



# INVITATION FOR BIDS

## PROCUREMENT OF CONTRACTOR SERVICES FOR INTERNAL ELECTRICAL DISTRIBUTION SYSTEM AND ALLIED WORKS AT BIN QASIM INDUSTRIAL PARK (BQIP), KARACHI

1. Pakistan Industrial Development Corporation (PIDC), a State-Owned Enterprise (SOE) invites Technical and Financial proposals from reputable Firms having similar nature experience and registered with PPRA for e-procurement on EPADS. The **Most Advantageous Bid** will be selected after thorough evaluation of Technical and Financial proposal
2. **Eligibility / Mandatory Criteria:**
  - a. Submission of proposal through PPRA EPADS is mandatory.
  - b. Company profile with name, address, legal status (i-e. Proprietorship, Partnership, Limited company etc.), year of relevant & general experience of the firm/JV.
  - c. Firm must have valid PEC certificate in category "C-1" or above, bearing relevant codes.
  - d. Firm must be an active tax payer and registered with relevant Tax authorities.
  - e. Affidavit on stamp paper must be submitted affirming that the firm is not blacklisted by any organization or government entity.
  - f. Experience in similar nature of works (details are mentioned in bidding documents).
  - g. A bid security amount of **Rs. 15,000,000** (Rupees Fifteen Million Only) in the form of a Deposit at Call or Bank Guarantee issued by a schedule Bank of Pakistan in favor of PIDC must be submitted. A scanned copy of the bid security must be attached with the technical bid on EPADS, while the original bid security must be submitted to the PIDC office before the submission deadline.
3. Bidding document can be downloaded free of cost from EPADS (<https://eprocure.gov.pk>) / PPRA website ([www.ppra.gov.pk](http://www.ppra.gov.pk)) / PIDC website ([www.pidc.com.pk](http://www.pidc.com.pk)).
4. A Pre-Bid Meeting will be held on **February 27, 2025**, at **11AM** at the Project office, **Bin Qasim Industrial Park (BQIP)** Karachi at **11:00 AM** to clarify bidder's queries for the captioned work.
5. Interested firms are requested to submit their proposals (Technical & Financial) electronically through PPRA EPADS on "**Single Stage Two Envelope**" procedure, and one sealed original hard copy on or before **11 March, 2025** till 11:00 am to below mentioned address. The proposals will be opened through PPRA EPADS on the same day at 11:30 am. Delayed / conditional / telegraphic proposals will not be entertained.
6. Financial Proposal of the technically qualified bidders would be opened electronically in the presence of bidder's representatives, for which time & date shall be intimated in due course.
7. PIDC reserves the right to accept or reject any or all proposals as per PPRA Rules.

### **Manager Technical - PIDC**

Pakistan Industrial Development Corporation (Pvt.) Ltd.,  
(Industrial Infrastructure division)

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**Pakistan Industrial Development Corporation (PIDC)**

**“Development of Internal Electrical Distribution System and Allied work at  
Bin Qasim Industrial Park (BQIP), Karachi”**

**Bidding Documents  
Volume-I**

**Tender No. PIDC/Tender/Tech/29**

**February-2025**



## BIDDING DOCUMENTS COMPRISE OF

<b>Volume-I</b>	<b>Instructions to Bidders &amp; Conditions of Contract</b>
Volume-II	Bill of Quantities
Volume-III	Technical Specifications
Volume-IV	Drawings

All the above volumes are integral part of the Contract Documents and are to be read in conjunction with each other and are mutually explanatory of each other. In case of any contradiction, the provisions under Priority of Document and explanation of the Engineer shall be final and binding on the Contractor

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## INVITATION TO BIDS

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Date \_\_\_\_\_

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  - c. Firm must have valid PEC certificate in category “C-1” or above, bearing relevant codes.
  - d. Firm must be an active tax payer and registered with relevant Tax authorities.
  - e. Affidavit on stamp paper must be submitted affirming that the firm is **not blacklisted** by any organization or government entity.
  - f. Experience in similar nature of works (details are mentioned in bidding documents).
  - g. A bid security amount of **Rs. 15,000,000** (Rupees Fifteen Million Only) in the form of a Deposit at Call or Bank Guarantee issued by a schedule Bank of Pakistan in favor of PIDC must be submitted. A scanned copy of the bid security must be attached with the technical bid on EPADS, while the original bid security must be submitted to the PIDC office before the submission deadline.
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### MANAGER TECHNICAL - PIDC

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(Industrial Infrastructure division)  
PIDC House, 2<sup>nd</sup> Floor, Dr. Ziauddin Ahmed Road, Karachi.  
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## **INSTRUCTIONS TO BIDDERS (IB)**

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## Invitation TO BidS

(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 and Source of Funds

- 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 summarised 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 the Bidding Data.

#### IB-2 Source of Funds

- 2.1 The Employer has applied for/received a funding from the source(s) in various currencies towards the cost of the project specified in the Bidding Data and it is intended that part of the proceeds of this funding will be applied to eligible payments under the Contract for which these Bidding Documents are issued.

#### IB-3 Eligible Bidders

- 3.1. This Invitation for Bids is open to all Bidders meeting the following requirements at the time of submission of Bids and thereafter:
  - (a) Duly eligible for this bidding process;
  - (b) Duly licensed by the Pakistan Engineering Council (PEC) in the category relevant to the value of the Works in the relevant field of specialization. However, a Foreign Constructor can submit provisional licence with its Bid but the Foreign Constructor will be required to submit standard licence after award of Contract and before start of work. Foreign Constructor shall not be eligible to participate in bidding individually. Foreign Constructor shall enter into joint venture with Pakistani Constructor registered with the Pakistan Engineering Council in equivalent/compatible category and submit the joint venture agreement to the Employer before participating in bidding in accordance with PEC Construction and Operation of Engineering Works Bye-laws, 1987;
  - (c) Pakistani Constructor must be on Active Taxpayer List of the Federal Board of Revenue and provincial revenue authority/ board where applicable; and
  - (d) All partners constituting the Bidder including proposed subcontractors do not appear in the list of debarred/ blacklisted firms and individuals on the websites of PEC and Federal & Provincial Procurement Regulatory Authorities and have not been declared debarred/ blacklisted by foreign country, international organizations or other foreign institutions.

#### **IB-4 Eligible Materials, Equipment and Services**

- 4.1 All materials, equipment and services to be supplied under this Contract shall have their origin in eligible countries described under paragraph 4.4 hereunder.
- 4.2 For purpose of this Clause, “origin” means the place where the Goods are mined, grown or produced or from where the ancillary services are supplied. Goods are produced when, through manufacturing, processing or substantial and major assembling of components, a commercially recognized product results that is substantially different in basic characteristics or in purpose or utility from its components.
- 4.3 The origin of Goods and Services is distinct from the nationality of the Bidder. 4.4 Eligible countries to participate in this bidding process are those which have been notified by Ministry of Interior, Government of Pakistan as Business-Friendly Countries (BVL).

#### **IB-5 One Bid per Bidder**

- 5.1 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.17) will be disqualified.

#### **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. Evaluation Criteria and Qualification Updating Forms;
4. General Conditions (GC);
5. Particular Conditions (PC):
  - Part A - Contract Data;
  - Part B - Special Provisions;
6. Specifications (SP):
  - Part A - Specific Provisions;
  - Part B - Technical Provisions;
7. Letter of Bid;
8. Schedules to Bid;
9. Standard Forms:
  - (i) Form of Bid Security;
  - (ii) Letter of Acceptance;
  - (iii) Form of Contract Agreement;
  - (iv) Form of Performance Security;
  - (v) DAAB Agreement;
  - (vi) Form of Mobilization Advance Guarantee;
10. Drawings.

7.2 The Bidders are expected to examine carefully the contents of all the above documents. Failure to comply with the requirements of Bid submission will be at the 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, Pre-Bid Meeting

- 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 the period specified in the Bidding Data, prior to the deadline for submission of bids.
  - 8.2 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.
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- 8.3 The Employer may, on his own 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, are as stipulated in the Bidding Data. All prospective Bidders or their authorized representatives shall be invited to attend such a pre-bid meeting.
- 8.4 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.
- 8.5 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 Subclause IB.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.
- 8.6 Absence at the pre-bid meeting will not be a cause for disqualification of a Bidder.

#### **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 listed in Sub-Clause IB.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 Such addendum shall be issued not later than number of days prior to the deadline for submission of bids, specified in the Bidding Data. 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 Cost of Bidding**

- 10.1 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.11 Language of Bid**

- 11.1 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 duly certified 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.12 Documents Comprising the Bid**

- 12.1 Each Bidder shall:

- (a) submit duly filled in, signed and stamped Letter of Bid and completed Schedules to Bid as required, including priced Bill of Quantities, in accordance with Clause IB.18 hereof;
- (b) submit Bid Security in accordance with Clause IB.16 hereof;
- (c) submit alternative proposal, if permissible in accordance with Clause IB.17;
- (d) submit a written power of attorney authorizing the signatory of the Bid to act for and on behalf of the Bidder. The name and position held by each person signing the authorization must be typed or printed below the signature;
- (e) submit the Qualification Updating Forms duly filled in, signed and stamped along with requisite attachments, to establish that the Bidder continues to meet the Eligibility and Qualification Criteria set out in the Prequalification Documents and as provided in the Section “Evaluation Criteria and Qualification Updating Forms”;
- (f) furnish a technical proposal taking into account the various Schedules to Bid, especially the following:
  - Schedule-C to Bid, Proposed Construction Schedule;
  - Schedule-D to Bid, Method of Performing the Work;
  - Schedule-E to Bid, List of Major Equipment;
  - Schedule-F to Bid, Organization Chart for Supervisory Staff;
  - and other pertinent information, such as mobilization programme, etc.

12.2 Bids submitted by a joint venture of two (2) or more firms specified in Bidding Data, shall comply with the following requirements:

- (a) the bid, and in case of a successful bid, the Form of Contract Agreement shall be signed by all members 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 Subpar a(b) above as well as in the Letter 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 and corresponding duties & responsibilities 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 partners without prior written consent of the Employer.

- 12.3 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 IB.1.2 hereof.

#### **IB-13 Bid Prices**

- 13.1 The price and discount if any quoted by the Bidders in the Letter of Bid and in the Bill of Quantity shall conform to the requirement specified below:
- 13.2 The Bidder shall quote any discounts and the methodology for their application.
- 13.3 If bids are being invited for individual lots (contracts) or for any combination of lots, the Bidders can offer discounts for the individual lots (contracts) as well as for award of more than one Contract and shall specify in their bid.
- 13.4 Unless stated otherwise in the Bidding Documents, the Contract shall be for the whole of the Works as described in Sub-Clause IB.1.1 hereof, based on the unit rates and/or prices.
- 13.5 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.
- 13.6 All duties, taxes and other levies payable by the Contractor under the Contract, or for any other cause, as on the date 28 days prior to the deadline for submission of bids shall be included in the rates and prices and the total Bid Price submitted by a Bidder. Additional/reduced duties, taxes and levies due to subsequent additions or changes in legislation shall be reimbursed/ deducted as per Sub Clause 13.6 [Adjustment for Changes in Laws] of the Conditions of Contract.
- 13.7 The rates and prices quoted by the Bidders are subject to adjustment during the performance of the Contract in accordance with the provisions of Sub-Clause 13.7 [Adjustments for Changes in Cost] of the General Conditions of Contract. The Bidders shall furnish the prescribed information for the price adjustment formulae in Schedule-A to Bid, and shall submit with their bids such other requisite supporting information if required under the said Schedule.

#### **IB-14 Currencies of Bid and Payment**

- 14.1 The unit rates and the prices shall be quoted by the Bidder entirely PKR. A Bidder expecting to incur expenditures in other currencies for inputs to the Works supplied from outside the Employer's country (referred to as the "Foreign Currency Requirements") shall indicate in Table III of Schedule-A to Bid the proportion of the Bid Price (excluding Provisional Sums) needed by him for the payment of such

Foreign Currency Requirements; in such case the unit rates and the prices shall be quoted by the Bidder in Equivalent PKR.

- 14.2 The rates of exchange to be used by the Bidder for currency conversion shall be the TT Selling Rates published or authorized by the State Bank of Pakistan prevailing on the date twenty-eight (28) days prior to the deadline for submission of bids. Such rates shall be notified by the Employer not later than fourteen (14) days prior to the deadline for submission of Bids.

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

#### **IB-15 Bid Validity**

- 15.1 Bids shall remain valid for the period stipulated in the Bidding Data after the date of Bid Opening specified in Clause IB.23.
- 15.2 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 normally may not 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.16 in all respects.

#### **IB-16 Bid Security**

- 16.1 Each Bidder shall furnish, as part of his bid, a Bid Security in original form in the amount stipulated in the Bidding Data in PKR or an equivalent amount in a freely convertible currency.
- 16.2 The Bid Security shall be, at the option of the Bidder, in the form of Call Deposit Receipt (CDR)/ Pay Order or a Security issued in the prescribed form included in the Bidding Documents, by (a) a Scheduled Bank in Pakistan or (b) a foreign bank duly counter-guaranteed by a Scheduled Bank in Pakistan or (c) an Insurance Company listed in the Bidding Data and rated by PACRA/VIS of rating as provided in Table below in favour of the Employer valid for a period 14 days beyond the Bid Validity date. The Bid Security of Joint Venture shall be in the name of Joint Venture or Lead/either Firm of the JV or in ratio of shares of the individual JV partners, submitting the bid.
- 16.3 Any Bid not accompanied by an acceptable Bid Security shall be rejected by the Employer as non-responsive.
- 16.4 The Bid Securities of the Bidders except the lowest three will be returned by the Employer within twenty-eight (28) days from the opening of Bids, provided a Bidder request for the return of its Bid Security, or upon the expiry of original validity of Bid Security or as extended, whichever is earlier.
- 16.5 The Bid Security of the lowest three Bidders including the successful Bidder will be returned when the successful Bidder has furnished the required Performance Security.
- 16.6 The Bid Security may be forfeited:

- (a) if the Bidder withdraws his bid except as provided in Sub Clause IB.22.1;
- (b) if the Bidder does not accept the correction of his Bid Price pursuant to Sub Clause IB.28.2 hereof; or
- (c) in the case of successful Bidder, fails to furnish the required Performance Security. 16.7 In case of annulment, all Bids submitted and specially, bid securities, shall be returned to the Bidders within 14 days of annulment.

#### **IB-17 Alternative Proposals by Bidder**

- 17.1 Unless otherwise specified in the Bidding Data, alternative proposal(s) shall not be considered.
- 17.2 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 alternative 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 Letter of Bid shall be that which represents complete compliance with the Bidding Documents.
- 17.3 Alternative proposal(s), if any, of the Bidder having submitted most advantageous Bid only may be considered by the Employer as the basis for the award of Contract to such Bidder.

#### **IB-18 Format and Signing of Bid**

- 18.1 Bidders are particularly directed that the amount entered on the Letter of Bid shall be for performing the Contract strictly in accordance with the Bidding Documents.
- 18.2 All Schedules to Bid are to be properly completed and signed.
- 18.3 No alteration is to be made in the Letter of Bid nor in the Schedules 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 in 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.12 and clearly mark them “ORIGINAL” and ‘COPY” as appropriate. In the event of discrepancy between them, the original shall prevail. The Bidder shall also provide complete searchable PDF versions as well as Word, Excel, etc., versions of the Bid if so, required in the Bidding Data.
- 18.5 The original of the Bid shall be typed or written in indelible ink and shall be signed by a person or persons duly authorized to sign on behalf of the Bidder pursuant to Sub-Clause IB.12.1(d) hereof. All pages of the Bid shall be initialled 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 initialled by the person or persons signing the Bid.
- 18.7 Bidders shall indicate in the space provided in the Letter 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 and the Bid as their file copy.
- 18.9 All documents executed outside Pakistan required to be submitted with the Bid must be certified by Pakistani Embassy in the respective country(ies).

#### **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 IB.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 specific identification of this bidding process as specified 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 IB.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.

##### **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 envelope.
  - (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 shall be declared late, rejected and 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 IB.22.1 and 28.2.
- 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 Letter of Bid may result in forfeiture of the Bid security in pursuance to Clause IB.16.

## **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. Only bids that are opened and read out at Bid opening shall be considered further.
- 23.3 The Bidder's name, total Bid Price and price of any alternative 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. Only discounts and alternative proposals read out at Bid opening shall be considered for evaluation. The Letter of Bid and the Summary Bill of Quantities are to be initialled by representative(s) of the Employer attending Bid opening. The Employer shall neither discuss the merits of any Bid nor reject any Bid (except for late Bids, in accordance with Sub-Clause IB 21.1).
- 23.4 The Employer shall prepare minutes of the Bid opening, including the information



disclosed to those present in accordance with the Sub-Clause IB.23.3.

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

24.1 Information relating to the examination, clarification, evaluation and comparison of Bids and recommendations for the award of Contract shall not be disclosed to Bidders or any other person not officially concerned with such process before the announcement of the result of Bid evaluation in the form of final evaluation report giving justification for acceptance or rejection of Bids which shall be done at least fifteen (15) days prior to award of Contract. 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 Contract 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 five (5) days after the announcement of the final evaluation report.

#### **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 and lump sum prices. Any clarification submitted by a Bidder that is not in response to a request by the Employer shall not be considered. The request for clarification and the response shall be in writing. 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.

25.2 The Employer may, at his discretion, ask any Bidder for confirmation/submission of missing information to clarify its Bid. However, the Employer does not have an obligation to request any additional information or clarification with respect to missing or deficient information in a Bid. The Employer may reject any Bid as non-responsive if found materially incomplete, obscure, irregular or omitting any material information required to be submitted in accordance with the Bidding Documents.

25.3 If a Bidder does not provide clarifications of its Bid by the date and time set reasonably (not less than seven (7) days) in the Employer's request for clarification, the Employer may proceed with the evaluation based on the information submitted in the Bid without waiting for the Bidder's response.

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

26.1 Prior to the comparison of Bids, the Employer will determine whether each Bid is substantially responsive to the requirements of the Bidding Documents.

26.2 The Employer's determination of a Bid's responsiveness is to be based on the contents of the Bid itself, as defined in Subclause IB.12.

26.3 A substantially responsive Bid is one which meets the requirements of the Bidding Documents, without material deviation, reservation or omission. A material deviation, reservation or omission is one that,

(a) if accepted, would:

(i) affect in any substantial way the scope, quality or performance of the Works; or

(ii) limit in any substantial way, inconsistent with the Bidding Documents,

- the Employer’s rights or the Bidder’s obligations under the proposed Contract; or
- (b) if rectified, would unfairly affect the competitive position of other Bidders presenting substantially responsive Bids.
- 26.4 During the evaluation of Bids, the following definitions apply:
- (a) “Deviation” is a departure from the requirements specified in the Bidding Documents;
- (b) “Reservation” is the setting of limiting conditions or withholding from complete acceptance of the requirements specified in the Bidding Documents; and
- (c) “Omission” is the failure to submit part or all of the information or documentation required in the Bidding Documents.
- 26.5 The Employer shall examine the technical aspects of the Bid submitted in accordance with Sub-Clause IB.12.1(f), in particular, to confirm that all requirements stated in Specifications have been met without any material deviation, reservation or omission.
- 26.6 If a Bid is not substantially responsive to the requirements of the Bidding Documents, it will be rejected by the Employer, and may not subsequently be made responsive by correction or withdrawal of the non-conforming deviation, reservation or omission.
- IB.27 Nonmaterial Nonconformities**
- 27.1 Provided that a Bid is substantially responsive, the Employer may waive any nonconformities in the Bid.
- 27.2 Provided that a Bid is substantially responsive, the Employer may request that the Bidder submit the necessary information or documentation, within a reasonable period of time, to rectify nonmaterial nonconformities in the Bid related to documentation requirements. Requesting information or documentation on such nonconformities shall not be related to any aspect of the price of the Bid. Failure of the Bidder to comply with the request may result in the rejection of its Bid.
- 27.3 Provided that a Bid is substantially responsive, the Employer shall rectify quantifiable nonmaterial nonconformities related to the Bid Price. To this effect, the Bid Price shall be adjusted, for comparison purposes only, to reflect the price of a missing or non-conforming item or component, by adding the average price of the item or component quoted by other lowest two evaluated substantially responsive Bidders. If the price of the item or component cannot be derived from the price of other substantially responsive Bids, the Employer shall use a suitable CSR, adjusted to the date 28 days earlier to the Bid submission date or its best assessment.
- IB.28 Correction of Arithmetic Errors**
- 28.1 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.
- (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
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total as quoted will govern and the unit rate will be corrected.

- (c) if there is an error in a total corresponding to the addition or subtraction of subtotals, the subtotals shall prevail and the total shall be corrected.

28.2 The amount stated in the Letter 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 IB.16.6(b) hereof.

### **IB-29 Evaluation and Comparison of Bids**

29.1 The Employer will evaluate and compare only the Bids determined to be substantially responsive in accordance with Clause IB.26. The Employer shall use the criteria and methodologies listed in this Clause. No other evaluation criteria or methodologies shall be permitted.

29.2 In evaluating and comparing 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 arithmetic errors pursuant to Clause IB.28;
- (b) price adjustment due to discounts offered in accordance with Sub-Clause IB.23.3;
- (c) excluding Provisional Sums and the provision, if any, for contingencies in the Summary Bill of Quantities, but including competitively priced daywork;
- (d) making an appropriate price adjustment for any quantifiable nonmaterial nonconformities in accordance with Sub-Clause IB.27.3; and
- (e) the additional evaluation factors are specified in Section Evaluation Criteria and Qualification Updating Forms.

29.3 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 Bids' comparison.

### **IB-30 Abnormally Low Bids**

30.1 If the Bid Price of the successful Bidder is more than 15% below the lower of the Employer's estimate of the cost of work to be performed under the Contract or average of other lowest two evaluated substantially responsive Bids, 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 an additional Performance Security by 10% of the difference of the Bid Price as determined hereinabove up to issuance of Taking Over Certificate 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. The Bids having Bid Price lower than 25% shall be liable to be rejected.

### **IB-31 Unbalanced or Front-Loaded Bids**

31.1 If the Bid of the successful Bidder is seriously unbalanced (Front Loaded) in relation to the average of other evaluated substantially responsive Bids, the Employer during

execution of contract may pay against measured quantities of significantly higher quoted line item(s) rate(s) with respect to same line item(s) rate(s) determined from the average of other lowest two evaluated substantially responsive Bids as instructed by the Engineer. The balance line item(s) rate(s) may be paid against the same measured quantities at the time of issuance of Taking Over Certificate or as instructed by the Engineer.

## F. AWARD OF CONTRACT

### IB.32 Award Criteria

32.1 Subject to Clauses IB.33 and IB.39, the Employer will award the Contract to the Bidder whose Bid has been determined as most advantageous Bid (substantially responsive to requirements of the Bidding Documents with the lowest evaluated Bid Price).

### IB-33 Employer's Right to Annul the Bidding Process

33.1 Notwithstanding Clause IB.32, the Employer reserves the right 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.

The Employer shall upon request communicate to any Bidder who submitted a Bid, the grounds for its rejection of all Bids but is not required to justify those grounds. Rejection of all Bids shall be notified to all Bidders promptly.

### IB-34 Notification of Award

34.1 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 “Accepted Contract Amount”). The Letter of Acceptance will also state the remedies with respect to Sub-Clauses IB.30 & IB.31 if applicable.

34.2 No negotiation with the Bidder having submitted most advantageous Bid or any other Bidder shall be permitted, however, Employer may have clarification meetings before issuing Letter of Acceptance to get clarified any item in the Bid evaluation report.

34.3 The Letter of Acceptance/ notification of award and its acknowledgement/acceptance by the Bidder will constitute the formation of the Contract, binding the Employer and the Bidder till signing of the formal Contract Agreement.

34.4 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 in accordance with Sub-Clause IB.16.5.

### IB.35 Performance Security

35.1 The successful Bidder shall furnish to the Employer a Performance Security in the form and the amount stipulated in the Conditions of Contract and additional Performance Security if applicable under IB.30 as stated in the Letter of Acceptance, within a period of 28 days after the receipt of Letter of Acceptance.

35.2 Failure of the successful Bidder to comply with the requirements of Sub Clause IB.35.1 or Clauses IB.36 or IB.37 shall constitute sufficient grounds for the annulment of the award, forfeiture of the Bid security and to award the Contract to the Bidder having submitted next advantageous Bid.

**IB-36 Signing of Contract Agreement**

36.1 Within 14 days from the date of furnishing of acceptable Performance Security under the Conditions of Contract, the Employer will notify the successful Bidder to depute its representative with appropriate Power of Attorney to sign the Contract Agreement in the form provided in the Bidding Documents, incorporating all agreements between the parties.

36.2 The formal Agreement between the Employer and the successful Bidder shall be executed within 14 days of the receipt of the above stated notification by the successful Bidder from the Employer.

**IB.37 Integrity Pact**

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

**IB.38 Instructions not Part of Contract**

38.1 Bids shall be prepared and submitted in accordance with the Instructions to Bidders which are provided to assist the Bidders in preparing Bids but do not constitute part of the Contract.

**IB-39 Corrupt and Fraudulent Practices**

39.1 The Employer will reject a Bid if it determines that the Bidder recommended for award, or any of its personnel, or its agents, or its sub-contractors, service providers, suppliers and/or their employees, has, directly or indirectly, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices in competing for the contract under this bidding.

39.2 The Employer will blacklist and hence forthwith debar a Constructor or individual, at any time, in accordance with the prevailing Public Procurement Rules 2004.

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## **BIDDING DATA**

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BD-2

### BIDDING DATA

The following specific data for the Works to be bid 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.

