notice has been given. The Contractor shall permit the Engineer to inspect all records kept pursuant to this Sub-Clause and shall supply him with copies thereof as and when the Engineer so instructs.

### **53.3 Substantiation of Claims**

Within 28 days, or such other reasonable time as may be agreed by the Engineer, of giving notice under Sub-Clause 53.1, the Contractor shall send to the Engineer an account giving detailed particulars of the amount claimed and the grounds upon which the claim is based. Where the event giving rise to the claim has a continuing effect, such account shall be considered to be an interim account and the Contractor shall, at such intervals as the Engineer may reasonably require, send further interim accounts giving the accumulated amount of the claim and any further grounds upon which it is based. In cases where interim accounts are sent to the Engineer, the Contractor shall send a final account within 28 days of the end of the effects resulting from the event. The Contractor shall, if required by the Engineer so to do, copy to the Employer all accounts sent to the Engineer pursuant to this Sub-Clause.

### **53.4 Failure to Comply**

If the Contractor fails to comply with any of the provisions of this Clause in respect of any claim which he seeks to make, his entitlement to payment in respect thereof shall not exceed such amount as the Engineer or any arbitrator or arbitrators appointed pursuant to Sub-Clause 67.3 assessing the claim considers to be verified by contemporary records (whether or not such records were brought to the Engineer's notice as required under Sub-Clause 53.2 and 53.3).

### **53.5 Payment of Claims**

The Contractor shall be entitled to have included in any interim payment certified by the Engineer pursuant to Clause 60 such amount in respect of any claim as the Engineer, after due consultation with the Employer and the Contractor, may consider due to the Contractor provided that the Contractor has

supplied sufficient particulars to enable the Engineer to determine the amount due. If such particulars are insufficient to substantiate the whole of the claim, the Contractor shall be entitled to payment in respect of such part of the claim as such particulars may substantiate to the satisfaction of the Engineer. The Engineer shall notify the Contractor of any determination made under this Sub-Clause, with a copy to the Employer.

### **Contractor's Equipment, Temporary Works and Materials**

#### **54.1 Contractor's Equipment, Temporary Works and Materials; Exclusive Use for the Works**

All Contractor's Equipment, Temporary Works and materials provided by the Contractor shall, when brought on to the Site, be deemed to be exclusively intended for the execution of the Works and the Contractor shall not remove the same or any part thereof, except for the purpose of moving it from one part of the Site to another, without the consent of the Engineer. Provided that consent shall not be required for vehicles engaged in transporting any staff, labour, Contractor's Equipment, Temporary Works, Plant or materials to or from the Site.

#### **54.2 Employer not Liable for Damage**

The Employer shall not at any time be liable, save as mentioned in Clauses 20 and 65, for the loss of or damage to any of the said Contractor's Equipment, Temporary Works or materials.

#### **54.3 Customs Clearance**

The Employer will use his best endeavors in assisting the Contractor, where required, in obtaining clearance through the Customs of Contractor's Equipment, materials and other things required for the Works.

#### **54.4 Re-export of Contractor's Equipment**

In respect of any Contractor's Equipment which the Contractor has imported for the purposes of the Works, the Employer will use his best endeavors to assist the Contractor, where required, in procuring any necessary Government consent to the re-export of such Contractor's Equipment by the Contractor upon the removal thereof pursuant to the terms of Contract.

#### **54.5 Conditions of Hire of Contractor's Equipment**

With a view to securing, in the event of termination under Clause 63, the continued availability, for the purpose of executing the Works, of any hired Contractor's Equipment, the Contractor shall not bring on to the Site any hired Contractor's Equipment unless there is an agreement for hire thereof (which agreement shall be deemed not to include an agreement for hire purchase) which contains a provision that the owner thereof will, on request in writing

made by the Employer within 7 days after the date on which any termination has become effective, and on the Employer undertaking to pay all hire charges in respect thereof from such date, hire such Contractor's Equipment to the Employer on the same terms in all respect as the same was hired to the Contractor save that the Employer shall be entitled to permit the use thereof by any other contractor employed by him for the purpose of execution and completing the Works and remedying any defects therein, under the terms of the said Clause 63.

**54.6 Costs for the Purpose of Clause 63**

In the event of the Employer entering into any agreement for the hire of Contractor's Equipment pursuant to Sub-Clause 54.5, all sums properly paid by the Employer under the provision of any such agreement and all costs incurred by him (including stamp duties) in entering into such agreement shall be deemed, for the purpose of Clause 63, to be part of the cost of executing and completing the Works and the remedying of any defects therein.

**54.7 Incorporation of Clause in Subcontracts**

The Contractor shall, where entering into any subcontract for the execution of any part of the Works, incorporate in such subcontract (by reference or otherwise) the provisions of this Clause in relation to Contractor's Equipment, Temporary Works or materials brought on to the Site by the Subcontractor.

**54.8 Approval of Materials not implied**

The operation of this Clause shall not be deemed to imply any approval by the Engineer of the materials or other matters referred to therein nor shall it prevent the rejection of any such materials at any time by the Engineer.

## **Measurement**

### **55.1 Quantities**

The quantities set out in the Bill of Quantities are the estimated quantities for the Works, and they are not to be taken as the actual and correct quantities of the Works to be executed by the Contractor in fulfillment of his obligations under the Contract.

### **56.1 Works to be Measured**

The Engineer shall, except as otherwise stated, ascertain and determine by measurement the value of the Works in accordance with the Contract and the Contractor shall be paid that value in accordance with Clause 60. The Engineer shall, when he requires any part of the Works to be measured, give reasonable notice to the Contractor's authorised agent, who shall:

- (a) forthwith attend or send a qualified representative to assist the Engineer in making such measurement, and
- (b) supply all particulars required by the Engineer.

Should the Contractor not attend, or neglect or omit to send such representative, then the measurement made by the Engineer or approved by him shall be taken to be the correct measurement of such part of the Works. For the purpose of measuring such Permanent Works as are to be measured by records and drawings, the Engineer shall prepare records and drawings as the work proceeds and the Contractor, as and when called upon to do so in writing, shall, within 14 days, attend to examine and agree such records and drawings with the Engineer and shall sign the same when so agreed. If the Contractor does not attend to examine and agree such records and drawings, they shall be taken to be correct. If, after examination of such records and drawings, the Contractor does not agree the same or does not sign the same as agreed, they shall nevertheless be taken to be correct, unless the Contractor, within 14 days of such examination, lodges with the Engineer notice of the respects in which such records and drawings are claimed by him to be incorrect. On receipt of such notice, the Engineer shall review the records and drawings and either confirm or vary them.

### **57.1 Method of Measurement**

The Works shall be measured net, notwithstanding any general or local custom, except where otherwise provided for in the Contract.

### **57.2 Breakdown of Lump Sum Items**

For the purposes of statements submitted in accordance with Sub-Clause 60.1, the Contractor shall submit to the Engineer, within 28 days after the receipt of the Letter of Acceptance, a breakdown for each of the lump sum items

contained in the Tender. Such breakdowns shall be subject to the approval of the Engineer.

## **Provisional Sums**

### **58.1 Definition of "Provisional Sum"**

"Provisional Sum" means a sum included in the Contract and so designated in the Bill of Quantities for the execution of any part of the Works or for the supply of goods, materials, Plant or services, or for contingencies, which sum may be used, in whole or in part, or not at all, on the instructions of the Engineer. The Contractor shall be entitled to only such amounts in respect of the work, supply or contingencies to which such Provisional Sums relate as the Engineer shall determine in accordance with this Clause. The Engineer shall notify the Contractor of any determination made under this Sub-Clause, with a copy to the Employer.

### **58.2 Use of Provisional Sums**

In respect of every Provisional Sum the Engineer shall have authority to issue instructions for the execution of work or for the supply of goods, material, Plant or services by:

- (a) the Contractor, in which case the Contractor shall be entitled to an amount equal to the value thereof determined in accordance with Clause 52, and
- (b) a nominated Subcontractor, as hereinafter defined, in which case the sum to be paid to the Contractor therefore shall be determined and paid in accordance with Sub-Clause 59.4.

### **58.3 Production of Vouchers**

The Contractor shall produce to the Engineer all quotations, invoices, vouchers and accounts or receipts in connection with expenditure in respect of Provisional Sums, except where work is valued in accordance with rates or prices set out in the Tender.

## **Nominated Subcontractors**

### **59.1 Definition of "Nominated Subcontractors"**

All specialists, merchants, tradesmen and others executing any work or supplying any goods, materials, Plant or services for which Provisional Sums are included in the Contract, who may have been or be nominated or selected or approved by the Employer or the Engineer, and all persons to whom by virtue of the provisions of the Contract the Contractor is required to subcontract shall, in the execution of such work or the supply of such goods, materials, Plant or services, be deemed to be subcontractors to the Contractor

and are referred to in this Contract as "nominated Subcontractors".

#### **59.2 Nominated Subcontractors, Objection to Nomination**

The Contractor shall not be required by the Employer or the Engineer, or be deemed to be under any obligation, to employ any nominated Subcontractor against whom the Contractor may raise reasonable objection, or who declines to enter into subcontract with the Contractor containing provisions:

(a) that in respect of the work, goods, materials, Plant or services the subject of the subcontract, the nominated Subcontractor will undertake towards the Contractor such obligations and liabilities as will enable the Contractor to discharge his own obligations and liabilities towards the Employer under the terms of the Contract and will save harmless and indemnify the Contractor from and against the same and from all claims, proceedings, damages, costs, charges and expenses whatsoever arising out of or in connection therewith, or arising out of or in connection with any failure to perform such obligations or to fulfill such liabilities, and

(b) that the nominated Subcontractor will save harmless and indemnify the Contractor from and against any negligence by the nominated Subcontractor, his agents, workmen and servants and from and against any misuse by him or them of any Temporary Works provided by the Contractor for the purposes of the Contract and from all claims as aforesaid.

#### **59.3 Design Requirements to be Expressly Stated**

If in connection with any Provisional Sum the services to be provided include any matter of design or specification of any part of the Permanent Works or of any Plant to be incorporated therein, such requirement shall be expressly stated in the Contract and shall be included in any nominated Subcontract. The nominated Subcontract shall specify that the nominated Subcontractor providing such services will save harmless and indemnify the Contractor from and against the same and from all claims, proceedings, damages, costs, charges and expenses whatsoever arising out of or in connection with any failure to perform such obligations or to fulfill such liabilities.

#### **59.4 Payments to Nominated Subcontractors**

For all work executed or goods, materials, Plant or services supplied by any nominated Subcontractor, the Contractor shall be entitled to:

(a) the actual price paid or due to be paid by the Contractor, on the instructions of the Engineer, and in accordance with the subcontract.

(b) in respect of labour supplied by the Contractor, the sum, if any, entered in the Bill of Quantities or, if instructed by the Engineer pursuant to paragraph (a) of Sub-Clause 58.2, as may be determined in accordance with Clause 52; and

- (c) in respect of all other charges and profit, a sum being a percentage rate of the actual price paid or due to be paid calculated, where provision has been made in the Bill of Quantities for a rate to be set against the relevant Provisional Sum, at the rate inserted by the Contractor against that item or, where no such provision has been made, at the rate inserted by the Contractor in the Appendix to Tender and repeated where provision for such is made in a special item provided in the Bill of Quantities for such purpose.

#### **59.5 Certification of Payments to Nominated Subcontractors**

Before issuing, under Clause 60 any certificate, which includes any payment in respect of work done or goods, materials, Plant or services supplied by any nominated Subcontractor, the Engineer shall be entitled to demand from the Contractor reasonable proof that all payments, less retentions, included in previous certificates in respect of the work or goods, materials, Plant or services of such nominated Subcontractor have been paid or discharged by the Contractor. If the Contractor fails to supply such proof, then, unless the Contractor:

- (a) satisfies the Engineer in writing that he has reasonable cause for withholding or refusing to make such payment, and

- (b) produces to the Engineer reasonable proof that he has so informed such nominated Subcontractor in writing,

the Employer shall be entitled to pay to such nominated Subcontractor direct, upon the certificate of the Engineer, all payments, less retention, provided for in the nominated Subcontract, which the Contractor has failed to make to such nominated Subcontractor and to deduct by way of set-off the amount so paid by the Employer from any sums due or to become due from the Employer to the Contractor.

Provided that, where the Engineer has certified and the Employer has paid direct as aforesaid, the Engineer shall in issuing any further certificate in favour of the Contractor, deduct from the amount thereof the amount so paid, direct as aforesaid, but shall not withhold or delay the issue of the certificate itself when due to be issued under the terms of the Contract.

### **Certificates and Payment**

#### **60.1 Monthly Statements**

The Contractor shall submit to the Engineer after the end of each month six copies, each signed by the Contractor's representative approved by the Engineer in accordance with the Sub-Clause 15.1, of a statement, in such form as the Engineer may from time to time prescribe, showing the amounts to which, the Contractor considers himself to be entitled up to the end of the month in respect of:



- (a) the value of the Permanent Works executed,
- (b) any other items in the Bill of Quantities including those for Contractor's Equipment, Temporary Works, dayworks and the like,
- (c) the percentage of the invoice value of listed materials, all as stated in the Appendix to Tender, and Plant delivered by the Contractor on the Site for incorporation in the Permanent Works but not incorporated in such Works,
- (d) adjustments under Clause 70, and
- (e) any other sum to which the Contractor may be entitled under the Contract or otherwise.

#### 60.2 **Monthly Payments**

The Engineer shall, within 28 days of receiving such statement, certify to the Employer the amount of payment to the Contractor which he considers due and payable in respect thereof, subject:

- (a) firstly, to the retention of the account calculated by applying the Percentage of Retention stated in the Appendix to Tender, to the amount to which the Contractor is entitled under paragraph (a), (b), (c) and (e) of Sub-Clause 60.1 until the amount so retained reaches the Limit of Retention Money stated in the Appendix to Tender, and
- (b) secondly, to the deduction, other than pursuant to Clause 47, of any sums which may have become due and payable by the Contractor to the Employer.

Provided that the Engineer shall not be bound to certify any payment under this Sub-Clause if the net amount thereof, after all retentions and deductions, would be less than the Minimum Amount of Interim Payment Certificates stated in the Appendix to Tender.

Notwithstanding the terms of this Clause or any other Clause of the Contract no amount will be certified by the Engineer for payment until the performance security, if required under the Contract, has been provided by the Contractor and approved by the Employer.

#### 60.3 **Payment of Retention Money**

- (a) Upon the issue of the Taking-Over Certificate with respect to the whole of the Works, one half of the Retention Money, or upon the issue of a Taking-Over Certificate with respect to a Section or part of the Permanent

Works only such proportion thereof as the Engineer determines having regard to the relative value of such Section or part of the Permanent Works, shall be

certified by the Engineer for payment to the Contractor.

- (c) Upon the expiration of the Defects Liability Period for the Works the other half of the Retention Money shall be certified by the Engineer for payment to the Contractor. Provided that, in the event of different Defects Liability Periods having become applicable to different Sections or part of the Permanent Works pursuant to Clause 48, the expression "expiration of the Defects Liability Period" shall, for the purposes of this Sub-Clause, be deemed to mean the expiration of the latest of such periods. Provided also that if at such time, there shall remain to be executed by the Contractor any work instructed, pursuant to Clause 49 and 50, in respect of the Works, the Engineer shall be entitled to withhold certification until completion of such work of so much of the balance of the Retention Money as shall, in the opinion of the Engineer, represent the cost of the work remaining to be executed.

#### 60.4 **Correction of Certificates**

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

#### 60.5 **Statement at Completion**

Not later than 84 days after the issue of the Taking-Over Certificate in respect of the whole of the Works, the Contractor shall submit to the Engineer a Statement at Completion with supporting documents showing in detail, in the form approved by the Engineer:

- (a) The final value of all work done in accordance with the Contract up to the date stated in such Taking-Over Certificate,
- (b) Any further sums which the Contractor considers to be due, and
- (c) An estimate of amounts which the Contractor considers will become due to him under the Contract.

The estimated amounts shall be shown separately in such Statement at Completion. The Engineer shall verify payment in accordance with Sub-Clause 60.2.

#### 60.6 **Final Statement**

Not later than 56 days after the issue of the Defects Liability Certificate pursuant to Sub-Clause 62.1, the Contractor shall submit to the Engineer for

consideration a draft final statement with supporting documents showing in detail, in the form approved by the Engineer:

- (a) the value of all work done in accordance with the Contract, and
- (b) any further sums which the Contractor considers to be due to him under the Contract.

If the Engineer disagrees with or cannot verify any part of the draft final statement, the Contractor shall submit such further information as the Engineer may reasonably require and shall make such changes in the draft as may be agreed between them. The Contractor shall then prepare and submit to the Engineer the final statement as agreed (for the purposes of these Conditions referred to as the "Final Statement").

If, following discussions between the Engineer and the Contractor and any changes to the draft final statement which may be agreed between them, it becomes evident that a dispute exists, the Engineer shall deliver to the Employer an Interim Payment Certificate for those parts of the draft final statement, if any, which are not in dispute. The dispute may then be settled in accordance with Clause 67.

#### **60.7 Discharge**

Upon submission of the Final Statement, the Contractor shall give to the Employer, with a copy to the Engineer, a written discharge confirming that the total of the Final Statement represents full and final settlement of all monies due to the Contractor arising out of or in respect of the Contract. Provided that such discharge shall become effective only after payment due under the Final Payment Certificate issued pursuant to Sub-Clause 60.8 has been made and the performance security referred to in Sub-Clause 10.1, if any, has been returned to the Contractor.

#### **60.8 Final Payment Certificate**

Within 28 days after receipt of the Final Statement, and the written discharge, the Engineer shall issue to the Employer (with a copy to the Contractor) a Final Payment Certificate stating:

- (a) the amount which, in the opinion of the Engineer, is finally due under the Contract or otherwise, and
- (b) after giving credit to the Employer for all amounts previously paid by the Employer and for all sums to which the Employer is entitled other than under Clause 47, the balance, if any, due from the Employer to the Contractor or from the Contractor to the Employer as the case may be.

#### **60.9 Cessation of Employer's Liability**

The Employer shall not be liable to the Contractor for any matter or thing arising out of or in connection with the Contract or execution of the Works, unless the Contractor shall have included a claim in respect thereof in his

Final Statement and (except in respect of matters or things arising after the issue of the Taking-Over Certificate in respect of the whole of the Works) in the Statement at Completion referred to in Sub-Clause 60.5.

**60.10 Time for Payment**

The amount due to the Contractor under any Interim Payment Certificate issued by the Engineer pursuant to this Clause, or to any other term of the Contract, shall, subject to Clause 47, be paid by the Employer to the Contractor within 28 days after such Interim Payment Certificate has been delivered to the Employer, or, in the case of the Final Payment Certificate referred to in Sub-Clause 60.8, within 56 days, after such Final Payment Certificate has been delivered to the Employer. In the event of the failure of the Employer to make payment within the times stated, the Employer shall pay to the Contractor interest at the rate stated in the Appendix to Tender upon all sums unpaid from the date by which the same should have been paid. The provisions of this Sub-Clause are without prejudice to the Contractor's entitlement under Clause 69 or otherwise.

**61.1 Approval only by Defects Liability Certificate**

Only the Defects Liability Certificate, referred to in Clause 62, shall be deemed to constitute approval of the Works.

**62.1 Defects Liability Certificate**

The Contract shall not be considered as completed until a Defects Liability Certificate shall have been signed by the Engineer and delivered to the Employer, with a copy to the Contractor, stating the date on which the Contractor shall have completed his obligations to execute and complete the Works and remedy any defects therein to the Engineer's satisfaction. The Defects Liability Certificate shall be given by the Engineer within 28 days after the expiration of the Defects Liability Period, or, if different defects liability periods shall become applicable to different Sections or parts of the Permanent Works, the expiration of the latest such period, or as soon thereafter as any works instructed, pursuant to Clause 49 and 50, have been completed to the satisfaction of the Engineer. Provided that the issue of the Defects Liability Certificate shall not be a condition precedent to payment to the Contractor of the second portion of the Retention Money in accordance with the conditions set out in Sub-Clause 60.3.

**62.2 Unfulfilled Obligations**

Notwithstanding the issue of the Defects Liability Certificate the Contractor and the Employer shall remain liable for the fulfillment of any obligation incurred under the provisions of the Contract prior to the issue of the Defects Liability Certificate which remains unperformed at the time of such Defects

Liability Certificate is issued and, for the purposes of determining the nature and extent of any such obligation, the Contract shall be deemed to remain in force between the parties to the Contract.

## **Remedies**

### **63.1 Default of Contractor**

If the Contractor is deemed by law unable to pay his debts as they fall due, or enters into voluntary or involuntary bankruptcy, liquidation or dissolution (other than a voluntary liquidation for the purposes of amalgamation or reconstruction), or becomes insolvent, or makes an arrangement with, or assignment in favour of, his creditors, or agrees to carry out the Contract under a committee of inspection of his creditors, or if a receiver, administrator, trustee or liquidator is appointed over any substantial part of his assets, or if, under any law or regulation relating to reorganization, arrangement or readjustment of debts, proceedings are commenced against the Contractor or resolutions passed in connection with dissolution or liquidation or if any steps are taken to enforce any security interest over a substantial part of the assets of the Contractor, or if any act is done or event occurs with respect to the Contractor or his assets which, under any applicable law has a substantially similar effect to any of the foregoing acts or events, or if the Contractor has contravened Sub-Clause 3.1, or has an execution levied on his goods, or Contract, if the Engineer certifies to the Employer, with a copy to the Contractor, that, in his opinion, the Contractor:

- (a) has repudiated the Contract, or
  - (b) without reasonable excuse has failed
    - (i) to commence the Works in accordance with Sub-Clause 41.1,
    - (ii) to proceed with the Works, or any Section thereof, within 28 days after receiving notice pursuant to Sub-Clause 46.1,
  - (c) has failed to comply with a notice issued pursuant to Sub-Clause 37.4 or an instruction issued pursuant to Sub-Clause 39.1 within 28 days after having received it
  - (d) despite previous warning from the Engineer, in writing, is otherwise persistently or flagrantly neglecting to comply with any of his obligations under the Contract, or
  - (e) has contravened Sub-Clause 4.1,
- then the Employer may, after giving 14 days' notice to the Contractor, enter upon the Site and the Works and terminate the employment of the Contractor without thereby releasing the Contractor from any of his obligations or liabilities under the Contract, or affecting the rights and authorities conferred on the Employer or the Engineer by the Contract, and may himself complete the Works or may employ any other contractor to complete the Works. The

Employer or such other contractor may use for such completion so much of the Contractor's Equipment, Temporary Works and materials as he or they may think proper.

### **63.2 Valuation at Date of Termination**

The Engineer shall, as soon as may be practicable after any such entry and termination by the Employer, fix and determine ex parte, or by or after reference to the parties or after such investigation or enquiries as he may think fit to make or institute, and shall certify:

(a) what amount (if any) had, at the time of such entry and termination, been reasonably earned by or would reasonably accrue to the Contractor in respect of work then actually done by him under the Contract, and

(b) the value of any of the said unused or partially used materials, any Contractor's Equipment and any Temporary Works.

### **63.3 Payment after Termination**

If the Employer terminates the Contractor's employment under this Clause, he shall not be liable to pay to the Contractor any further amount (including damages) in respect of the Contract until the expiration of the Defects Liability Period and thereafter until the costs of execution, completion and remedying of any defects, damages for delay in completion (if any) and all other expenses incurred by the Employer have been ascertained and the amount thereof certified by the Engineer. The Contractor shall then be entitled to receive only such sum (if any) as the Engineer may certify would have been payable to him upon due completion by him after deducting the said amount. If such amount exceeds the sum which would have been payable to the Contractor on due completion by him, then the Contractor shall, upon demand, pay to the Employer the amount of such excess and it shall be deemed a debt due by the Contractor to the Employer and shall be recoverable accordingly.

### **63.4 Assignment of Benefit of Agreement**

Unless prohibited by law, the Contractor shall, if so, instructed by the Engineer within 14 days of such entry and termination referred to in Sub-Clause 63.1, assign to the Employer the benefit of any agreement for the supply of any goods or materials or services and/or for the execution of any work for the purposes of the Contract, which the Contractor may have entered into.

### **64.1 Urgent Remedial Work**

If, by reason of any accident, or failure, or other event occurring to, in, or in connection with the Works, or any part thereof, either during the execution of the Works, or during the Defects Liability Period, any remedial or other work

is, in the opinion of the Engineer, urgently necessary for the safety of the Works and the Contractor is unable or unwilling at once to do such work, the Employer shall be entitled to employ and pay other persons to carry out such work as the Engineer may consider necessary. If the work or repair so done by the Employer is work which, in the opinion of the Engineer, the Contractor was liable to do at his own cost under the Contract, then all costs consequent thereon or incidental thereto shall, after due consultation with the Employer and the Contractor, be determined by the Engineer and shall be recoverable from the Contractor by the Employer, and may be deducted by the Employer from any monies due or to become due to the Contractor and the Engineer shall notify the Contractor accordingly, with a copy to the Employer. Provided that the Engineer shall, as soon after the occurrence of any such emergency as may be reasonably practicable, notify the Contractor thereof.

### **Special Risks**

#### **65.1 No Liability for Special Risks**

The Contractor shall be under no liability whatsoever in consequence of any of the special risks referred to in Sub-Clause 65.2, whether by way of indemnity or otherwise, for or in respect of:

- (a) destruction of or damage to the Works, save to work condemned under the provisions of Clause 39 prior to the occurrence of any of the said special risks,
- (b) destruction of or damage to property, whether of the Employer or third parties, or
- (c) injury or loss of life.

#### **65.2 Special Risks**

The Special Risks are:

- (a) the risks defined under paragraphs (a), (c), (d) and (e) of Sub-Clause 20.4, and
- (b) the risks defined under paragraph (b) of Sub-Clause 20.4 insofar as these relate to the country in which the Works are to be executed.

#### **65.3 Damage to Works by Special Risks**

If the Works or any materials or Plant on or near or in transit to the Site, or any of the Contractor's Equipment, sustain destruction or damage by reason of any of the said special risks, the Contractor shall be entitled to payment in accordance with the Contract for any Permanent Works duly executed and for any materials or Plant so destroyed or damaged and, so far as may be required by the Engineer or as may be necessary for the completion of the Works, to payment for:

- (a) rectifying any such destruction or damage to the Works, and

(b) replacing or rectifying such materials or Contractor's Equipment,

and the Engineer shall determine an addition to the Contract Price in accordance with Clause 52 (which shall in the case of the cost of replacement of Contractor's Equipment include the fair market value thereof as determined by the Engineer) and shall notify the Contractor accordingly, with a copy to the Employer.

#### **65.4 Projectile, Missile**

Destruction, damage, injury or loss of life caused by the explosion or impact, whenever and wherever occurring, of any mine, bomb, shell, grenade, or other projectile, missile, munition, or explosive of war, shall be deemed to be a consequence of the said special risks.

#### **65.5 Increased Costs arising from Special Risks**

Save to the extent that the Contractor is entitled to payment under any other provision of the Contract, the Employer shall repay to the Contractor any costs of the execution of the Work (other than such as may be attributable to the cost of reconstructing work condemned under the provisions of Clause 39 prior to the occurrence of any special risk) which are howsoever attributable to or consequent on or the result of or in any way whatsoever connected with the said special risks, subject however to the provisions in this Clause hereinafter contained in regard to outbreak of war, but the Contractor shall, as soon as any such cost comes to his knowledge, forthwith notify the Engineer thereof. The Engineer shall, after due consultation with the Employer and the Contractor, determine the amount of the Contractor's costs in respect thereof which shall be added to the Contract Price and shall notify the Contractor accordingly, with a copy to the Employer.

#### **65.6 Outbreak of War**

If, during the currency of the Contract, there is an outbreak of war, whether war is declared or not, in any part of the world which, whether financially or otherwise, materially affects the execution of the Works, the Contractor shall, unless and until the Contract is terminated under the provisions of this Clause, continue to use his best endeavor to complete the execution of the Works. Provided that the Employer shall be entitled, at any time after such outbreak of war, to terminate the Contract by giving notice to the Contractor and, upon such notice being given, the Contract shall, except as to the rights of the parties under this clause and Clause 67, terminate, but without prejudice to the rights of either party in respect of any antecedent breach thereof.

#### **65.7 Removal of Contractor's Equipment on Termination**

If the Contract is terminated under the provisions of Sub-Clause 65.6, the Contractor shall, with all reasonable dispatch, remove from the Site all Contractor's Equipment and shall give similar facilities to his Subcontractors



to do so.

#### 65.8 **Payment if Contract Terminated**

If the Contract is terminated as aforesaid, the Contractor shall be paid by the Employer, insofar as such amounts or items have not already been covered by payments on account made to the Contractor, for all work executed prior to the date of termination at the rates and prices provided in the Contract and in addition:

(a) the amounts payable in respect of any preliminary items referred to in the Bill of Quantities, so far as the work or service comprised therein has been carried out or performed, and a proper portion of any such items which have been partially carried out or performed.

(b) the cost of materials, Plant or goods reasonably ordered for the Works which have been delivered to the Contractor or of which the Contractor is legally liable to accept delivery, such materials, Plant or goods becoming the property of the Employer upon such payments being made by him.

(c) a sum being the amount of any expenditure reasonably incurred by the Contractor in the expectation of completing the whole of the Works insofar as such expenditure has not been covered by any other payments referred to in this Sub-Clause.

(d) any additional sum payable under the provisions of Sub-Clauses 65.3 and 65.5.

(e) such proportion of the cost as may be reasonable, taking into account payments made or to be made for work executed, of removal of Contractor's Equipment under Sub-Clause 65.7 and, if required by the Contractor, return thereof to the Contractor's main plant yard in his country of registration or to other destination, at no greater cost; and

(f) the reasonable cost of repatriation of all the Contractor's staff and workmen employed on or in connection with the Works at the time of such termination.

Provided that against any payment due from the Employer under this Sub-Clause, the Employer shall be entitled to be credited with any outstanding balances due from the Contractor for advances in respect of Contractor's Equipment, materials and Plant and any other sums which, at the date of termination, were recoverable by the Employer from the Contractor under the terms of Contract. Any sums payable under this Sub-Clause shall, after due consultation with the Employer and the Contractor, be determined by the Engineer who shall notify the Contractor accordingly, with a copy to the Employer.

#### **Release from Performance**

#### 66.1 **Payment in Event of Release from Performance**

If any circumstance outside the control of both parties arises after the issue of the Letter of Acceptance which renders it impossible or unlawful for either party to fulfill his or their contractual obligations, or under the law governing the Contract the parties are released from further performance, then the parties shall be discharged from the Contract, except as to their rights under this Clause and Clause 67 and without prejudice to the rights of either party in respect of any antecedent breach of the Contract, and the sum payable by the Employer to the Contractor in respect of the work executed shall be the same as that which would have been payable under Clause 65 if the Contract had been terminated under the provisions of Clause 65.

### **Settlement of Disputes**

#### 67.1 **Engineer's Decision**

If a dispute of any kind whatsoever arises between the Employer and the Contractor in connection with, or arising out of, the Contract or the execution of the Works, whether during the execution of the Works or after their completion and whether before or after repudiation or other termination of the Contract, including any dispute as to any opinion, instruction, determination, certificate or valuation of the Engineer, the matter in dispute shall, in the first place, be referred in writing to the Engineer, with a copy to the other party. Such reference shall state that it is made pursuant to this Clause. No later than the eighty-fourth day after the day on which he received such reference the Engineer shall give notice of his decision to the Employer and the Contractor. Such decision shall state that it is made pursuant to this Clause.

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

If either the Employer or the Contractor be dissatisfied with any decision of the Engineer, or if the Engineer fails to give notice of his decision on or before the eighty-fourth day on which he received the reference, then either the Employer or the Contractor may, on or before the seventieth day after the day on which he received notice of such decision, or on or before the seventieth day after the day on which the said period of 84 days expired, as the case may be, give notice to the other party, with a copy for information to the Engineer, of his intention to commence arbitration, as hereinafter provided, as to the matter in dispute. Such notice shall establish the entitlement of the party giving the same to commence arbitration, as hereinafter provided, as to such dispute and, subject to Sub-Clause 67.4, no arbitration in respect thereof may be commenced unless such notice is given.

If the Engineer has given notice of his decision as to a matter in dispute to the Employer and the Contractor and no notice of intention to commence arbitration as to such dispute has been given by either the Employer or the Contractor on or before the seventieth day after the day on which the parties received notice as to such decision from the Engineer, the said decision shall become final and binding upon the Employer and the Contractor.

#### **67.2 Amicable Settlement**

Where notice of intention to commence arbitration as to a dispute has been given in accordance with Sub-Clause 67.1, the parties shall attempt to settle such dispute amicably before the commencement of arbitration. Provided that, unless the parties otherwise agree, arbitration may be commenced on or after the fifty-sixth day after the day on which notice of intention to commence arbitration of such dispute was given, even if no attempt at amicable settlement thereof has been made.

#### **67.3 Arbitration**

Any dispute in respect of which:

- (a) the decision, if any, of the Engineer has not become final and binding pursuant to Sub-Clause 67.1, and
- (b) amicable settlement has not been reached within the period stated in Sub-Clause 67.2,

shall be finally settled, unless otherwise specified in the Contract, under the Rules of Conciliation and Arbitration of the International Chamber of Commerce by one or more arbitrators appointed under such Rules. The said arbitrator/s shall have full power to open up, review and revise any decision, opinion, instruction, determination, certificate or valuation of the Engineer related to the dispute.

Neither party shall be limited in the proceedings before such arbitrator/s to the evidence or arguments put before the Engineer for the purpose of obtaining his said decision pursuant to Sub-Clause 67.1. No such decision shall disqualify the Engineer from being called as a witness and giving evidence before the arbitrator/s on any matter whatsoever relevant to the dispute.

Arbitration may be commenced prior to or after completion of the Works, provided that the obligations of the Employer, the Engineer and the Contractor shall not be altered by reason of the arbitration being conducted during the progress of the Works.

#### **67.4 Failure to Comply with Engineer's Decision**

Where neither the Employer nor the Contractor has given notice of intention to commence arbitration of a dispute within the period stated in Sub-Clause 67.1 and the related decision has become final and binding, either party may, if the other party fails to comply with such decision, and without prejudice to

any other rights it may have, refer the failure to arbitration in accordance with Sub-Clause 67.3. The provisions of Sub-Clause 67.1 and 67.2 shall not apply to any such reference.

## **Notices**

### **68.1 Notice to Contractor**

All certificates, notices or instructions to be given to the Contractor by the Employer or the Engineer under the terms of the Contract shall be sent by post, cable, telex or facsimile transmission to or left at the Contractor's principal place of business or such other address as the Contractor shall nominate for that purpose.

### **68.2 Notice to Employer and Engineer**

Any notice to be given to the Employer or to the Engineer under the terms of the Contract shall be sent by post, cable, telex or facsimile transmission to or left at the respective addresses nominated for that purpose in Part II of these Conditions.

### **68.3 Change of Address**

Either party may change a nominated address to another address in the country where the Works are being executed by prior notice to the other party, with a copy to the Engineer, and the Engineer may do so by prior notice to both parties.

## **Default of Employer**

### **69.1 Default of Employer**

In the event of the Employer:

(a) failing to pay to the Contractor the amount due under any certificate of the Engineer within 28 days after the expiry of the time stated in Sub-Clause 60.10 within which payment is to be made, subject to any deduction that the Employer is entitled to make under the Contract,

(b) interfering with or obstructing or refusing any required approval to the issue of any such certificate,

(c) becoming bankrupt or, being a company, going into liquidation, other than for the purpose of a scheme of reconstruction or amalgamation, or

(d) giving notice to the Contractor that for economic reasons it is impossible for him to continue to meet his contractual obligations,

the Contractor shall be entitled to terminate his employment under the

Contract by giving notice to the Employer, with a copy to the Engineer. Such termination shall take effect 14 days after the giving of the notice.

**69.2 Removal of Contractor's Equipment**

Upon the expiry of the 14 days' notice referred to in Sub-Clause 69.1, the Contractor shall, notwithstanding the provisions of Sub-Clause 54.1, with all reasonable dispatch, remove from the Site all Contractor's Equipment brought by him thereon.

**69.3 Payment on Termination**

In the event of such termination the Employer shall be under the same obligations to the Contractor in regard to payment as if the Contract had been terminated under the provisions of Clause 65, but in addition to the payments specified in Sub-Clause 65.8, the Employer shall pay to the Contractor the amount of any loss or damage to the Contractor arising out of or in connection with or by consequence of such termination.

**69.4 Contractor's Entitlement to Suspend Work**

Without prejudice to the Contractor's entitlement to interest under Sub-Clause 60.10 and to terminate under Sub-Clause 69.1, the Contractor may, if the Employer fails to pay the Contractor the amount due under any certificate of the Engineer within 28 days after the expiry of the time stated in Sub-Clause 60.10 within which payment is to be made, subject to any deduction that the Employer is entitled to make under the Contract, after giving 28 days' prior notice to the Employer, with a copy to the Engineer, suspend work or reduce the rate of work.

If the Contractor suspends work or reduces the rate of work in accordance with the provisions of this Sub-Clause and thereby suffers delay or incurs costs the Engineer shall, after due consultation with the Employer and the Contractor, determine:

- (a) any extension of time to which the Contractor is entitled under Clause 44, and
- (b) the amount of such costs, which shall be added to the Contract Price,

and shall notify the Contractor accordingly, with a copy to the Employer.

**69.5 Resumption of Work**

Where the Contractor suspends work or reduces the rate of work, having given notice in accordance with Sub-Clause 69.4, and the Employer subsequently pays the amount due, including interest pursuant to Sub-Clause 60.10, the Contractor's entitlement under Sub-Clause 69.1 shall, if notice of termination has not been given, lapse and the Contractor shall resume normal working as soon as is reasonably possible.

## **Changes in Cost and Legislation**

### **70.1 Increase or Decrease of Cost**

There shall be added to or deducted from the Contract Price such sums in respect of rise or fall in the cost of labour and/or materials or any other matters affecting the cost of the execution of the Works as may be determined in accordance with part II of these Conditions.

### **70.2 Subsequent Legislation**

If, after the date 28 days prior to the latest date for submission of tenders for the Contract there occur in the country in which the Works are being or are to be executed changes to any National or State Statute, Ordinance, Decree or other Law or any regulation or bye-law of any local or other duly constituted authority, or the introduction of any such State Statute, Ordinance, Decree, Law, regulation or bye-law which causes additional or reduced cost to the Contractor, other than under Sub-Clause 70.1, in the execution of the Contract, such additional or reduced cost shall, after due consultation with the Employer and the Contractor, be determined by the Engineer and shall be added to or deducted from the Contract Price and the Engineer shall notify the Contractor accordingly, with a copy to the Employer.

## **Currency and Rates of Exchange**

### **71.1 Currency Restrictions**

If, after the date 28 days prior to the latest date for submission of tenders for the Contract, the Government or authorized agency of the Government of the country in which the Works are being or are to be executed imposes currency restrictions and/or transfer of currency restrictions in relation to the currency or currencies in which the Contract Price is to be paid, the Employer shall reimburse any loss or damage to the Contractor arising therefrom, without prejudice to the right of the Contractor to exercise any other rights or remedies to which he is entitled in such event.

### **72.1 Rates of Exchange**

Where the Contract provides for payment in whole or in part to be made to the Contractor in foreign currency or currencies, such payment shall not be subject to variations in the rate or rates of exchange between such specified foreign currency or currencies and the currency of the country in which the Works are to be executed.

### **72.2 Currency Proportions**

Where the Employer has required the Tender to be expressed in a single currency but with payment to be made in more than one currency and the

Contractor has stated the proportions or amounts of other currency or currencies in which he requires payment to be made, the rate or rates of exchange applicable for calculating the payment of such proportions or amounts shall, unless otherwise stated in Part II of these Conditions, be those prevailing, as determined by the Central Bank of the country in which the Works are to be executed, on the date 28 days prior to the latest date for the submission of tenders for the Contract, as has been notified to the Contractor by the Employer prior to the submission of tenders or as provided for in the Tender.

**72.3 Currencies of Payment for Provisional Sums**

Where the Contract provides for payment in more than one currency, the proportions or amounts to be paid in foreign currencies in respect of Provisional Sums shall be determined in accordance with the principles set forth in Sub-Clauses 72.1 and 72.2 as and when these sums are utilised in whole or in part in accordance with the provisions of Clauses 58 and 59.

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## **Part II   -   Particular Conditions of Contract**



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**PART II - PARTICULAR CONDITIONS OF CONTRACT****1.1 Definitions**

(a) (i) The Employer is **The Shaikh Ayaz University, Shikarpur**

(a) (iv) The \_\_\_\_\_ Engineer \_\_\_\_\_ is

\_\_\_\_\_, or any other competent person appointed by the Employer, 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) “Bidder or Tenderer” means any person or persons, company, corporation, firm or joint venture submitting a Bid or Tender.

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

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

The following paragraph is added:

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

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

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

**2.1 Engineer's Duties and Authority**

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

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

- (i) Consenting to the sub-letting of any part of the Works under Sub-Clause 4.1 “Subcontracting”.
- (ii) Certifying additional cost determined under Sub-Clause 12.2 “Not Foreseeable Physical Obstructions or Conditions”.

- (iii) Any action under Clause 10 “Performance Security” and Clauses 21,23,24 & 25 “Insurance” of sorts.
- (iv) Any action under Clause 40 “Suspension”.
- (v) Any action under Clause 44 “Extension of Time for Completion”.
- (vi) Any action under Clause 47 “Liquidated Damages for Delay” or Payment of Bonus for Early Completion of Works (PCC Sub-Clause 47.3).
- (vii) Issuance of “Taking Over Certificate” under Clause 48.
- (viii) Issuing a Variation Order under Clause 51, except:
  - a) in an emergency\* situation, as stated herebelow, 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: Employer 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 Employer.)

## **2.2 Engineer’s Representative**

The following paragraph is added:

The Employer 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 Employer intends to replace the Engineer, the Employer 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 Employer shall not replace the Engineer with a person against whom the Contractor raises reasonable objection by notice to the Employer, 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:

- (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) Special Provisions
- (h) Appendices to Bid (B to L),
- (i) The Priced Bill of Quantities
- (j) The Specifications, Technical Provisions
- (k) The Drawings

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 text is deleted and substituted with the following:

The Contractor shall provide Performance Security to the Employer in the prescribed form. The said Security shall be furnished or caused to be furnished by the Contractor within 14 days after the receipt of the Letter of Acceptance. The Performance Security shall be of an amount equal up to 10% of the Contract Price stated in the Letter of Acceptance. Such Security shall be in the form of bank guarantee from any Scheduled Bank in Pakistan

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 14 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.  
*(Employer to select appropriate one)*

**14.3 Cash Flow Estimate to be Submitted**

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

The following Sub-Clause 14.5 is added:

**14.5 Detailed Program and Monthly Progress Report**

- a) For purposes of Sub-Clause 14.1, the Contractor shall submit to the Engineer detailed Program for the following:
  - (1) Execution of Works.
  - (2) Labour Employment.
  - (3) Local Material Procurement.
  - (4) Material Imports, if any; and
  - (5) Other details as required by the Engineer.
- (b) During the period of the Contract, the Contractor shall submit to the Engineer not later than the 8<sup>th</sup> day of the following month, 10 copies each of Monthly Progress Reports covering:
  - (1) A Construction Schedule indicating the monthly progress in percentage.
  - (2) Description of all work carried out since the last report.
  - (3) Description of the work planned for the next 56 days sufficiently detailed to enable the Engineer to determine his Program of inspection and testing.
  - (4) Monthly summary of daily job record.
  - (5) Photographs to illustrate progress; and
  - (6) Information about problems and difficulties encountered, if any, and proposals to overcome the same.
- (c) During the period of the Contract, the Contractor shall keep a daily record of the work progress, which shall be made available to the Engineer as and when requested. The daily record shall include particulars of weather conditions, number of men working, deliveries of materials, quantity, location and assignment of Contractor's equipment.

The following Sub-Clauses 15.2 and 15.3 are added:

**15.2 Language Ability of Contractor's Representative**

The Contractor's authorised 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.

### **15.3 Contractor's Representative**

The Contractor's authorised representative and his other professional engineers working at Site shall register themselves with the Pakistan Engineering Council.

The Contractor's authorised representative at Site shall be authorised 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.

### **16.4 Employment of Local Personnel**

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

The following Sub-Clauses 19.3 is added:

### **19.3 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 Employer's Risks**

The Employer's risks are:

Delete the text and substitute with the following:

- (a) insofar as they directly affect the execution of the Works in Pakistan:
  - (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 Employer 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**

The text is deleted and substituted with the following:

There shall be no obligation for the insurances in Sub-Clause 21.1 to include loss or damage caused by the risks listed under Sub-Clause 20.4 paras (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 Employer.

Costs of such insurances shall be borne by the Contractor.

The following Sub-Clause 31.3 is added:

#### **31.3 Co-operation with other Contractors**

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

The following Sub-Clauses 34.2 to 34.12 are added:

**34.2 Rates of Wages and Conditions of Labour**

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

**34.3 Employment of Persons in the Service of Others**

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

**34.4 Housing for Labour**

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

**34.5 Health and Safety**

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

**34.6 Epidemics**

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

**34.7 Supply of Water**

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

**34.8 Alcoholic Liquor or Drugs**

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

**34.9 Arms and Ammunition**

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

**34.10 Festivals and Religious Customs**

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

**34.11 Disorderly Conduct**

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

**34.12 Compliance by Subcontractors**

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

The following Sub-Clauses 35.2 and 35.3 are added:

**35.2 Records of Safety and Health**

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

**35.3 Reporting of Accidents**

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

The following Sub-Clause 36.6 is added:

**36.6 Use of Pakistani Materials and Services**

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

**41.1 Commencement of Works**

The text is deleted and substituted with the following:

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

The following Sub-Clause 47.3 is added:

**47.3 Bonus for Early Completion of Works**

No bonus for early completion of work

**48.2 Taking Over of Sections or Parts**

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

**51.2 Instructions for Variations**

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

**52.1 Valuation of Variations**

In the tenth line, after the words "Engineer shall" the following is added: within a period not exceeding one-eighth of the completion time subject to a minimum of 56 days from the date of disagreement whichever is later.

**53.4 Failure to Comply**

This Sub-Clause is deleted in its entirety.

**54.3 Customs Clearance**

The following text is added:

However, all the expenses and activities related to custom clearance is responsibility of the Contractor

**54.5 Conditions of Hire of Contractor's Equipment**

The following paragraph is added:

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

The following Sub-Clauses 59.4 & 59.5 are added:

#### **59.4 Payments to Nominated Subcontractors**

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

#### **59.5 Certification of Payments & Nominated Subcontractors**

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

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

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

#### **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-Clause 60.11 (a)(6) hereof".  
(In case Clause 60.11 is applicable)

#### **60.10 Time for Payment**

The text is deleted and substituted with the following:

The amount due to the Contractor under any Interim Payment Certificate issued by the Engineer pursuant to this Clause, or to any other terms of the Contract, shall , subject to Clause 47, be paid by the Employer to the Contractor within 30 days after such Interim Payment Certificate has been jointly verified by Consultant/Employer and Contractor, or, in the case of the Final Certificate referred to in Sub Clause 60.8, within 60 days after such Final Payment Certificate has been jointly verified by Consultant/Employer and Contractor.

The following Sub-Clause 60.11, 60.12 & 60.13 is added:

#### **60.11 Secured Advance on Materials**

- a) The Contractor shall be entitled to receive from the Employer Secured Advance against an indemnity bond acceptable to the Employer of such sum as the Engineer may consider proper in respect of non-perishable materials brought at the Site but not yet incorporated in the Permanent Works provided that:
  - (1) The materials are in accordance with the Specifications for the Permanent Works.
  - (2) Such materials have been delivered to the Site and are properly stored and protected against loss or damage or deterioration to the satisfaction of the Engineer but at the risk and cost of the Contractor.
  - (3) The Contractor's records of the requirements, orders, receipts and use of materials are kept in a form approved by the Engineer, and such records shall be available for inspection by the Engineer.
  - (4) The Contractor shall submit with his monthly statement the estimated value of the materials on Site together with such documents as may be required by the Engineer for the purpose of valuation of materials and providing evidence of ownership and payment therefor.
  - (5) Ownership of such materials shall be deemed to vest in the Employer and these materials shall not be removed from the Site or otherwise disposed of without written permission of the Employer; and
  - (6) The sum payable for such materials on Site shall not exceed 75 % of the (i) landed cost of imported materials, or (ii) ex-factory / ex-warehouse price of locally manufactured or produced materials, or (iii) market price of other materials.
- (b) The recovery of Secured Advance paid to the Contractor under the above provisions shall be affected from the monthly payments on actual consumption basis or within 90 days.

#### **60.12 Financial Assistance to Contractor**

**Mobilization Advance**

- (a) An interest-free Mobilization Advance up to 10 % of the Contract Price stated in the Letter of Acceptance shall be paid by the Employer to the Contractor in two equal parts upon submission by the Contractor of a Mobilization Advance Guarantee/Bond 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 four equal instalments from first four IPCs.

**60.13 Mode of Payment**

The payments shall be released by the Employer to the Contractor, at Employer's choice, either in the form of Cheque/(s) drawn in the favour of the Contractor or in the form of Irrevocable Inland Letter of Credit (LC) opened in the favour of Contractor. If letter of credit is opened in favour of contractor, the cost (commission and bank charges) of L/C shall be the responsibility of the Contractor

**63.1 Default of Contractor**

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

Provided further that in addition to the action taken by the Employer against the Contractor under this Clause, the Employer 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 Byelaws 1987, as amended from time to time.

**65.2 Special Risks**

The text is deleted and substituted with the following:

The Special Risks are the risks defined under Sub-Clause 20.4 sub paragraphs (a) (i) to (a) (v).

**67.3 Arbitration**

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

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

The following paragraph is added:

The place of arbitration shall be Shikarpur, Pakistan.

#### **68.1 Notice to Contractor**

The following paragraph is added:

For the purposes of this Sub-Clause, the Contractor shall, immediately after receipt of Letter of Acceptance, intimate in writing to the Employer 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.

#### **68.2 Notice to Employer and Engineer**

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

a) The Employer:

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b) The Engineer:

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#### **70.1 Increase or Decrease of Cost**

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

Price adjustment is not applicable to this project.

#### **71.0 Currency and Rates of Exchange**

Sub-Clauses 71.1, 72.1, 72.2 and 72.3 are deleted entirely and substituted with the following:

Contract is based on Pakistani Rupees (PKR) and payments will be made only in Pakistani Rupees (PKR)

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

#### **73.1 Payment of Income Tax**

The Contractor, Subcontractors and their employees shall be responsible for payment of all their income tax, super tax and other taxes on income arising out of the Contract and the rates and prices stated in the Contract shall be deemed to cover all such taxes as per prevailing laws.

#### **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 Employer 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 Employer 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 Employer under Sub-Para (a) and (c) of this Sub-Clause.

#### **75.1 Termination of Contract for Employer's Convenience**

The Employer shall be entitled to terminate the Contract at any time for the Employer'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 Employer as provided in Sub-Clause 65.8 hereof.

#### **76.1 Liability of Contractor**

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

#### **77.1 Joint and Several Liability**

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

#### **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 Employer or the Engineer. If any dispute arises as to the necessity of any publication or disclosure for the purpose of the Contract, the same shall be referred to the decision of the Engineer whose award shall be final.

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## **DRAWINGS**



**THE SHAIKH AYAZ UNIVERSITY,**  
**SHIKARPUR**



**CONSTRUCTION OF GUEST HOUSE FOR  
THE PROJECT TITLED “PROVISION OF  
MISSING FACILITIES FOR THE SHAIKH  
AYAZ UNIVERSITY SHIKARPUR”**

**BILLS OF QUANTITIES**

**April, 2022**

CONSTRUCTION OF GUEST HOUSE FOR THE SHAIKH AYAZ UNIVERSITY SHIKARPUR		
DETAILED ESTIMATE		
SUMMARY OF COST		
Rates Based on Composite Schedule of Rate (GENERAL-2012) Sindh		
Sr. No.	DESCRIPTION	AMOUNT
1.	CIVIL WORKS	
a	Cost of Schedule Items	25,849,994
b	Add Premium Above or Below	
c	Add Premium Above or Below	
d	Cost of Non-Schedule Items	
	TOTAL OF CIVIL WORKS - A	
2.	PUBLIC HEALTH WORKS	
a	Cost of Schedule Items	1,333,772
b	Add Premium Above or Below	
c	Cost of Non-Schedule Items	
	TOTAL OF PHE WORKS - B	
3.	ELECTRIC WORKS	
a	Cost of Schedule Items	2,391,563
b	Add Premium Above or Below	
c	Cost of Non-Schedule Items	
	TOTAL OF ELECTRICAL WORKS - C	
	TOTAL (A+B+C)	
	5% SST	
	GRAND TOTAL	

CONTRACTOR

# CONSTRUCTION OF GUEST HOUSE FOR THE SHAIKH AYAZ UNIVERSITY SHIKARPUR

## DETAILED ESTIMATE

### CIVIL WORKS

Rates Based on Composite Schedule of Rate (GENERAL-2012) Sindh

Sr. No.	Item No.	Description of Item	Unit	Qty	Rate	Amount
1	C-1/18(b)	Excavation in foundation of Building Bridges and other structures including dagbelling dressing,refilling around structure with excavated earth Watering and ramming lead upto 5 ft in Ordinary Soil.	%0Cft	24069.32	3176.25	76,450.18
2	C-18/92	Providing Anti -termite treatment by spraying /sprinkling /spreading Neptachlar 0.5% Emulsion as an overall pre - construction treatment in slab type construction under the slab and along attached perches or entrances etc, complete as per directions of Engineer Incharge.	P.Sft	21040.51	9.74	204,934.57
3	C-4/5(i)	Cement concrete plain including placing compacting, finishing and curing, complete (including screening and washing at stone aggregate without for all shuttering.(Mix 1:4:8)	%Cft	2029.32	11288.75	229,084.86
4	C-4/6 a-i	R.C work in roof slab, beams columns rafts, lintels and other structural members laid in situ or precast laid in position complete in all respects (I) Ratio (1 : 2: 4 ) 90 Lbs.cement 2 Cft. Sand 4 Cft. Shingle 1/8" to 1/4" gauge. (Foundation)	P.Cft	7663.52	337.00	2,582,606.24
5	C-4/6 a-i	R.C work in roof slab, beams columns rafts, lintels and other structural members laid in situ or precast laid in position complete in all respects (I) Ratio (1 : 2: 4 ) 90 Lbs.cement 2 Cft. Sand 4 Cft. Shingle 1/8" to 1/4" gauge. (Ground Floor)	P.Cft	5078.49	337.00	1,711,451.13
6	C-4/6 a-i +6 (d)	R.C work in roof slab, beams columns rafts, lintels and other structural members laid in situ or precast laid in position complete in all respects (I) Ratio (1 : 2: 4 ) 90 Lbs.cement 2 Cft. Sand 4 Cft. Shingle 1/8" to 1/4" gauge. (First Floor)	P.Cft	3802.12	349.10	1,327,320.09
7	C-4/6 a-i +6 (d)	R.C work in roof slab, beams columns rafts, lintels and other structural members laid in situ or precast laid in position complete in all respects (I) Ratio (1 : 2: 4 ) 90 Lbs.cement 2 Cft. Sand 4 Cft. Shingle 1/8" to 1/4" gauge. (Second Floor)	P.Cft	981.79	361.20	354,622.55
8	C-4/6 b-i + c	Precast reinforced cement concrete in columns, beams lintels stair cases, shelves, etc. (I) Ratio 1 : 2: 4 including erecting and fixing in position precast cement concrete or stone slab in roofs or Lintels, etc, lift upto 20 feet including all charges. (Terrace Railing)	P.Cft	342.72	351.55	120,483.22
9	C-4/6 a-ii	Reinforced cement concrete in roof slab, beams, columns lintels, girders and other structural members laid in situ or precast laid in position, or prestressed members cast in situ, complete in all respects:- Type B (nominal mix 1: 1.5: 3) UPL	P.Cft	1031.36	349.00	359,944.64
10	C-4/6 a-ii	Reinforced cement concrete in roof slab, beams, columns lintels, girders and other structural members laid in situ or precast laid in position, or prestressed members cast in situ, complete in all respects:- Type B (nominal mix 1: 1.5: 3) G.F	P.Cft	1406.4	349.00	490,833.60
11	C-4/6 a-ii +6 (d)	Reinforced cement concrete in roof slab, beams, columns lintels, girders and other structural members laid in situ or precast laid in position, or prestressed members cast in situ, complete in all respects:- Type B (nominal mix 1: 1.5: 3) F.F	P.Cft	1172.31	361.10	423,321.14



Sr. No.	Item No.	Description of Item	Unit	Qty	Rate	Amount
12	C-4/6 a-ii +6 (d)	Reinforced cement concrete in roof slab, beams, columns lintels, girders and other structural members laid in situ or precast laid in position, or prestressed members cast in situ, complete in all respects:- Type B (nominal mix 1: 1.5: 3) S.F	P.Cft	56.61	373.20	21,126.85
13	C-4/8(b)	Fabrication of mild steel reinforcement for cement concrete including cutting,bending, laying in position, making joints and fastenings including cost of binding wire (also includes removal of rust from bars.) Using Tor bars	P.Cwt	1411.81	5001.70	7,061,450.08
14	C-5/4-l(e)	Pacca brick work in foundation and plinth in cement sand mortar 1:6.	%Cft	7282.21	11948.36	870,104.67
15	C-1/21	Filling, watering and ramming earth in floors with surplus earth from foundation lead upto one chain and lift upto 5 feet.	%0Cft	8023.11	1512.50	12,134.95
16	C-1/22	Filling, watering and ramming earth under floor with new earth (Excavated from outside) lead upto one chain and lift upto 5 feet.	%0Cft	33065.86	3630.00	120,029.07
17	C-5/5-l(d)	Pacca brick work in Ground Floor cement, sand mortar Ratio 1:5	%Cft	7505.32	12902.08	968,342.39
18	C-5/5-l(c)	Pacca brick work in Ground Floor cement, sand mortar Ratio 1:4	%Cft	97.01	13227.41	12,831.91
19	C-5/5-l(d) + 6	Pacca brick work in First Floor cement, sand mortar Ratio 1:5	%Cft	5653.02	13340.71	754,153.00
20	C-5/5-l-c + 6	Pacca brick work in First Floor cement, sand mortar Ratio 1:4	%Cft	415.42	13666.04	56,771.46
21	C-5/5-l(d) + 6	Pacca brick work in Second Floor cement, sand mortar Ratio 1:5	%Cft	192.3	13915.46	26,759.43
22	C-9/12(b)	Cement plaster 1:5 upto 12' height:- b) ½" (13 mm) thick. (Internal) Ground Floor	%Sft	11428.85	2241.80	256,211.96
23	C-9/12(b)+29	Cement plaster 1:5 upto 12' height:- b) ½" (13 mm) thick. (Internal) First Floor	%Sft	10827.33	2382.77	257,990.37
24	C-9/12(b)+29	Cement plaster 1:5 upto 12' height:- b) ½" (13 mm) thick. (Internal) Second Floor	%Sft	401.63	2523.74	10,136.10
25	C-9/12(c)	Cement plaster 1:5 upto 12' height:- b) ¾" (20 mm) thick. (Internal) Ground Floor	%Sft	4931.24	2678.50	132,083.26
26	C-9/12(c)+29	Cement plaster 1:5 upto 12' height:- b) ¾" (20 mm) thick. (Internal) First Floor	%Sft	5670.11	2819.47	159,867.05
27	C-9/11(c)	Cement plaster 1:4 Ground Floor upto 12' height:- c) ¾" (20 mm) thick. (External)	%Sft	7063.5	3015.76	213,018.21
28	C-9/11(c)+29	Cement plaster 1:4 First Floor upto 12' height:- c) ¾" (20 mm) thick. (External)	%Sft	6073.59	3156.73	191,726.84
29	C-9/11(c)+29	Cement plaster 1:4 Second Floor upto 12' height:- c) ¾" (20 mm) thick. (External)	%Sft	2927.08	3297.70	96,526.32
30	C-9/10(a)	Cement plaster 3/8" thick under soffit or R.C.C. roof slab only upto 12' height ratio 1:3. Ground Floor	%Sft	3339.85	2225.12	74,315.67
31	C-9/10(a)+29	Cement plaster 3/8" thick under soffit or R.C.C. roof slab only upto 12' height ratio 1:3. First Floor	%Sft	2704.17	2366.09	63,983.10
32	C-9/10(a)+29	Cement plaster 3/8" thick under soffit or R.C.C. roof slab only upto 12' height ratio 1:3. Second Floor	%Sft	237.03	2507.06	5,942.48
33	C-9/24(c)	Distempering:- New surface:- three coats	%Sft	39540.21	1079.65	426,895.88
34	C-9/(38.A+38.B)	Preparing the surface and painting with weather coat l/c rubbing the surface with rubbing brick / sand Paper, filling the voids with chalk/ plaster of Paris and then painting with weather coat of approved make:- three coats	%Sft	11961.86	2567.95	307,174.58

Sr. No.	Item No.	Description of Item	Unit	Qty	Rate	Amount
35	C-5/29	Supplying and filling sand under floor and plugging in walls.	%Cft	2801.33	1141.25	31,970.18
36	C-4/2	Dry rammed brick or stone ballast 1 1/2" to 2" gauge.	%Cft	2659.69	3327.50	88,501.18
37	C-8/74	Providing & fixing cement paving blocks flooring having size of 197 x 97 x 80 (mm) of city / quddra / cobble shape with pigmented having strength b/w 5000 psi to 8500 psi l/c filling the joints with hill sand and laying in specified manner / pattern and design etc: complete.	P.Sft	1119.96	248.17	277,940.47
38	C-4/5(f)	Cement concrete plain including placing compacting, finishing and curing, complete (including screening and washing at stone aggregate without for all shuttering.(Mix 1:2:4)	%Cft	2284.14	14429.25	329,584.27
39	C-8/16-c	Providing and laying 2" thick topping cement concrete (1:2:4 ) including Surface finishing and dividing into panels:	%Sft	1895.67	3275.50	62,092.67
40	C-7/5	Single layer of tiles 9" x4 1/2" x 2" laid over 4" earth 1" mud plaster without Bhoosa grouted with cement sand 1:3 on top of R.C.C slab provide with 34 Lbs. Bitumen coating sand blinded.	%Sft	6928.35	5628.97	389,994.81
41	C-7/18	Khuras on roof 2'x2'x6" (600 x 600 x 150 mm)	Each	14	358.68	5,021.52
42	C-10/59	First class Sheesham wood wrought framed and fixed in place including chowkhats hold fasts, tower bolts, chocks, cleats, handles card with hooks and cost of nails and screws, etc. panelled or panelled and glazed or fully glazed 1-1/2" thick.	P.Sft	917.49	662.24	607,598.58
43	C-10/19-(A)-ii	Providing and fixing sliding bolt to doors.Iron sliding bolt 12" long.(a) Panelled or panelled and glazed or fully glazed 2" thick.	Each	46	222.23	10,222.58
44	C-10/21	Providing and fixing, approved quality mortice lock.	Each	40	1786.13	71,445.20
45	C-11/5-(c)	Preparing surface and painting of doors and windows any type, (including edges).Three Coats.	%Sft	1620.78	2116.41	34,302.35
46	C-18/83(a)	Supplying & fixing in position Aluminium channels framing for hinged doors or Alcop made with 5 mm thick tinted glass glazing (Belgium) and Alpha (Japan) locks l/c handles, stoppers etc. (a) Deluxe model (White)	P.Sft	244.8	1450.76	355,146.05
47	C-18/84(a)	Supplying & fixing in position Aluminium channels framing for sliding windows & ventilators of Alcop made with 5 mm thick tinted glass glazing (Belgium) & Aluminium fly screen l/c handles stoppers & locking arrangement etc. complete. (a) Deluxe model (White).	P.Sft	1062.33	1592.69	1,691,962.37
48	C-17/26	Supplying & fixing in position iron/steel grill of 3/4" x 1/4" size flat iron of approved design including painting 3 coats etc. complete (weight not to be less than 3.7 Lbs./Sq . Foot of finished grill).	P.Sft	1062.33	180.50	191,750.57
49	C-18/69(a)	Damp Proof course with cement sand Ratio (1: 2) mixed with dampo b) 1-1/2" thick	%Sft	8.95	1934.82	173.17
50	C-7/13	Two coats of bitumen laid hot using 34 Lbs for % Sft. Ober roof and blinded with sand at one Cft. Per % Sft.	%Sft	965.4	1887.40	18,220.96
51	C-7/38	Providing and laying single per layer of polythene sheet 0.13 mm thick for water proffing as per specification and instructions of Engineer incharge.	P.Sft	14822.1	10.70	158,596.47
52	C-4/7(ii)	Extra cost due to use of Hi Bond Pre-packaged Polymer Modified mortar (DHPMM) as an admixture in concrete mix for increasing durability, to be used in concreting, flooring, block/ brick/ stone masonry or plastering as % by weight of cement.	P.Kg	1983.11	459.80	911,833.98

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# CONSTRUCTION OF GUEST HOUSE FOR THE SHAIKH AYAZ UNIVERSITY SHIKARPUR

## DETAILED ESTIMATE

### CIVIL WORKS

**Rates Based on Composite Schedule of Rate (GENERAL-2012) Sindh**

Sr. No.	Item No.	Description of Item	Unit	Qty	Rate	Amount
1	NSI	Providing and laying false ceiling comprising of 5/8" thick plaster of paris sheet of required size in approved design with one line of 6" wide niche all around , hanging with Copper wire (16 SWG) duly enriched with POP and flaxen i/c thecost of making space for rope light /screws/jute/making holes for lights and rawal plugs including paint complete in all respects as approved and directed by the Incharge.	P.Sft	5099.37		
2	NSI	Providing and applying wall putty (Kansai or equivalent) two coats on plastered surface to prepare the surface even and smooth complete in all respect as approved and directed by the Engineer Incharge.	P.Sft	79080.42		
3	NSI	Providing and laying Porcelain tiles flooring 24"x24"x3/8" light polished SB laid in cement over 3/4" thick cement sand mortar (1:2) i/c filling joints in white cement or matching pigment complete in all respect. (MASTER or Equivalent)	P.Sft	8397.58		
4	NSI	Providing and laying Porcelain tiles skirting/ dado 24"x4"x3/8" light polished SB laid in cement over 3/4" thick cement sand mortar (1:2) i/c filling joints in white cement or matching pigment complete in all respect. (MASTER or Equivalent)	P.Sft	1385.79		
5	NSI	Providing and laying Ceramic Matt Tiles Texture Light color for flooring size 12"x26"x3/8" laid over 3/4" thick cement sand mortar (1:2) i/c filling joints in white cement and matching pigment i/c cutting charges complete in all respect as approved & directed by the Engineer/ Incharge. (Premium Quality Tile, Equivalent)	P.Sft	957.78		
6	NSI	Providing and laying Ceramic Matt Tiles Texture Light color for skirting / dado size12"x26"x3/8" laid over 3/4" thick cement sand mortar (1:2) i/c filling joints in white cement and matching pigment i/c cutting charges complete in all respect as approved & directed by the Engineer/ Incharge. (Premium Quality Tile, Equivalent)	P.Sft	3609.27		
7	NSI	Providing and fixing 3/4" thick Boticina Marble full width area above 2 Sft laid in white cement matching pigment 3/4" thick cement sand mortar (1:2) i/c filling joints in white cement & matching pigment,including Polished and making gola on exposed edges complete in all respect as approved by the Engineer/ Incharge.(Stairs, Podium, Vanity)	P.Sft	2026.29		
8	NSI	Providing and fixing UPVC Doors 38mm thickness i/c deluex matching color UPVC frame matt or glossy finish having color (white-Gray-Marble Gray-Oak Wood- Dard Oak Wood, Coffee Wood Honey Pine Wood-Mahagony-Marry Gold-Chocolate Brown-Honey Dew) i/c all accessories i/c mortice locks complete in all respect as approval by the Engineer Incharge.	P.Sft	374.85		
9	NSI	Providing and fixing SS railing 2'-6" height, 2" dia SS pole 16 SWG at 4 ft c/c, 2" dia SS 16 SWG pipe on top, 3 no. 3/4" dia SS 16 SWG horizontal pipe from pole to pole, buffing and polishing complete in all respect including the cost of base plate, base plate cap, rawl bolt etc. as per approval of Engineer/ Incharge.	P.Rft	339.15		