IB Clause Reference	Bidding Data
1.1	<p><b>Name and address of the Employer:</b></p> <p style="text-align: center;">Pakistan Industrial Development Corporation (PIDC) 2<sup>nd</sup> Floor PIDC House Dr. Ziauddin Road, Karachi, Pakistan Telephone: 021-38266666 Web: www.pidc.com.pk</p>
1.1	<p><b>Name of the Project &amp; Summary of the Works:</b></p> <p>Development of Internal Electrical Distribution System and Allied Work at Bin Qasim Industrial Park (BQIP) Karachi.</p>
1.2	<p><b>Time for Completion for the Works:</b></p> <p>Eight (08) Months from the date of Commencement.</p>
2.1	<p><b>Source of Funding:</b></p> <p>PIDC arranged funds from its own source.</p>
3.1	<p><b>Eligible Bidders</b></p> <p>All bids shall be evaluated on Technical and Financial merit. The Company Evaluation Criteria is attached in bidding documents.</p>
8.1	<p><b>Time limit for clarification:</b></p> <p>Any sort of clarifications can be obtained on or before five (05) days prior to bid submission date.</p>
8.3	<p><b>Venue, time, and date of the pre-Bid meeting:</b></p> <p>A pre bid meeting will be held at PIDC Project Site office at Bin Qasim Industrial Park (BQIP), Karachi on <b>27<sup>th</sup> February, 2025</b> at 1100 Hours. The Employer is not responsible for any verbal communications.</p>
11.1	<p><b>Bid language:</b> English</p>
14.1	<p><b>Currencies of Bid and Payment:</b></p> <p>The unit rates and the prices shall be quoted by the bidder entirely in Pak rupees. and inclusive of all Government Taxes.</p>

15.1	<p><b>Period of Bid Validity:</b> Period of bid Validity is 120 days after the date of bid opening. (Extendable)</p>
16.1	<p><b>Amount of Bid Security:</b> A bid security amounting to <b>Rs. 15,000,000 (Rupees Fifteen Million Only)</b> in favor of Pakistan Industrial Development Corporation (PIDC) must be submitted. <b>A scanned copy of the bid security must be attached with the technical bid electronically, while the original bid security must be submitted to the PIDC office before the submission deadline.</b></p>
16.2	<p>A bid security shall be in the form of <b>Call Deposit Receipt (CDR)/ Pay Order or bank guarantee</b> issued by a schedule Bank of Pakistan or from insurance company having at least AA rating from PACRA/VIS in favor of Pakistan Industrial Development Corporation (PIDC) must be submitted.</p>
17.1	<p>Alternative Proposal(s) by the Bidder shall not be considered.</p>
19.2	<p><b>Sealing and Marking of Bids</b></p> <ul style="list-style-type: none"> <li>• The process of e-Procurement will be carried out for this tender on <b>single stage Two envelope method</b>. The bidders must register with PPRA for e-procurement on EPADS (<a href="https://eprocare.gov.pk">https://eprocare.gov.pk</a>).</li> <li>• Submission through PPRA EPADS is mandatory.</li> <li>• Interested bidders are requested to submit their proposals electronically through PPRA EPADS and also submit one original hard copy. Delayed/conditional/telegraphic Proposals will not be entertained.</li> <li>• Manual proposal of only those participants will be accepted who submit their bids through PPRA EPADS.</li> </ul> <p><b>For manual submission, Technical &amp; Financial Proposals shall be placed into one outer envelope and sealed. This outer envelope shall bear the submission address, the name of the assignment, firm name and the address.</b></p>
20.1(a)	<p><b>Deadline for submission of Bids:</b> Delete the whole text and substitute with the following: <b>The Proposals must be submitted electronically EPADS not later than:</b></p> <p><b>Time: 1100 Hours</b> <b>Date: 11<sup>th</sup> March 2025</b></p> <p><b>For Manual submission, the Procuring Agency address is:</b> Pakistan Industrial Development Corporation (Pvt.) Ltd., Pidc House, 2nd Floor, Dr. Ziauddin Ahmed Road, Karachi. 021-35685041-9</p>



	<p>Manual proposal of only those participants will be accepted who submit their bids through PPRA EPADS.</p> <p><b>If in any case/ scenario the last date of submission is declared a public holiday the next working day shall be considered the deadline for submission of bids.</b></p>
<p><b>23.1</b></p>	<p><b>Venue, time, and date of Bid opening:</b></p> <p><b>Electronic Bids</b> will be opened on the same day at <b>11<sup>th</sup> March 2025 at 11:30 am</b> through EPADS in the presence of Procurement Committee and bidders who opt to participate at the following venue, Pakistan Industrial Development Corporation (PIDC) 2<sup>nd</sup> Floor PIDC House Dr. Ziauddin Road, Karachi, Pakistan Tel: +92-21-3568-5041-9</p>

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## **EVALUATION CRITERIA AND QUALIFICATION**

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## EVALUATION CRITERIA AND QUALIFICATION UPDATING FORMS

This Section contains Eligibility and Qualification Criteria that the Employer shall use to evaluate Bids and qualify Bidders in accordance with Clauses IB.26 of Instructions to Bidders. The Bidder shall provide all the information requested below.

The information provided below shall be substantiated with valid documentary evidences otherwise the requirement will not be considered as complied.

The Qualification Requirements on the basis of which the Bidders shall be evaluated for the instant project are all as given hereunder. These shall be provided by the Bidders as ‘Technical Proposal/ Qualification Documents’ in Envelope-1 of their Bids for development of Internal Electrical Distribution Network System & Allied Works, if attached documents are proved, wrong, fake or bogus then the client reserves the right to disqualify the firm for further bidding process.

These Qualification Documents, besides specified mandatory requirements, shall also include the past track record, the technical capability, and financial capability as well as the contracting firm’s specific methodology & approach proposed for undertaking the relevant construction of Internal Electrical Distribution Network and Allied Works at Bin Qasim Industrial Park, Karachi as stated herein and in the Bid Documents.

Envelope-2 ‘Financial Proposal/Bid’ shall be opened of only those Bidders that have met all the mandatory requirements as well as minimum Scoring Criteria for Qualification as specified hereunder. If quoted price of few bidders is same then, Bidder who get more marks in Technical Bid will be considered.

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### TECHNICAL PROPOSAL/BID EVALUATION CRITERIA

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#### MANDATORY REQUIREMENTS/CRITERIA

Description	Evaluation Criteria	Result
<b>I) Reconfirmation of Valid PEC Registration</b>		
The Contractor must have a valid Pakistan Engineering Council (PEC) Registration in C-1 Category or above, as well as Registration under relevant specialization code.	Qualified/ Disqualified	
<b>II) Valid Undertaking/Declaration of No Litigation/Blacklisting</b>		
Affidavit on stamp paper must be submitted affirming that the firm is <b>not blacklisted</b> on any project by any organization government entity.	Qualified/ Disqualified	
<b>III) Tax Certificate</b>		
A copy of relevant Federal and provincial tax Certificate shall be provided by the Bidder as a mandatory requirement. And the bidder should be an active tax payer.	Qualified/ Disqualified	
<b>IV) Joint Venture (If applicable)</b>		
The JV Agreement (if) should be in line with PEC Bye-Laws	Qualified/	

Description	Evaluation Criteria	Result
and must clearly mention the share and responsibilities of each party	Disqualified	
<b>V) Valid Bid Security as per Bidding Documents</b>		
Valid Bid Security as described in the tender documents shall be provided by the Bidder as a mandatory requirement.  A scanned copy of the bid security must be attached with the technical bid, while the original bid security must be submitted to the PIDC office before the submission deadline.	Qualified/ Disqualified	
<b>VI) Documentary Evidence with Bid</b>		
Completion certificates of atleast one (1) similar nature project related to Electrical Distribution Networks and Allied Work, with a minimum project value of PKR 1,000 million.	Qualified/ Disqualified	
The Bidder must have an annual turnover of at least PKR 1,000 million for each of the last three (3) years.	Qualified/ Disqualified	

#### REQUIREMENTS/CRITERIA FOR SCORING BASED EVALUATION

Sr. No.	Category	Weightage/Marks
A	Experience Record	60
B	Personnel Capabilities	15
C	Equipment Capabilities	10
D	Financial Soundness	10
E	Construction Schedule	05
<b>Total</b>		<b>100</b>

**Note:** Qualification status shall be decided on Pass/Fail basis.

#### A. General Experience

Sr. No.	Description	Marks Assigned	Explanation for Marks
a)	Firms Existence (Registration with PEC)	10	01 mark for each year's existence till 2024
b)	Projects of Similar nature Internal Electrical Distribution Network and Allied Works Completed in last ten years with a minimum value of PKR 1000 million each.	30	15 Marks will be given against each project.

<b>c)</b>	Projects of Similar Internal Electrical Distribution Network and Allied Works in-hand with a minimum value of PKR 500 million each.	<b>20</b>	10 Marks will be given against each project.
<b>Total Marks Allocated</b>			<b>60</b>

- No marks will be given in the absence of documentary proof.

### B. Personnel Capabilities

Sr. No.	Description	Marks Assigned	Explanation for Marks
<b>a)</b>	Engineers (Bachelors / Masters) registered with Pakistan Engineering Council (PEC) <ul style="list-style-type: none"> <li>Electrical Engineer – 2 Nos</li> </ul>	<b>10</b>	5 Marks will be given against each Register Engineer with minimum 5 years' experience.
<b>b)</b>	Associates Engineers (DAE)/BE/BS <ul style="list-style-type: none"> <li>Civil – 1 Nos</li> <li>Electrical – 1 Nos</li> </ul>	<b>5</b>	2.5 Marks will be given against each Associates Engineer with minimum 5 years' experience for DAE or 3 years for BE/BS.
<b>Total Allocated Marks</b>			<b>15</b>

No marks will be given in the absence of documentary proof.

### C. Equipment Capability

Critical equipment required for the Project.

Sr. No.	Description	Marks Assigned	Explanation for Marks
1	Excavator	<b>2</b>	
2	Crane	<b>2</b>	
3	Forklift	<b>2</b>	
4	Cable pulling winches	<b>2</b>	
5	Cable splicing/termination and cutting tools	<b>1</b>	
6	Cable pulling winches	<b>1</b>	
<b>Total Allocated Marks</b>			<b>10</b>

Proof of acceptable ownership documents of purchased/rental/leased of each machinery/equipment.

#### D. Financial Soundness

Sr. No.	Description	Marks Assigned	Explanation for Marks
a)	Annual turnover of Rs. 1000 million (Rs. 100 Crore) or more for the last 3 consecutive years, supported by audited financial statements. The marks will be allocated based on the turnover for each year	10	<input type="checkbox"/> Rs. 1000 million to Rs. 2000 (Total: 6 marks) <input type="checkbox"/> Rs. 2000 million to Rs. 3000 (Total: 9 marks) <input type="checkbox"/> Over Rs. 3000 million: (Total: 10 mark)
<b>Total Allocated Marks</b>			<b>10</b>
<b>E. Construction Schedule</b>			
Complete work schedule item-wise starting from 1st May 2025, developed on Primavera Project Planner P-6 with detailed milestones, start dates, and an item-wise breakdown of the project.		A comprehensive and clear schedule with well-defined milestones will be awarded full marks. Partial marks may be given for incomplete or unclear schedules.	
<b>Total Allocated Marks</b>			<b>5</b>

#### KEY NOTES ON EVALUATION CRITERIA:

- a) For Technical Proposal/Bid Assessment, the Bidder/Contractor must secure an overall score of minimum 70 Points out of Total 100 Points, in addition to meeting all Mandatory Requirements as stipulated in this Document.
- b) The Contractor must fill out all the appendices/ annexure of this Document, with correct information, along with relevant acceptable supporting documents of proofs.

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**LETTER OF BID  
AND  
SCHEDULES TO BID**

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## 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, Schedules to Bid including Bill of Quantities, Drawings 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 said Bidding Documents and Addenda for the sum of Equivalent PKR \_\_\_\_\_ (Eq. Pak Rupees \_\_\_\_\_) or such other sum as may be ascertained in accordance with the said conditions.
2. We meet the eligibility requirements in accordance with IB.3.
3. We, including any Subcontractors for any part of the Contract, are not debarred/ blacklisted by the Employer, any Government/Semi Government/Public Department in Pakistan or foreign country, international organizations or other foreign institutions.
4. Our subcontractors or suppliers for any part of the Contract, if any, shall have nationalities from eligible countries, in accordance with IB.4.4.
5. We understand that all the Schedules attached hereto form part of this Bid.
6. As security for due performance of the undertakings and obligations of this Bid, we submit herewith a Bid Security in the amount of PKR \_\_\_\_\_ (Pak. Rupees. \_\_\_\_\_) drawn in your favour or made payable to you and valid for a period of \_\_\_\_\_ days beginning from the date Bids are opened.
7. 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 Contract Data.
8. We agree to abide by this Bid for the period of \_\_\_\_\_ days, inclusive of 14 days beyond Bid validity period (as mentioned at Sr. No. 6 above) and it shall remain binding upon us and may be accepted at any time before the expiration of that period.
9. 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.
10. We do hereby declare that the Bid is made without any collusion, comparison of figures or arrangement with any other Bidder for the Works.
11. We understand that you are not bound to accept the lowest or any Bid you may receive.



12. We undertake that all the information and documents submitted with the Bid are genuine, and in case of incorrect information of fake documents we shall be liable for punitive action under the Applicable Law.

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 \_\_\_\_\_

**A-1**  
**Schedule-A to Bid**

**SCHEDULE OF ADJUSTMENT DATA**  
**Schedule of Cost Indexation**

[The Employer is to engage a professional with experience in construction costs and the inflationary effect on construction costs when preparing the contents of the Schedule of Cost Indexation. In the case of very large and/or complex works contracts, it may be necessary to specify several families of price adjustment formulae corresponding to the different works involved.]

[The formulae for price adjustment shall be of the following general type:]

$$P_n = a + b \frac{L_n}{L_o} + c \frac{E_n}{E_o} + d \frac{M_n}{M_o} + \dots$$

where: “P<sub>n</sub>” is the adjustment multiplier to be applied to the estimated Contract value in the relevant currency of the work carried out in period “n”, this period being a month;

“a” is a fixed coefficient, stated in the relevant table of adjustment data, representing the nonadjustable portion in contractual payments;

“b”, “c”, “d”, ... are coefficients representing the estimated proportion of each cost element related to the execution of the Works as stated in the relevant table of adjustment data; such tabulated cost elements may be indicative of resources such as labour, equipment and materials;

“L<sub>n</sub>”, “E<sub>n</sub>”, “M<sub>n</sub>”, ... are the current cost indices or reference prices for period “n”, expressed in the relevant currency of payment, each of which is applicable to the relevant tabulated cost element on the date 49 days prior to the last day of the period (to which the particular Payment Certificate relates); and

“L<sub>o</sub>”, “E<sub>o</sub>”, “M<sub>o</sub>”, ... are the base cost indices or reference prices, expressed in the relevant currency of payment, each of which is applicable to the relevant tabulated cost element on the Base Date.

The weightings (coefficients) for each of the factors of cost stated in the following table(s) of adjustment data shall only be adjusted if they have been rendered unreasonable, unbalanced or inapplicable, as a result of Variation(s).

If the currency in which the Contract price is expressed is different from the currency of the country of origin of the indices, a correction factor will be applied to avoid incorrect adjustments of the Contract price. The correction factor shall be: Z<sub>0</sub> / Z<sub>1</sub>, where,

Z<sub>0</sub> = the number of units of currency of the origin of the indices which equal to one unit of the currency of the Contract Price on the Base date, and

Z<sub>1</sub> = the number of units of currency of the origin of the indices which equal to one unit of the currency of the Contract Price on the Date of Adjustment.

**A-2**  
**Schedule-A to Bid**

**PRICE ADJUSTMENT / SCHEDULE OF ADJUSTMENT DATA**

Price adjustment will be as per actual on under mentioned items: -

Cost Element	Description	Weightages	Applicable index
1	2	3	4
(i)	Fixed Portion	0.250	-
(ii)	Local Labor	0.036	Federal Bureau of Statistics (FBS) (FBS) Monthly Statistical Bulletin
(iii)	RMUs (item no. 1.1 a)	0.194	
(iv)	1C-630 mm.sq electric cable (item no. 2.3 a)	0.162	
(v)	3C-120 mm.sq electric cable (item no. 2.3 b)	0.322	
(vi)	High Speed Diesel	0.036	As announced by Pakistan State Oil (PSO) on Twenty-Eight (28) days prior to bid-opening date.
	<b>Total</b>	<b>1.000</b>	

**Notes:**

- 1) Indices for (ii)” is taken from the Government of Pakistan Federal Bureau of Statistics, Monthly Statistical Bulletin; whereas “(vi)” is taken from PSO. 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) Applicable indices from Items from “iii” to “v” would be decided after consultation with PEC.
- 3) Any fluctuation in the indices or prices of materials other than those given above shall not be subject to adjustment of the Contract Price.

**B-1**  
**Schedule-B to Bid**

**BILL OF QUANTITIES**

**A. Preamble:**

1. The Bill of Quantities shall be read in conjunction with the Conditions of Contract, Specifications and Drawings.
2. The quantities given in the Bill of Quantities are estimated and provisional, and are given to provide a common basis for bidding. The basis of payment will be the actual quantities of work executed and measured by the Contractor and verified by the Engineer and valued at the rates and prices as given 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 as given 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, or the same shall be determined by the Engineer in accordance with Clause 13, General Conditions.
6. General directions and description of work and materials are not necessarily repeated nor summarized 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 Bill of Quantities.
7. All type of taxes and others payable by the Contractor under the Contract, or for any other cause, shall be included in the rates and prices and the total Bid Price submitted by a bidder.
8. The following abbreviations for units have been used in Bill of Quantities:

<b>Units</b>		<b>Abbreviations</b>
Cubic Meter	=	cum
Square Meter	=	sqm
Kilogram	=	kg
Provisional Sum	=	PS
Lump-Sum	=	LS

**C-1**  
**Schedule-C to Bid**

**CONSTRUCTION SCHEDULE**

Pursuant to Sub-Clause 8.3 of the General Conditions, the whole of the Works, and each Section (if any), shall be completed within the Time for Completion for the Works or Section (as the case may be) stated as hereunder and mentioned in Contract Data:

Description	Time for Completion (days)
a) Whole Works	
b) Section A	
c) Section B	
d) _____	
e) _____	
f) _____	

[The Bidder shall provide, 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 programme for completion of the whole of the Works and Sections of the Works may meet Employer’s completion targets in days noted above and counted from the Commencement Date (Attach sheets as required for the specified form of Construction Schedule)]

D-1

Schedule-D to Bid

### METHOD OF PERFORMING THE WORK

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

**1. Organization Chart:**

Shall indicate 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. Method of executing the Works:**

The procedures for installation of equipment and machinery and transportation of equipment and materials to the site.]

E-1

Schedule-E to Bid

### LIST OF MAJOR EQUIPMENT

[The Bidder will provide on Sheet E-2 of this Schedule a list of all major equipment and related items, under separate heading for items owned, to be purchased or to be arranged on lease by him to carry out the Works. The information shall include make, type, capacity, and anticipated period of utilization for all equipment.

The Bidder shall provide adequate information to demonstrate clearly that it has the capability to meet the requirements for the key equipment listed in Sheet E-3.]

E-2  
Schedule-E to Bid

**LIST OF MAJOR EQUIPMENT**  
**Owned, Purchased or Leased**

Owned Purchased or Leased	Description of Unit (Make, Model, Year)	Capacity HP Rating	Condition	Present Location or Source	Date of Delivery at Site	Period of Work on Project
a. Owned						
b. To be Purchased						
c. To be arranged on Lease						



**F-1**  
**Schedule-F to Bid**

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

**G-1**  
**Schedule-G to Bid**

**LIST OF SUBCONTRACTORS**

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

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

Part of Works (Give Details)	Subcontractor (With Complete Address)

**H-1**  
**Schedule-H to Bid**

**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 Programme of the Works and the Rates in the Bill of Quantities, expressed in thousands of PKR:

<b>Quarter</b>	<b>Amounts (1,000 PKR)</b>
<b>1<sup>st</sup></b>	
<b>2<sup>nd</sup></b>	
<b>3<sup>rd</sup></b>	
<b>4<sup>th</sup></b>	
<b>5<sup>th</sup></b>	
<b>Bid Price</b>	

I-1  
Schedule-I to Bid

### CONSTRUCTION CAMP AND HOUSING FACILITIES

[The Bidder in accordance with Clause 6 of the Conditions of Contract shall provide description of his construction camp's facilities and staff housing requirements.

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) Electrical 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.)]

**Note:**

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.

**J-1**  
**Schedule-J to Bid**

**INTEGRITY PACT**  
**DECLARATION OF FEES, COMMISSION AND BROKERAGE, ETC. PAYABLE BY THE**  
**BIDDERS/CONTRACTORS OF GOODS, SERVICES & WORKS IN CONTRACTS WORTH**  
**PAK. RS. 10.00 MILLION OR MORE**

Contract No. \_\_\_\_\_ Dated \_\_\_\_\_  
Contract Value: \_\_\_\_\_ Contract Title: \_\_\_\_\_

..... [Name of Bidder/Contractor] 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 Bidder/ Contractor] 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 Bidder/Contractor] 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 Bidder/Contractor] 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 Bidder/Contractor] 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 Bidder/Contractor] 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 Employer: .....

Name of Bidder/Contractor: .....

Signature: .....

Signature: .....

[Seal]

[Seal]

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## **STANDARD FORMS**

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**BS-1**

**BID SECURITY**

Security Executed on

\_\_\_\_\_ (Date)

Expiry \_\_\_\_\_ on

\_\_\_\_\_ (Date)

Name \_\_\_\_\_ of \_\_\_\_\_ Surety \_\_\_\_\_ with \_\_\_\_\_ Address:

\_\_\_\_\_

\_\_\_\_\_ Name \_\_\_\_\_ of \_\_\_\_\_ Principal \_\_\_\_\_ (Bidder) \_\_\_\_\_ with \_\_\_\_\_ Address

\_\_\_\_\_

\_\_\_\_\_ Penal Sum of Security PKR \_\_\_\_\_ (Pak Rupees

\_\_\_\_\_

\_\_\_\_\_)

Bid \_\_\_\_\_ Reference \_\_\_\_\_ No. \_\_\_\_\_

KNOW ALL

MEN BY THESE PRESENTS, that in pursuance of the terms of the Bid and at the request of the said Principal (Bidder) we, the Surety above named, are held and firmly bound unto

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

THE CONDITION OF THIS OBLIGATION IS SUCH, that whereas the Bidder has submitted the accompanying Bid dated \_\_\_\_\_ for \_\_\_\_\_ (Particulars of Bid) to the said Employer; and

(1) WHEREAS, the Employer has required as a condition for considering said Bid that the Bidder furnishes a Bid Security in the above said sum to the Employer, conditioned as under: that the Bid Security shall remain in force for a period fourteen (14) days beyond the Bid Validity date i.e., upto \_\_\_\_\_.

(2) that the Bid Securities of the Bidders except the lowest three will be returned by the Employer within twenty eight (28) days from the opening of Bids, provided a Bidder request for the return of its Bid Security, or on the expiry of original validity of Bid Security or as extended, whichever is earlier;

(3) that the Bid Security of the lowest three Bidders comprising the successful Bidder will be returned when the successful Bidder has furnished the required Performance Security; and

(4) that in the event of failure of the successful Bidder to furnish the required Performance Security, the entire said sum be paid immediately to the said Employer pursuant to IB.16 and IB.35 of the Instructions to Bidders for the successful Bidder's failure to perform.

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

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

PROVIDED ALSO THAT the Employer shall decide, whether the Principal (Bidder) has duly performed his obligations to sign the Contract Agreement and to furnish the requisite Performance Security within the time stated above, or has defaulted in fulfilling said requirements and the Surety shall pay without objection the said sum upon demand from the Employer forthwith and without any reference to the Principal (Bidder) or any other person.

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

**SURETY (Bank)**

WITNESS:

Signature:

\_\_\_\_\_

1. \_\_\_\_\_

Name:

\_\_\_\_\_

\_\_\_\_\_

Title:

\_\_\_\_\_

Corporate Secretary (Seal)

Corporate Guarantor (Seal)

2.

\_\_\_\_\_

\_\_\_\_\_

Name, Title & Address



PS-1

**FORM OF PERFORMANCE SECURITY**

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 defenses 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.

**Guarantor**

(Schedule Bank/ Insurance Company)

Signature\_\_\_\_\_

Name\_\_\_\_\_

Title\_\_\_\_\_

Corporate Guarantor (Seal)

WITNESS:

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

WITNESS:

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

CA-1

### FORM OF CONTRACT AGREEMENT

THIS CONTRACT AGREEMENT (hereinafter called the “Agreement”) made on the \_\_\_\_\_ day of \_\_\_\_\_ (month) 20\_\_\_\_ between \_\_\_\_\_

\_\_\_\_\_ (hereinafter called the “Employer”) of \_\_\_\_\_ (hereinafter 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, in the order of priority, 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:

- a) This Contract Agreement;
- b) The Letter of Acceptance;
- c) The Letter of Bid;
- d) The Particular Conditions Part A - Contract Data;
- e) The Particular Conditions Part B - Special Provisions;
- f) The General Conditions;
- g) The Specifications Part A - Specific Provisions;
- h) The Specifications Part B - Technical Provisions;
- i) The Drawings;
- j) The Completed Schedules to Bid including Schedule of Prices;
- k) the JV Undertaking (if the Contractor is a JV); and
- l) [Employer to insert any other documents forming part of the Contract]

The addenda/corrigenda, if any, (Excluding part relating to Instructions to Bidders along with Bidding Data) shall be deemed to have been incorporated at the appropriate places in the “Documents forming the Contract”.

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 Contactor  
(Seal)

\_\_\_\_\_  
Signature of Employer  
(Seal)

Signed, Sealed and Delivered in the presence of:

\_\_\_\_\_  
Witness  
(Name, Title and Address)

\_\_\_\_\_  
Witness  
(Name, Title and Address)

MG-1

**FORM OF 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 Pak Rupees \_\_\_\_\_ (PKR \_\_\_\_\_) 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,  
(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, on the part of the Contractor, of which the Employer at his discretion of making decision, 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 PKR \_\_\_\_\_ (Pak Rupees \_\_\_\_\_).

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**

(Scheduled Bank/ Insurance Company)

WITNESS:

Signature \_\_\_\_\_

1. \_\_\_\_\_

Name \_\_\_\_\_

\_\_\_\_\_  
Corporate Secretary (Seal)

Title \_\_\_\_\_  
Corporate Secretary (Seal)

2. \_\_\_\_\_

\_\_\_\_\_  
Name, Title & Address

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## **CONDITIONS OF CONTRACT**

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## CONDITIONS OF CONTRACT

The Conditions of Contract comprise two parts:

- (a) General Conditions
- (b) Particular Conditions

### General Conditions

These Conditions are the “General Conditions” which form part of the “FIDIC Conditions of Contract for Construction for Building and Engineering Works Designed by the Employer Second Edition (2017 Red book, Reprinted 2022 with amendments)” published by:

International Federation of Consulting Engineers

(Fédération Internationale des Ingénieurs – Conseils) – (FIDIC)

World Trade Center II - Geneva Airport

P. O. Box 311

CH-1215 Geneva 15

Switzerland

Email: [fidic@fidic.org](mailto:fidic@fidic.org), [fidic.pub@fidic.org](mailto:fidic.pub@fidic.org)

Website: <https://fidic.org/bookshop>



## Particular Conditions

**(Mandatory Provisions not to be amended/substituted  
except as instructed/permited by PEC in writing)**

The Particular Conditions (PC) complement the General Conditions (GC) to specify dates, contractual requirements, and special circumstances related to the Works. The PC consists of two parts, Part A - Contract Data and Part B - Special Provisions. The provisions to be found in the Special Provisions (Particular Conditions - Part B) take precedence over the equivalent provisions found under the same Sub-Clause number(s) in the General Conditions, and the provisions of the Contract Data (Particular Conditions - Part A) take precedence over the Special Provisions (Particular Conditions - Part B).

### Part A - Contract Data

Data to be Given	Sub-Clause	Data
Defects Liability Period (DLP):	1.1.27	365 days calculated from the date of completion of work certified by the Engineer.
Employer's name and address:	1.1.31	<b>Pakistan Industrial Development Corporation (PIDC)</b> 2nd Floor, PIDC House, Dr. Ziauddin Ahmed Road, Karachi Tel: +92-21-3568-5041-9 pidc.khi@gmail.com
Engineer's name and address:	1.1.35	<b>Asian Consulting Engineers Pvt. Ltd.</b> C-03 Jhelum Block, Green Forts II, Lahore +92 42 35450914-15
Time for Completion:	1.1.84	Total time period for the project is Eight (08) Months from the date of Commencement.
Address of Employer for communications:	1.3(d)	<b>Senior Project Manager</b> Site Office (BQIP) Pakistan Industrial Development Corporation (PIDC) Bin Qasim Industrial Park (BQIP), Karachi
address of Engineer for communications:		<b>Resident Engineer</b> <b>Asian Consulting Engineers Pvt. Ltd.</b> C-03 Jhelum Block, Green Forts II, Lahore +92 42 35450914-15
Address of Contractor for communications		[insert Contractor's address at the time of signing of the Contract]
Contract shall be governed by the law of:	1.4	Islamic Republic of Pakistan
Ruling language:		English

Language for communications:		English
number of additional paper copies of Contractor's Documents:	1.8	06
After receiving the Letter of Acceptance, the Contractor shall be given right of access to all or part of the Site within:	2.1	No later than the Commencement Date
Engineer's Duties and Authority	3.2 (e)(ii)	Variation resulting in an increase of the Accepted Contract Amount in excess of one percent (1%) subject to accumulative Variations not exceeding five percent (5%) of the Accepted Contract Amount
Performance Security (as percentage of the Accepted Contract Amount in Currencies) percent: currency:	4.2	10% of Contract Price stated in the Letter of Acceptance, in the form of unconditional, irrevocable Bank Guarantee from any Schedule Bank of Pakistan or Insurance company having at least AA Insurance Company rated by PACRA/VIS of rating, acceptable to the Employer.
Period of Validity of Performance Security		The performance security shall be valid until a date 14 days from the date of issue of the Defects Liability Certificates.
List of Insurance Companies	4.2.1	AA Rating Insurance Company rated by PACRA/VIS of rating.
Number of additional paper copies of progress reports	4.20	03
Normal working hours on the Site	6.5	Eight (08) hours per day under normal circumstances.
Number of additional paper copies of programme	8.3	03
Delay Damages payable for each day of delay	8.8 & 14.15(b)	0.1% of the Accepted Contract Amount for delay in completion of whole of the Works for each day.
Maximum amount of Delay Damages	8.8	Ten percent (10%) of the Accepted Contract Amount.
Applicability of Incentives for Early Completion	8.14	No
Maximum Amount of Mobilization Advance (Interest Free)	14.2	Ten (10%) of Contract Price stated in the Letter of Acceptance (excluding Provisional Sum if any) against irrevocable bank guarantee via a schedule bank of Pakistan or Insurance company having at least AA rating from PACRA/VIS, acceptable to the Employer.
Recovery of Mobilization Advance	14.2.3	The advance payment shall be recovered 15% by the client from the Contractor's each invoice/IPC till such time it is fully recovered.
Period of payment	14.3	one month
percentage of retention	14.3 (iii)	10% of the amount of Interim Payment Certificate

limit of Retention Money	14.3 (iii)	5% of Contract Price stated in the Letter of Acceptance.
Payment of Retention Money	14.3(iii)	a. Upon the issue of the Taking-Over Certificate with respect to the whole of the works, one half of the Retention Money shall be certified by the Engineer for payment to the Contractor. b. Upon the expiration of the Defects Liability Period for the works the other half of the Retention Money shall be certified by the Engineer for payment to the Contractor.
Plant and Materials for payment when delivered to the Site	14.5(c)(i)	The Contractor shall be entitled to receive from the Employer Secured Advance against material an indemnity bond acceptable to the Employer. The sum payable for such materials on Site shall not exceed 75 % of the price quoted in Schedule of Price.
Minimum amount of Interim Payment Certificate (IPC)	14.6.2	50 million
Period of payment of Advance Payment to the Contractor	14.7(a)	1) First part within 14 days after signing of the Contract Agreement or date of receipt of Engineer's Notice to Commence, 2) Second part within 42 days from the date of payment of the first part, subject to the satisfaction of the Engineer/Employer as to the state of mobilization of the Contractor.
Period for the Employer to make interim payments to the Contractor under Sub-Clause 14.6 [Interim Payment]	14.7b(i)	28 days
Period for the Employer to make final payment to the Contractor	14.7(c)	56 days
Currencies of payment of Contract Price	14.15	Pak Rupees
Periods for submission of insurance: a) evidence of insurance b) relevant policies	19.1	Within twenty-eight (28) day from the Commencement Date.
Rules of Arbitration	21.6	PEC Rules of Conciliation and Arbitration or Pakistan Arbitration Act of 1940, if the former is inactive. The place of Arbitration shall be in the Employer's country: Karachi
Warranty Period		The Warranty Period is 2 years for (goods/equipment) from the date of issuance of Taking Over Certificate.
Taking Over Certificate		Taking-Over Certificate will be issued as a whole.

## Particular Conditions

### Part B – Special Provisions

<p>1.1 Definitions</p>	<p>1.1.76 “Specification” Following is added at the end: “And consists of two parts i.e., i) “Part A - Specific Provisions”; and ii) ii) “Part B - Technical Provisions”.”</p>
<p>1.2 Interpretation</p>	<p>“and” is deleted from the end of sub-paragraph (i) and added at the end of sub-paragraph (j). Sub-paragraph (k) is added: “(k) The word “tender” is synonymous with “bid” the word tenderer with “bidder”, the words “tender documents” with “bidding documents” and “Schedule of Prices” with “Bill of Quantities”, as applicable.”</p>
<p>1.5 Priority of Documents</p>	<p>The documents listed at (a) through (k) of this Sub-Clause are deleted and substituted with the following: (a) the Contract Agreement; (b) the Letter of Acceptance; (c) the Letter of Bid; (d) the Particular Conditions Part A - Contract Data; (e) the Particular Conditions Part B - Special Provisions; (f) the General Conditions; (g) the Specification Part A - Specific Provisions; (h) the Specification Part B - Technical Provisions; (i) the Drawings; (j) the completed Schedules to Bid including Bill of Quantities; (k) the JV Undertaking (if the Contractor is a JV); and (l) any other documents forming part of the Contract. The addenda/corrigenda, if any, shall be deemed to have been incorporated at the appropriate places in the documents forming the Contract.</p>
<p>1.6 Contract Agreement</p>	<p>In the last line of the 1st paragraph the text “shall be borne by the Employer” is substituted by “shall be reimbursed by the Employer to the Contractor”.</p>
<p>3.1 The Engineer</p>	<p>Asian Consulting Engineers (Pvt) Ltd</p>
<p>3.2 Engineer’s Duties and Authority</p>	<p>The Engineer shall obtain the consent in writing of the Employer before taking action under the following Sub-Clauses of these Conditions: (a) Consenting to the subcontracting of any part of the Works under Sub-Clause 5.1 [Subcontractors] (b) Any action under Sub-Clauses 8.9 [Employer’s Suspension] and 8.12 [Prolonged Suspension]</p>

	<p>(c) Issuance of “Taking Over Certificate” under Sub-Clause 10.1 [Taking Over the Works and Sections].</p> <p>(d) Issuing the “Performance Certificate” under Sub-Clause 11.9 [Performance Certificate].</p> <p>(e) Sub-Clause 13.1 [Right to Vary]: instructing a Variation, except;</p> <p>(i) in an emergency situation as determined by the Engineer, or</p> <p>(ii) if such a Variation would increase the Accepted Contract Amount by less than the percentage specified in the Contract Data.</p> <p>(f) Sub-Clause 13.3 [Variation Procedure]: approving a proposal for Variation submitted by the Contractor in accordance with Sub-Clause 13.3.2 [Variation by Request for Proposal] or 13.2 [Value Engineering].</p> <p>(g) Certifying release of second half of the Retention Money under Sub-Clause 14.9 [Release of Retention Money].</p> <p>(h) Issuing Final Payment Certificate under Sub-Clause 14.13 [Issue of FPC].</p> <p>(i) Sub-Clause _____*</p> <p>(j) Sub-Clause _____</p> <p>[insert Sub-Clause number (not Sub-Clause 3.7 [Agreement or Determination])]</p> <p>Any such requirement shall not be applied to any action by the Engineer under Sub-Clause 3.7 [Agreement or Determination], as stated in Sub-Clause 3.2 [Engineer’s Duties and Authority] of the General Conditions.</p> <p>Notwithstanding the obligation, as set out above, to obtain approval, if, in the opinion of the Engineer, an emergency occurs affecting the safety of life or of the Works or of adjoining property, he may, without relieving the Contractor of any of his duties and responsibility 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, despite the absence of approval of the Employer, 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 13 and shall notify the Contractor accordingly, with a copy to the Employer.</p> <p>Following is added after the words “the Employer’s consent is required” in 4th paragraph:</p> <p>“stating that the Employer’s consent has been obtained for that specified authority”</p>
<p>4.2 Performance Security</p>	<p>4.2.1 Contractor’s Obligations</p> <p>The entity issuing the Performance Security and its form shall be as under:</p> <p>The Performance Security shall be, at the option of the Contractor, issued in the prescribed form included in the Bidding Documents, by</p> <p>(a) a Scheduled Bank in Pakistan or (b) an Insurance Company</p>

	<p>listed in the Contract Data and rated by PACRA/VIS of rating as provided in Table below: Accepted Contract Amount (In Eq. PKR million) Minimum Rating of Insurance Companies Up to 1000 A (+) 1001 to no limit AA In case of Joint Venture, the Performance Security shall be in the name of the Joint Venture or in the name of Lead/either firm of the JV or in ratio of shares of the individual JV partners.</p>
4.3 Contractor's Representative	<p>In second paragraph the text “professional engineer as defined in the Pakistan Engineering Council Act, 1975 (Act No. V of 1976) (having temporary licence in case of foreign engineer under Section 12 of the Pakistan Engineering Council Act, 1975 (Act No. V of 1976)” are added after the words “qualified, experienced”. In the 3rd paragraph the words “28 days” are substituted by “14 days”. In 2nd line of 4th paragraph the text “or appoint a replacement” is substituted by “except appointment of a suitable temporary replacement is deployed at the Site”</p>
4.4 Contractor's Documents	<p>4.4.2 As-Built Records First paragraph is deleted and the text in the last paragraph is substituted with the following: “The Contractor shall furnish to the Engineer 6 copies, one reproducible and one electronic copy (provided the Engineer has made available to the Contractor editable form of the Drawings) of all Drawings amended to conform to the Works as built. In case the Engineer does not make available to the Contractor editable form of the Drawings, the Contractor shall furnish to the Engineer as-built data for incorporation in the Drawings. Upon receipt of PDF versions of the as-built drawings prepared by the Engineer, the Contractor shall furnish to the Engineer 6 copies and one reproducible of these Drawings. The price of such Drawings shall be deemed to be included in the Contract Price.” Following Sub-Clause is added: 4.4.4 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 exceed 21 days and be construed as a complete check but will indicate only that the general method of construction and detailing is satisfactory and the Engineer's review or approval shall not relieve the Contractor of any of his responsibilities under the Contract.</p>
4.8 Health and Safety Obligations	<p>The following text is added at the end of this Sub-Clause: In the event of work being carried out outside the normal working hours and 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</p>

	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.
4.20 Progress Reports	At the end of sub-paragraph (g) the word “and” is deleted and at the end of sub-paragraph (h) the full stop (.) is replaced with “;”, and the following new sub-paragraphs are added as: (i) planned programme for the execution of the Works for next 56 days to enable the Engineer to determine its programme of inspection and testing; (j) monthly summery of daily job record indicating weather conditions, deployment of Contractor’s Equipment, labour employment, local material procurement and material import, if any; and (k) salient contractual and project information.
6.7 Health and Safety of Personnel	The existing text is substituted with the following: “In order to provide for the safety, health and welfare of persons, and for prevention of damage of any kind, all operations for the purposes of or in connection with the Contract shall be carried out in compliance with the Safety Requirements of the Government of Pakistan with such modifications thereto as the Engineer may authorize or direct and the Contractor shall take or cause to be taken such further measures and comply with such further requirements as the Engineer may determine to be reasonably necessary for such purpose. The Contractor shall also provide all other medical services and appoint a health and safety officer at Site if stated in the Specifications. In case of any fatality or serious accident, the Contractor shall, in addition, notify the Engineer immediately by the quickest available means.”
6.17 Alcoholic Liquor or Drugs	The Contractor shall not, otherwise than in accordance with the Laws of the Country, import, sell, give, barter or otherwise dispose of any alcoholic liquor or drugs, or permit or allow importation, sale, gift, barter or disposal thereto by Contractor’s Personnel.
6.18 Arms and Ammunition	The Contractor shall not give, barter, or otherwise dispose of, to any person, any arms or ammunition of any kind, or allow Contractor’s Personnel to do so.
6.19 Festivals and Religious Customs	The Contractor shall respect the Country’s recognized festivals, days of rest and religious or other customs.
6.20 Funeral Arrangements	The Contractor shall be responsible, to the extent required by local regulations, for making any funeral arrangements for any of its local employees who may die while engaged upon the Works.
6.21 Forced Labour	The Contractor, including its Subcontractors, shall not employ or engage forced labour which consists of any work or service, not voluntarily performed, that is exacted from an individual under threat

	of force or penalty, and includes any kind of involuntary or compulsory labour, such as indentured labour, bonded labour or similar labour-contracting arrangements.
6.22 Child Labour	The Contractor, including its Subcontractors, shall not employ or engage child labour in accordance with relevant law(s) in force in Islamic Republic of Pakistan.
6.23 Employment Records of Workers	The Contractor shall keep complete and accurate records of the employment of labour at the Site. The records shall include the names, ages, genders, hours worked and wages paid to all workers. These records shall be summarized on a monthly basis and submitted to the Engineer. These records shall be included in the details to be submitted by the Contractor under Sub-Clause 6.10 [Contractor's Records].
6.24 Workers' Organizations	The Contractor shall comply with the relevant labour laws of Pakistan which recognize workers' rights to form and to join workers' organizations/Trade Union of their choosing and to bargain collectively without interference.
6.25 Non-Discrimination and Equal Opportunity	The Contractor shall not make decisions relating to the employment or treatment of Contractor's Personnel on the basis of personal characteristics unrelated to inherent job requirements. The Contractor shall base the employment of Contractor's Personnel on the principle of equal opportunity and fair treatment, and shall not discriminate with respect to any aspects of the employment relationship, including recruitment and hiring, compensation (including wages and benefits), working conditions and terms of employment, access to training, job assignment, promotion, termination of employment or retirement, and disciplinary practices. Special measures of protection or assistance to remedy past discrimination or selection for a particular job based on the inherent requirements of the job shall not be deemed discrimination. The Contractor shall provide protection and assistance as necessary to ensure nondiscrimination and equal opportunity, including for specific groups such as women, persons with disabilities, migrant workers and children (of working age in accordance with Sub-Clause 6.22).
6.26 Epidemics	In the event of any out-break of illness of 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 the purpose of overcoming the same.
7.7 Ownership of Plant and Materials	"No Plant and/or Materials that is the property of the Employer shall be removed from the Site
7.9	The Contractor shall, so far as may be consistent with the Contract, make the maximum use of materials, supplies, plant and equipment



Use of Pakistani Materials and Services	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.
8.1 Commencement of Works	After signing of the Contract Agreement by both Parties,” and thereafter the word “The” is replaced with the word “the”
8.5 Extension of Time for Completion	The following is added after paragraph (c): “for last five years”.
8.14 Incentives For Early Completion	Contract Data does not state applicability of incentives for early completion
12.2 Method of Measurement	The following paragraph is added at the end of the Sub-Clause: “Summary of measured quantity for payment shall be delineated item-wise under four heads namely; “Schedule of Prices Quantity”, “Quantity Executed To-date”, “Quantity Certified Previously” and “Net Quantity Executed under this Certificate”.
13.6 Adjustments for Changes in Laws	The following paragraph is added at the end of the Sub-Clause: “Notwithstanding the foregoing, the Contractor shall not be entitled to an extension of time if the relevant delay has already been taken into account in the determination of a previous extension of time and such Cost shall not be separately paid if the same shall already have been taken into account in the indexing of any inputs to the Table of Adjustment Data in accordance with the provisions of Sub-Clause 13.7 [Adjustments for Changes in Cost].”
14.2 Advance Payment	The entity issuing the Advance Payment Guarantee and its form shall be as under: The Advance Payment Guarantee shall be in the form of Guarantee issued by a Scheduled Bank in Pakistan or AA Insurance Company rated by PACRA/VIS of rating.
14.6 Issue of IPC	14.6.1 The IPC In the first line of the 1st paragraph the words “28 days” are substituted by “14 days”.
14.7 Payment	Through crossed cheque in favour of the Contractor or JV partners. The Payment to JV partners shall be made at the request of the Joint Ventures in the ratio of their shares specified by them” are added at the end of the Sub-Clause
15.2 Termination for Contractor’s Default	15.2.1 Notice Following text is added at the end of sub-paragraph (h) of this Sub-Clause: “For the purposes of this Contract, corrupt and fraudulent practices have been defined in Public Procurement Rules 2004.” 15.2.3 After Termination The word “and” at the end of sub-paragraph (ii) of paragraph (b) is deleted the following paragraph is added after sub-paragraph (iii):

		“(iv) all Employer-Supplied Materials and/or Employer's Equipment made available to the Contractor in accordance with Sub-Clause 2.6 [Employer-Supplied Materials and Employer's Equipment], and”
15.4 Payment Termination	after	The following text is added at the end of this Sub-Clause: “The Employer shall be entitled to sell any of the Contractor's Equipment, Temporary Works and unused materials and apply the proceeds of sale towards payment of any debt due from the Contractor to the Employer under this Clause including any outstanding payments to the Subcontractors.
16.2 Termination by Contractor		16.2.1 Notice The sub-paragraph (j) is deleted in its entirety. At the end of sub-paragraph (i) “; or” is replaced with “.” and at the end of sub-paragraph (h) “;” is replaced with “; or”. In sub-paragraph (f) “84 days” are replaced with “180 days” and text “for reasons not attributable to the Contractor” is added at the end.
16.3 Contractor's Obligations After Termination		Sub-paragraph (c) is deleted and replaced with: “(c) deliver to the Engineer all Employer-Supplied Materials and/or Employer's Equipment made available to the Contractor in accordance with Sub-Clause 2.6 [Employer Supplied Materials and Employer's Equipment]; and (d) remove all other Goods from the Site, except as necessary for safety, and leave the Site.”
17.1 Responsibility for Care of the Works		After the two instances of “Goods” in the last paragraph, the words “Employer-Supplied Materials and/or Employer's Equipment” are added.
18.5 Optional Termination		In sub-paragraph (c), the words “and necessarily” are added after the words “was reasonably”.
19.2 Insurance to be provided by the Contractor		19.2.5 Injury to employees The words “sickness, disease” are deleted in the third line of first paragraph. The following Sub-Clause is added after Sub-Clause 19.2.6: 19.2.7 Insurance Company “The Contractor shall be obliged to place all insurances described in this Clause with insurers listed in the Contract Data and rated by PACRA/VIS of rating as provided in Table below: Accepted Contract Amount (In Eq. million PKR) Minimum Rating of Insurance Companies Up to 1000 A (+) 1001 to no limit AA 21.6 Arbitration
21.6 Arbitration		The word “international” is deleted in the sixth line of first paragraph. The text of sub-paragraph (a) is substituted with the following: “the Dispute shall be finally settled under the Rules of Arbitration, specified in the Contract Data;”
23 Taxes		The Contractor, Subcontractors and their employees shall be liable to pay income tax, withholding tax, super tax and other taxes on

	<p>income arising out of the Contract. The rates and prices as stated in the contract shall be deemed to cover all such taxes.</p>
<p>24 Integrity Part</p>	<p>If it is found and established at any stage that the Contractor or any of his Subcontractors, agents or servants have violated or involved in violation of the Integrity Pact signed by the Contractor then the Employer shall be entitled to :</p> <p>(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, agent or servants;</p> <p>(b) terminate the Contract; and</p> <p>(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, agent or servants.</p> <p>The termination under sub-paragraph (b) of this Sub-Clause shall proceed in the manner prescribed under Sub-Clause 15.1 to 15.4 and the payment under Sub-Clause 15.4 shall be made after having deducted the amounts due to the Employer under subparagraph (a) and (c) of this Sub-Clause.</p>

## **SPECIFICATIONS PART B - TECHNICAL**

### **SP-1. The Site**

The site for this project is located at Bin Qasim Industrial Park, Karachi. All work and operations related to the project will be carried out within this site area, and the Contractor shall comply with all local regulations and requirements pertaining to the site.

### **SP-2 SITE OFFICE**

The Contractor shall provide and maintain an office facility at the project site for the use of the Engineer and the Engineer's Representative. The site office must comprise at least two rooms: one conference room and one toilet. This office must be equipped with necessary furniture, stationery, air conditioning, sanitation, and other facilities required for the full duration of the construction period.

The office facility must be ready for occupancy by the Engineer within 20 days from the commencement of the works. The Contractor shall remove all provided facilities upon completion of the works. No separate payment will be made for the site office, and the cost shall be included in the overall cost of the works.

### **SP-3. Work Under the Contract**

The contract involves the development of an internal distribution network and allied works at Bin Qasim Industrial Park (BQIP), Karachi, to meet the growing power demands of the BQIP customers. The work shall be carried out in strict compliance with the standards and regulations established by the concerned DISCO, ensuring that all installations, connections, and infrastructure meet the required quality, safety, and operational standards. The contractor will be responsible for ensuring that all work aligns with the technical specifications, procedures, and safety protocols outlined by the concerned DISCO to guarantee reliable and efficient power distribution to the BQIP customers.

### **SP-4. Work by Others**

The Contractor shall cooperate with any other contractors or entities working in parallel or nearby, and the Contractor's responsibilities will include coordinating the execution of works to avoid interference with other ongoing works.

### **SP-5. Project Features**

The Bin Qasim Industrial Park (BQIP) in Karachi is designed to provide infrastructure and utilities to its enterprises. Regarding the internal electrical distribution and allied works, BQIP has made provisions to meet the power requirements of its zone enterprises, with immediate power needs being addressed through feeder lines from the grid station.

### **SP-6. Drawings**

During the construction, the Contractor shall keep an accurate record of any deviations from the approved Contract Drawings. Upon completion of the work, the Contractor shall submit cloth/milar paper tracings of the final as-built conditions, clearly marking

all variations from the original drawings. These drawings shall be provided to the Employer and shall become the property of the Employer.

All shop drawings/fabrication drawings must be prepared by the Contractor and submitted to the Engineer for approval at least fifteen (15) days before commencing any work related to these drawings. The Engineer shall review and approve or request corrections to these drawings within fifteen (5) days of receipt.

**SP-7. Physical and Other Data Available to Contractor**

The Contractor shall have access to all physical and other data available at the site, including but not limited to previous studies, environmental data, and site surveys, which will help in the execution of the works.

**SP-8. Layout of Work and Surveys**

The layout of work, including surveys, shall be as per the approved drawings and shall be carried out in close coordination with the Engineer to ensure accurate execution.

**SP-9. Approval of Materials and Equipment**

The Contractor must obtain prior approval from the Engineer for all materials and equipment before finalizing any purchase orders. No materials or equipment shall be used unless approved by the Engineer.

**SP-10. Contractor's Quality Assurance Plan**

The Contractor shall submit a Quality Assurance Plan (QAP) that outlines the procedures and measures for ensuring that the works meet the quality standards specified in the contract.

**SP-11. Construction Schedule**

The Bidder shall provide, 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 programme for completion of the whole of the Works and Sections of the Works may meet Employer's completion targets in days noted above and counted from the Commencement Date.

**SP-12. Facilities Provided by the Employer**

As per Schedule-I to Bid, the Employer will provide specific facilities for the project. The Contractor shall coordinate with the Employer for the provision and utilization of these facilities.

**SP-13. Construction Camps and Colonies**

As per Schedule-I to Bid of this bidding documents

**SP-14. Other Facilities for Engineers and Employers Personnel**

S.No	Items
01	Laptop Intel Core i7 with minimum requirements of 11 <sup>th</sup> Generation, 2.4 GHz Processor, 12 GB RAM and 1 TB SSD/Hard Disk with DVD/RV (02nos)
02	03 nos. 3 in 1 Laser printer A4 paper size (03nos)
03	A multifunction color copier/printer with fast printing, scanning, copying, and faxing capabilities, designed for high-volume office use with advanced security and mobile printing options. (01nos)
04	Laser colour printer A-3 paper size HP Latest M751 DN or equivalent (01nos)
05	1.5 Ton Invertor Air Conditioner (Gree, Kenwood or equivalent) (01nos)
06	Microwave Oven Latest Model (Dawlance or equivalent) (01nos)
07	Water Dispenser Latest Model (Dawlance or equivalent) (01nos)
08	Office Boy for Consultant Office. (01nos)

**b) Vehicles**

The contractor shall provide, maintain and make available at all times for the exclusive use of the Engineer the following brand-new vehicle. The number and type of each being as specified below:

- i. Brand New a 1200-cc motor car (Auto Gear) with Air Conditioner and Power Steering with Fuel & Driver 01 No.

The car shall be provided within 14 days from the commencement date and shall be fully serviced, registered, taxed, comprehensively insured, and maintained throughout the duration of the contract.

After the completion of the project, the car shall become the property of the Employer.

**SP-15. Safety and Health**

The Contractor shall maintain records and provide reports concerning safety, health, and welfare of workers, along with measures to prevent damage to property. All work must comply with Clause 4.8 and 6.7 of the Particular Conditions in Part B – Special Provisions.

**SP-16. Environmental Protection**

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.

The Contractor shall comply with all applicable national, Provincial and local environmental laws and regulations:

- a) Establish an operational system or managing environmental impacts.
- b) Carry out all of the monitoring and mitigation measures set forth in the initial environmental examination (“IEE”) and the Environmental Management Plans (EMP) attached hereto as Appendix 1 and Appendix 2 respectively and.
- c) Allocate the budget required to ensure that such measures are carried out. The Contractor shall submit to the Employer monthly report on the carrying out of such measures.
- d) More particularly, the Contractor shall comply with (i) the measures and requirements set forth in the initial environmental examination and the environmental management plant/equipment ( attached hereto Appendix 1 and Appendix 2 respectively): and (ii) any corrective or preventative actions set out in safeguards monitoring reports that the Employer/Engineer will prepare from time to time to mentioned implementation of the initial environmental examination and the environment management plant/equipment.