# CONSTRUCTION OF GUEST HOUSE SHAIKH AYAZ UNIVERSITY SHIKARPUR

## DETAILED ESTIMATE

### PUBLIC HEALTH WORKS

Rates Based on Composite Schedule of Rate (GENERAL-2012)

SR. NO.	ITEM NO.	DESCRIPTION	UNIT	QTY	RATE (RS)	AMOUNT (RS)
		<b>SANITARY FIXTURES AND FITTINGS</b>				
1	SOR(Water supply & Sewerage (Ch 1/5)	Providing and fixing European type white glazed earthen ware wash down W.C. pan complete with and l/c the cost of white/black plastic seat (Best quality) and lid with C.P.brass hineges and buffers, 3 gallons white glazed earthen ware low level foushing cistern with siphon fitting 1-1/2" dia white porcelain enamelled fluish bend 3/4" dia and making requiste number of holes in walls, plinth and floor for pipe connections and making good in cement concrete 1:2:4. (Master, Sonex, Porta)	Each	21.00	11,477.40	241,025.40
2	SOR(Water supply & Sewerage (Ch 1/19-c)	Providing and fixing steel sinks stainless local make complete with cast iron or wrought iron brackets 6 inches built in wall, 1-1/2" c.p bubber plug chrome plated brass chain, 1-1/2" c.p brass waste, with 1-1/2" P.V.C. waste pipe & making requiste number of holes in wall, plinth & floor for pipe connection & making good in cement concrete 1:2:4. (c) Steel sink stainless sized 33" x 18" local make (Standard pattern) (Master or Equivalent)	Each	1.00	5,712.30	5,712.30
3	SOR(Water supply & Sewerage (Ch 6/19 (a)	Providing and fixing CP Muslim shower with double bib cock & ring pipe etc complete. (Master, Sonex, or Equivalent)	Each	21.00	3,432.00	72,072.00
4	SOR(Water supply & Sewerage (Ch 2/5)	Providing and fixing soap tray earthen ware with c.p screws etc.complete.	Each	21.00	497.20	10,441.20
5	SOR(Water supply & Sewerage (Ch 2/1 (iii-b)	Providing and fixing chrome plated brass towel rail complete with brackets fixing with 1" long c.p brass screws. (iii) Towel Rail 24" long (b) 3/4" dia round or square (Superior Quality)	Each	21.00	1,082.95	22,741.95
6	SOR(Water supply & Sewerage (Ch 2/2 (b)	Providing and fixing c,p brass toilet paper holder of standard size with chrome plated brass brackets complete (Similar to twyford's design No 1108) (b) Superior Quality	Each	21.00	1,071.40	22,499.40
7	SOR(Water supply & Sewerage (Ch 1/22)	Providing and fixing (1/2") dia, lead connection complete with a (1/2") dia brass stop cock, two brass nuts & lining jointed to lead pipe with plumber wiped solder joints (1/2" lead pipe to be of not less than 4lbs per lineal yard. (Master, Sonex, or Equivalent)	Each	65.00	689.70	44,830.50
8	SOR(Water supply & Sewerage (Ch 10/1 (i)	Providing and fixing 6" x 4" C.C gully trap with 4" outlet complete with 4" thick 1:2:4 C.C for bed & 1/2" thick cement plaster (1:3) to the karb. C.I grating 6" x 6' C.I cover and frame 12" x 12" (inside) etc complete. Earthan ware glazed Gully trap 6" x 6" x 4" with C.I cover & Frame.	Each	7.00	1,220.67	8,544.69
9	SOR (PHE works) Part-B (II) A-2	Providing and laying R.C.C. pipe & collors of class "B" and fixing in trench i/c cutting,fitting and jointing with maxphalt composition and cement mortar (1:1) i/e. testing with water to a head of 22.5 meter or 76 ft. (e) 310mm (12") i/d	P.Rft	500.00	543.75	271,875.00

SR. NO.	ITEM NO.	DESCRIPTION	UNIT	QTY	RATE (RS)	AMOUNT (RS)
10	SOR (PHE works) Part-B (III) A-1	Excavation for pipeline in trechches, and pits in soft soils i/c trimming and dressing sides to true alignment and shape levelling of beds of trenches to correct level and grade, cutting joint and holes and disposal of surplus earth within a one chain as directed by engineer incharge.Providing fence guards, lights, flags and temperory crossings for non-vehicular traffic where ever required lift upto 5ft. (1.52 m) and lead upto one chain (30.5 m).	1000 Cft	4,500.00	3,600.00	16,200.00
11	Ch/1/13 (d)	Earth work compaction (Soft, ordinary or hard soil). (d) Ramming earth work (All types of soil).	1000 Cft	4,500.00	453.75	2,041.88
12	Ch/1/9 (a)	Rehandling of earth work. (a) Lead upto a single throw of Kassi, Phawrah or a = Shovel.	1000 Cft	4,500.00	756.25	3,403.13
13	SOR(Water supply & Sewerage (Ch 6/4 (iv)	Providing and fixing full way gun metal peet/gate valve with wheels, threaded or flabged ends with rubber washing.(iv) 1-1/4" (Light pattern) (Kitz. Audco or Equivalent)	Each	8.00	337.92	2,703.36
14	SOR(Water supply & Sewerage (Ch 6/4 (v)	Providing and fixing full way gun metal peet/gate valve with wheels, threaded or flabged ends with rubber washing.(v) 1-1/2" (Light pattern) (Kitz. Audco or Equivalent)	Each	8.00	695.42	5,563.36
		<b>MANHOLE</b>				
15	VI-B (ii) P (1)	Constructing manhole or inspection chamber for the required diameter of circular sewer and 3'-6" (1067 mm) depth waith walls of BB in cement sand mortar 1:3 cement plastered 1:3, 1/2" thick. Inside of walls and 1" (25 mm) thick over benching and channel i/c fixing C.I manhole cover with frame of clear opening 1-1/2' x 1-1/2' (457 x 457mm) of 1.75 cwt. (88.9 Kg) embaded in plain C.C 1:2:4 and fixing 1"(25mm) dia MS steps 6" (150 mm) wide projecting 4" (102mm) from the face of wall at 12" (305mm) C/C duly painted etc. Complete as per Standard specification and drawing.	Job	10.00	14,748.00	147,480.00
16	SOR (Water supply & Sanitary works) Ch 1-13	Providing & fixing 22"x 16" lavatory basin in white glazed earthen ware complete with & i/c the cost of W.I or C.I cantilever brackets 6 inches built into walls, painted white in 2 coats after a primary coat of red lead paint, a pair of 1/2" rubber plug & chrome brass waste of approved pattern 1-1/4" dia malleable iron or CP brass trap, malleable iron or brass unions and making requisite number of holes in walls plinth and floor for pipe connection &making good in cement concrete 1:2:4 (Foreign or Equivalent) (Master, Sonex, or Equivalent)	Each	22.00	6,237.00	137,214.00
17	SOR (Water supply & Sanitary works) Ch 6-14 (b)	Providing and fixing, wash hand basin mixture of superior quality with CP head 1/2' dia. (Master, Sonex, or Equivalent)	Each	23.00	3,179.00	73,117.00
18	SOR (Water supply & Sanitary works) Ch 1-20	Providing and fixing 6" x 2" or 6" x 3" C.I floor trap of the approved selt cleaning design with a C.I screwed down grating without a vent arm complete with & i/c making requisite number of holes in walls, plinth & floor for pipe connections & making good cement concrete 1:2:4.	Each	75.00	2,042.43	153,182.25
19	SOR (Water supply & Sanitary works) Ch 1-26 (b)	Providing and fixing 24"x 18" bavelled edge mirror of belgium glass complete with 1/8' thick hard board and c.p screws fixed to wooden pleat. ( Superior Quality)	Sft	21.00	2,376.00	49,896.00
		<b>VALVES</b>				

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# CONSTRUCTION OF GUEST HOUSE SHAIKH AYAZ UNIVERSITY SHIKARPUR

## DETAILED ESTIMATE

### PUBLIC HEALTH WORKS

**Rates Based on Composite Schedule of Rate (GENERAL-2012)**

SR. NO.	ITEM NO.	DESCRIPTION	UNIT	QTY	RATE (RS)	AMOUNT (RS)
1	NSI	UPVC Multi Floor Trap (110x75mm) including strainer; making required number of connections; breaking concrete or masonry work & then making it good; etc. of approved make. (Master, Sonex, or Equivalent)	Each	15.00		
2	NSI	Providing, Fixing Dadex Class D or equivalent UPVC clean out with cover making requisite number of holes in walls, plinth or floor for pipe connection and making good the same as necessary to the structure complete including, rubber gasket and clamp. (Dadex, Popular or Equivalent)	Each	4.00		
3	NSI	Providing and fitting "P" trap:ii) 10 cm (4") glazed.	Each	21.00		
4	NSI	Providing and fixing Wall Shower complete in all respects as approved by the Engineer incharge. (Master, Sonex, or Equivalent)	Each	21.00		
5		<b>WATER SUPPLY PIPES AND FITTINGS</b>				
		P/F Polypropylene Random copolymer (PPRC) PN-20 pipe with fusion / threaded joints including the cost of all specials/ accessories i.e elbow, bend, sockets etc. (Popular /Beta or equivalent) complete in all respect.				
	i	1 1/2" (40 mm) dia.	Rft	160.00		
	ii	1" (25 mm) dia.	Rft	360.00		
	iii	2" (50 mm) dia.	Rft	210.00		
	iv	3/4" (20 mm) dia.	Rft	770.00		
6		<b>SOIL, WASTE, VENTILATING PIPES &amp; FITTINGS</b>				
		Providing , fixing and testing UPVC Nikasi type "B" with solution of same quality make including the cost of all specials/ accessories i.e elbow, bend, sockets etc. (Popular/Beta or equivalent) complete in all respect.				
	i	100 mm (4") dia.	Rft	530.00		
	ii	80 mm (3") dia.	Rft	550.00		
		<b>GAS GESYER</b>				
7	NSI	Providing and Fixing Sui Gas Geyser 50 gallon capacity comprising of internal tank of G.I sheet 14-SWG and External M.S sheet 22-SWG covering with proper foot rests dully enamel painted, 4" thick heigh density glass wool insulation with proper warranty with thermostat temperature gauge including fixing and making connection at site etc. complete in all respects as approved by the Engineer Incharge. (Ambassador/Firex/Exquire)	No	2.00		
8	NSI	Providing and fixing Gate valve 1 bars, RUV(itly) or equivalent complete in all respects as approved by the Engineer incharge.	Each	2.00		



SR. NO.	ITEM NO.	DESCRIPTION	UNIT	QTY	RATE (RS)	AMOUNT (RS)
9	NSI	Providing and fixing Gate valve 2 bars, RUV(itly) or equivalent complete in all respects as approved by the Engineer incharge.	Each	4.00		
Total of Non SOR ITEMS						

# CONSTRUCTION OF GUEST HOUSE FOR THE SHAIKH AYAZ UNIVERSITY SHIKARPUR

## DETAILED ESTIMATE

### ELECTRICAL WORKS

Rates Based on Composite Schedule of Rate (GENERAL-2012) Sindh

Sr. No.	Item No.	Description	Unit	Qty	Unit Rate (Rs.)	Total Amount (Rs.)
		<b><u>DISTRIBUTION BOARDS</u></b>				
		Supply at site, fabrication, installation, testing and commissioning of Distribution Board (DB) , made of sheet steel 16 SWG, degreased and derusted, with 2 coats of antirust paint, 2 coats of powder coated paint of approved colour, protection classification IP-44, totally enclosed indoor floor mounting cubicle type in free standing design, with hinged door, handle including cost of all auxiliaries, internal wiring, designation lables on MCCBS, grounding bar suitable for system Voltage 440 V, 50 Hz, 3 Phase and neutral bus bars of 99.9% electrolytic copper, including cost of cable terminal blocks wiring from breakers, brass cable glands, all accessories complete in all respects metion in BOQ or not required for performing completely. All incoming and outgoing breakers shall be accessible only by opening the front door having further M.S. sheet cover gaskets shall also be provided where necessary. Panel should be compeltely made in certified factory. ie PEL, Green T & D, Mazcorp engineering or equivalent a per instructions by engineer incharge				
		All MCCBs shall be suitable to operate without any derating at 40°C ambient temperature and shall be of one make only. The sides of MDB shall also have louvers at bottom and top on sides of panel for hot air exhaust, wire mesh etc. The back of the panel shall be lockable door instead of bolted and shall conform to single line diagram. item should be of ABB, Schneider or equivalent as per instructions by engineer incharge				
		<b><u>Main Distribution Board</u></b>				
		<b><u>INCOMMING</u></b>				
	ELECT SH-X(208)	Providing and fixing circuit breaker 125,150,200 & 225 amps TP(XS-225NS) on prepared board as required.	Per No.	1	25541	25,541
	ELECT SH-XV(273)	Providing and fixing of current transformer of ration 300/5 amps (round) RLC-30 as required or as per instructed as EI.	Per No.	3	1686	5,058
	ELECT SH-XVI(285)	Providing and fixing voltmeter size 96/96mm 500 volt as required and as instruction of EI.	Per No.	3	999	2,997
	ELECT SH-X(203)	Providing and fixing circuit breaker 6,10,15,20,30,40,50 & 63 amps SP(TB-5S) on prepared board as required.	Per No.	3	916	2,748
		<b><u>OUTGOING</u></b>				
	ELECT SH-X(203)	Providing and fixing circuit breaker 6,10,15,20,30,40,50 & 63 amps SP(TB-5S) on prepared board as required.	Per No.	40	916	36,640
	ELECT SH-X(207)	Providing and fixing circuit breaker 15,20,30,40,50, 75 & 100 amps TP(XS-100NS) on prepared board as required.	Per No.	4	9226	36,904
		<b><u>DISTRIBUTION BOARD DB-Lighting GF, FF</u></b>				
		<b><u>INCOMMING</u></b>				
	ELECT SH-X(207)	Providing and fixing circuit breaker 15,20,30,40,50, 75 & 100 amps TP(XS-100NS) on prepared board as required.	Per No.	2	9226	18,452
	ELECT SH-XV(269)	Providing and fixing of current transformer of ration 60/5 amps (round) RLC-30 as required or as per instructed as EI.	Per No.	6	1191	7,146
	ELECT SH-XVI(285)	Providing and fixing voltmeter size 96/96mm 500 volt as required and as instruction of EI.	Per No.	6	999	5,994
	ELECT SH-X(203)	Providing and fixing circuit breaker 6,10,15,20,30,40,50 & 63 amps SP(TB-5S) on prepared board as required.	Per No.	6	916	5,496
		<b><u>OUTGOING</u></b>				
	ELECT SH-X(203)	Providing and fixing circuit breaker 6,10,15,20,30,40,50 & 63 amps SP(TB-5S) on prepared board as required.	Per No.	41	916	37,556
	ELECT SH-X(207)	Providing and fixing circuit breaker 15,20,30,40,50 & 60 amps TP(XES-100CB(CS)) on prepared board as required.	Per No.	2	5521	11,042
		<b><u>DISTRIBUTION BOARD DB-FF Power</u></b>				

Sr. No.	Item No.	Description	Unit	Qty	Unit Rate (Rs.)	Total Amount (Rs.)
		<b>INCOMING</b>				
	ELECT SH-X(207)	Providing and fixing circuit breaker 15,20,30,40,50, 75 & 100 amps TP(XS-100NS) on prepared board as required.	Per No.	1	9226	9,226
	ELECT SH-XV(270)	Providing and fixing of current transformer of ration 100/5 amps (round) RLC-30 as required or as per instructed as EI.	Per No.	3	1191	3,573
	ELECT SH-XVI(285)	Providing and fixing voltmeter size 96/96mm 500 volt as required and as instruction of EI.	Per No.	3	999	2,997
	ELECT SH-X(203)	Providing and fixing circuit breaker 6,10,15,20,30,40,50 & 63 amps SP(TB-5S) on prepared board as required.	Per No.	3	916	2,748
		<b>OUTGOING</b>				
	ELECT SH-X(203)	Providing and fixing circuit breaker 6,10,15,20,30,40,50 & 63 amps SP(TB-5S) on prepared board as required.	Per No.	30	916	27,480
	ELECT SH-X(207)	Providing and fixing circuit breaker 15,20,30,40,50 & 60 amps TP(XES-100CB(CS)) on prepared board as required.	Per No.	1	5521	5,521
<b>1</b>		<b>WIRING IN CONCEALED CONDUITS</b>				
i)		<b>Distribution board to Switch</b>				
		Wiring of light circuit from Distribution Board to switch,with Three nos. single core 2.5 Sqmm PVC insulated 450/750 volts grade stranded copper conductor cables in concealed PVC conduits (conduits partly shared) including PVC conduit, and conduit accessories etc. Cable should be of Newage, Fast cable, Universal cables or equivalent and conduit should be of Dadex, Turkplast, Easyfit or equivalent as per instructions by engineer incharge				
a	ELECT SH-I(24)	Providing and laying (main or Sub Main Pvc insulated with 3-7.29 copper conductor in 3/4" dia PVC conduit recessed in the wall or column as required.	Rmtr	805	294.00	236,670
ii)		<b>Switch to light point</b>				
		Wiring from switch to light or fan point with 3 nos. single core 1.5 Sqmm PVC insulated 450/750 Volts grade stranded copper conductor cables in concealed PVC conduit including PVC conduit, Conduit accessories,etc.(conduit partly shared).				
a	ELECT SH-II(124)	Wiring of Light and fan point with 3.29 Pvc insulated wire in 20mm (3/4") dia PVC conduit recessed in the wall or column as required.	Per/Point	155	1,130.00	175,150
		Point to point wiring				
b	ELECT SH-I(22)	Providing and laying (main or Sub Main Pvc insulated with 3-3.29 copper conductor in 3/4" dia PVC conduit recessed in the wall or column as required.	Rmtr	3010	220.00	662,200
iii)		<b>Switch to Switch</b>				
		Wiring from switch to switch with 3 nos. single core 2.5 Sqmm PVC insulated 450/750 Volts grade stranded copper conductor cables in concealed PVC conduit including PVC conduit, Conduit accessories,etc.(conduit partly shared).				
a	ELECT SH-I(24)	Providing and laying (main or Sub Main Pvc insulated with 3-7.29 copper conductor in 3/4" dia PVC conduit recessed in the wall or column as required.	Rmtr	600	294.00	176,400
iv)		<b>Distribution board to General Purpose ( 5A/13A) socket</b>				
		Wiring of circuit from Distribution Board to 5A/13A ,230Volts with 3 nos. single core 2.5 Sqmm PVC insulated 450/750 Volts graded , 2&3 pin switched socket, stranded copper conductor cables in concealed PVC conduit, including conduit accessories, etc(conduit partly shared)				
a	ELECT SH-I(24)	Providing and laying (main or Sub Main Pvc insulated with 3-7.29 copper conductor in 3/4" dia PVC conduit recessed in the wall or column as required.	Rmtr	1200	294.00	352,800
v)		<b>Socket to Socket</b>				
		Wiring from 5 Amps, 2&3 pin socket to socket with 3 nos. single core 2.5 Sqmm PVC insulated 450/750 Volts grade solid or stanerd copper conductor cables in concealed PVC conduit including PVC conduit,Conduit accessories, etc complete. (conduit partly shared)				

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# CONSTRUCTION OF GUEST HOUSE FOR THE SHAIKH AYAZ UNIVERSITY SHIKARPUR

## DETAILED ESTIMATE

### ELECTRICAL WORKS

Rates Based on Composite Schedule of Rate (GENERAL-2012) Sindh

Sr. No.	Item No.	Description	Unit	Qty	Unit Rate (Rs.)	Total Amount (Rs.)
1		<b>DISTRIBUTION BOARDS</b>				
		Supply at site, fabrication, installation, testing and commissioning of Distribution Board (DB) , made of sheet steel 16 SWG, degreased and derusted, with 2 coats of antirust paint, 2 coats of powder coated paint of approved colour, protection classification IP-44, totally enclosed indoor floor mounting cubicle type in free standing design, with hinged door, handle including cost of all auxiliaries, internal wiring, designation lables on MCCBS, grounding bar suitable for system Voltage 440V, 50 Hz, 3 Phase and neutral bus bars of 99.9% electrolytic copper, including cost of cable terminal blocks wiring from breakers, brass cable glands, all accessories complete in all respects metion in BOQ or not required for performing completely. All incoming and outgoing breakers shall be accessible only by opening the front door having further M.S. sheet cover gaskets shall also be provided where necessary. Panel should be compeltely made in certified factory. ie PEL, Green T & D, Mazcorp engineering or equivalent ass per instructions by engineer incharg				
		All MCCBs shall be suitable to operate without any derating at 40°C ambient temperature and shall be of one make only. The sides of MDB shall also have louvers at bottom and top on sides of panel for hot air exhaust, wire mesh etc. The back of the panel shall be lockable door instead of bolted and shall conform to single line diagram. item should be of ABB, Schneider or equivalent as per instructions by engineer incharge				
		<b>Main Distribution Board</b>				
		<b>INCOMING</b>				
		03 No Digital Ammeter scaled 0-300 Amps of appropriate sizes.				
		03 Nos. R-Y-B indication lamps.				
		05 Nos.copper bus bars 225 Ampere,three phase,Earth and Netural for distrubitions with appropriate size DB BOX				
		02 Nos Phase Rotation/failure, (adjustable under/over voltage threshold),50/60Hz, 0.1~10 Sec Delay, 380~500V				
		02 No Thermostatically controlled 230 Volts robust exhaust fans 6"/8" dia. to be installed on front of MDB for hot air exhaust including cost of thermostat ON-OFF switches wire mesh and all necessary accessories / wiring, complete in all respects.	Job	1		
		<b>DISTRIBUTION BOARD DB-Lighting GF, FF</b>				
		<b>INCOMING</b>				
		03 No Digital Ammeter scaled 0-500 Amps of appropriate sizes.				
		03 Nos. R-Y-B indication lamps.				
		05 Nos.copper bus bars 40Ampere,three phase,Earth and Netural for distrubitions with appropriate size DB BOX	Job	2		
		<b>DISTRIBUTION BOARD DB-FF power</b>				
		<b>INCOMING</b>				
		03 No Digital Ammeter scaled 0-500 Amps of appropriate sizes.				

Sr. No.	Item No.	Description	Unit	Qty	Unit Rate (Rs.)	Total Amount (Rs.)
		03 Nos. R-Y-B indication lamps.				
		05 Nos.copper bus bars 150 Ampere,three phase,Earth and Natural for distrubitions with appropriate size DB BOX	Job	1		
		Each Bus bar is 300*12*2 mm.				
<b>2</b>		<b><u>LIGHT FIXTURES</u></b>				
i)		Supply, installation, testing and commissioning of following light fittings, ceiling, recessed,wall mounted as per specified fixture. Complete with internal wiring, Grounding terminal , driver complete in all respects. Lights should be of Phillips, ledvance or equivalent				
ii)		14 Watt 4t luxline LED wall/Ceiling mounted Light Fixture, IP-22 rated	No.	4		
iii)		20 Watt LED Light Fixture surface/recessed mounted, IP-22 rated	No.	193		
iv)		15 Watt (Warm) LED Light Fixture surface/recessed mounted, IP-22 rated	No	41		
v)		15 Watt (White) LED Light Fixture surface/recessed mounted, IP-22 rated	No.	23		
vi)		10 Watt LED Light Fixture surface/recessed mounted, IP-22 rated	No.	42		
<b>3</b>		<b><u>MISCELLANEOUS FITTINGS</u></b>				
		Supply, installation, testing & commissioning of Ceiling/ Exhaust fan. The ceiling/exhaust fan shall comprise circular fan metallic/ plastic body, metallic fan blades, down rod (if necessary) of suitable dia & length, AC capacitor, internal wiring, terminals all installation & operational accessories as per tender specifications, as per site requirements and as per instructions by the Engineer. make GFC, Pak Fan, Royal Fan or approved equivalent.				
i)		12 " outer dia exhaust fan with plastic body,fan blades and louvers	No.	22		
ii)		Providing and Fixing of brass ceiling fan 56" (good quality)	No.	31		
iii)		Providing and Fixing of brass bracket fan 18" (good quality)	No.	1		
<b>4</b>		<b><u>WIRING ACCESSORIES</u></b>				
		Supply at site, installation, testing and commissioning of the following wiring accessories, complete in all respects. Made of TJ, Legrand or approved equivalent.				
i)		10 Amps, 250Volts one way, One gang light control switches including appropriate size concealed Plastic back box.	No.	3		
ii)		10 Amps, 250Volts one way, Two gang light control switches including appropriate size concealed Plastic back box.	No.	23		
iii)		10 Amps, 250Volts one way, Three gang light control switches including appropriate size concealed Plastic back box.	No.	4		
iv)		10 Amps, 250Volts one way, Four gang light control switches including appropriate size concealed Plastic back box.	No.	26		
v)		10 Amps, 250Volts one way, Six gang light control switches including appropriate size concealed Plastic back box.	No.	4		
vi)		15 Amps, 250Volts, universal 5 in 1 switched socket unit including appropriate size Plastic back box.	No.	93		
vii)		20 Amps Double Pole(DP) switch with neon indication lamp complete including appropriate size Plastic back box.	No.	28		

Sr. No.	Item No.	Description	Unit	Qty	Unit Rate (Rs.)	Total Amount (Rs.)
viii)		45 Amps Double Pole(DP) switch with neon indication lamp complete including appropriate size Plastic back box.	No.	1		
xi)		Fan Dimmer 250 watt with switch including appropriate size Plastic back box. with all associated accessories.	No.	31		
x)		Appropriate size of plastic body fan box and ceiling fan rod 24" in length	Nos	31		
		MS BAR for hanging Ceiling fan	Nos	31		
5		<b>LT CABLES</b>				
		Supply at site, installation, testing and commissioning of PVC insulated armoured copper conductor cable 600 / 1000 Volt grade (or otherwise mentioned in cable description ) in prelaidd conduits / trenches to be installed as per routes shown on drawings including cost of all necessary materials, connections, identification tags, cables lugs properly crimped at both ends for the following sizes complete in all respects. Actual length of cables to be installed shall be practically measured at site by the Contractor, duly authenticated by the Engineer before placing the order with the manufacturer, however, approximate length of cables are shown herewith. Payments shall be made as per actual length installed. Cable should be of Newage, Fast cable, Universal cables or equivalent and conduit should be of Dadex, Turkplast, Easyfit or equivalent as per instructions by engineer incharge				
		Providing and laying (main or Sub Main) Pvc insulated, Pvc sheathed with 4 core copper conductor 600/1000 volts size 16mm <sup>2</sup>	Rmtr	100		
		Providing and laying (main or Sub Main) Pvc insulated, Pvc sheathed with 4 core copper conductor 600/1000 volts size 35mm <sup>2</sup>	Rmtr	50		
		Providing and laying (main or Sub Main) Pvc insulated, Pvc sheathed with 4 core copper conductor 600/1000 volts size 120mm <sup>2</sup>	Rmtr	100		
6		<b>GROUNDING SYSTEM</b>				
i)		<b>GROUNDING cable</b>				
		Supply and erection of single core PVC insulated, PVC sheathed copper conductor, 660/1100 volts grade cable, in prelaidd G.I. pipe/M.S. conduits/PVC pipe/G.I. wire/trenches, etc (rate for cable only):- 19/1.32 mm (19/0.052")	rmtr	30		
		Supply and erection of single core PVC insulated, PVC sheathed copper conductor, 660/1100 volts grade cable, in prelaidd G.I. pipe/M.S. conduits/PVC pipe/G.I. wire/trenches, etc (rate for cable only):- 6 mm sq (7/0.044")	rmtr	100		
		Supply and erection of single core PVC insulated, PVC sheathed copper conductor, 660/1100 volts grade cable, in prelaidd G.I. pipe/M.S. conduits/PVC pipe/G.I. wire/trenches, etc (rate for cable only):- 16 mm sq (7/0.064")	rmtr	50		
ii)		<b>Plate type earthing</b>				
		Providing & fixing of Plate type Earthing commpressed with execveted hole 6"up 63 feet,GI pipe 2"(50mm)with Tees , Sockets , Endcap of 60 (RFT) Copper Plate of 1/2"x 2"x 48", 2x 70mmsq S/Core copper bare conductor 125 (Rft) Earth Connection Point of 1200 x 50 x 50mm (L x W x T) Inspection Pit of 300 x 300 x 450 mm (L x W x D) completed with all respect	No.	1		

Sr. No.	Item No.	Description	Unit	Qty	Unit Rate (Rs.)	Total Amount (Rs.)
iii)		<b><u>Grounding Connection Point</u></b>				
		Supply of Grounding connecting points consisting of copper plate 300mm long x50mm wide x 6mm thick to be installed, complete with fixing arrangement, brass nuts bolts, washers, lugs, 12.5mm dia. holes to facilitate connections of Incoming copper strips / copper conductors.	Nos.	1		
iv)		<b><u>Testing and commissioning</u></b>				
		Testing and commissioning of the earthing system in the presence of site engineer with electronic devices such as megger etc, making so report with after approximating 3 time testing and the grounding ohm must be less than or upto 3 ohms	Nos.	1		
7		<b><u>CIVIL WORKS</u></b>				
i)		<b><u>Trench ( for LT Cable )</u></b>				
		Labour for excavation and refilling of trench 12" wide, 24" deep 9" sand compaction below and above in preinstalled PVC pipes, ramming watering all necessary material, labour etc, complete in all respect. Actual length of the trench shall be as per site condition and paid accordingly however approximate length of trench is given.	R.Mtr	100		
ii)		<b><u>Manhole For LT Cable Pulling ( If Required)</u></b>				
		Construction of manholes to facilitate pulling of cables in trench or conduit as shown on drawing, manholes shall be of the size 24" x 24" x 30" deep with 9" thick wall with cement mortar, internal plaster 1:4, 100mm thick RCC cover for manhole, including cost of all accessories / materials, complete in all respects. (Tentative number of manholes have been provided, however payment shall be made as per actual and as per quantity requirement)	Nos.	1		
iii)		<b><u>Conduit</u></b>				
		Supply and erection of PVC pipe for wiring recessed in walls, including inspection boxes, pull boxes, hooks, cutting jharries, and repairing surface, etc., complete with all specials, conduit should be of Dadex, Turkplast, Easyfit or equivalent as per instructions by engineer incharge.				
	i)	20 mm i/d	R.Mtr	50		
	ii)	25 mm i/d	R.Mtr	500		
8		<b><u>CCTV System</u></b>				
i		<b><u>Camera Cable</u></b>				
		Supply, installation, Testing and commissioning of CAT 6a UTP CABLE IN PVC PIPE Ø 1"; MEASUREMENT IN METERS complete in all respects.including cost of conduit and its accesories installing arrangment, making jurries in wall and repairment of wall. Made of D-Link or equivalent approved by engineer incharge	R.Mtr	390		
9		<b><u>DATA NETWORKING SYSTEM</u></b>				
C-I-06		<b><u>Data Network point</u></b>				



Sr. No.	Item No.	Description	Unit	Qty	Unit Rate (Rs.)	Total Amount (Rs.)
a		Wiring for each data/computer point with UTP, 4 pair Cat 6a (500 Mhz ) Network Cable supports (10 Giga) laid in PVC Conduit , with pure copper conductor PVC insulated PVC sheathed including cost of Single Shutter Face palte with UTP Cat-6a Keystone Jack with Back Box to be installed on walls, from Data Cabinet to Computer Points, PVC conduit & Cable tray. including cost of conduit and its accesories installing arrangment, making jurries in wall and repairment of wall. cable should be made of D-link(NCB-6AUGRYR-305) or equivalent & conduit should be of Dadex, Turkplast, Easyfit or equivalent as per instructions by engineer incharge.	Points	28		
		<b>Networking Switch</b>				
a		Supply, installation testing and commisioning of 24 port layer 2 network switch 10/100/1000 MBPS with 04 giga SFP uplink ports, switching capacity 56 GBPS, rack mounted to be instaled in data cabinit, complete in all respect. Make cisico / HP / D-Link or equivalent (specification as per dgs-1210-28p) as per instructions by Engineer Incharge	Nos.	1		
b		Supply, installation, testing and commsioning of 24 port POE switch of following specification 24 × 100 Mbps PoE ports, and 2 × 1000 Mbps combos. IEEE 802.3at/af standard. IEEE 802.3, IEEE 802.3u and IEEE 802.3x standard. High priority ports. 8-core power supply. Upstream port link aggregation. Up to 250 m transmission distance. 6 KV surge protection for PoE ports. PoE power management. 100 Mbps network access make dahua DH-PFS4226-24ET-240 or equivalent as per instructions by engineer incharge	Nos	1		
C-I-07		<b>Data Cabinets</b>				
		Supply at site, installation, testing and commissioning of data cabinet of approximate size as mentioned below, powder coated, having lockable glass door at front, 2 exhaust fans on top, suitable for under mentioned patch panels, consisting of the following data points to be terminated on modular patch panel, including cost of power bus bar, suitable for Cat. 6a cables patch guides, patch cords for Data points, all necessary accessories / materials for active and passive equipment. The data cabinet shall be complete in all respects including cost of all necessary materials / accessories required for proper functioning for the data cabinet. Data cabinet shall be installed after obtaining necessary permission from the computer specialist of the Client. made of Matrix, d-link or equivalent as per instructions by site engineer				
a		Data Cabinet 6U 368 x 570 x 390 mm Wall Mounted Imported made of M.S sheet,Powder Coated, having lockable glass door at front,double section , fans on top,to accomodate UTP Cat-6a, 24 port patch panel, UTP Cat-6a Patch Cords 1 meter length, Cable Manager, OFDF, Six socket Power distribution Unit.	Nos.	1		
b		Supply, installation, testing and commisioning of DATA RACK 27U 600x 800; PREFORATED; 01x FIX, 01x SLIDING TRAYS; 04 FANS; 1x 06 WAY ALL PDU;; complete in all respects.	Nos.	1		

Sr. No.	Item No.	Description	Unit	Qty	Unit Rate (Rs.)	Total Amount (Rs.)
C-I-08		<b>Patch Panel</b>				
a		Supply, installation, testing and commissioning of PATCH PANEL 24 PORT Fully LOADED WITH Cat-6 I/Os SUITABLE FOR CAT-VI UTP CABLE; RACK MOUNT , complete in all respects.made of D-Link(NPP-C61BLK241)	Nos.	2		
C-I-09		<b>Cable Manager</b>				
a		Supply, installation, testing and commissioning of MS CABLE MANAGER/ORGANISER RACK MOUNT , complete in all respects. 19"1U Metal cable Management with rings. Made of D-Link(NCM-M01) or equivalent approved by site engineer	Nos.	2		
C-I-10		<b>Faceplate</b>				
a		Supply, installation, testing and commissioning of single Faceplate Accepts Two Keystone Jacks with Shutter & ID Plate- 86*86 mm - White Colour - Square with Cat6 UTP 180° Punch Down Keystone Jack - White Colour and Back Box for Dual Shutter Face/Plate. Plastic(D35xH85xW85 CM), complete in all respects. made of D-Link(NFP-0WHI21)+(NKJ-C6WHI1B21) or equivalent as per instructions by site engineer	Nos.	28		
C-I-11		<b>Fiber Optic Cable</b>				
		Supply at site, installation, testing and commissioning of the following Fiber Optic Cables to be installed in conduits, cable trays and dura duct including cost of all necessary accessories/ materials complete in all respect including cost of conduit and its accesories installing arrangment, making jurries in wall and repairment of wall. Cable should be made of D-Link or equivalent & conduit should be of Dadex, Turkplast, Easyfit or equivalent as per instructions by engineer incharge.				
a)		12 Core Multimode (50/125um) OM2 Unitube Armoured Outdoor Fiber Cable - HDPE Sheath in meters D-Link(NCB-FM500-AUHD-12)	R.Mtr	50		
C-I-12		<b>Patch Cord</b>				
		Supply, installation, testing and commissioning of LC-SC Multimode (50/125um) OM2 Duplex Patch Cord,3m, complete in all respects. Made of Dlink (NCB-FM50D-LCSC-3) or equivalent as per instructions by site engineer	Nos.	28		
C-I-13		<b>6 port PDU</b>				
		Supply, installation, testing and commissioning of 6 PORT IEC PDU, (6) IEC C19 OUTPUT & (1)IEC C20 INPUT PLUG 16A 240V PDU made of BayLan, serveredge or equivalent approved by site engineer	Nos.	2		
C-I-14		<b>Television point</b>				
		Supply at site, installation, testing & commissioning of Wiring for each Television point with coaxial cable RG-6 1.0 MM (BLACK) CU CLAD, in 1" dia conduit partly shared, Network Cable pure copper conductor PVC insulated PVC sheathed including cost of Jack with Back Box to be installed on Walls, from boster to Television Points on walls, complete in all respect including cost of conduit and its accesories installing arrangment, making jurries in wall and repairment of wall. cable should be made of D-link or equivalent & conduit should be of Dadex, Turkplast, Easyfit or equivalent as per instructions by engineer incharge.	Nos	23		
C-I-15		<b>Faceplate</b>				

Sr. No.	Item No.	Description	Unit	Qty	Unit Rate (Rs.)	Total Amount (Rs.)
i		Supply, installation, testing and commissioning of faceplate SINGLE SHUTTER/PORT WITH 1 gang tv outlet & BACK BOX , complete in all respects. Made of legrand or equivalent as per instructions by site engineer	Nos.	23		
		<b>SECTION - N</b>				
10		<b><u>Fire Alarm System</u></b>				
		Supply, installation, testing and commissioning of following items as per drawings, specifications, & instructions of the Engineer, complete in all respect, all item should be of Gent by honeywell, ETON uk or approved equivalent as per instructions by the Engineer as required.				
C-N-01		<b><u>Manual Call Point</u></b>				
		Supply, install testing and commsiong of manual call point RESET type with allied components with full functionality as per specification of manufacturer / drawing with proper staff and tools and plants etc.Input Source Zone signal Address Coding dip switch Operating Voltage 26V DC Alarm Current 6mA Quiescent Current 850µA Ambient Temperature 0°C ~ +50°C Material Fire-proof plastic	Each	4		
C-N-02		<b><u>Smoke Detector</u></b>				
		Supply, install testing and commsiong of Addressable Optical Smoke Detectors incorporating a with in the housing of the detector. Sensing of the detector shall be adjustable via software between 0-90 seconds.Address Coding Binary Alarm Current DC26V 6mA Standby Current DC26V 850µA Sensitivity Setting Comply to EN54 Ambient Temperature 0°C ~ +50°C Material Fire-proof plastic	Each	35		
C-N-03		<b><u>Heat Detector</u></b>				
		Supply, install testing and commsiong of Low profile intelligent analogue addressable multi sensor with combined optical thermal sensors in a single housing with dual LED for 360 deg. viewing and mounting base. Address Coding Binary Alarm Current DC26V 6mA Standby Current DC26V 850µA Sensitivity Setting Comply to EN54 Thermal Setting 58°C Ambient Temperature 0°C ~ +50°C Material Fire-proof plastic	Each	1		
C-N-04		<b><u>Sounder</u></b>				

Sr. No.	Item No.	Description	Unit	Qty	Unit Rate (Rs.)	Total Amount (Rs.)
		Supply, install testing and commsiong of Intelligent analogue addressable Loop powered sounder with flasher and red body and wall mounting base.Input Source Zone signal Address Coding Binary dip switch Operating Voltage 26.5V DC Standby Current Under 850µA Alarm Current Under 8mA Sound Output 90 ±4dB at 1 meter Sounder Output 2.3~3.4KHz Ingress Protection IP65 Ambient Temperature -20°C ~ +50°C Ambient Humidity 10% ~ 95% Material Fire-proof plastic	Each	4		
C-N-05		<b>FACP</b>				
		Supply, install, testing and commsiong of Addressable FACP. Each loop can connect up to 250 addressable devices. Maximum networking are 32 loops and total addressable points are 8000. Large LCD screen (40 x 15 lines) allows more events to be displayed on the same screen. Power 220V AC 50/60Hz *Others also available Battery Capacity 24V DC 4Ah Charging Voltage, Current 26V DC 100~400mA *With auto adjustment function Zone Voltage, Current 26.5V DC 340mA System Capacity 250 devices/1 loop *Expandable for site requirement Exterior Resistance Round-trip under 40Ω Transmitting Method Digital series transmitting Accumulation Time 0~40 seconds Main Sound 85dB @1M Material 1.6mm steel plate	Each	2		
C-N-06		<b>Cable</b>				
		Supply, install testing and commsiong of 2 x 2.5 mmsq shielded drain wire, 30 minutes fire resistance,red, LPCB approved, BS 7629-1/2008, BS 5839-1 standard in 25 mm dia pvc conduit complete in all respects including cost of conduit and its accesories installing arrangment, making jurries in wall and repairment of wall .(Newage, Pakistan Cable, Fast or approved equivalent). conduit should be of Dadex, Turkplast, Easyfit or equivalent as per instructions by engineer incharge.	Rmtr	940		
C-N-07		<b>Programming, Testing and Commissioning</b>				
		Programming, Testing and Commissioning of Complete system by authorized certified company complete in all respects as per instructions of the Engineer.	Job	1		
C-N-08		<b>Fire Extinguishers</b>				
		Supply & installation of 1 x 6kg DCP CO2 Fire Extinguishers installed as per instructions of Cleint, complete with wall hanging and mounting arrangement complete in all respects. Complete in all respect as per instructions by site engineer	Nos.	4		
<b>Total of Non-SOR Items</b>						



**THE SHAIKH AYAZ UNIVERSITY,**  
**SHIKARPUR**



**CONSTRUCTION OF VICE CHANCELLOR  
RESIDENCE FOR THE PROJECT TITLED  
“PROVISION OF MISSING FACILITIES FOR  
THE SHAIKH AYAZ UNIVERSITY  
SHIKARPUR”**

**BILLS OF QUANTITIES**

**April, 2022**

# CONSTRUCTION OF VC RESIDENCE AT THE SHAIKH AYAZ UNIVERSITY, SHIKARPUR

## DETAILED ESTIMATE

### SUMMARY OF COST

Rates Based on Composite Schedule of Rate (GENERAL-2012) Sindh

Sr. No.	DESCRIPTION	AMOUNT
1.	CIVIL WORKS	
a	Cost of Schedule Items	10,443,192
b	Add Premium Above or Below	
c	Add Premium Above or Below	
d	Cost of Non-Schedule Items	
	TOTAL OF CIVIL WORKS - A	
2.	PUBLIC HEALTH WORKS	
a	Cost of Schedule Items	705,358
b	Add Premium Above or Below	
c	Cost of Non-Schedule Items	
	TOTAL OF PHE WORKS - B	
3.	ELECTRIC WORKS	
a	Cost of Schedule Items	602,611
b	Add Premium Above or Below	
c	Cost of Non-Schedule Items	
	TOTAL OF ELECTRICAL WORKS - C	
	TOTAL (A+B+C)	
	5% SST	
	GRAND TOTAL	

Contractor

# CONSTRUCTION OF VC RESIDENCE AT THE SHAIKH AYAZ UNIVERSITY, SHIKARPUR

## DETAILED ESTIMATE

### CIVIL WORKS

Rates Based on Composite Schedule of Rate (GENERAL-2012) Sindh

Sr. No.	Item No.	Description of Item	Unit	Qty	Rate	Amount
1	C-1/18(b)	Excavtion in foundation of Building Bridges and other structures including dagbelling dressing,refilling around structrure with excavated earth Watering and ramming lead upto 5 ft in Ordinary Soil.	%0Cft	6842.04	3176.25	21,732
2	C-18/92	Providing Anti-termmite treatment by spraying /sprinkling /spreading Neptachlar 0.5% Emulsion as an overall pre - construction treatment in slab type construction under the slab and along attached perches or entrances etc, complete as per directions of Engineer Incharge.	P.Sft	10782.64	9.74	105,023
3	C-4/5(i)	Cement concrete plain including placing compacting, finishing and curing, complete (including screening and washing at stone aggregate without for all shuttering. (Mix 1:4:8)	%Cft	2036.32	11288.75	229,875
4	C-4/6 a-i	R.C work in roof slab, beams columns rafts, lintels and other structural members laid in situ or precast laid in position complete in all respects (I) Ratio (1 : 2: 4 ) 90 Lbs.cement 2 Cft. Sand 4 Cft. Shingle 1/8" to 1/4" gauge. (Foundation)	P.Cft	1238.16	337.00	417,260
5	C-4/6 a-i	R.C work in roof slab, beams columns rafts, lintels and other structural members laid in situ or precast laid in position complete in all respects (I) Ratio (1 : 2: 4 ) 90 Lbs.cement 2 Cft. Sand 4 Cft. Shingle 1/8" to 1/4" gauge. (Ground Floor)	P.Cft	2493.56	337.00	840,330
6	C-4/6 a-i +6 (d)	R.C work in roof slab, beams columns rafts, lintels and other structural members laid in situ or precast laid in position complete in all respects (I) Ratio (1 : 2: 4 ) 90 Lbs.cement 2 Cft. Sand 4 Cft. Shingle 1/8" to 1/4" gauge. (First Floor)	P.Cft	1622.57	349.10	566,439
7	C-4/6 a-ii	Reinforced cement concrete in roof slab, beams, columns lintels, girders and other structural members laid in situ or precast laid in position, or prestressed members cast in situ, complete in all respects:- Type B (nominal mix 1: 1.5: 3) UPL	P.Cft	224.1	349.00	78,211
8	C-4/6 a-ii	Reinforced cement concrete in roof slab, beams, columns lintels, girders and other structural members laid in situ or precast laid in position, or prestressed members cast in situ, complete in all respects:- Type B (nominal mix 1: 1.5: 3) G.F	P.Cft	282.33	349.00	98,533
9	C-4/6 a-ii +6 (d)	Reinforced cement concrete in roof slab, beams, columns lintels, girders and other structural members laid in situ or precast laid in position, or prestressed members cast in situ, complete in all respects:- Type B (nominal mix 1: 1.5: 3) F.F	P.Cft	151.76	361.10	54,801
10	C-4/8(b)	Fabrication of mild steel reinforcement for cement concrete including cutting,bending, laying in position, making joints and fastenings including cost of binding wire (also includes removal of rust from bars.) Using Tor bars	P.Cwt	364.06	5001.70	1,820,919
11	C-5/4-I(e)	Pacca brick work in foundation and plinth in cement sand mortar 1:6.	%Cft	4412.57	11948.36	527,230
12	C-1/21	Filling, watering and ramming earth in floors with surplus earth from foundation lead upto one chain and lift jupto 5 feet.	%0Cft	2280.68	1512.50	3,450

Sr. No.	Item No.	Description of Item	Unit	Qty	Rate	Amount
13	C-1/22	Filling, watering and ramming earth under floor with new earth (Excavated from outside) lead upto one chain and lift upto 5 feet.	%0Cft	22154.37	3630.00	80,420
14	C-5/5-l(d)	Pacca brick work in Ground Floor cement, sand mortar Ratio 1:5	%Cft	2582.47	12902.08	333,192
15	C-5/5-l(c)	Pacca brick work in Ground Floor cement, sand mortar Ratio 1:4	%Cft	210.8	13227.41	27,883
16	C-5/5-l(d) + 6	Pacca brick work in First Floor cement, sand mortar Ratio 1:5	%Cft	1982.92	13340.71	264,536
17	C-5/5-l-c + 6	Pacca brick work in First Floor cement, sand mortar Ratio 1:4	%Cft	252.16	13666.04	34,460
18	C-9/12(b)	Cement plaster 1:5 upto 12' height:- b) ½" (13 mm) thick. (Internal) Ground Floor	%Sft	5273.61	2241.80	118,224
19	C-9/12(b)+29	Cement plaster 1:5 upto 12' height:- b) ½" (13 mm) thick. (Internal) First Floor	%Sft	4135.33	2382.77	98,535
20	C-9/12(c)	Cement plaster 1:5 upto 12' height:- b) ¾" (20 mm) thick. (Internal) Ground Floor	%Sft	4909.98	2678.50	131,514
21	C-9/12(c)+29	Cement plaster 1:5 upto 12' height:- b) ¾" (20 mm) thick. (Internal) First Floor	%Sft	3988.96	2819.47	112,468
22	C-9/11(c)	Cement plaster 1:4 Ground Floor upto 12' height:- c) ¾" (20 mm) thick. (External)	%Sft	4739.75	3015.76	142,939
23	C-9/11(c)+29	Cement plaster 1:4 First Floor upto 12' height:- c) ¾" (20 mm) thick. (External)	%Sft	3899.46	3156.73	123,095
24	C-9/10(a)	Cement plaster 3/8" thick under soffit or R.C.C. roof slab only upto 12' height ratio 1:3. Ground Floor	%Sft	3381.16	2225.12	75,235
25	C-9/10(a)+29	Cement plaster 3/8" thick under soffit or R.C.C. roof slab only upto 12' height ratio 1:3. First Floor	%Sft	2113.74	2366.09	50,013
26	C-9/(38.A+38.B)	Preparing the surface and painting with weather coat l/c rubbing the surface with rubbing brick / sand Paper, filling the voids with chalk/ plaster of Paris and then painting with weather coat of approved make:- three coats	%Sft	8639.21	2567.95	221,851
27	C-9/24(c)	Distempering:- New surface:- three coats	%Sft	22981.25	1079.65	248,117
28	C-5/29	Supplying and filling sand under floor and plugging in walls.	%Cft	1341.21	1141.25	15,307
29	C-4/2	Dry rammed brick or stone ballast 1 1/2" to 2" gauge.	%Cft	1427.33	3327.50	47,494
30	C-4/5(f)	Cement concrete plain including placing compacting, finishing and curing, complete (including screening and washing at stone aggregate without for all shuttering.(Mix 1:2:4)	%Cft	1031.73	14429.25	148,871
31	C-8/16-c	Providing and laying 2" thick topping cement concrete (1:2:4 ) including Surface finishing and dividiing into panels:	%Sft	1077.11	3275.50	35,281
32	C-8/75	Providing & fixing glass strips 4 mm for flooring upto 1" depth l/c fixing in flooring with cement in specified pattern & design.	P.Sft	430.84	11.16	4,808
33	C-7/18	Khuras on roof 2'x2'x6" (600 x 600 x 150 mm)	Each	9	358.68	3,228
34	C-10/59	First class Sheesham wood wrought framed and fixed in place including chowkhats hold fasts, tower bolts, chocks, cleats, handles card with hooks and cost of nails and screws, etc. panelled or panelled and glazed or fully glazed 1-1/2" thick.	P.Sft	317.73	662.24	210,414
35	C-18/83(a)	Supplying & fixing inposition Aluminium channels framing for hinged doors or Alcop made with 5 mm thick tinted glass glazing (Belgium) and Alpha (Japan) locks l/c handles, stoppers etc. (a) Deluxe model (White)	P.Sft	81.6	1450.76	118,382



Sr. No.	Item No.	Description of Item	Unit	Qty	Rate	Amount
36	C-10/19-(A)-ii	Providing and fixing sliding bolt to doors.Iron sliding bolt 12" long.(a) Panelled or panelled and glazed or fully glazed 2" thick.	Each	14	222.23	3,111
37	C-10/21	Providing and fixing, approved quality mortice lock.	Each	14	1786.13	25,006
38	C-11/5-(c)	Preparing surface and painting of doors and windows any type, (including edges).Three Coats.	%Sft	635.46	2116.41	13,449
39	C-18/84(a)	Supplying & fixing in position Aluminium channels framing for slidding windows & ventilators of Alcop made with 5 mm thick tinted glass glazing (Belgium) & Aluminium fly screen l/c handles stoppers & locking arrangement etc. complete. (a) Deluxe model (White).	P.Sft	846.6	1592.69	1,348,371
40	C-17/26	Supplying & fixing in position iron/steel grill of 3/4" x 1/4" size flat iron of approved design including painting 3 coats etc. complete (weight not to be less than 3.7 Lbs./Sq . Foot of finished grill).	P.Sft	846.6	180.50	152,811
41	C-18/69(a)	Damp Proof course with cement sand Ratio (1: 2) mixed with dampo b) 1-1/2" thick	%Sft	48.25	1934.82	934
42	C-7/13	Two coats of bitumen laid hot using 34 Lbs for % Sft. Ober roof and blinded with sand at one Cft. Per % Sft.	%Sft	290.03	1887.40	5,474
43	C-7/38	Providing and laying single per layer of polythene sheet 0.13 mm thick for water proffing as per specification and instructions of Engineer incharge.	P.Sft	6197.6	10.70	66,314
44	C-8/71	Providing & fixing cement paving blocks flooring having size of 197 x 97 x 60 (mm) of city / quddra / cobble shape with natural colours, having strength b/w 5000 psi to 8500 psi l/c filling the joints with hill sand and laying in specified manner /pattern and design etc: complete.	P.Sft	3908.64	199.77	780,829
45	C-7/5	Single layer of tiles 9" x4 1/2" x 2" laid over 4" earth 1" mud plaster without Bhoosa grouted with cement sand 1:3 on top of R.C.C slab provide with 34 Lbs. Bitumen coating sand blinded.	%Sft	2953.79	5628.97	166,268
46	C-4/6-(b-i) + c	Precast reinforced cement concrete in columns, beams lintels stair cases, shelves, etc. Ratio 1:2:4 and erecting and fixing in position precast cement concrete or stone slab in roofs or Lintels, etc, lift upto 20 feet including all charges.	P.Cft	237.12	351.55	83,360
47	C-4/7(ii)	Extra cost due to use of Hi Bond Pre-packaged Polymer Modified mortar (DHPMM) as an admixture in concrete mix for increasing durability, to be used in concreting, flooring, block/ brick/ stone masonry or plastering as % by weight of cement.	P.Kg	544.89	459.80	250,540
48	C-4/11	Providing and fixing ornamental cement jalli 2" thick (1 : 2 : 4) without steel.	P.Sft	123.08	226.02	27,819
<b>O.H.W.T</b>						
1	C-4/6 a-i +6 (d)	R.C work in roof slab, beams columns rafts, lintels and other structural members laid in situ or precast laid in position complete in all respects (I) Ratio (1 : 2: 4 ) 90 Lbs.cement 2 Cft. Sand 4 Cft. Shingle 1/8" to 1/4" gauge. (Second Floor)	P.Cft	152.24	361.20	54,989.09
2	C-4/6 a-ii +6 (d)	Reinforced cement concrete in roof slab, beams, columns lintels, girders and other structural members laid in situ or precast laid in position, or prestressed members cast in situ, complete in all respects:- Type B (nominal mix 1: 1.5: 3) S.F	P.Cft	2.68	373.20	1,000.18

Sr. No.	Item No.	Description of Item	Unit	Qty	Rate	Amount
3	C-4/8(b)	Fabrication of mild steel reinforcement for cement concrete including cutting,bending, laying in position, making joints and fastenings including cost of binding wire (also includes removal of rust from bars.) Using Tor bars	P.Cwt	10.3	5001.70	51,517.51
4	C-5/5-l(d) + 6	Pacca brick work in Second Floor cement, sand mortar Ratio 1:5	%Cft	9.56	13915.46	1,330.32
<b>Total of SOR Items</b>						<b>10,443,192</b>

**CONSTRUCTION OF VC RESIDENCE AT THE SHAIKH AYAZ UNIVERSITY, SHIKARPUR****DETAILED ESTIMATE****CIVIL WORKS****Rates Based on Composite Schedule of Rate (GENERAL-2012) Sindh**

Sr. No.	Item No.	Description of Item	Unit	Qty	Rate	Amount
1	NSI	Providing and laying false ceiling comprising of 5/8" thick plaster of paris sheet of required size in approved design with one line of 6" wide niche all around , hanging with Copper wire (16 SWG) duly enriched with POP and flaxen i/c thecost of making space for rope light /screws/jute/making holes for lights and rawal plugs including paint complete in all respects as approved and directed by the Incharge.	P.Sft	821.52		
2	NSI	Providing and applying wall putty (Kansai or equivalent) two coats on plastered surface to prepare the surface even and smooth complete in all respect as approved and directed by the Engineer Incharge.	P.Sft	22981.25		
3	NSI	Providing and laying Porcelain tiles flooring 24"x24"x3/8" light polished SB laid in cement over 3/4" thick cement sand mortar (1:2) i/c filling joints in white cement or matching pigment complete in all respect. (MASTER or Equivalent)	P.Sft	2937.29		
4	NSI	Providing and laying Porcelain tiles skirting/ dado 24"x4"x3/8" light polished SB laid in cement over 3/4" thick cement sand mortar (1:2) i/c filling joints in white cement or matching pigment complete in all respect. (MASTER or Equivalent)	P.Sft	280.27		
5	NSI	Providing and laying Ceramic Matt Tiles Texture Light color for flooring size 12"x26"x3/8" laid over 3/4" thick cement sand mortar (1:2) i/c filling joints in white cement and matching pigment i/c cutting charges complete in all respect as approved & directed by the Engineer/ Incharge. (Premium Quality Tile, Equivalent)	P.Sft	570.24		
6	NSI	Providing and laying Ceramic Matt Tiles Texture Light color for skirting / dado size12"x26"x3/8" laid over 3/4" thick cement sand mortar (1:2) i/c filling joints in white cement and matching pigment i/c cutting charges complete in all respect as approved & directed by the Engineer/ Incharge. (Premium Quality Tile, Equivalent)	P.Sft	1479.66		
7	NSI	Providing and fixing 3/4" thick Boticina Marble full width area above 2 Sft laid in white cement matching pigment 3/4" thick cement sand mortar (1:2) i/c filling joints in white cement & matching pigment,including Polished and making gola on exposed edges complete in all respect as approved by the Engineer/ Incharge.(Stairs)	P.Sft	306.93		
8	NSI	Providing and fixing UPVC Doors 38mm thickness i/c deluex matching color UPVC frame matt or glossy finish having color (white-Gray-Marble Gray-Oak Wood- Dard Oak Wood, Coffee Wood Honey Pine Wood-Mahagony-Marry Gold-Chocolate Brown-Honey Dew) i/c all accessories i/c mortice locks complete in all respect as approval by the Engineer Incharge.	P.Sft	142.8		

# CONSTRUCTION OF VC RESIDENCE AT THE SHAIKH AYAZ UNIVERSITY, SHIKARPUR

## DETAILED ESTIMATE

### PUBLIC HEALTH WORKS

Rates Based on Composite Schedule of Rate (GENERAL-2012)

SR. NO.	ITEM NO.	DESCRIPTION	UNIT	QTY	RATE (RS)	AMOUNT (RS)
		<b>SANITARY FIXTURES AND FITTINGS</b>				
1	SOR(Water supply & Sewerage (Ch 1/5)	Providing and fixing European type white glazed earthen ware wash down W.C. pan complete with and l/c the cost of white/black plastic seat (Best quality) and lid with C.P.brass hinges and buffers, 3 gallons white glazed earthen ware low level foushing cistern with siphon fitting 1-1/2" dia white porcelain enamelled fluish bend 3/4" dia and making requiste number of holes in walls, plinth and floor for pipe connections and making good in cement concrete 1:2:4. (Master, Sonex, Porta)	Each	5.00	11,477.40	57,387.00
2	SOR(Water supply & Sewerage (Ch 1/2-A ii)	Providing and Fixing squatting type white glazed earthen ware w.c pan with front fresh inlet & complete with including the cost of flushing cistern with internal fitting and flush pipe with bend and making requisite number of holes in walls plinth & floor for pipe connection and making good in cement concrete 1:2:4. (A) W.C pan 23" & low level earthen ware flush tank 3 gallons. (ii) with 4" dia white glazed earthen ware trap and plastic thumble. (Master, Sonex, Porta)	Each	2.00	5,772.80	11,545.60
2	SOR(Water supply & Sewerage (Ch 1/19-c)	Providing and fixing steel sinks stainless local make complete with cast iron or wrought iron brackets 6 inches built in wall, 1-1/2" c.p bubbler plug chrome plated brass chain, 1-1/2" c.p brass waste, with 1-1/2" P.V.C. waste pipe & making requisite number of holes in wall, plinth & floor for pipe connection & making good in cement concrete 1:2:4. (c) Steel sink stainless sized 33" x 18" local make (Standard pattern) (Master or Equivalent)	Each	2.00	5,712.30	11,424.60
3	SOR(Water supply & Sewerage (Ch 6/19 (a)	Providing and fixing CP Muslim shower with double bib cock & ring pipe etc complete. (Master, Sonex, or Equivalent)	Each	7.00	3,432.00	24,024.00
4	SOR(Water supply & Sewerage (Ch 2/5)	Providing and fixing soap tray earthen ware with c.p screws etc.complete. (Master, Sonex, or Equivalent)	Each	7.00	497.20	3,480.40
5	SOR(Water supply & Sewerage (Ch 2/1 (iii-b)	Providing and fixing chrome plated brass towel rail complete with brackets fixing with 1" long c.p brass screws. (iii) Towel Rail 24" long (b) 3/4" dia round or square (Superior Quality)	Each	3.00	1,082.95	3,248.85
6	SOR(Water supply & Sewerage (Ch 2/2 (b)	Providing and fixing c.p brass toilet paper holder of standard size with chrome plated brass brackets complete (Similar to twyforde design No 1108) (b) Superior Quality	Each	7.00	1,071.40	7,499.80
7	SOR(Water supply & Sewerage (Ch 1/22)	Providing and fixing (1/2") dia, lead connection complete with a (1/2") dia brass stop cock, two brass nuts & lining jointed to lead pipe with plumber wiped solder joints (1/2" lead pipe to be of not less than 4lbs per lineal yard. (Master, Sonex, or Equivalent)	Each	25.00	689.70	17,242.50

SR. NO.	ITEM NO.	DESCRIPTION	UNIT	QTY	RATE (RS)	AMOUNT (RS)
8	SOR(Water supply & Sewerage (Ch 10/1 (i)	Providing and fixing 6" x 4" C.C gully trap with 4" outlet complete with 4" thick 1:2:4 C.C for bed & 1/2" thick cement plaster (1:3) to the karb. C.I grating 6" x 6" C.I cover and frame 12" x 12" (inside) etc complete. Earthen ware glazed Gully trap 6" x 6" x 4" with C.I cover & Frame.	Each	5.00	1,220.67	6,103.35
9	SOR (PHE works) Part-B (II) A-2	Providing and laying R.C.C. pipe & collors of class "B" and fixing in trench i/c cutting,fitting and jointing with maxphalt composition and cement mortar (1:1) i/e. testing with water to a head of 22.5 meter or 76 ft. (e) 310mm (12") i/d	P.Rft	400.00	543.75	217,500.00
10	SOR (PHE works) Part-B (III) A-1	Excavation for pipeline in trechches, and pits in soft soils i/c trimming and dressing sides to true alignment and shape levelling of beds of trenches to correct level and grade, cutting joint and holes and disposal of surplus earth within a one chain as directed by engineer incharge.Providing fence guards, lights, flags and temperory crossings for non-vehicular traffic where ever required lift upto 5ft. (1.52 m) and lead upto one chain (30.5 m).	1000 Cft	3,600.00	3,600.00	12,960.00
11	Ch/1/13 (d)	Earth work compaction (Soft, ordinary or hard soil). (d) Ramming earth work (All types of soil).	1000 Cft	3,600.00	453.75	1,633.50
12	Ch/1/9 (a)	Rehandling of earth work. (a) Lead upto a single throw of Kassi, Phawrah or a = Shovel.	1000 Cft	3,600.00	756.25	2,722.50
13	SOR(Water supply & Sewerage (Ch 6/4 (iv)	Providing and fixing full way gun metal peet/gate valve with wheels, threaded or flabged ends with rubber washing.(iv) 1-1/4" (Light pattern) (Kitz. Audco or Equivalent)	Each	6.00	337.92	2,027.52
14	SOR(Water supply & Sewerage (Ch 6/4 (v)	Providing and fixing full way gun metal peet/gate valve with wheels, threaded or flabged ends with rubber washing.(v) 1-1/2" (Light pattern) (Kitz. Audco or Equivalent)	Each	6.00	695.42	4,172.52
		<b>MANHOLE</b>				
15	VI-B (ii) P (1)	Constructing manhole or inspection chamber for the required diameter of circular sewer and 3'-6" (1067 mm) depth waith walls of BB in cement sand mortar 1:3 cement plastered 1:3, 1/2" thick. Inside of walls and 1" (25 mm) thick over benching and channel i/c fixing C.I manhole cover with frame of clear opening 1-1/2' x 1-1/2' (457 x 457mm) of 1.75 cwt. (88.9 Kg) embaded in plain C.C 1:2:4 and fixing 1"(25mm) dia MS steps 6" (150 mm) wide projecting 4" (102mm) from the face of wall at 12" (305mm) C/C duly painted etc. Complete as per Standard specification and drawing.	Job	10.00	14,748.00	147,480.00
16	SOR (Water supply & Sanitary works) Ch 1-13	Providing & fixing 22"x 16" lavatory basin in white glazed earthen ware complete with & i/c the cost of W.I or C.I cantilever brackets 6 inches built into walls, painted white in 2 coats after a primary coat of red lead paint, a pair of 1/2" rubber plug & chrome brass waste of approved pattern 1-1/4" dia malloable iron or CP brass trap, malloable iron or brass unions and making requisite number of holes in walls plinth and floor for pipe connection &making good in cement concrete 1:2:4 (Foreign or Equivalent) (Master, Sonex, or Equivalent)	Each	7.00	6,237.00	43,659.00
17	SOR (Water supply & Sanitary works) Ch 6-14 (b)	Providing and fixing, wash hand basin mixture of superior quality with CP head 1/2' dia. (Master, Sonex, or Equivalent)	Each	11.00	3,179.00	34,969.00

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# CONSTRUCTION OF VC RESIDENCE AT THE SHAIKH AYAZ UNIVERSITY, SHIKARPUR

## DETAILED ESTIMATE

### PUBLIC HEALTH WORKS

**Rates Based on Composite Schedule of Rate (GENERAL-2012)**

SR. NO.	ITEM NO.	DESCRIPTION	UNIT	QTY	RATE (RS)	AMOUNT (RS)
1	NSI	UPVC Multi Floor Trap (110x75mm) including strainer; making required number of connections; breaking concrete or masonry work & then making it good; etc. of approved make. (Master, Sonex, or Equivalent)	Each	10.00		
2	NSI	Providing, Fixing Dadex Class D or equivalent UPVC clean out with cover making requisite number of holes in walls, plinth or floor for pipe connection and making good the same as necessary to the structure complete including, rubber gasket and clamp. (Dadex, Popular or Equivalent)	Each	4.00		
3	NSI	Providing and fitting "P" trap:ii) 10 cm (4") glazed.	Each	7.00		
4	NSI	Providing and fixing Wall Shower grohe concealed or equivalent complete in all respects as approved by the Engineer incharge. (Master, Sonex, or Equivalent)	Each	3.00		
5		<b>WATER SUPPLY PIPES AND FITTINGS</b>				
		P/F Polypropylene Random copolymer (PPRC) PN-20 pipe with fusion / threaded joints including the cost of all specials/ accessories i.e elbow, bend, sockets etc. (Popular /Beta or equivalent) complete in all respect.				
	i	1 1/2" (40 mm) dia.	Rft	110.00		
	ii	1" (25 mm) dia.	Rft	180.00		
	iii	2" (50 mm) dia.	Rft	80.00		
	iv	3/4" (20 mm) dia.	Rft	400.00		
6		<b>SOIL, WASTE, VENTILATING PIPES &amp; FITTINGS</b>				
		Providing , fixing and testing UPVC Nikasi type "B" with solution of same quality make including the cost of all specials/ accessories i.e elbow, bend, sockets etc. (Popular/Beta or equivalent) complete in all respect.				
	i	100 mm (4") dia.	Rft	260.00		
	ii	80 mm (3") dia.	Rft	230.00		
		<b>GAS GESYER</b>				
7	NSI	Providing and Fixing Sui Gas Geyser 50 gallon capacity comprising of internal tank of G.I sheet 14-SWG and External M.S sheet 22-SWG covering with proper foot rests dully enamel painted, 4" thick heigh density glass wool insulation with proper warranty with thermostat temperature gauge including fixing and making connection at site etc. complete in all respects as approved by the Engineer Incharge. (Ambassador/Firex/Exquire)	No	1.00		
8	NSI	Providing and fixing Gate valve 1 bars, RUV(itly) or equivalent complete in all respects as approved by the Engineer incharge.	Each	2.00		