The Contractor shall:

- a) Be responsible for the implementation of Environmental Management plan (EMP) and Resettlement plan (RP) as mentioned in the environmental and social reports of the project.
- b) Engage / hire a qualified environmentalist as an environmental inspector who will liaise and coordinate with Project Manager in order to ensure compliance with the proposed mitigation and monitoring measures required under EMP and RP. Necessary guidance in this respect will be provided.
- c) Carry out the physical work required for the restoration of any public utility (Sewerage line, Water transporting system / Pipes rain waters drainage system etc.) damaged due to contrition activates at project site.
- d) Comply with all applicable laws (Pakistan Environment Protection ACT: PEPA 1997, Labour laws) of this country and pertinent occupational health & safety regulation.
- e) Try to provide employment opportunity to women living in the vicinity of the project area and refrain from child labor.
- f) Disseminate information at work sites regarding risks of transmissible diseases (HIV / AIDS & Hepatitis) for the workers employed during construction work and take adequate proper measures to protect workers from potential exposure to these diseases.
- g) Avoid discrimination between the wages and benefits of male and female workers for works of equal value.
- h) Be responsible for implementation of EMP and RP, being part of contract.
- i) Shall ensure all the formalities mentioned in the EMP and RP.

In case of noncompliance with the mitigation and monitoring measure of EMP and RP, the Employer will have the right to suspend work and withhold payments till the remedial

measures. Any delay caused by the noncompliance of mitigation and monitoring measure by the Contractor will be on account of the Contractor and he will be liable to pay penalty.

#### **SP-17. Standards of Countries other than those Specified**

Any materials, equipment, or services sourced from countries other than those specified shall meet the same standards and requirements as those defined in the contract, subject to prior approval by the Engineer.

#### **SP-18. Progress Reports and Photograph**

The Contractor shall submit to the Engineer Daily, Fortnightly and Monthly progress reports in Six copies detailing the progress in the execution of work during the reporting period. The submission of the progress reports shall be condition precedent to the payment of Contractors Bills by the Engineer. One week in advance the Contractor shall submit to the Engineer, particulars of the work he proposes to execute within the following two weeks.

The Contractor shall furnish to the Engineer every two weeks at least four photographs to clearly show the progress of construction. The photographs shall be submitted in twelve glossy prints 15 cm x 10 cm, together with the negative. Each print shall be marked on the back with the date and serial number. There shall be no writing, lettering or marking on the face of the photograph.

#### **SP-19. Measurement and Payment – General**

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.

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.

#### **SP-20. Measurement and Payment**

The work shall be measured for the units mentioned in the Schedule of Prices according to the Contract as determined by the Engineer from approved drawings, Specifications and Contract Documents.

#### **SP-21. Warranty of Equipment**

The Warranty Period shall be applicable for One (01) years after completion of Defect liability Period for (goods/equipment). The Contractor shall provide respective warranty cards of manufacturer along with other documents (such as user manual etc.) for each equipment. Moreover, in case any defect occurred in the equipment during the warranty period, the Contractor shall rectify/replace as agreed with the Engineer.

#### **SP- 22. INSPECTION OF MATERIALS & EQUIPMENT(S).**

All the required tests and commissioning along with related issues will be carried out in the aggregated laboratory in the presence of following inspection team detailed by the Engineer In charge / Employer. All the expenditure of inspection team each member for living, lodging, transportation, air return tickets, Medical Insurance will be borne by the Contractor whereas



the daily allowances in Rs. 30,000/day will be paid to the Inspectors. Laboratory test expenditures will also be borne by the Contractor.

The Inspection Team shall comprise of two (02) members from Employer & one from consultant.

Contractor must get approval from “The Engineer” of all Material before the finalization of Purchase Orders along with valid prototype test report.

### **SP-31 APPROVED INSURANCE COMPANIES**

The following list of the Insurance Companies constitutes the only Insurance Companies in Pakistan which the Employer will recognize for all Insurances required under the Contract. However, any public property to be insured under the Contract, which includes the Works, shall be insured by the National Insurance Corporation of Pakistan.

1. Eastern Federal Union Insurance Co. Ltd.
2. Habib Insurance Co. Ltd.
3. Adamjee Insurance Co. Ltd.
4. Muslim Insurance Co. Ltd.
5. New Jubilee Insurance Co. Ltd.
6. National Security Insurance Co. Ltd.
7. National Insurance Corporation of Pakistan
8. The United Insurance Company of Pakistan

Notwithstanding anything mentioned hereinabove, the approval of the Employer shall be mandatory for the Contractor to obtain prior to engagement of any Insurance Company.

### **SP-16 FIRST AID FACILITIES**

The Contractor shall provide and maintain adequate First Aid Facilities convenient to the Site to the approval of the Employer.

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**PIDC**

**Pakistan Industrial Development Corporation (PIDC) (Pvt.) Ltd.**

“Development of Internal Electrical Distribution System and Allied work at Bin Qasim Industrial Park (BQIP), Karachi”

## **VOLUME – III: BILL OF QUANTITIES (BOQ) (Infrastructure Electrical)**

**February-2025**



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## Quality Control Sheet



QUALITY CONTROL SHEET				
DOCUMENT	<b>Volume - III: Bill of Quantities (BOQ) (Infrastructure Electrical)</b>			
PROJECT	<b>“Power Distribution Network at Bin Qasim Industrial Park, Karachi (Package#IX)”</b>			
CODE	<b>9200099</b>			
REVISION NO.	<b>Rv.001 <input checked="" type="checkbox"/></b>	Rv.002	Rv.003	Rv.004
AUTHOR				
VERIFIED				
TO [Client]	<b>Pakistan Industrial Development Corporation (PIDC) (Pvt.) Ltd.</b>			
NOTES				

## Table of Contents

<b>SECTION - 1:</b>	<b>BILL OF QUANTITIES (BOQ)</b> .....	<b>1</b>
---------------------	---------------------------------------	----------

## SECTION - 1: BILL OF QUANTITIES (BOQ)

(1)	(2)	(3)	(4)	(5)	(6)
Item No.	Description	Estimated Quantity	Unit	Rate	Amount
				(Rs.)	(Rs.)
					(3) x (5)
	All items shall be carried out in accordance with the specification and drawings and to the satisfaction of the Engineer. Any Item equipment apparatus which might not have been mention in the BOQ but which will be used and necessary for Completion of the work, as per K- Electric/IEC/BS standards shall be arranged by the contractor. All tools, plants and labor required for successful completion of work shall be supplied by the contractor.				
<b>1</b>	<b>Section A: MV Outdoor Pad Mounted Equipment</b>				
1.1	Supply, installation, testing and commissioning of 11 kV Pad Mounted SF6 MV Ring Main Unit (RMU), complete interconnected housed in sheet steel pad mounted outdoor type body, conforming to protection Class IP-54, epoxy powder coated paint with approved color, door interlocked and safety features as per K-Electric standards. This package shall be as per technical specification. Complete in all respects as per the entire satisfaction of the Engineer.				
a)	4-Way Pad Mounted Ring Main Unit (RMU) as per K-Electric Specifications & Standards	20	No		
1.1.1	Supply, installation and commissioning of fully metered 11kV/MV Panel to be installed in consumer's sub-station and				

(1)	(2)	(3)	(4)	(5)	(6)
Item No.	Description	Estimated Quantity	Unit	Rate	Amount
				(Rs.)	(Rs.)
				(3) x (5)	
	manufactured as per the latest K-Electric requirement and specifications. Sheet metal clad indoor floor mounting cubicle type 11 kV MV Panel, 3 phase, 3 wire, 50 Hz. 630 Amps triple pole fully enclosed vacuum circuit Breakers draw out type fitted with manual operating mechanism having mechanical indicators for positing, visual ON-OFF indicator, having 2 overload trip coil to work in conjunction with IDMT relay.				
a)	11 kV / MV Panel as per KE Standards and Specifications	1	No		
1.2	Outdoor Pad Mounted Equipment Foundation				
	Providing and Construction of RCC foundation PAD with 3800 PSI strength with SR5 for respective pad mounting equipment, water resistance chemical, water proofing material applied on structure surface are concealed below FGL/FRL, Pad size as per recommendation of the manufacturer, for other installation detail refer to electrical drawing and specification. Complete in all respect.				
a)	MV Ring Main Unit Foundation	20	No		
1.3	Supply, installation, testing and commissioning of complete earthing system for the following item: Ring Main Unit (RMU). The work shall include 3 meter long Copper rod of 20 mm dia size with bare Copper Earth Conductor. 1x70 mm.sq, upto earth connecting point, inspection chamber, etc. to achieve less than 2.5 ohms specified earthing results. Complete in all respect	40	No		



(1)	(2)	(3)	(4)	(5)	(6)
Item No.	Description	Estimated Quantity	Unit	Rate	Amount
				(Rs.)	(Rs.)
					(3) x (5)
	as per drawing or specifications or as directed by the Engineer.				
<b>2</b>	<b>Section B: MV Cable Network System</b>				
2.1	Excavation of every type of trench in any type of soil with in the project area for laying of MV cables, as per dimensions given on the drawings, jobs includes back filling of any type of trench already excavated earth after laying various cables including site clearness, timbering and shoring, stock piling, river sand, backfilling, protective bricks, cable warning tape disposal of surplus up-to 38km and excavated earth compacted to 95% modified AASHTO density in layers of not exceeding 9" thickness etc, as per drawings & specification. Complete in all respects or as directed by the Engineer.				
a)	Excavation	58,574	cu.m		
b)	Back filling and compaction	20,306	cu.m		
c)	River Sand (Bed and cover)	9,947	cu.m		
d)	Bricks (225 x 112 x 75) mm	2,487	cu.m		
e)	Warning Tape width 150 mm and 0.05 mm thickness.	38,072	Rm		
2.2	Supply and installation of MV cable marker sat 50 meter interval as per specifications. Complete in all respects and to the approval of the Engineer.	761	Nos		
	Medium Voltage Cable				
2.3	All items under this head to be carried out as per K-Electric, the entire satisfaction of the client and engineer, and as mentioned				

(1)	(2)	(3)	(4)	(5)	(6)
Item No.	Description	Estimated Quantity	Unit	Rate	Amount
				(Rs.)	(Rs.)
					(3) x (5)
	in general notes or noted otherwise. Complete in all respects. Providing, laying, testing, commissioning and termination at both ends of following 8.7/15 kV Armoured Aluminium MV Cable 1-Core-Al XLPE/PVC/AWA/PVC & 3-Core-Al XLPE/PVC/SWA/PVC directly buried, including cable binding ties as per drawings and specification, including cable glands, identification markers, etc. Complete in all respect or as directed by the Engineer.				
a)	From Grid Station to Ring Main Units:				
	1C-630 mm.sq, Al XLPE/PVC/AWA/PVC	26,884	Rm		
b)	From Ring Main Unit to Pad Mounted Transformer:				
	3C-120 mm.sq, Al XLPE/PVC/SWA/PVC	29,111	Rm		
2.4	Providing, installation, testing and commissioning of following termination kits and joints of approved manufacturer, including cable glands, ferrules, lugs, ties and miscellaneous materials etc.as per specification and complete in all respect.				
2.4.1	Termination Kit:				
a)	From Grid Station to Ring Main Units:				
	1C-630 mm.sq, Al XLPE/PVC/AWA/PVC	60	Each		
2.4.2	Straight Cable Joint (Splices) :				
a)	From Grid Station to Ring Main Units:				
	1C-630 mm.sq, Al XLPE/PVC/AWA/PVC	54	Each		
b)	From Ring Main Unit to Pad Mounted Transformer:				

(1)	(2)	(3)	(4)	(5)	(6)
Item No.	Description	Estimated Quantity	Unit	Rate	Amount
				(Rs.)	(Rs.)
					(3) x (5)
	3C-120 mm.sq, Al XLPE/PVC/SWA/PVC	58	Each		
2.5	Providing and laying of uPVC Pipe of size 6''dia Class "C" through thrust bore for horizontal length without disturbing the existing road structure or any other utility line complete in all respect or as directed by the engineer.	500	Rm		
<b>Total (PKR)</b>					



## Pakistan Industrial Development Corporation (PIDC)

Development of Internal Electrical Distribution System and Allied work at Bin Qasim Industrial Park (BQIP), Karachi



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**PROCUREMENT OF CONSULTANCY SERVICES FOR DESIGN / DESIGN REVIEW AND CONSTRUCTION SUPERVISION OF INFRASTRUCTURE WORKS AT BIN QASIM INDUSTRIAL PARK (BQIP), PHASE III  
BIN QASIM TOWN KARACHI**

<b>CLASSIFICATION :-</b>	<b>ELECTRICAL</b>				PAGE: 01
<b>DATE:-</b>	<b>31st JANUARY, 2025</b>				
<b>CONTRACT NO :-</b>					
<b>11 KV DISTRIBUTION GRID STATION TO RMU NETWORK</b>					

**LIST OF ELECTRICAL DRAWINGS**

S.NO	DRAWING NO	DRAWING TITLES	VER.	SIZE	REMARKS.
1	BQIP- E - 00	LIST OF DRAWINGS	1	A2	SUBMITTED
2	BQIP- E - 01	OVERALL 11 KV PRIMARY FEEDER LAYOUT FROM GRID STATION TO RMU's (KEY PLAN (SHEET 1 OF 1)	1	A2	SUBMITTED
3	BQIP- E - 02	ENLARGED 11 KV PRIMARY FEEDER LAYOUT FROM GRID STATION TO RMU's (SHEET 1 OF 12)	1	A2	SUBMITTED
4	BQIP- E - 02	ENLARGED 11 KV PRIMARY FEEDER LAYOUT FROM GRID STATION TO RMU's (SHEET 2 OF 12)	1	A2	SUBMITTED
5	BQIP- E - 02	ENLARGED 11 KV PRIMARY FEEDER LAYOUT FROM GRID STATION TO RMU's (SHEET 3 OF 12)	1	A2	SUBMITTED
6	BQIP- E - 02	ENLARGED 11 KV PRIMARY FEEDER LAYOUT FROM GRID STATION TO RMU's (SHEET 4 OF 12)	1	A2	SUBMITTED
7	BQIP- E - 02	ENLARGED 11 KV PRIMARY FEEDER LAYOUT FROM GRID STATION TO RMU's (SHEET 5 OF 12)	1	A2	SUBMITTED
8	BQIP- E - 02	ENLARGED 11 KV PRIMARY FEEDER LAYOUT FROM GRID STATION TO RMU's (SHEET 6 OF 12)	1	A2	SUBMITTED
9	BQIP- E - 02	ENLARGED 11 KV PRIMARY FEEDER LAYOUT FROM GRID STATION TO RMU's (SHEET 7 OF 12)	1	A2	SUBMITTED
10	BQIP- E - 02	ENLARGED 11 KV PRIMARY FEEDER LAYOUT FROM GRID STATION TO RMU's (SHEET 8 OF 12)	1	A2	SUBMITTED
11	BQIP- E - 02	ENLARGED 11 KV PRIMARY FEEDER LAYOUT FROM GRID STATION TO RMU's (SHEET 9 OF 12)	1	A2	SUBMITTED
12	BQIP- E - 02	ENLARGED 11 KV PRIMARY FEEDER LAYOUT FROM GRID STATION TO RMU's (SHEET 10 OF 12)	1	A2	SUBMITTED
13	BQIP- E - 02	ENLARGED 11 KV PRIMARY FEEDER LAYOUT FROM GRID STATION TO RMU's (SHEET 11 OF 12)	1	A2	SUBMITTED
14	BQIP- E - 02	ENLARGED 11 KV PRIMARY FEEDER LAYOUT FROM GRID STATION TO RMU's (SHEET 12 OF 12)	1	A2	SUBMITTED
15	BQIP- E - 03	OVERALL PLAN 11 KV SECONDARY FEEDER LAYOUT FROM RMU TO TRANSFORMER (KEY PLAN)	1	A2	SUBMITTED
16	BQIP- E - 04	ENLARGED PLAN 11 KV SECONDARY FEEDER LAYOUT FROM RMU TO TRANSFORMER (SHEET 1 OF 22)	1	A2	SUBMITTED
17	BQIP- E - 04	ENLARGED PLAN 11 KV SECONDARY FEEDER LAYOUT FROM RMU TO TRANSFORMER (SHEET 2 OF 22)	1	A2	SUBMITTED
18	BQIP- E - 04	ENLARGED PLAN 11 KV SECONDARY FEEDER LAYOUT FROM RMU TO TRANSFORMER (SHEET 3 OF 22)	1	A2	SUBMITTED
19	BQIP- E - 04	ENLARGED PLAN 11 KV SECONDARY FEEDER LAYOUT FROM RMU TO TRANSFORMER (SHEET 4 OF 22)	1	A2	SUBMITTED
20	BQIP- E - 04	ENLARGED PLAN 11 KV SECONDARY FEEDER LAYOUT FROM RMU TO TRANSFORMER (SHEET 5 OF 22)	1	A2	SUBMITTED
21	BQIP- E - 04	ENLARGED PLAN 11 KV SECONDARY FEEDER LAYOUT FROM RMU TO TRANSFORMER (SHEET 6 OF 22)	1	A2	SUBMITTED
22	BQIP- E - 04	ENLARGED PLAN 11 KV SECONDARY FEEDER LAYOUT FROM RMU TO TRANSFORMER (SHEET 7 OF 22)	1	A2	SUBMITTED
23	BQIP- E - 04	ENLARGED PLAN 11 KV SECONDARY FEEDER LAYOUT FROM RMU TO TRANSFORMER (SHEET 7 OF 22)	1	A2	SUBMITTED
24	BQIP- E - 04	ENLARGED PLAN 11 KV SECONDARY FEEDER LAYOUT FROM RMU TO TRANSFORMER (SHEET 8 OF 22)	1	A2	SUBMITTED
25	BQIP- E - 04	ENLARGED PLAN 11 KV SECONDARY FEEDER LAYOUT FROM RMU TO TRANSFORMER (SHEET 9 OF 22)	1	A2	SUBMITTED
26	BQIP- E - 04	ENLARGED PLAN 11 KV SECONDARY FEEDER LAYOUT FROM RMU TO TRANSFORMER (SHEET 10 OF 22)	1	A2	SUBMITTED
27	BQIP- E - 04	ENLARGED PLAN 11 KV SECONDARY FEEDER LAYOUT FROM RMU TO TRANSFORMER (SHEET 11 OF 22)	1	A2	SUBMITTED
28	BQIP- E - 04	ENLARGED PLAN 11 KV SECONDARY FEEDER LAYOUT FROM RMU TO TRANSFORMER (SHEET 12 OF 22)	1	A2	SUBMITTED
29	BQIP- E - 04	ENLARGED PLAN 11 KV SECONDARY FEEDER LAYOUT FROM RMU TO TRANSFORMER (SHEET 13 OF 22)	1	A2	SUBMITTED
30	BQIP- E - 04	ENLARGED PLAN 11 KV SECONDARY FEEDER LAYOUT FROM RMU TO TRANSFORMER (SHEET 14 OF 22)	1	A2	SUBMITTED
31	BQIP- E - 04	ENLARGED PLAN 11 KV SECONDARY FEEDER LAYOUT FROM RMU TO TRANSFORMER (SHEET 15 OF 22)	1	A2	SUBMITTED
32	BQIP- E - 04	ENLARGED PLAN 11 KV SECONDARY FEEDER LAYOUT FROM RMU TO TRANSFORMER (SHEET 16 OF 22)	1	A2	SUBMITTED
33	BQIP- E - 04	ENLARGED PLAN 11 KV SECONDARY FEEDER LAYOUT FROM RMU TO TRANSFORMER (SHEET 17 OF 22)	1	A2	SUBMITTED
34	BQIP- E - 04	ENLARGED PLAN 11 KV SECONDARY FEEDER LAYOUT FROM RMU TO TRANSFORMER (SHEET 18 OF 22)	1	A2	SUBMITTED
35	BQIP- E - 04	ENLARGED PLAN 11 KV SECONDARY FEEDER LAYOUT FROM RMU TO TRANSFORMER (SHEET 19 OF 22)	1	A2	SUBMITTED
36	BQIP- E - 04	ENLARGED PLAN 11 KV SECONDARY FEEDER LAYOUT FROM RMU TO TRANSFORMER (SHEET 20 OF 22)	1	A2	SUBMITTED
37	BQIP- E - 04	ENLARGED PLAN 11 KV SECONDARY FEEDER LAYOUT FROM RMU TO TRANSFORMER (SHEET 21 OF 22)	1	A2	SUBMITTED
38	BQIP- E - 04	ENLARGED PLAN 11 KV SECONDARY FEEDER LAYOUT FROM RMU TO TRANSFORMER (SHEET 22 OF 22)	1	A2	SUBMITTED
39	BQIP- E-FD - 05	FOUNDATION DETAIL OF RING MAIN UNIT (RMU)	1	A2	SUBMITTED

PROJECT:  
PROCUREMENT OF CONSULTANCY SERVICES FOR  
DESIGN / DESIGN REVIEW AND CONSTRUCTION  
SUPERVISION OF INFRASTRUCTURE WORKS AT BIN  
QASIM INDUSTRIAL PARK (BQIP), PHASE III  
BIN QASIM TOWN KARACHI

DRAWING TITLE:  
**LIST OF DRAWINGS**

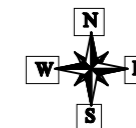
ORIGINAL:	DATE:	SCALE:
A2	JANUARY, 2025	

DATE	DESCRIPTION	DRAWN	APPROVED	PMANAGER
31-01-2025	FOR CLIENT SUBMISSION	M DEN	ENGR FARHAN	ENGR MUNEEB

DRAWING NO:	SHEET	REV
<b>BQIP-E-00</b>	<b>1 OF 1</b>	<b>00</b>

CLIENT:  
 NATIONAL INDUSTRIAL PARKS  
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SHAHRAH-E-FARABI, KARACHI-74400, PAKISTAN.  
PHONE: 021-59225035-9, 021-35631046-8

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FAX: +92 42 35450916 WEB: www.asiancon.com



**LEGEND**

S NO	DESCRIPTION
1	RING MAIN UNIT-01 (RMU)
2	RING MAIN UNIT-02 (RMU)
3	RING MAIN UNIT-03 (RMU)
4	RING MAIN UNIT-04 (RMU)
5	RING MAIN UNIT-05 (RMU)
6	RING MAIN UNIT-06 (RMU)
7	RING MAIN UNIT-07 (RMU)
8	RING MAIN UNIT-08 (RMU)
9	RING MAIN UNIT-09 (RMU)
10	RING MAIN UNIT-10 (RMU)
11	RING MAIN UNIT-11 (RMU)
12	RING MAIN UNIT-12 (RMU)
13	RING MAIN UNIT-13 (RMU)
14	RING MAIN UNIT-14 (RMU)
15	RING MAIN UNIT-15 (RMU)
16	RING MAIN UNIT-16 (RMU)
17	RING MAIN UNIT-17 (RMU)
18	RING MAIN UNIT-18 (RMU)
19	RING MAIN UNIT-19 (RMU)
20	RING MAIN UNIT-20 (RMU)
21	11 KV FEEDER-01
22	11 KV FEEDER-02
23	11 KV FEEDER-03
24	11 KV FEEDER-04
25	11 KV FEEDER-05
26	11 KV FEEDER-06
27	11 KV FEEDER-07
28	11 KV FEEDER-08
29	11 KV FEEDER-09
30	11 KV FEEDER-10
31	11 KV FEEDER-11
32	11 KV FEEDER-12
33	11 KV FEEDER-13
34	11 KV FEEDER-14
35	11 KV FEEDER-15
36	11 KV FEEDER-16
37	11 KV FEEDER-17
38	11 KV FEEDER-18
39	11 KV FEEDER-19
40	11 KV FEEDER-20
41	MV MANHOLE
42	3X1C 500mm <sup>2</sup> ALUMINUM, XLPE/PVC/AWA/PVC CABLE (FROM GRID STATION TO RMU)

**NOTE:**  
RMU IS NOT PART OF THE CLIENT'S SCOPE. THE SUPPLY AND INSTALLATION OF RMU SHALL BE THE PART OF THE CONSUMER'S SCOPE.