SR. NO.	ITEM NO.	DESCRIPTION	UNIT	QTY	RATE (RS)	AMOUNT (RS)
9	NSI	Providing and fixing Gate valve 2 bars, RUV(itly) or equivalent complete in all respects as approved by the Engineer incharge.	Each	4.00		
Total of Non SOR ITEMS						



# CONSTRUCTION OF VC RESIDENCE AT THE SHAIKH AYAZ UNIVERSITY, SHIKARPUR

## DETAILED ESTIMATE

### ELECTRICAL WORKS

Rates Based on Composite Schedule of Rate (GENERAL-2012) Sindh

Sr. No.	Item No.	Description	Unit	Qty	Unit Rate (Rs.)	Total Amount (Rs.)
		<b><u>DISTRIBUTION BOARDS</u></b>				
		Supply at site, fabrication, installation, testing and commissioning of Distribution Board (DB) , made of sheet steel 16 SWG, degreased and derusted, with 2 coats of antirust paint, 2 coats of powder coated paint of approved colour, protection classification IP-44, totally enclosed indoor floor mounting cubicle type in free standing design, with hinged door, handle including cost of all auxiliaries, internal wiring, designation lables on MCCBS, grounding bar suitable for system Voltage 440 V, 50 Hz, 3 Phase and neutral bus bars of 99.9% electrolytic copper, including cost of cable terminal blocks wiring from breakers, brass cable glands, all accessories complete in all respects metion in BOQ or not required for performing completely. All incoming and outgoing breakers shall be accessible only by opening the front door having further M.S. sheet cover gaskets shall also be provided where necessary. Panel should be compeltely made in certified factory. ie PEL, Green T & D, Mazcorp engineering or equivalent as per instructions by engineer incharge				
		All MCCBs shall be suitable to operate without any derating at 40°C ambient temperature and shall be of one make only. The sides of MDB shall also have louvers at bottom and top on sides of panel for hot air exhaust, wire mesh etc. The back of the panel shall be lockable door instead of bolted and shall conform to single line diagram. item should be of ABB, Schneider or equivalent as per instructions by engineer incharge				
		<b><u>Main Distribution Board</u></b>				
		<b><u>INCOMMING</u></b>				
	ELECT SH-X(207)	Providing and fixing circuit breaker 15,20,30,40,50, 75 & 100 amps TP(XS-100NS) on prepared board as required.	Per No.	1	9226	9,226
	ELECT SH-XV(269)	Providing and fixing of current transformer of ration 60/5 amps (round) RLC-30 as required or as per instructed as EI.	Per No.	3	1191	3,573
	ELECT SH-XVI(285)	Providing and fixing voltmeter size 96/96mm 500 volt as required and as instruction of EI.	Per No.	3	999	2,997
	ELECT SH-X(203)	Providing and fixing circuit breaker 6,10,15,20,30,40,50 & 63 amps SP(TB-5S) on prepared board as required.	Per No.	3	916	2,748
		<b><u>OUTGOING</u></b>				
	ELECT SH-X(203)	Providing and fixing circuit breaker 6,10,15,20,30,40,50 & 63 amps SP(TB-5S) on prepared board as required.	Per No.	36	916	32,976
	ELECT SH-X(207)	Providing and fixing circuit breaker 15,20,30,40,50 & 60 amps TP(XES-100CB(CS)) on prepared board as required.	Per No.	3	5521	16,563
<b>1</b>		<b><u>WIRING IN CONCEALED CONDUITS</u></b>				
i)		<b><u>Distribution board to Switch</u></b>				
		Wiring of light circuit from Distribution Board to switch,with Three nos. single core 2.5 Sqmm PVC insulated 450/750 volts grade stranded copper conductor cables in concealed PVC conduits (conduits partly shared) including PVC conduit, and conduit accessories etc. Cable should be of Newage, Fast cable, Universal cables or equivalent and conduit should be of Dadex, Turkplast, Easyfit or equivalent as per instructions by engineer incharge				
a	ELECT SH-I(24)	Providing and laying (main or Sub Main Pvc insulated with 3-7.29 copper conductor in 3/4" dia PVC conduit recessed in the wall or column as required.	Rmtr	300	294.00	88,200
ii)		<b><u>Switch to light point</u></b>				

[illegible]

# CONSTRUCTION OF VC RESIDENCE AT THE SHAIKH AYAZ UNIVERSITY, SHIKARPUR

## DETAILED ESTIMATE

### ELECTRICAL WORKS

Rates Based on Composite Schedule of Rate (GENERAL-2012) Sindh

Sr. No.	Item No.	Description	Unit	Qty	Unit Rate (Rs.)	Total Amount (Rs.)
1		<b><u>DISTRIBUTION BOARDS</u></b>				
		Supply at site, fabrication, installation, testing and commissioning of Distribution Board (DB) , made of sheet steel 16 SWG, degreased and derusted, with 2 coats of antirust paint, 2 coats of powder coated paint of approved colour, protection classification IP-44, totally enclosed indoor floor mounting cubicle type in free standing design, with hinged door, handle including cost of all auxiliaries, internal wiring, designation lables on MCCBS, grounding bar suitable for system Voltage 440 V, 50 Hz, 3 Phase and neutral bus bars of 99.9% electrolytic copper, including cost of cable terminal blocks wiring from breakers, brass cable glands, all accessories complete in all respects metion in BOQ or not required for performing completely. All incoming and outgoing breakers shall be accessible only by opening the front door having further M.S. sheet cover gaskets shall also be provided where necessary. Panel should be compeltely made in certified factory. ie PEL, Green T & D, Mazcorp engineering or equivalent as per instructions by engineer incharg				
		All MCCBs shall be suitable to operate without any derating at 40°C ambient temperature and shall be of one make only. The sides of MDB shall also have louvers at bottom and top on sides of panel for hot air exhaust, wire mesh etc. The back of the panel shall be lockable door instead of bolted and shall conform to single line diagram. item should be of ABB, Schneider or equivalent as per instructions by engineer incharge				
		<b><u>Main Distribution Board</u></b>				
		<b><u>INCOMING</u></b>				
		03 No Digital Ammeter scaled 0-500 Amps of appropriate sizes.				
		03 Nos. R-Y-B indication lamps.				
		05 Nos.copper bus bars 100 Ampere,three phase,Earth and Natural for distrubitions with appropriate size DB BOX	Job	1		
		Each Bus bar is 300*12*2 mm.				
2		<b><u>LIGHT FIXTURES</u></b>				
i)		Supply, installation, testing and commissioning of following light fittings, ceiling, recessed,wall mounted as per specified fixture. Complete with internal wiring, Grounding terminal , driver complete in all respects. Lights should be of Phillips, ledvance or equivalent				
iii)		20 Watt LED Light Fixture surface/recessed mounted, IP-22 rated	No.	96		
iv)		15 Watt (Warm) LED Light Fixture surface/recessed mounted, IP-22 rated	No	29		
v)		15 Watt (White) LED Light Fixture surface/recessed mounted, IP-22 rated	No.	23		
vi)		10 Watt LED Light Fixture surface/recessed mounted, IP-22 rated	No.	11		
3		<b><u>MISCELLANEOUS FITTINGS</u></b>				

Sr. No.	Item No.	Description	Unit	Qty	Unit Rate (Rs.)	Total Amount (Rs.)
		Supply, installation, testing & commissioning of Ceiling/ Exhaust fan. The ceiling/ exhaust fan shall comprise circular fan metallic/ plastic body, metallic fan blades, down rod (if necessary) of suitable dia & length, AC capacitor, internal wiring, terminals all installation & operational accessories as per tender specifications, as per site requirements and as per instructions by the Engineer. make GFC, Pak Fan, Royal Fan or approved equivalent.				
i)		Providing and Fixing of brass ceiling fan 56" (good quality)	No.	13		
ii)		12 " outer dia exhaust fan with plastic body, fan blades and louvers	No.	9		
<b>4</b>		<b>WIRING ACCESSORIES</b>				
		Supply at site, installation, testing and commissioning of the following wiring accessories, complete in all respects. Made of T.J, Legrand or approved equivalent.				
ii)		10 Amps, 250Volts one way, Two gang light control switches including appropriate size concealed Plastic back box.	No.	9		
		10 Amps, 250Volts one way, Three gang light control switches including appropriate size concealed Plastic back box.	No.	7		
iv)		10 Amps, 250Volts one way, Four gang light control switches including appropriate size concealed Plastic back box.	No.	7		
v)		10 Amps, 250Volts one way, Six gang light control switches including appropriate size concealed Plastic back box.	No.	7		
xi)		15 Amps, 250Volts, universal 5 in 1 switched socket unit including appropriate size Plastic back box.	No.	36		
xii)		20 Amps Double Pole(DP) switch with neon indication lamp complete including appropriate size Plastic back box.	No.	14		
xiii)		45 Amps Double Pole(DP) switch with neon indication lamp complete including appropriate size Plastic back box.	No.	1		
xiv)		Fan Dimmer 250 watt with switch including appropriate size Plastic back box. with all associated accessories.	No.	13		
xv)		Appropriate size of plastic body fan box and ceiling fan rod 24" in length	Nos	13		
		MS BAR for hanging Ceiling fan	Nos	13		
<b>5</b>		<b>GROUNDING SYSTEM</b>				
i)		<b>GROUNDING cable</b>				
		Supply and erection of single core PVC insulated, PVC sheathed copper conductor, 660/1100 volts grade cable, in prelaidd G.I. pipe/M.S. conduits/PVC pipe/G.I. wire/trenches, etc (rate for cable only):- 16 mm sq (7/0.064")	rmtr	30		
ii)		<b>Plate type earthing</b>				
		Providing & fixing of Plate type Earthing commpressed with excecveted hole 6"up 63 feet,GI pipe 2"(50mm)with Tees , Sockets , Endcap of 60 (RFT) Copper Plate of 1/2"x 2"x 48", 2x 70mmsq S/Core copper bare conductor 125 (Rft) Earth Connection Point of 1200 x 50 x 50mm (L x W x T) Inspection Pit of 300 x 300 x 450 mm (L x W x D) completed with all respect	No.	1		
iv)		<b>Testing and commissioning</b>				

Sr. No.	Item No.	Description	Unit	Qty	Unit Rate (Rs.)	Total Amount (Rs.)
		Testing and commissioning of the earthing system in the presence of site engineer with electronic devices such as megger etc, making so report with after approximating 3 time testing and the grounding ohm must be less than or upto 3 ohms	Nos.	1		
<b>6</b>		<b><u>LT CABLES</u></b>				
		Supply at site, installation, testing and commissioning of PVC insulated armoured copper conductor cable 600 / 1000 Volt grade (or otherwise mentioned in cable description ) in prelaidd conduits / trenches to be installed as per routes shown on drawings including cost of all necessary materials, connections, identification tags, cables lugs properly crimped at both ends for the following sizes complete in all respects. Actual length of cables to be installed shall be practically measured at site by the Contractor, duly authenticated by the Engineer before placing the order with the manufacturer, however, approximate length of cables are shown herewith. Payments shall be made as per actual length installed. Cable should be of Newage, Fast cable, Universal cables or equivalent and conduit should be of Dadex, Turkplast, Easyfit or equivalent as per instructions by engineer incharge				
		Providing and laying (main or Sub Main) Pvc insulated, Pvc sheated with 4 core copper conductor 600/1000 volts size 35mm <sup>2</sup>	Rmtr	50		
<b>7</b>		<b><u>CIVIL WORKS</u></b>				
	i)	<b><u>Trench ( for LT Cable )</u></b>				
		Labour for excavation and refilling of trench 12" wide, 24" deep 9" sand compaction below and above in preinstalled PVC pipes, ramming watering all necessary material, labour etc, complete in all respect. Actual length of the trench shall be as per site condition and paid accordingly however approximate length of trench is given.	R.Mtr	50		
	ii)	<b><u>Manhole For LT Cable Pulling ( If Required)</u></b>				
		Construction of manholes to facilitate pulling of cables in trench or conduit as shown on drawing, manholes shall be of the size 24" x 24" x 30" deep with 9" thick wall with cement mortar, internal plaster 1:4, 100mm thick RCC cover for manhole, including cost of all accessories / materials, complete in all respects. (Tentative number of manholes have been provided, however payment shall be made as per actual and as per quantity requirement)	Nos.	3		
	iii)	<b><u>Conduit</u></b>				
		Supply and erection of PVC pipe for wiring recessed in walls, including inspection boxes, pull boxes, hooks, cutting jharries, and repairing surface, etc., complete with all specials, conduit should be of Dadex, Turkplast, Easyfit or equivalent as per instructions by engineer incharge.				
	i)	20 mm i/d	R.Mtr	90		
	ii)	25 mm i/d	R.Mtr	20		
<b>8</b>		<b><u>CCTV System</u></b>				
	i	<b><u>Camera Cable</u></b>				

Sr. No.	Item No.	Description	Unit	Qty	Unit Rate (Rs.)	Total Amount (Rs.)
		Supply, installation, Testing and commissioning of CAT 6a UTP CABLE IN PVC PIPE Ø 1"; MEASUREMENT IN METERS complete in all respects.including cost of conduit and its accesories installing arrangment, making jurries in wall and repairment of wall. Made of D-Link or equivalent approved by engineer incharge	R.Mtr	120		
<b>9</b>		<b><u>DATA NETWORKING SYSTEM</u></b>				
i		<b><u>Data Network point</u></b>				
		Wiring for each data/computer point with UTP, 4 pair Cat 6a (500 Mhz ) Network Cable supports (10 Giga) laid in PVC Conduit , with pure copper conductor PVC insulated PVC sheathed including cost of Single Shutter Face palte with UTP Cat-6a Keystone Jack with Back Box to be installed on walls, from Data Cabinet to Computer Points, PVC conduit & Cable tray. including cost of conduit and its accesories installing arrangment, making jurries in wall and repairment of wall. cable should be made of D-link(NCB-6AUGRYR-305) or equivalent & conduit should be of Dadex, Turkplast, Easyfit or equivalent as per instructions by engineer incharge.	Points	6		
ii		<b><u>Networking Switch</u></b>				
		Supply, installation, testing and commisioning of TP-Link 8-Port Gigabit Easy Smart Switch with 4-Port PoE (TL-SG108PE) 8 10/100/1000Mbps ports provide instant large file transfers <ul style="list-style-type: none"> <li>• Equipped with 4 802.3af PoE ports with up to 15.4W for each port</li> <li>• Supports PoE power up to 55W for all PoE ports</li> <li>• IEEE 802.3x flow control provides reliable data transfers as per instructions by Engineer Incharge</li> </ul>	Nos	1		
iii		<b><u>Faceplate</u></b>				
a		Supply, installation, testing and commisioning of single Faceplate Accepts Two Keystone Jacks with Shutter & ID Plate- 86*86 mm - White Colour - Square with Cat6 UTP 180 ° Punch Down Keystone Jack - White Colour and Back Box for Dual Shutter Face/Plate. Plastic(D35xH85xW85 CM), complete in all respects. made of D-Link(NFP-0WHI21)+(NKJ-C6WHI1B21) or equivalent as per instructions by site engineer	Nos.	6		
iv		<b><u>Wifi Access Points</u></b>				
		Supply at site, installation, testing and commissioning of the instant access point for Wifi( Enterprise),including wifi connection with the supplier 1 device as wifi and other as router for first floor making the job complete in all respects.	Job	1		
v		<b><u>Television point</u></b>				

Sr. No.	Item No.	Description	Unit	Qty	Unit Rate (Rs.)	Total Amount (Rs.)
		Supply at site, installation, testing & commissioning of Wiring for each Television point with coaxial cable RG-6 1.0 MM (BLACK) CU CLAD, in 1" dia conduit partly shared, Network Cable pure copper conductor PVC insulated PVC sheathed including cost of Jack with Back Box to be installed on Walls, from boster to Television Points on walls, complete in all respect including cost of conduit and its accesories installing arrangment, making jurries in wall and repairment of wall. cable should be made of D-link or equivalent & conduit should be of Dadex, Turkplast, Easyfit or equivalent as per instructions by engineer incharge.	Nos	4		
vi		<b>Faceplate</b>				
		Supply, installation, testing and commisioning of faceplate SINGLE SHUTTER/PORT WITH 1 gang tv outlet & BACK BOX , complete in all respects. Made of legrand or equivalent as per instructions by site engineer	Nos.	4		
vii		<b>Telephone</b>				
		Supply at site, installation, testing & commissioning of Wiring for each Telephone point with 5 pair telephone cable , in 1" dia conduit partly shared, solid plain copper conductors, solid PVC insulation, conductors twisted together in pairs, overall PVC sheath, conductor resistance (Max @ 200C) 97.8ohms/km, capacitance Unbalanced (Max) 500pF/500m, insulation resistance (Min @ 200C): 50Mohms/km including cost of Keystone Jack with Back Box to be installed on Walls, from Junction box to Telephone Points on walls, complete in all respect. cable should be made of D-link or equivalent & conduit should be of Dadex, Turkplast, Easyfit or equivalent as per instructions by engineer incharge.	Nos	4		
viii		<b>Faceplate</b>				
		Supply, installation, testing and commisioning of faceplate SINGLE SHUTTER/PORT WITH 1x RJ-11 I/O & BACK BOX , complete in all respects. Made of TJ, legrand or equivalent as per instructions by engineer incharge	Nos.	4		
<b>Total of Non-SOR Items</b>						



# "PROVISION OF MISSING FACILITIES FOR THE SHAIKH AYAZ UNIVERSITY SHIKARPUR"



## GUEST HOUSE TENDER DRAWINGS MARCH, 2022

DESIGN BY



### **NEW VISION ENGINEERING CONSULTANT**

HEAD OFFICE:

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IJP Road Islamabad.

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REGIONAL OFFICE:


287-A Street # 06 Cavalry  
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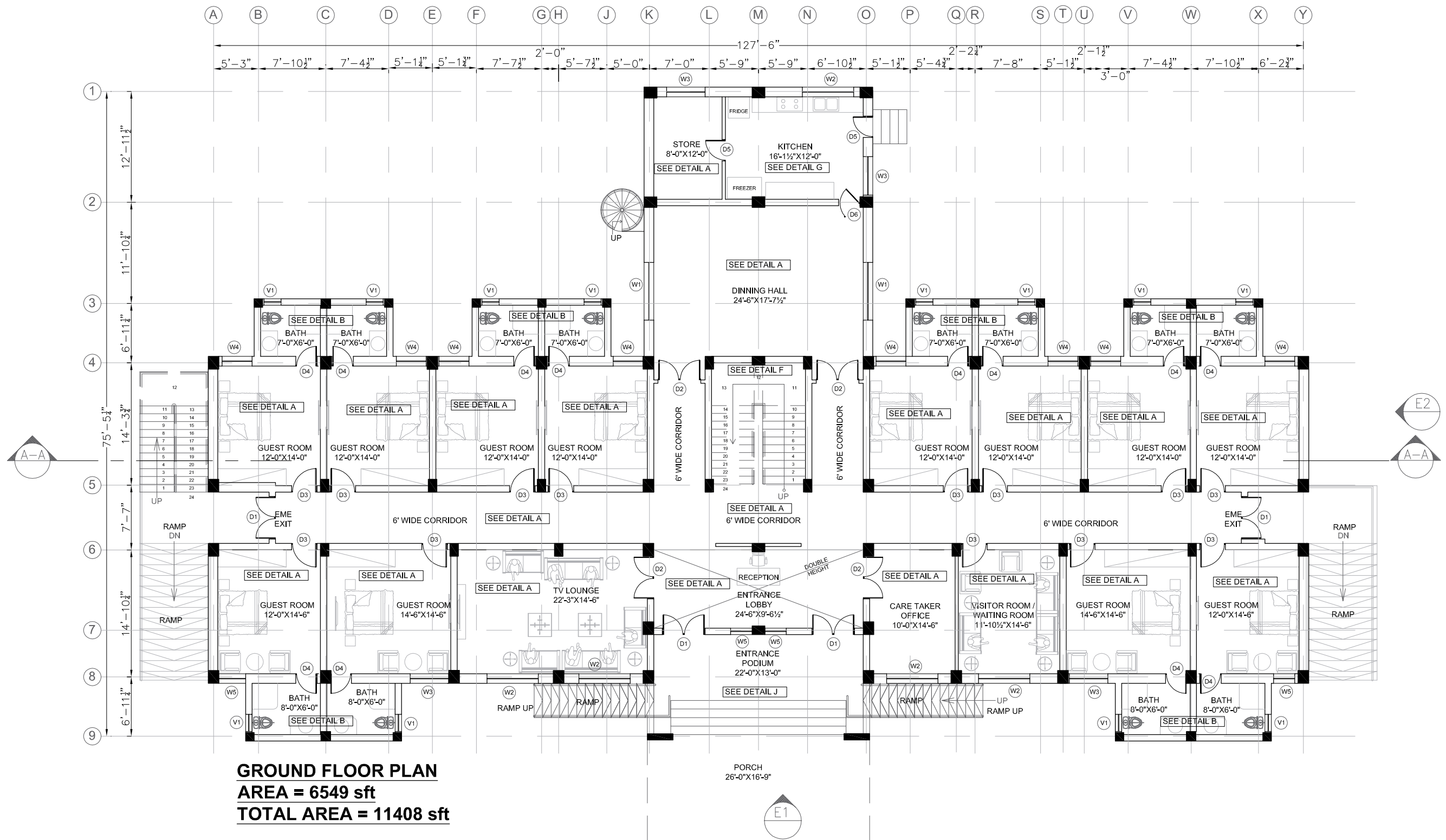
LIST OF DRAWINGS		
S.NO.	DRAWING TITLE	DRG. NO
ARCHITECTURE DRAWINGS		
1	LIST OF DRAWING	LS-00
2	GROUND FLOOR PLAN	AR-01
3	FIRST FLOOR PLAN	AR-02
4	ROOF PLAN	AR-03
5	ELEVATION E1	AR-04
6	ELEVATION E2	AR-05
7	SCHEDULE OF OPENINGS	AR-06
8	DOOR & WINDOW ELEVATION	AR-07
9	FLOOR FINISHING DETAILS	AR-08
10	RAMP DETAIL	AR-09
11	STAIR DETAIL	AR-10

ADDITION & REVISION					
ADD. REV. NO.	DATE	DESCRIPTION	DES. BY	CHK. BY	APP. BY

DESIGNER:	<b>NEW VISION ENGINEERING CONSULTANT</b> Head Office: Office No.B-6 Second Floor Masood Arcade IJP Road Islamabad. Ph: +92-51-4848375, Fax: +92-51-4848375 Email: newvisionec@yahoo.com Regional Office: 287-A Street # 6, Cavalry Ground ,Lahore Ph: +92-42-37250130
	

PROJECT:	"PROVISION OF MISSING FACILITIES FOR THE SHAIKH AYAZ UNIVERSITY SHIKARPUR"
TITLE:	LIST OF DRAWING

CLIENT:	SHAIKH AYAZ UNIVERSITY SHIKARPUR		
DESIGNED BY:	AR.SALMAN	APPROVED BY:	DATE : MAR, 2022
DRAWN BY:	RIZWAN	JOB NO.	SCALE: N.T.S
DRG. NO.	LS-00		



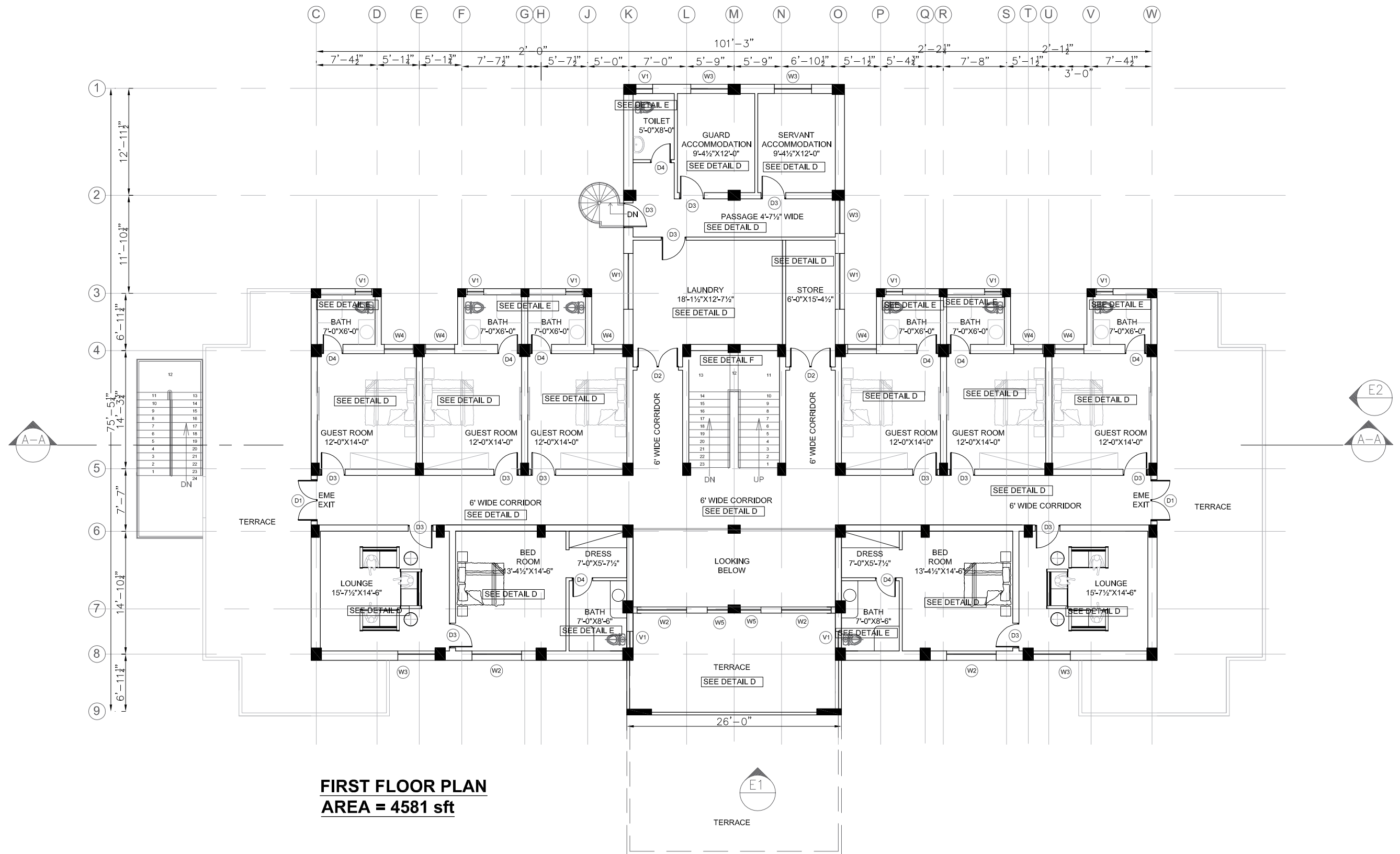
**GROUND FLOOR PLAN**  
**AREA = 6549 sft**  
**TOTAL AREA = 11408 sft**

ADDITION & REVISION					
01	7/10/2021	REVISED PLAN			
ADD. REV. NO.	DATE	DESCRIPTION	DES. BY	CHK. BY	APP. BY

DESIGNER:  
**NEW VISION ENGINEERING CONSULTANT**  
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Ph: +92-42-37250130

PROJECT:	"PROVISION OF MISSING FACILITIES FOR THE SHAIKH AYAZ UNIVERSITY SHIKARPUR"	
TITLE:	GROUND FLOOR PLAN	

CLIENT: SHAIKH AYAZ UNIVERSITY SHIKARPUR		
DESIGNED BY: AR.SALMAN	APPROVED BY:	DATE: MAR, 2022
DRAWN BY: SUFYAN	JOB NO.	SCALE: N.T.S
DRG. NO.	AR-01	



ADDITION & REVISION					
ADD. REV. NO.	DATE	DESCRIPTION	DES. BY	CHK. BY	APP. BY

DESIGNER:



**NEW VISION ENGINEERING CONSULTANT**

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Regional Office: 287-A Street # 6, Cavalry Ground ,Lahore  
 Ph: +92-42-37250130

PROJECT:

"PROVISION OF MISSING FACILITIES FOR THE  
 SHAIKH AYAZ UNIVERSITY SHIKARPUR"

TITLE:

FIRST FLOOR PLAN

CLIENT:

SHAIKH AYAZ UNIVERSITY SHIKARPUR

DESIGNED BY:

AR.SALMAN

APPROVED BY:

DATE: MAR, 2022

DRAWN BY:

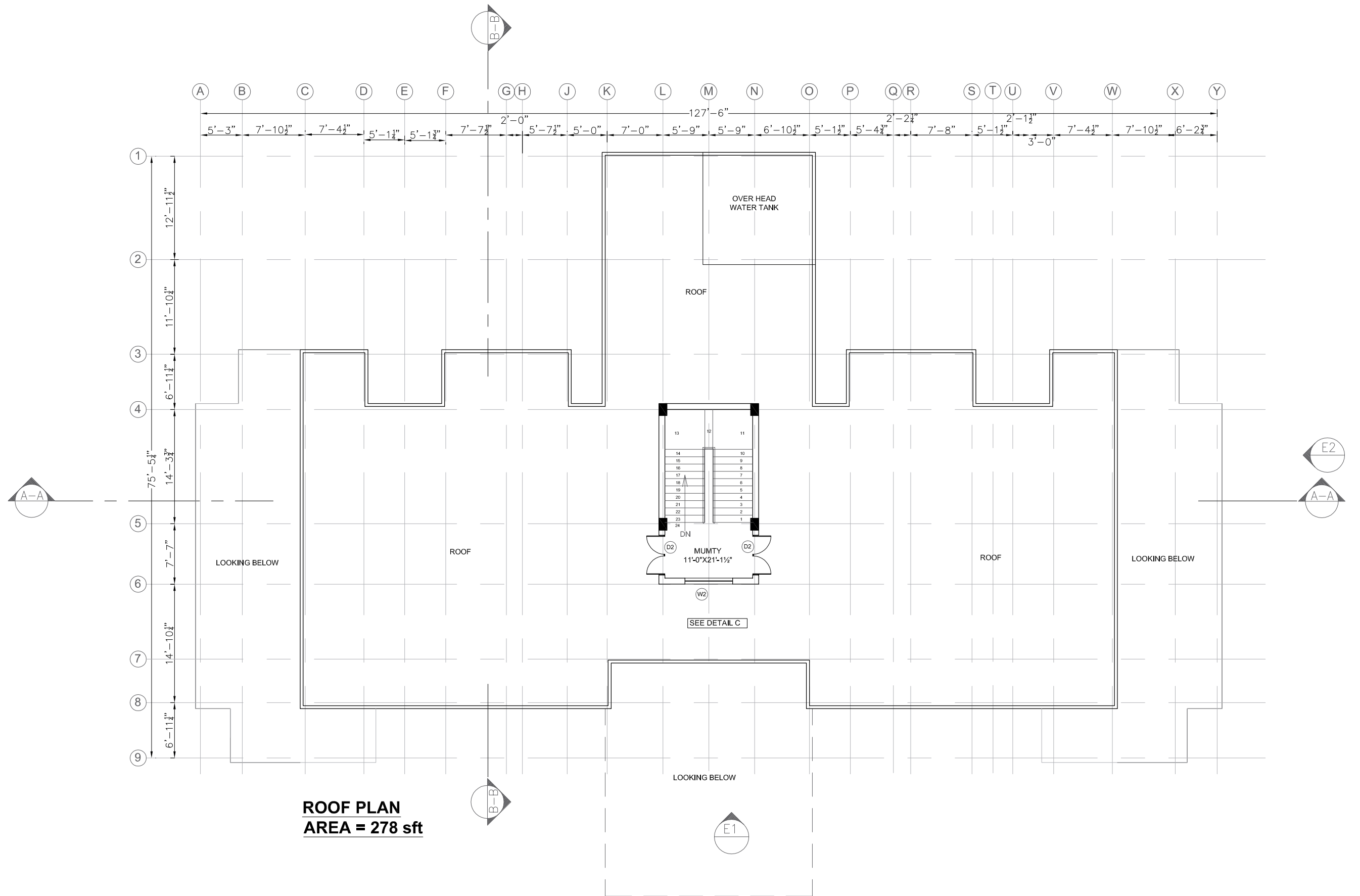
SUFYAN

JOB NO.

SCALE: N.T.S

DRG. NO.

AR-02



ADDITION & REVISION					
ADD. REV. NO.	DATE	DESCRIPTION	DES. BY	CHK. BY	APP. BY

DESIGNER:



# **NEW VISION ENGINEERING CONSULTANT**

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 Ph: +92-42-37250130

PROJECT:

**"PROVISION OF MISSING FACILITIES FOR THE  
 SHAIKH AYAZ UNIVERSITY SHIKARPUR"**

TITLE:

**ROOF PLAN**

CLIENT:

**SHAIKH AYAZ UNIVERSITY SHIKARPUR**

DESIGNED BY:  
 AR.SALMAN

APPROVED BY:

DATE :  
 MAR. 2022

DRAWN BY:  
 SUFYAN

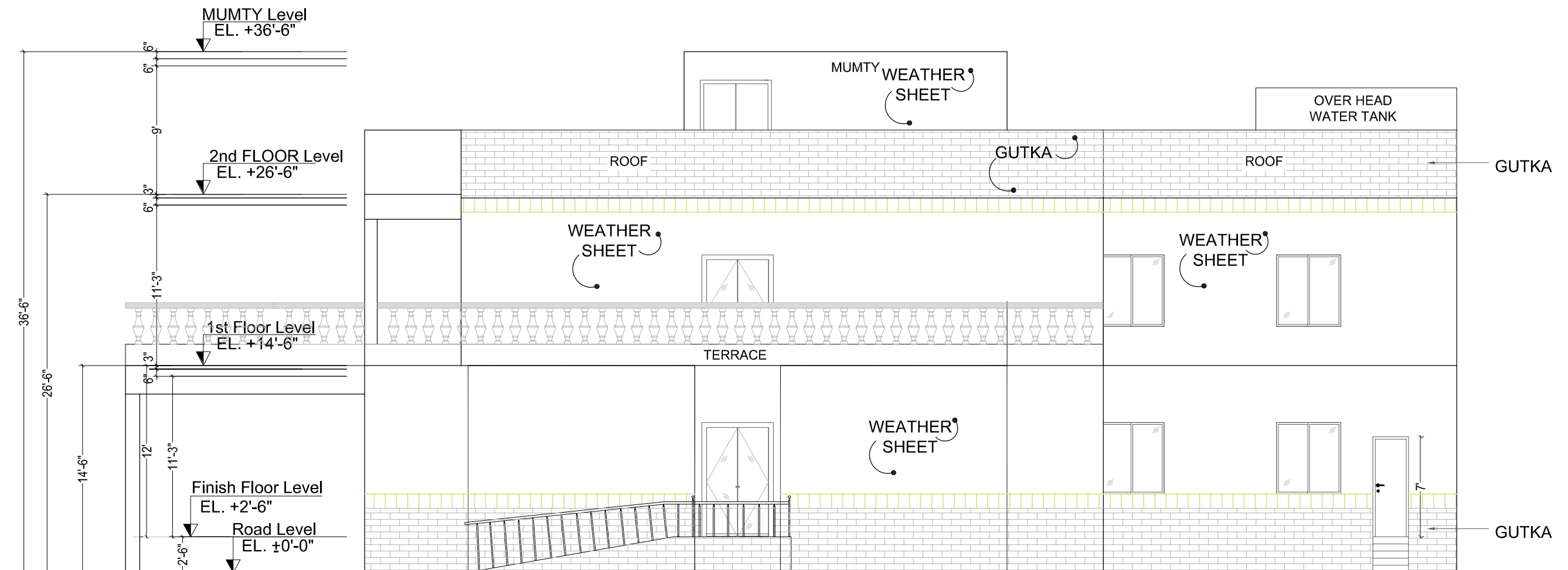
JOB NO.

SCALE:  
 N.T.S

DRG. NO.

AR-03






ADDITION & REVISION					
ADD/REV/INT	DATE	DESCRIPTION	REV BY	CHK BY	APP BY

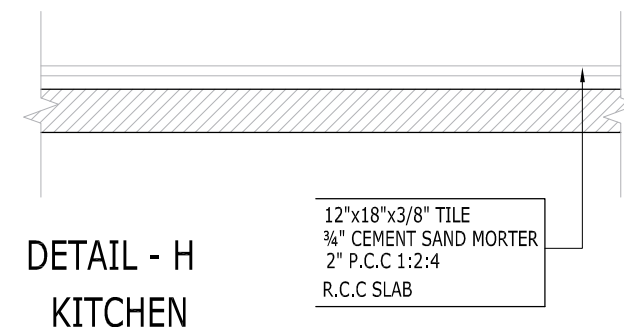
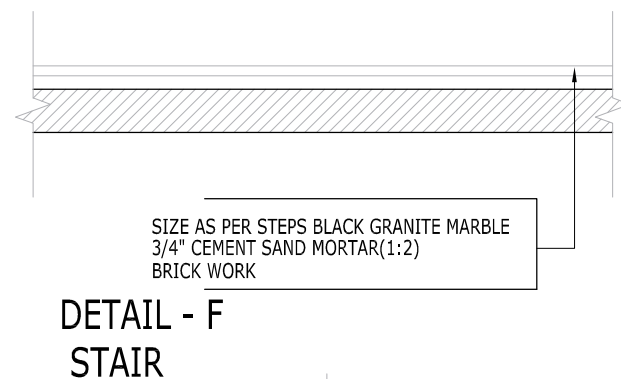
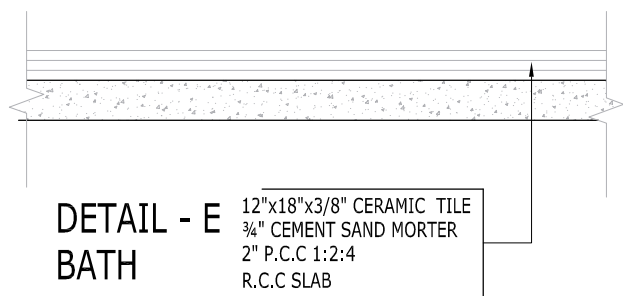
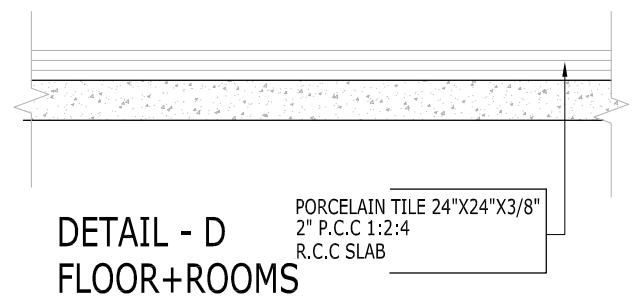
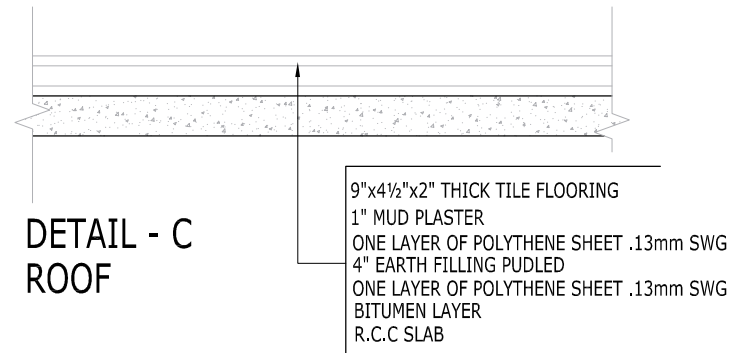
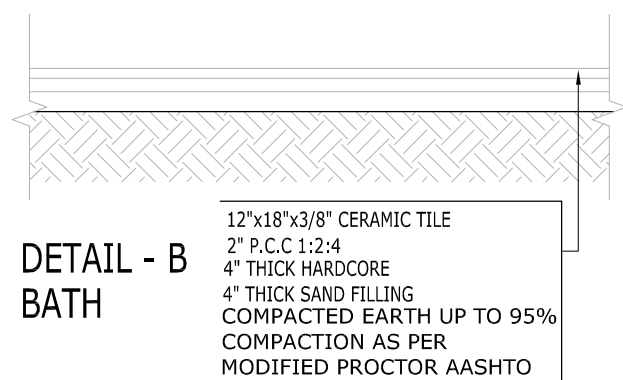
PROJECT:	"PROVISION OF MISSING FACILITIES FOR THE SHAIKH AYAZ UNIVERSITY SHIKARPUR"
TITLE:	ELEVATION E-2

SCHEDULE OF OPENINGS				
S.NO.	OPENINGS	DIMENSIONS	SILL LEVEL	REMARKS
1	D1	5'-0"x8'-0"	0'-0"	ALUMINUM GLASS DOOR
2	D2	5'-0"x7'-0"	0'-0"	SOLID WOOD DOOR
3	D3	3'-0"x7'-0"	0'-0"	SOLID WOOD DOOR
4	D4	2'-6"x7'-0"	0'-0"	UPVC DOOR
5	D5	2'-6"x7'-0"	0'-0"	SOLID FLUSH DOOR
6	D6	2'-6"x7'-0"	0'-0"	REVOLVING DOOR
7	W1	6'-9"x5'-0"	+3'-0"	ALUMINUM WINDOW
8	W2	6'-0"x5'-0"	+3'-0"	ALUMINUM WINDOW
9	W3	4'-6"x5'-0"	+3'-0"	ALUMINUM WINDOW
10	W4	3'-6"x5'-0"	+3'-0"	ALUMINUM WINDOW
11	W5	2'-6"x5'-0"	+3'-0"	ALUMINUM WINDOW
12	V1	2'-0"x2'-0"	+6'-0"	ALUMINUM WINDOW

ADDITION & REVISION						<div>DESIGNER: <b>NEW VISION ENGINEERING CONSULTANT</b> Head Office: Office No.B-6 Second Floor Masood Arcade IJP Road Islamabad. Ph: +92-51-4848375, Fax: +92-51-4848375 Email: newvisionec@yahoo.com  Regional Office: 287-A Street # 6, Cavalry Ground ,Lahore Ph: +92-42-37250130</div> <div></div>	PROJECT: <b>"PROVISION OF MISSING FACILITIES FOR THE SHAIKH AYAZ UNIVERSITY SHIKARPUR"</b>		CLIENT: <b>SHAIKH AYAZ UNIVERSITY SHIKARPUR</b>	
DESIGNED BY: AR.SALMAN		APPROVED BY:		DATE : MAR, 2022						
DRAWN BY: SUFYAN		JOB NO.		SCALE: N.T.S						
DRG. NO.		AR-06								
DOOR & WINDOW SCHEDULE										
ADD. REV. NO.	DATE	DESCRIPTION	DES. BY	CHK. BY	APP. BY					







ADDITION & REVISION					
ADD. REV. NO.	DATE	DESCRIPTION	DES. BY	CHK. BY	APP. BY

DESIGNER: **NEW VISION ENGINEERING CONSULTANT**  
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 Regional Office: 287-A Street # 6, Cavalry Ground ,Lahore  
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PROJECT:	"PROVISION OF MISSING FACILITIES FOR THE SHAIKH AYAZ UNIVERSITY SHIKARPUR"	
TITLE:	FLOOR FINISH DETAIL	

CLIENT:	SHAIKH AYAZ UNIVERSITY SHIKARPUR		
DESIGNED BY:	AR.SALMAN	APPROVED BY:	DATE : MAR, 2022
DRAWN BY:	SUFYAN	JOB NO.	SCALE: N.T.S
DRG. NO.	AR-08		



DESIGNER

PROJECT:
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TITLE:

## STAIR DETAIL

CLIENT:
---------

AR-10

# STRUCTURE

## L I S T O F D R A W I N G S

S.NO.	DRAWING NO	DESCRIPTION	REMARKS
		TITLE SHEET	
STRUCTURAL			
1	ST-00	LIST OF DRAWINGS	
2	ST-01	GENERAL NOTES	
3	ST-02	TYPICAL DETAIL	
4	ST-03	TYPICAL DETAIL	
5	ST-04	TYPICAL DETAIL	
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7	ST-06	FOUNDATION REINFORCEMENT DETAIL	
8	ST-07	FOUNDATION SECTION DETAIL	
9	ST-07a	FOUNDATION SECTION DETAIL	
10	ST-08	BRICK MASONRY FOUNDATION LAYOUT	
11	ST-09	BRICK MASONRY FOUNDATION SECTION DETAIL	
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16	ST-14	GROUND FLOOR BEAM LAYOUT PLAN	
17	ST-15	FIRST FLOOR BEAM LAYOUT PLAN	
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22	ST-20	GROUND FLOOR SLAB LAYOUT POSITIVE REINFORCEMENT	
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24	ST-22	MUMTY SLAB LAYOUT POSITIVE REINFORCEMENT	
25	ST-23	GROUND FLOOR SLAB LAYOUT NEGATIVE REINFORCEMENT	
26	ST-24	FIRST FLOOR SLAB LAYOUT NEGATIVE REINFORCEMENT	
27	ST-25	MUMTY SLAB LAYOUT NEGATIVE REINFORCEMENT	

[illegible]

ADDITION & REVISION						
ADD./REV. NO.	DATE	DESCRIPTION		DES. BY	CHK. BY	APP. BY

DESIGNER



## NEW VISION ENGINEERING CONSULTANT

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PROJECT:

**"PROVISION OF MISSING FACILITIES FOR THE  
SHAIKH AYAZ UNIVERSITY SHIKARPUR"**

TITLE OF DRAWING

## LIST OF DRAWINGS

CLIENT:

**SHAIKH AYAZ UNIVERSITY SHIKARPUR**

DESIGNED BY: AK

APPROVED BY: MR

DATE MARCH 2022

DRAWN BY: RIZ

JOB NO.

AS SHOWN

CHECKED BY: MF

DRG. NO. ST-00

## STRUCTURAL NOTES

## GENERAL TECHNICAL NOTES

1. Figured dimensions are to be followed.
  2. Class "A" kiln burnt brick with minimum crushing strength of 2000 PSI should be used & joint at end should be sloppy, Vertical toothed joint at corners are prohibited.
  3. A steel G-60 deformed steel should be used in beams footing slabs and water retaining structures, in columns, for all diameters.
  4. All steel should be checked for its quality and placement DETAIL as shown in drawings.
  5. Extra care is required for proper placement of top reinforcement at support sections and cantilevers.
  6. Dotted bars designate top reinforcement.
  7. Provide L- shaped end hooks for all bars at discontinuous ends in footings, walls, beams and slabs as shown in drawings.
  8. Lap length should be followed As except specified:-
    - (a) 1"  $\varnothing$  = 60"
    - (b) 3/4"  $\varnothing$  = 45"
    - (c) 5/8"  $\varnothing$  = 36"
    - (d) 1/2"  $\varnothing$  = 30"
    - (e) 3/8"  $\varnothing$  = 23"
  09. Provide 3/8" dia at 12" c/c as distribution steel if not shown in drawings.
  10. Minimum concrete cover.
 

a) Footing = 2"	e) Water tank and retaining wall
b) Slabs = 3/4"	i- Water/earth face or
c) Beams = 1 1/2"	exposed to weather = 2"
d) Columns = 1 1/2"	ii- Other faces = 1"
  11. All footing should be taken below the original Ground Level to achieve the minimum depth as shown in drawings. Footing should not be placed on uncompacted fill area.
  12. All drawings should be read in conjunction with Architectural Drawings.
  13. Contractor will co-ordinate all drawings such as architectural, structural, electrical, mechanical, water supply, drainage etc: before execution of work.
  14. Standard ACI 318, Astm C 33 and Astm A-615 use for structural concrete
  15. Fine modulus of fine aggregate varies from 2- 3.5mm  
For concrete use 2.9- 3.2mm  
For plaster use 2.2- 3.6mm
- QUALITY OF CONCRETE**
1. **FOOTINGS & RETAINING WALLS.**  
Minimum concrete compressive strength for 6"x12" cylinder to be 3000 psi at 28 days age. Concrete Nominal Mix 1:2:4 or more rich to provide specified strength (Equivalent 6"x6"x6" cube strength 3750 psi)

2. COLUMNS.

Minimum concrete compressive strength for 6"x12" cylinder to be 4000 psi at 28 days age. Concrete Nominal Mix to be 1:1½:3 or more rich to provide specified strength

### 3. BEAMS, RIBS & SLABS.

Minimum concrete compressive strength for 6"x12" cylinder to be 3000 psi at 28 days age. Concrete Nominal Mix to be 1:2:4 or more rich to provide specified strength (Equivalent 6"x6"x6" cube strength 3750 psi)

4. Use of plasticizers recommended to reduce the water cement ratio and increase workability of concrete.
5. All concrete mixes to be used, should be got designed & approved before execution of work.
6. Quality, size and gradation of aggregates (fine & course) as used during the mix design, should be strictly adhered with.
7. The Design is in accordance with Seismic Zone 2A.

## NOTES

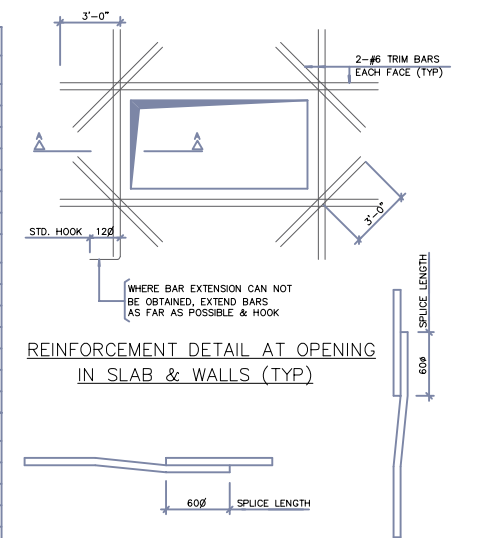
1. ALL LAYOUT DIMENSIONS AND F.FLOOR LEVELS TO BE AS PER ARCH DRAWING.
2. PROVIDE PLINTH BEAM PB AT PLINTH LEVEL, WALL BEAMS AT SLAB LEVEL.
3. PROVIDE #2 DOUBLE-LEG TIE BARS AT 12" CENTRES AT COMMON JOINT BETWEEN WALLS AND COLUMNS. THESE BARS SHOULD PASS INTO WALLS ON EACH SIDE OF COLUMNS.

## REINFORCING STEEL

REINFORCING STEEL $f_y = 60,000$ psi			
BAR NO.	BAR DIA (IN.)	DEVELOPMENT LENGTH (INCH) IN TENSION	
		$f_c = 3000$ psi	$f_c = 4000$ psi
#3	0.375	17"	15"
#4	0.500	22"	19"
#5	0.625	28"	24"
#6	0.750	33"	29"
#7	0.875	48"	42"
#8	1.000	55"	48"
BAR NO.	BAR DIA (IN.)	DEVELOPMENT LENGTH (INCH) IN COMPRESSION	
		$f_c = 3000$ psi	$f_c = 4000$ psi
#3	0.375	9"	8"
#4	0.500	11"	10"
#5	0.625	14"	12"
#6	0.750	17"	15"
#7	0.875	20"	17"
#8	1.000	22"	19"
BAR NO.	BAR DIA (IN.)	SPLICE LENGTH (INCH) IN TENSION	
		$f_c = 3000$ psi	$f_c = 4000$ psi
#3	0.375	22"	20"
#4	0.500	29"	25"
#5	0.625	37"	32"
#6	0.750	43"	38"
#7	0.875	63"	55"
#8	1.000	72"	63"

REINFORCING STEEL $f_y = 40,000$ psi			
BAR NO.	BAR DIA (IN.)	DEVELOPMENT LENGTH (INCH) IN TENSION	
		$f_c = 3000$ psi	$f_c = 4000$ psi
#3	0.375	12"	12"
#4	0.500	15"	13"
#5	0.625	19"	17"
#6	0.750	23"	20"
#7	0.875	33"	28"
#8	1.000	37"	32"

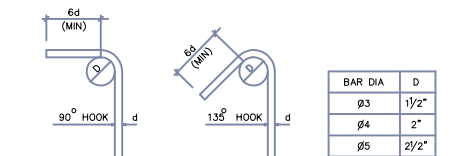


BEAM SPLICE  
(TYP)

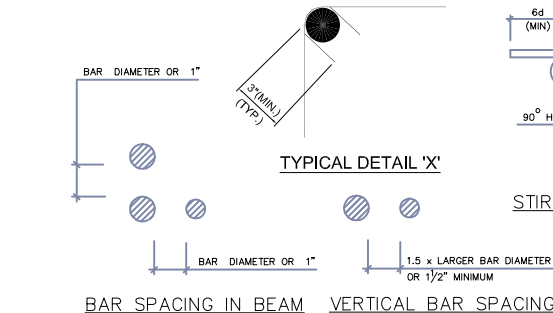
COLUMN SPLICE  
(TYP)

BAR DIA	D
#3	2½"
#4	3"
#5	4"
#6	4½"
#8	6"
#9	9"
#11	11"

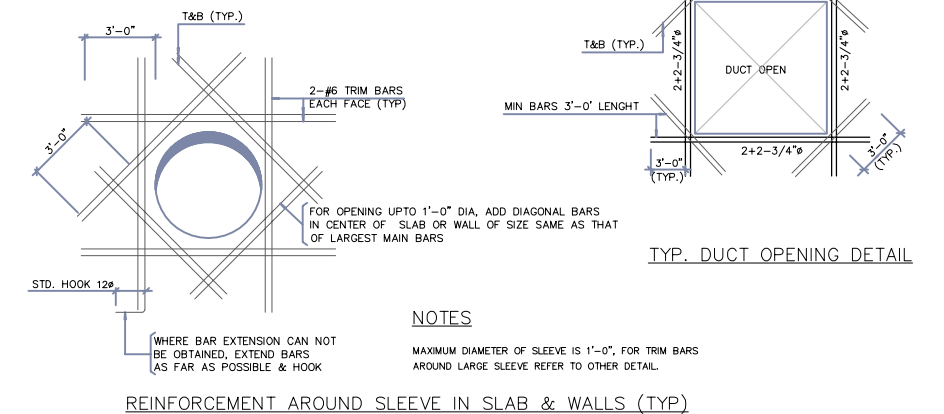
### STANDARD BAR HOOKS



### STIRRUPS AND TIE HOOKS

BAR SPACING IN BEAM

### VERTICAL BAR SPACING

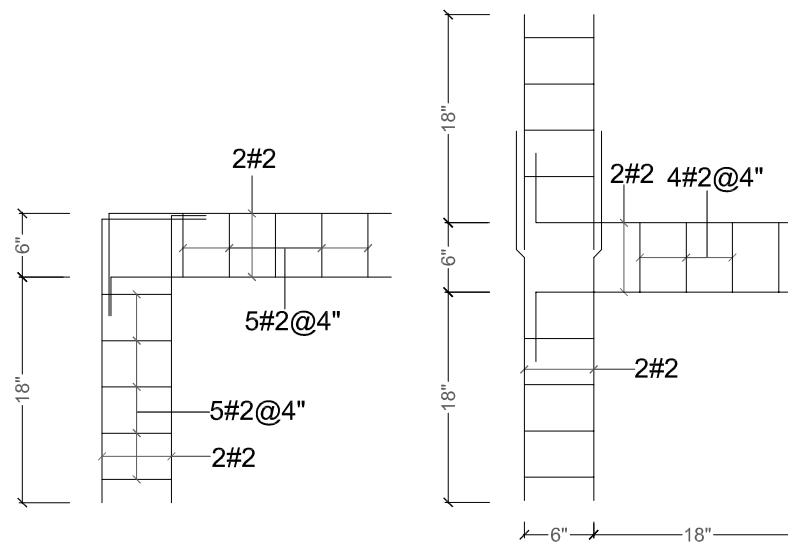


TYP. DUCT OPENING DETAIL

NOTES

MAXIMUM DIAMETER OF SLEEVE IS 1'-0", FOR TRIM BARS  
AROUND LARGE SLEEVE REFER TO OTHER DETAIL.

REINFORCEMENT AROUND SLEEVE IN SLAB & WALLS (TYP)



### PLAN OF BRICK WALL TIE FOR CORNER JOINT

### PLAN OF BRICK WALL TIE FOR T- JOINT

ADDITION & REVISION						
ADD./REV. NO.	DATE	DESCRIPTION	DES. BY	CHK. BY	APP. BY	

DESIGNER:



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PROJECT:
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**"PROVISION OF MISSING FACILITIES FOR THE  
SHAIKH AYAZ UNIVERSITY SHIKARPUR"**

TITLE:

## GENERAL NOTES

CLIENT:	
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SHAIKH AYAZ UNIVERSITY SHIKARPUR

DESIGNED BY:

APPROVED BY:
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DATE :	MARCH, 2022
--------	-------------

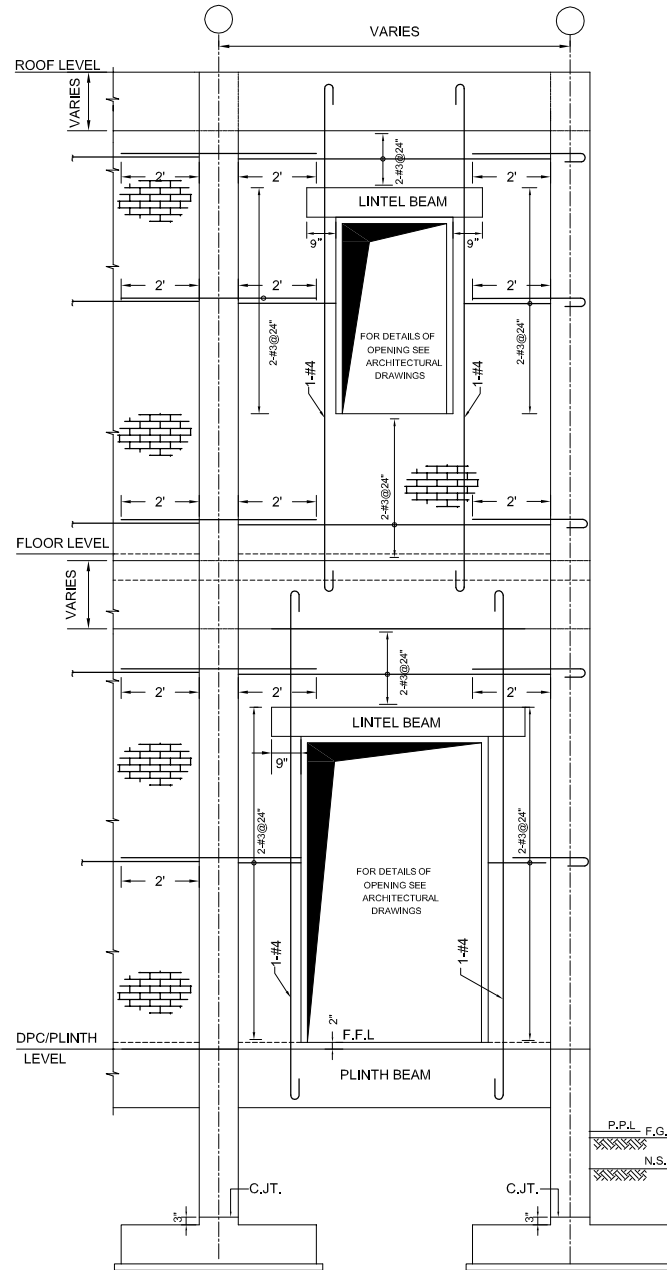
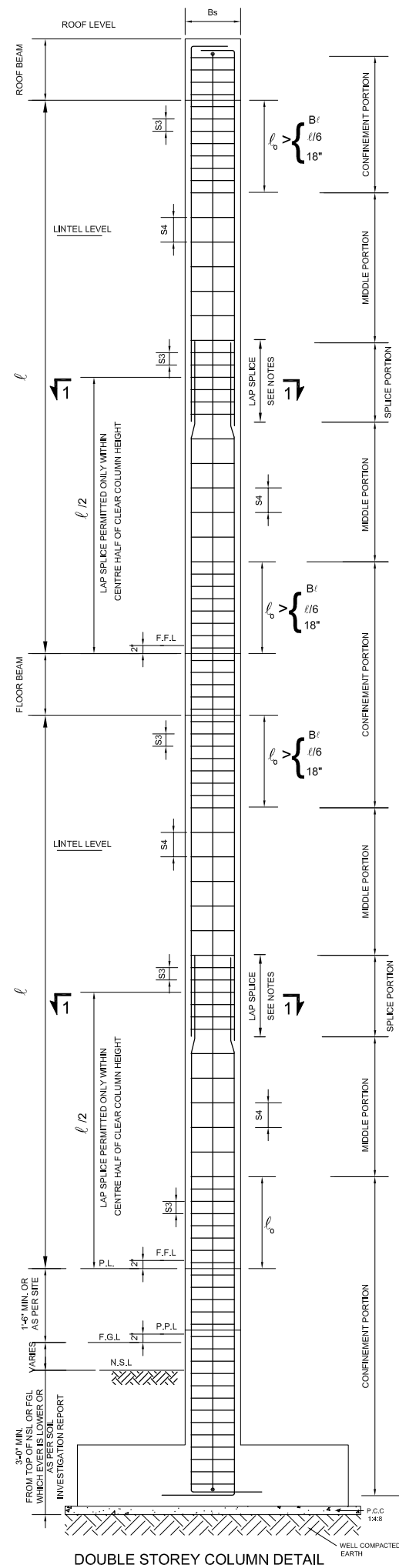
DRAWN BY:

JOB NO.
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SCALE:	N.T.S
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DRG. NO.	
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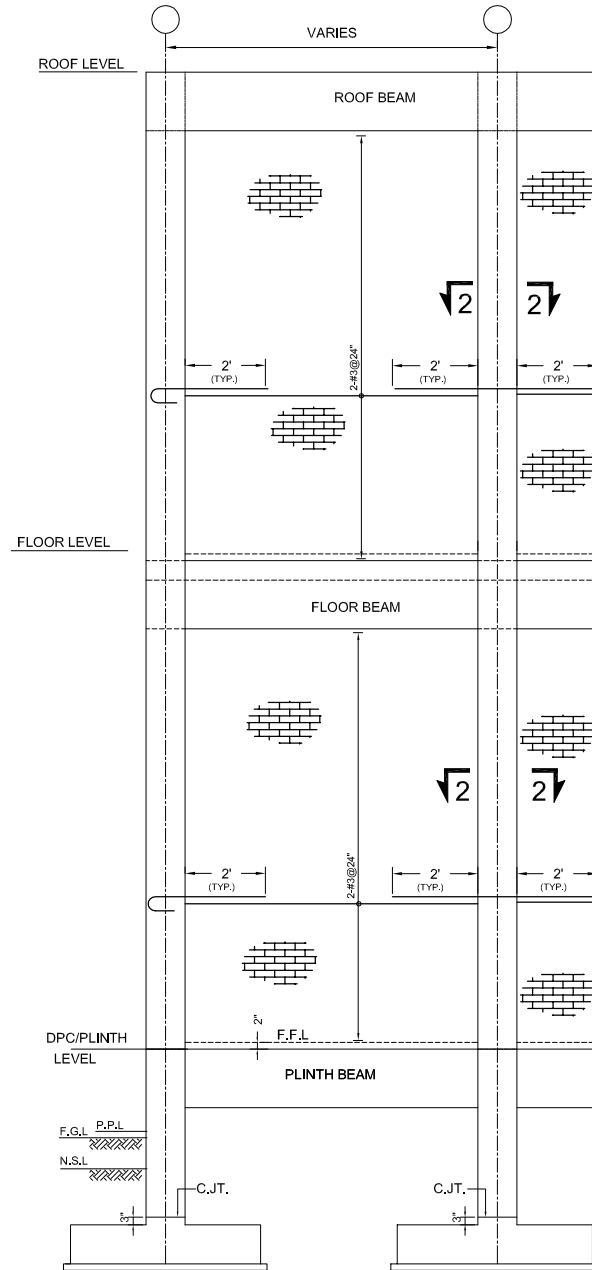
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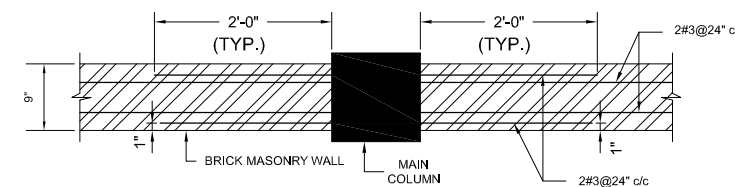
TYPICAL WALL REINFORCEMENT DETAIL WITH OPENINGS

#### LEGENDS

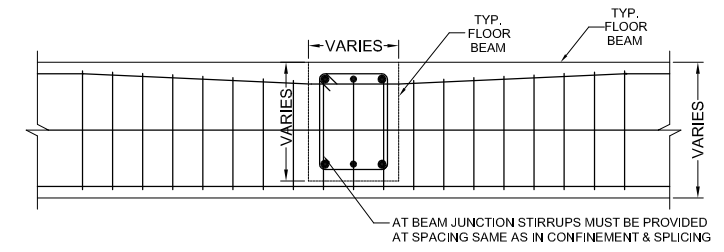
S1	STIRRUPS SPACING IN BEAM NEAR SUPPORTS & LAP SPLICES
S2	STIRRUPS SPACING IN BEAM IN MIDSPAN
S3	CROSSTIE SPACING IN COLUMNS IN CONFINEMENT & LAP SPLICE
S4	CROSSTIE SPACING IN COLUMNS IN MIDDLE PORTION.
h	DEPTH OF BEAM
db	DIAMETER OF BAR
B <sub>s</sub>	LEAST LATERAL DIMENSION OF COLUMN
B	LARGEST LATERAL DIMENSION OF COLUMN
l	CLEAR HEIGHT OF COLUMN
l <sub>o</sub>	LENGTH OF CONFINEMENT PORTION
l <sub>d</sub>	DEVELOPMENT LENGTH FOR STEEL BAR
d	EFFECTIVE DEPTH OF BEAM



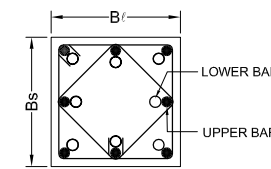
TYPICAL WALL REINFORCEMENT DETAIL



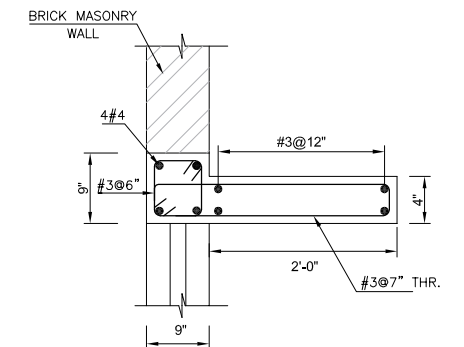
TYP. WALL & MAIN COLUMN JOINT DETAIL SECTION 2-2



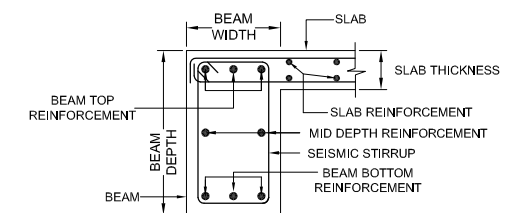
TYP. BEAM-BEAM JOINT DETAIL



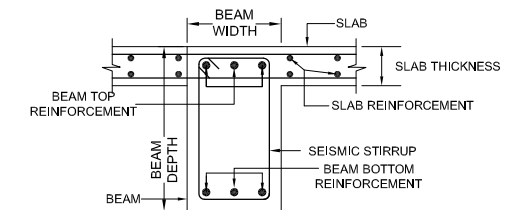
SECTION 1-1



TYP. SECTION OF WINDOW SHADE  
FOR LEVEL DETAILS REFER ARCHITECTURAL DRAWINGS



TYP. SECTION OF EXTERNAL BEAM (L-SHAPED)



TYP. SECTION OF INTERNAL BEAM (T-SHAPED)

ADDITION & REVISION				
ADD. REV. NO.	DATE	DESCRIPTION	DES. BY	CHK. BY

DESIGNER:



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PROJECT:

"PROVISION OF MISSING FACILITIES FOR THE SHAIKH AYAZ UNIVERSITY SHIKARPUR"

TITLE:

TYPICAL DETAIL

CLIENT:

SHAIKH AYAZ UNIVERSITY SHIKARPUR

DESIGNED BY:

ENG. AHSAN

APPROVED BY:

JOB NO.

DATE:

MARCH, 2022

DRAWN BY:

RIZWAN

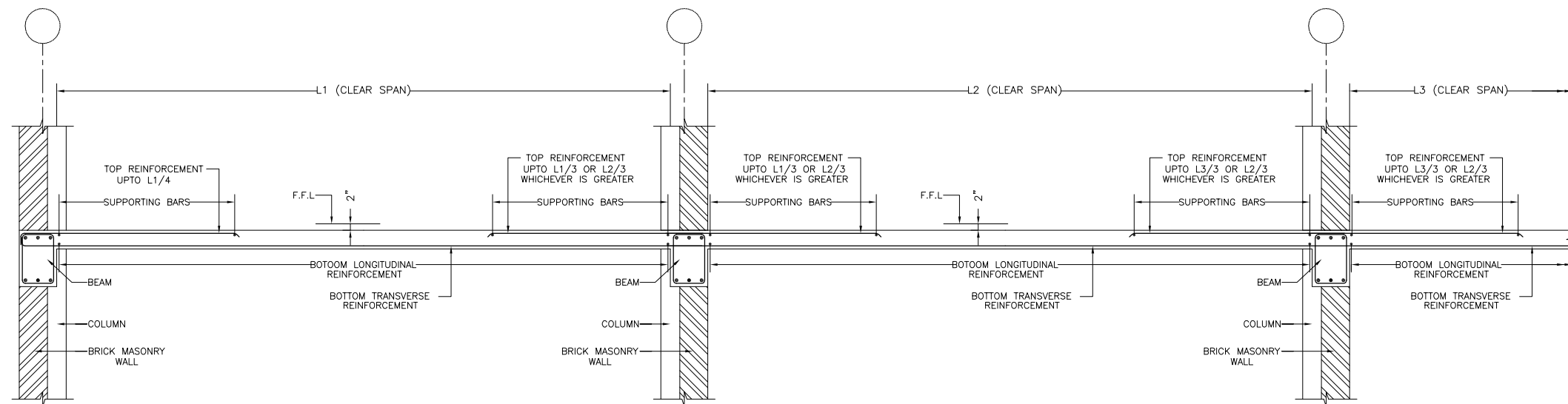
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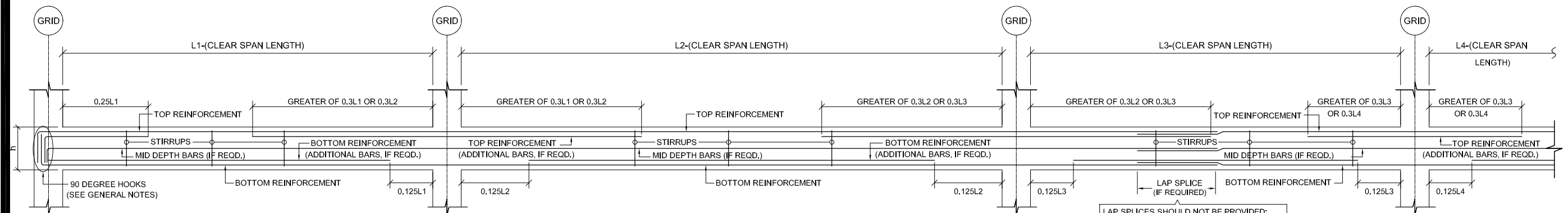
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ST-02



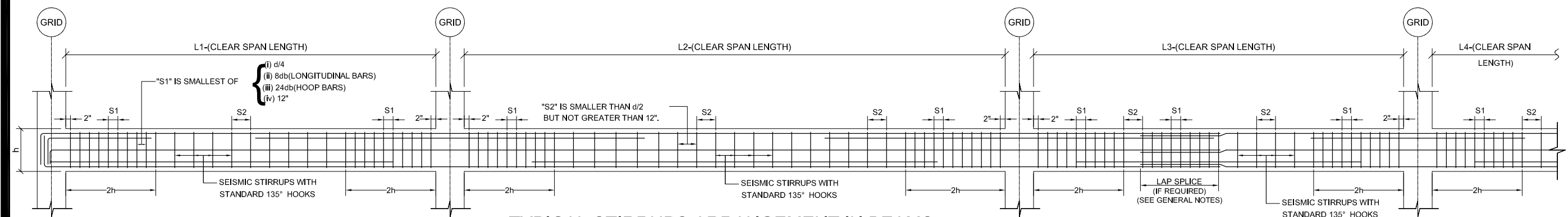


TYPICAL SECTION OF SLAB  
REINFORCEMENT CURTAILMENT DETAIL



TYPICAL MAIN BARS ARRANGEMENT IN BEAMS

LAP SPICES SHOULD NOT BE PROVIDED:  
(1) WITHIN JOINTS.  
(2) WITHIN A DISTANCE OF TWICE THE MEMBER DEPTH.  
(3) AT CENTRE OF CLEAR SPAN OF BEAM.



TYPICAL STIRRUPS ARRANGEMENT IN BEAMS

ADDITION & REVISION				
ADD.	REV.	NO.	DATE	DESCRIPTION

DESIGNER:



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PROJECT:

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SHAIKH AYAZ UNIVERSITY SHIKARPUR"

TITLE:

TYPICAL DETAIL

CLIENT:

SHAIKH AYAZ UNIVERSITY SHIKARPUR

DESIGNED BY:

ENG. AHSAN

DRAWN BY:

RIZWAN

DRG. NO.

APPROVED BY:

JOB NO.

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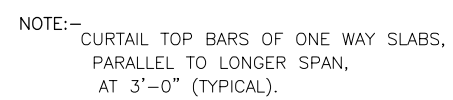
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ST-03

DATE:

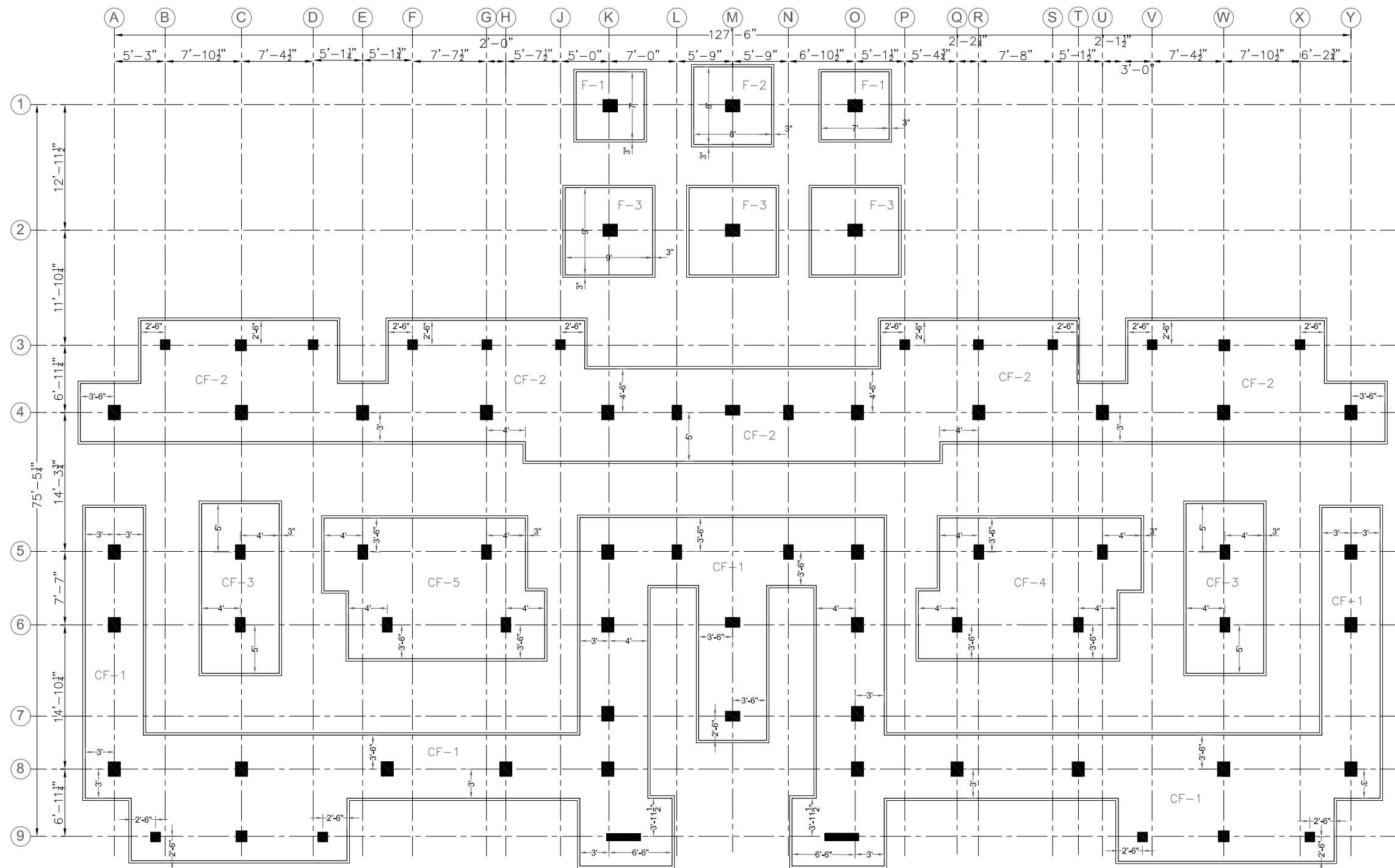
MARCH, 2022



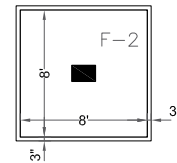
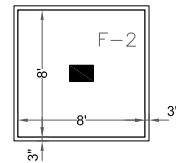


CLIENT:			<b>SHAIKH AYAZ UNIVERSITY SHIKARPUR</b>		
DESIGNED BY: ENG. AHSAN					
DRAWN BY: RIZWAN			JOB NO.		DATE : MARCH, 2022
DRG. NO.			SCALE:		N.T.S

ST-04



FOUNDATION LAYOUT PLAN  
FOR MORE DETAIL REFER TO ARCHITECTURAL DRAWINGS



ADDITION & REVISION					
ADD./REV. NO.	DATE	DESCRIPTION	DES. BY	CHK. BY	APP. BY

DESIGNER:



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PROJECT:

**"PROVISION OF MISSING FACILITIES FOR THE  
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TITLE:

**FOUNDATION LAYOUT PLAN**

CLIENT:

**SHAIKH AYAZ UNIVERSITY SHIKARPUR**

DESIGNED BY:

ENG. AHSAN

APPROVED BY:

DATE :

MARCH, 2022

DRAWN BY:

RIZWAN

JOB NO.

SCALE:

N.T.S

DRG. NO.

ST-05

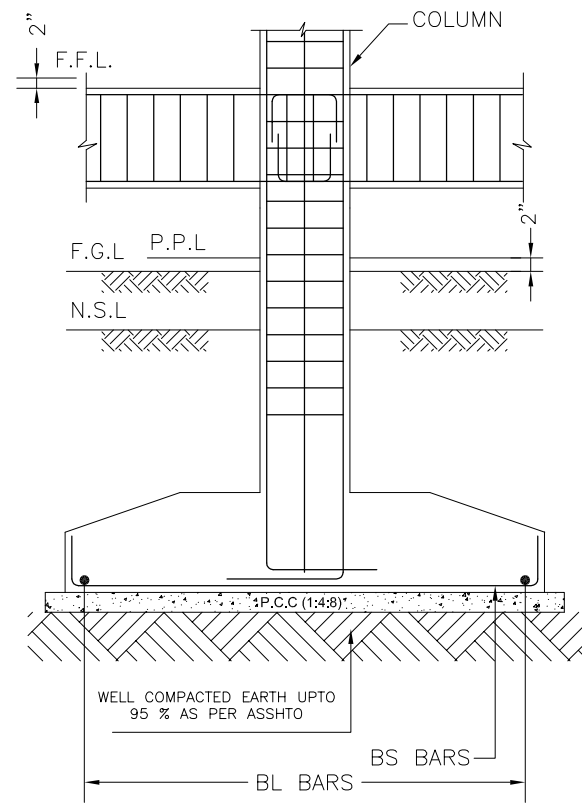
S C H E D U L E    O F    F O O T I N G S												
BEARING CAPACITY Ton/Sq.ft.	MARK	SIZE						REINFORCEMENT    DETAIL				REMARKS
		L	W	H	h	l	W	BOTTOM    BARS		TOP    BARS		
								BS	BL	TS	TL	
1.5	F1	7'-0"	7'-0"	15"	12"	12"	12"	#5@6"    c/c	#5@6"    c/c	-	-	ISOLATED    FOOTING
1.5	F2	8'-0"	8'-0"	15"	12"	12"	12"	#5@5"    c/c	#5@5"    c/c	-	-	ISOLATED    FOOTING
1.5	F3	9'-0"	9'-0"	15"	12"	12"	12"	#5@5"    c/c	#5@5"    c/c	-	-	ISOLATED    FOOTING
1.5	CF1	SEE    DRW-ST-05		15"	-			#5@6"    c/c	#5@6"    c/c	#4@8"    c/c	#4@8"    c/c	COMBINED    FOOTING
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1.5	CF5			15"	-			#5@6"    c/c	#5@6"    c/c	#4@8"    c/c	#4@8"    c/c	COMBINED    FOOTING

							ADDITION & REVISION						<div>DESIGNER:</div> <div></div>	PROJECT: "PROVISION OF MISSING FACILITIES FOR THE SHAIKH AYAZ UNIVERSITY SHIKARPUR"				CLIENT: SHAIKH AYAZ UNIVERSITY SHIKARPUR					
														DESIGNED BY: ENG. AHSAN		APPROVED BY:		DATE : MARCH, 2022					
														DRAWN BY: RIZWAN		JOB NO.		SCALE: N.T.S					
														TITLE: FOUNDATION REINFORCEMENT DETAIL						DRG. NO.		ST-06	
							ADD/REV. NO.		DATE		DESCRIPTION			DES. BY		CHK. BY		APP. BY					

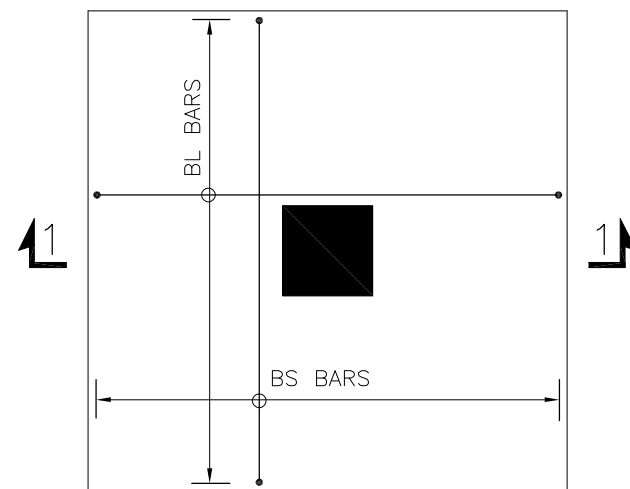
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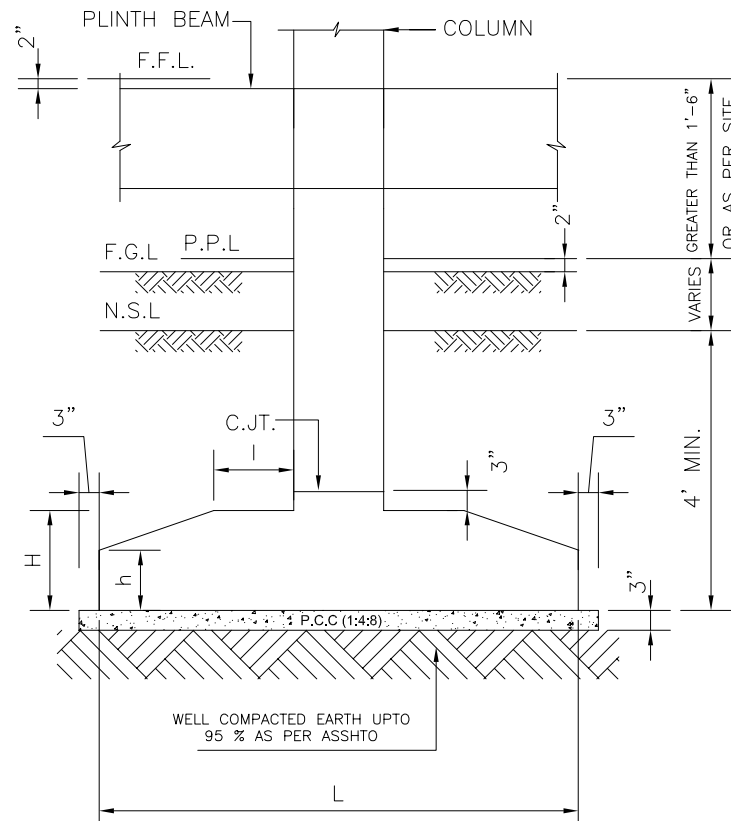
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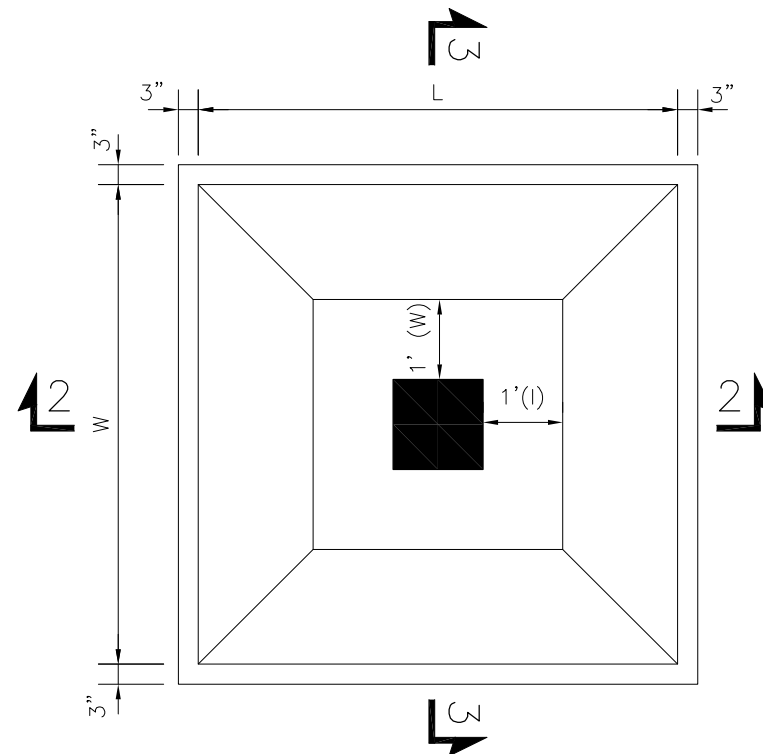
SECTION 1-1  
REINFORCEMENT DETAILS



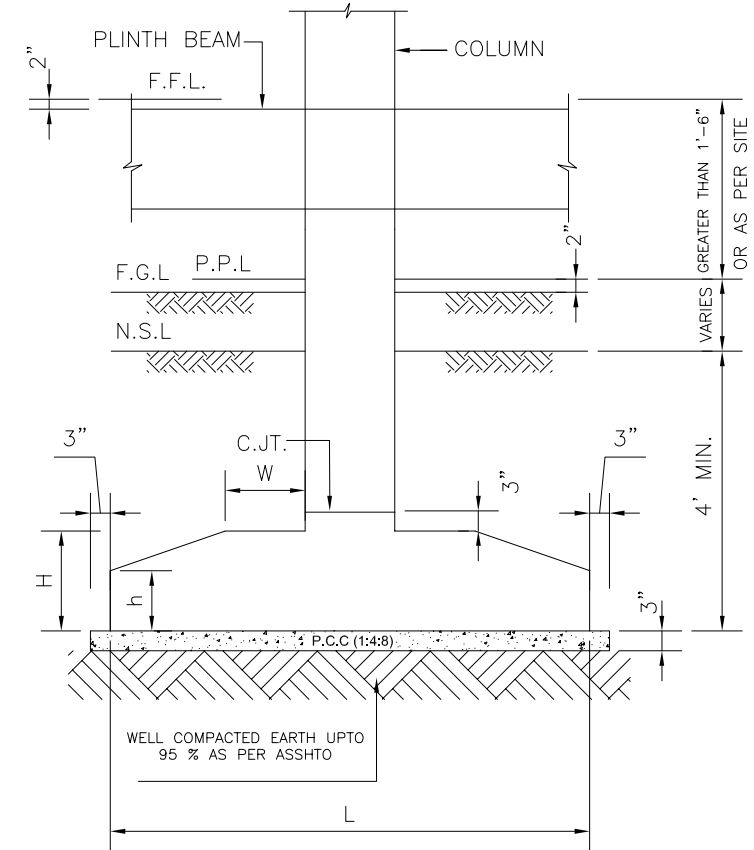
ISOLATED FOOTING (TYP.)  
REINFORCEMENT DETAILS



SECTION 2-2  
CONCRETE OUTLINE



ISOLATED FOOTING (TYP.)  
CONCRETE OUTLINE



SECTION 3-3  
CONCRETE OUTLINE

ADDITION & REVISION					
ADD./REV. NO.	DATE	DESCRIPTION	DES. BY	CHK. BY	APP. BY

DESIGNER:



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PROJECT:

"PROVISION OF MISSING FACILITIES FOR THE  
SHAikh AYAZ UNIVERSITY SHIKARPUR"

TITLE:

FOUNDATION SECTION DETAIL

CLIENT:

SHAikh AYAZ UNIVERSITY SHIKARPUR

DESIGNED BY:

ENG. AHSAN

APPROVED BY:

DATE :

MARCH, 2022

DRAWN BY:

RIZWAN

JOB NO.

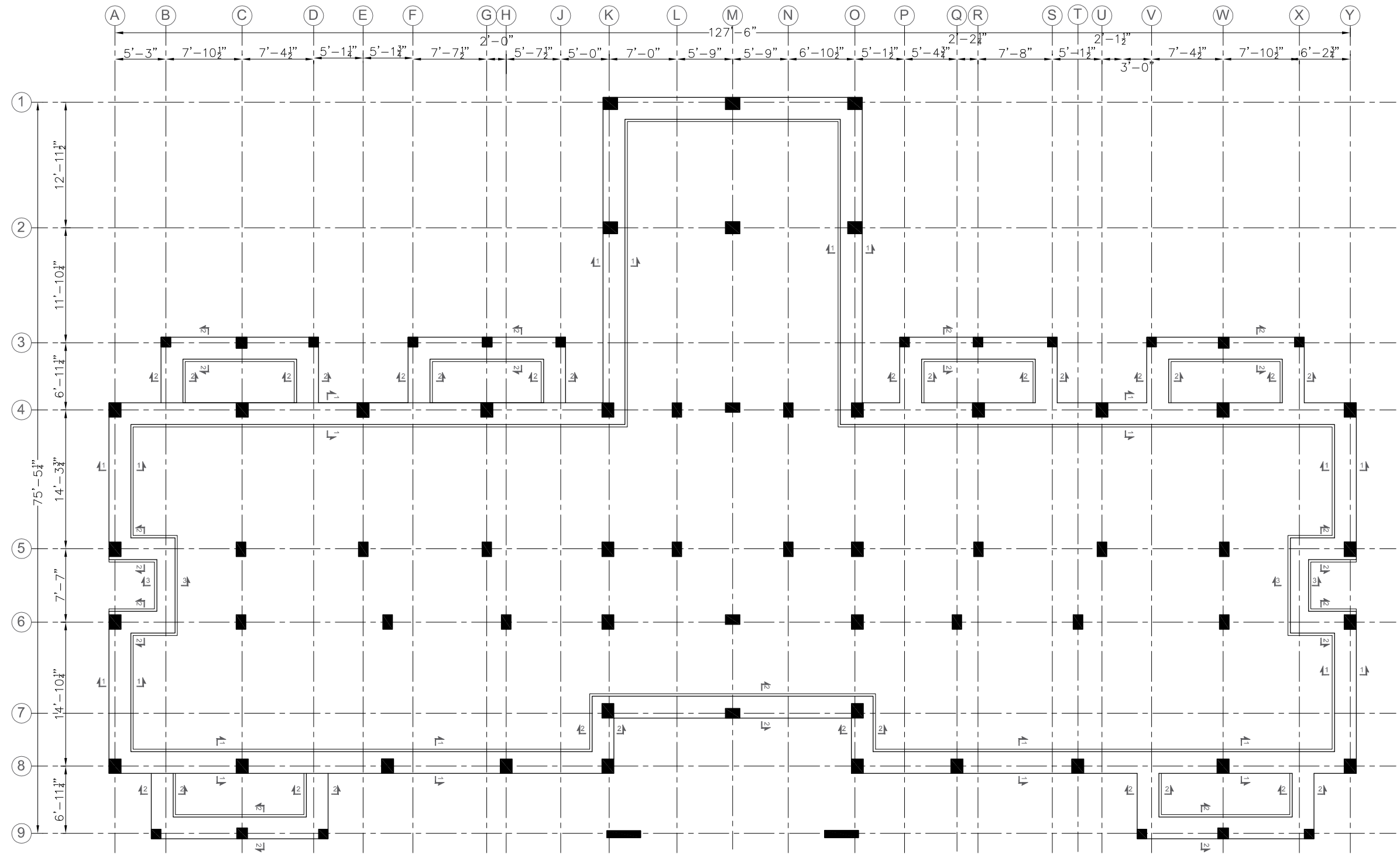
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N.T.S

DRG. NO.

ST-07





BRICK MASONRY FOUNDATION LAYOUT  
FOR MORE DETAIL REFER TO ARCHITECTURAL DRAWINGS

ADDITION & REVISION					
ADD./REV. NO.	DATE	DESCRIPTION	DES. BY	CHK. BY	APP. BY

DESIGNER:



**NEW VISION ENGINEERING CONSULTANT**

Head Office: Office No.B-6 Second Floor Masood Arcade  
IJP Road Islamabad.

Ph: +92-51-4848374, Fax: +92-51-4848375

Email: newvisionec@yahoo.com

Regional Office: House # 98/4-2, Gardan Town, Lahore

Ph: +92-42-35911695, Email: newvision761@yahoo.com

PROJECT:

"PROVISION OF MISSING FACILITIES FOR THE  
SHAIKH AYAZ UNIVERSITY SHIKARPUR"

TITLE:

**BRICK MASONRY FOUNDATION  
LAYOUT**

CLIENT:

**SHAIKH AYAZ UNIVERSITY SHIKARPUR**

DESIGNED BY:

ENG. AHSAN

APPROVED BY:

DATE :

MARCH, 2022

DRAWN BY:

RIZWAN

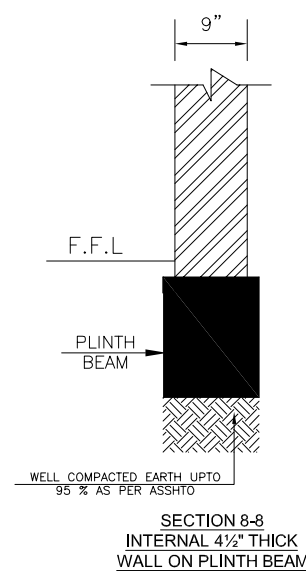
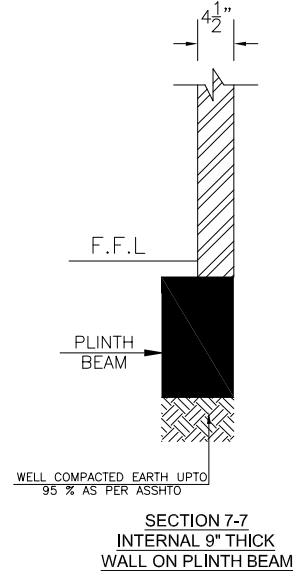
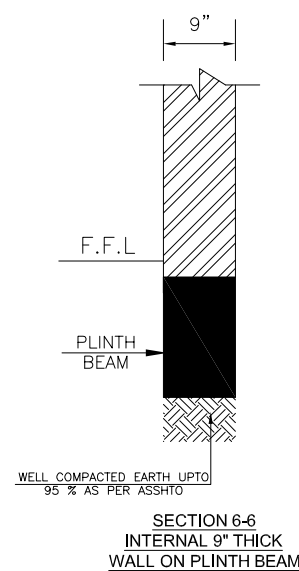
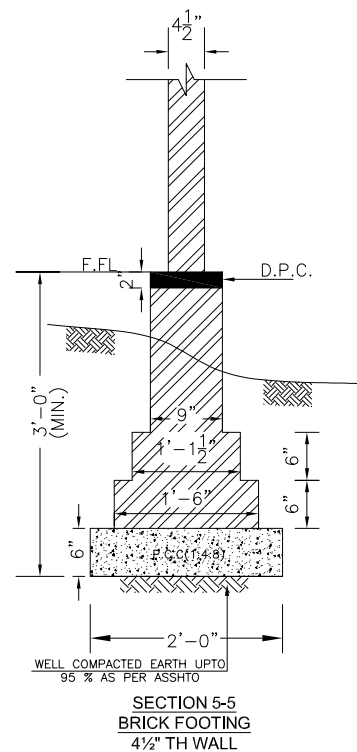
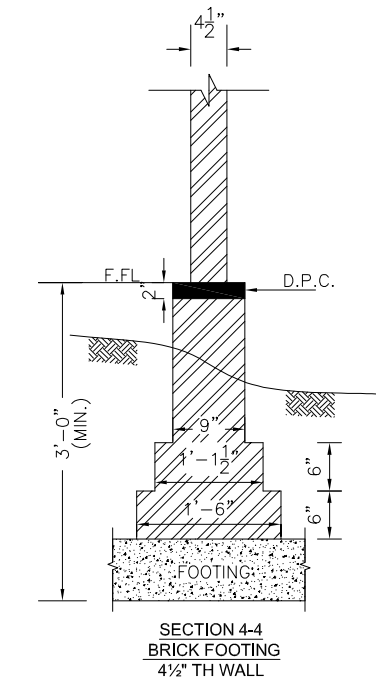
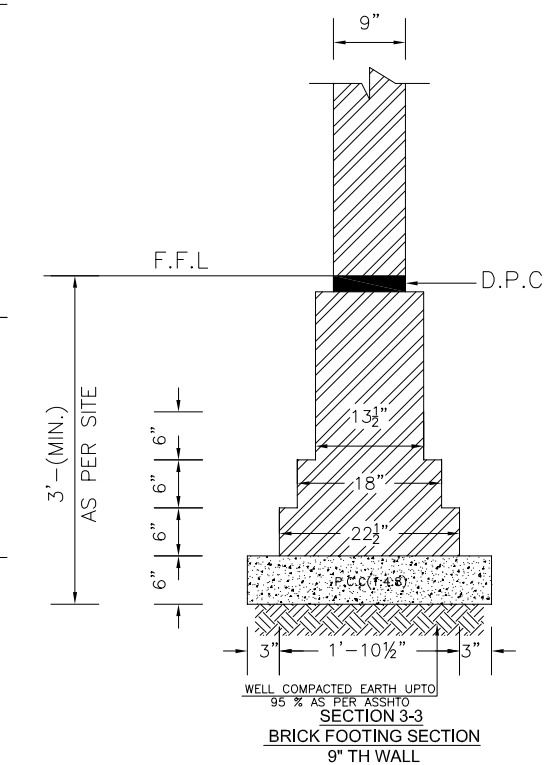
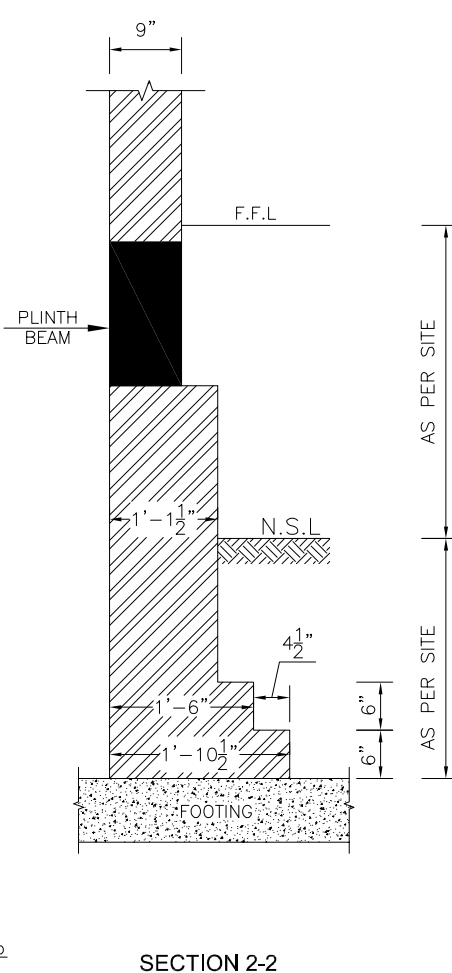
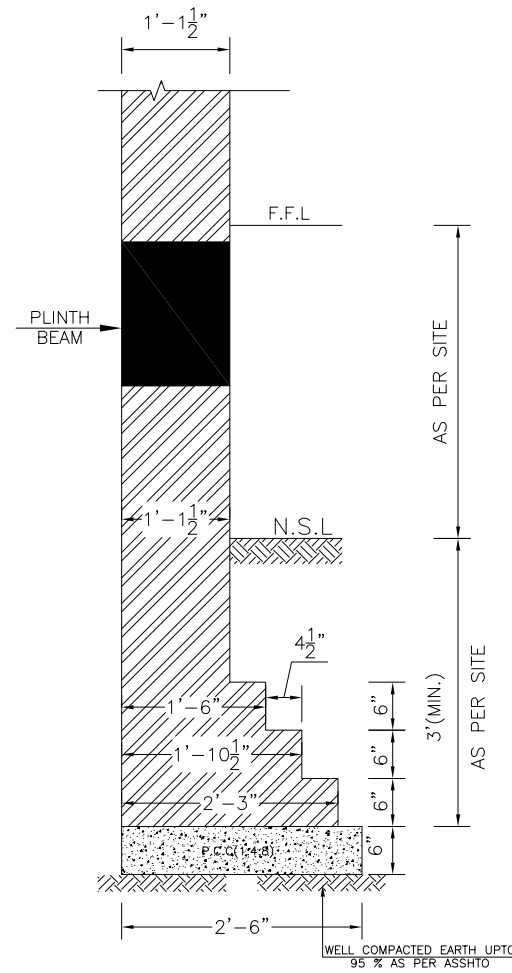
JOB NO.

SCALE:

N.T.S

DRG. NO.

ST-08



ADDITION & REVISION					
ADD./REV. NO.	DATE	DESCRIPTION	DES. BY	CHK. BY	APP. BY

DESIGNER:



**NEW VISION ENGINEERING CONSULTANT**

Head Office: Office No.B-6 Second Floor Masood Arcade  
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Regional Office: House # 98/4-2, Gardan Town, Lahore

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PROJECT:

"PROVISION OF MISSING FACILITIES FOR THE  
SHAIKH AYAZ UNIVERSITY SHIKARPUR"

TITLE:

**BRICK MASONRY FOUNDATION  
SECTION DETAIL**

CLIENT:

**SHAIKH AYAZ UNIVERSITY SHIKARPUR**

DESIGNED BY:

ENG. AHSAN

APPROVED BY:

DATE :

MARCH, 2022

DRAWN BY:

RIZWAN

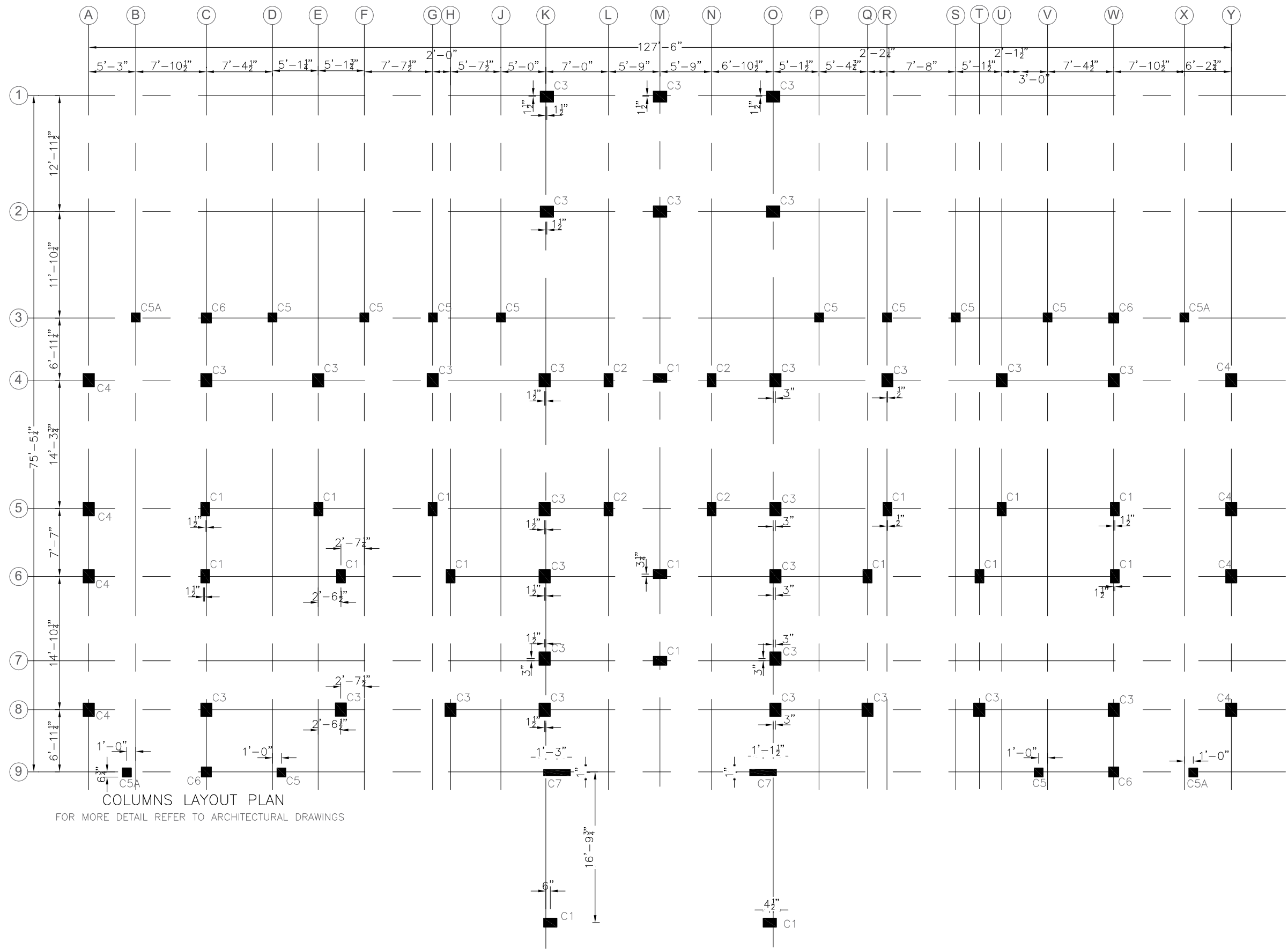
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SCALE:

N.T.S

DRG. NO.

ST-09



COLUMNS LAYOUT PLAN  
FOR MORE DETAIL REFER TO ARCHITECTURAL DRAWINGS

ADDITION & REVISION				
ADD./REV. NO.	DATE	DESCRIPTION	DES. BY/CHK. BY	APP. BY

DESIGNER:



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Email: newvisionec@yahoo.com  
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Ph: +92-42-37250130

PROJECT:  
**"PROVISION OF MISSING FACILITIES FOR THE  
SHAIKH AYAZ UNIVERSITY SHIKARPUR"**

TITLE OF DRAWING:

COLUMN LAYOUT PLAN

CLIENT:

**SHAIKH AYAZ UNIVERSITY SHIKARPUR**

DESIGNED BY: AK	APPROVED BY: MR	DATE: MARCH, 2022
DRAWN BY: RIZ	JOB NO.	SCALE: AS SHOWN
CHECKED BY: MF	DRG. NO.	ST-10







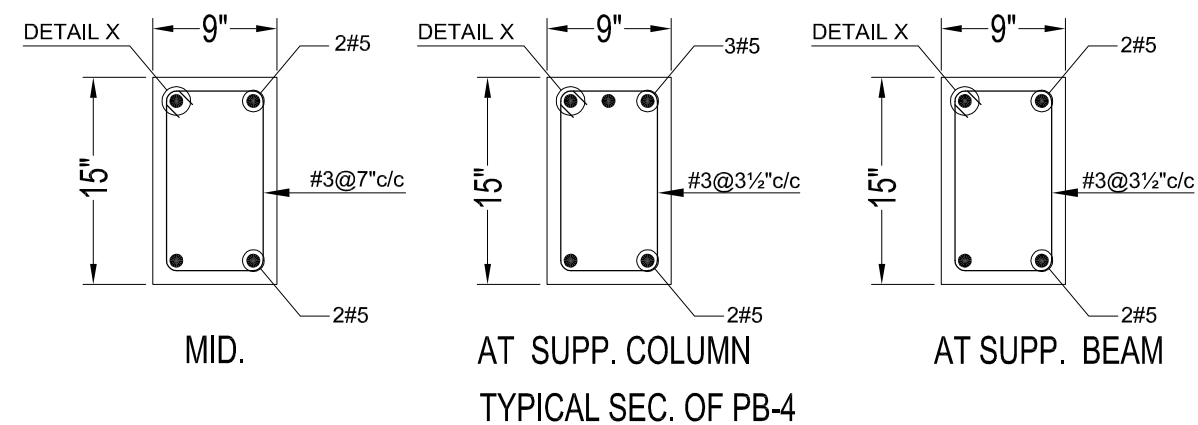
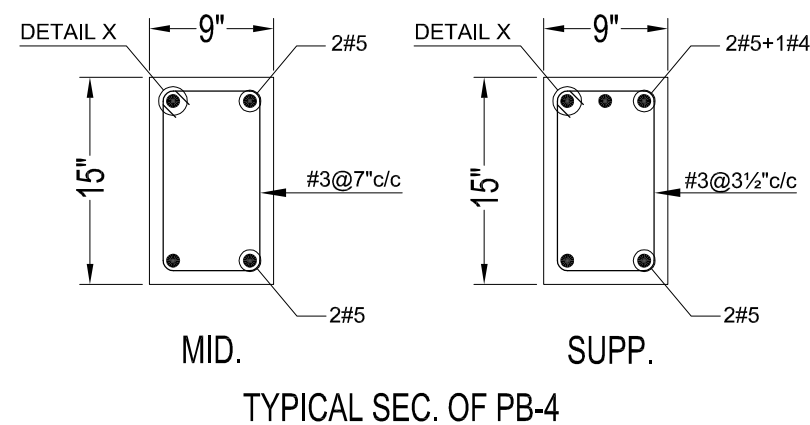
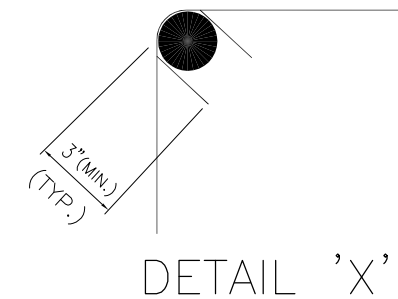
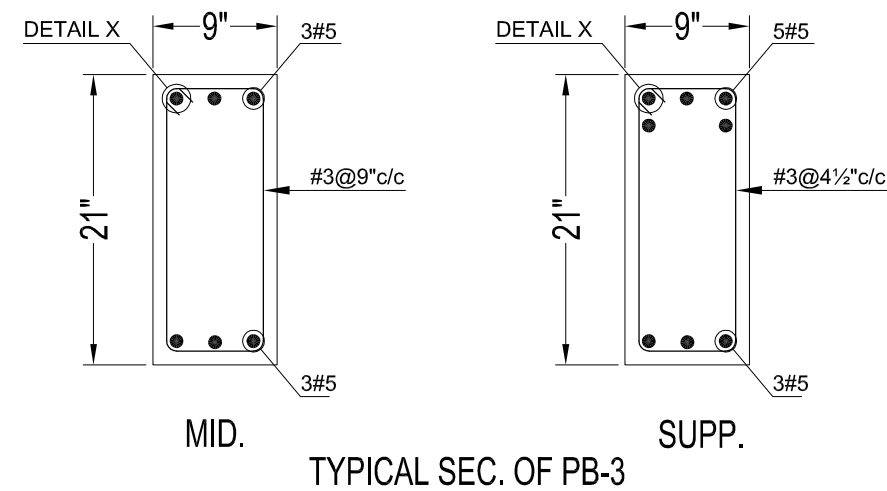
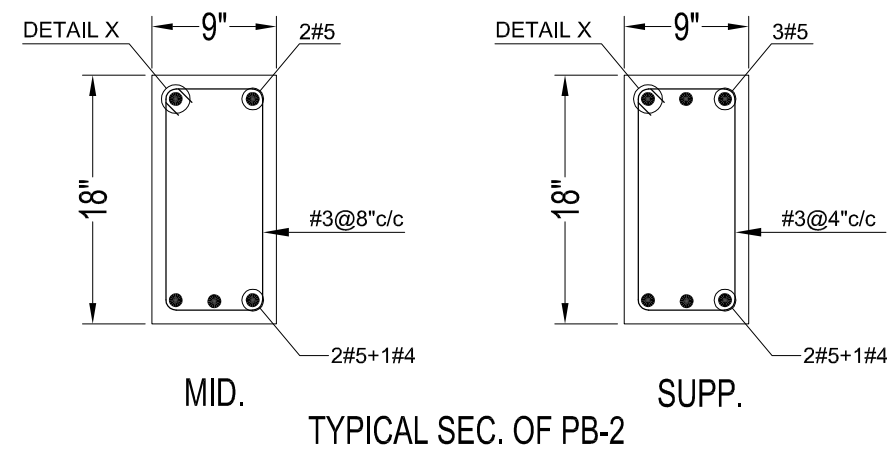
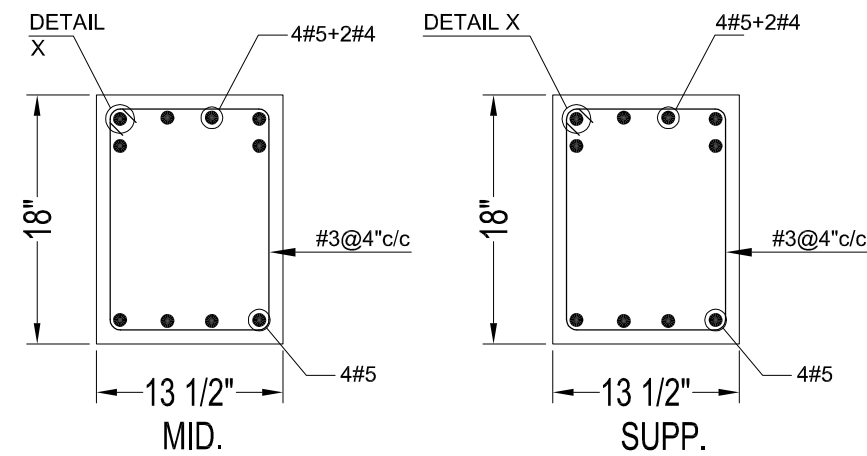
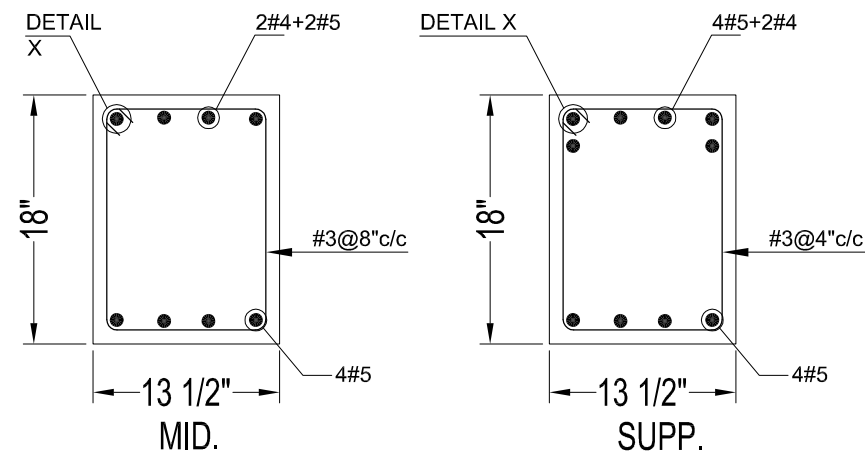
ADDITION & REVISION					
ADD./REV. NO	DATE	DESCRIPTION	DES. BY	CHK. BY	APP. BY



Regional Office: 287-A Street # 6, Cavalry Ground ,Lahore  
Ph: +92-42-37250130

### PLINTH BEAMS LAYOUT PLAN

CHECKED BY: MF	DRG. NO.	ST-12
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ADDITION & REVISION					
ADD./REV. NO.	DATE	DESCRIPTION	DES. BY	CHK. BY	APP. BY



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 Email: newvisionec@yahoo.com

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 Ph: +92-42-37250130

PROJECT:  
**"PROVISION OF MISSING FACILITIES FOR THE  
SHAikh AYAZ UNIVERSITY SHIKARPUR"**

TITLE OF DRAWING:

### PLINTH BEAMS SECTION DETAIL

CLIENT:
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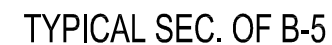
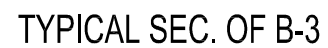
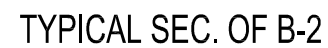
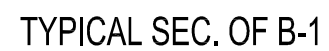
SHAIKH AYAZ UNIVERSITY SHIKARPUR

DESIGNED BY: AK	APPROVED BY: MR	DATE: MARCH, 2022
DRAWN BY: RIZ	JOB NO.	SCALE: AS SHOWN
CHECKED BY: MF	DRG. NO.	ST-13









ADDITION & REVISION					
ADD./REV. NO.	DATE	DESCRIPTION	DES. BY	CHK. BY	APP. BY



CHECKED BY: MF	DRG. NO.	ST-17
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ADDITION & REVISION					



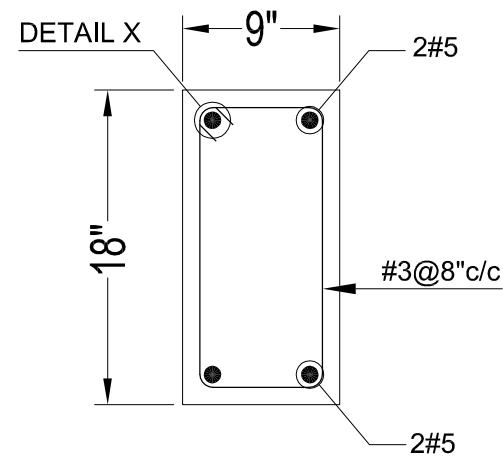
Head Office: Office No.B-6 Second Floor Masood Arcade  
IJP Road Islamabad.  
Ph: +92-51-4848375, Fax: +92-51-4848375  
Email: newvisionec@yahoo.com

Regional Office: 287-A Street # 6, Cavalry Ground ,Lahore  
Ph: +92-42-37250130

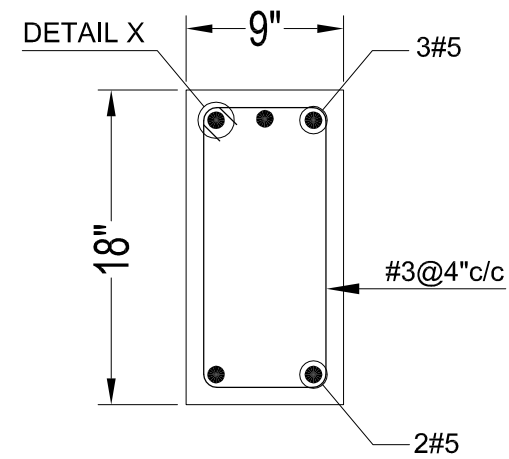
FIRST FLOOR BEAM SECTION DETAIL

DESIGNED BY: AK	APPROVED BY: MR	DATE: MARCH, 2022
DRAWN BY: RIZ	JOB NO.	SCALE: AS SHOWN
CHECKED BY: MF	DRG. NO. ST-18	



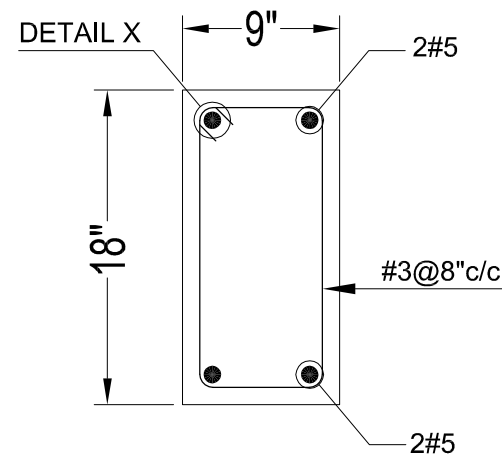


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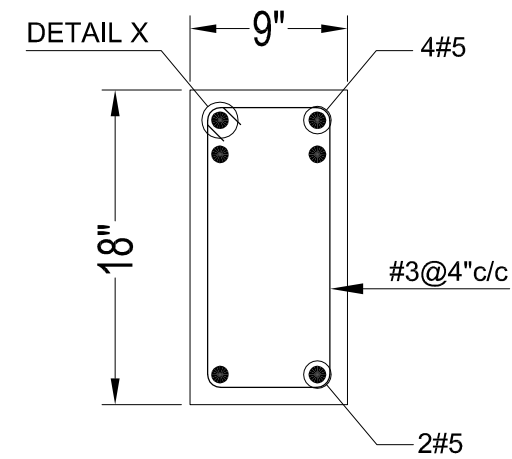


SUPP.

TYPICAL SEC. OF MB-1

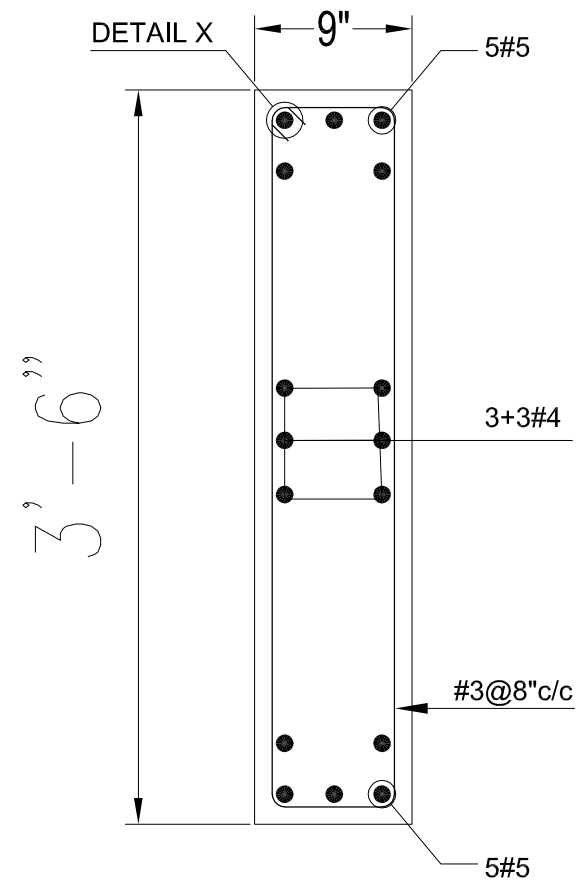


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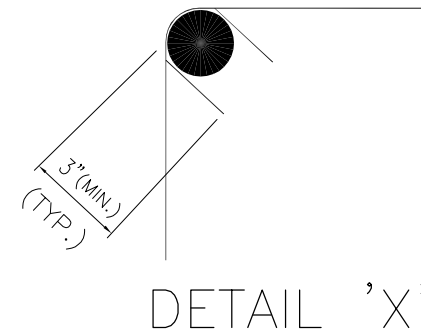


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TYPICAL SEC. OF MB-2



TYPICAL SEC. OF ARB-1



ADDITION & REVISION				
ADD./REV. NO.	DATE	DESCRIPTION	DES. BY	CHK. BY

DESIGNER:



**NEW VISION ENGINEERING CONSULTANT**  
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 Ph: +92-42-37250130

PROJECT:  
**"PROVISION OF MISSING FACILITIES FOR THE  
 SHAIKH AYAZ UNIVERSITY SHIKARPUR"**

TITLE OF DRAWING:  
**MUMTY BEAM SECTION DETAIL**

CLIENT: SHAIKH AYAZ UNIVERSITY SHIKARPUR			
DESIGNED BY: AK	APPROVED BY: MR	DATE:	MARCH, 2022
DRAWN BY: RIZ	JOB NO.	SCALE:	AS SHOWN
CHECKED BY: MF	DRG. NO.	ST-19	







DESIGNER:

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Regional Office: 287-A Street # 6, Cavalry Ground ,Lahore  
Ph: +92-42-37250130

PROJECT:
<b>"PROVISION OF MISSING FACILITIES FOR THE SHAIKH AYAZ UNIVERSITY SHIKARPUR"</b>

TITLE OF DRAWING:

GROUND FLOOR SLAB LAYOUT  
NEGATIVE REINFORCEMENT DETAIL

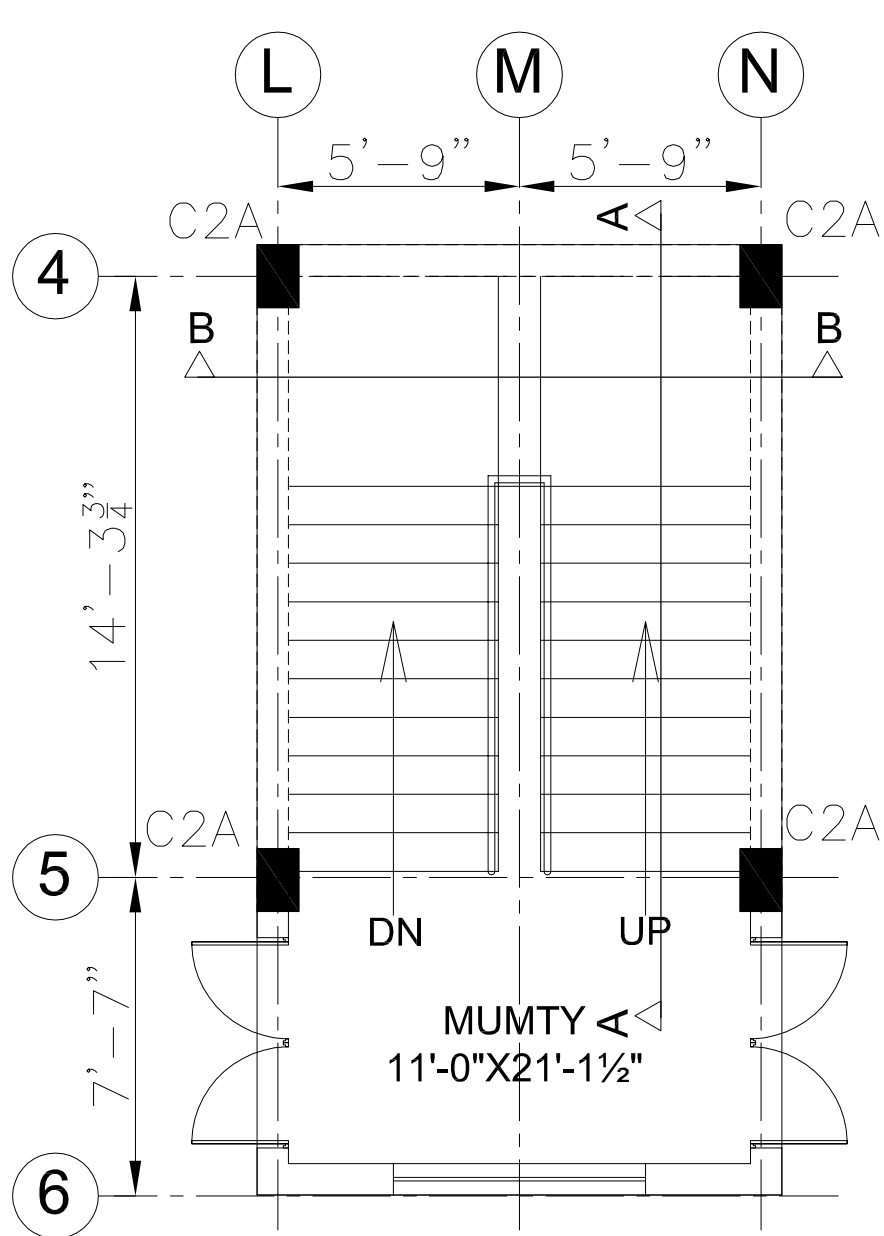
CLIENT:
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SHAIKH AYAZ UNIVERSITY SHIKARPUR

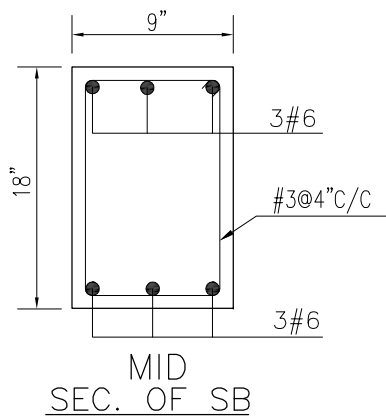
DESIGNED BY: AK	APPROVED BY: MR	DATE: MARCH, 2022
DRAWN BY: RIZ	JOB NO.	SCALE: AS SHOWN
CHECKED BY: MF	DRG. NO.	ST-23



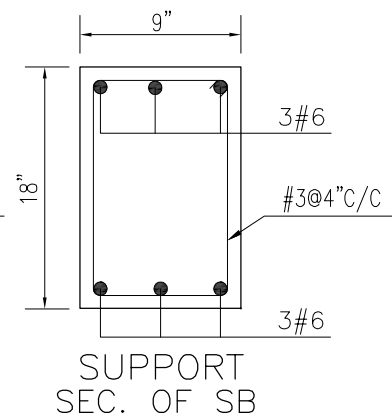




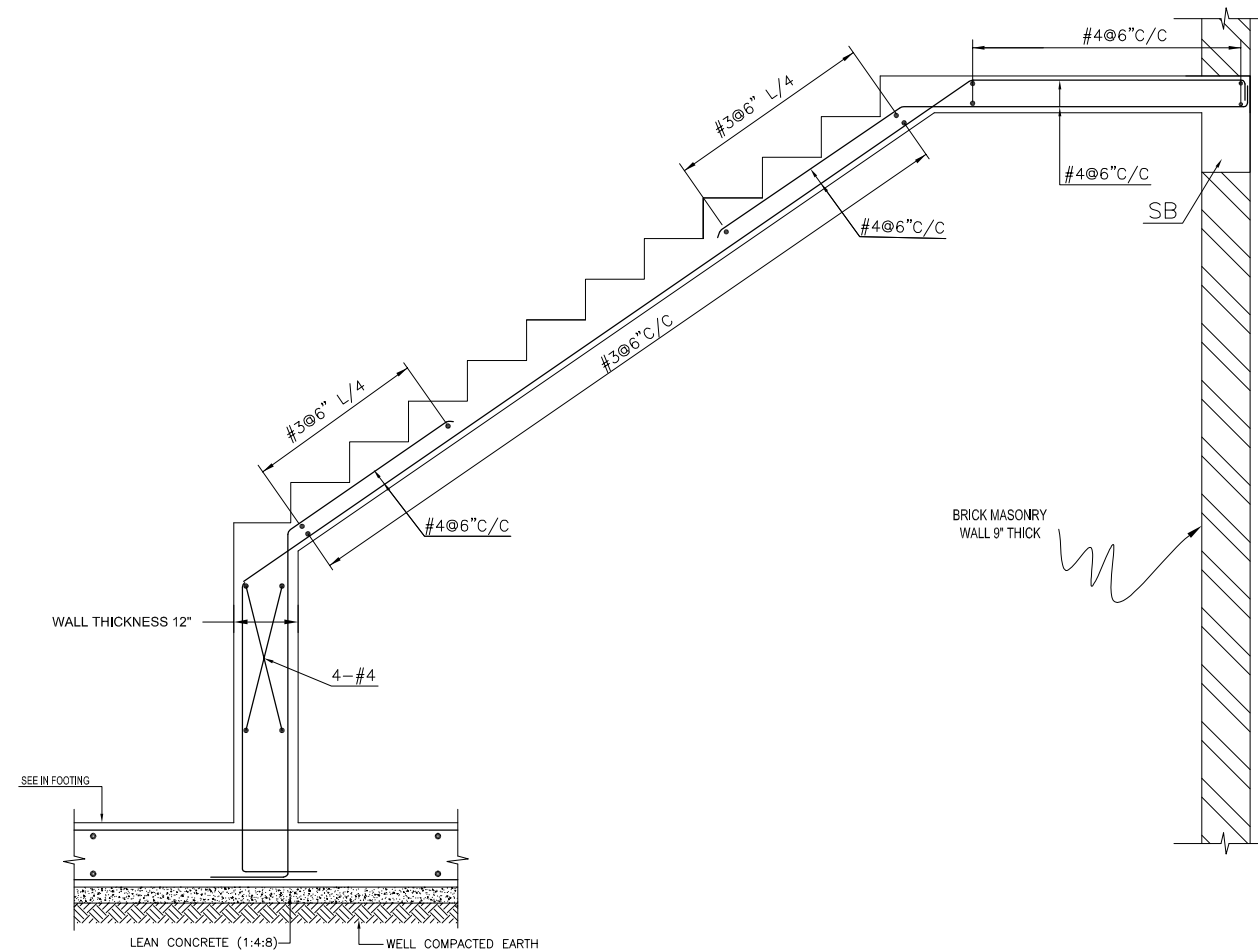
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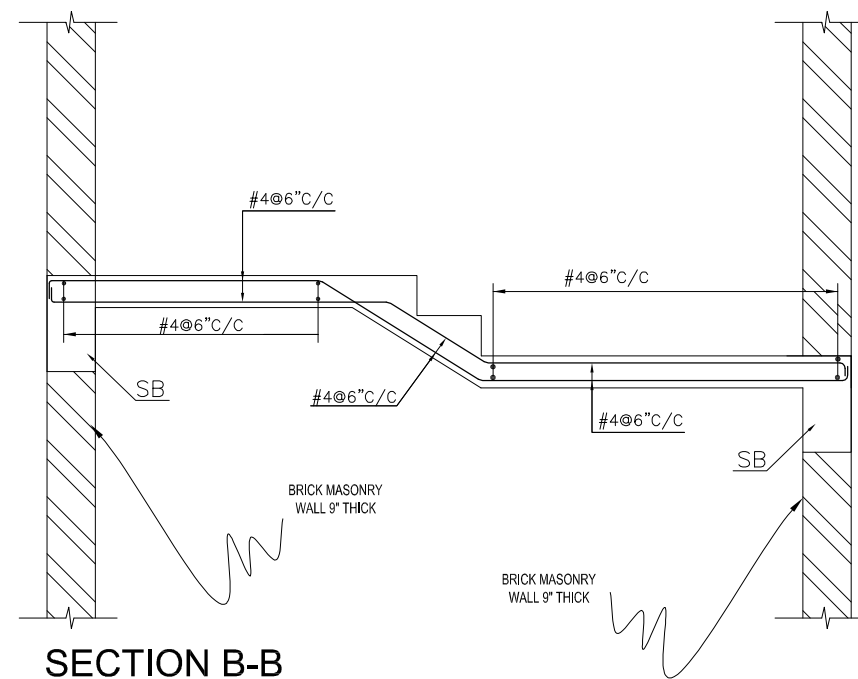
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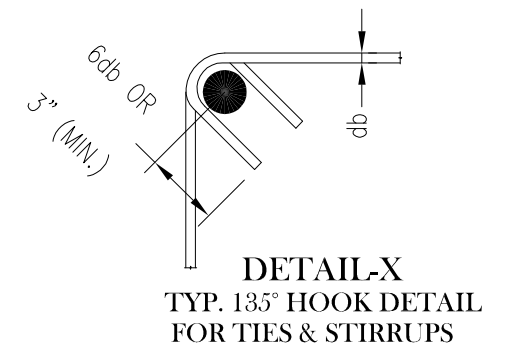
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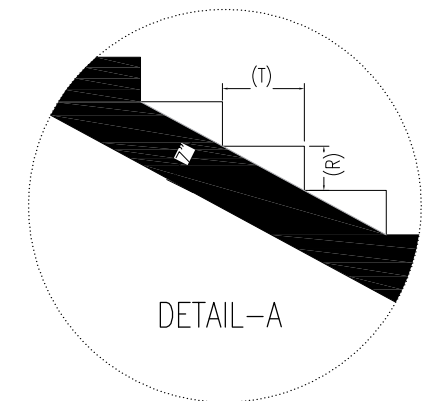
SECTION A-A