**PROJECT:**  
PROCUREMENT OF CONSULTANCY SERVICES FOR DESIGN / DESIGN REVIEW AND CONSTRUCTION SUPERVISION OF INFRASTRUCTURE WORKS AT BIN QASIM INDUSTRIAL PARK (BQIP), PHASE III BIN QASIM TOWN KARACHI

**DRAWING TITLE:**  
**OVERALL 11 KV PRIMARY FEEDER LAYOUT FROM GRID STATION TO RMU'S (KEY PLAN)**

ORIGINAL	DATE	SCALE
A2	JANUARY, 2025	

DATE	DESCRIPTION	DRAWN	APPROVED	PMANAGER
31-01-2025	FOR CLIENT SUBMISSION	M DEN	ENGR FARHAN	ENGR MUNEEB

**DRAWING NO:** BQIP-E-01

**SHEET:** 1 OF 1

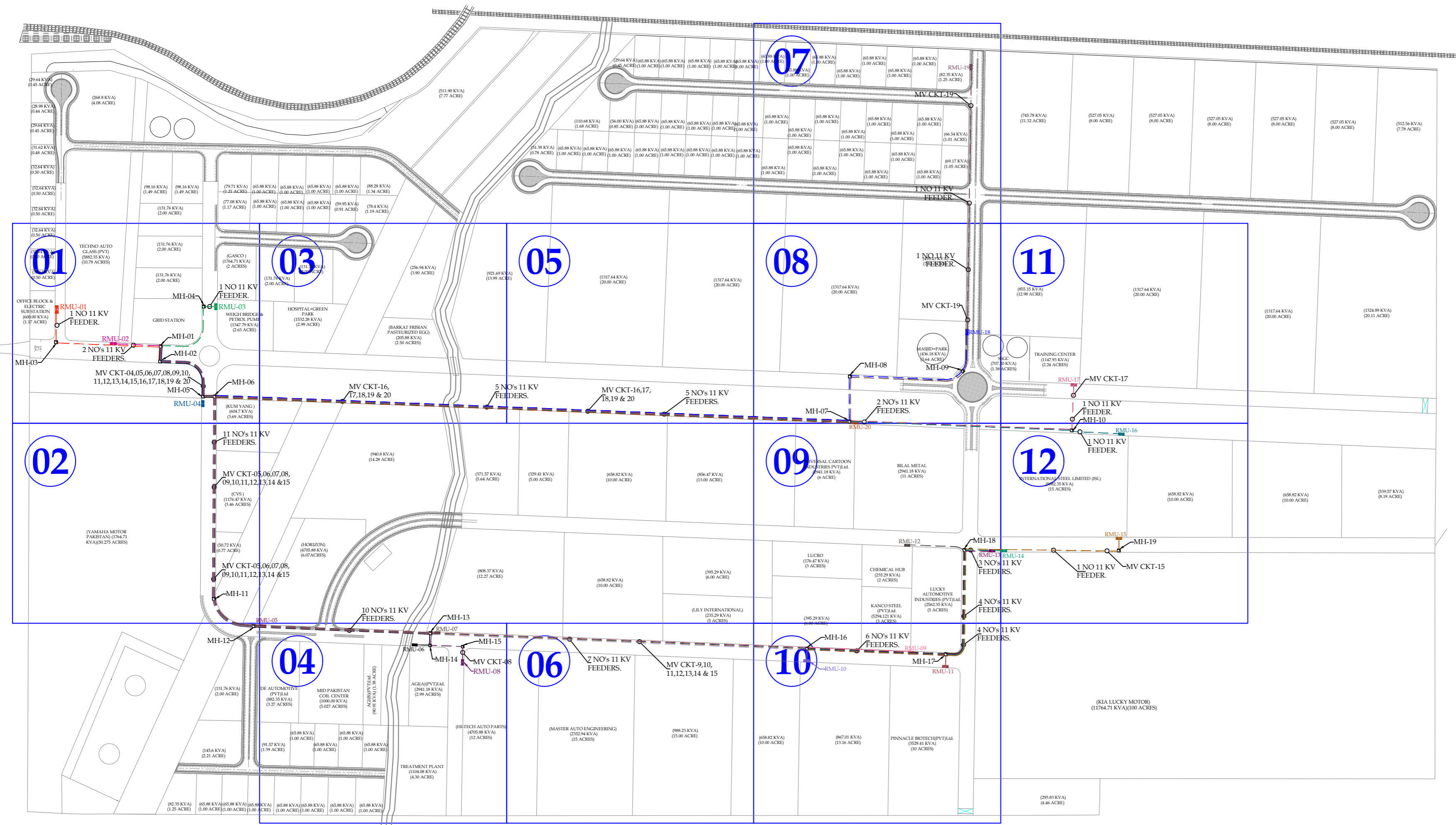
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**CLIENT:**  

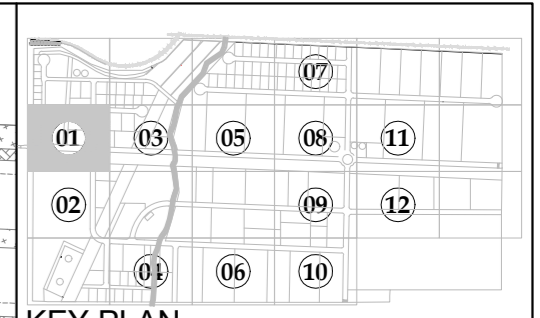
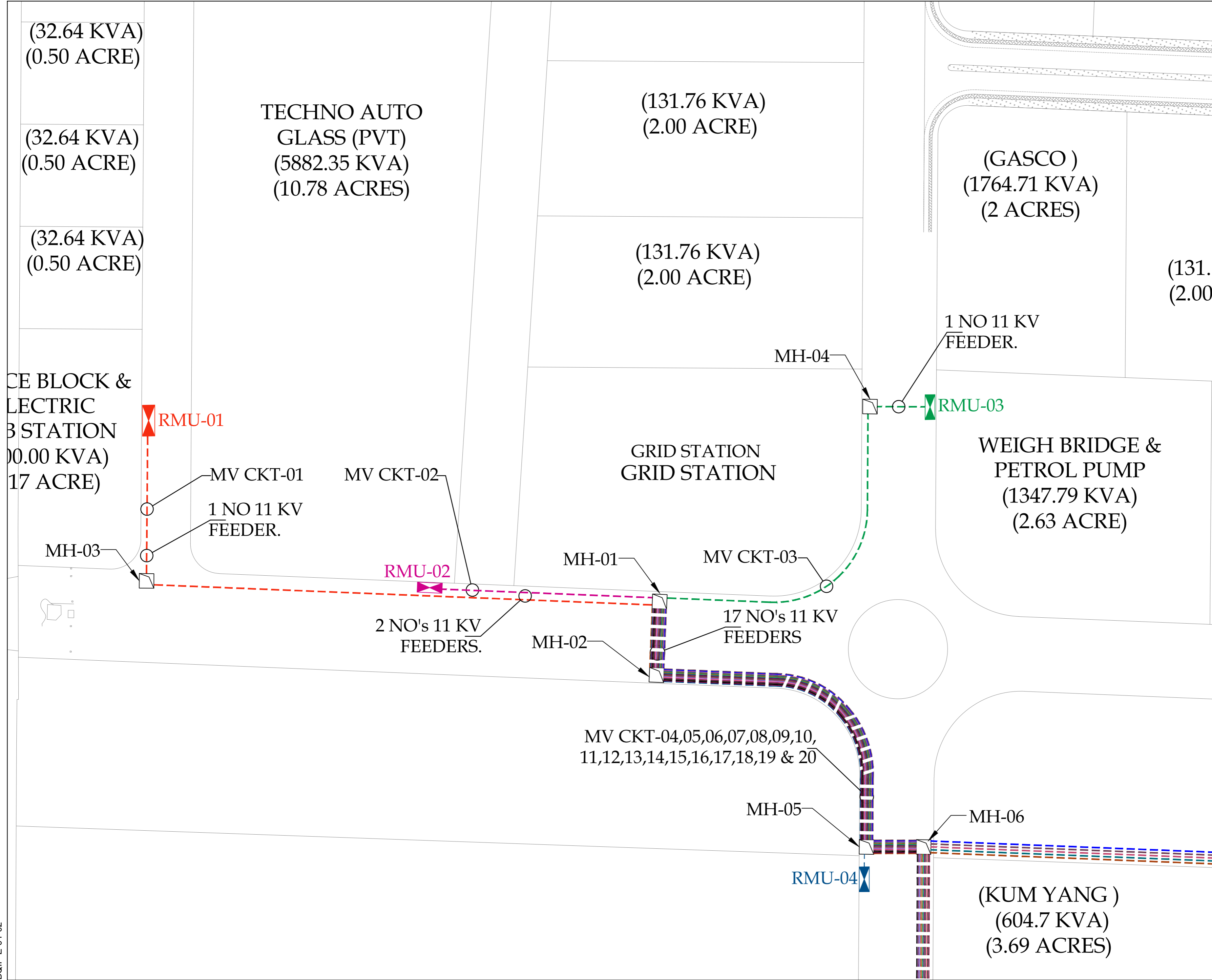
**NATIONAL INDUSTRIAL PARKS DEVELOPMENT & MANAGEMENT COMPANY**  
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 SHAHRAN-E-FARSH, KARACHI-74400, PAKISTAN.  
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**CONSULTANT:**  

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BQIP-E-01-02



**LEGEND**

S NO	DESCRIPTION
1	RING MAIN UNIT-01 (RMU)
2	RING MAIN UNIT-02 (RMU)
3	RING MAIN UNIT-03 (RMU)
4	RING MAIN UNIT-04 (RMU)
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15	RING MAIN UNIT-15 (RMU)
16	RING MAIN UNIT-16 (RMU)
17	RING MAIN UNIT-17 (RMU)
18	RING MAIN UNIT-18 (RMU)
19	RING MAIN UNIT-19 (RMU)
20	RING MAIN UNIT-20 (RMU)
21	11 KV FEEDER-01
22	11 KV FEEDER-02
23	11 KV FEEDER-03
24	11 KV FEEDER-04
25	11 KV FEEDER-05
26	11 KV FEEDER-06
27	11 KV FEEDER-07
28	11 KV FEEDER-08
29	11 KV FEEDER-09
30	11 KV FEEDER-10
31	11 KV FEEDER-11
32	11 KV FEEDER-12
33	11 KV FEEDER-13
34	11 KV FEEDER-14
35	11 KV FEEDER-15
36	11 KV FEEDER-16
37	11 KV FEEDER-17
38	11 KV FEEDER-18
39	11 KV FEEDER-19
40	11 KV FEEDER-20
41	MV MANHOLE
42	3X1C 500mm <sup>2</sup> ALUMINUM, XLPE/PVC/AWA/PVC CABLE (FROM GRID STATION TO RMU)

**NOTE:**  
 RMU IS NOT PART OF THE CLIENT'S SCOPE. THE SUPPLY AND INSTALLATION OF RMU SHALL BE THE PART OF THE CONSUMER'S SCOPE.

**PROJECT:**  
 PROCUREMENT OF CONSULTANCY SERVICES FOR DESIGN / DESIGN REVIEW AND CONSTRUCTION SUPERVISION OF INFRASTRUCTURE WORKS AT BIN QASIM INDUSTRIAL PARK (BQIP), PHASE III BIN QASIM TOWN KARACHI

**DRAWING TITLE:**  
 ENLARGED 11 KV PRIMARY FEEDER LAYOUT FROM GRID STATION TO RMU'S

DATE	DESCRIPTION	DRAWN	APPROVED	PMANAGER
31-01-2025	FOR CLIENT SUBMISSION	M DEN	ENGR FARHAN	ENGR MUNEEB

DRAWING NO:	SHEET	REV
BQIP-E-02	01 OF 12	00

**CLIENT:**  
 NATIONAL INDUSTRIAL PARKS DEVELOPMENT & MANAGEMENT COMPANY  
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 SHAHRAN-E-FAYDAL, KARACHI-74400, PAKISTAN.  
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 TELEPHONE: +92 42 35450914-5 +92 32 142 71101  
 FAX: +92 42 35450916 WEB: www.asiancon.com

BQIP-E-01-02

(YAMAHA MOTOR  
PAKISTAN) (1764.71  
KVA)(50.275 ACRES)

11 NO's 11 KV  
FEEDERS.

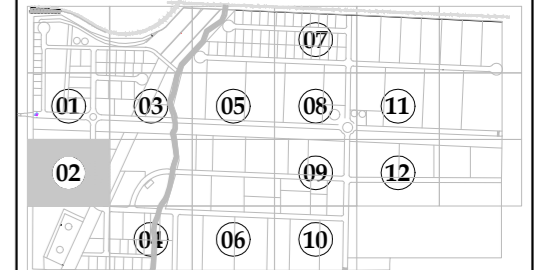
MV CKT-05,06,07,08,  
09,10,11,12,13,14 &15

(CVS )  
(1176.47 KVA)  
(3.46 ACRES)

(50.72 KVA)  
(0.77 ACRE)

MV CKT-05,06,07,08,  
09,10,11,12,13,14 &15

MH-11  
11 NO's 11 KV  
FEEDERS.



KEY PLAN

LEGEND

S NO	DESCRIPTION
1	RING MAIN UNIT-01 (RMU)
2	RING MAIN UNIT-02 (RMU)
3	RING MAIN UNIT-03 (RMU)
4	RING MAIN UNIT-04 (RMU)
5	RING MAIN UNIT-05 (RMU)
6	RING MAIN UNIT-06 (RMU)
7	RING MAIN UNIT-07 (RMU)
8	RING MAIN UNIT-08 (RMU)
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13	RING MAIN UNIT-13 (RMU)
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16	RING MAIN UNIT-16 (RMU)
17	RING MAIN UNIT-17 (RMU)
18	RING MAIN UNIT-18 (RMU)
19	RING MAIN UNIT-19 (RMU)
20	RING MAIN UNIT-20 (RMU)
21	11 KV FEEDER-01
22	11 KV FEEDER-02
23	11 KV FEEDER-03
24	11 KV FEEDER-04
25	11 KV FEEDER-05
26	11 KV FEEDER-06
27	11 KV FEEDER-07
28	11 KV FEEDER-08
29	11 KV FEEDER-09
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31	11 KV FEEDER-11
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36	11 KV FEEDER-16
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38	11 KV FEEDER-18
39	11 KV FEEDER-19
40	11 KV FEEDER-20
41	MV MANHOLE
42	3X1C 500mm <sup>2</sup> ALUMINUM, XLPE/PVC/AWA/ PVC CABLE (FROM GRID STATION TO RMU)

NOTE:  
RMU IS NOT PART OF THE CLIENT'S SCOPE. THE  
SUPPLY AND INSTALLATION OF RMU SHALL  
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PROJECT:  
PROCUREMENT OF CONSULTANCY SERVICES FOR  
DESIGN / DESIGN REVIEW AND CONSTRUCTION  
SUPERVISION OF INFRASTRUCTURE WORKS AT BIN  
QASIM INDUSTRIAL PARK (BQIP), PHASE III  
BIN QASIM TOWN KARACHI

DRAWING TITLE:  
ENLARGED 11 KV PRIMARY  
FEEDER LAYOUT FROM GRID  
STATION TO RMU'S

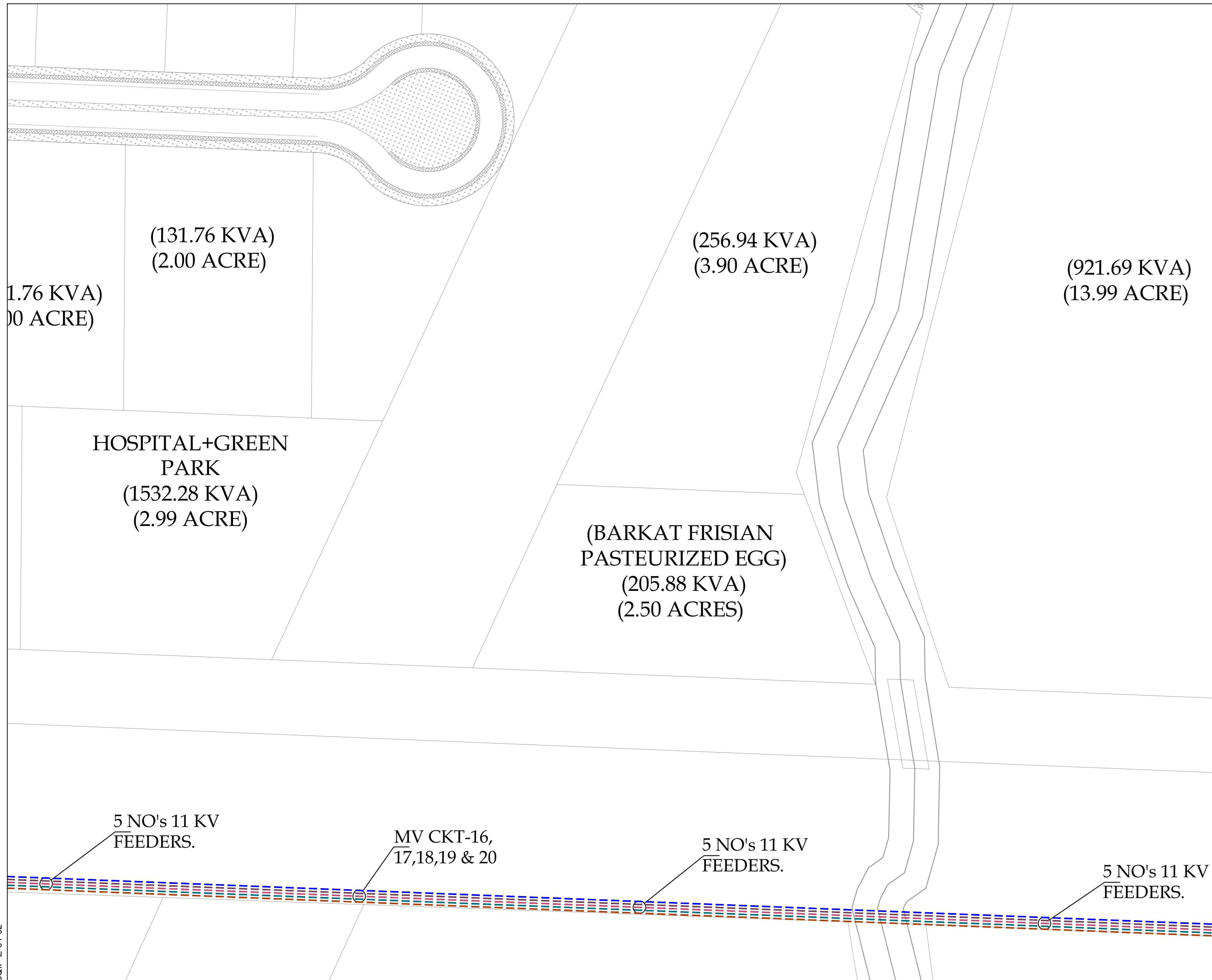
DATE	DESCRIPTION	DRAWN	APPROVED	PMANAGER
31-01-2025	FOR CLIENT SUBMISSION	M DEN	ENGR FARHAN	ENGR MUNEER

DRAWING N°:	SHEET	REV
BQIP-E-02	02 OF 12	00

CLIENT:  
 NATIONAL INDUSTRIAL PARKS  
DEVELOPMENT & MANAGEMENT COMPANY  
2nd FLOOR, BLOCK-C, FTC BUILDING  
SHAHRAH-E-FARSH, KARACHI-74400, PAKISTAN.  
PHONE: 021-99225035-9, 021-35631046-8.

CONSULTANT:  
 ASIAN CONSULTING ENGINEERS PVT.(LTD)  
C-3 JHILLUM BLOCK, GREEN FORT-II, LAHORE, PAKISTAN  
TELEPHONE: +92 42 35450914-5 +92 32 142 71101  
FAX: +92 42 35450916 WEB: www.asiancon.com





KEY PLAN

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21	11 KV FEEDER-01
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25	11 KV FEEDER-05
26	11 KV FEEDER-06
27	11 KV FEEDER-07
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PROJECT:  
PROCUREMENT OF CONSULTANCY SERVICES FOR DESIGN / DESIGN REVIEW AND CONSTRUCTION SUPERVISION OF INFRASTRUCTURE WORKS AT BIN QASIM INDUSTRIAL PARK (BQIP), PHASE III BIN QASIM TOWN KARACHI

DRAWING TITLE:  
ENLARGED 11 KV PRIMARY FEEDER LAYOUT FROM GRID STATION TO RMU's

ORIGINAL:	DATE:	SCALE:
A2	JANUARY, 2025	

DATE	DESCRIPTION	DRAWN	APPROVED	PMANAGER
31-01-2025	FOR CLIENT SUBMISSION	M DEN	ENGR FARHAN	ENGR MUNEEB

DRAWING N°:	SHEET	REV
BQIP-E-02	03 OF 12	00

CLIENT:  

**NATIONAL INDUSTRIAL PARKS DEVELOPMENT & MANAGEMENT COMPANY**  
 2nd FLOOR, BLOCK-C, FTC BUILDING  
 SHAHRAN-E-FARSH, KARACHI-74400, PAKISTAN.  
 PHONE: 021-9225035-9, 021-35631046-8

CONSULTANT:  

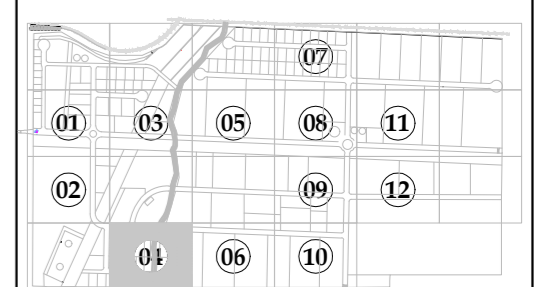
**ASIAN CONSULTING ENGINEERS PVT.(LTD)**  
 C-3 JHELUM BLOCK, GREEN FORT-II, LAHORE, PAKISTAN  
 TELEPHONE: +92 42 35450914-5 +92 32 142 71101  
 FAX: +92 42 35450916 WEB: www.asiancon.com

BQIP-E-01-02

(371.57 KVA)  
(5.64 ACRE)

(HORIZON)  
(4705.88 KVA)  
(6.07 ACRES)

(808.37 KVA)  
(12.27 ACRE)



KEY PLAN

LEGEND

S NO	DESCRIPTION
1	RING MAIN UNIT-01 (RMU)
2	RING MAIN UNIT-02 (RMU)
3	RING MAIN UNIT-03 (RMU)
4	RING MAIN UNIT-04 (RMU)
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19	RING MAIN UNIT-19 (RMU)
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21	11 KV FEEDER-01
22	11 KV FEEDER-02
23	11 KV FEEDER-03
24	11 KV FEEDER-04
25	11 KV FEEDER-05
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PROJECT:  
PROCUREMENT OF CONSULTANCY SERVICES FOR DESIGN / DESIGN REVIEW AND CONSTRUCTION SUPERVISION OF INFRASTRUCTURE WORKS AT BIN QASIM INDUSTRIAL PARK (BQIP), PHASE III BIN QASIM TOWN KARACHI

DRAWING TITLE:  
ENLARGED 11 KV PRIMARY FEEDER LAYOUT FROM GRID STATION TO RMU'S

DATE	DESCRIPTION	DRAWN	APPROVED	PMANAGER
31-01-2025	FOR CLIENT SUBMISSION	M DEN	ENGR FARHAN	ENGR MUNEEB

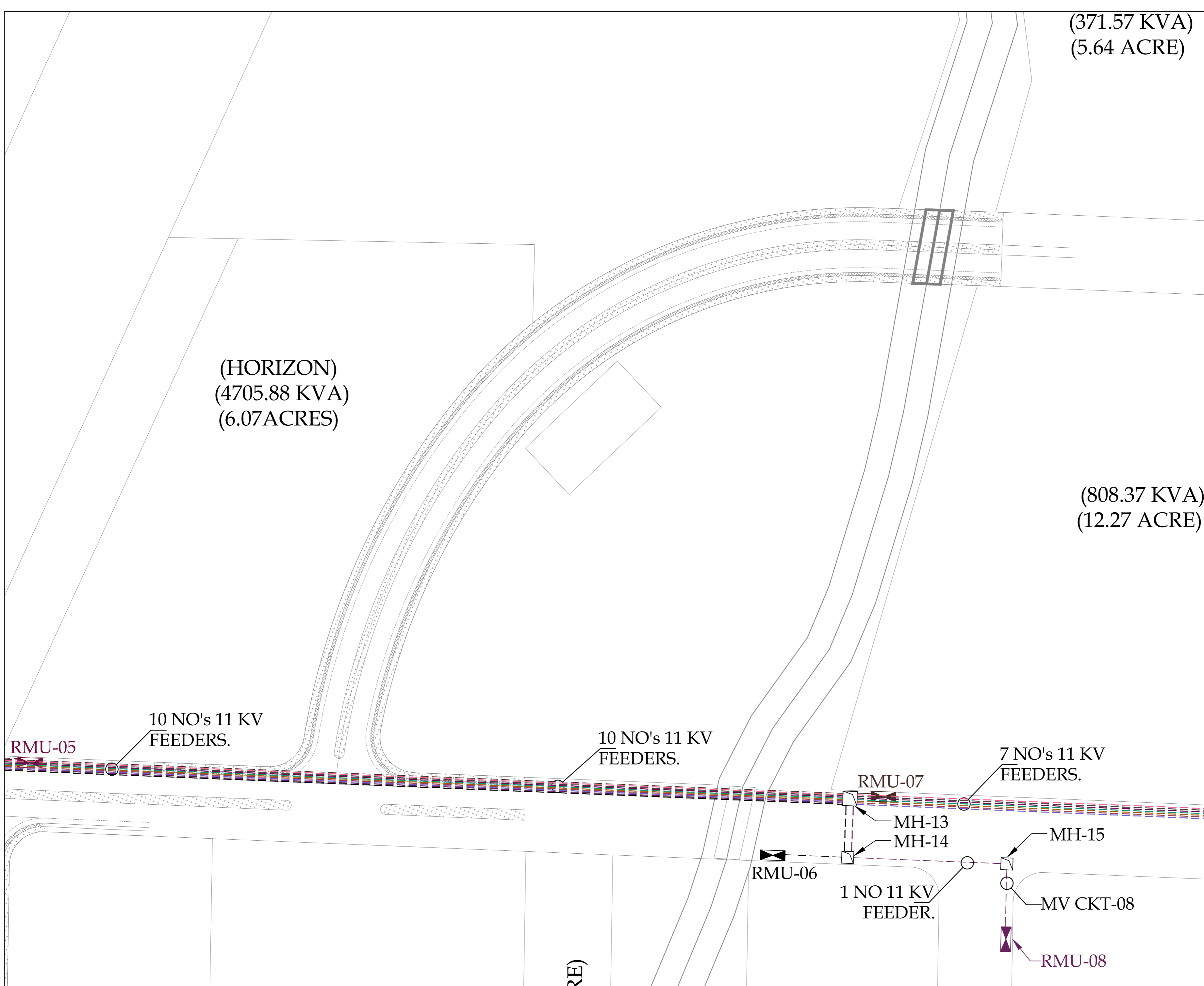
DRAWING N°:  
BQIP-E-02

SHEET	REV
04 OF 12	00

CLIENT:  
NATIONAL INDUSTRIAL PARKS DEVELOPMENT & MANAGEMENT COMPANY  
2ND FLOOR, BLOCK-C, FTC BUILDING  
SHAHRAH-E-FARSH, KARACHI-74400, PAKISTAN.  
PHONE: 021-99225035-9, 021-35631046-8.

CONSULTANT:  
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BQIP-E-01-02





KEY PLAN KEY PLAN LEGEND

S NO	DESCRIPTION
1	RING MAIN UNIT-01 (RMU)
2	RING MAIN UNIT-02 (RMU)
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4	RING MAIN UNIT-04 (RMU)
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19	RING MAIN UNIT-19 (RMU)
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21	11 KV FEEDER-01
22	11 KV FEEDER-02
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PROCUREMENT OF CONSULTANCY SERVICES FOR DESIGN / DESIGN REVIEW AND CONSTRUCTION SUPERVISION OF INFRASTRUCTURE WORKS AT BIN QASIM INDUSTRIAL PARK (BQIP), PHASE III BIN QASIM TOWN KARACHI

DRAWING TITLE:  
ENLARGED 11 KV PRIMARY FEEDER LAYOUT FROM GRID STATION TO RMU'S

DATE	DESCRIPTION	DRAWN	APPROVED	PMANAGER
31-01-2025	FOR CLIENT SUBMISSION	M DEN	ENGR FARHAN	ENGR MUNEEB

DRAWING N°:  
BQIP-E-02

SHEET  
05 OF 12

REV  
00

CLIENT:  
NATIONAL INDUSTRIAL PARKS DEVELOPMENT & MANAGEMENT COMPANY  
2nd FLOOR, BLOCK-C, FTC BUILDING  
SHAHRAH-E-FARSH, KARACHI-74400, PAKISTAN.  
PHONE: 021-99225035-9, 021-35631046-8

CONSULTANT:  
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5 NO's 11 KV FEEDERS.