SECTION B-B



DETAIL-X  
TYP. 135° HOOK DETAIL  
FOR TIES & STIRRUPS



DETAIL-A

ADDITION & REVISION				
ADD./REV. NO.	DATE	DESCRIPTION	DES. BY	CHK. BY

DESIGNER:



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PROJECT:  
"PROVISION OF MISSING FACILITIES FOR THE  
SHAIKH AYAZ UNIVERSITY SHIKARPUR"

TITLE OF DRAWING:

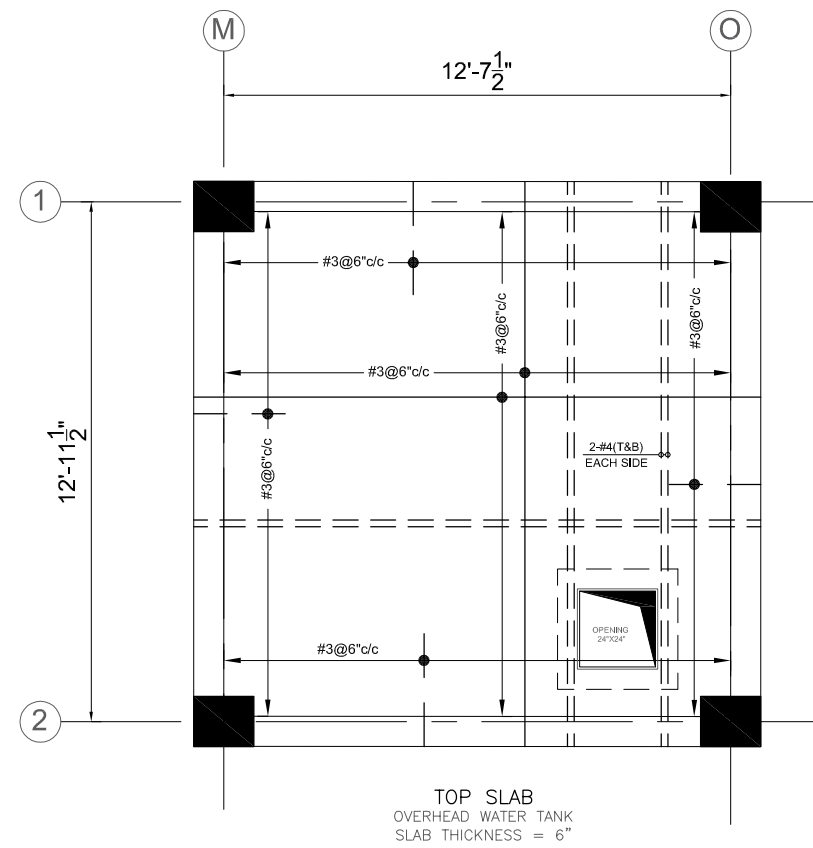
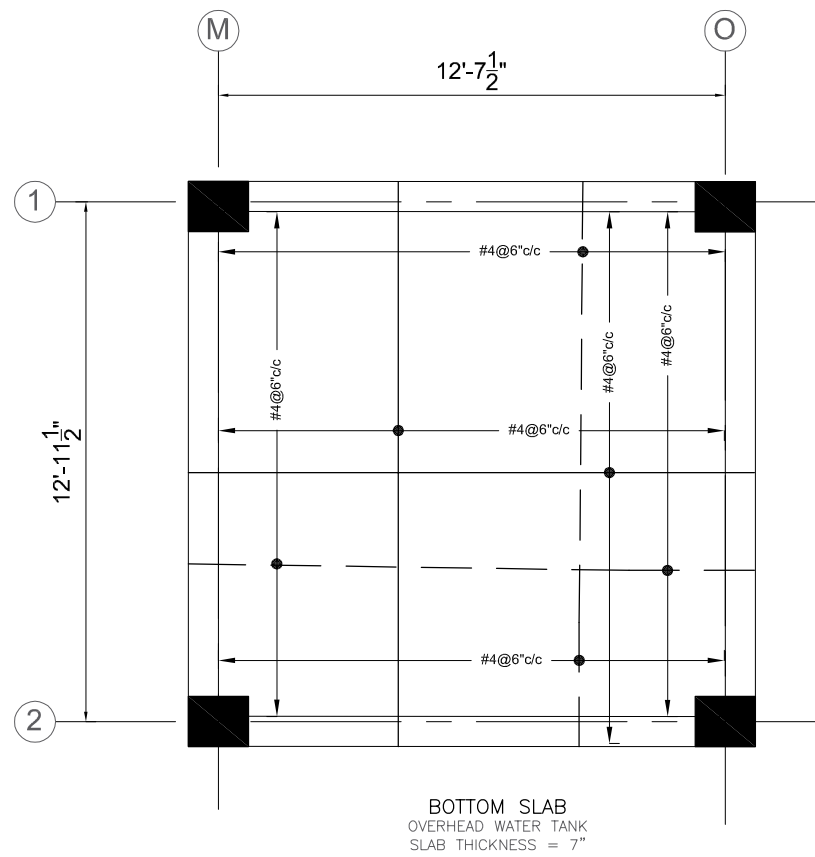
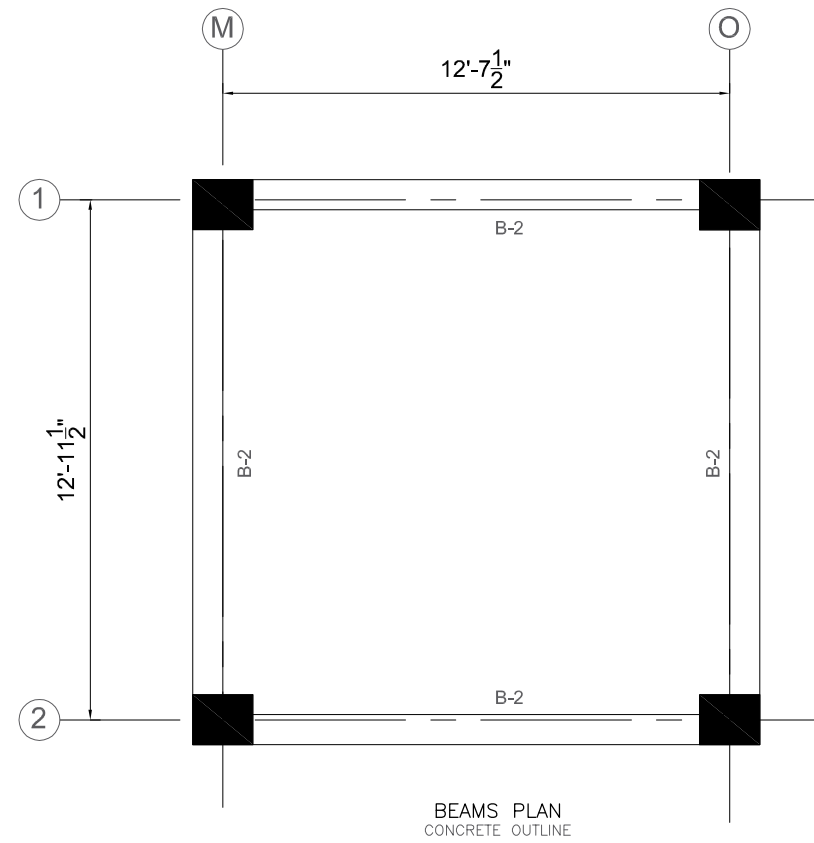
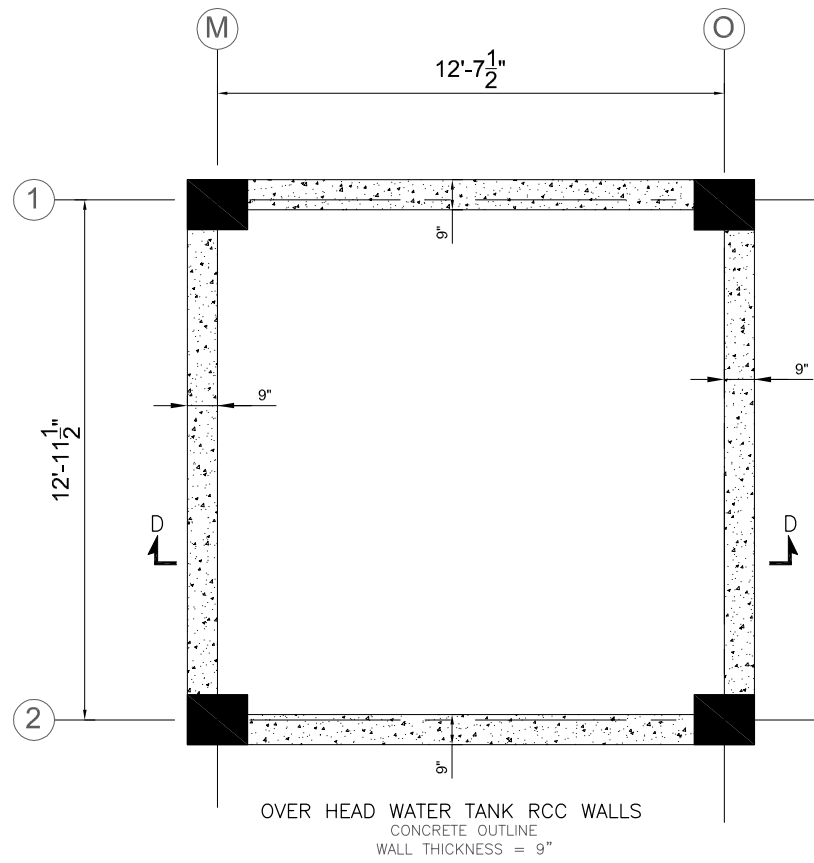
TYPICAL STAIR DETAIL

CLIENT:

SHAIKH AYAZ UNIVERSITY SHIKARPUR

DESIGNED BY: AK	APPROVED BY: MR	DATE: MARCH, 2022
DRAWN BY: RIZ	JOB NO.	SCALE: AS SHOWN
CHECKED BY: MF	DRG. NO.	ST-26





#### ADDITION & REVISION

ADD./REV. NO.	DATE	DESCRIPTION	DES. BY	CHK. BY	APP. BY

DESIGNER:



#### NEW VISION ENGINEERING CONSULTANT

Head Office: Office No.B-6 Second Floor Masood Arcade  
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PROJECT:

"PROVISION OF MISSING FACILITIES FOR THE  
SHAIKH AYAZ UNIVERSITY SHIKARPUR"

TITLE:

O.H.W.TANK DETAIL-1

CLIENT:

SHAIKH AYAZ UNIVERSITY SHIKARPUR

DESIGNED BY:

ENG. AHSAN

APPROVED BY:

DATE :

MARCH, 2022

DRAWN BY:

RIZWAN

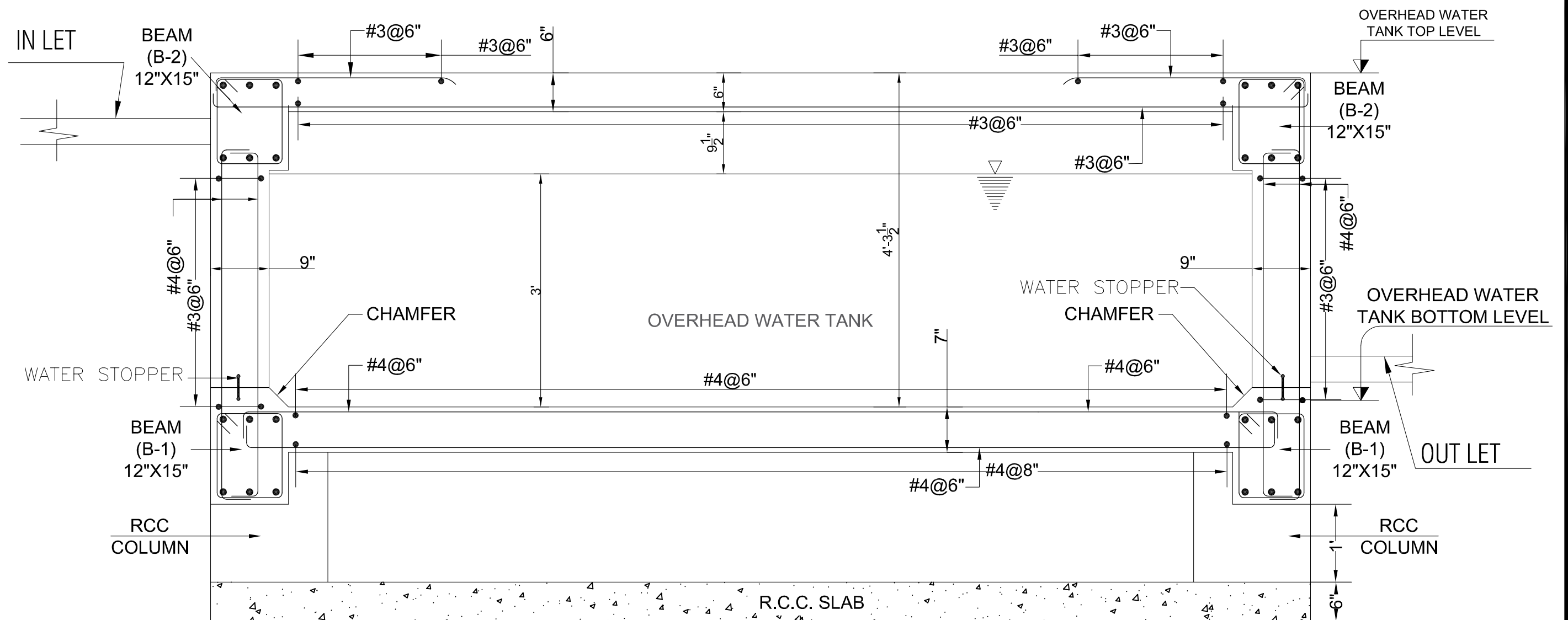
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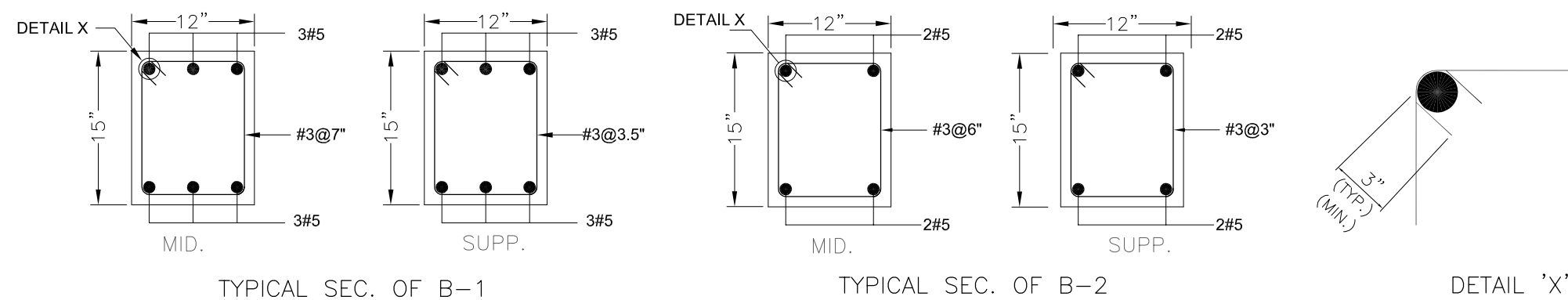
N.T.S

DRG. NO.

ST-27



SECTION D-D  
OVERHEAD WATER TANK



TYPICAL SEC. OF B-1

TYPICAL SEC. OF B-2

DETAIL 'X'

ADDITION & REVISION					
ADD./REV. NO.	DATE	DESCRIPTION	DES. BY	CHK. BY	APP. BY



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PROJECT:  
**"PROVISION OF MISSING FACILITIES FOR THE  
 SHAIKH AYAZ UNIVERSITY SHIKARPUR"**  
 TITLE:  
**O.H.W.TANK DETAIL-2**

CLIENT: SHAIKH AYAZ UNIVERSITY SHIKARPUR		
DESIGNED BY: ENG. AHSAN	APPROVED BY:	DATE : MARCH, 2022
DRAWN BY: RIZWAN	JOB NO.	SCALE: N.T.S
DRG. NO.	ST-28	

**ELECTRICAL**

LIST OF DRAWINGS		
S.NO.	DRAWING TITLE	DRG. NO
ELECTRICAL DRAWINGS		
1	LIST OF DRAWING	EL-00
2	GENERAL NOTES	EL-01
3	LEGEND AND SYMBOLS	EL-02
4	EARTHING DETAIL	EL-03
5	DB PLANS	EL-04
6	TYPICAL DETAIL-01	EL-05
7	TYPICAL DETAIL-02	EL-06
8	GROUND FLOOR PLAN (LIGHTING LAYOUT)	EL-07
9	FIRST FLOOR PLAN (LIGHTING LAYOUT)	EL-08
10	GROUND FLOOR PLAN (POWER LAYOUT)	EL-09
11	FIRST FLOOR PLAN (POWER LAYOUT)	EL-10
12	GROUND FLOOR PLAN (SMOKE DETECTOR LAYOUT)	EL-11
13	FIRST FLOOR PLAN (SMOKE DETECTOR LAYOUT)	EL-12

ADDITION & REVISION					
ADD. REV. NO.	DATE	DESCRIPTION	DES. BY	CHK. BY	APP. BY

DESIGNER:



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Ph: +92-42-37250130

PROJECT:	"PROVISION OF MISSING FACILITIES FOR THE SHAIKH AYAZ UNIVERSITY SHIKARPUR"
TITLE:	LIST OF DRAWINGS

CLIENT:			SHAIKH AYAZ UNIVERSITY SHIKARPUR
DESIGNED BY:	APPROVED BY:	DATE :	MARCH, 2022
ENG. SHADAB			
DRAWN BY:	JOB NO.	SCALE:	N.T.S
RIZWAN			
DRG. NO.	EL-00		

# GENERAL NOTES

## ELECTRICAL SYSTEMS

1. FOLLOWING NOTES SHALL IN GENERAL APPLY TO ALL ELECTRICAL DRAWINGS. THE INSTRUCTIONS IN THESE NOTES SHALL BE FOLLOWED UNLESS STATED OTHERWISE.
2. THESE NOTES SHALL BE APPLICABLE TO THE ENTIRE ELECTRICAL WORKS, IF THE SITE CONDITIONS NECESSITATE ANY ALTERATIONS OR DEVIATIONS THE DIRECTIONS OF THE ENGINEER SHALL BE OBSERVED AS FINAL INSTRUCTIONS.
3. ALL ELECTRICAL DRAWINGS SHALL BE READ IN CONJUNCTION WITH BOQ, TECHNICAL SPECIFICATIONS, ARCHITECTURAL, STRUCTURAL, PLUMBING AND HVAC DRAWINGS & ALL OTHER RELEVANT DETAILS.
4. DIMENSIONS/MEASUREMENTS GIVEN IN LAYOUT AND DETAILED DRAWINGS ARE APPROXIMATE. THE CONTRACTOR SHALL BE RESPONSIBLE TO CALCULATE THE ACTUAL DIMENSIONS/ MEASUREMENTS ACCORDING TO STRUCTURAL AND ARCHITECTURAL DRAWINGS.
5. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS WITH ALL RELEVANT DETAILS TO THE ENGINEER FOR APPROVAL ACCORDING TO THE GENERAL CONDITIONS OF CONTRACT WELL IN TIME BEFORE COMMENCEMENT OF THAT WORK.
6. PROPER CO-ORDINATION OF ELECTRICAL WORKS WITH OTHER SERVICES SHALL BE CARRIED OUT AT SITE.
7. ALL NON - CURRENT CARRYING PARTS I.e. OUTER CASINGS OF EQUIPMENT SUCH AS HT & LT PANELS, DISTRIBUTIONS BOARDS, CABLE TRAYS, AUXILIARY CONSTRUCTIONS FOR EQUIPMENT ETC. SHALL BE CONNECTED TO THE GROUNDING/ EARTHING SYSTEM AT REQUIRED NUMBER OF POINTS WITH SPECIFIED SIZES OF CONDUCTORS. WATER PIPES ALONG ELECTRICAL LINE SHALL BE BONDED TO THE EARTHING SYSTEM WITH 10 sq.mm. SINGLE CORE, COPPER CONDUCTOR PVC CABLE.
8. ELECTRICAL POINTS FOR EQUIPMENT SHALL BE INSTALLED IN CO-ORDINATION WITH THE RELEVANT DRAWINGS OF OTHER SERVICES, SUCH AS COMMUNICATION SYSTMS, HVAC, PLUMBING ETC. THE LOCATION ON ELECTRICAL DRAWINGS IS ONLY INDICATIVE.
9. ARRANGEMENT OF ELECTRICAL EQUIPMENTS ON ELECTRICAL DRAWINGS ARE TENTATIVE. EXACT ARRANGEMENT OF EQUIPMENTS SHALL BE MADE IN VIEW OF ITS PHYSICAL DIMENSIONS AND EASE OF MAINTENANCE. AND AS PER SITE REQUIREMENTS.
10. LOADS ON ALL PHASES SHALL BE BALANCED AT THE TESTING/ COMMISSIONING STAGE.
11. CONDUIT/DUCT RUN UNDER FLOOR SHALL HAVE A MINIMUM COVER OF TWO INCHES FROM TOP OF CONDUIT/DUCT TO FINISH FLOOR LEVEL.
12. RUN GREEN-YELLOW OR GREEN SINGLE CORE PVC INSULATED COPPER CONDUCTOR CABLE OF SPECIFIED SIZES AS PROTECTIVE EARTH CONDUCTOR (ECC) ALL ALONG LIGHT AND POWER WIRING. WHEREVER THE SIZE IS NOT SPECIFIED THE FOLLOWING CRITERIA SHALL BE OBSERVED TO DETERMINE MINIMUM CROSS SECTIONAL AREA OF EARTH CONTINUITY CONDUCTOR (ECC) IN RELATION TO THE AREA OF ITS PHASE CONDUCTORS. RUN SEPARATE ECC FOR EACH CIRCUIT.
  - ECC & PHASE CONDUCTOR OF SAME SIZE FOR UPTO AND INCLUDING 16 SQMM CABLES
  - 16 SQMM ECC FOR PHASE CONDUCTOR OF 16 SQMM, 25SQMM & 35 SQMM CABLES
  - FOR CABLES OF 50 SQMM AND ABOVE SIZES, ECC IS HALF SIZE OF PHASE CONDUCTOR.
  - MAXIMUM SIZE OF ECC IS 70 SQMM.

## ELECTRICAL SYSTEMS

13. THE MAXIMUM CAPACITY OF PVC CONDUITS FOR SIMULTANEOUS DRAWING OF PVC INSULATED CABLES SHALL BE DETERMINED AS PER BS 4607. THE FOLLOWING TABLE SHALL BE USED TO DETERMINE THE MAXIMUM NUMBER OF CABLES.

S. #	NOMINAL CONDUCTOR SIZE(SQMM)	NO. & DIA OF WIRES	NOMINAL OVERALL DIA	20 MM DIA (3/4" DIA)	25 MM DIA (1" DIA)	32 MM DIA (1 1/4" DIA)
1	1.5	1/1.38	3.1	10	18	30
2	2.5	1/1.78	3.5	8	14	23
3	2.5	7/0.67	3.8	7	12	20
4	4	7/0.85	4.3	5	9	15
5	6	7/1.04	4.9	4	7	12
6	10	7/1.35	6.2	2	4	7
7	16	7/1.70	7.3	-	3	5
8	25	7/2.14	9.0	-	2	3
9	35	19/1.53	10.3	-	-	2

14. NORMAL & EMERGENCY CIRCUITS SHALL RUN IN SEPARATE CONDUITS.
15. ALL WIRING FOR CONTROLS SHALL BE CARRIED OUT WITH 1 CORE PVC CABLES OF SPECIFIED VOLTAGE GRADE AND SIZES.
16. THE WIRING SHALL BE CONTINUOUS LOOPING-IN TYPE AND NO JOINT IN WIRES SHALL BE ALLOWED.
17. THE WIRING SYSTEM SHALL BE CARRIED OUT ONLY AFTER THE CONDUIT SYSTEM IS COMPLETELY INSTALLED AND ALL OUTLET BOXES, ETC. ARE FIXED IN POSITION.
18. MOUNTING HEIGHTS OF ELECTRICAL FITTINGS WHEN MEASURED FROM FINISHED FLOOR LEVEL (F.F.L.) TO THE BOTTOM OF FITTINGS SHALL BE AS UNDER, UNLESS OTHERWISE SHOWN OR INSTRUCTED.

MAIN SWITCH BOARD	48 INCHES
DISTRIBUTION BOARD	48 INCHES
CONTROL PANEL	48 INCHES
ON/OFF PUSH BUTTON STATION	48 INCHES
DIMMER CONTROL UNIT	48 INCHES
LIGHT CONTROL SWITCH (ONE WAY/TWO WAY)	48 INCHES
5A SOCKET OUTLETS IN GENERAL AREAS	10 INCHES
15A SOCKET OUTLETS IN GENERAL AREAS	10 INCHES
20A SOCKET OUTLETS IN GENERAL AREAS	10 INCHES
15A SOCKET OUTLETS IN KITCHEN (ABOVE COUNTER)	10 INCHES
15A SOCKET OUTLETS IN TOILETS	66 INCHES
16A TP 5PIN INDUSTRIAL SOCKET OUTLETS IN LABS.	48 INCHES
32A TP 5PIN INDUSTRIAL SOCKET OUTLETS IN LABS	48 INCHES
63A TP 5PIN INDUSTRIAL SOCKET OUTLETS IN LABS.	48 INCHES
CEILING FAN	96 INCHES
WALL FAN	84 INCHES
EXHAUST FAN	REFER ARCH. DRGS.

## COMMUNICATION SYSTEMS

1. FOLLOWING NOTES SHALL IN GENERAL APPLY TO ALL COMMUNICATION SYSTEMS DRAWINGS. THE INSTRUCTIONS IN THESE NOTES SHALL BE FOLLOWED UNLESS STATED OTHERWISE.
2. THESE NOTES SHALL BE APPLICABLE TO THE ENTIRE COMMUNICATION SYSTEMS WORKS, IF THE SITE CONDITIONS NECESSITATE ANY ALTERATIONS OR DEVIATIONS THE DIRECTIONS OF THE ENGINEER SHALL BE OBSERVED AS FINAL INSTRUCTIONS.
3. ALL COMMUNICATION SYSTEMS DRAWINGS SHALL BE READ IN CONJUNCTION WITH TECHNICAL SPECIFICATIONS, ITEMS OF B.O.Q., ARCHITECTURAL STRUCTURAL, HVAC, PLUMBING DRAWINGS AND ALL OTHER RELEVANT DETAILS.
4. DIMENSIONS/MEASUREMENTS GIVEN IN LAYOUT AND DETAILED DRAWINGS ARE APPROXIMATE. THE CONTRACTOR SHALL BE RESPONSIBLE TO CALCULATE THE ACTUAL DIMENSIONS/MEASUREMENTS ACCORDING TO STRUCTURAL AND ARCHITECTURAL DRAWINGS.
5. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS WITH ALL RELEVANT DETAILS TO THE ENGINEER FOR APPROVAL ACCORDING TO THE GENERAL CONDITIONS OF CONTRACT WELL IN TIME BEFORE COMMENCEMENT OF THAT WORK.
6. PROPER CO-ORDINATION OF COMMUNICATION SYSTEMS WORKS WITH OTHER SERVICES SHALL BE CARRIED OUT AT SITE.
7. TELEPHONE SYSTEM SHALL BE COMPLETE WITH INSTRUMENTS, EQUIPMENT AND INTERCONNECTING WIRING, TELEPHONE EXCHANGE, TELEPHONE OUTLETS, JUNCTION BOXES, CONDUITS OF SPECIFIED SIZES IN THE BUILDING, AND UNDERGROUND PIPES OF SPECIFIED SIZES SHOWN ON DRAWINGS SHALL BE PROVIDED. WHERE SIZE OF CONDUIT/PIPE IS NOT SPECIFIED SUITABLE SIZE SHALL BE INSTALLED AS DIRECTED BY THE ENGINEER.
8. POINTS FOR COMMUNICATION SYSTEMS EQUIPMENT SHALL BE INSTALLED IN CO-ORDINATION WITH THE RELEVANT DRAWINGS OF OTHER SERVICES, SUCH AS ELECTRICAL, HVAC, PLUMBING ETC. THE LOCATION ON COMMUNICATION SYSTEMS DRAWINGS IS ONLY INDICATIVE.
9. ARRANGEMENT OF COMMUNICATION SYSTEMS EQUIPMENTS ON DRAWINGS ARE TENTATIVE EXACT ARRANGEMENT OF EQUIPMENTS SHALL BE MADE IN VIEW OF ITS PHYSICAL DIMENSIONS AND EASE OF MAINTENANCE.
10. CONDUIT/DUCT RUN UNDER FLOOR SHALL HAVE A MINIMUM COVER 2 INCHES FROM TOP OF CONDUIT/DUCT TO FINISH FLOOR LEVEL.
11. RUN GREEN-YELLOW OR GREEN SINGLE CORE PVC INSULATED COPPER CONDUCTOR CABLE OF SPECIFIED SIZES AS PROTECTIVE EARTH CONDUCTOR (ECC) ALL ALONG COMMUNICATION SYSTEMS WIRING.
12. ALL WIRING FOR CONTROLS SHALL BE CARRIED OUT WITH 1 CORE PVC CABLES OF SPECIFIED VOLTAGE GRADE AND SIZES.
13. THE WIRING SHALL BE CONTINUOUS LOOPING-IN TYPE AND NO JOINT IN WIRES SHALL BE ALLOWED.
14. THE WIRING SYSTEM SHALL BE CARRIED OUT ONLY AFTER THE CONDUIT SYSTEM IS COMPLETELY INSTALLED AND ALL OUTLET BOXES, ETC. ARE FIXED IN POSITION.
15. MOUNTING HEIGHTS OF ELECTRICAL FITTINGS WHEN MEASURED FROM FINISHED FLOOR LEVEL (F.F.L.) TO THE BOTTOM OF FITTINGS SHALL BE AS UNDER, UNLESS OTHERWISE SHOWN OR INSTRUCTED.

TELEPHONE JUNCTION BOX	10 INCHES
TELEPHONE OUTLET	10 INCHES
INTERCOM CONTROL PACK	10 INCHES
INTERCOM STATION (WALL MOUNTED)	36 INCHES
FA SYSTEM CONTROL PANEL	36 INCHES
FA SYSTEM JUNCTION BOX	10 INCHES
MANUAL CALL STATION	42 INCHES
AUDIO ALARM	100 INCHES

ADDITION & REVISION					
ADD. REV. NO.	DATE	DESCRIPTION	DES. BY	CHK. BY	APP. BY

DESIGNER:



### NEW VISION ENGINEERING CONSULTANT

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PROJECT:

"PROVISION OF MISSING FACILITIES FOR THE  
SHAIKH AYAZ UNIVERSITY SHIKARPUR"

TITLE:

### GENERAL NOTES

CLIENT:

SHAIKH AYAZ UNIVERSITY SHIKARPUR

DESIGNED BY:

APPROVED BY:

DATE :

MARCH, 2022

DRAWN BY:


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SCALE:


N.T.S

DRG. NO.

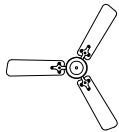
EL-01




20 Watt LED/SMD Light fixture




15 Watt LED/SMD Light fixture




56" dia ceiling fan suitable to give an air displacement of minimum 8000 Cu. ft./ min. Fan shall be made with 99% purity Copper windings.




Exhaust 12" dia plastic body




Bracket fan 18"



10 Watt LED/SMD Light fixture




15 Watt LED/SMD (Warm)Light fixture




14 Watt LED/SMD Light fixture




10-13 amps light plug




data point




smoke detector



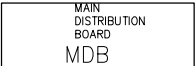
manual call point & sounder



Fire Alarm Control Panel



sub DB



main DB

ADDITION & REVISION					
ADD. REV. NO.	DATE	DESCRIPTION	DES. BY	CHK. BY	APP. BY

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PROJECT:

"PROVISION OF MISSING FACILITIES FOR THE  
SHAIKH AYAZ UNIVERSITY SHIKARPUR"

TITLE:

LEGEND AND SYMBOLS

CLIENT:

SHAIKH AYAZ UNIVERSITY SHIKARPUR

DESIGNED BY:  
ENG. SHADAB

APPROVED BY:

DATE :  
MARCH, 2022

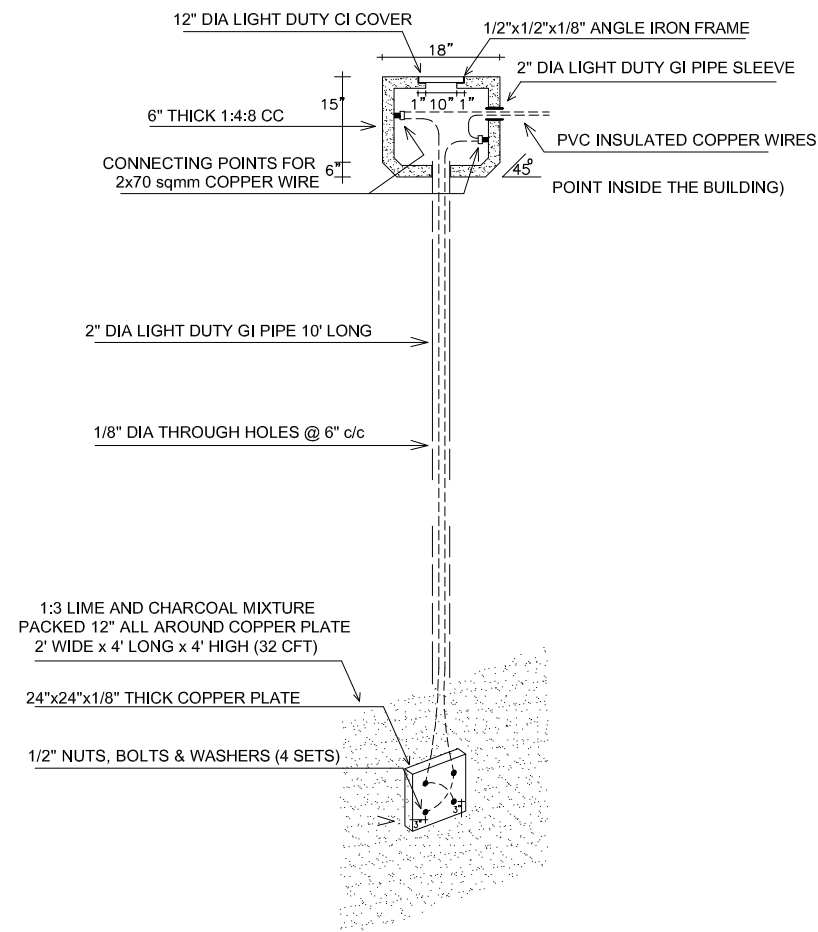
DRAWN BY:  
RIZWAN

JOB NO.

SCALE:  
N.T.S

DRG. NO.

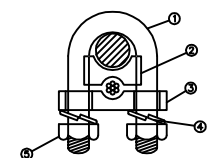
EL-02



DETAIL-E-2

PLATE TYPE EARTH ELECTRODE

(FOR EARTHING OF ELECTRICAL POWER SYSTEM)



DETAIL-A

ITEM NO.	NAME	MATERIAL
1	U-BOLT	MILD STEEL
2	SPACER	CAST IRON
3	BASE	MILD STEEL
4	SPRING WASHER	CARBON STEEL
5	NUT	MILD STEEL

ALL MEASUREMENTS ARE IN MM

ADDITION & REVISION					
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PROJECT:

"PROVISION OF MISSING FACILITIES FOR THE  
SHAIKH AYAZ UNIVERSITY SHIKARPUR"

TITLE:

**EARTHING DETAIL**

CLIENT:

**SHAIKH AYAZ UNIVERSITY SHIKARPUR**

DESIGNED BY:

ENG. SHADAB

APPROVED BY:

DATE :

MARCH, 2022

DRAWN BY:

RIZWAN

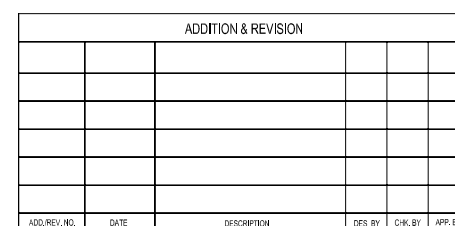
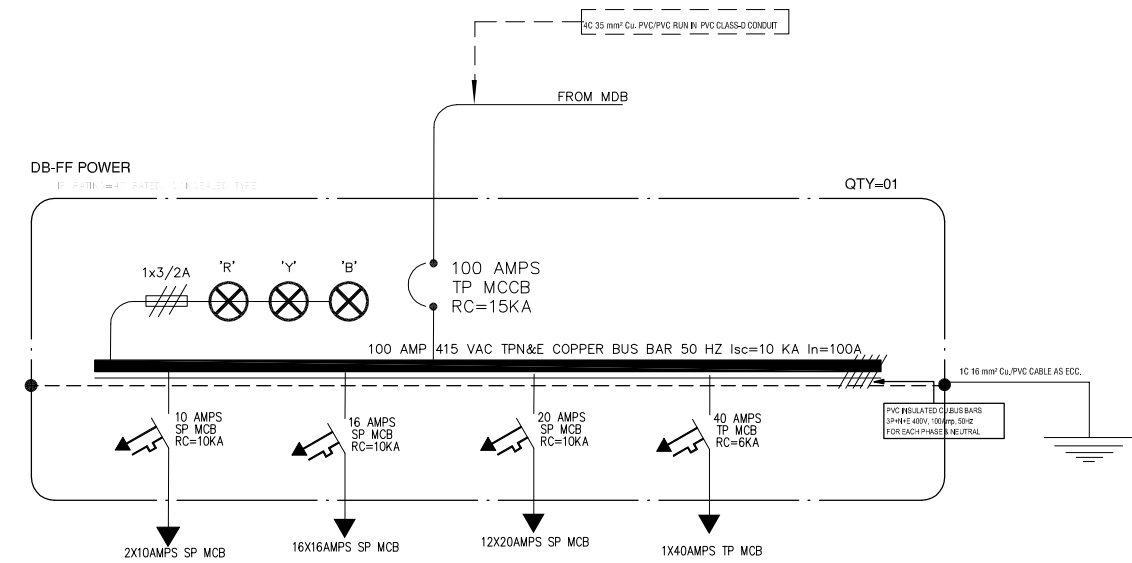
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SCALE:

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DRG. NO.

EL-03



EL-04



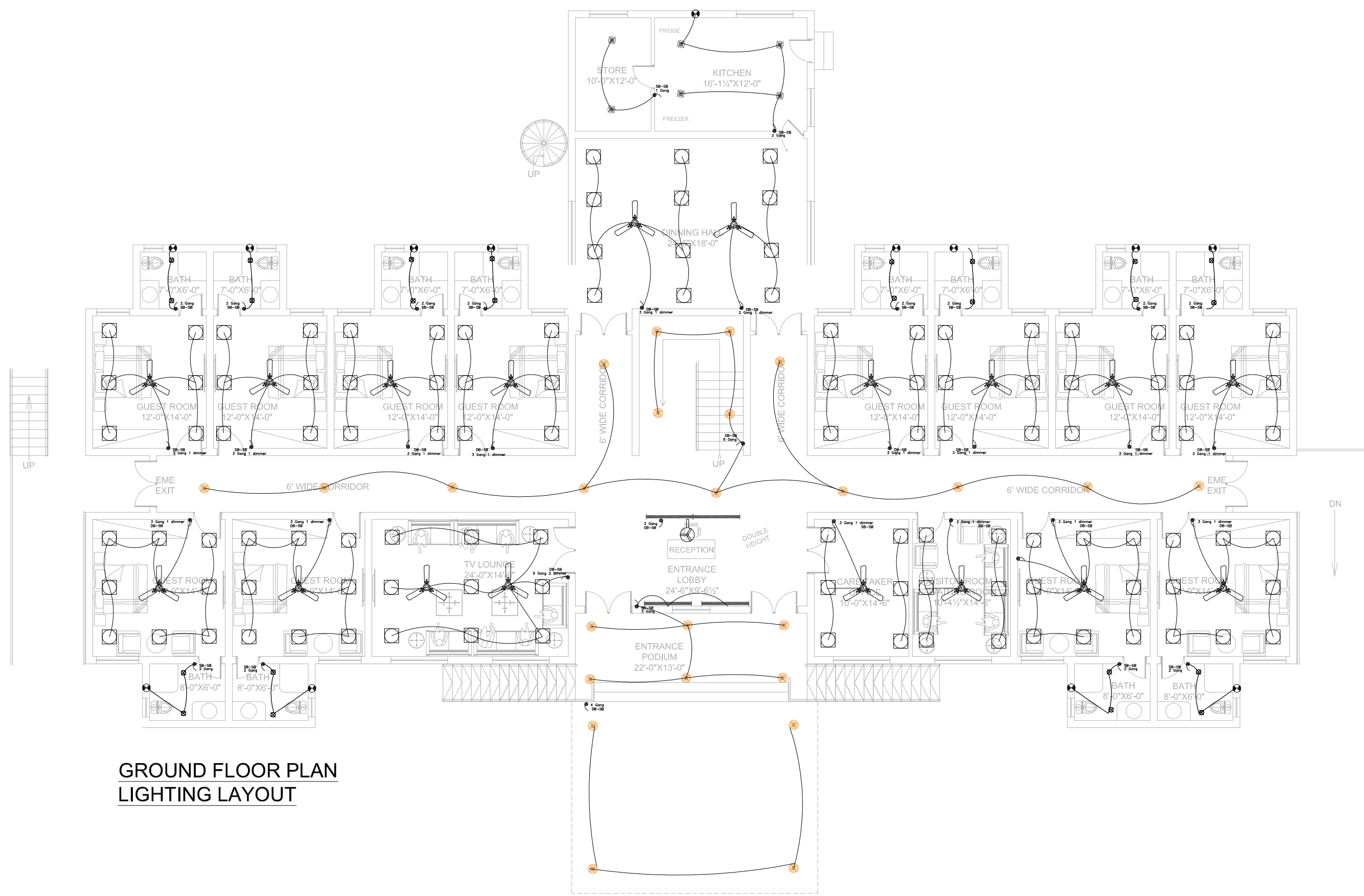


ADDITION & REVISION					
ADD./REV. NO.	DATE	DESCRIPTION	DES. BY	CHECK BY	APP. BY



EL-05





GROUND FLOOR PLAN  
LIGHTING LAYOUT

ADDITION & REVISION					
01	7/10/21	REVISED PLAN			
ADD. REV. NO.	DATE	DESCRIPTION	DES. BY	CHK. BY	APP. BY

DESIGNER:



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PROJECT:

"PROVISION OF MISSING FACILITIES FOR THE  
SHAIKH AYAZ UNIVERSITY SHIKARPUR"

TITLE:

GROUND FLOOR PLAN  
LIGHTING LAYOUT PLAN

CLIENT:

SHAIKH AYAZ UNIVERSITY SHIKARPUR

DESIGNED BY:

ENG. SHADAB

APPROVED BY:

SUBYAN

DATE:

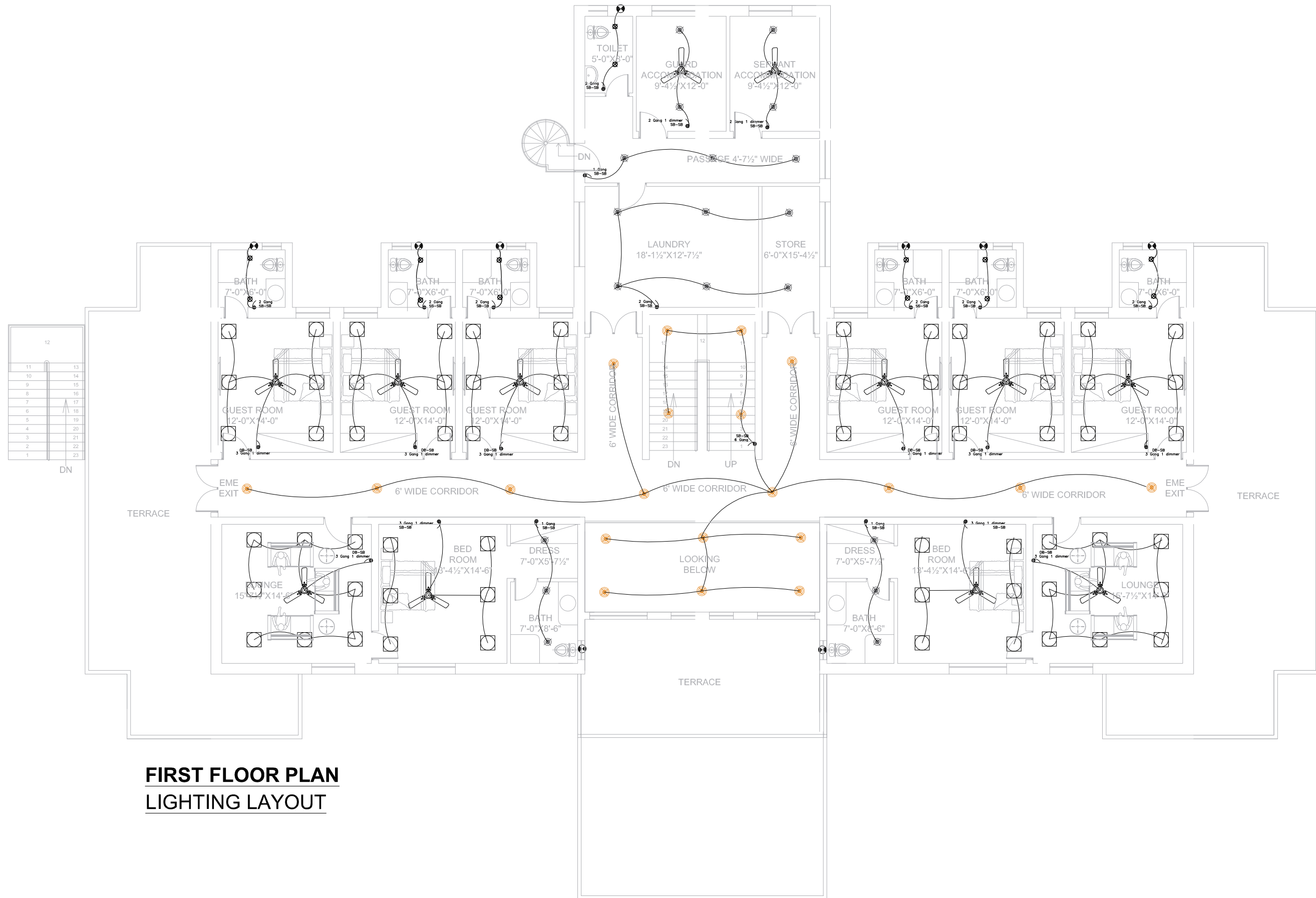
MARCH, 2022

SCALE:

N.T.S

DRG. NO.

EL-07



FIRST FLOOR PLAN  
LIGHTING LAYOUT

ADDITION & REVISION					
ADD. REV. NO.	DATE	DESCRIPTION	DES. BY	CHK. BY	APP. BY

DESIGNER:



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PROJECT:

"PROVISION OF MISSING FACILITIES FOR THE  
SHAIKH AYAZ UNIVERSITY SHIKARPUR"

TITLE:

FIRST FLOOR PLAN  
LIGHTING LAYOUT PLAN

CLIENT:

SHAIKH AYAZ UNIVERSITY SHIKARPUR

DESIGNED BY:

APPROVED BY:

DATE :

MARCH, 2022

DRAWN BY:

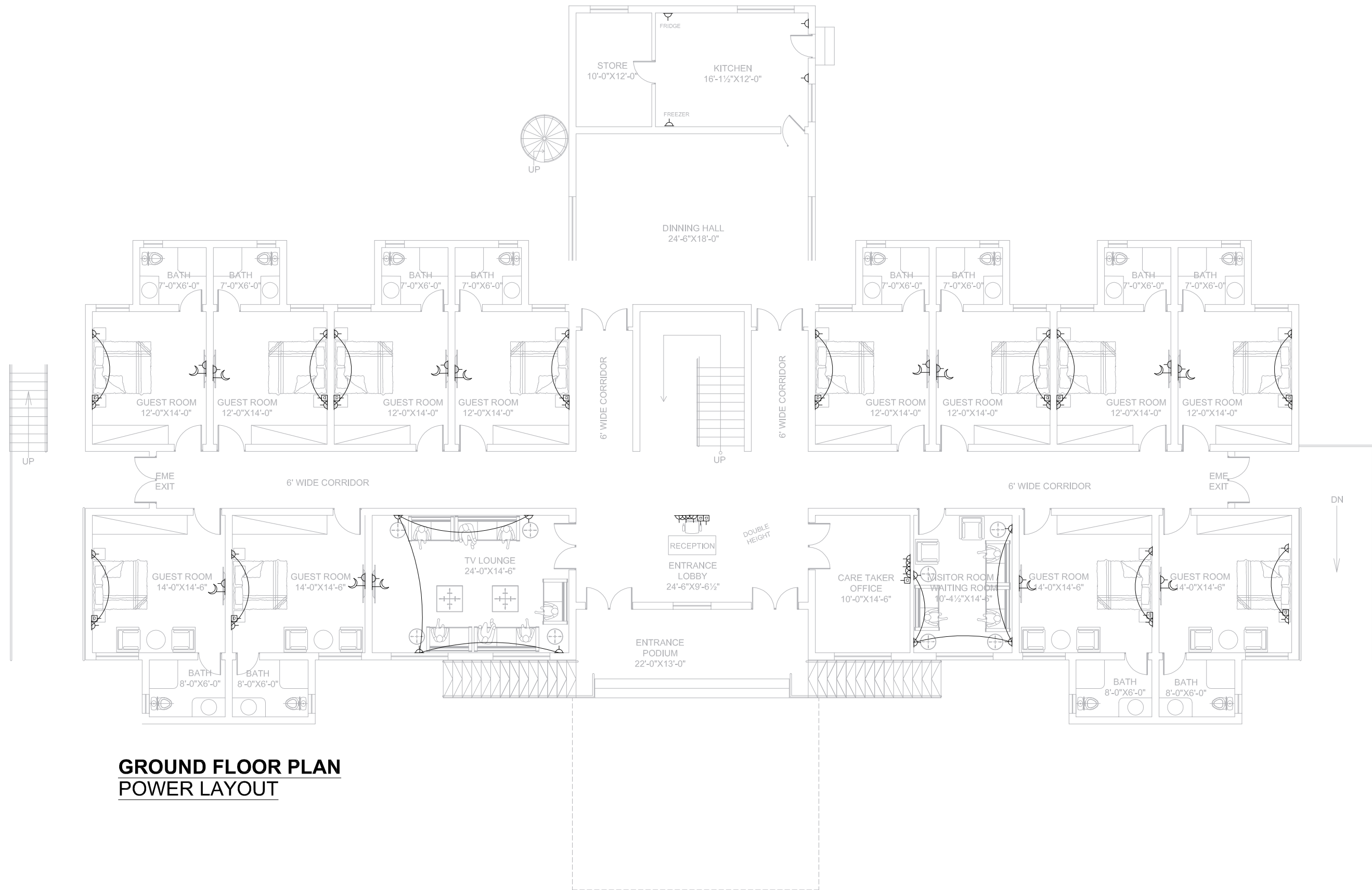
JOB NO.

SCALE:

N.T.S

DRG. NO.

EL-08



**GROUND FLOOR PLAN**  
**POWER LAYOUT**

ADDITION & REVISION					
BT	7/10/21	REVISED PLAN			
ADD. REV. NO.	DATE	DESCRIPTION	DES. BY	CHK. BY	APP. BY

DESIGNER:



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PROJECT:

"PROVISION OF MISSING FACILITIES FOR THE  
SHAIKH AYAZ UNIVERSITY SHIKARPUR"

TITLE:

**GROUND FLOOR PLAN**  
**POWER LAYOUT**

CLIENT:

**SHAIKH AYAZ UNIVERSITY SHIKARPUR**

DESIGNED BY:

ENG. SHADAB

APPROVED BY:

DATE :

MARCH, 2022

DRAWN BY:

RIZWAN

JOB NO.

SCALE:

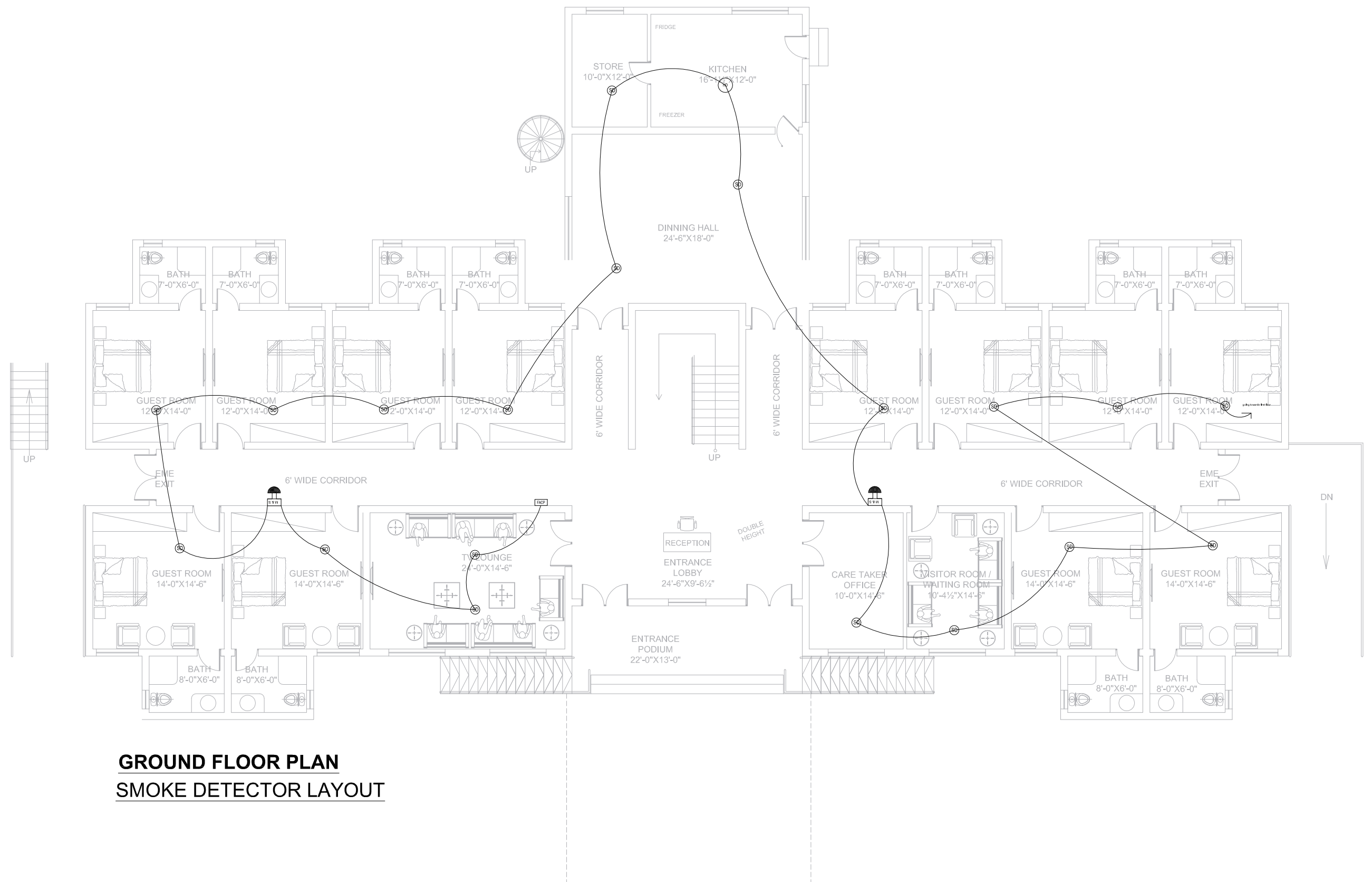
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DRG. NO.

EL-09







## GROUND FLOOR PLAN

### SMOKE DETECTOR LAYOUT

ADDITION & REVISION				
01	7/10/21	REVISED PLAN		
ADD. REV. NO.	DATE	DESCRIPTION	DES. BY	CHEK BY

DESIGNER:



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PROJECT:
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**"PROVISION OF MISSING FACILITIES FOR THE  
SHAikh AYAZ UNIVERSITY SHIKARPUR"**

TITLE:

GROUND FLOOR PLAN  
SMOKE DETECTOR LAYOUT

CLIENT:
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SHAIKH AYAZ UNIVERSITY SHIKARPUR

DESIGNED BY:

APPROVED BY:
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DATE :	MARCH, 2022
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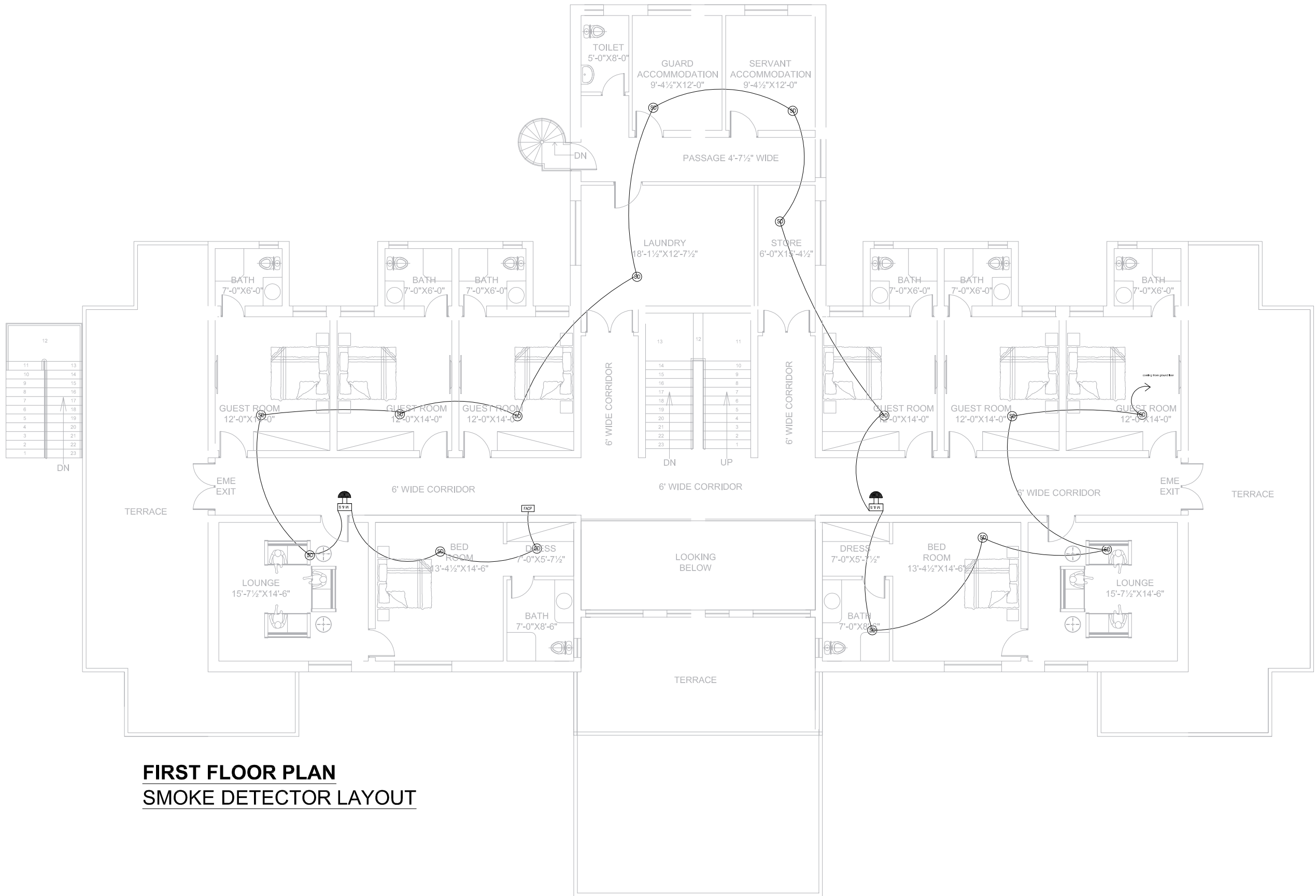
DRAWN BY:

	JOB NO.

SCALE: N.T.S

DRG. NO.

EL-11



**FIRST FLOOR PLAN**  
**SMOKE DETECTOR LAYOUT**

ADDITION & REVISION					
ADD. REV. NO.	DATE	DESCRIPTION	DES. BY	CHK. BY	APP. BY

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PROJECT:

"PROVISION OF MISSING FACILITIES FOR THE  
SHAIKH AYAZ UNIVERSITY SHIKARPUR"

TITLE:

**FIRST FLOOR PLAN**  
**SMOKE DETECTOR LAYOUT**

CLIENT:

**SHAIKH AYAZ UNIVERSITY SHIKARPUR**

DESIGNED BY:

ENG. SHADAB

APPROVED BY:

DATE :  
MARCH, 2022

DRAWN BY:

RIZWAN

JOB NO.

SCALE:  
N.T.S


DRG. NO.

EL-12



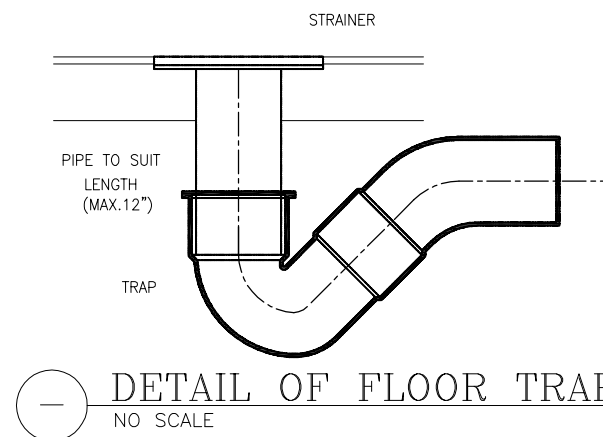
**PLUMBING**

LIST OF DRAWINGS		
S.NO.	DRAWING TITLE	DRG. NO
PLUMBING DRAWINGS		
1	LIST OF DRAWING	PL-00
2	GENERAL NOTES	PL-01
3	GROUND FLOOR PLAN (SANITARY DRAINAGE LAYOUT)	PL-02
4	FIRST FLOOR PLAN (SANITARY DRAINAGE LAYOUT)	PL-03
5	ROOF FLOOR PLAN (STORM WATER DRAINAGE LAYOUT)	PL-04
6	GROUND FLOOR PLAN (WATER SUPPLY LAYOUT)	PL-05
7	FIRST FLOOR PLAN (WATER SUPPLY LAYOUT)	PL-06
8	ROOF PLAN (WATER SUPPLY LAYOUT)	PL-07
9	GROUND FLOOR PLAN (GAS SUPPLY LAYOUT)	PL-08
10	TYPICAL DETAILS	PL-09
11	TYPICAL DETAILS	PL-10

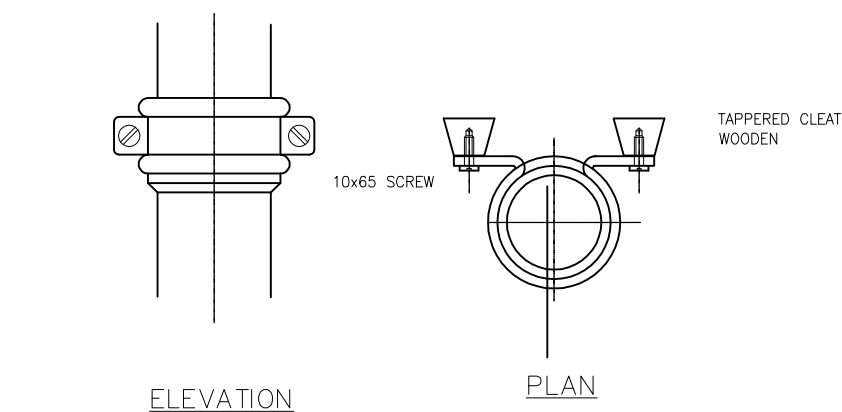
ADDITION & REVISION						<div>DESIGNER:</div> <div></div>	<div><b>NEW VISION ENGINEERING CONSULTANT</b></div> <div>Head Office: Office No.B-6 SECOND FLOOR Masood Arcade IJP Road Islamabad. Ph: +92-51-4848375, Fax: +92-51-4848375 Email: newvisionec@yahoo.com Regional Office: 287-A Street # 6, Cavalry Ground ,Lahore Ph: +92-42-37250130</div>	PROJECT: <b>"PROVISION OF MISSING FACILITIES FOR THE SHAIKH AYAZ UNIVERSITY SHIKARPUR"</b>	CLIENT: <b>SHAIKH AYAZ UNIVERSITY SHIKARPUR</b>		
								TITLE: <b>LIST OF DRAWINGS</b>	DESIGNED BY: MF	APPROVED BY:	DATE : MARCH, 2022
									DRAWN BY: RIZWAN	JOB NO.	SCALE: N.T.S
ADD./REV. NO.	DATE	DESCRIPTION	DES. BY	CHK. BY	APP. BY			DRG. NO. PL-00			

- 1 - PIPE PASSING THROUGH WALL, FLOOR OR ROOF SHALL BE PROTECTED WITH SLEEVES
- 2 - PIPE SIZES & DIMENSIONS ARE IN INCHES, UNLESS OTHERWISE MENTIONED
- 3 - PLUMBING SERVICES, SHALL BE CO-ORDINATED WITH OTHER SERVICES SUCH AS ELECTRICAL, ETC. TO AVOID CONFLIT OR INTERFERENCE WITH THEM.
- 4 - SIZE OF FLOOR DRAIN UNLESS OTHERWISE STATED SHALL BE SAME AS THE SIZE OF OUTLET DRAIN PIPE.
- 5 - WHEREVER FLOOR DRAIN/TRAP IS SHOWN, SLOPE FLOOR TOWARDS DRAIN/TRAP.
- 6 - HORIZONTAL DRAINAGE PIPING OF 3 INCH DIAMETER & LESS SHALL BE INSTALLED WITH A SLOPE OF NOT LESS THEN 1/4 INCH PER FOOT, LARGER ONES WITH A SLOPE OF NOT LESS THAN 1/8 INCH PER FOOT.
- 7 - EXTENSION OF VENT PIPES THROUGH A ROOF SHALL BE TERMINATED AT LEAST 6 INCHES ABOVE FINISHED ROOF LEVEL. EACH VENT TERMINAL SHALL BE MADE WATER TIGHT WITH THE ROOF BY PROPER FLASHING
- 8 - SIZE OF ANYTHING GIVEN ON PLUMBING DRAWING MEANS ITS CLEAR DIMENSIONS (CAPACITY), UNLESS OTHERWISE MENTIONED.
- THE "VERTICAL DISTANCE" FROM FIXTURE OUTLET TO THE TRAP WEIR SHALL PREFERABLY BE NOT MORE THAN 12 INCHES. HOWEVER, THIS "VERTICAL DISTANCE" FROM THE FIXTURE OUTLET TO THE TRAP WEIR SHALL NOT EXCEED 24 INCHES.
- WHERE THE CHANGE OF DIRECTION IS 45° OR LESS, IT IS NOT NECESSARY TO PROVIDE A CLEAN OUT. BUT WHEN THE CHANGE IN DIRECTION IS MORE THAN 45°, A CLEAN OUT SHOULD BE REQUIRED.
- ALL TRAPS AND FLOOR DRAINS SHALL HAVE A WATER SEAL NOT LESS THAN 2 INCHES.
- 2 - (EXTERNAL SERVICES) THE BOTTOM OF WATER-SERVICES PIPE , AT ALL POINTS,SHALL BE AT LEAST 12 INCHES ABOVE THE TOP OF THE SEWER LINE AT ITS HIGHEST POINT.
- 3 - NO "T" FITTING IS ALLOWED IN SANITARY DRAINAGE LAYOUT. USE ONLY "Y" FITTINGS.

ABBREVIATION	DESCRIPTION
SP	SOIL PIPE
WP	WASTE PIPE
SS	SOIL STACK
WS	WASTE STACK
VP	VENT PIPE
VS	VENT STACK
T/A	TO ABOVE
F/A	FROM ABOVE
T/B	TO BELOW
F/B	FROM BELOW








— DETAIL OF FLOOR TRAP  
NO SCALE

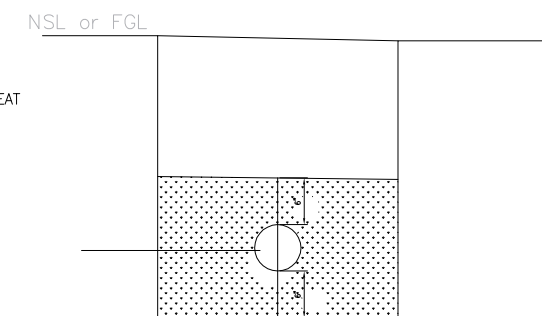


ELEVATION PLAN

— **DETAIL OF PIPE CLAMP**

NO SCALE (DIMENSIONS ARE IN mm.)

ABBREVI.	DESCRIPTION
GV	GATE VALVE
WP	WASTE PIPE
SP	SOIL PIPE
 HS	HAND SHOWER
 G.T	GULLY TRAP
 Gr.T	GREASE INTERCEPTOR
 MFT	MULTI FLOOR TRAP
 FT	FLOOR TRAP
O.H.W.T	OVERHEAD WATER TANK
U.G.W.T	UNDERGROUND WATER TANK
WC	WATER CLOSD
SH	SHOWER
T/A	TO ABOVE
F/A	FROM ABOVE
T/B	TO BELOW
F/B	FROM BELOW



— PIPE TRENCH DETAIL  
NO SCALE

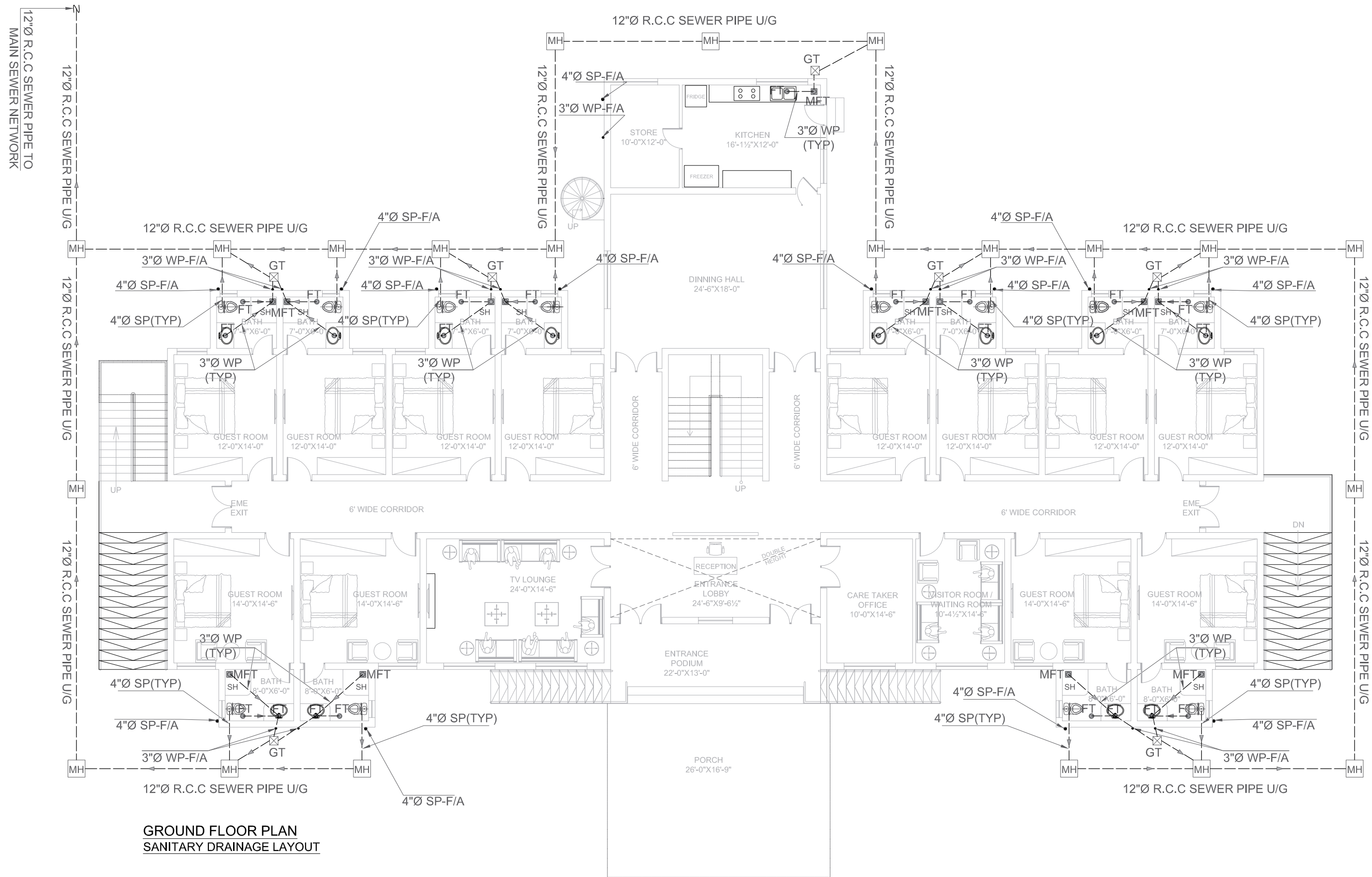
ADDITION & REVISION					
ADD. REV. NO.	DATE	DESCRIPTION	DES. BY	CHK. BY	APP. BY



TITLE: \_\_\_\_\_

GENERAL NOTES

DESIGNED BY:	APPROVED BY:	DATE :
MF		MARCH, 2022
DRAWN BY:	JOB NO.	SCALE:
		N.T.S
DRG. NO.	PL-01	



**GROUND FLOOR PLAN  
SANITARY DRAINAGE LAYOUT**

ADDITION & REVISION					
ADD./REV. NO.	DATE	DESCRIPTION	DES. BY	CHK. BY	APP. BY

DESIGNER:



**NEW VISION ENGINEERING CONSULTANT**

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Ph: +92-42-37250130

PROJECT:

**"PROVISION OF MISSING FACILITIES FOR THE  
SHAIKH AYAZ UNIVERSITY SHIKARPUR"**

TITLE:

**GROUND FLOOR PLAN  
SANITARY DRAINAGE LAYOUT**

CLIENT:

**SHAIKH AYAZ UNIVERSITY SHIKARPUR**

DESIGNED BY:  
MF

DRAWN BY:

DRG. NO.

APPROVED BY:

JOB NO.

PL-02

DATE :  
MARCH, 2022

SCALE:  
N.T.S







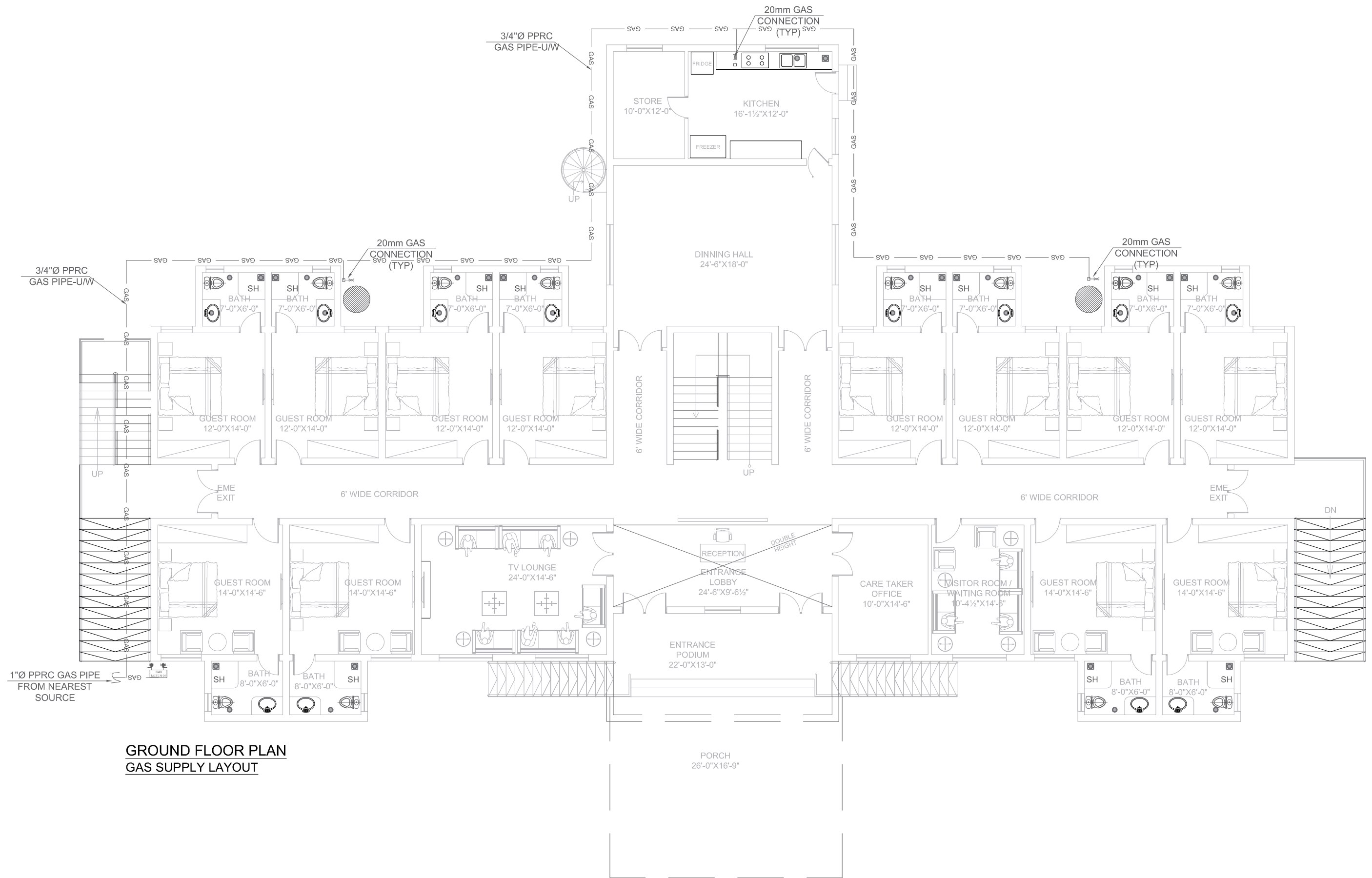
DESIGNED BY: MF	APPROVED BY:	DATE : MARCH, 2022
DRAWN BY:	JOB NO.	SCALE: N.T.S
DRG. NO.	PL-05	



PL-06



PL-07



**GROUND FLOOR PLAN  
GAS SUPPLY LAYOUT**

ADDITION & REVISION				
ADD./REV. NO.	DATE	DESCRIPTION	DES. BY	CHK. BY

DESIGNER:



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PROJECT:

**"PROVISION OF MISSING FACILITIES FOR THE  
SHAIKH AYAZ UNIVERSITY SHIKARPUR"**

TITLE:

**GROUND FLOOR PLAN  
GAS SUPPLY LAYOUT**

CLIENT:

**SHAIKH AYAZ UNIVERSITY SHIKARPUR**

DESIGNED BY:

MF

APPROVED BY:

DATE :  
MARCH, 2022

DRAWN BY:

JOB NO.

SCALE:  
N.T.S

DRG. NO.

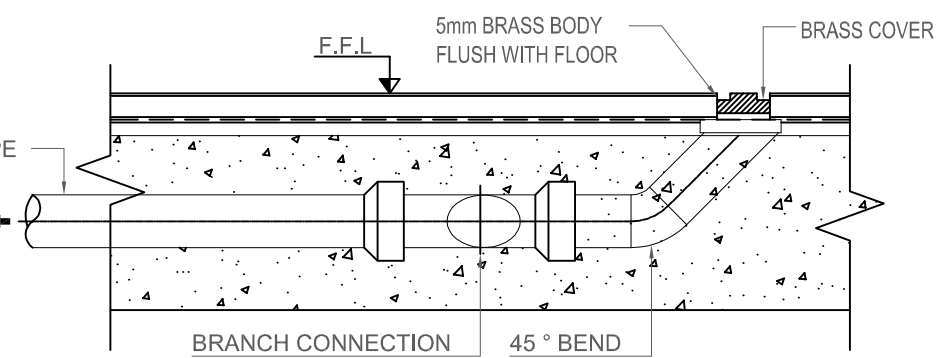
PL-08



ADDITION & REVISION					
ADD. REV. NO.	DATE	DESCRIPTION	DES. BY	CHEK. BY	APP.



PL-09



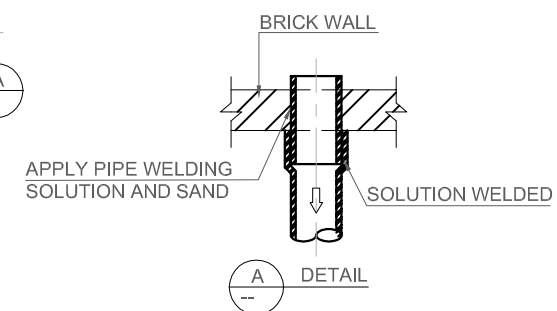
## GROUND CLEAN OUT PLUG DETAIL



Diagram illustrating the components and installation of a Cast Iron Manhole Cover and Frame. The diagram shows the cover and frame assembly, inlet and outlet pipes, and a cross-section view labeled 'A'.

Labels and components:

- CAST IRON MANHOLE COVER AND FRAME
- INLET PIPE
- OUTLET PIPE
- PLAN
- Cross-section view labeled 'A' showing the internal structure and the 'APPLY PIPE SOLUTION' area.



## MANHOLE DETAIL

ADDITION & REVISION					
ADD./REV. NO.	DATE	DESCRIPTION	DES. BY	CHK. BY	APP. BY



DRG. NO.	PL-10
----------	-------

# "PROVISION OF MISSING FACILITIES FOR THE SHAIKH AYAZ UNIVERSITY SHIKARPUR"



## VICE CHANCELLOR RESIDENCE TENDER DRAWINGS MARCH, 2022

DESIGN BY



### **NEW VISION ENGINEERING CONSULTANT**

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Ph: +92-42-37250130,

LIST OF DRAWINGS		
S.NO.	DRAWING TITLE	DRG. NO
ARCHITECTURE DRAWINGS		
1	LIST OF DRAWING	LS-00
2	GROUND FLOOR PLAN	AR-01
3	FIRST FLOOR PLAN	AR-02
4	ROOF PLAN	AR-03
5	ELEVATION E1	AR-04
6	ELEVATION E2	AR-05
7	SCHEDULE OF OPENINGS	AR-06
8	DOOR & WINDOW ELEVATION	AR-07
9	FLOOR FINISHING DETAILS	AR-08
10	STAIR DETAIL	AR-09

ADDITION & REVISION					
ADD/REV. NO.	DATE	DESCRIPTION	DES. BY	CHK. BY	APP. BY

DESIGNER:  


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PROJECT:	"PROVISION OF MISSING FACILITIES FOR THE SHAIKH AYAZ UNIVERSITY SHIKARPUR"
TITLE:	LIST OF DRAWING

CLIENT: SHAIKH AYAZ UNIVERSITY SHIKARPUR		
DESIGNED BY: AR.SALMAN	APPROVED BY:	DATE : MAR, 2022
DRAWN BY: RIZWAN	JOB NO.	SCALE: N.T.S
DRG. NO. LS-00		





DESIGNER:

Regional Office: 287-A Street # 6, Cavalry Ground ,Lahore  
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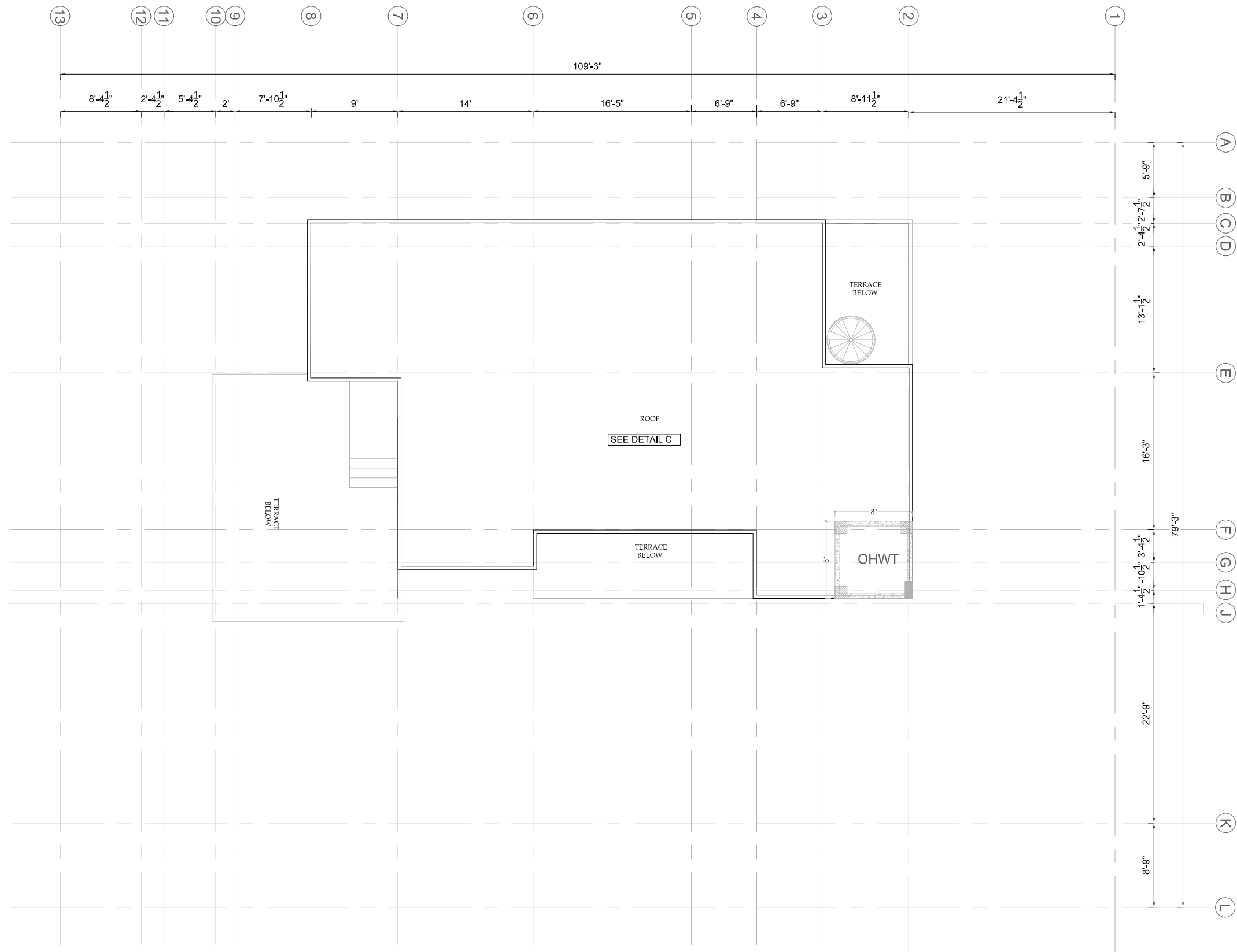


TITLE:

CLIENT:
---------

AR-02





ROOF PLAN

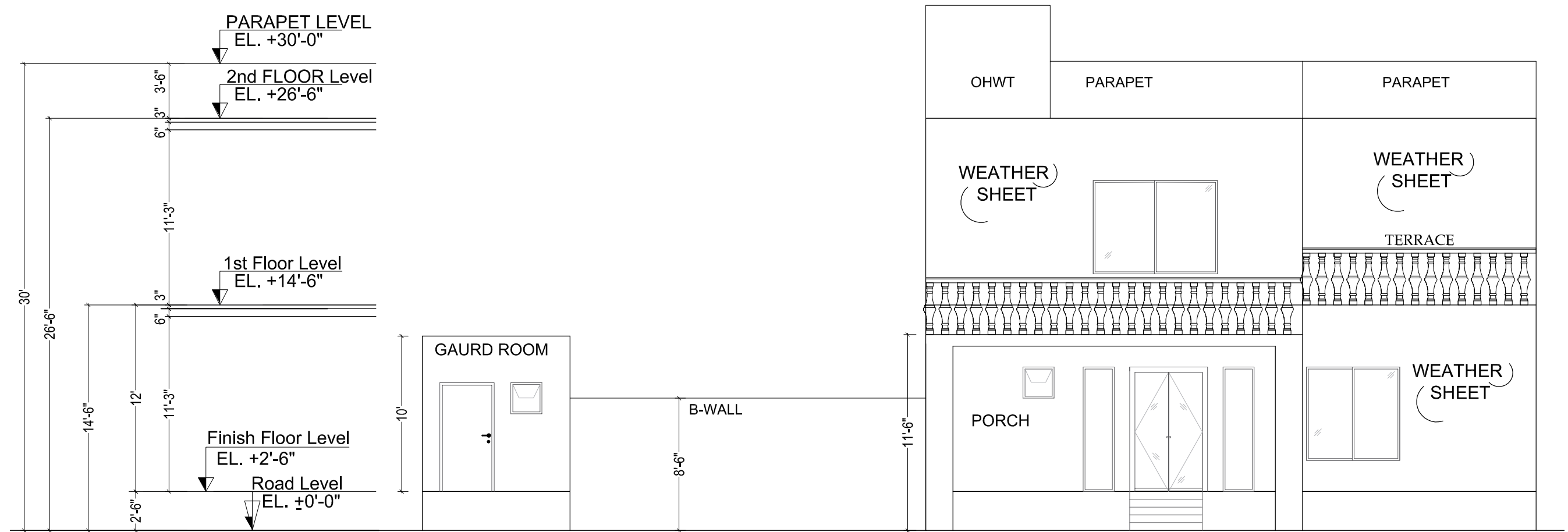
ADDITION & REVISION					
ADD. REV. NO.	DATE	DESCRIPTION	DES. BY	CHK. BY	APP. BY



DESIGNER: **NEW VISION ENGINEERING CONSULTANT**  
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Ph: +92-42-37250130

PROJECT: **"PROVISION OF MISSING FACILITIES FOR THE  
SHAIKH AYAZ UNIVERSITY SHIKARPUR"**  
TITLE: **ROOF PLAN**

CLIENT: <b>SHAIKH AYAZ UNIVERSITY SHIKARPUR</b>		
DESIGNED BY: AR.SALMAN	APPROVED BY:	DATE : MAR, 2022
DRAWN BY: SUFYAN	JOB NO.	SCALE: N.T.S
DRG. NO. <b>AR-03</b>		



E1 ELEVATION E1

ADDITION & REVISION					
ADD. REV. NO.	DATE	DESCRIPTION	DES. BY	CHK. BY	APP. BY

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PROJECT:

"PROVISION OF MISSING FACILITIES FOR THE  
SHAIKH AYAZ UNIVERSITY SHIKARPUR"

TITLE:

ELEVATION E-2

CLIENT:

SHAIKH AYAZ UNIVERSITY SHIKARPUR

DESIGNED BY:

AR.SALMAN

APPROVED BY:

DATE :

MAR, 2022

DRAWN BY:

SUFYAN

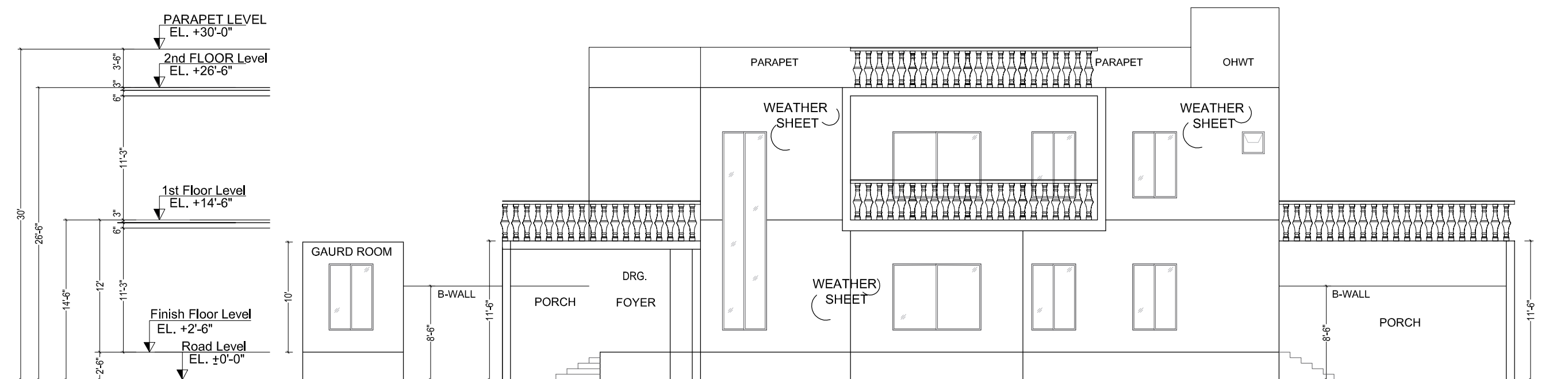
JOB NO.

SCALE:

N.T.S

DRG. NO.

AR-04



E2 ELEVATION E2

ADDITION & REVISION					
ADD. REV. NO.	DATE	DESCRIPTION	DES. BY	CHK. BY	APP. BY

DESIGNER:



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PROJECT:

"PROVISION OF MISSING FACILITIES FOR THE  
SHAIKH AYAZ UNIVERSITY SHIKARPUR"

TITLE:

ELEVATION E-1

CLIENT:

SHAIKH AYAZ UNIVERSITY SHIKARPUR

DESIGNED BY:

AR.SALMAN

APPROVED BY:

DATE :

MAR, 2022

DRAWN BY:

SUFYAN

JOB NO.

SCALE:

N.T.S


DRG. NO.

AR-05

SCHEDULE OF OPENINGS				
S.NO.	OPENINGS	DIMENSIONS	SILL LEVEL	REMARKS
1	D1	5'-0"x8'-0"	0'-0"	ALUMINUM GLASS DOOR
2	D2	3'-6"x7'-0"	0'-0"	SOLID WOOD DOOR
3	D3	3'-0"x7'-0"	0'-0"	SOLID WOOD DOOR
4	D4	2'-6"x7'-0"	0'-0"	UPVC DOOR
5	D5	2'-6"x7'-0"	0'-0"	SOLID FLUSH DOOR
6	W1	8'-0"x6'-0"	+2'-0"	ALUMINUM WINDOW
7	W2	6'-0"x6'-0"	+2'-0"	ALUMINUM WINDOW
8	W3	4'-0"x6'-0"	+2'-0"	ALUMINUM WINDOW
9	W4	4'-0"x19'-0"	+1'-0"	ALUMINUM WINDOW
10	W5	2'-0"x6'-0"	+2'-0"	ALUMINUM WINDOW
11	SW	4'-0"x3'-6"	+3'-6"	ALUMINUM WINDOW
12	V1	2'-0"x2'-0"	+6'-0"	ALUMINUM WINDOW

ADDITION & REVISION					
ADD/REV. NO.	DATE	DESCRIPTION	DES. BY	CHK. BY	APP. BY

DESIGNER:



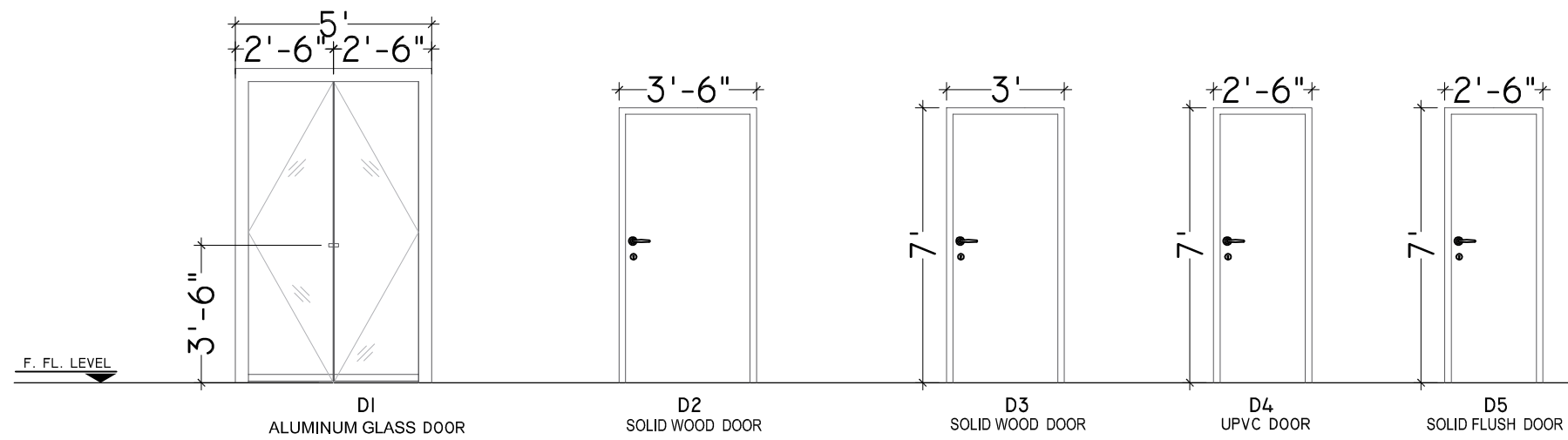
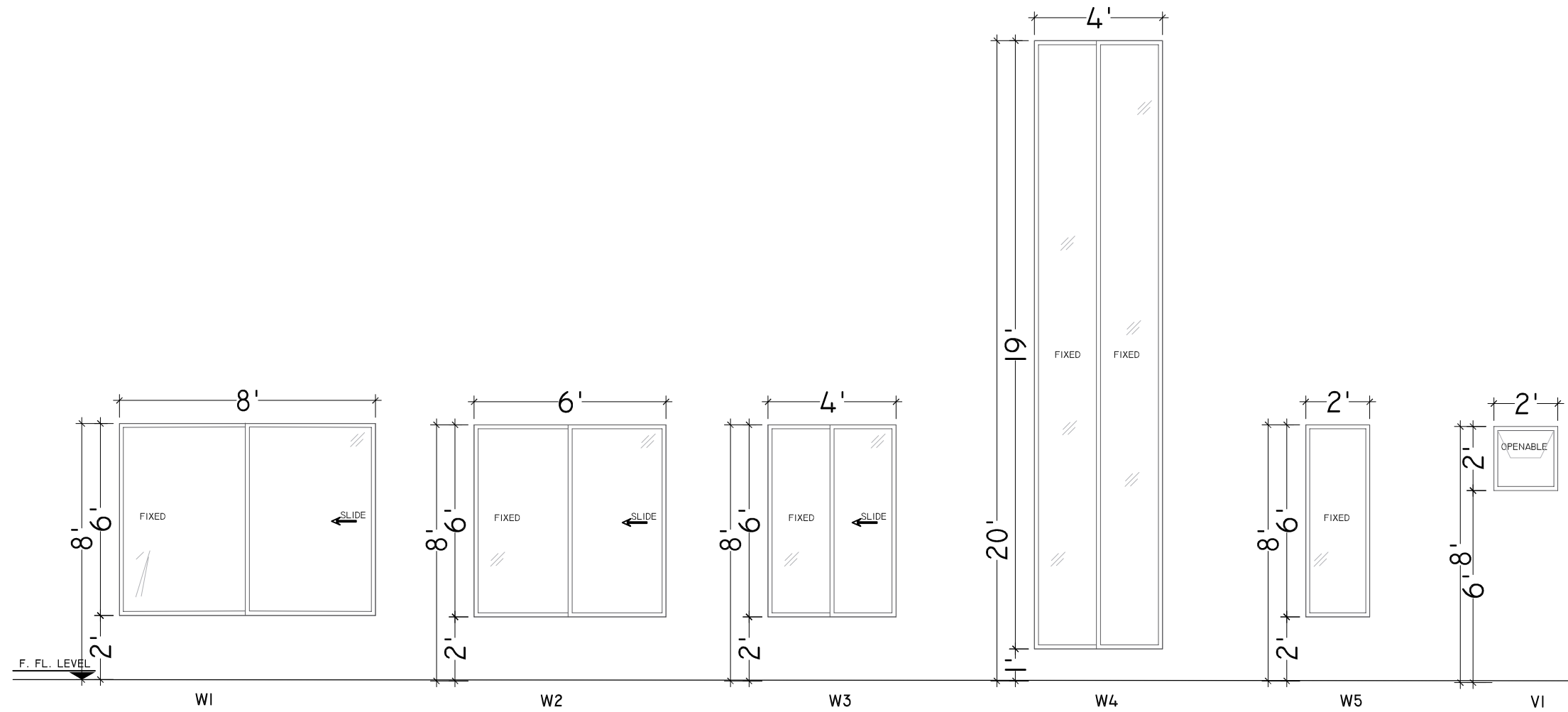
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PROJECT:	"PROVISION OF MISSING FACILITIES FOR THE SHAIKH AYAZ UNIVERSITY SHIKARPUR"
TITLE:	DOOR & WINDOW SCHEDULE

CLIENT: SHAIKH AYAZ UNIVERSITY SHIKARPUR		
DESIGNED BY: AR.SALMAN	APPROVED BY:	DATE : MAR, 2022
DRAWN BY: SUFYAN	JOB NO.	SCALE: N.T.S
DRG. NO. AR-06		



ADDITION & REVISION					
ADD. REV. NO.	DATE	DESCRIPTION	DES. BY	CHK. BY	APP. BY

DESIGNER:



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PROJECT:

"PROVISION OF MISSING FACILITIES FOR THE  
SHAIKH AYAZ UNIVERSITY SHIKARPUR"

TITLE:

DOOR & WINDOW ELEVATION

CLIENT:

SHAIKH AYAZ UNIVERSITY SHIKARPUR

DESIGNED BY:  
AR.SALMAN

APPROVED BY:

DATE :  
MAR, 2022

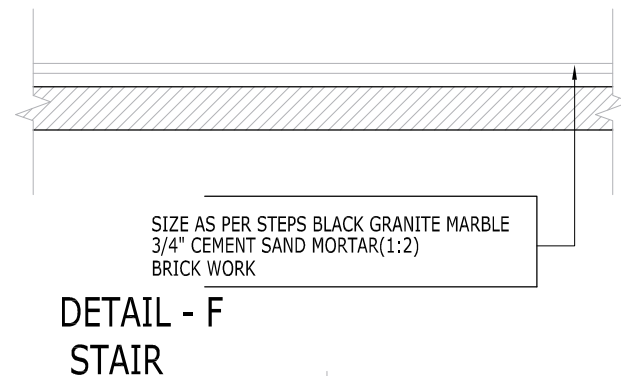
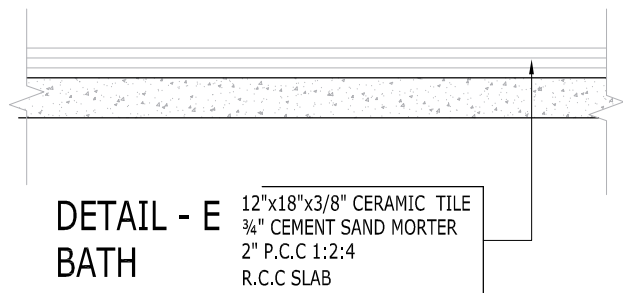
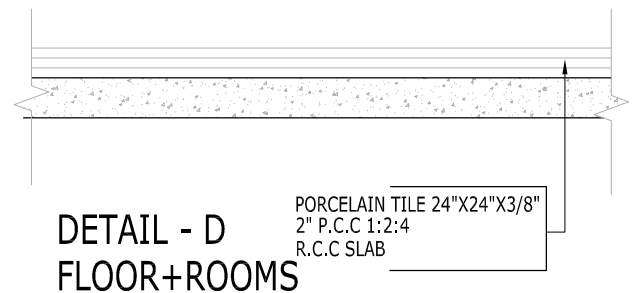
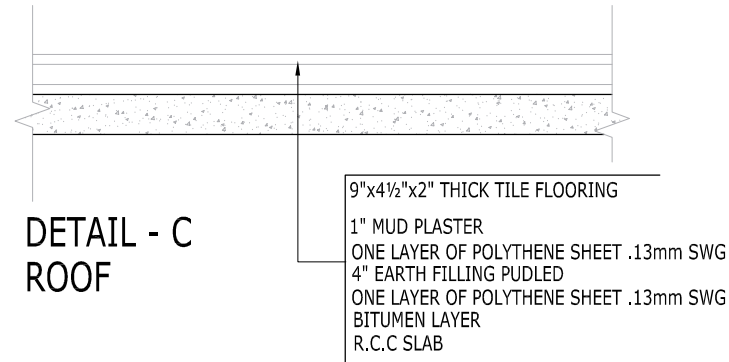
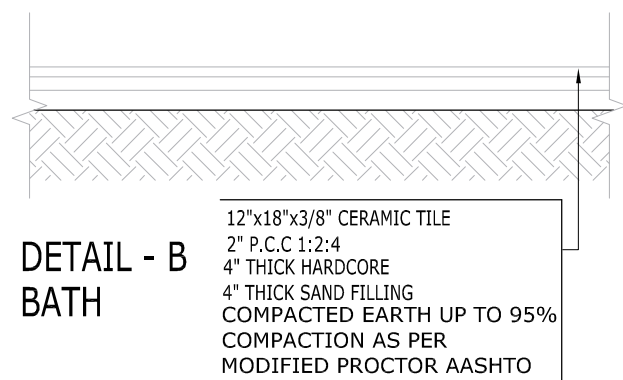
DRAWN BY:  
SUFYAN

JOB NO.

SCALE:  
N.T.S

DRG. NO.

AR-07



ADDITION & REVISION					
ADD. REV. NO.	DATE	DESCRIPTION	DES. BY	CHK. BY	APP. BY

DESIGNER:



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PROJECT:

"PROVISION OF MISSING FACILITIES FOR THE  
SHAIKH AYAZ UNIVERSITY SHIKARPUR"

TITLE:

FLOOR FINISH DETAIL

CLIENT:

SHAIKH AYAZ UNIVERSITY SHIKARPUR

DESIGNED BY:  
AR.SALMAN

APPROVED BY:

DATE :  
MAR, 2022

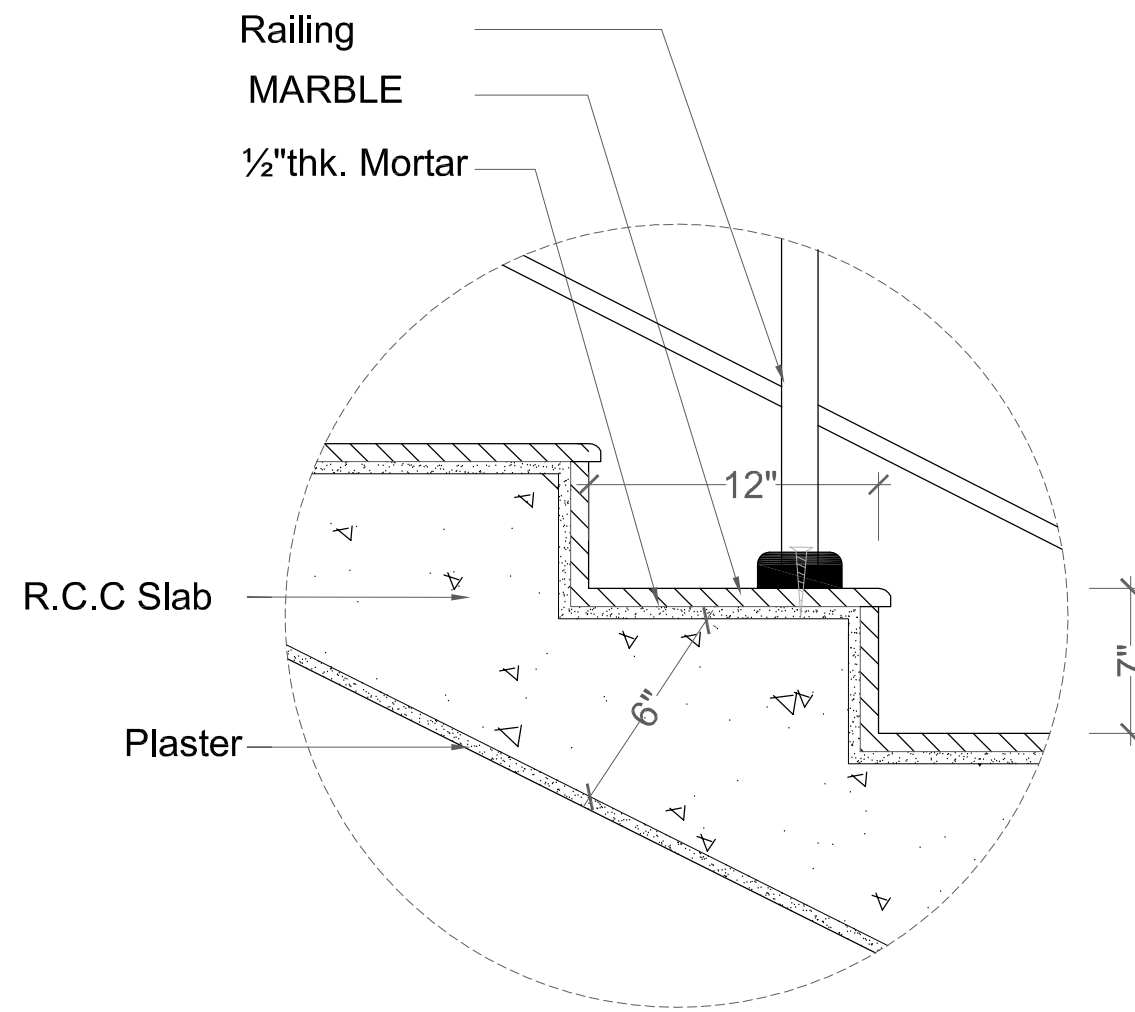
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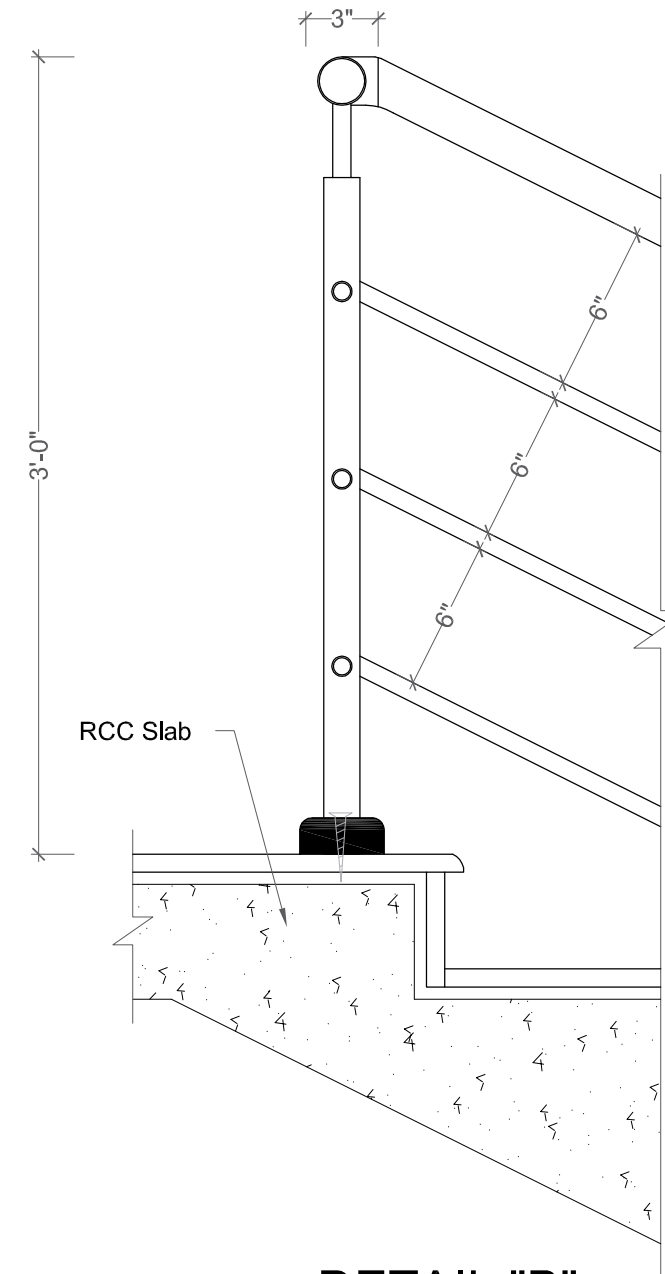
SCALE:  
N.T.S

DRG. NO.

AR-08



DETAIL "A"



DETAIL "B"

ADDITION & REVISION					
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DESIGNER:



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PROJECT:

"PROVISION OF MISSING FACILITIES FOR THE  
SHAIKH AYAZ UNIVERSITY SHIKARPUR"

TITLE:

STAIR DETAIL

CLIENT:

SHAIKH AYAZ UNIVERSITY SHIKARPUR

DESIGNED BY:  
AR.SALMAN

APPROVED BY:

DATE :  
MAR, 2022

DRAWN BY:  
SUFYAN

JOB NO.

SCALE:  
N.T.S

DRG. NO.

AR-09

# STRUCTURE



LIST OF DRAWINGS		
S.NO.	DRAWING TITLE	DRG. NO
STRUCTURE DRAWINGS		
1	LIST OF DRAWINGS	S-00
2	GENERAL NOTES	S-01
3	TYPICAL DETAILS	S-02
4	TYPICAL DETAILS	S-03
5	GROUND FLOOR FOUNDATION PLAN	S-04
6	FOUNDATION SECTION DETAILS	S-05
7	TYPICAL FOUNDATION SECTION DETAILS	S-06
8	FOUNDATION SECTION DETAILS	S-07
9	GROUND FLOOR COLUMN PLAN	S-08
10	COLUMN SECTION DETAILS	S-09
11	GROUND FLOOR PLAN BEAM LAYOUT	S-10
12	GROUND FLOOR BEAM SECTION	S-11
13	GROUND FLOOR SLAB POSITIVE REINFORCEMENT DETAIL	S-12
14	GROUND FLOOR SLAB NEGATIVE REINFORCEMENT DETAIL	S-13
15	FIRST FLOOR PLAN BEAM LAYOUT	S-14
16	FIRST FLOOR BEAM SECTION	S-15
17	FIRST FLOOR SLAB POSITIVE REINFORCEMENT DETAIL	S-16
18	FIRST FLOOR SLAB NEGATIVE REINFORCEMENT DETAIL	S-17

		ADDITION & REVISION				<div>DESIGNER:</div> <div></div>	<div>NEW VISION ENGINEERING CONSULTANT</div> <div>Head Office: Office No,B-6 Second Floor Masood Arcade IJP Road Islamabad.</div> <div>Ph: +92-51-4848375, Fax: +92-51-4848375</div> <div>Email: newvisionec@yahoo.com</div> <div>Regional Office: 287-A Street # 6, Cavalry Ground ,Lahore</div> <div>Ph: +92-42-37250130</div>	PROJECT:		CLIENT:		
		"PROVISION OF MISSING FACILITIES FOR THE SHAIKH AYAZ UNIVERSITY SHIKARPUR"		SHAIKH AYAZ UNIVERSITY SHIKARPUR								
		TITLE:										
		LIST OF DRAWINGS										
SNO	REV	NO	DATE	DESCRIPTION	DES	BY	CHECK	BY	APP	BY	DRG. NO.	ST-00

# STRUCTURAL NOTES

## GENERAL TECHNICAL NOTES

- Figured dimensions are to be followed.
- Class "A" kiln burnt brick with minimum crushing strength of 2000 PSI should be used & joint at end should be sloppy, Vertical toothed joint at corners are prohibited.
- A steel G-60 deformed steel should be used in beams footing slabs and water retaining structures, in columns, for all diameters.
- All steel should be checked for its quality and placement DETAIL as shown in drawings.
- Extra care is required for proper placement of top reinforcement at support sections and cantilevers.
- Dotted bars designate top reinforcement.
- Provide L- shaped end hooks for all bars at discontinuous ends in footings, walls, beams and slabs as shown in drawings.
- Lap length should be followed As except specified:-
  - 1"  $\varnothing$  = 60"
  - 3/4"  $\varnothing$  = 45"
  - 5/8"  $\varnothing$  = 36"
  - 1/2"  $\varnothing$  = 30"
  - 3/8"  $\varnothing$  = 23"
- Provide 3/8" dia at 12" c/c as distribution steel if not shown in drawings.
- Minimum concrete cover.
  - Footing = 2"
  - Slabs = 3/4"
  - Beams = 1 1/2"
  - Columns = 1 1/2"
  - Water tank and retaining wall i- Water/earth face or exposed to weather = 2" ii- Other faces = 1"
- All footing should be taken below the original Ground Level to achieve the minimum depth as shown in drawings. Footing should not be placed on uncompacted fill area.
- All drawings should be read in conjunction with Architectural Drawings.
- Contractor will co-ordinate all drawings such as architectural, structural, electrical, mechanical, water supply, drainage etc: before execution of work.
- Standard ACI 318, Astm C 33 and Astm A-615 use for structural concrete
- Fine modulus of fine aggregate varies from 2- 3.5mm For concrete use 2.9- 3.2mm For plaster use 2.2- 3.6mm

## QUALITY OF CONCRETE

### 1. FOOTINGS & RETAINING WALLS.

Minimum concrete compressive strength for 6"x12" cylinder to be 3000 psi at 28 days age. Concrete Nominal Mix 1:2:4 or more rich to provide specified strength (Equivalent 6"x6"x6" cube strength 3750 psi)

### 2. COLUMNS.

Minimum concrete compressive strength for 6"x12" cylinder to be 4000 psi at 28 days age. Concrete Nominal Mix to be 1:1 1/2:3 or more rich to provide specified strength

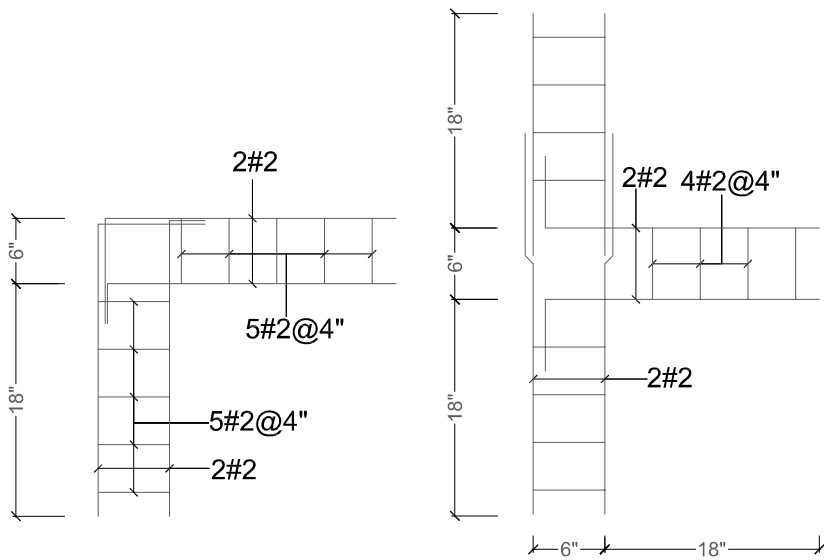
### 3. BEAMS, RIBS & SLABS.

Minimum concrete compressive strength for 6"x12" cylinder to be 3000 psi at 28 days age. Concrete Nominal Mix to be 1:2:4 or more rich to provide specified strength (Equivalent 6"x6"x6" cube strength 3750 psi)

- Use of plasticizers recommended to reduce the water cement ratio and increase workability of concrete.
- All concrete mixes to be used, should be got designed & approved before execution of work.
- Quality, size and gradation of aggregates (fine & coarse) as used during the mix design, should be strictly adhered with.
- The Design is in accordance with Seismic Zone 2A.

## NOTES

- ALL LAYOUT DIMENSIONS AND F.FLOOR LEVELS TO BE AS PER ARCH DRAWING.
- PROVIDE PLINTH BEAM PB AT PLINTH LEVEL, WALL BEAMS AT SLAB LEVEL.
- PROVIDE #2 DOUBLE-LEG TIE BARS AT 12" CENTRES AT COMMON JOINT BETWEEN WALLS AND COLUMNS. THESE BARS SHOULD PASS INTO WALLS ON EACH SIDE OF COLUMNS.



PLAN OF BRICK WALL TIE FOR CORNER JOINT

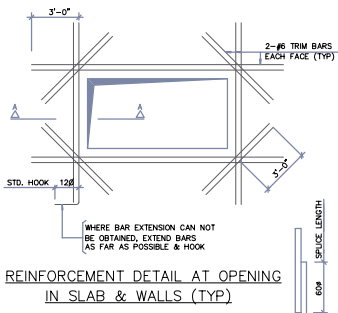
PLAN OF BRICK WALL TIE FOR T- JOINT

## REINFORCING STEEL

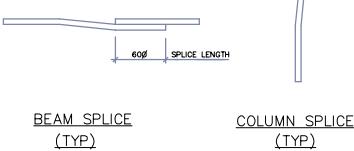
REINFORCING STEEL $f_y = 60,000$ psi			
BAR NO.	BAR DIA (IN.)	DEVELOPMENT LENGTH (INCH) IN TENSION	
		$f_c = 3000$ psi	$f_c = 4000$ psi
#3	0.375	17"	15"
#4	0.500	22"	19"
#5	0.625	28"	24"
#6	0.750	35"	29"
#7	0.875	48"	42"
#8	1.000	56"	48"
BAR NO.	BAR DIA (IN.)	DEVELOPMENT LENGTH (INCH) IN COMPRESSION	
		$f_c = 3000$ psi	$f_c = 4000$ psi
#3	0.375	9"	8"
#4	0.500	11"	10"
#5	0.625	14"	12"
#6	0.750	17"	15"
#7	0.875	20"	17"
#8	1.000	22"	19"
BAR NO.	BAR DIA (IN.)	SPLICE LENGTH (INCH) IN TENSION	
		$f_c = 3000$ psi	$f_c = 4000$ psi
#3	0.375	22"	20"
#4	0.500	29"	25"
#5	0.625	37"	32"
#6	0.750	45"	38"
#7	0.875	55"	55"
#8	1.000	72"	63"

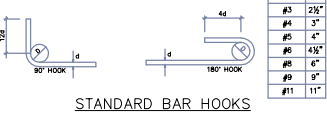
REINFORCING STEEL $f_y = 40,000$ psi			
BAR NO.	BAR DIA (IN.)	DEVELOPMENT LENGTH (INCH) IN TENSION	
		$f_c = 3000$ psi	$f_c = 4000$ psi
#3	0.375	12"	12"
#4	0.500	15"	13"
#5	0.625	18"	17"
#6	0.750	23"	20"
#7	0.875	33"	28"
#8	1.000	37"	32"



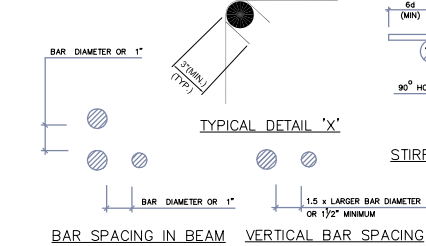
REINFORCEMENT DETAIL AT OPENING IN SLAB & WALLS (TYP)



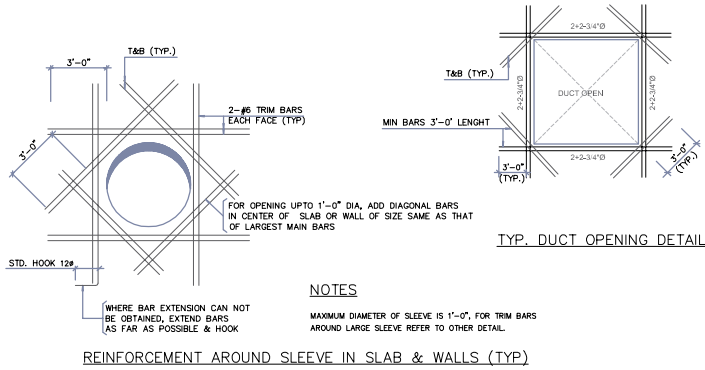
BEAM SPLICE (TYP) COLUMN SPLICE (TYP)



STANDARD BAR HOOKS



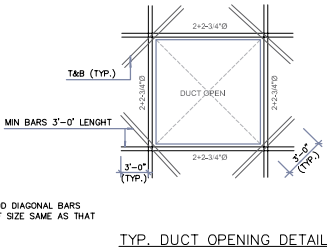
BAR SPACING IN BEAM VERTICAL BAR SPACING



REINFORCEMENT AROUND SLEEVE IN SLAB & WALLS (TYP)

## NOTES

MAXIMUM DIAMETER OF SLEEVE IS 1'-0", FOR TRIM BARS AROUND LARGE SLEEVE REFER TO OTHER DETAIL.



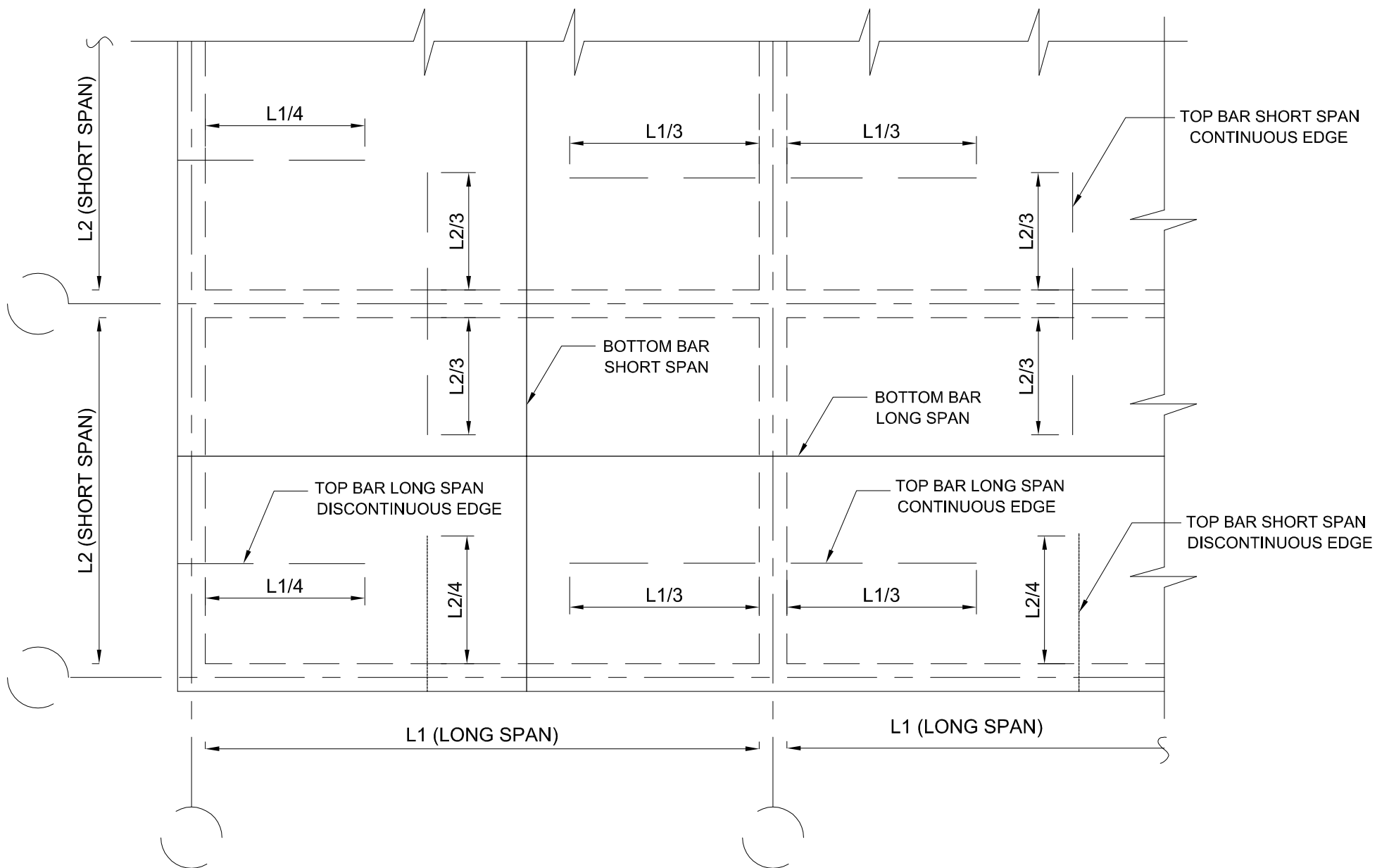
TYP. DUCT OPENING DETAIL

DESIGNER: **NEW VISION ENGINEERING CONSULTANT**  
Head Office: Office No.B-6 Second Floor Masood Arcade  
IJP Road Islamabad.  
Ph: +92-51-4848375, Fax: +92-51-4848375  
Email: newvisionec@yahoo.com  
Regional Office: 287-A Street # 6, Cavalry Ground ,Lahore  
Ph: +92-42-37250130

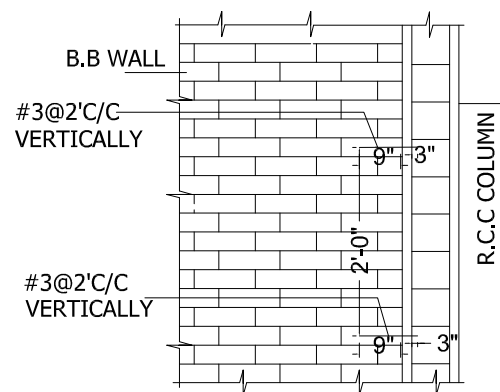


PROJECT: **"PROVISION OF MISSING FACILITIES FOR THE SHAIKH AYAZ UNIVERSITY SHIKARPUR"**  
TITLE: **GENERAL NOTES**

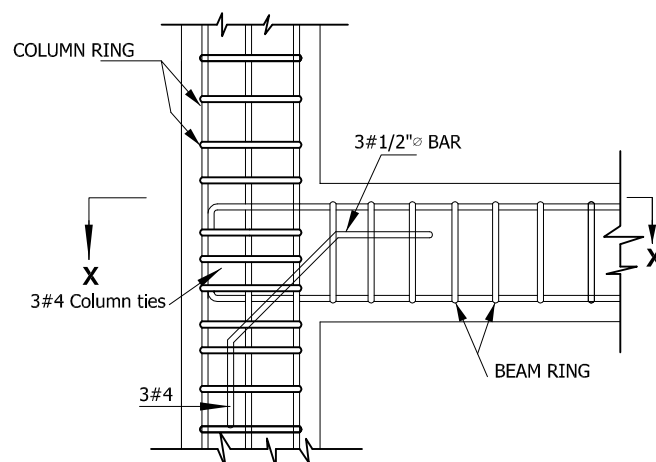
CLIENT: **SHAIKH AYAZ UNIVERSITY SHIKARPUR**  
DESIGNED BY: **ENG.AHSAN** APPROVED BY: **DATE: MARCH, 2022**  
DRAWN BY: **RIZWAN** JOB NO. **SCALE: N.T.S.**  
DRG. NO. **ST-01**



TYP. SLAB REINFORCEMENT  
SCALE: NTS



DETAIL OF SEISMIC JOINT  
BETWEEN COLUMN & B.B. WALL.