MV CKT-16,17, 18,19 & 20

5 NO's 11 KV FEEDERS.

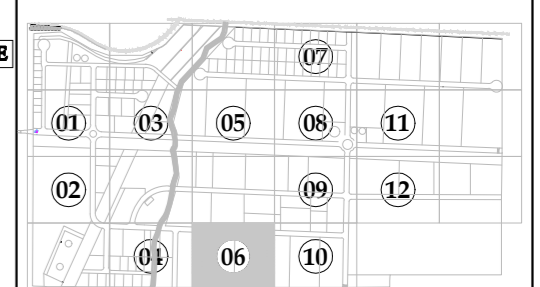
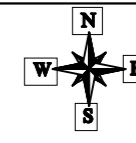
7 KVA) ACRE)

(329.41 KVA) (5.00 ACRE)

(658.82 KVA) (10.00 ACRE)

(856.47 KVA) (13.00 ACRE)

BQIP-E-01-02



KEY PLAN

LEGEND

S NO	DESCRIPTION
1	RING MAIN UNIT-01 (RMU)
2	RING MAIN UNIT-02 (RMU)
3	RING MAIN UNIT-03 (RMU)
4	RING MAIN UNIT-04 (RMU)
5	RING MAIN UNIT-05 (RMU)
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7	RING MAIN UNIT-07 (RMU)
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19	RING MAIN UNIT-19 (RMU)
20	RING MAIN UNIT-20 (RMU)
21	11 KV FEEDER-01
22	11 KV FEEDER-02
23	11 KV FEEDER-03
24	11 KV FEEDER-04
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PROJECT:  
PROCUREMENT OF CONSULTANCY SERVICES FOR DESIGN / DESIGN REVIEW AND CONSTRUCTION SUPERVISION OF INFRASTRUCTURE WORKS AT BIN QASIM INDUSTRIAL PARK (BQIP), PHASE III BIN QASIM TOWN KARACHI

DRAWING TITLE:  
ENLARGED 11 KV PRIMARY FEEDER LAYOUT FROM GRID STATION TO RMU'S

DATE	DESCRIPTION	DRAWN	APPROVED	PMANAGER
31-01-2025	FOR CLIENT SUBMISSION	M DIEN	ENGR FARHAN	ENGR MUNEEB

DRAWING N°:  
BQIP-E-02

SHEET  
06 OF 12

REV  
00

CLIENT:  

**NATIONAL INDUSTRIAL PARKS**  
 DEVELOPMENT & MANAGEMENT COMPANY  
 2nd FLOOR, BLOCK-C, FTC BUILDING  
 SHAHRAN-E-FARSH, KARACHI-74400, PAKISTAN.  
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CONSULTANT:  

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MV CKT-9,10,  
11,12,13,14 & 15

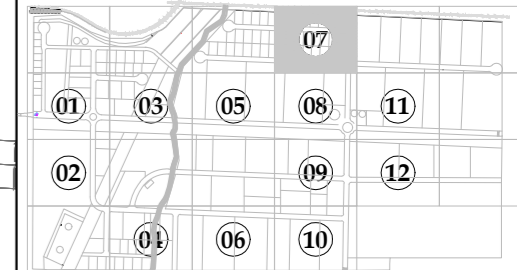
7 NO's 11 KV  
FEEDERS.

MV CKT-9,10,  
11,12,13,14 & 15

7 NO's 11 KV  
FEEDERS.

(MASTER AUTO ENGINEERING)  
(2352.94 KVA)  
(15 ACRES)

(988.23 KVA)  
(15.00 ACRE)



KEY PLAN

LEGEND

S NO	DESCRIPTION
1	RING MAIN UNIT-01 (RMU)
2	RING MAIN UNIT-02 (RMU)
3	RING MAIN UNIT-03 (RMU)
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24	11 KV FEEDER-04
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DRAWING TITLE:  
ENLARGED 11 KV PRIMARY FEEDER LAYOUT FROM GRID STATION TO RMU'S

DATE	DESCRIPTION	DRAWN	APPROVED	P/MANAGER
31-01-2025	FOR CLIENT SUBMISSION	M DEN	ENGR FARHAN	ENGR MUNEEB

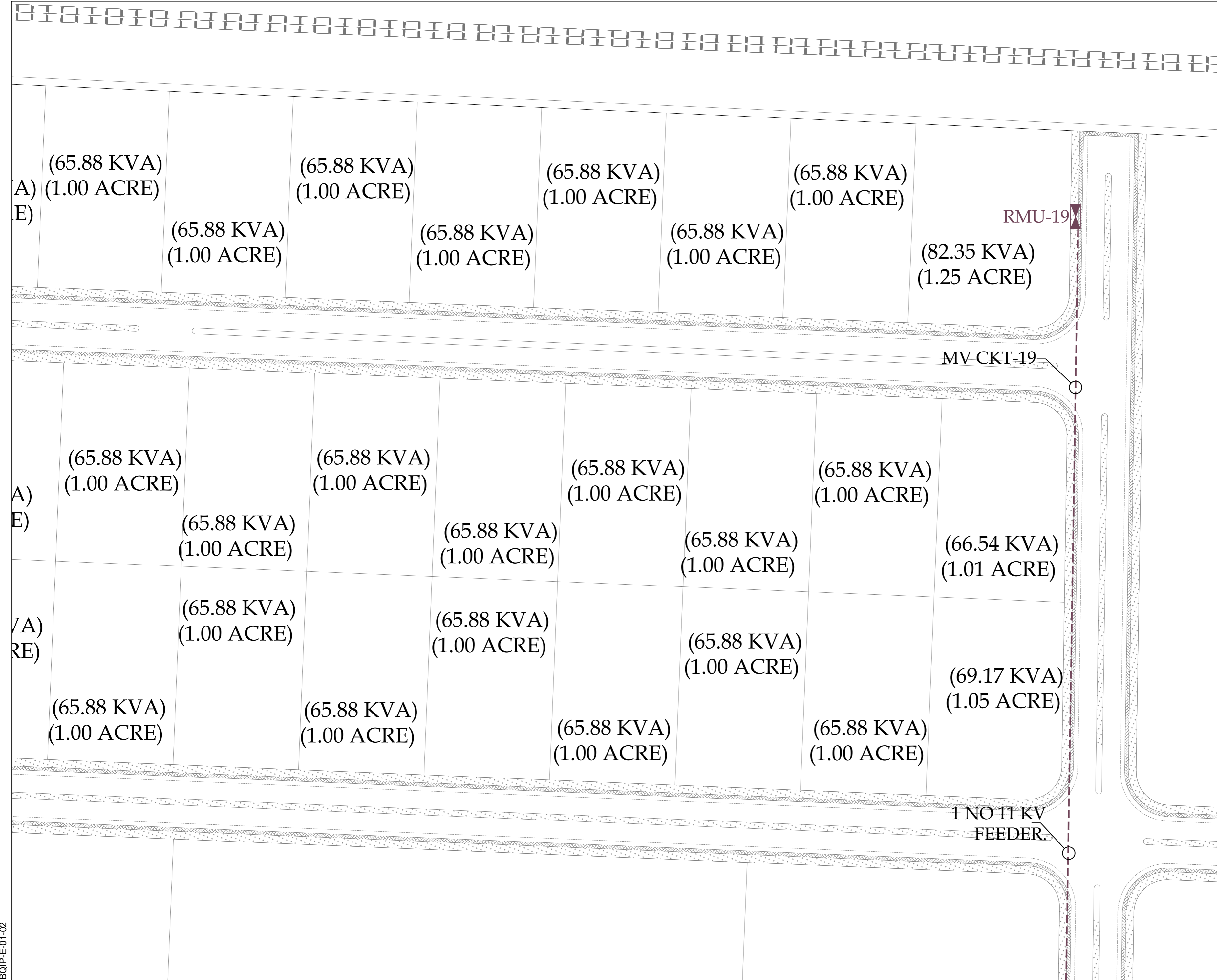
DRAWING N°:	SHEET	REV
BQIP-E-02	07 OF 12	00

CLIENT:  

**NATIONAL INDUSTRIAL PARKS**  
 DEVELOPMENT & MANAGEMENT COMPANY  
 2nd FLOOR, BLOCK-C, FTC BUILDING  
 SHAHRAN-E-FARSH, KARACHI-74400, PAKISTAN.  
 PHONE: 021-99225035-9, 021-35631046-8.

CONSULTANT:  

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 FAX: +92 42 35450916 WEB: www.asiancon.com



BQIP-E-01-02



KEY PLAN

LEGEND

S NO	DESCRIPTION
1	RING MAIN UNIT-01 (RMU)
2	RING MAIN UNIT-02 (RMU)
3	RING MAIN UNIT-03 (RMU)
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19	RING MAIN UNIT-19 (RMU)
20	RING MAIN UNIT-20 (RMU)
21	11 KV FEEDER-01
22	11 KV FEEDER-02
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40	11 KV FEEDER-20
41	MV MANHOLE
42	3X1C 500mm <sup>2</sup> ALUMINUM, XLPE/PVC/AWA/ PVC CABLE (FROM GRID STATION TO RMU)

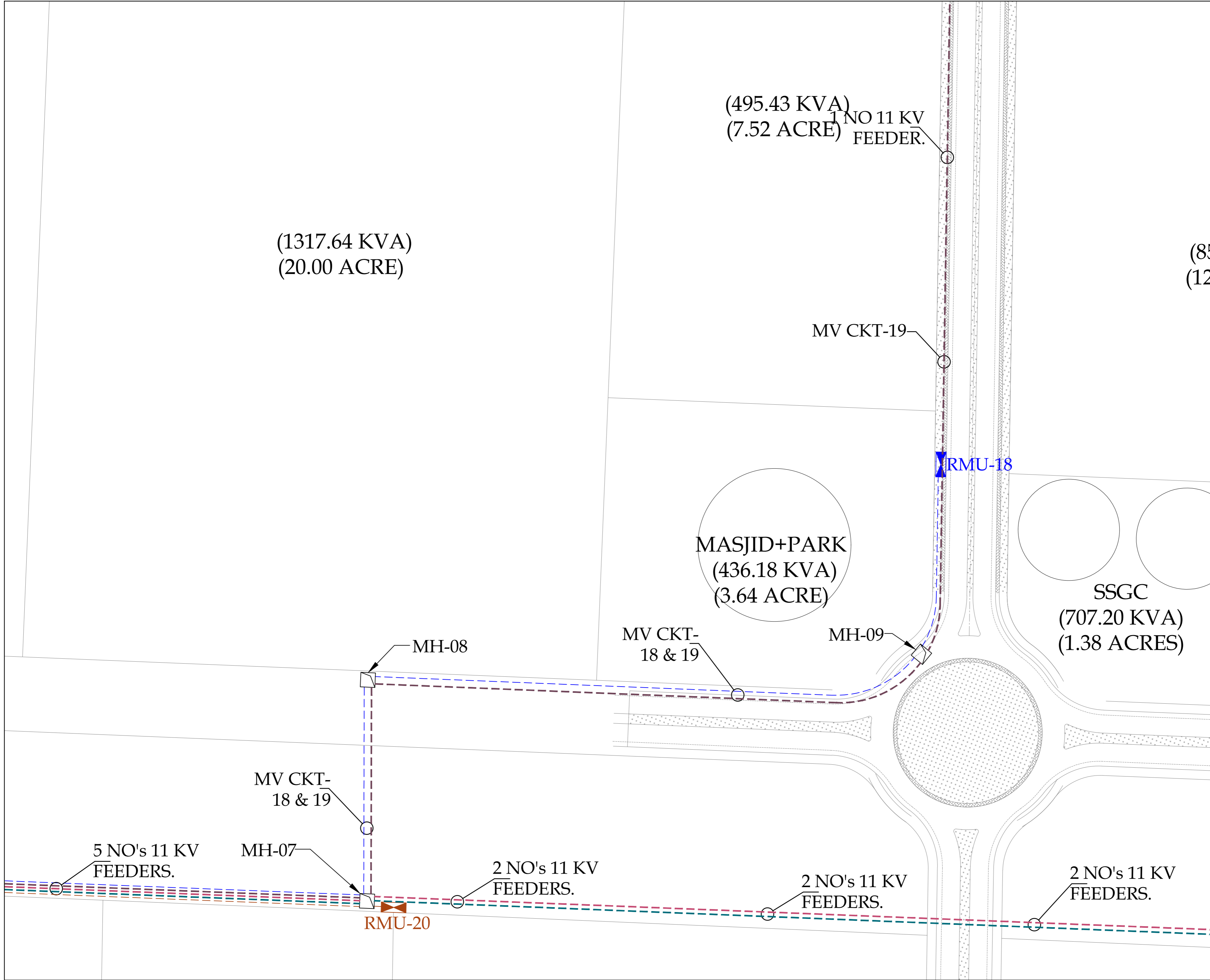
(85  
(12

(1317.64 KVA)  
(20.00 ACRE)

(495.43 KVA)  
(7.52 ACRE) 1 NO 11 KV  
FEEDER.

MASJID+PARK  
(436.18 KVA)  
(3.64 ACRE)

SSGC  
(707.20 KVA)  
(1.38 ACRES)



NOTE:  
RMU IS NOT PART OF THE CLIENT'S SCOPE. THE SUPPLY AND INSTALLATION OF RMU SHALL BE THE PART OF THE CONSUMER'S SCOPE.

PROJECT:  
PROCUREMENT OF CONSULTANCY SERVICES FOR DESIGN / DESIGN REVIEW AND CONSTRUCTION SUPERVISION OF INFRASTRUCTURE WORKS AT BIN QASIM INDUSTRIAL PARK (BQIP), PHASE III BIN QASIM TOWN KARACHI

DRAWING TITLE:  
ENLARGED 11 KV PRIMARY FEEDER LAYOUT FROM GRID STATION TO RMU's

ORIGINAL	DATE	SCALE
A2	JANUARY, 2025	

DATE	DESCRIPTION	DRAWN	APPROVED	PMANAGER
31-01-2025	FOR CLIENT SUBMISSION	M DEN	ENGR FARHAN	ENGR MUNEEB

DRAWING N°:  
BQIP-E-02

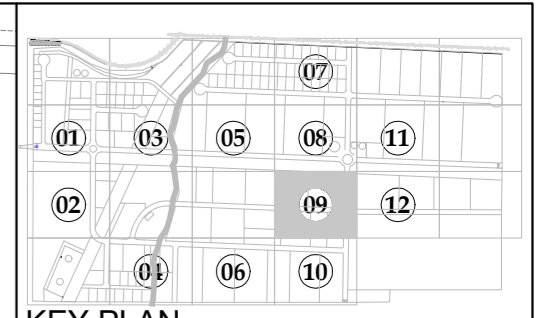
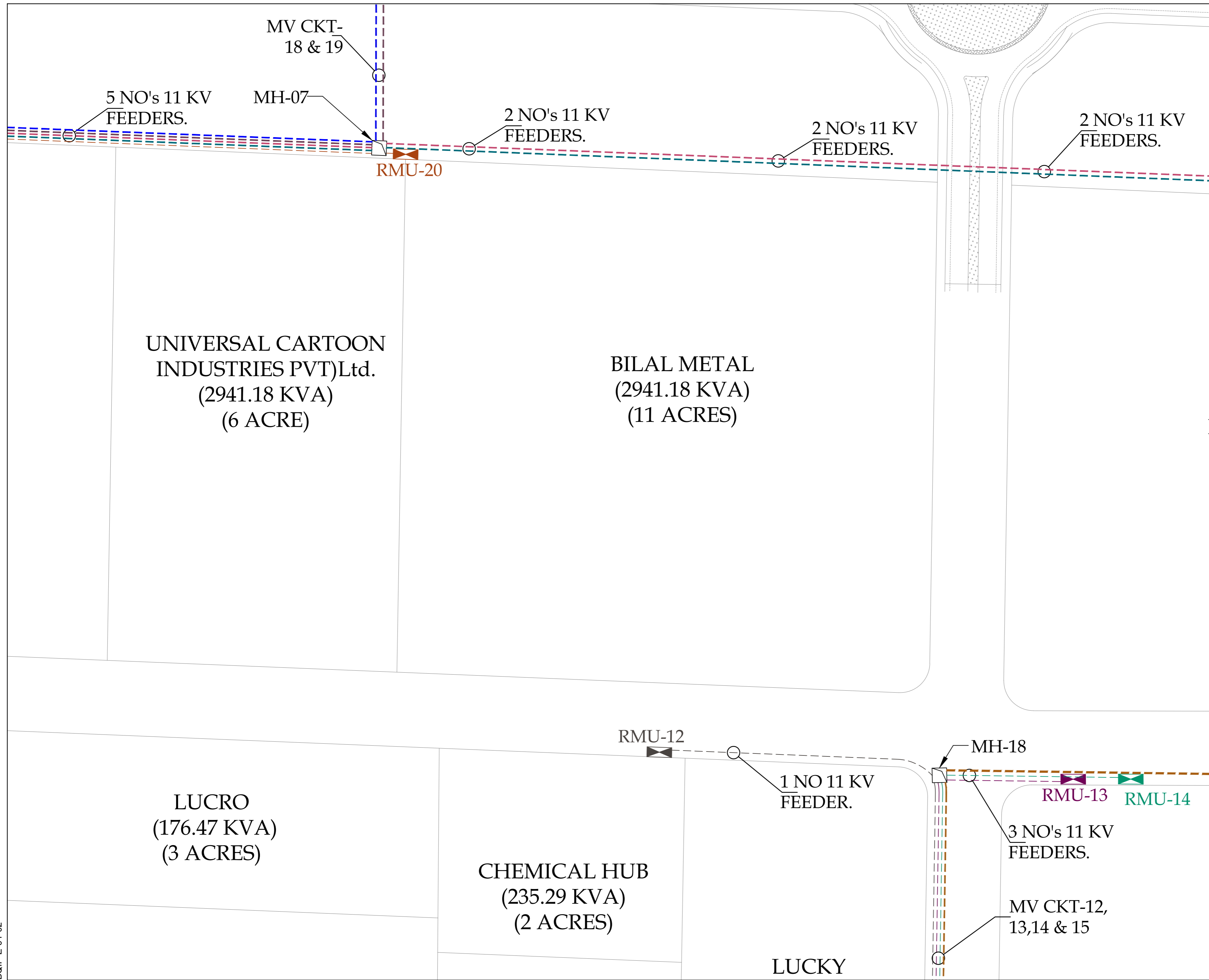
SHEET  
08 OF 12

REV  
00

CLIENT:  
NATIONAL INDUSTRIAL PARKS DEVELOPMENT & MANAGEMENT COMPANY  
2nd FLOOR, BLOCK-C, FTC BUILDING  
SHAHRAH-E-FARAB, KARACHI-74400, PAKISTAN.  
PHONE: 021-8225035-9, 021-35531046-8

CONSULTANT:  
ASIAN CONSULTING ENGINEERS PVT.(LTD)  
C-3 JHILUM BLOCK, GREEN FORT-II, LAHORE, PAKISTAN  
TELEPHONE: +92 42 35450914-5 +92 32 142 71101  
FAX: +92 42 35450916 WEB: www.asiancon.com

BQIP-E-01-02



**LEGEND**

S NO	DESCRIPTION
1	RING MAIN UNIT-01 (RMU)
2	RING MAIN UNIT-02 (RMU)
3	RING MAIN UNIT-03 (RMU)
4	RING MAIN UNIT-04 (RMU)
5	RING MAIN UNIT-05 (RMU)
6	RING MAIN UNIT-06 (RMU)
7	RING MAIN UNIT-07 (RMU)
8	RING MAIN UNIT-08 (RMU)
9	RING MAIN UNIT-09 (RMU)
10	RING MAIN UNIT-10 (RMU)
11	RING MAIN UNIT-11 (RMU)
12	RING MAIN UNIT-12 (RMU)
13	RING MAIN UNIT-13 (RMU)
14	RING MAIN UNIT-14 (RMU)
15	RING MAIN UNIT-15 (RMU)
16	RING MAIN UNIT-16 (RMU)
17	RING MAIN UNIT-17 (RMU)
18	RING MAIN UNIT-18 (RMU)
19	RING MAIN UNIT-19 (RMU)
20	RING MAIN UNIT-20 (RMU)
21	11 KV FEEDER-01
22	11 KV FEEDER-02
23	11 KV FEEDER-03
24	11 KV FEEDER-04
25	11 KV FEEDER-05
26	11 KV FEEDER-06
27	11 KV FEEDER-07
28	11 KV FEEDER-08
29	11 KV FEEDER-09
30	11 KV FEEDER-10
31	11 KV FEEDER-11
32	11 KV FEEDER-12
33	11 KV FEEDER-13
34	11 KV FEEDER-14
35	11 KV FEEDER-15
36	11 KV FEEDER-16
37	11 KV FEEDER-17
38	11 KV FEEDER-18
39	11 KV FEEDER-19
40	11 KV FEEDER-20
41	MV MANHOLE
42	3X1C 500mm <sup>2</sup> ALUMINUM, XLPE/PVC/AWA/PVC CABLE (FROM GRID STATION TO RMU)

**NOTE:**  
 RMU IS NOT PART OF THE CLIENT'S SCOPE. THE SUPPLY AND INSTALLATION OF RMU SHALL BE THE PART OF THE CONSUMER'S SCOPE.

**PROJECT:**  
 PROCUREMENT OF CONSULTANCY SERVICES FOR DESIGN / DESIGN REVIEW AND CONSTRUCTION SUPERVISION OF INFRASTRUCTURE WORKS AT BIN QASIM INDUSTRIAL PARK (BQIP), PHASE III BIN QASIM TOWN KARACHI

**DRAWING TITLE:**  
 ENLARGED 11 KV PRIMARY FEEDER LAYOUT FROM GRID STATION TO RMU'S

DATE	DESCRIPTION	DRAWN	APPROVED	PMANAGER
31-01-2025	FOR CLIENT SUBMISSION	M DEN	ENGR FARHAN	ENGR MUNEEB

**DRAWING NO.:** BQIP-E-02

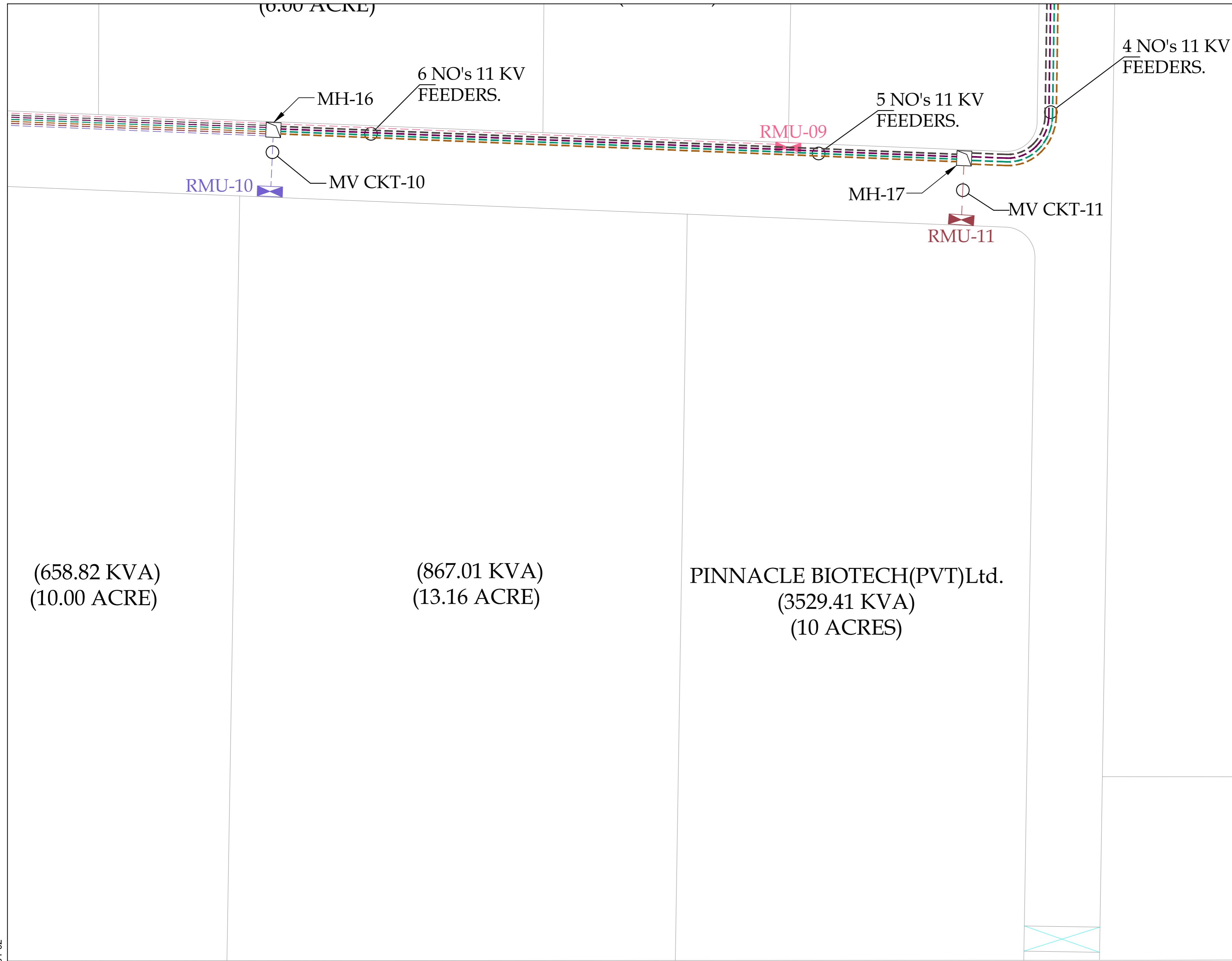
**SHEET:** 09 OF 12

**REV:** 00

**CLIENT:**  
 NATIONAL INDUSTRIAL PARKS DEVELOPMENT & MANAGEMENT COMPANY  
 2nd FLOOR, BLOCK-C, FTC BUILDING SHAHRAN-E-FARSH, KARACHI-74400, PAKISTAN.  
 PHONE: 021-99225035-9, 021-35631046-8

**CONSULTANT:**  
 ASIAN CONSULTING ENGINEERS PVT.(LTD)  
 C-3 JHELUM BLOCK, GREEN FORT-II, LAHORE, PAKISTAN  
 TELEPHONE: +92 42 35450914-5 +92 32 142 71101  
 FAX: +92 42 35450916 WEB: www.asiancon.com

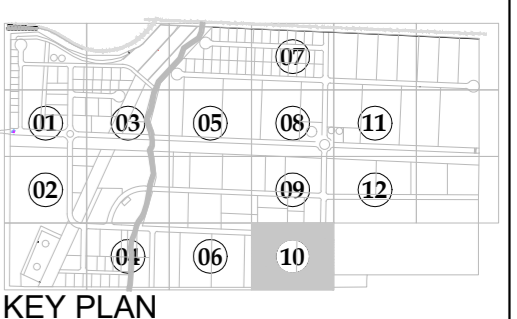
BQIP-E-01-02



(658.82 KVA)  
(10.00 ACRE)

(867.01 KVA)  
(13.16 ACRE)

PINNACLE BIOTECH(PVT)Ltd.  
(3529.41 KVA)  
(10 ACRES)



LEGEND

S NO	DESCRIPTION
1	RING MAIN UNIT-01 (RMU)
2	RING MAIN UNIT-02 (RMU)
3	RING MAIN UNIT-03 (RMU)
4	RING MAIN UNIT-04 (RMU)
5	RING MAIN UNIT-05 (RMU)
6	RING MAIN UNIT-06 (RMU)
7	RING MAIN UNIT-07 (RMU)
8	RING MAIN UNIT-08 (RMU)
9	RING MAIN UNIT-09 (RMU)
10	RING MAIN UNIT-10 (RMU)
11	RING MAIN UNIT-11 (RMU)
12	RING MAIN UNIT-12 (RMU)
13	RING MAIN UNIT-13 (RMU)
14	RING MAIN UNIT-14 (RMU)
15	RING MAIN UNIT-15 (RMU)
16	RING MAIN UNIT-16 (RMU)
17	RING MAIN UNIT-17 (RMU)
18	RING MAIN UNIT-18 (RMU)
19	RING MAIN UNIT-19 (RMU)
20	RING MAIN UNIT-20 (RMU)
21	11 KV FEEDER-01
22	11 KV FEEDER-02
23	11 KV FEEDER-03
24	11 KV FEEDER-04
25	11 KV FEEDER-05
26	11 KV FEEDER-06
27	11 KV FEEDER-07
28	11 KV FEEDER-08
29	11 KV FEEDER-09
30	11 KV FEEDER-10
31	11 KV FEEDER-11
32	11 KV FEEDER-12
33	11 KV FEEDER-13
34	11 KV FEEDER-14
35	11 KV FEEDER-15
36	11 KV FEEDER-16
37	11 KV FEEDER-17
38	11 KV FEEDER-18
39	11 KV FEEDER-19
40	11 KV FEEDER-20
41	MV MANHOLE
42	3X1C 500mm <sup>2</sup> ALUMINUM, XLPE/PVC/AWA/ PVC CABLE (FROM GRID STATION TO RMU)

NOTE:  
RMU IS NOT PART OF THE CLIENT'S SCOPE. THE SUPPLY AND INSTALLATION OF RMU SHALL BE THE PART OF THE CONSUMER'S SCOPE.

PROJECT:  
PROCUREMENT OF CONSULTANCY SERVICES FOR DESIGN / DESIGN REVIEW AND CONSTRUCTION SUPERVISION OF INFRASTRUCTURE WORKS AT BIN QASIM INDUSTRIAL PARK (BQIP), PHASE III BIN QASIM TOWN KARACHI

DRAWING TITLE:  
ENLARGED 11 KV PRIMARY FEEDER LAYOUT FROM GRID STATION TO RMU'S

ORIGINAL	DATE	SCALE		
A2	JANUARY, 2025			
DATE	DESCRIPTION	DRAWN	APPROVED	PMANAGER
31-01-2025	FOR CLIENT SUBMISSION	M DEN	ENGR FARHAN	ENGR MUNEEB

DRAWING N°:  
BQIP-E-02

SHEET  
10 OF 12

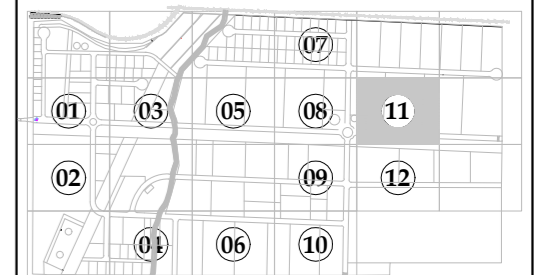
REV  
00

CLIENT:  
NATIONAL INDUSTRIAL PARKS  
DEVELOPMENT & MANAGEMENT COMPANY  
2nd FLOOR, BLOCK-C, FTC BUILDING  
SHAHRAH-E-FARSHAL, KARACHI-74400, PAKISTAN.  
PHONE: 021-99225035-9, 021-35631046-8.

CONSULTANT:  
ASIAN CONSULTING ENGINEERS PVT.(LTD)  
C-3 JHILLUM BLOCK, GREEN FORT-II, LAHORE, PAKISTAN  
TELEPHONE: +92 42 35450914-5 +92 32 142 71101  
FAX: +92 42 35450916 WEB: www.asiancon.com

BQIP-E-01-02





KEY PLAN

LEGEND

S NO	DESCRIPTION
1	RING MAIN UNIT-01 (RMU)
2	RING MAIN UNIT-02 (RMU)
3	RING MAIN UNIT-03 (RMU)
4	RING MAIN UNIT-04 (RMU)
5	RING MAIN UNIT-05 (RMU)
6	RING MAIN UNIT-06 (RMU)
7	RING MAIN UNIT-07 (RMU)
8	RING MAIN UNIT-08 (RMU)
9	RING MAIN UNIT-09 (RMU)
10	RING MAIN UNIT-10 (RMU)
11	RING MAIN UNIT-11 (RMU)
12	RING MAIN UNIT-12 (RMU)
13	RING MAIN UNIT-13 (RMU)
14	RING MAIN UNIT-14 (RMU)
15	RING MAIN UNIT-15 (RMU)
16	RING MAIN UNIT-16 (RMU)
17	RING MAIN UNIT-17 (RMU)
18	RING MAIN UNIT-18 (RMU)
19	RING MAIN UNIT-19 (RMU)
20	RING MAIN UNIT-20 (RMU)
21	11 KV FEEDER-01
22	11 KV FEEDER-02
23	11 KV FEEDER-03
24	11 KV FEEDER-04
25	11 KV FEEDER-05
26	11 KV FEEDER-06
27	11 KV FEEDER-07
28	11 KV FEEDER-08
29	11 KV FEEDER-09
30	11 KV FEEDER-10
31	11 KV FEEDER-11
32	11 KV FEEDER-12
33	11 KV FEEDER-13
34	11 KV FEEDER-14
35	11 KV FEEDER-15
36	11 KV FEEDER-16
37	11 KV FEEDER-17
38	11 KV FEEDER-18
39	11 KV FEEDER-19
40	11 KV FEEDER-20
41	MV MANHOLE
42	3X1C 500mm <sup>2</sup> ALUMINUM, XLPE/PVC/AWA/PVC CABLE (FROM GRID STATION TO RMU)

NOTE:  
RMU IS NOT PART OF THE CLIENT'S SCOPE. THE SUPPLY AND INSTALLATION OF RMU SHALL BE THE PART OF THE CONSUMER'S SCOPE.

PROJECT:  
PROCUREMENT OF CONSULTANCY SERVICES FOR DESIGN / DESIGN REVIEW AND CONSTRUCTION SUPERVISION OF INFRASTRUCTURE WORKS AT BIN QASIM INDUSTRIAL PARK (BQIP), PHASE III BIN QASIM TOWN KARACHI

DRAWING TITLE:  
ENLARGED 11 KV PRIMARY FEEDER LAYOUT FROM GRID STATION TO RMU'S

ORIGINAL	DATE	SCALE		
A2	JANUARY, 2025			
DATE	DESCRIPTION	DRAWN	APPROVED	PMANAGER
31-01-2025	FOR CLIENT SUBMISSION	M DEN	ENGR FARHAN	ENGR MUNEEB

DRAWING N°:	SHEET	REV
BQIP-E-02	11 OF 12	00

CLIENT:  

**NATIONAL INDUSTRIAL PARKS DEVELOPMENT & MANAGEMENT COMPANY**  
 2nd FLOOR, BLOCK-C, FTC BUILDING  
 SHAHRAN-E-FARSH, KARACHI-74400, PAKISTAN.  
 PHONE: 021-99225035-9, 021-35631046-8.

CONSULTANT:  

**ASIAN CONSULTING ENGINEERS PVT.(LTD)**  
 C-3 JHELUM BLOCK, GREEN FORT-II, LAHORE, PAKISTAN  
 TELEPHONE: +92 42 35450914-5 +92 32 142 71101  
 FAX: +92 42 35450916 WEB: www.asiancon.com

(855.15 KVA)  
(12.98 ACRE)

(1317.64 KVA)  
(20.00 ACRE)

SSGC  
(707.20 KVA)  
(1.38 ACRES)

TRAINING CENTER  
(1147.93 KVA)  
(2.24 ACRES)

MV CKT-17

RMU-17

1 NO 11 KV FEEDER.

2 NO's 11 KV FEEDERS.

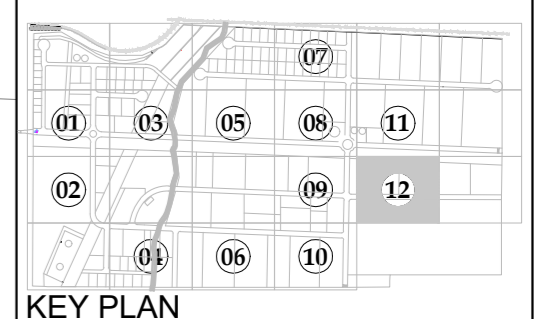
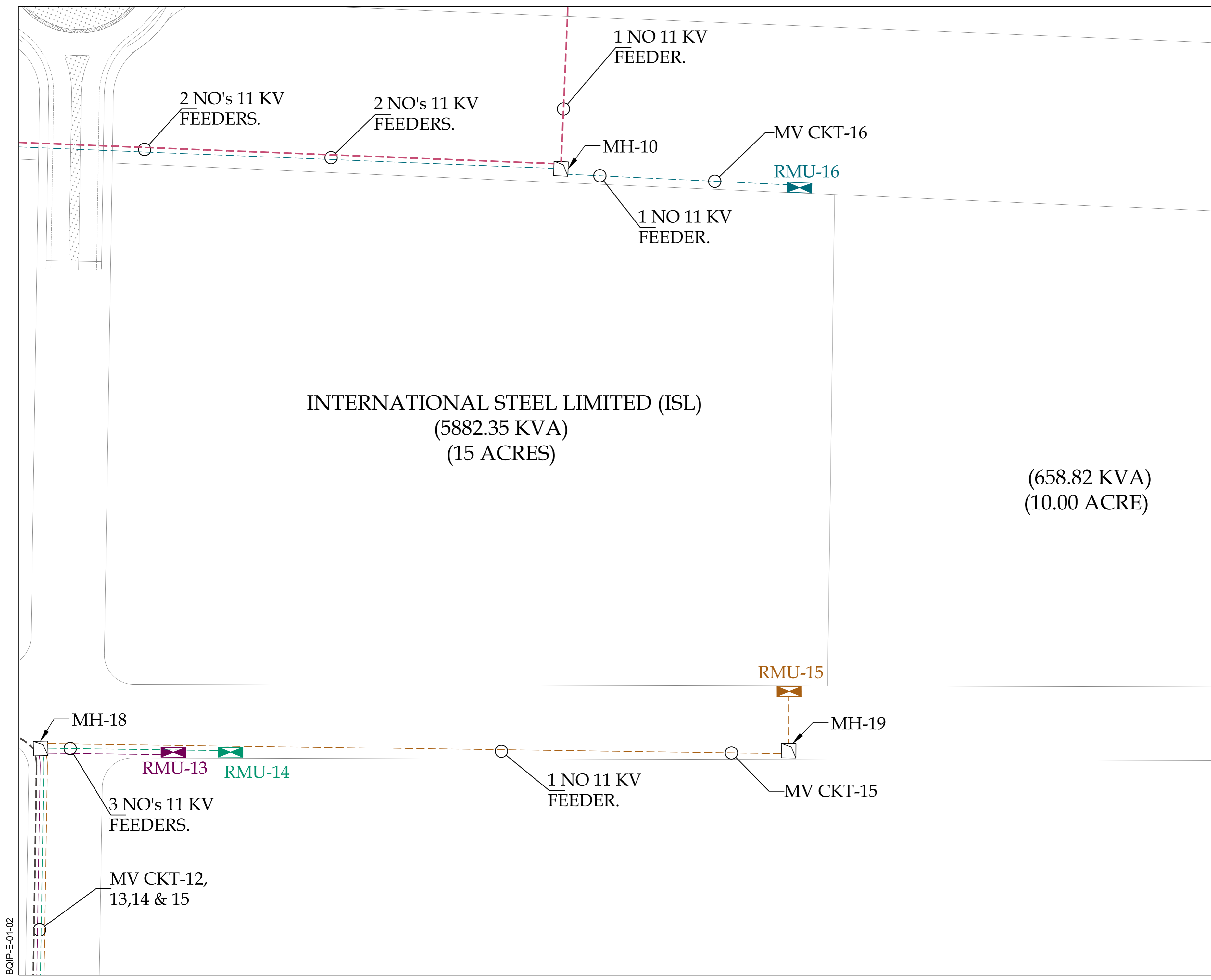
2 NO's 11 KV FEEDERS.

MH-10

MV CKT-16

RMU-16

1 NO 11 KV FEEDER.



KEY PLAN

LEGEND

S NO	DESCRIPTION
1	RING MAIN UNIT-01 (RMU)
2	RING MAIN UNIT-02 (RMU)
3	RING MAIN UNIT-03 (RMU)
4	RING MAIN UNIT-04 (RMU)
5	RING MAIN UNIT-05 (RMU)
6	RING MAIN UNIT-06 (RMU)
7	RING MAIN UNIT-07 (RMU)
8	RING MAIN UNIT-08 (RMU)
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11	RING MAIN UNIT-11 (RMU)
12	RING MAIN UNIT-12 (RMU)
13	RING MAIN UNIT-13 (RMU)
14	RING MAIN UNIT-14 (RMU)
15	RING MAIN UNIT-15 (RMU)
16	RING MAIN UNIT-16 (RMU)
17	RING MAIN UNIT-17 (RMU)
18	RING MAIN UNIT-18 (RMU)
19	RING MAIN UNIT-19 (RMU)
20	RING MAIN UNIT-20 (RMU)
21	11 KV FEEDER-01
22	11 KV FEEDER-02
23	11 KV FEEDER-03
24	11 KV FEEDER-04
25	11 KV FEEDER-05
26	11 KV FEEDER-06
27	11 KV FEEDER-07
28	11 KV FEEDER-08
29	11 KV FEEDER-09
30	11 KV FEEDER-10
31	11 KV FEEDER-11
32	11 KV FEEDER-12
33	11 KV FEEDER-13
34	11 KV FEEDER-14
35	11 KV FEEDER-15
36	11 KV FEEDER-16
37	11 KV FEEDER-17
38	11 KV FEEDER-18
39	11 KV FEEDER-19
40	11 KV FEEDER-20
41	MV MANHOLE
42	3X1C 500mm <sup>2</sup> ALUMINUM, XLPE/PVC/AWA/PVC CABLE (FROM GRID STATION TO RMU)

NOTE:  
RMU IS NOT PART OF THE CLIENT'S SCOPE. THE SUPPLY AND INSTALLATION OF RMU SHALL BE THE PART OF THE CONSUMER'S SCOPE.

PROJECT:  
PROCUREMENT OF CONSULTANCY SERVICES FOR DESIGN / DESIGN REVIEW AND CONSTRUCTION SUPERVISION OF INFRASTRUCTURE WORKS AT BIN QASIM INDUSTRIAL PARK (BQIP), PHASE III BIN QASIM TOWN KARACHI

DRAWING TITLE:  
ENLARGED 11 KV PRIMARY FEEDER LAYOUT FROM GRID STATION TO RMU's

DATE	DESCRIPTION	DRAWN	APPROVED	PMANAGER
31-01-2025	FOR CLIENT SUBMISSION	M DEN	ENGR FARHAN	ENGR MUNEEB

DRAWING N°:  
BQIP-E-02

SHEET  
12 OF 12

REV  
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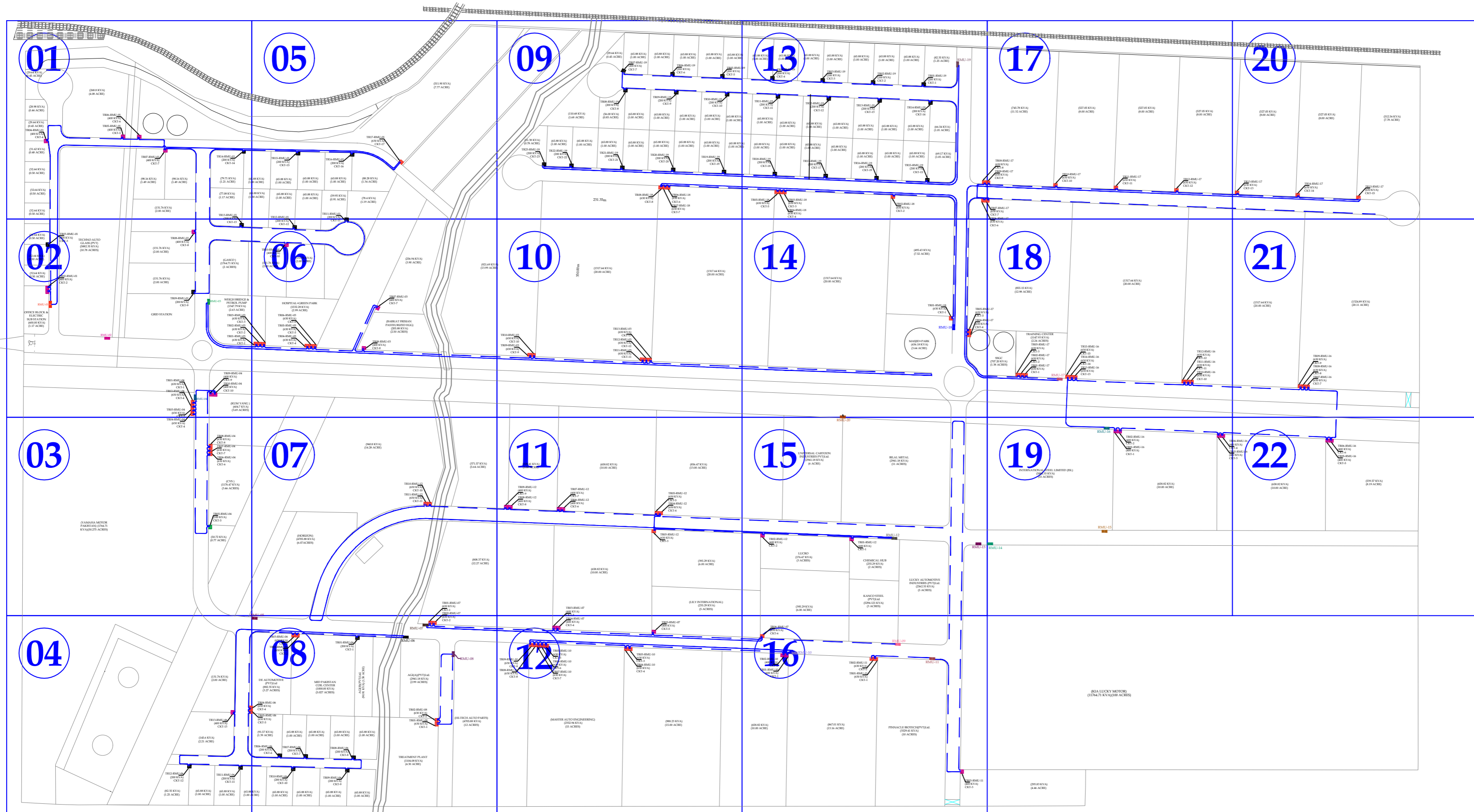
CLIENT:  

**NATIONAL INDUSTRIAL PARKS**  
 DEVELOPMENT & MANAGEMENT COMPANY  
 2nd FLOOR, BLOCK-C, FTC BUILDING  
 SHAHRAN-E-FARSH, KARACHI-74400, PAKISTAN.  
 PHONE: 021-99225035-9, 021-35631046-8.

CONSULTANT:  

**ASIAN CONSULTING ENGINEERS PVT.(LTD)**  
 C-3 JHELUM BLOCK, GREEN FORT-II, LAHORE, PAKISTAN  
 TELEPHONE: +92 42 35450914-5 +92 32 142 71101  
 FAX: +92 42 35450916 WEB: www.asiancon.com

BQIP-E-01-02



**LEGEND**

S NO	DESCRIPTION	QUANTITY
1	RING MAIN UNIT-01 (RMU)	01 NO
2	RING MAIN UNIT-02 (RMU)	01 NO
3	RING MAIN UNIT-03 (RMU)	01 NO
4	RING MAIN UNIT-04 (RMU)	01 NO
5	RING MAIN UNIT-05 (RMU)	01 NO
6	RING MAIN UNIT-06 (RMU)	01 NO
7	RING MAIN UNIT-07 (RMU)	01 NO
8	RING MAIN UNIT-08 (RMU)	01 NO
9	RING MAIN UNIT-09 (RMU)	01 NO
10	RING MAIN UNIT-10 (RMU)	01 NO
11	RING MAIN UNIT-11 (RMU)	01 NO
12	RING MAIN UNIT-12 (RMU)	01 NO
13	RING MAIN UNIT-13 (RMU)	01 NO
14	RING MAIN UNIT-14 (RMU)	01 NO
15	RING MAIN UNIT-15 (RMU)	01 NO
16	RING MAIN UNIT-16 (RMU)	01 NO
17	RING MAIN UNIT-17 (RMU)	01 NO
18	RING MAIN UNIT-18 (RMU)	01 NO
19	RING MAIN UNIT-19 (RMU)	01 NO
20	RING MAIN UNIT-20 (RMU)	01 NO
21	TRANSFORMER	
22	TRANSFORMER	
23	TRANSFORMER	
24	TRANSFORMER	
25	3C 120mm <sup>2</sup> ALUMINUM, XLPE/PVC/SWA/PVC CABLE.	

NOTE: SUPPLY AND INSTALLATION OF TRANSFORMER IS NOT PART OF THE CLIENT'S SCOPE. TRANSFORMER AND ITS INSTALLATION SHALL BE THE PART OF CONSUMER'S SCOPE.

PROJECT: PROCUREMENT OF CONSULTANCY SERVICES FOR DESIGN / DESIGN REVIEW AND CONSTRUCTION SUPERVISION OF INFRASTRUCTURE WORKS AT BIN QASIM INDUSTRIAL PARK (BQIP), PHASE III BIN QASIM TOWN KARACHI

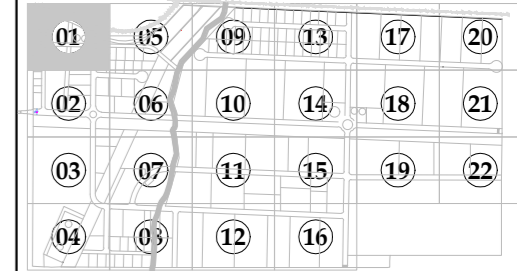
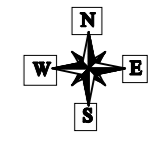
DRAWING TITLE: OVERALL PLAN 11 KV SECONDARY FEEDER LAYOUT FROM RMUs TO TRANSFORMER (KEY PLAN)

DATE	DESCRIPTION	DRAWN	APPROVED	PMANAGER
31-01-2025	FOR CLIENT SUBMISSION	M DEEN	ENGR FARIHAN	ENGR MUNEEB

DRAWING NO: BQIP-E-03 SHEET 1 OF 1 REV 00

CLIENT: NATIONAL INDUSTRIAL PARKS DEVELOPMENT & MANAGEMENT COMPANY  
2ND FLOOR, BLOCK-C, FTC BUILDING  
SHAHRAH-E-FARSH, KARACHI-74400, PAKISTAN.  
PHONE: 021-99220305-9, 021-35631046-8.

CONSULTANT: ASIAN CONSULTING ENGINEERS PVT.(LTD)  
C-3 JHELLUM BLOCK, GREEN FORT-II, LAHORE, PAKISTAN  
TELEPHONE: +92 42 35450914-5 +92 32 142 71101  
Fax: +92 42 35450916 WEB: www.asiancon.com



KEY PLAN

LEGEND

S NO	DESCRIPTION	QUANTITY
1	RING MAIN UNIT-01 (RMU)	01 NO
2	RING MAIN UNIT-02 (RMU)	01 NO
3	RING MAIN UNIT-03 (RMU)	01 NO
4	RING MAIN UNIT-04 (RMU)	01 NO
5	RING MAIN UNIT-05 (RMU)	01 NO
6	RING MAIN UNIT-06 (RMU)	01 NO
7	RING MAIN UNIT-07 (RMU)	01 NO
8	RING MAIN UNIT-08 (RMU)	01 NO
9	RING MAIN UNIT-09 (RMU)	01 NO
10	RING MAIN UNIT-10 (RMU)	01 NO
11	RING MAIN UNIT-11 (RMU)	01 NO
12	RING MAIN UNIT-12 (RMU)	01 NO
13	RING MAIN UNIT-13 (RMU)	01 NO
14	RING MAIN UNIT-14 (RMU)	01 NO
15	RING MAIN UNIT-15 (RMU)	01 NO
16	RING MAIN UNIT-16 (RMU)	01 NO
17	RING MAIN UNIT-17 (RMU)	01 NO
18	RING MAIN UNIT-18 (RMU)	01 NO
19	RING MAIN UNIT-19 (RMU)	01 NO
20	RING MAIN UNIT-20 (RMU)	01 NO
21	TRANSFORMER	
22	TRANSFORMER	
23	TRANSFORMER	
24	TRANSFORMER	
25	3C 120mm <sup>2</sup> ALUMINIUM, XLPE/PVC/SWA/PVC CABLE.	

NOTE:  
SUPPLY AND INSTALLATION OF TRANSFORMER IS NOT PART OF THE CLIENT'S SCOPE. TRANSFORMER AND ITS INSTALLATION SHALL BE THE PART OF CONSUMER'S SCOPE.

PROJECT:  
PROCUREMENT OF CONSULTANCY SERVICES FOR DESIGN / DESIGN REVIEW AND CONSTRUCTION SUPERVISION OF INFRASTRUCTURE WORKS AT BIN QASIM INDUSTRIAL PARK (BQIP), PHASE III BIN QASIM TOWN KARACHI

DRAWING TITLE:  
ENLARGED PLAN 11 KV SECONDARY FEEDER LAYOUT FROM RMU,s TO TRANSFORMER

DATE	DESCRIPTION	DRAWN	APPROVED	PMANAGER
31-01-2025	FOR CLIENT SUBMISSION	M DEN	ENGR FARHAN	ENGR MUNEEB

DRAWING N°:	SHEET	REV
BQIP-E-04	01 OF 22	00

CLIENT:  

**NATIONAL INDUSTRIAL PARKS DEVELOPMENT & MANAGEMENT COMPANY**  
 2nd FLOOR, BLOCK-C, FTC BUILDING  
 SHAHRAN-E-FARSHAL, KARACHI-74400, PAKISTAN.  
 PHONE: 021-92225035-9, 021-35631046-8.