COLUMN AND BEAM JOINT

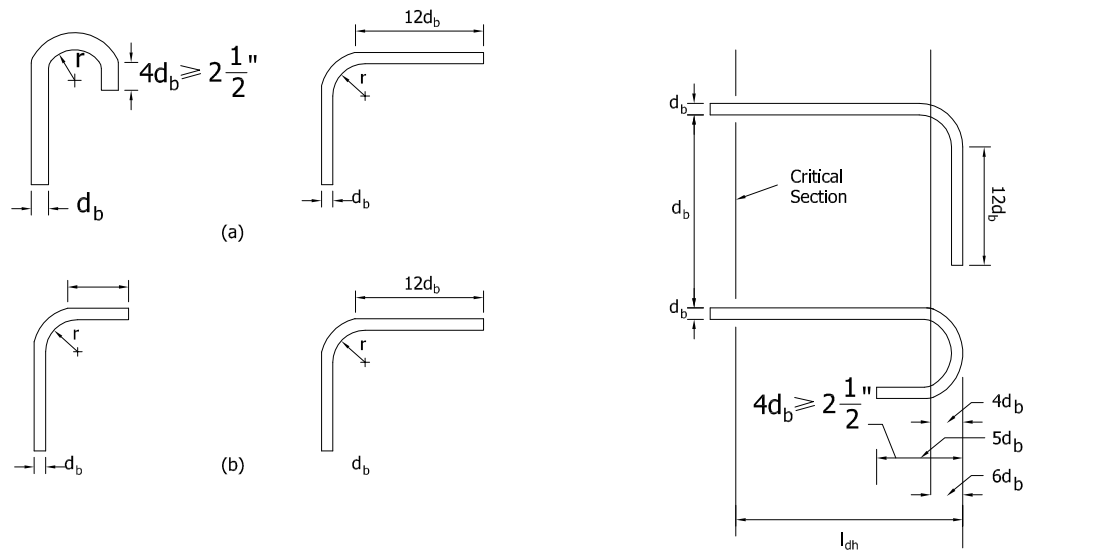
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NO.	REV.	DATE	DESCRIPTION	DES. BY / CHK. BY / APP. BY



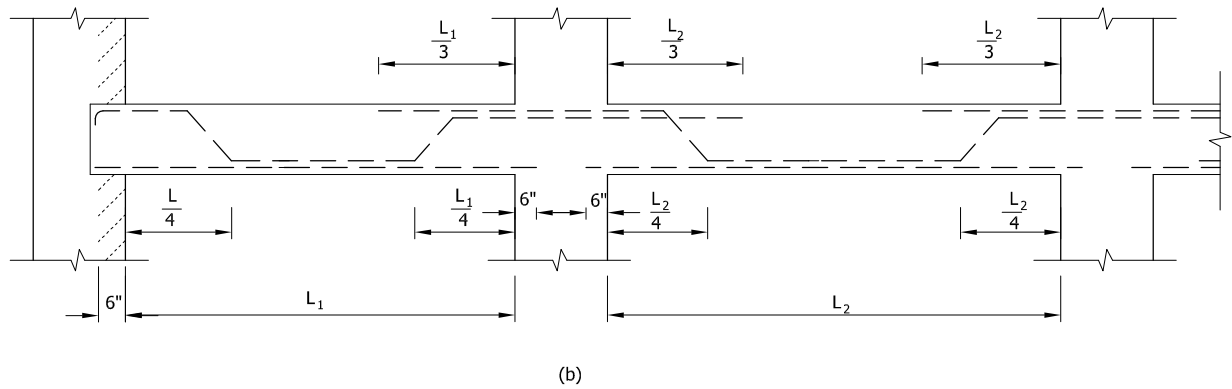
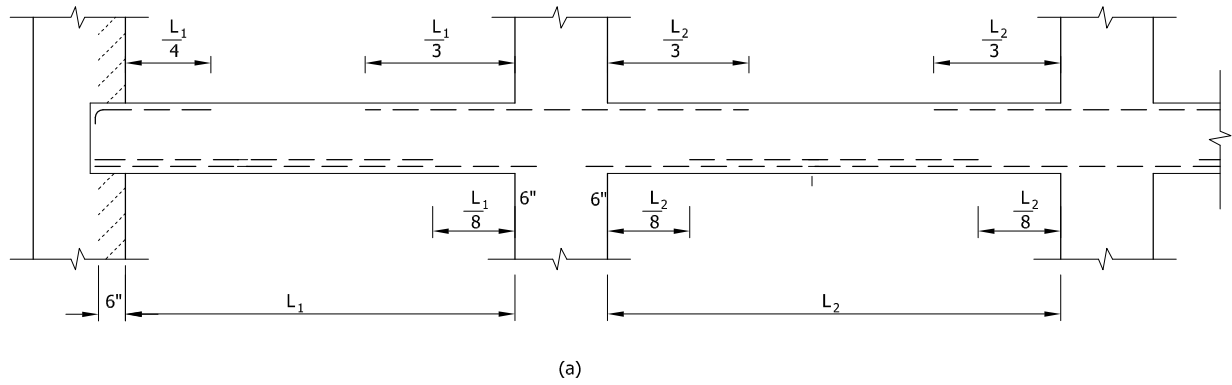
**NEW VISION ENGINEERING CONSULTANT**  
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IJP Road Islamabad.  
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Email: newvisionec@yahoo.com  
Regional Office: 287-A Street # 6, Cavalry Ground ,Lahore  
Ph: +92-42-37250130

PROJECT:	"PROVISION OF MISSING FACILITIES FOR THE SHAIKH AYAZ UNIVERSITY SHIKARPUR"	
TITLE:	TYPICAL DETAILS	

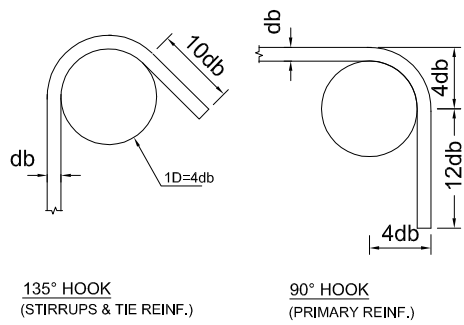
CLIENT:			
SHAIKH AYAZ UNIVERSITY SHIKARPUR			
DESIGNED BY:		APPROVED BY:	
ENG.AHSAN		DATE: MARCH, 2022	
DRAWN BY: RIZWAN		SCALE: N.T.S.	
DRG. NO.		ST-02	



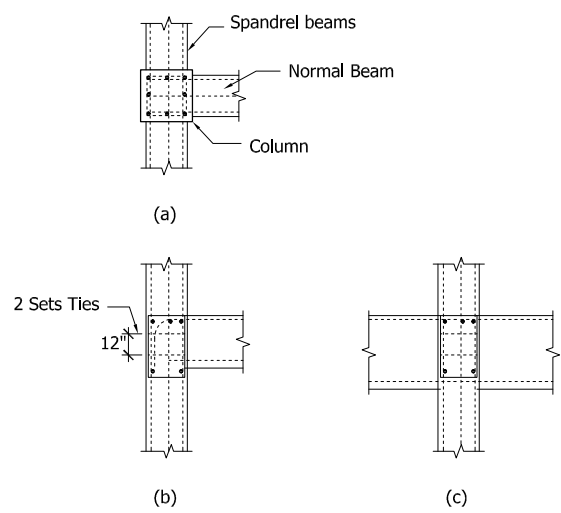
### STANDARD HOOKS



### BEAM REINFORCEMENT DETAILING THROUGH COLUMNS



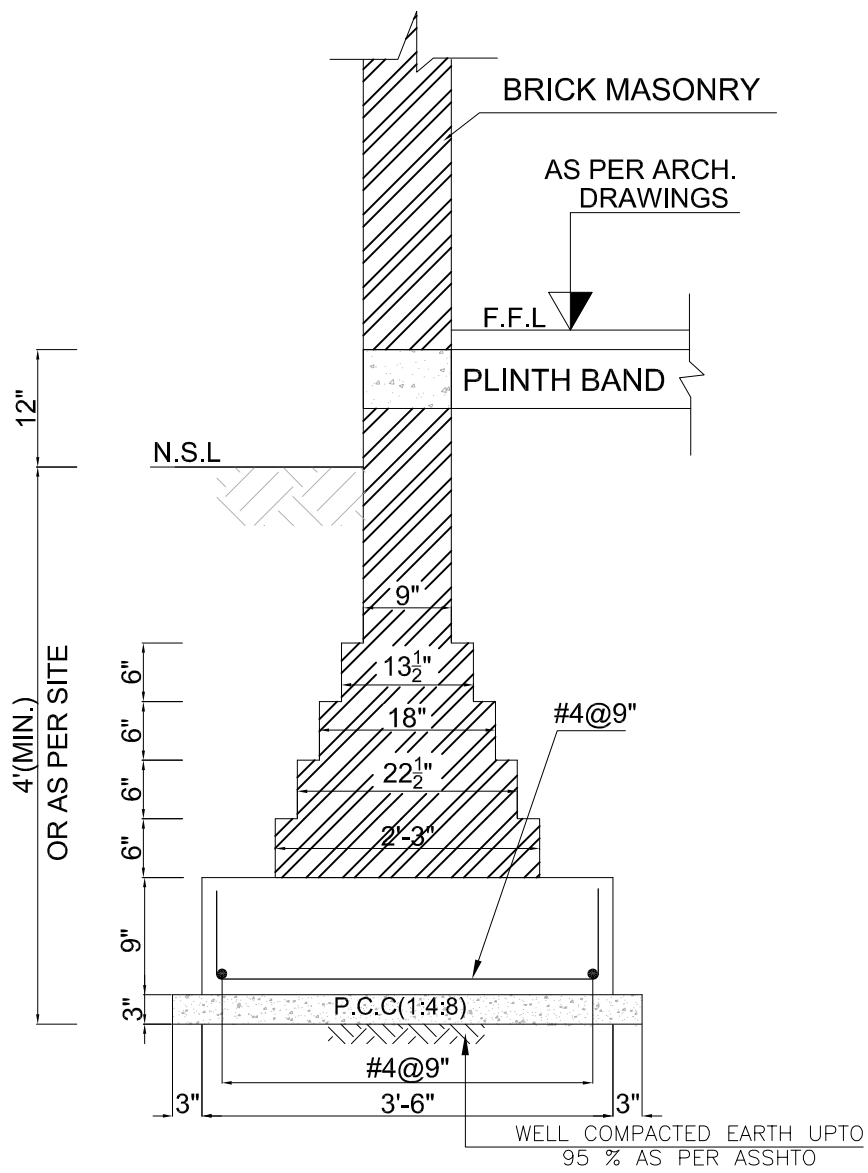
### BAR BENDS



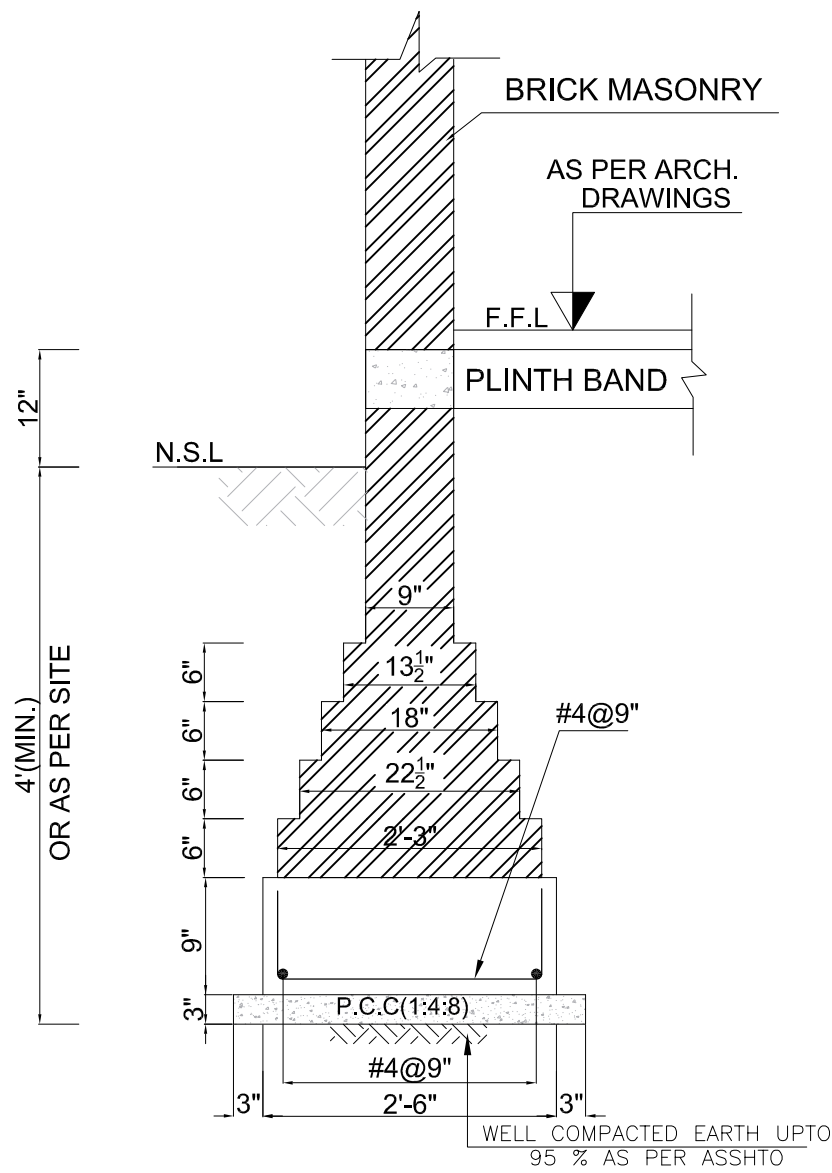
### COLUMN AND BEAM JOINT FOR SEISMIC FORCE CONTROL

ADDITION & REVISION				<b>DESIGNER:</b> <b>NEW VISION ENGINEERING CONSULTANT</b> Head Office: Office No.B-6 Second Floor Masood Arcade IJP Road Islamabad. Ph: +92-51-4848375, Fax: +92-51-4848375 Email: newvisionec@yahoo.com Regional Office: 287-A Street # 6, Cavalry Ground ,Lahore Ph: +92-42-37250130	<b>PROJECT:</b> <b>"PROVISION OF MISSING FACILITIES FOR THE SHAIKH AYAZ UNIVERSITY SHIKARPUR"</b> <b>TITLE:</b> <b>TYPICAL DETAILS</b>	<b>CLIENT:</b> <b>SHAIKH AYAZ UNIVERSITY SHIKARPUR</b>		
NO.	REV.	NO.	DATE			DESIGNED BY:	APPROVED BY:	DATE:
						ENG.AHSAN		MARCH, 2022
						DRAWN BY:	JOB NO.	SCALE:
						RIZWAN		N.T.S.
						DRG. NO.	ST-03	

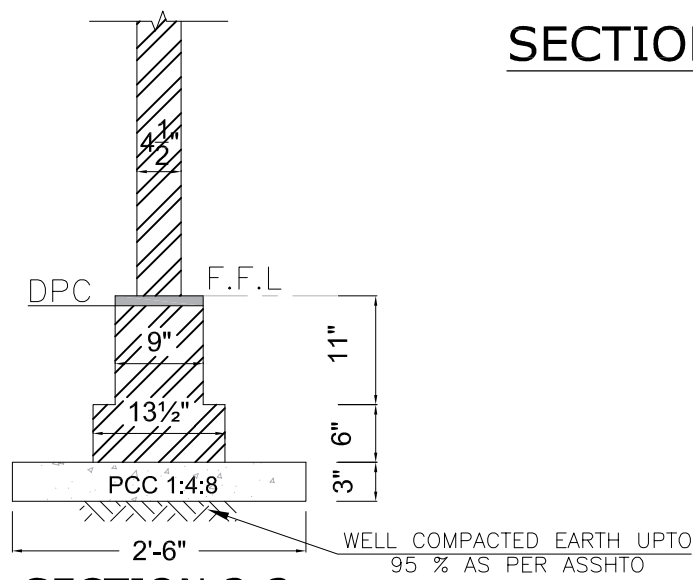




**SECTION 1-1**



**SECTION 2-2**



**SECTION 3-3**

ADDITION & REVISION				
NO.	REV.	DATE	DESCRIPTION	DES. BY / CHK. BY / APP. BY

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Email: newvisionec@yahoo.com

Regional Office: 287-A Street # 6, Cavalry Ground ,Lahore  
Ph: +92-42-37250130

PROJECT:

**"PROVISION OF MISSING FACILITIES FOR THE  
SHAIKH AYAZ UNIVERSITY SHIKARPUR"**

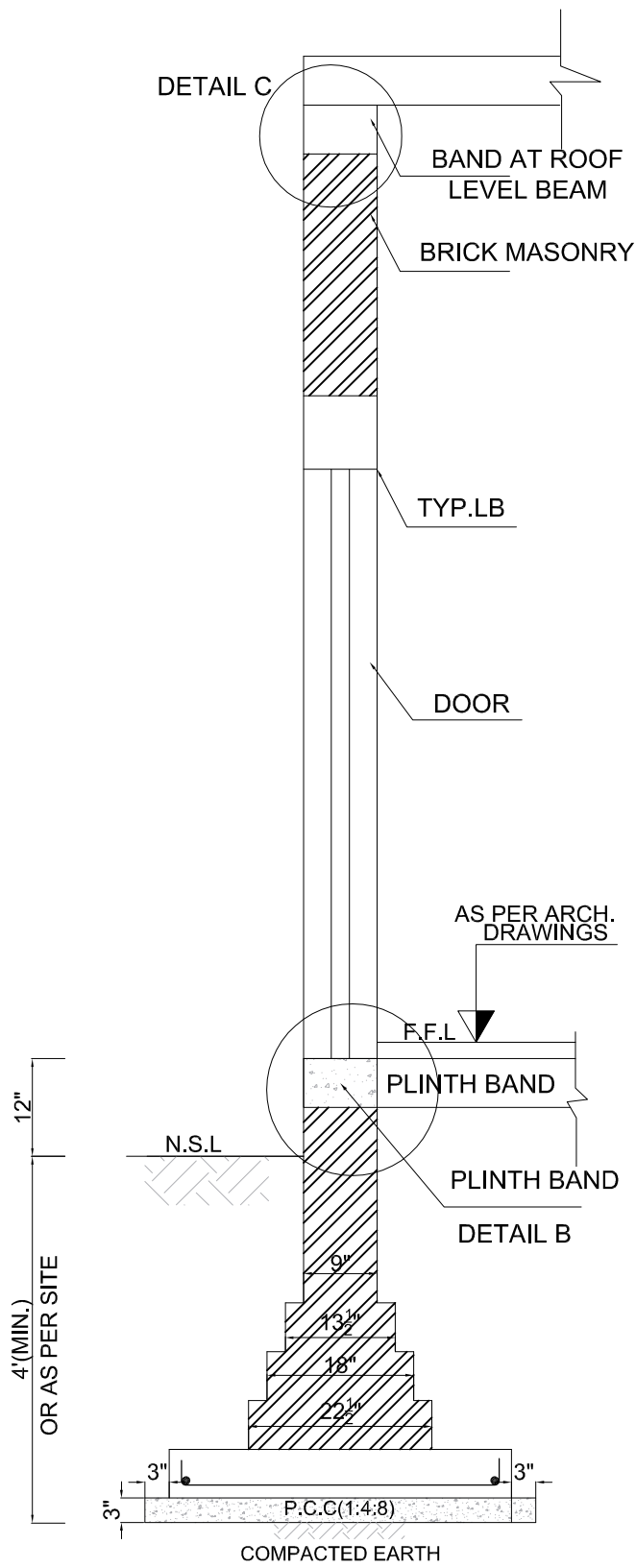
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**FOUNDATION  
SECTION DETAIL**

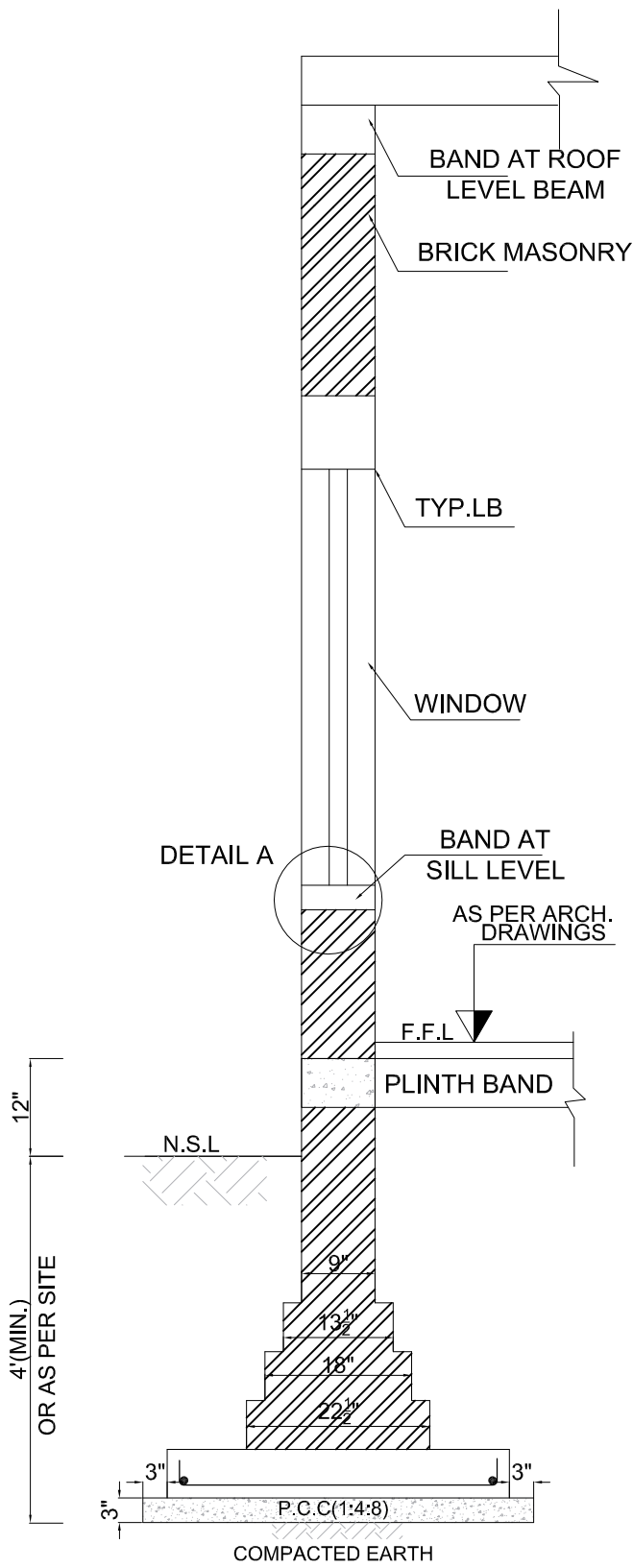
CLIENT:

**SHAIKH AYAZ UNIVERSITY SHIKARPUR**

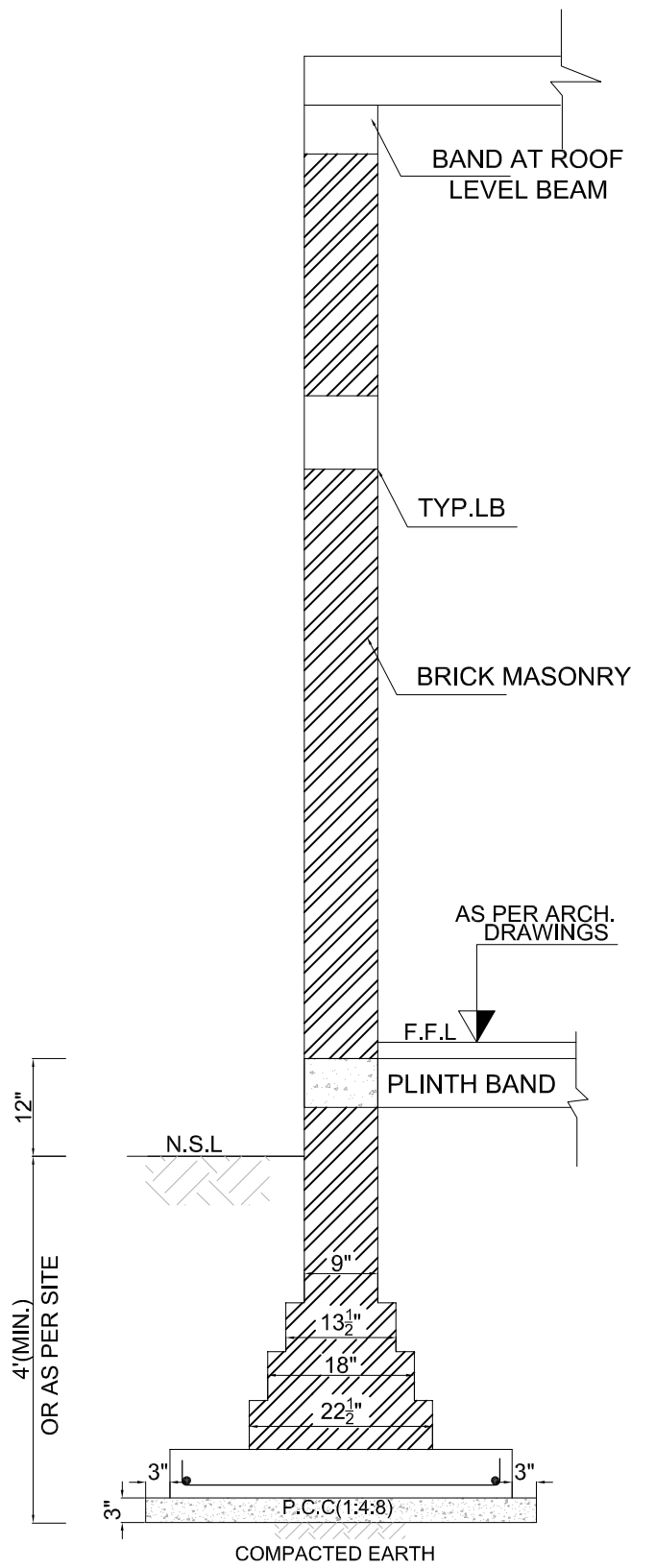
DESIGNED BY: ENG.AHSAN	APPROVED BY:	DATE: MARCH, 2022
DRAWN BY: RIZWAN	JOB NO.	SCALE: N.T.S.
DRG. NO.		ST-05



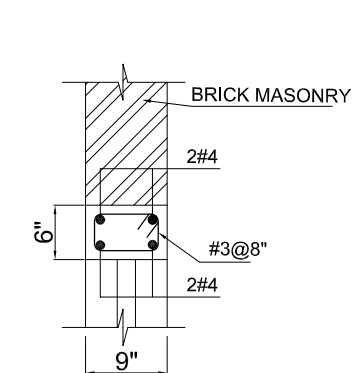
FOOTING BELOW DOOR OPENING



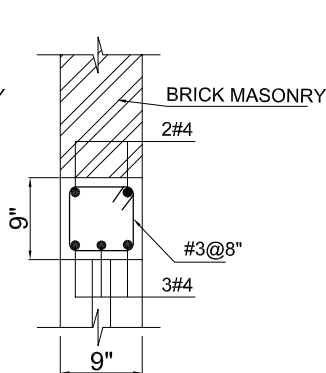
FOOTING BELOW WINDOW OPENING



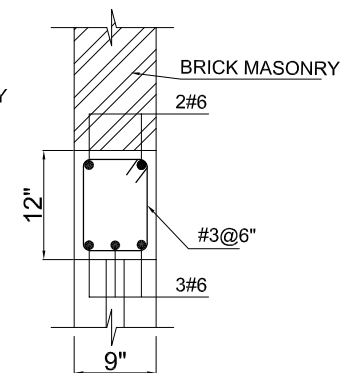
FOOTING BELOW MASONRY OPENING



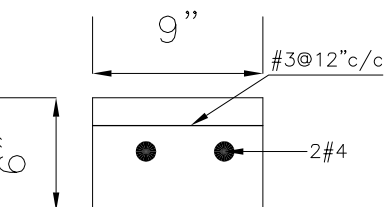
SEC. OF TYP.LB  
AT OPENINGS  
UPTO 6' LENGTH



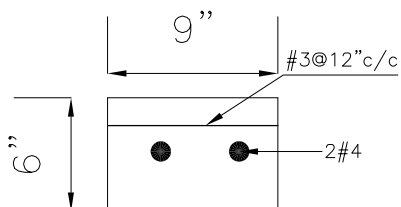
SEC. OF TYP.LB  
AT OPENINGS  
UPTO 10' LENGTH



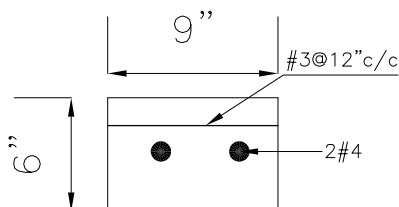
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AT OPENINGS  
UPTO 15' LENGTH



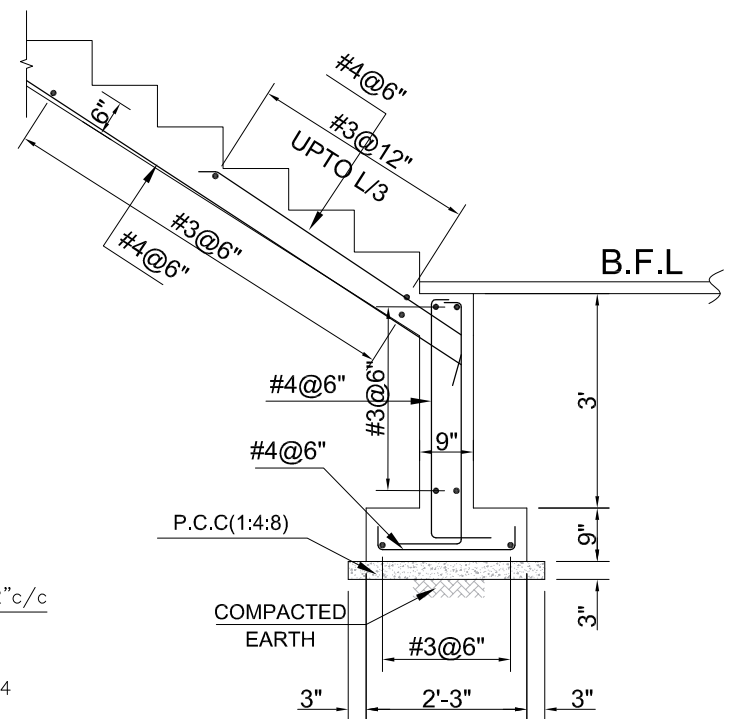
DETAIL A  
BAND AT SILL LEVEL



DETAIL B  
PLINTH BAND



DETAIL C  
BAND AT ROOF LEVEL



STAIR CASE SECTION

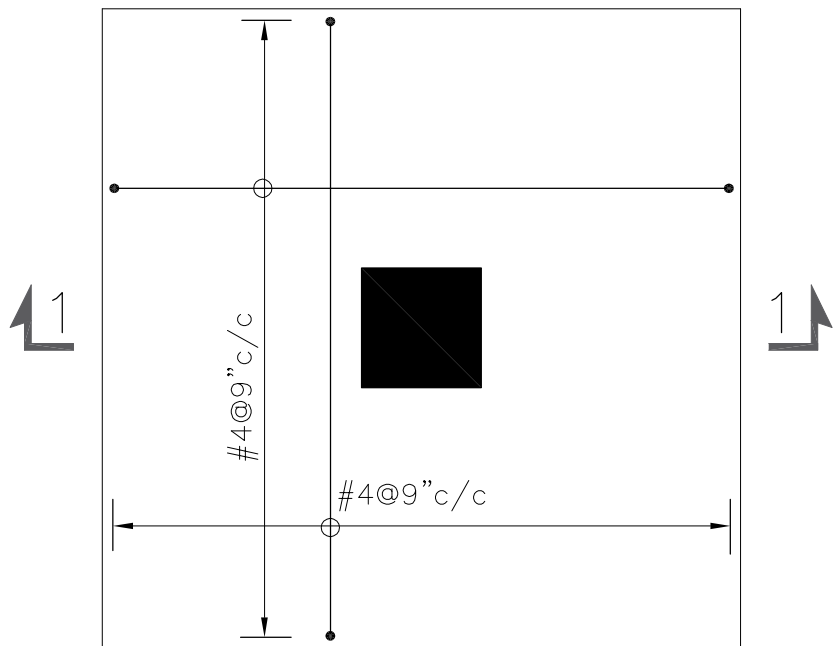
ADDITION & REVISION				
NO.	REV.	DATE	DESCRIPTION	DES. BY / CHK. BY / APP. BY

DESIGNER: **NEW VISION ENGINEERING CONSULTANT**  
 Head Office: Office No.B-6 Second Floor Masood Arcade  
 IJP Road Islamabad.  
 Ph: +92-51-4848375, Fax: +92-51-4848375  
 Email: newvisionec@yahoo.com  
 Regional Office: 287-A Street # 6, Cavalry Ground ,Lahore  
 Ph: +92-42-37250130

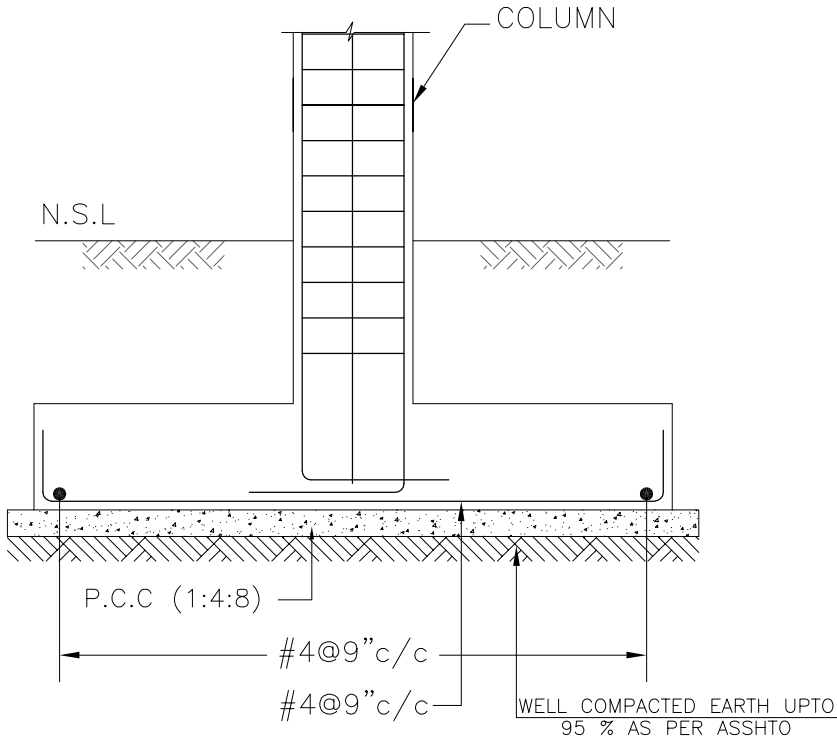
PROJECT: **"PROVISION OF MISSING FACILITIES FOR THE  
 SHAIKH AYAZ UNIVERSITY SHIKARPUR"**  
 TITLE: **TYPICAL FOUNDATION SECTION  
 DETAILS**

CLIENT: **SHAIKH AYAZ UNIVERSITY SHIKARPUR**  
 DESIGNED BY: **ENG.AHSAN** APPROVED BY:  DATE: **MARCH, 2022**  
 DRAWN BY: **RIZWAN** JOB NO.  SCALE: **N.T.S.**  
 DRG. NO. **ST-06**

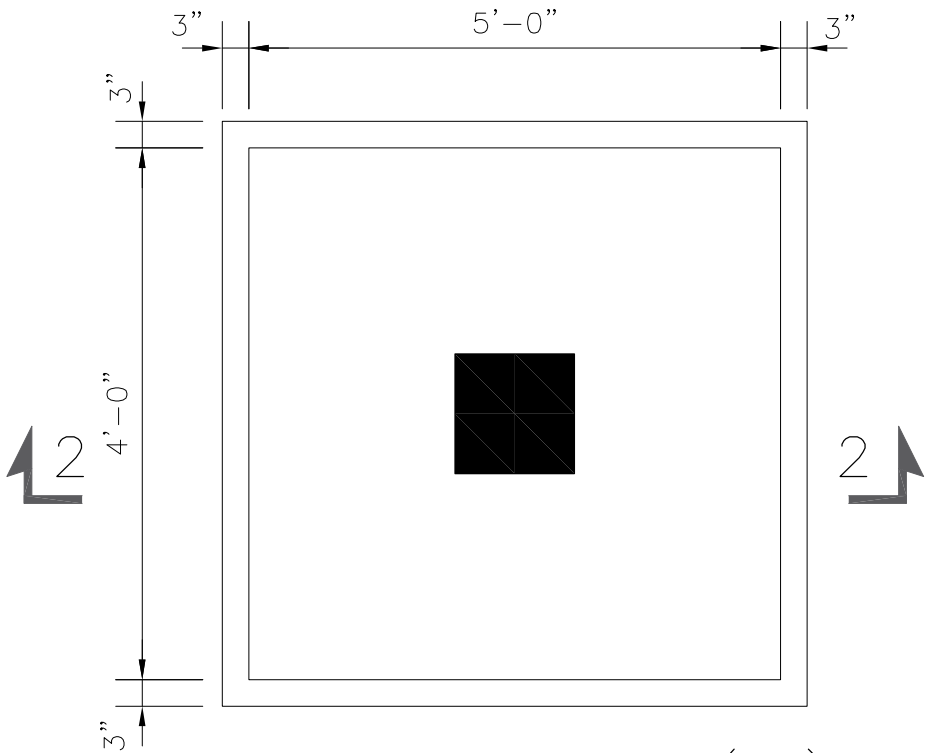




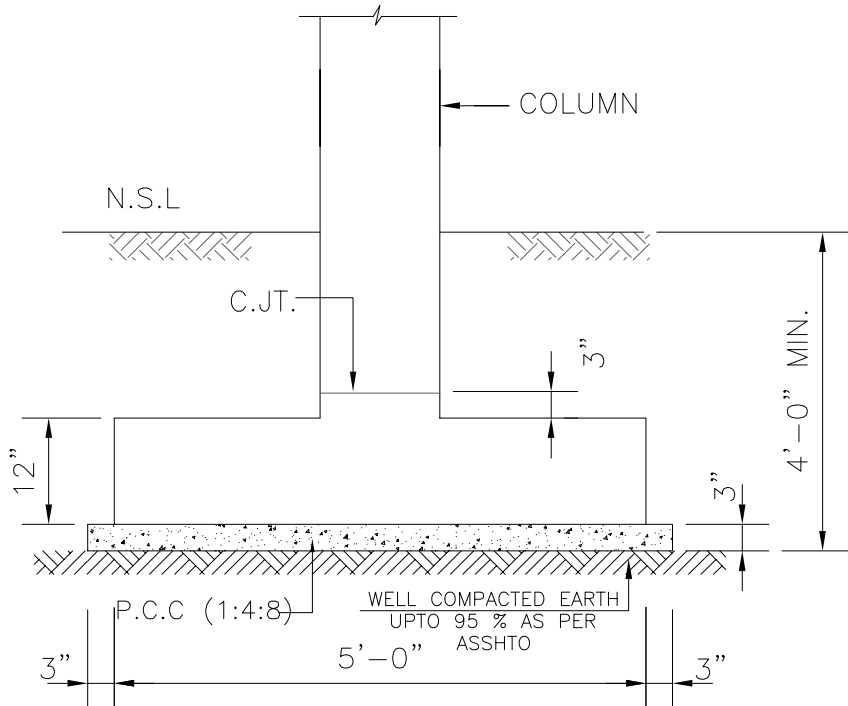
ISOLATED FOOTING (F1)  
REINFORCEMENT DETAILS



SECTION 1-1  
REINFORCEMENT DETAILS



ISOLATED FOOTING (F1)  
CONCRETE OUTLINE



SECTION 2-2  
CONCRETE OUTLINE

ADDITION & REVISION				
NO.	REV.	DATE	DESCRIPTION	DES. BY / CHK. BY / APP. BY

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IJP Road Islamabad.  
Ph: +92-51-4848375, Fax: +92-51-4848375  
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Regional Office: 287-A Street # 6, Cavalry Ground ,Lahore  
Ph: +92-42-37250130

PROJECT:

**"PROVISION OF MISSING FACILITIES FOR THE  
SHAIKH AYAZ UNIVERSITY SHIKARPUR"**

TITLE:

**FOUNDATION SECTION DETAILS**

CLIENT:

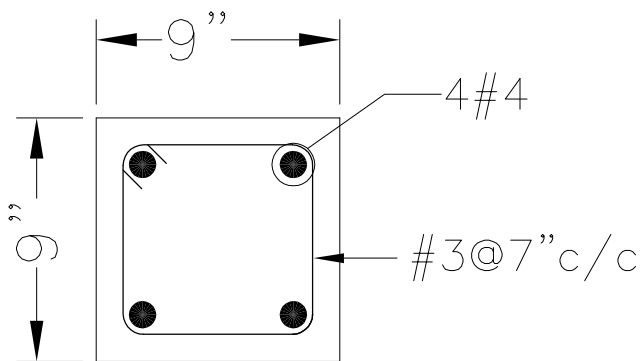
**SHAIKH AYAZ UNIVERSITY SHIKARPUR**

DESIGNED BY:	APPROVED BY:	DATE:
ENG.AHSAN		MARCH, 2022
DRAWN BY:	JOB NO.	SCALE:
RIZWAN		N.T.S.
DRG. NO.	ST-07	

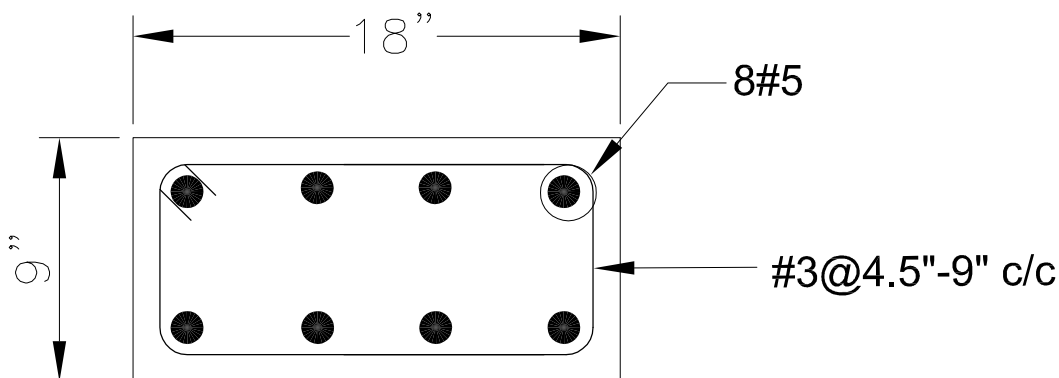




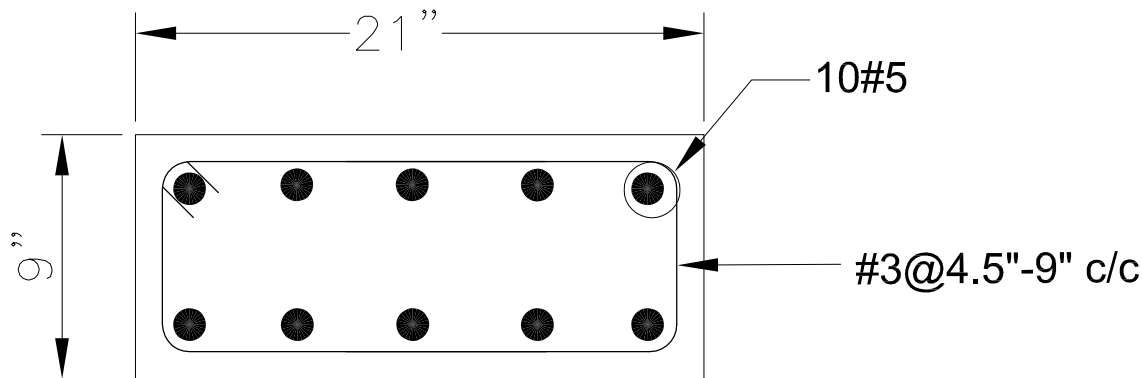
CLIENT:		
SHAIKH AYAZ UNIVERSITY SHIKARPUR		
DESIGNED BY: ENG.AHSAN	APPROVED BY:	DATE: MARCH, 2022
DRAWN BY: RIZWAN	JOB NO.	SCALE: N.T.S.
DRG. NO.		ST-08



COLUMN  
C1



COLUMN  
C2



COLUMN  
C3

ADDITION & REVISION				
NO.	REV.	NO.	DATE	DESCRIPTION

DESIGNER:

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IJP Road Islamabad.  
Ph: +92-51-4848375, Fax: +92-51-4848375  
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Regional Office: 287-A Street # 6, Cavalry Ground ,Lahore  
Ph: +92-42-37250130



PROJECT:

**"PROVISION OF MISSING FACILITIES FOR THE  
SHAIKH AYAZ UNIVERSITY SHIKARPUR"**

TITLE:

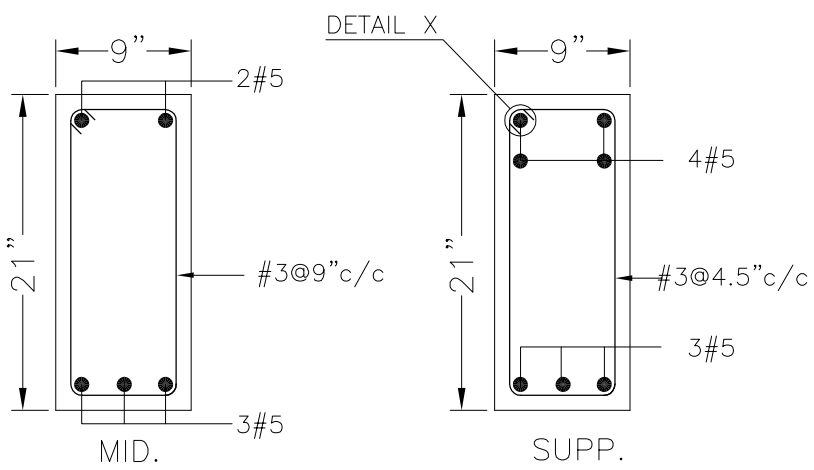
**COLUMN SECTION DETAILS**

CLIENT:

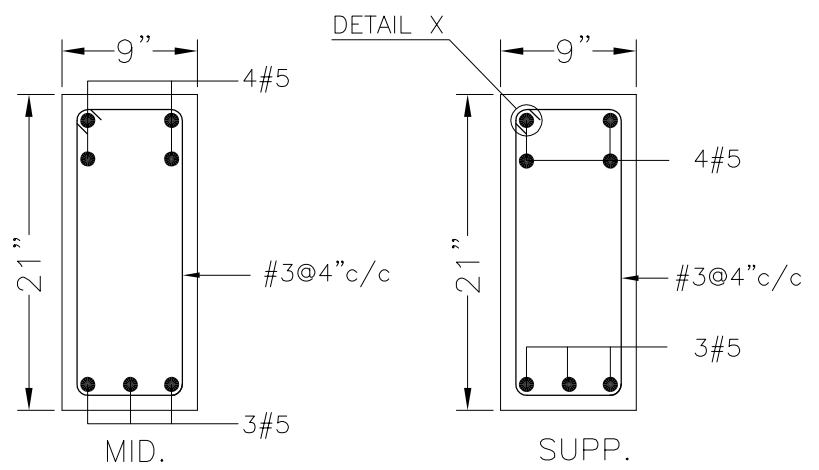
**SHAIKH AYAZ UNIVERSITY SHIKARPUR**

DESIGNED BY: ENG.AHSAN	APPROVED BY:	DATE: MARCH, 2022
DRAWN BY: RIZWAN	JOB NO.	SCALE: N.T.S.
DRG. NO.		ST-09

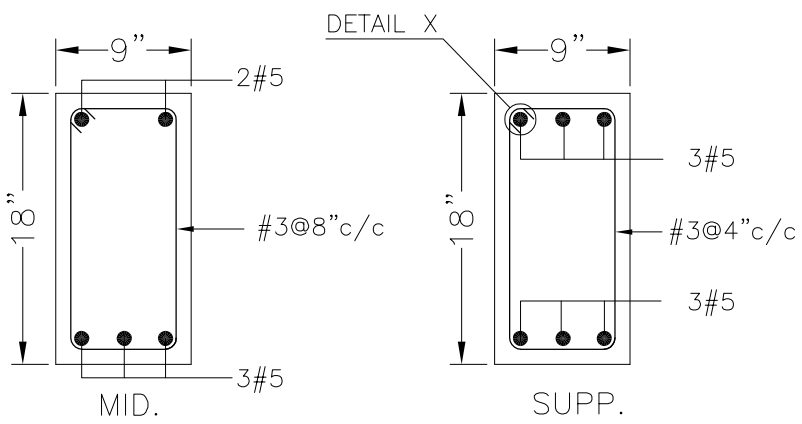




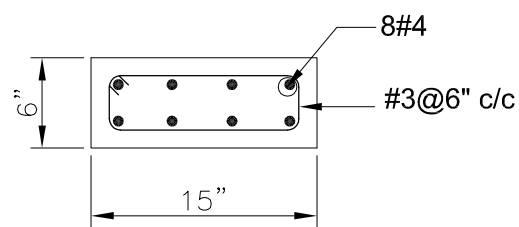
TYPICAL SEC. OF B-1



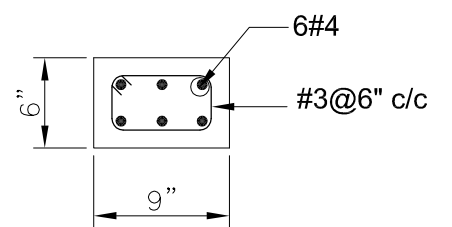
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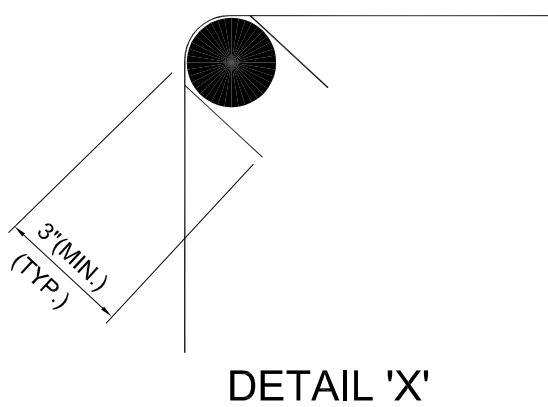
TYPICAL SEC. OF B-2



TYPICAL SEC. OF CB-1



TYPICAL SEC. OF CB-2



DETAIL 'X'

ADDITION & REVISION				
NO.	REV.	DATE	DESCRIPTION	DES. BY / CHK. BY / APP. BY

DESIGNER:

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Ph: +92-51-4848375, Fax: +92-51-4848375  
Email: newvisionec@yahoo.com

Regional Office: 287-A Street # 6, Cavalry Ground ,Lahore  
Ph: +92-42-37250130

PROJECT:

**"PROVISION OF MISSING FACILITIES FOR THE  
SHAIKH AYAZ UNIVERSITY SHIKARPUR"**

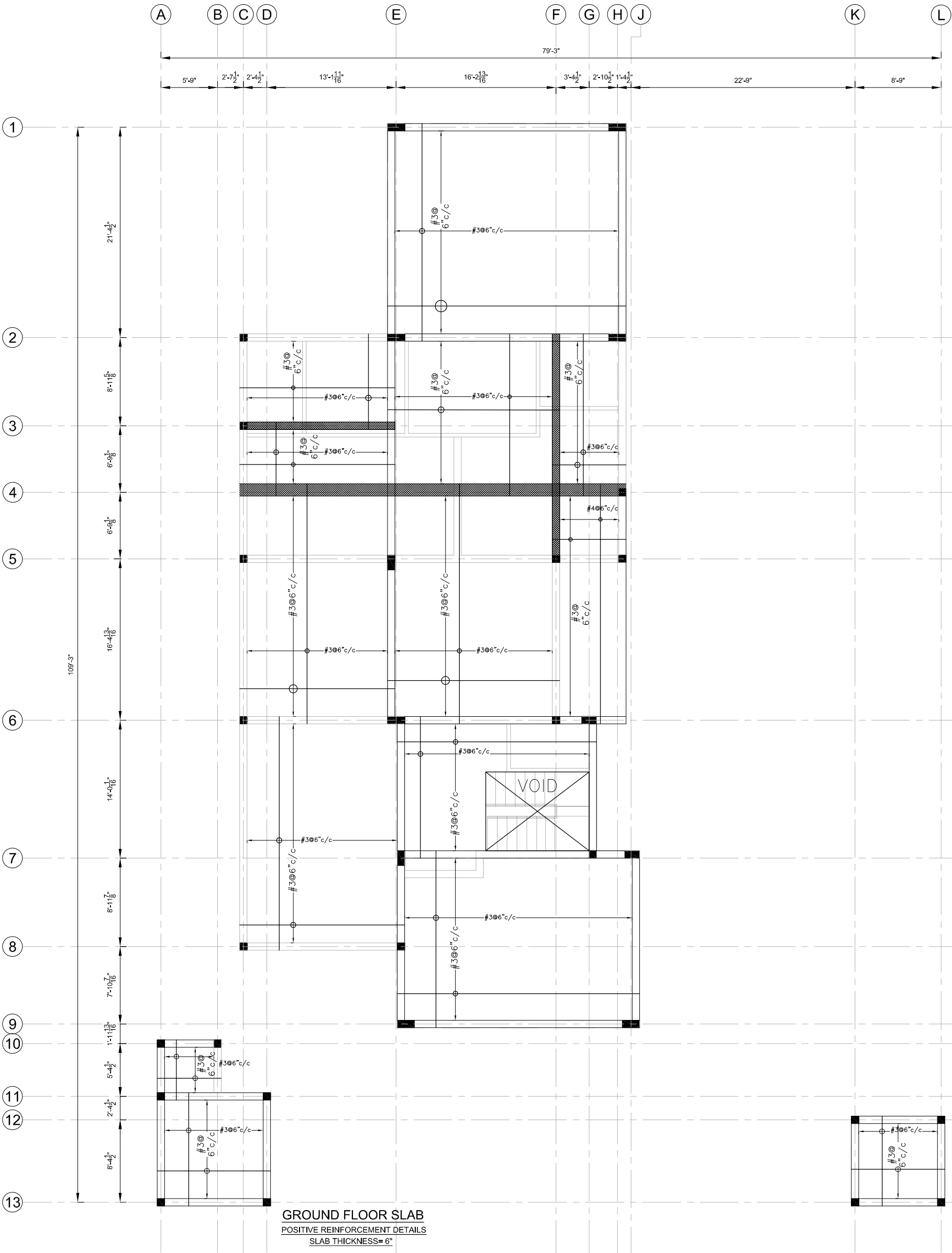
TITLE:

**GROUND FLOOR BEAM SECTION**

CLIENT:

**SHAIKH AYAZ UNIVERSITY SHIKARPUR**


DESIGNED BY: ENG.AHSAN	APPROVED BY:	DATE: MARCH, 2022
DRAWN BY: RIZWAN	JOB NO.	SCALE: N.T.S.
DRG. NO.		ST-11



GROUND FLOOR SLAB  
POSITIVE REINFORCEMENT DETAILS  
SLAB THICKNESS= 6"

ADDITION & REVISION				
NO.	REV.	NO.	DATE	DESCRIPTION
				DES. BY (CHK. BY) APP. BY

DESIGNER:



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Email: newvisionec@yahoo.com  
Regional Office: 287-A Street # 6, Cavalry Ground ,Lahore  
Ph: +92-42-37250130

PROJECT:

"PROVISION OF MISSING FACILITIES FOR THE  
SHAIKH AYAZ UNIVERSITY SHIKARPUR"

TITLE:

GROUND FLOOR SLAB LAYOUT  
POSITIVE REINFORCEMENT  
DETAIL

CLIENT:

SHAIKH AYAZ UNIVERSITY SHIKARPUR

DESIGNED BY:

ENG.AHSAN

APPROVED BY:

DATE:

MARCH, 2022

DRAWN BY:

RIZWAN

JOB NO.

SCALE:

N.T.S.

DRG. NO.

ST-12





ADDITION & REVISION						
ADD. REV. NO.	DATE	DESCRIPTION	DES. BY	CHK. BY	APP. BY	



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Regional Office: 287-A Street # 6, Cavalry Ground ,Lahore  
Ph: +92-42-37250130

PROJECT:

**"PROVISION OF MISSING FACILITIES FOR THE  
SHAIKH AYAZ UNIVERSITY SHIKARPUR"**

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TITLE:

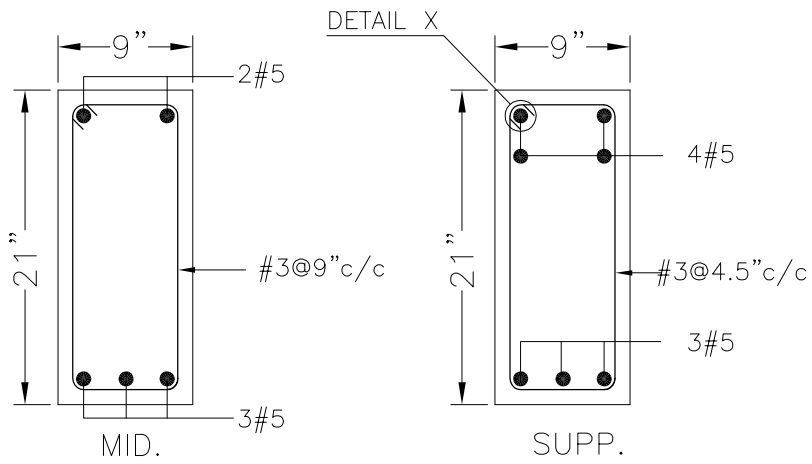
**FIRST FLOOR BEAM LAYOUT  
PLAN**

CLIENT:

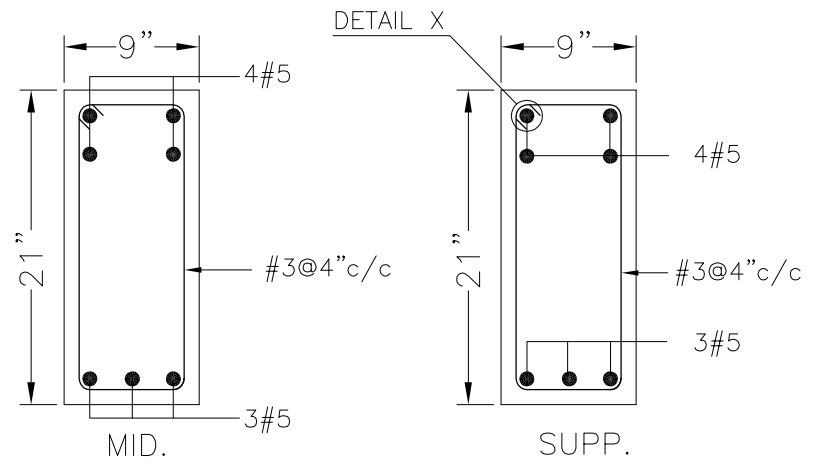
**SHAIKH AYAZ UNIVERSITY SHIKARPUR**

<b>DESIGNED BY:</b> ENG.AHSAN	<b>APPROVED BY:</b>	<b>DATE:</b> MARCH, 2022
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<b>DRG. NO.</b>		

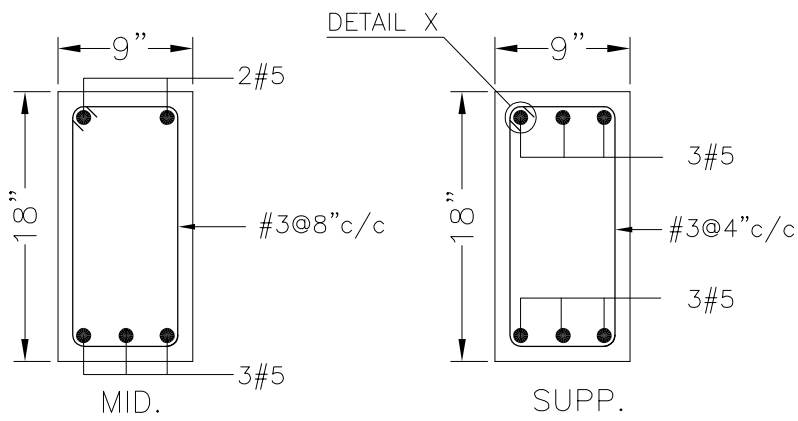
ST-14



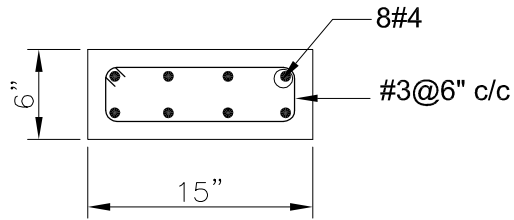
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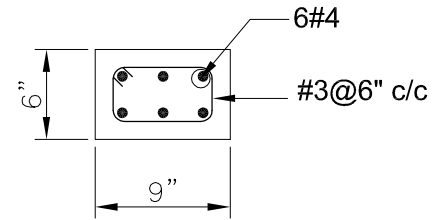
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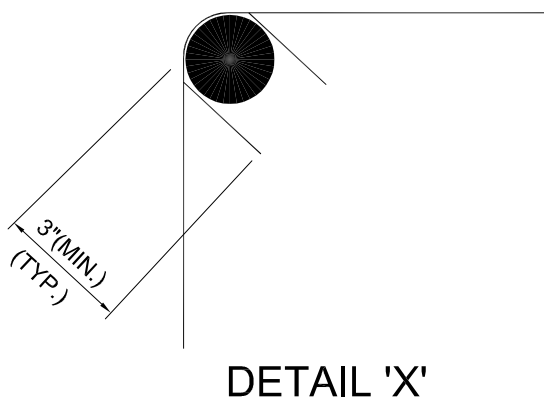
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TYPICAL SEC. OF CB-1



TYPICAL SEC. OF CB-2



ADDITION & REVISION				
NO.	REV.	DATE	DESCRIPTION	DES. BY / CHK. BY / APP. BY

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Email: newvisionec@yahoo.com

Regional Office: 287-A Street # 6, Cavalry Ground ,Lahore  
Ph: +92-42-37250130



PROJECT:

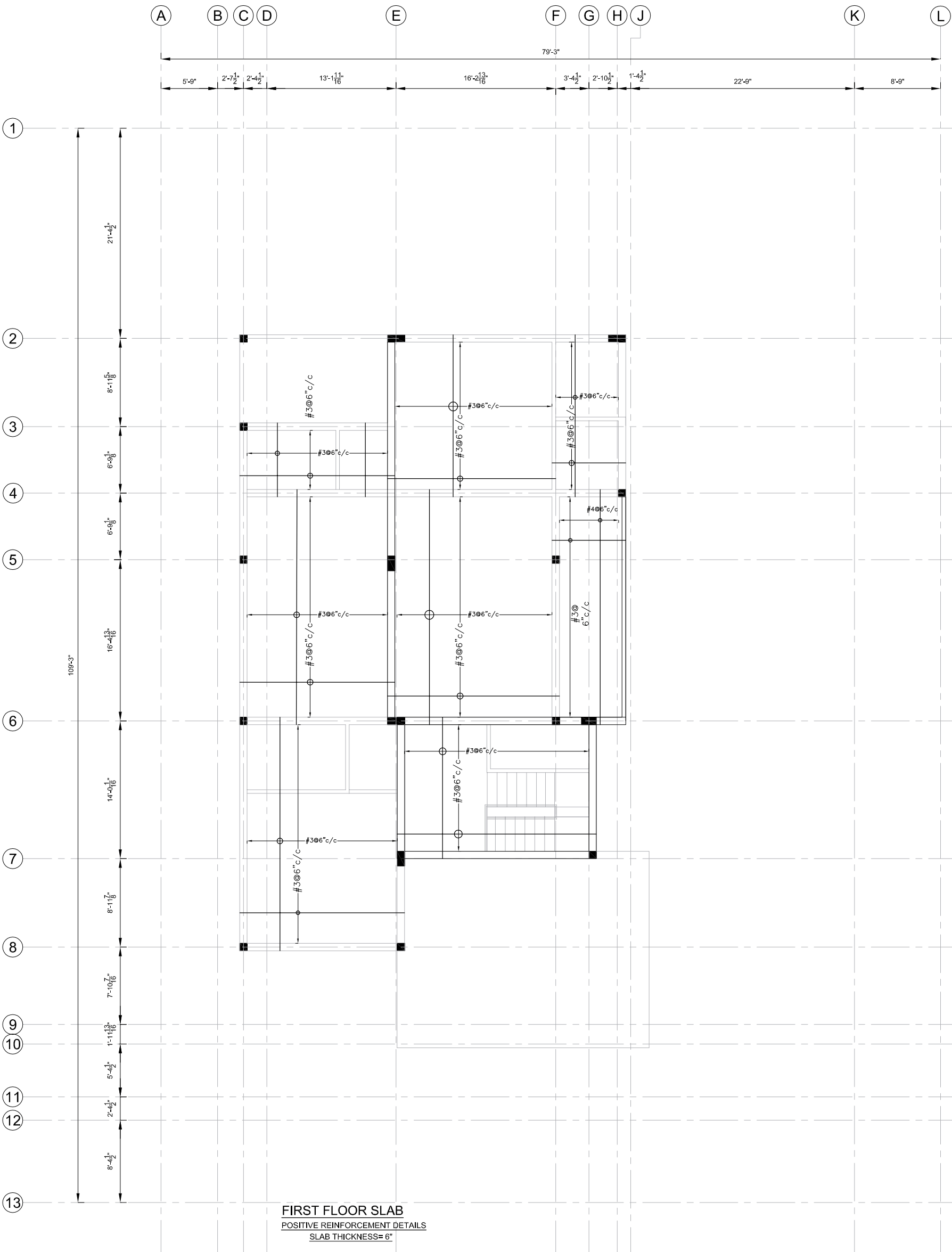
**"PROVISION OF MISSING FACILITIES FOR THE  
SHAIKH AYAZ UNIVERSITY SHIKARPUR"**

TITLE:

**FIRST FLOOR BEAM SECTION**

CLIENT:		
SHAIKH AYAZ UNIVERSITY SHIKARPUR		
DESIGNED BY:	APPROVED BY:	DATE:
ENG.AHSAN		MARCH, 2022
DRAWN BY:	JOB NO.	SCALE:
RIZWAN		N.T.S.
DRG. NO.	ST-15	





FIRST FLOOR SLAB  
POSITIVE REINFORCEMENT DETAILS  
SLAB THICKNESS= 6"

ADDITION & REVISION				
NO.	REV.	DATE	DESCRIPTION	DES. BY / CHK. BY / APP. BY

DESIGNER:  
**NEW VISION ENGINEERING CONSULTANT**  
Head Office: Office No.B-6 Second Floor Masood Arcade  
IJP Road Islamabad.  
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Regional Office: 287-A Street # 6, Cavalry Ground ,Lahore  
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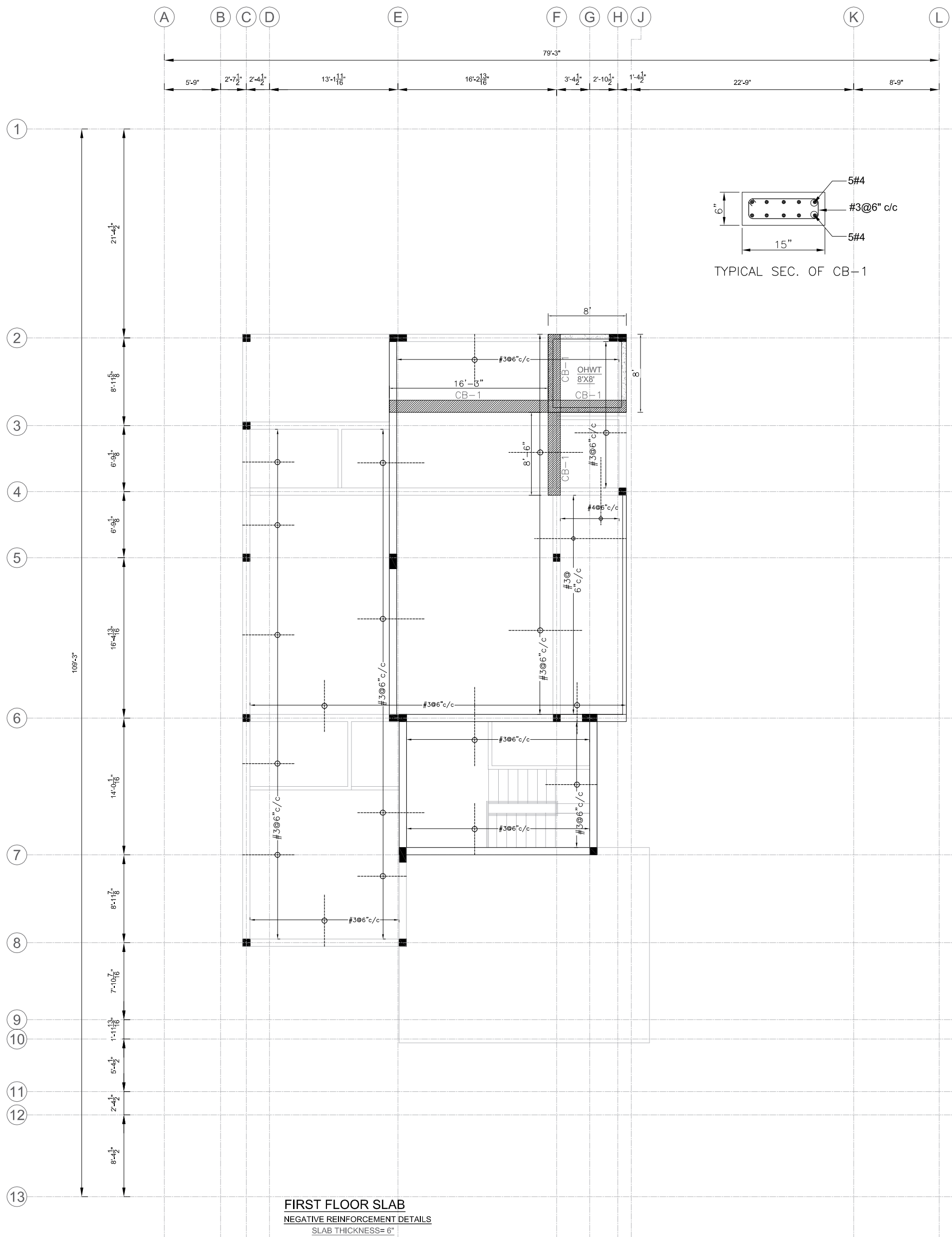


PROJECT:  
**"PROVISION OF MISSING FACILITIES FOR THE  
SHAIKH AYAZ UNIVERSITY SHIKARPUR"**

TITLE:  
**FIRST FLOOR SLAB LAYOUT  
POSITIVE REINFORCEMENT  
DETAIL**

CLIENT:  
**SHAIKH AYAZ UNIVERSITY SHIKARPUR**

DESIGNED BY: ENG.AHSAN	APPROVED BY:	DATE: MARCH, 2022
DRAWN BY: RIZWAN	JOB NO.	SCALE: N.T.S.
DRG. NO.	ST-16	



TYPICAL SEC. OF CB-1

ADDITION & REVISION						
ADD./REV. NO.	DATE	DESCRIPTION	DES. BY	CHEK. BY	APP. BY	

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Head Office: Office No.B-6 Second Floor Masood Arcade  
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Ph: +92-51-4848375, Fax: +92-51-4848375  
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Regional Office: 287-A Street # 6, Cavalry Ground ,Lahore  
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PROJECT:	<b>"PROVISION OF MISSING FACILITIES FOR THE SHAikh AYAZ UNIVERSITY SHIKARPUR"</b>
TITLE:	<b>FIRST FLOOR SLAB LAYOUT NEGATIVE REINFORCEMENT DETAIL</b>

CLIENT:		
SHAIKH AYAZ UNIVERSITY SHIKARPUR		
DESIGNED BY: ENG.AHSAN	APPROVED BY:	DATE : MARCH, 2022
DRAWN BY: RIZWAN	JOB NO.	SCALE: N.T.S.
DRG. NO.		ST-17

[illegible]

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**"PROVISION OF MISSING FACILITIES FOR THE  
SHAikh AYAZ UNIVERSITY SHIKARPUR"**

### OHW TANK DETAIL

SHAIKH AYAZ UNIVERSITY SHIKARPUR

DATE : APRIL, 2022



SCALE: N.T.S.

ST-18



**ELECTRICAL**

LIST OF DRAWINGS		
S.NO.	DRAWING TITLE	DRG. NO
ELECTRICAL DRAWINGS		
1	LIST OF DRAWING	EL-00
2	GENERAL NOTES	EL-01
3	LEGEND AND SYMBOLS	EL-02
4	EARTHING DETAIL	EL-03
5	DB PLANS	EL-04
6	TYPICAL DETAIL-01	EL-05
7	GROUND FLOOR PLAN (LIGHTING LAYOUT)	EL-06
8	FIRST FLOOR PLAN (LIGHTING LAYOUT)	EL-07
9	GROUND FLOOR PLAN (POWER LAYOUT)	EL-08
10	FIRST FLOOR PLAN (POWER LAYOUT)	EL-09

ADDITION & REVISION						DESIGNER: 	PROJECT: "PROVISION OF MISSING FACILITIES FOR THE SHAIKH AYAZ UNIVERSITY SHIKARPUR"	CLIENT: SHAIKH AYAZ UNIVERSITY SHIKARPUR		
								DESIGNED BY: ENG.SHADAB	APPROVED BY:	DATE : MARCH, 2022
							TITLE:  LIST OF DRAWINGS	DRAWN BY: RIZWAN	JOB NO.	SCALE: N.T.S
ADD. REV. NO.	DATE	DESCRIPTION	DES. BY	CHK. BY	APP. BY			DRG. NO.	EL-00	

# GENERAL NOTES

## ELECTRICAL SYSTEMS

1. FOLLOWING NOTES SHALL IN GENERAL APPLY TO ALL ELECTRICAL DRAWINGS. THE INSTRUCTIONS IN THESE NOTES SHALL BE FOLLOWED UNLESS STATED OTHERWISE.
2. THESE NOTES SHALL BE APPLICABLE TO THE ENTIRE ELECTRICAL WORKS, IF THE SITE CONDITIONS NECESSITATE ANY ALTERATIONS OR DEVIATIONS THE DIRECTIONS OF THE ENGINEER SHALL BE OBSERVED AS FINAL INSTRUCTIONS.
3. ALL ELECTRICAL DRAWINGS SHALL BE READ IN CONJUNCTION WITH BOQ, TECHNICAL SPECIFICATIONS, ARCHITECTURAL, STRUCTURAL, PLUMBING AND HVAC DRAWINGS & ALL OTHER RELEVANT DETAILS.
4. DIMENSIONS/MEASUREMENTS GIVEN IN LAYOUT AND DETAILED DRAWINGS ARE APPROXIMATE. THE CONTRACTOR SHALL BE RESPONSIBLE TO CALCULATE THE ACTUAL DIMENSIONS/ MEASUREMENTS ACCORDING TO STRUCTURAL AND ARCHITECTURAL DRAWINGS.
5. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS WITH ALL RELEVANT DETAILS TO THE ENGINEER FOR APPROVAL ACCORDING TO THE GENERAL CONDITIONS OF CONTRACT WELL IN TIME BEFORE COMMENCEMENT OF THAT WORK.
6. PROPER CO-ORDINATION OF ELECTRICAL WORKS WITH OTHER SERVICES SHALL BE CARRIED OUT AT SITE.
7. ALL NON - CURRENT CARRYING PARTS I.e. OUTER CASINGS OF EQUIPMENT SUCH AS HT & LT PANELS, DISTRIBUTIONS BOARDS, CABLE TRAYS, AUXILIARY CONSTRUCTIONS FOR EQUIPMENT ETC. SHALL BE CONNECTED TO THE GROUNDING/ EARTHING SYSTEM AT REQUIRED NUMBER OF POINTS WITH SPECIFIED SIZES OF CONDUCTORS. WATER PIPES ALONG ELECTRICAL LINE SHALL BE BONDED TO THE EARTHING SYSTEM WITH 10 sq.mm. SINGLE CORE, COPPER CONDUCTOR PVC CABLE.
8. ELECTRICAL POINTS FOR EQUIPMENT SHALL BE INSTALLED IN CO-ORDINATION WITH THE RELEVANT DRAWINGS OF OTHER SERVICES, SUCH AS COMMUNICATION SYSTMS, HVAC, PLUMBING ETC. THE LOCATION ON ELECTRICAL DRAWINGS IS ONLY INDICATIVE.
9. ARRANGEMENT OF ELECTRICAL EQUIPMENTS ON ELECTRICAL DRAWINGS ARE TENTATIVE. EXACT ARRANGEMENT OF EQUIPMENTS SHALL BE MADE IN VIEW OF ITS PHYSICAL DIMENSIONS AND EASE OF MAINTENANCE. AND AS PER SITE REQUIREMENTS.
10. LOADS ON ALL PHASES SHALL BE BALANCED AT THE TESTING/ COMMISSIONING STAGE.
11. CONDUIT/DUCT RUN UNDER FLOOR SHALL HAVE A MINIMUM COVER OF TWO INCHES FROM TOP OF CONDUIT/DUCT TO FINISH FLOOR LEVEL.
12. RUN GREEN-YELLOW OR GREEN SINGLE CORE PVC INSULATED COPPER CONDUCTOR CABLE OF SPECIFIED SIZES AS PROTECTIVE EARTH CONDUCTOR (ECC) ALL ALONG LIGHT AND POWER WIRING. WHEREVER THE SIZE IS NOT SPECIFIED THE FOLLOWING CRITERIA SHALL BE OBSERVED TO DETERMINE MINIMUM CROSS SECTIONAL AREA OF EARTH CONTINUITY CONDUCTOR (ECC) IN RELATION TO THE AREA OF ITS PHASE CONDUCTORS. RUN SEPARATE ECC FOR EACH CIRCUIT.
  - ECC & PHASE CONDUCTOR OF SAME SIZE FOR UPTO AND INCLUDING 16 SQMM CABLES
  - 16 SQMM ECC FOR PHASE CONDUCTOR OF 16 SQMM, 25SQMM & 35 SQMM CABLES
  - FOR CABLES OF 50 SQMM AND ABOVE SIZES, ECC IS HALF SIZE OF PHASE CONDUCTOR.
  - MAXIMUM SIZE OF ECC IS 70 SQMM.

## ELECTRICAL SYSTEMS

13. THE MAXIMUM CAPACITY OF PVC CONDUITS FOR SIMULTANEOUS DRAWING OF PVC INSULATED CABLES SHALL BE DETERMINED AS PER BS 4607. THE FOLLOWING TABLE SHALL BE USED TO DETERMINE THE MAXIMUM NUMBER OF CABLES.

S. #	NOMINAL CONDUCTOR SIZE(SQMM)	NO. & DIA OF WIRES	NOMINAL OVERALL DIA	20 MM DIA (3/4" DIA)	25 MM DIA (1" DIA)	32 MM DIA (1 1/4" DIA)
1	1.5	1/1.38	3.1	10	18	30
2	2.5	1/1.78	3.5	8	14	23
3	2.5	7/0.67	3.8	7	12	20
4	4	7/0.85	4.3	5	9	15
5	6	7/1.04	4.9	4	7	12
6	10	7/1.35	6.2	2	4	7
7	16	7/1.70	7.3	-	3	5
8	25	7/2.14	9.0	-	2	3
9	35	19/1.53	10.3	-	-	2

14. NORMAL & EMERGENCY CIRCUITS SHALL RUN IN SEPARATE CONDUITS.
15. ALL WIRING FOR CONTROLS SHALL BE CARRIED OUT WITH 1 CORE PVC CABLES OF SPECIFIED VOLTAGE GRADE AND SIZES.
16. THE WIRING SHALL BE CONTINUOUS LOOPING-IN TYPE AND NO JOINT IN WIRES SHALL BE ALLOWED.
17. THE WIRING SYSTEM SHALL BE CARRIED OUT ONLY AFTER THE CONDUIT SYSTEM IS COMPLETELY INSTALLED AND ALL OUTLET BOXES, ETC. ARE FIXED IN POSITION.
18. MOUNTING HEIGHTS OF ELECTRICAL FITTINGS WHEN MEASURED FROM FINISHED FLOOR LEVEL (F.F.L.) TO THE BOTTOM OF FITTINGS SHALL BE AS UNDER, UNLESS OTHERWISE SHOWN OR INSTRUCTED.

MAIN SWITCH BOARD	48 INCHES
DISTRIBUTION BOARD	48 INCHES
CONTROL PANEL	48 INCHES
ON/OFF PUSH BUTTON STATION	48 INCHES
DIMMER CONTROL UNIT	48 INCHES
LIGHT CONTROL SWITCH (ONE WAY/TWO WAY)	48 INCHES
5A SOCKET OUTLETS IN GENERAL AREAS	10 INCHES
15A SOCKET OUTLETS IN GENERAL AREAS	10 INCHES
20A SOCKET OUTLETS IN GENERAL AREAS	10 INCHES
15A SOCKET OUTLETS IN KITCHEN (ABOVE COUNTER)	10 INCHES
15A SOCKET OUTLETS IN TOILETS	66 INCHES
16A TP 5PIN INDUSTRIAL SOCKET OUTLETS IN LABS.	48 INCHES
32A TP 5PIN INDUSTRIAL SOCKET OUTLETS IN LABS	48 INCHES
63A TP 5PIN INDUSTRIAL SOCKET OUTLETS IN LABS.	48 INCHES
CEILING FAN	96 INCHES
WALL FAN	84 INCHES
EXHAUST FAN	REFER ARCH. DRGS.

## COMMUNICATION SYSTEMS

1. FOLLOWING NOTES SHALL IN GENERAL APPLY TO ALL COMMUNICATION SYSTEMS DRAWINGS. THE INSTRUCTIONS IN THESE NOTES SHALL BE FOLLOWED UNLESS STATED OTHERWISE.
2. THESE NOTES SHALL BE APPLICABLE TO THE ENTIRE COMMUNICATION SYSTEMS WORKS, IF THE SITE CONDITIONS NECESSITATE ANY ALTERATIONS OR DEVIATIONS THE DIRECTIONS OF THE ENGINEER SHALL BE OBSERVED AS FINAL INSTRUCTIONS.
3. ALL COMMUNICATION SYSTEMS DRAWINGS SHALL BE READ IN CONJUNCTION WITH TECHNICAL SPECIFICATIONS, ITEMS OF B.O.Q., ARCHITECTURAL STRUCTURAL, HVAC, PLUMBING DRAWINGS AND ALL OTHER RELEVANT DETAILS.
4. DIMENSIONS/MEASUREMENTS GIVEN IN LAYOUT AND DETAILED DRAWINGS ARE APPROXIMATE. THE CONTRACTOR SHALL BE RESPONSIBLE TO CALCULATE THE ACTUAL DIMENSIONS/MEASUREMENTS ACCORDING TO STRUCTURAL AND ARCHITECTURAL DRAWINGS.
5. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS WITH ALL RELEVANT DETAILS TO THE ENGINEER FOR APPROVAL ACCORDING TO THE GENERAL CONDITIONS OF CONTRACT WELL IN TIME BEFORE COMMENCEMENT OF THAT WORK.
6. PROPER CO-ORDINATION OF COMMUNICATION SYSTEMS WORKS WITH OTHER SERVICES SHALL BE CARRIED OUT AT SITE.
7. TELEPHONE SYSTEM SHALL BE COMPLETE WITH INSTRUMENTS, EQUIPMENT AND INTERCONNECTING WIRING, TELEPHONE EXCHANGE, TELEPHONE OUTLETS, JUNCTION BOXES, CONDUITS OF SPECIFIED SIZES IN THE BUILDING, AND UNDERGROUND PIPES OF SPECIFIED SIZES SHOWN ON DRAWINGS SHALL BE PROVIDED. WHERE SIZE OF CONDUIT/PIPE IS NOT SPECIFIED SUITABLE SIZE SHALL BE INSTALLED AS DIRECTED BY THE ENGINEER.
8. POINTS FOR COMMUNICATION SYSTEMS EQUIPMENT SHALL BE INSTALLED IN CO-ORDINATION WITH THE RELEVANT DRAWINGS OF OTHER SERVICES, SUCH AS ELECTRICAL, HVAC, PLUMBING ETC. THE LOCATION ON COMMUNICATION SYSTEMS DRAWINGS IS ONLY INDICATIVE.
9. ARRANGEMENT OF COMMUNICATION SYSTEMS EQUIPMENTS ON DRAWINGS ARE TENTATIVE EXACT ARRANGEMENT OF EQUIPMENTS SHALL BE MADE IN VIEW OF ITS PHYSICAL DIMENSIONS AND EASE OF MAINTENANCE.
10. CONDUIT/DUCT RUN UNDER FLOOR SHALL HAVE A MINIMUM COVER 2 INCHES FROM TOP OF CONDUIT/DUCT TO FINISH FLOOR LEVEL.
11. RUN GREEN-YELLOW OR GREEN SINGLE CORE PVC INSULATED COPPER CONDUCTOR CABLE OF SPECIFIED SIZES AS PROTECTIVE EARTH CONDUCTOR (ECC) ALL ALONG COMMUNICATION SYSTEMS WIRING.
12. ALL WIRING FOR CONTROLS SHALL BE CARRIED OUT WITH 1 CORE PVC CABLES OF SPECIFIED VOLTAGE GRADE AND SIZES.
13. THE WIRING SHALL BE CONTINUOUS LOOPING-IN TYPE AND NO JOINT IN WIRES SHALL BE ALLOWED.
14. THE WIRING SYSTEM SHALL BE CARRIED OUT ONLY AFTER THE CONDUIT SYSTEM IS COMPLETELY INSTALLED AND ALL OUTLET BOXES, ETC. ARE FIXED IN POSITION.
15. MOUNTING HEIGHTS OF ELECTRICAL FITTINGS WHEN MEASURED FROM FINISHED FLOOR LEVEL (F.F.L.) TO THE BOTTOM OF FITTINGS SHALL BE AS UNDER, UNLESS OTHERWISE SHOWN OR INSTRUCTED.

TELEPHONE JUNCTION BOX	10 INCHES
TELEPHONE OUTLET	10 INCHES
INTERCOM CONTROL PACK	10 INCHES
INTERCOM STATION (WALL MOUNTED)	36 INCHES
FA SYSTEM CONTROL PANEL	36 INCHES
FA SYSTEM JUNCTION BOX	10 INCHES
MANUAL CALL STATION	42 INCHES
AUDIO ALARM	100 INCHES

ADDITION & REVISION					
ADD. REV. NO.	DATE	DESCRIPTION	DES. BY	CHK. BY	APP. BY

DESIGNER:



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PROJECT:

"PROVISION OF MISSING FACILITIES FOR THE  
SHAIKH AYAZ UNIVERSITY SHIKARPUR"

TITLE:

### GENERAL NOTES

CLIENT:

SHAIKH AYAZ UNIVERSITY SHIKARPUR

DESIGNED BY:

APPROVED BY:

DATE :

MARCH, 2022

DRAWN BY:

JOB NO.

SCALE:

N.T.S

DRG. NO.

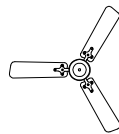
EL-01



20 Watt LED/SMD Light fixture



15 Watt LED/SMD Light fixture



56" dia ceiling fan suitable to give an air displacement of minimum 8000 Cu. ft./ min. Fan shall be made with 99% purity Copper windings.



Exhaust 12" dia plastic body



Bracket fan 18"



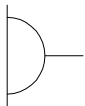
10 Watt LED/SMD Light fixture



15 Watt LED/SMD (Warm) Light fixture



14 Watt LED/SMD Light fixture



10-13 amps light plug



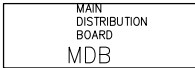
data point



manual call point & sounder



Fire Alarm Control Panel



main DB

ADDITION & REVISION					
ADD. REV. NO.	DATE	DESCRIPTION	DES. BY	CHK. BY	APP. BY

DESIGNER:

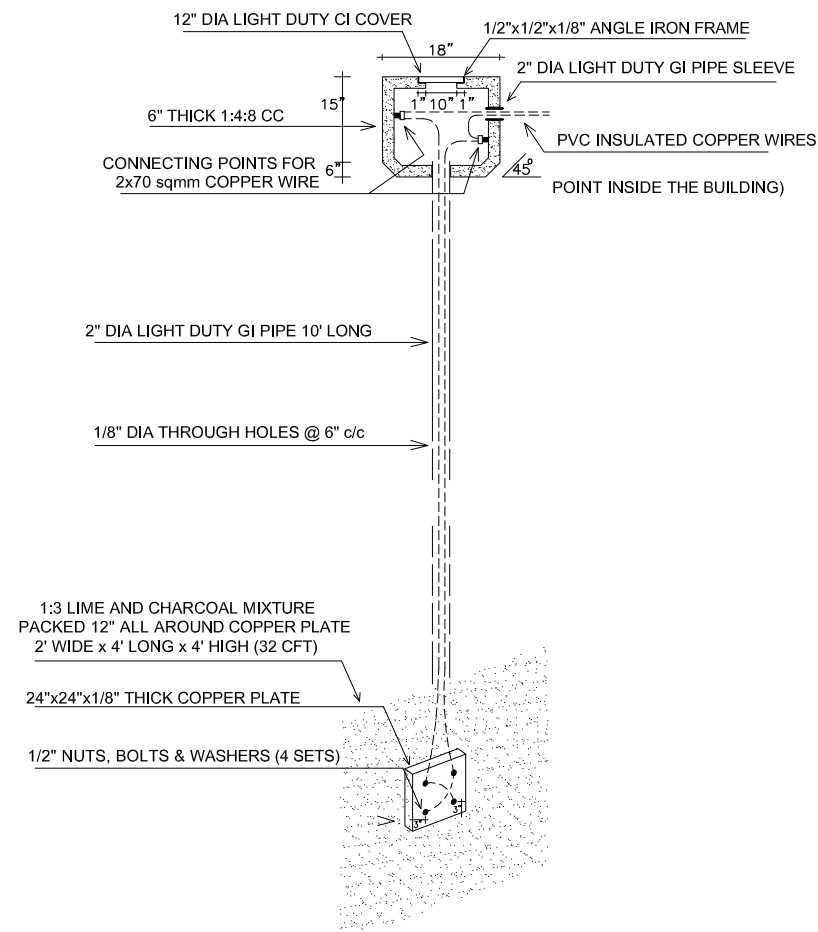


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PROJECT:	"PROVISION OF MISSING FACILITIES FOR THE SHAIKH AYAZ UNIVERSITY SHIKARPUR"	
TITLE:	LEGEND AND SYMBOLS	

CLIENT: SHAIKH AYAZ UNIVERSITY SHIKARPUR		
DESIGNED BY: ENG. SHADAB	APPROVED BY:	DATE : MARCH, 2022
DRAWN BY: RIZWAN	JOB NO.	SCALE: N.T.S
DRG. NO.	EL-02	

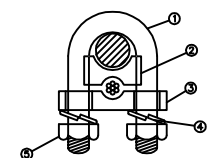




DETAIL-E-2

PLATE TYPE EARTH ELECTRODE

(FOR EARTHING OF ELECTRICAL POWER SYSTEM)



DETAIL-A

ITEM NO.	NAME	MATERIAL
1	U-BOLT	MILD STEEL
2	SPACER	CAST IRON
3	BASE	MILD STEEL
4	SPRING WASHER	CARBON STEEL
5	NUT	MILD STEEL

ALL MEASUREMENTS ARE IN MM

ADDITION & REVISION					
ADD. REV. NO.	DATE	DESCRIPTION	DES. BY	CHK. BY	APP. BY

DESIGNER:



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PROJECT:

"PROVISION OF MISSING FACILITIES FOR THE  
SHAIKH AYAZ UNIVERSITY SHIKARPUR"

TITLE:

**EARTHING DETAIL**

CLIENT:

**SHAIKH AYAZ UNIVERSITY SHIKARPUR**

DESIGNED BY:

ENG. SHADAB

APPROVED BY:

DATE :

MARCH, 2022

DRAWN BY:

RIZWAN

JOB NO.

SCALE:

N.T.S

DRG. NO.

EL-03

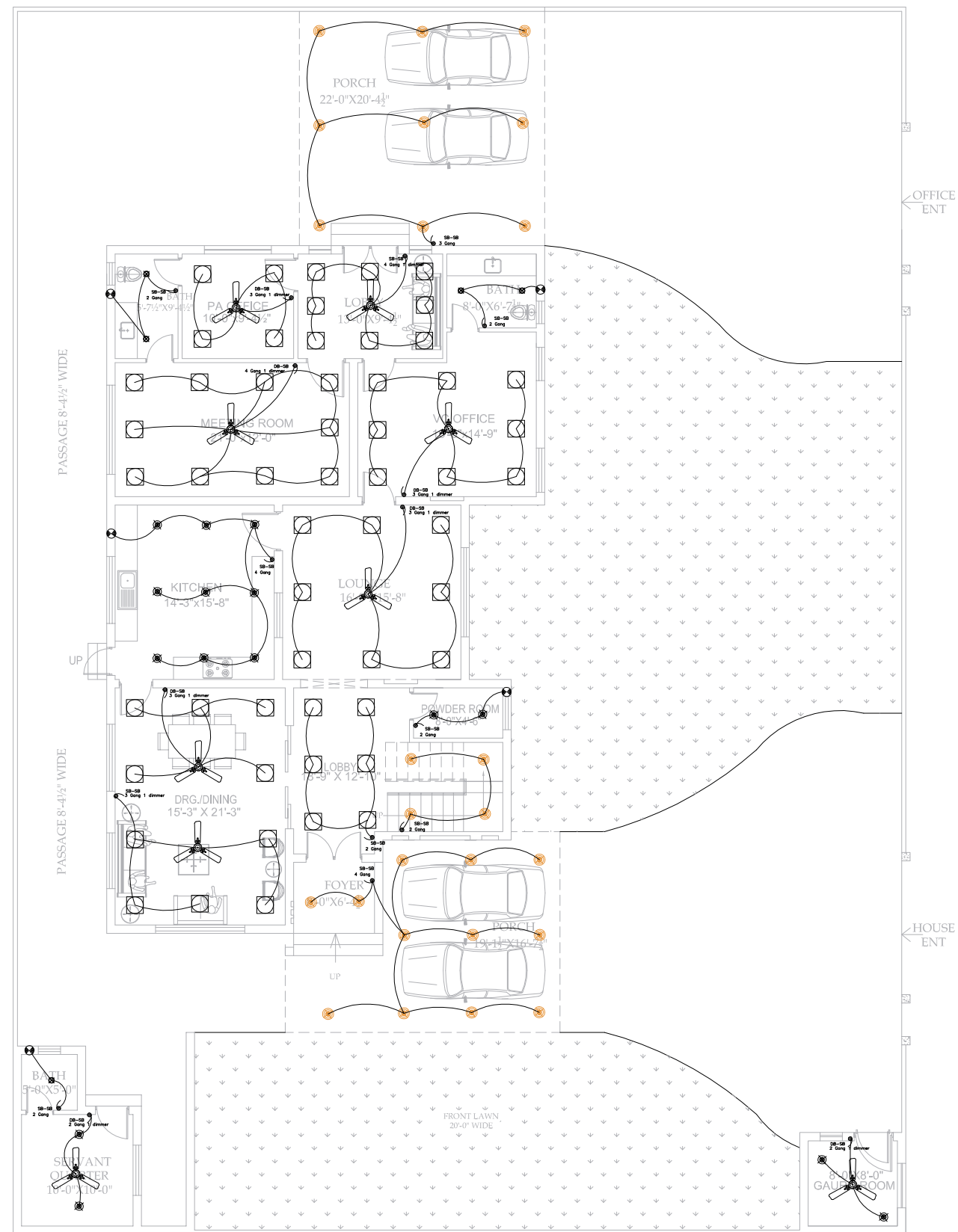




ADDITION & REVISION					
ADD./REV. NO.	DATE	DESCRIPTION	DES. BY	CHECK BY	APP. BY



EL-05



GROUND FLOOR PLAN  
LIGHTING LAYOUT

ADDITION & REVISION					
DT	7/10/21	REVISED PLAN			
ADD. REV. NO.	DATE	DESCRIPTION	DES. BY	CHK. BY	APP. BY

DESIGNER:



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PROJECT:

"PROVISION OF MISSING FACILITIES FOR THE  
SHAIKH AYAZ UNIVERSITY SHIKARPUR"

TITLE:

**GROUND FLOOR PLAN  
LIGHTING LAYOUT PLAN**

CLIENT:

**SHAIKH AYAZ UNIVERSITY SHIKARPUR**

DESIGNED BY:

ENG. SHADAB

APPROVED BY:

DATE :  
MARCH, 2022

**SUZAYAN**

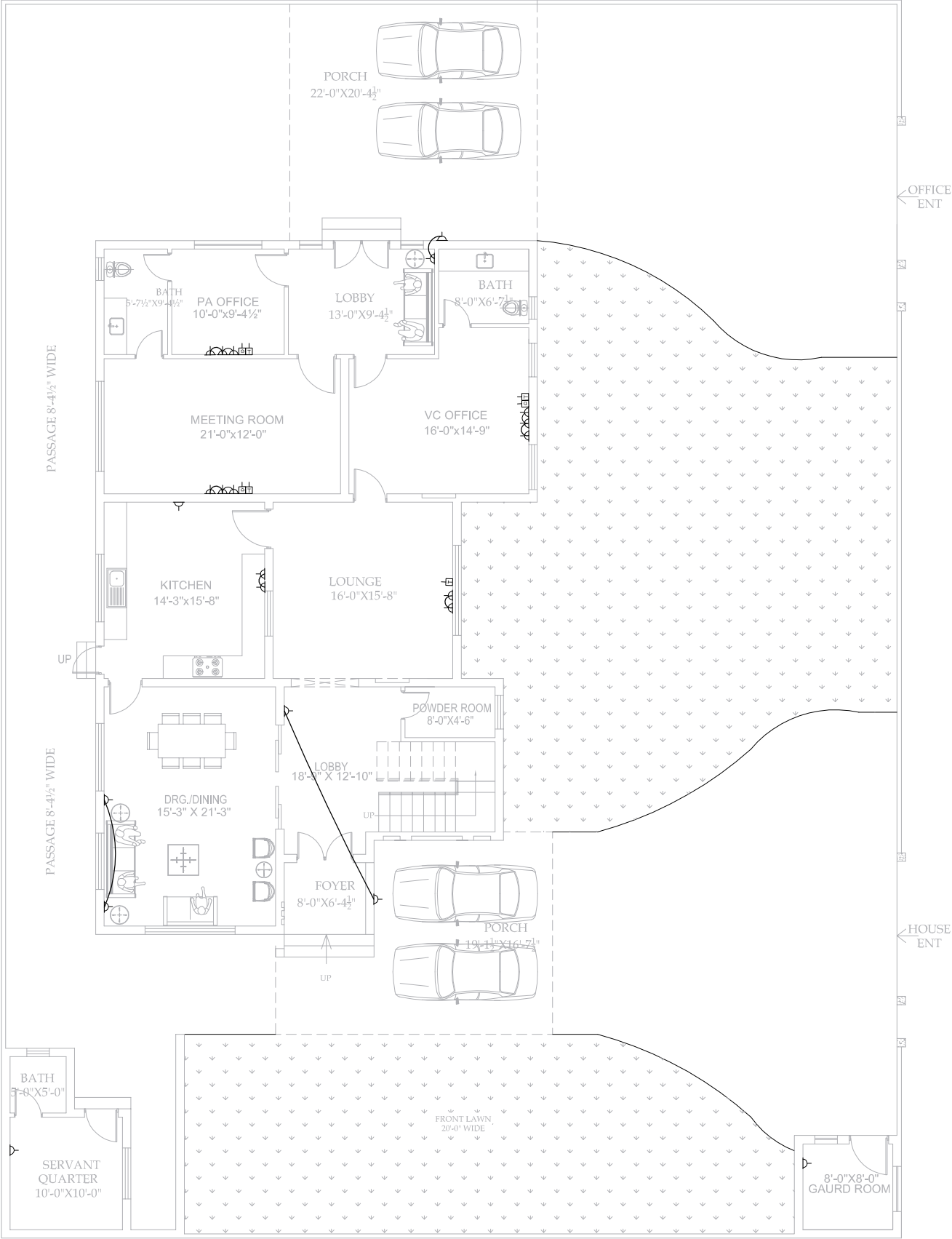
JOB NO.

SCALE:  
N.T.S

DRG. NO.

EL-06






GROUND FLOOR PLAN  
POWER LAYOUT

ADDITION & REVISION						
DT	DT/DT	REVISION PLAN				
ADD. REV. NO.	DATE	DESCRIPTION	DES. BY	CHK. BY	APP. BY	

DESIGNER:



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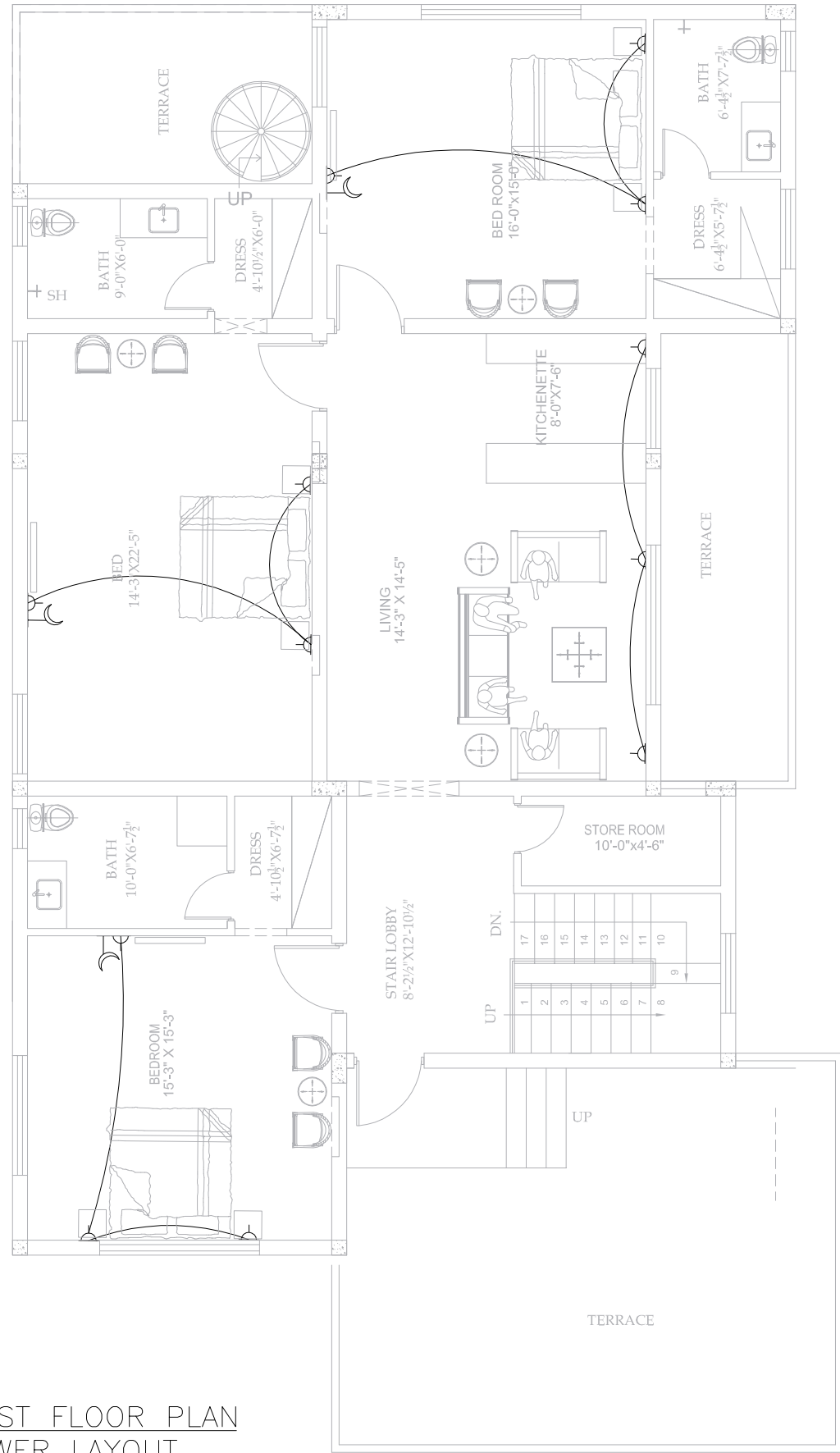
PROJECT:

"PROVISION OF MISSING FACILITIES FOR THE  
SHAIKH AYAZ UNIVERSITY SHIKARPUR"

TITLE:

GROUND FLOOR PLAN  
POWER LAYOUT

CLIENT:			
SHAIKH AYAZ UNIVERSITY SHIKARPUR			
DESIGNED BY:	APPROVED BY:	DATE :	MARCH, 2022
ENG.SHADAB			
DRAWN BY:	JOB NO.	SCALE:	N.T.S
RIZWAN			
DRG. NO.	EL-08		



FIRST FLOOR PLAN  
POWER LAYOUT

ADDITION & REVISION					
ADD. REV. NO.	DATE	DESCRIPTION	DES. BY	CHK. BY	APP. BY

DESIGNER:



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PROJECT:

"PROVISION OF MISSING FACILITIES FOR THE  
SHAIKH AYAZ UNIVERSITY SHIKARPUR"

TITLE:

FIRST FLOOR PLAN  
POWER LAYOUT

CLIENT:

SHAIKH AYAZ UNIVERSITY SHIKARPUR

DESIGNED BY:

ENG. SHADAB

APPROVED BY:

DATE :

MARCH, 2022

DRAWN BY:

RIZWAN

JOB NO.

SCALE:

N.T.S


DRG. NO.

EL-09

**PLUMBING**

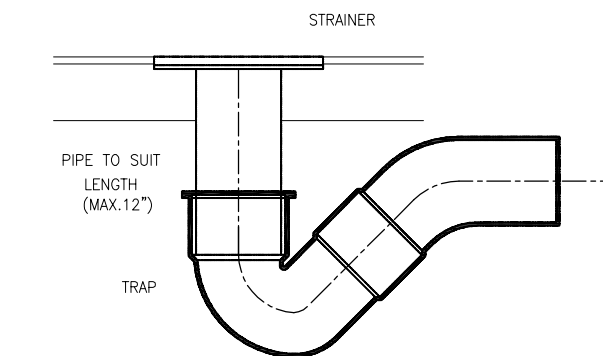


LIST OF DRAWINGS		
S.NO.	DRAWING TITLE	DRG. NO
PLUMBING DRAWINGS		
1	LIST OF DRAWING	PL-00
2	GENERAL NOTES	PL-01
3	GROUND FLOOR PLAN (SANITARY DRAINAGE LAYOUT)	PL-02
4	FIRST FLOOR PLAN (SANITARY DRAINAGE LAYOUT)	PL-03
5	ROOF FLOOR PLAN (STORM WATER DRAINAGE LAYOUT)	PL-04
6	GROUND FLOOR PLAN (WATER SUPPLY LAYOUT)	PL-05
7	FIRST FLOOR PLAN (WATER SUPPLY LAYOUT)	PL-06
8	ROOF PLAN (WATER SUPPLY LAYOUT)	PL-07
9	GROUND FLOOR PLAN (GAS SUPPLY LAYOUT)	PL-08
10	FIRST FLOOR PLAN (GAS SUPPLY LAYOUT)	PL-09
11	TYPICAL DETAILS	PL-10
12	TYPICAL DETAILS	PL-11

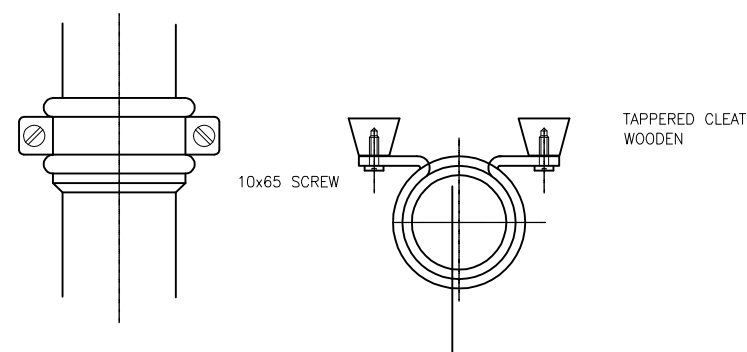
ADDITION & REVISION						<div>DESIGNER:</div> <div></div> <div><b>NEW VISION ENGINEERING CONSULTANT</b> Head Office: Office No.B-6 SECOND FLOOR Masood Arcade IJP Road Islamabad. Ph: +92-51-4848375, Fax: +92-51-4848375 Email: newvisionec@yahoo.com Regional Office: 287-A Street # 6, Cavalry Ground ,Lahore Ph: +92-42-37250130</div>	PROJECT:		CLIENT:		
							"PROVISION OF MISSING FACILITIES FOR THE SHAIKH AYAZ UNIVERSITY SHIKARPUR"		SHAIKH AYAZ UNIVERSITY SHIKARPUR		
							TITLE:		DESIGNED BY:	APPROVED BY:	DATE :
									MF		MARCH, 2022
									DRAWN BY:	JOB NO.	SCALE:
									RIZWAN		N.T.S
ADD./REV. NO.	DATE	DESCRIPTION				DES. BY	CHK. BY	APP. BY	DRG. NO.	PL-00	

- PIPE PASSING THROUGH WALL, FLOOR OR ROOF SHALL BE PROTECTED WITH SLEEVES
- 2 — PIPE SIZES & DIMENSIONS ARE IN INCHES, UNLESS OTHERWISE MENTIONED
- 3 — PLUMBING SERVICES, SHALL BE CO-ORDINATED WITH OTHER SERVICES SUCH AS ELECTRICAL, ETC. TO AVOID CONFLIT OR INTERFERENCE WITH THEM.
- 4 — SIZE OF FLOOR DRAIN UNLESS OTHERWISE STATED SHALL BE SAME AS THE SIZE OF OUTLET DRAIN PIPE.
- 5 — WHEREVER FLOOR DRAIN/TRAP IS SHOWN, SLOPE FLOOR TOWARDS DRAIN/TRAP.
- 6 — HORIZONTAL DRAINAGE PIPING OF 3 INCH DIAMETER & LESS SHALL BE INSTALLED WITH A SLOPE OF NOT LESS THEN 1/4 INCH PER FOOT, LARGER ONES WITH A SLOPE OF NOT LESS THAN 1/8 INCH PER FOOT.
- 7 — EXTENSION OF VENT PIPES THROUGH A ROOF SHALL BE TERMINATED AT LEAST 6 INCHES ABOVE FINISHED ROOF LEVEL. EACH VENT TERMINAL SHALL BE MADE WATER TIGHT WITH THE ROOF BY PROPER FLASHING
- 8 — SIZE OF ANYTHING GIVEN ON PLUMBING DRAWING MEANS ITS CLEAR DIMENSIONS (CAPACITY), UNLESS OTHERWISE MENTIONED.
- THE "VERTICAL DISTANCE" FROM FIXTURE OUTLET TO THE TRAP WEIR SHALL PREFERABLY BE NOT MORE THAN 12 INCHES. HOWEVER, THIS "VERTICAL DISTANCE" FROM THE FIXTURE OUTLET TO THE TRAP WEIR SHALL NOT EXCEED 24 INCHES.
- WHERE THE CHANGE OF DIRECTION IS 45° OR LESS, IT IS NOT NECESSARY TO PROVIDE A CLEAN OUT. BUT WHEN THE CHANGE IN DIRECTION IS MORE THAN 45°, A CLEAN OUT SHOULD BE REQUIRED.
- ALL TRAPS AND FLOOR DRAINS SHALL HAVE A WATER SEAL NOT LESS THAN 2 INCHES.
- (EXTERNAL SERVICES) THE BOTTOM OF WATER-SERVICES PIPE , AT ALL POINTS,SHALL BE AT LEAST 12 INCHES ABOVE THE TOP OF THE SEWER LINE AT ITS HIGHEST POINT.
- NO "T" FITTING IS ALLOWED IN SANITARY DRAINAGE LAYOUT. USE ONLY "Y" FITTINGS.

ABBREVIATION	DESCRIPTION
SP	SOIL PIPE
WP	WASTE PIPE
SS	SOIL STACK
WS	WASTE STACK
VP	VENT PIPE
VS	VENT STACK
T/A	TO ABOVE
F/A	FROM ABOVE
T/B	TO BELOW
F/B	FROM BELOW



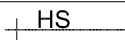


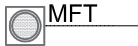
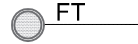
— DETAIL OF FLOOR TRAP  
NO SCALE

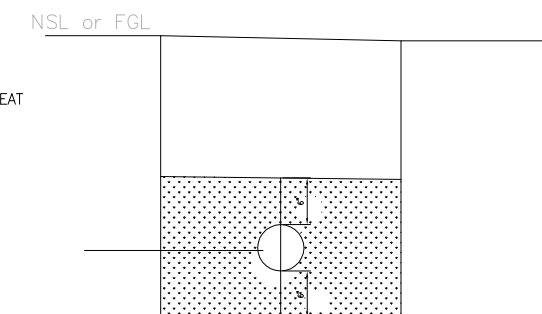


ELEVATION PLAN

— **DETAIL OF PIPE CLAMP**

NO SCALE (DIMENSIONS ARE IN mm.)

ABBREVI.	DESCRIPTION
GV	GATE VALVE
WP	WASTE PIPE
SP	SOIL PIPE
 HS	HAND SHOWER
 G.T	GULLY TRAP
 Gr.T	GREASE INTERCEPTOR
 MFT	MULTI FLOOR TRAP
 FT	FLOOR TRAP
O.H.W.T	OVERHEAD WATER TANK
U.G.W.T	UNDERGROUND WATER TANK
WC	WATER CLOSD
SH	SHOWER
T/A	TO ABOVE
F/A	FROM ABOVE
T/B	TO BELOW
F/B	FROM BELOW



— PIPE TRENCH DETAIL  
NO SCALE

ADDITION & REVISION					
ADD. REV. NO.	DATE	DESCRIPTION	DES. BY	CHK. BY	APP. BY

DESIGNER:



## NEW VISION ENGINEERING CONSULTANT

Head Office: Office No.B-6 SECOND FLOOR Masood Arcade  
IJP Road Islamabad.

Ph: +92-51-4848375, Fax: +92-51-4848375

Email: [newvisionec@yahoo.com](mailto:newvisionec@yahoo.com)

Address: 287-A Street # 6, Cavalry Ground, Lahore

Ph: +92-42-37250130

PROJECT:
----------

**"PROVISION OF MISSING FACILITIES FOR THE  
SHAIKH AYAZ UNIVERSITY SHIKARPUR"**

TITLE:

## GENERAL NOTES

CLIENT:
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SHAIKH AYAZ UNIVERSITY SHIKARPUR

DESIGNED BY:

Y:	APPROVED BY:
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DATE :	MARCH, 2022
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DRAWN BY:

JOB NO.	
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SCALE:

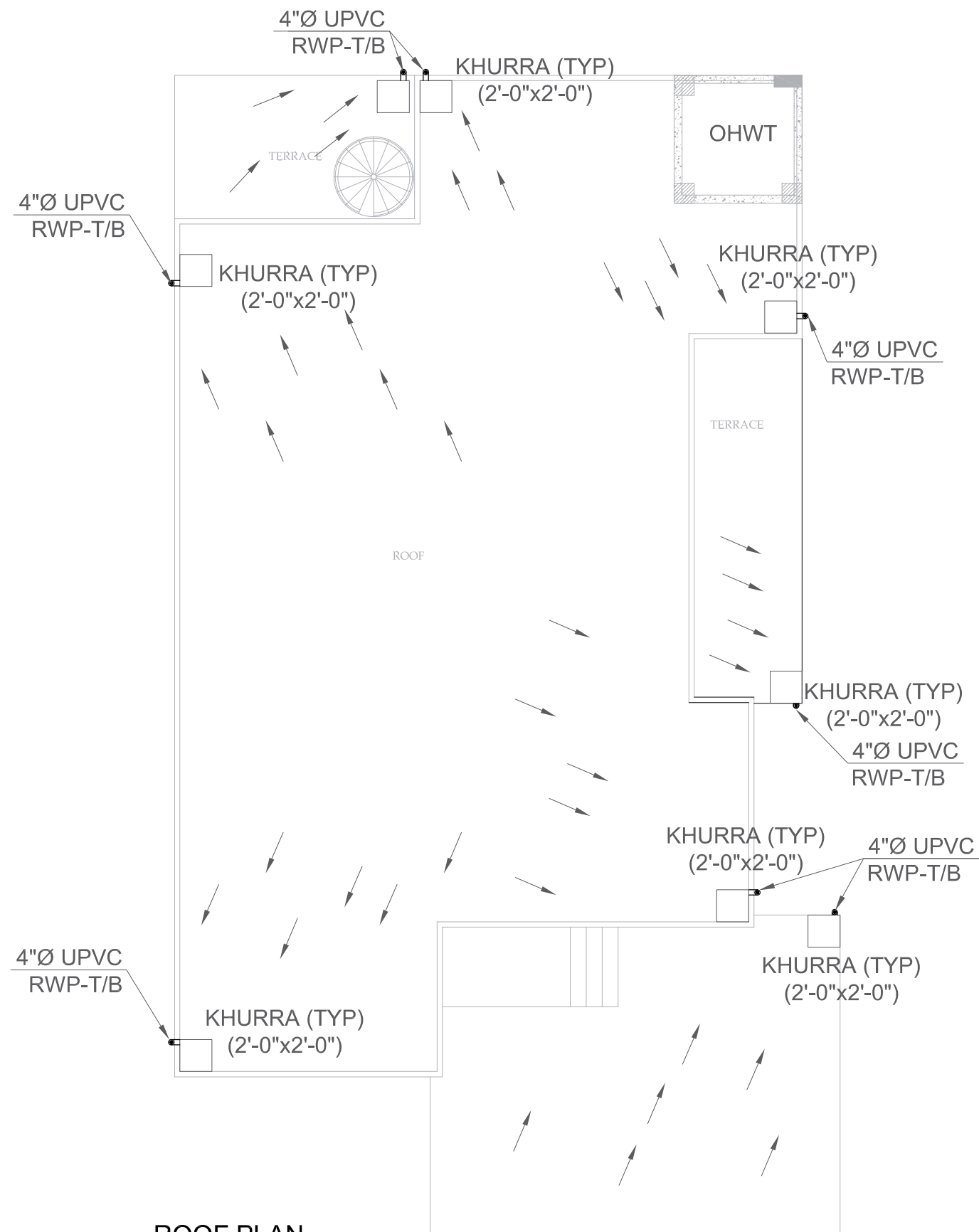
DRG. NO.

PL-01





CLIENT:		
SHAikh AYAZ UNIVERSITY SHIKARPUR		
DESIGNED BY: MF	APPROVED BY:	DATE : MARCH, 2022
DRAWN BY:	JOB NO.	SCALE: N.T.S
DRG. NO.	PL-03	



**ROOF PLAN**  
**STORM WATER DRAINAGE LAYOUT**

ADDITION & REVISION					
ADD./REV. NO.	DATE	DESCRIPTION	DES. BY	CHK. BY	APP. BY

DESIGNER:



**NEW VISION ENGINEERING CONSULTANT**

Head Office: Office No.B-6 SECOND FLOOR Masood Arcade  
IJP Road Islamabad.  
Ph: +92-51-4848375, Fax: +92-51-4848375  
Email: newvisionec@yahoo.com  
Regional Office: 287-A Street # 6, Cavalry Ground ,Lahore  
Ph: +92-42-37250130

PROJECT:

**"PROVISION OF MISSING FACILITIES FOR THE  
SHAIKH AYAZ UNIVERSITY SHIKARPUR"**

TITLE:

**ROOF PLAN  
STORM WATER DRAINAGE  
LAYOUT**

CLIENT:

**SHAIKH AYAZ UNIVERSITY SHIKARPUR**

DESIGNED BY:  
MF

APPROVED BY:

DATE :  
MARCH, 2022

DRAWN BY:

JOB NO.

SCALE:  
N.T.S

DRG. NO.

PL-04



ADDITION & REVISION						
ADD./REV. NO.	DATE	DESCRIPTION	DES. BY	CHK. BY	APP. BY	

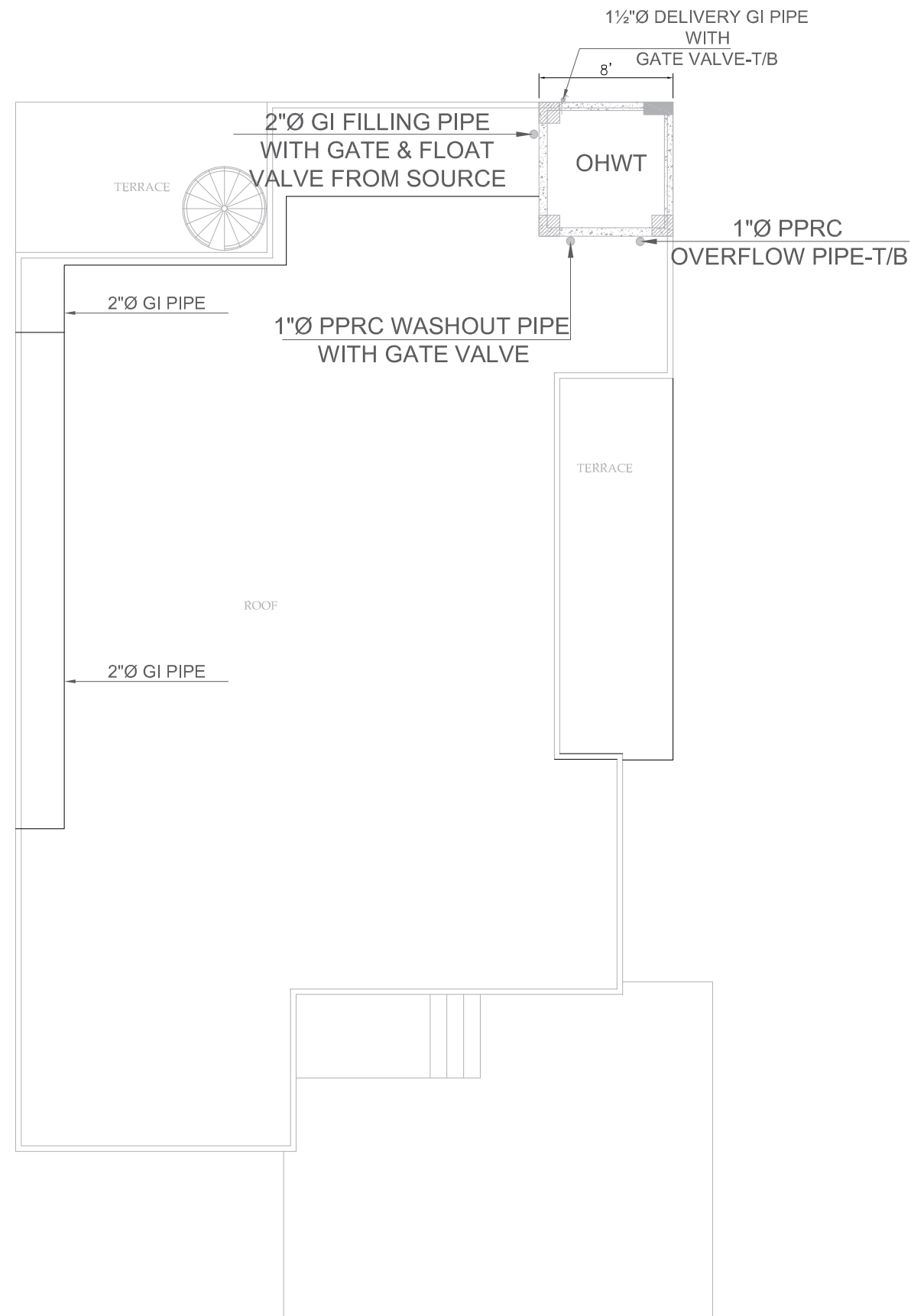


Head Office: Office No.B-6 SECOND FLOOR Masood Arcade  
IJP Road Islamabad.  
Ph: +92-51-4848375, Fax: +92-51-4848375  
Email: [newvisionec@yahoo.com](mailto:newvisionec@yahoo.com)  
Regional Office: 287-A Street # 6, Cavalry Ground ,Lahore  
Ph: +92-42-37250130

### GROUND FLOOR PLAN WATER SUPPLY LAYOUT

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**ROOF PLAN**  
**WATER SUPPLY LAYOUT**

ADDITION & REVISION					
ADD./REV. NO.	DATE	DESCRIPTION	DES. BY	CHK. BY	APP. BY

DESIGNER:



**NEW VISION ENGINEERING CONSULTANT**

Head Office: Office No.B-6 SECOND FLOOR Masood Arcade  
IJP Road Islamabad.

Ph: +92-51-4848375, Fax: +92-51-4848375

Email: newvisionec@yahoo.com

Regional Office: 287-A Street # 6, Cavalry Ground ,Lahore

Ph: +92-42-37250130

PROJECT:

**"PROVISION OF MISSING FACILITIES FOR THE  
SHAIKH AYAZ UNIVERSITY SHIKARPUR"**

TITLE:

**ROOF PLAN  
WATER SUPPLY LAYOUT**

CLIENT:

**SHAIKH AYAZ UNIVERSITY SHIKARPUR**

DESIGNED BY:

MF

APPROVED BY:

DATE :

MARCH, 2022

DRAWN BY:

JOB NO.

SCALE:

N.T.S

DRG. NO.

PL-07





ADDITION & REVISION						
ADD./REV. NO.	DATE	DESCRIPTION	DES. BY	CHK. BY	APP. BY	



Head Office: Office No.B-6 SECOND FLOOR Masood Arcade  
IJP Road Islamabad.  
Ph: +92-51-4848375, Fax: +92-51-4848375  
Email: [newvisionec@yahoo.com](mailto:newvisionec@yahoo.com)  
Regional Office: 287-A Street # 6, Cavalry Ground ,Lahore  
Ph: +92-42-37250130

**"PROVISION OF MISSING FACILITIES FOR THE  
SHAIKH AYAZ UNIVERSITY SHIKARPUR"**

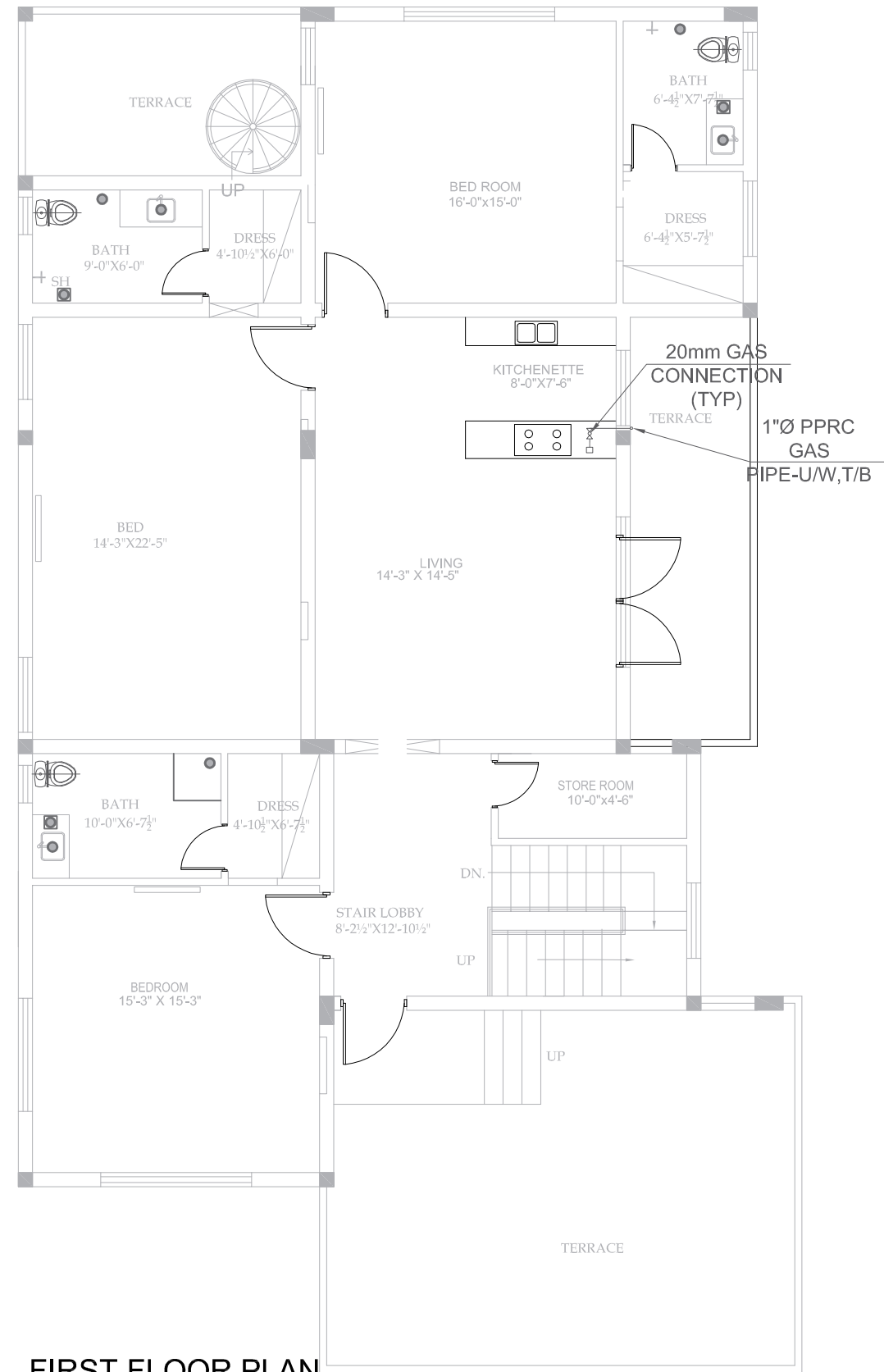
## GROUND FLOOR PLAN GAS SUPPLY LAYOUT

**SHAIKH AYAZ UNIVERSITY SHIKARPUR**

DATE: MARCH, 2022

SCALE: N.T.S.

PL-08



**FIRST FLOOR PLAN**  
**WATER SUPPLY LAYOUT**

ADDITION & REVISION					
ADD./REV. NO.	DATE	DESCRIPTION	DES. BY	CHK. BY	APP. BY

DESIGNER:



**NEW VISION ENGINEERING CONSULTANT**

Head Office: Office No.B-6 SECOND FLOOR Masood Arcade  
IJP Road Islamabad.

Ph: +92-51-4848375, Fax: +92-51-4848375

Email: newvisionec@yahoo.com

Regional Office: 287-A Street # 6, Cavalry Ground ,Lahore

Ph: +92-42-37250130

PROJECT:

**"PROVISION OF MISSING FACILITIES FOR THE  
SHAIKH AYAZ UNIVERSITY SHIKARPUR"**

TITLE:

**FIRST FLOOR PLAN  
GAS SUPPLY LAYOUT**

CLIENT:

**SHAIKH AYAZ UNIVERSITY SHIKARPUR**

DESIGNED BY:  
MF

APPROVED BY:

DATE :  
MARCH, 2022

DRAWN BY:

JOB NO.

SCALE:  
N.T.S

DRG. NO.

PL-09

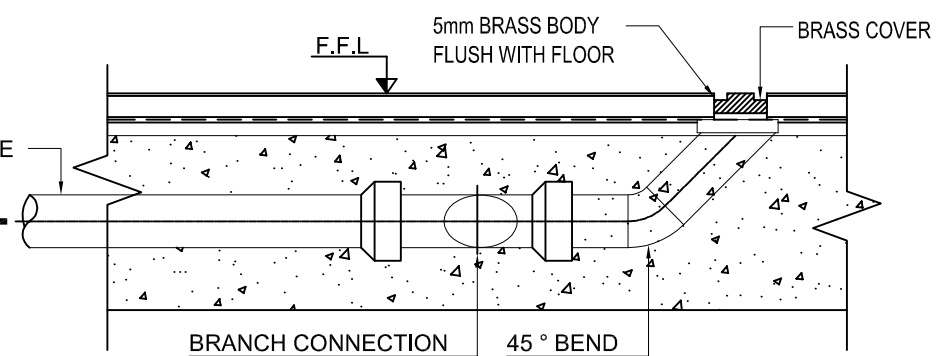


— DETAIL OF WASTE VENT PIPE  
NO SCALE

ADDITION & REVISION					
ADD. REV. NO.	DATE	DESCRIPTION	DES. BY	CHK. BY	APP. BY



PL-10



## GROUND CLEAN OUT PLUG DETAIL



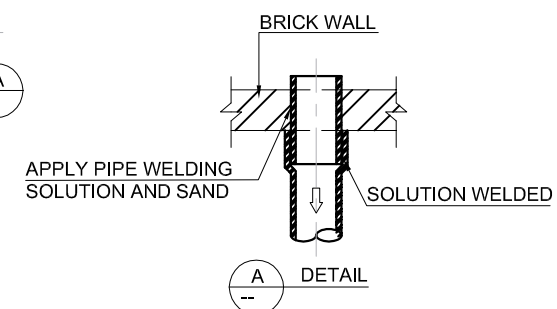
CAST IRON MANHOLE COVER AND FRAME

INLET PIPE

OUTLET PIPE

PLAN

APPLY PIPE SOLUTION



## MANHOLE DETAIL

ADDITION & REVISION					
ADD./REV. NO.	DATE	DESCRIPTION	DES. BY	CHK. BY	APP. BY



PL-11



# The Shaikh Ayaz University, Shikarpur

No: PMF/SAUS/32

Dated: 28.04.2022

## **NOTICE INVITING TENDER**

The Shaikh Ayaz University Shikarpur, Sindh invites sealed Bids / Tenders from interested Bidders under PPRA Rules 2004 for the following work:

S.No.	Name of Work	Estimated Cost (In Million)	Bid Security	Tender fee (Rs.)	Completion Period
01	Construction of VC Residence	22.723	2% of Bid Amount	3000/=	12 Months
02	Construction of Guest House	64.523	2% of Bid Amount	3000/=	16 Months

**Eligibility for S. No. 01:** Valid Registration with Pakistan Engineering Council in Category C-5 or above and discipline CE-09, CE-10, EE-04, EE-06, and valid registration with Tax Authorities (FBR & SRB) and valid Electrical Inspectors license.

**Eligibility for S. No. 02:** Valid Registration with Pakistan Engineering Council in Category C-5 or above and discipline CE-09, CE-10, EE-04, EE-06, and valid registration with Tax Authorities (FBR & SRB) and valid Electrical Inspectors license.

### **Qualification:**

- List of similar assignments along with cost undertaken over past 05 years and performance certificate issued by the procuring agency.
- Detail of office, equipment and machineries / transport owned / leased / hired by firm / bidders.
- Financial Statement and Income Tax Return for Last 05 years supported by audit reports.
- Registration with Income Tax Department (NTN Certificate) and Active Status with FBR.
- Registration Certificate of Sindh Revenue Board, Govt. of Sindh.
- Undertaking on Affidavit that the Firm is not involved in any litigation and black listed in any department.

**Method of Procurement:** (Single Stage – One Envelope Procedure)

### **Bidding / Tender Documents:**

**Issuance:** Complete set of Bidding Documents can be obtained on payment of a Tender Fee of Rs. 3000/= in the shape of Pay Order / Demand Draft (Non-Refundable) in favor of Project titled "Provision of Missing Facilities for The Shaikh Ayaz University", Shikarpur and can be downloaded from PPRA's Website i.e. ([www.ppra.org.pk](http://www.ppra.org.pk)), Website i.e. [www.saus.edu.pk](http://www.saus.edu.pk) on any working day from date of publication up to 23-05-2022.



**Submission:** Bids completed in all respects in sealed envelopes mentioning name of work and marked as “**Technical and Financial**” must be submitted on or before 24-05-2022 upto (10:00 am) and must be accompanied by a Bid Security 2% of Bid Price in the shape of Pay Order / Demand Draft in favor of ‘**Provision of Missing Facilities for The Shaikh Ayaz University**’, Shikarpur.

**Opening:**

1. The technical and financial proposals will be opened on the same day, 24-05-2022 (10:30 am) in presence of bidders who wish to attend. The financial bid of qualified bidder shall be opened/accepted, who have complied the bidding requirements.

**Place of Issuance, Submission, Inquiries & Opening:** Office of the Project Director, The Shaikh Ayaz University, Shikarpur, Sindh.

**Telephone Number:** 92- 726- 920371

**Email Address:** ghanisaus@gmail.com

**Terms & Conditions:** Under the following conditions, Bid will be rejected:

- i. Conditional and Telegraphic Bids / Tenders.
- ii. Bids not accompanied by Bid Security of required amount and form.
- iii. Bids received after specified Date and Time.
- iv. Bids submitted by Black Listed Firms.
- v. Incomplete Bids as per instructions given in Bidding Documents.

**NOTE:**

- i. Maximum Two (02) contracts will be awarded to a single bidder and his further bids will not be opened for award of subsequent works.
- ii. If the financial bid of the most lowest bidder will be more than 15% below to the Engineers Estimate, then the bidder/firm is required to submit additional 10% Bank Guarantee/Pay order with performance guarantee prior to the contract agreement.

**Bid validity period:** Ninety (90) days.

Procuring Agency reserves the right to reject any or all bids subject to the relevant provisions of Public Procurement Rules (PPRA) 2004.



**Project Director-PMF**  
The Shaikh Ayaz University  
Shikarpur