CONSULTANT:  

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 TELEPHONE: +92 42 35450914-5 +92 32 142 71101  
 FAX: +92 42 35450916 WEB: www.asiancon.com

BQIP-E-03-04

(29.64 KVA)  
(0.45 ACRE)

(28.98 KVA)  
(0.44 ACRE)

(29.64 KVA)  
(0.45 ACRE)

TR04-RMU-01  
(400 KVA)  
CKT-4

(31.62 KVA)  
(0.48 ACRE)

(32.64 KVA)  
(0.50 ACRE)

(32.64 KVA)  
(0.50 ACRE)

(32.64 KVA)  
(0.50 ACRE)

(268.8 KVA)  
(4.08 ACRE)

TR06-RMU-01  
(400 KVA)  
CKT-6

TR05-RMU-01  
(400 KVA)  
CKT-5

TR07-RMU-01  
(400 KVA)  
CKT-7

(98.16 KVA)  
(1.49 ACRE)

(98.16 KVA)  
(1.49 ACRE)

(131.76 KVA)  
(2.00 ACRE)

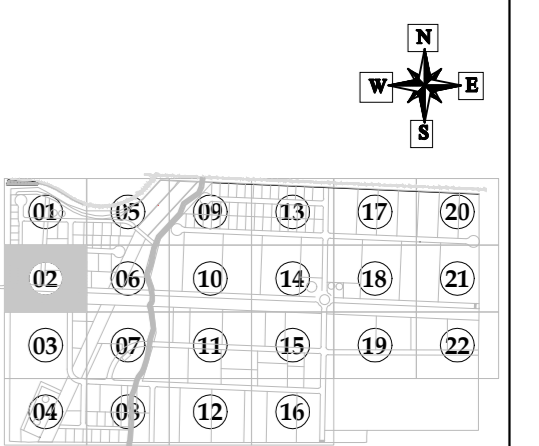
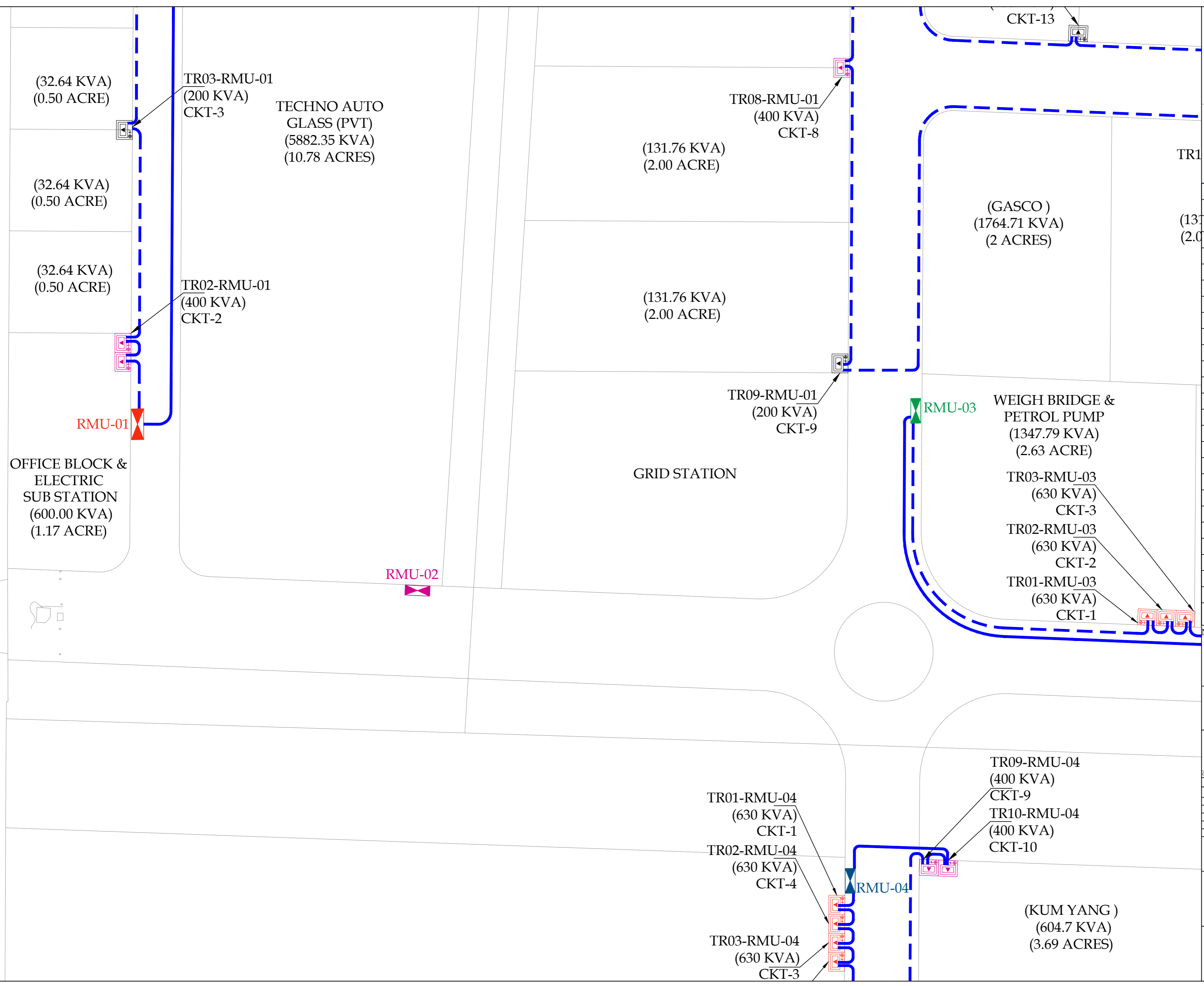
TR14-RMU-01  
(200 KVA)  
CKT-14

(79.71 KVA)  
(1.21 ACRE)

(77.08 KVA)  
(1.17 ACRE)

TR13-RMU-01  
(200 KVA)

BQIP-E-03-04



KEY PLAN

LEGEND

S NO	DESCRIPTION	QUANTITY
1	RING MAIN UNIT-01 (RMU)	01 NO
2	RING MAIN UNIT-02 (RMU)	01 NO
3	RING MAIN UNIT-03 (RMU)	01 NO
4	RING MAIN UNIT-04 (RMU)	01 NO
5	RING MAIN UNIT-05 (RMU)	01 NO
6	RING MAIN UNIT-06 (RMU)	01 NO
7	RING MAIN UNIT-07 (RMU)	01 NO
8	RING MAIN UNIT-08 (RMU)	01 NO
9	RING MAIN UNIT-09 (RMU)	01 NO
10	RING MAIN UNIT-10 (RMU)	01 NO
11	RING MAIN UNIT-11 (RMU)	01 NO
12	RING MAIN UNIT-12 (RMU)	01 NO
13	RING MAIN UNIT-13 (RMU)	01 NO
14	RING MAIN UNIT-14 (RMU)	01 NO
15	RING MAIN UNIT-15 (RMU)	01 NO
16	RING MAIN UNIT-16 (RMU)	01 NO
17	RING MAIN UNIT-17 (RMU)	01 NO
18	RING MAIN UNIT-18 (RMU)	01 NO
19	RING MAIN UNIT-19 (RMU)	01 NO
20	RING MAIN UNIT-20 (RMU)	01 NO
21	TRANSFORMER	
22	TRANSFORMER	
23	TRANSFORMER	
24	TRANSFORMER	
25	3C 120mm <sup>2</sup> ALUMINIUM, XLPE/PVC/SWA/PVC CABLE.	

NOTE:  
SUPPLY AND INSTALLATION OF TRANSFORMER IS NOT PART OF THE CLIENT'S SCOPE. TRANSFORMER AND ITS INSTALLATION SHALL BE THE PART OF CONSUMER'S SCOPE.

PROJECT:  
PROCUREMENT OF CONSULTANCY SERVICES FOR DESIGN / DESIGN REVIEW AND CONSTRUCTION SUPERVISION OF INFRASTRUCTURE WORKS AT BIN QASIM INDUSTRIAL PARK (BQIP), PHASE III BIN QASIM TOWN KARACHI

DRAWING TITLE:  
ENLARGED PLAN 11 KV SECONDARY FEEDER LAYOUT FROM RMU,s TO TRANSFORMER

DATE	DESCRIPTION	DRAWN	APPROVED	MANAGER
31-01-2025	FOR CLIENT SUBMISSION	M DEN	ENGR FARHAN	ENGR MUNEEB

DRAWING N°:	SHEET	REV
BQIP-E-04	02 OF 22	00

CLIENT:  
NATIONAL INDUSTRIAL PARKS DEVELOPMENT & MANAGEMENT COMPANY  
2nd FLOOR, BLOCK-C, FTC BUILDING  
SHAHRAH-E-FAYDAL, KARACHI-74400, PAKISTAN.  
PHONE: 021-99225035-9, 021-35631046-8.

CONSULTANT:  
ASIAN CONSULTING ENGINEERS PVT.(LTD)  
C-3 JHELLUM BLOCK, GREEN FORT-II, LAHORE, PAKISTAN  
TELEPHONE: +92 42 35450914-5 +92 32 142 71101  
FAX: +92 42 35450916 WEB: www.asiancon.com

TR04-RMU-04  
(630 KVA)  
CKT-4

TR08-RMU-04  
(630 KVA)  
CKT-8

TR07-RMU-04  
(630 KVA)  
CKT-7

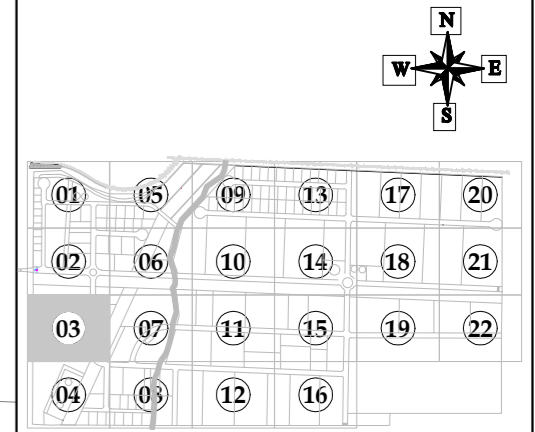
TR06-RMU-04  
(630 KVA)  
CKT-6

(CVS)  
(1176.47 KVA)  
(3.46 ACRES)

TR05-RMU-04  
(100 KVA)  
CKT-5

(50.72 KVA)  
(0.77 ACRE)

(YAMAHA MOTOR  
PAKISTAN) (1764.71  
KVA)(50.275 ACRES)



KEY PLAN

LEGEND

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4	RING MAIN UNIT-04 (RMU)	01 NO
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7	RING MAIN UNIT-07 (RMU)	01 NO
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10	RING MAIN UNIT-10 (RMU)	01 NO
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12	RING MAIN UNIT-12 (RMU)	01 NO
13	RING MAIN UNIT-13 (RMU)	01 NO
14	RING MAIN UNIT-14 (RMU)	01 NO
15	RING MAIN UNIT-15 (RMU)	01 NO
16	RING MAIN UNIT-16 (RMU)	01 NO
17	RING MAIN UNIT-17 (RMU)	01 NO
18	RING MAIN UNIT-18 (RMU)	01 NO
19	RING MAIN UNIT-19 (RMU)	01 NO
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PROJECT:  
PROCUREMENT OF CONSULTANCY SERVICES FOR DESIGN / DESIGN REVIEW AND CONSTRUCTION SUPERVISION OF INFRASTRUCTURE WORKS AT BIN QASIM INDUSTRIAL PARK (BQIP), PHASE III BIN QASIM TOWN KARACHI

DRAWING TITLE:  
ENLARGED PLAN 11 KV SECONDARY FEEDER LAYOUT FROM RMU,s TO TRANSFORMER

DATE	DESCRIPTION	DRAWN	APPROVED	PMANAGER
31-01-2025	FOR CLIENT SUBMISSION	M DEN	ENGR FARHAN	ENGR MUNEEB

DRAWING N°:  
BQIP-E-04

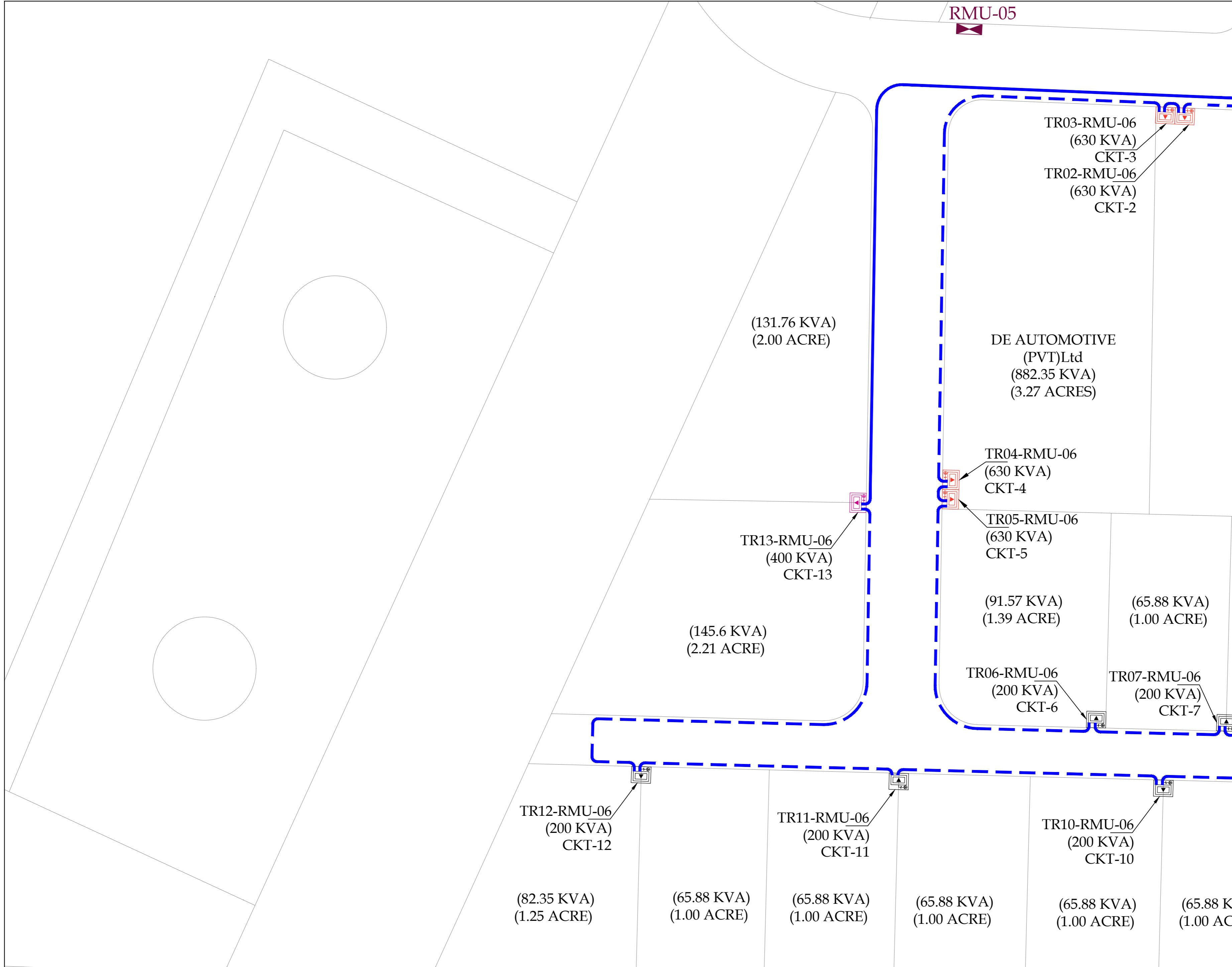
SHEET  
03 OF 22

REV  
00

CLIENT:  
NATIONAL INDUSTRIAL PARKS  
DEVELOPMENT & MANAGEMENT COMPANY  
2nd FLOOR, BLOCK-C, FTC BUILDING  
SHAHRAH-E-FARSH, KARACHI-74400, PAKISTAN.  
PHONE: 021-99225035-9, 021-35631046-8.

CONSULTANT:  
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BQIP-E-03-04



**KEY PLAN**

LEGEND		
S NO	DESCRIPTION	QUANTITY
1	RING MAIN UNIT-01 (RMU)	01 NO
2	RING MAIN UNIT-02 (RMU)	01 NO
3	RING MAIN UNIT-03 (RMU)	01 NO
4	RING MAIN UNIT-04 (RMU)	01 NO
5	RING MAIN UNIT-05 (RMU)	01 NO
6	RING MAIN UNIT-06 (RMU)	01 NO
7	RING MAIN UNIT-07 (RMU)	01 NO
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9	RING MAIN UNIT-09 (RMU)	01 NO
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12	RING MAIN UNIT-12 (RMU)	01 NO
13	RING MAIN UNIT-13 (RMU)	01 NO
14	RING MAIN UNIT-14 (RMU)	01 NO
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17	RING MAIN UNIT-17 (RMU)	01 NO
18	RING MAIN UNIT-18 (RMU)	01 NO
19	RING MAIN UNIT-19 (RMU)	01 NO
20	RING MAIN UNIT-20 (RMU)	01 NO
21	TRANSFORMER	
22	TRANSFORMER	
23	TRANSFORMER	
24	TRANSFORMER	
25	3C 120mm <sup>2</sup> ALUMINUM, XLPE/PVC/SWA/PVC CABLE.	

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**PROJECT:**  
PROCUREMENT OF CONSULTANCY SERVICES FOR DESIGN / DESIGN REVIEW AND CONSTRUCTION SUPERVISION OF INFRASTRUCTURE WORKS AT BIN QASIM INDUSTRIAL PARK (BQIP), PHASE III BIN QASIM TOWN KARACHI

**DRAWING TITLE:**  
ENLARGED PLAN 11 KV SECONDARY FEEDER LAYOUT FROM RMU,s TO TRANSFORMER

ORIGINAL	DATE	SCALE
A2	JANUARY, 2025	

DATE	DESCRIPTION	DRAWN	APPROVED	PMANAGER
31-01-2025	FOR CLIENT SUBMISSION	M DEN	ENGR FARHAN	ENGR MUNEEB

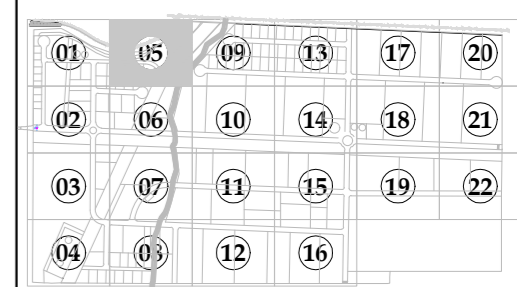
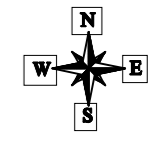
**DRAWING N°:** BQIP-E-04

**SHEET:** 04 OF 22

**REV:** 00

**CLIENT:**  
 NATIONAL INDUSTRIAL PARKS DEVELOPMENT & MANAGEMENT COMPANY  
 2nd FLOOR, BLOCK-C, FTC BUILDING  
 SHAHRAN-E-FARSH, KARACHI-74400, PAKISTAN.  
 PHONE: 021-8225035-9, 021-35631046-8

**CONSULTANT:**  
 ASIAN CONSULTING ENGINEERS PVT.(LTD)  
 C-3 JHELLUM BLOCK, GREEN FORT-II, LAHORE, PAKISTAN  
 TELEPHONE: +92 42 35450914-5 +92 32 142 71101  
 FAX: +92 42 35450916 WEB: www.asiancon.com



KEY PLAN

LEGEND

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3	RING MAIN UNIT-03 (RMU)	01 NO
4	RING MAIN UNIT-04 (RMU)	01 NO
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6	RING MAIN UNIT-06 (RMU)	01 NO
7	RING MAIN UNIT-07 (RMU)	01 NO
8	RING MAIN UNIT-08 (RMU)	01 NO
9	RING MAIN UNIT-09 (RMU)	01 NO
10	RING MAIN UNIT-10 (RMU)	01 NO
11	RING MAIN UNIT-11 (RMU)	01 NO
12	RING MAIN UNIT-12 (RMU)	01 NO
13	RING MAIN UNIT-13 (RMU)	01 NO
14	RING MAIN UNIT-14 (RMU)	01 NO
15	RING MAIN UNIT-15 (RMU)	01 NO
16	RING MAIN UNIT-16 (RMU)	01 NO
17	RING MAIN UNIT-17 (RMU)	01 NO
18	RING MAIN UNIT-18 (RMU)	01 NO
19	RING MAIN UNIT-19 (RMU)	01 NO
20	RING MAIN UNIT-20 (RMU)	01 NO
21	TRANSFORMER	
22	TRANSFORMER	
23	TRANSFORMER	
24	TRANSFORMER	
25	3C 120mm <sup>2</sup> ALUMINUM, XLPE/PVC/SWA/PVC CABLE.	

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PROJECT:  
PROCUREMENT OF CONSULTANCY SERVICES FOR DESIGN / DESIGN REVIEW AND CONSTRUCTION SUPERVISION OF INFRASTRUCTURE WORKS AT BIN QASIM INDUSTRIAL PARK (BQIP), PHASE III BIN QASIM TOWN KARACHI

DRAWING TITLE:  
ENLARGED PLAN 11 KV SECONDARY FEEDER LAYOUT FROM RMU, s TO TRANSFORMER

ORIGINAL	DATE	SCALE
A2	JANUARY, 2025	

DATE	DESCRIPTION	DRAWN	APPROVED	PMANAGER
31-01-2025	FOR CLIENT SUBMISSION	M DEN	ENGR FARHAN	ENGR MUNEEB

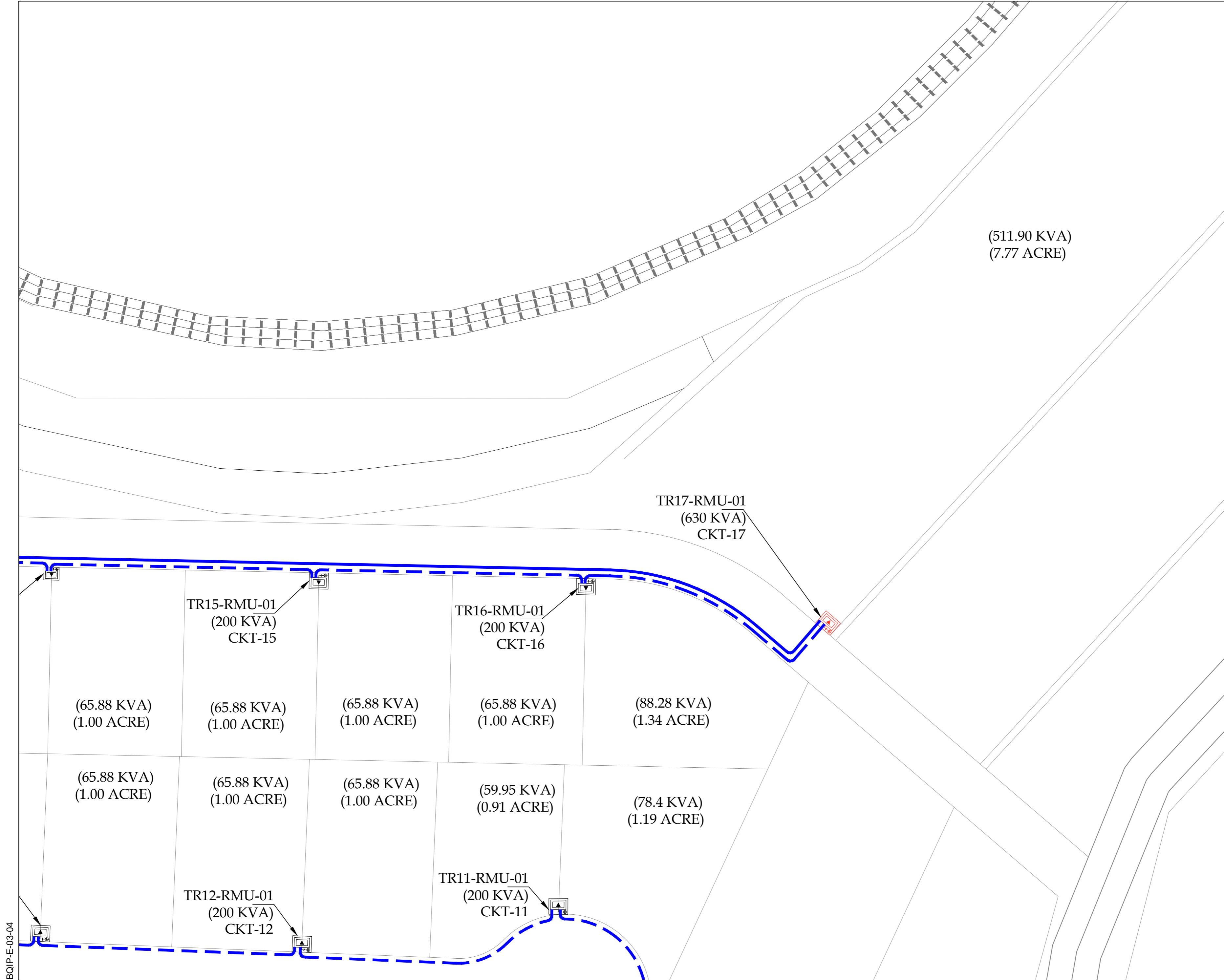
DRAWING N°:	SHEET	REV
BQIP-E-04	05 OF 22	00

CLIENT:  

**NATIONAL INDUSTRIAL PARKS DEVELOPMENT & MANAGEMENT COMPANY**  
 2nd FLOOR, BLOCK-C, FTC BUILDING  
 SHAHRAN-E-FARSH, KARACHI-74400, PAKISTAN.  
 PHONE: 021-99225035-9, 021-35631046-8.

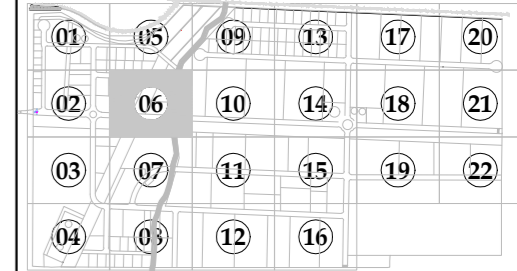
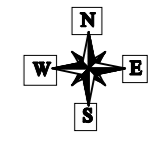
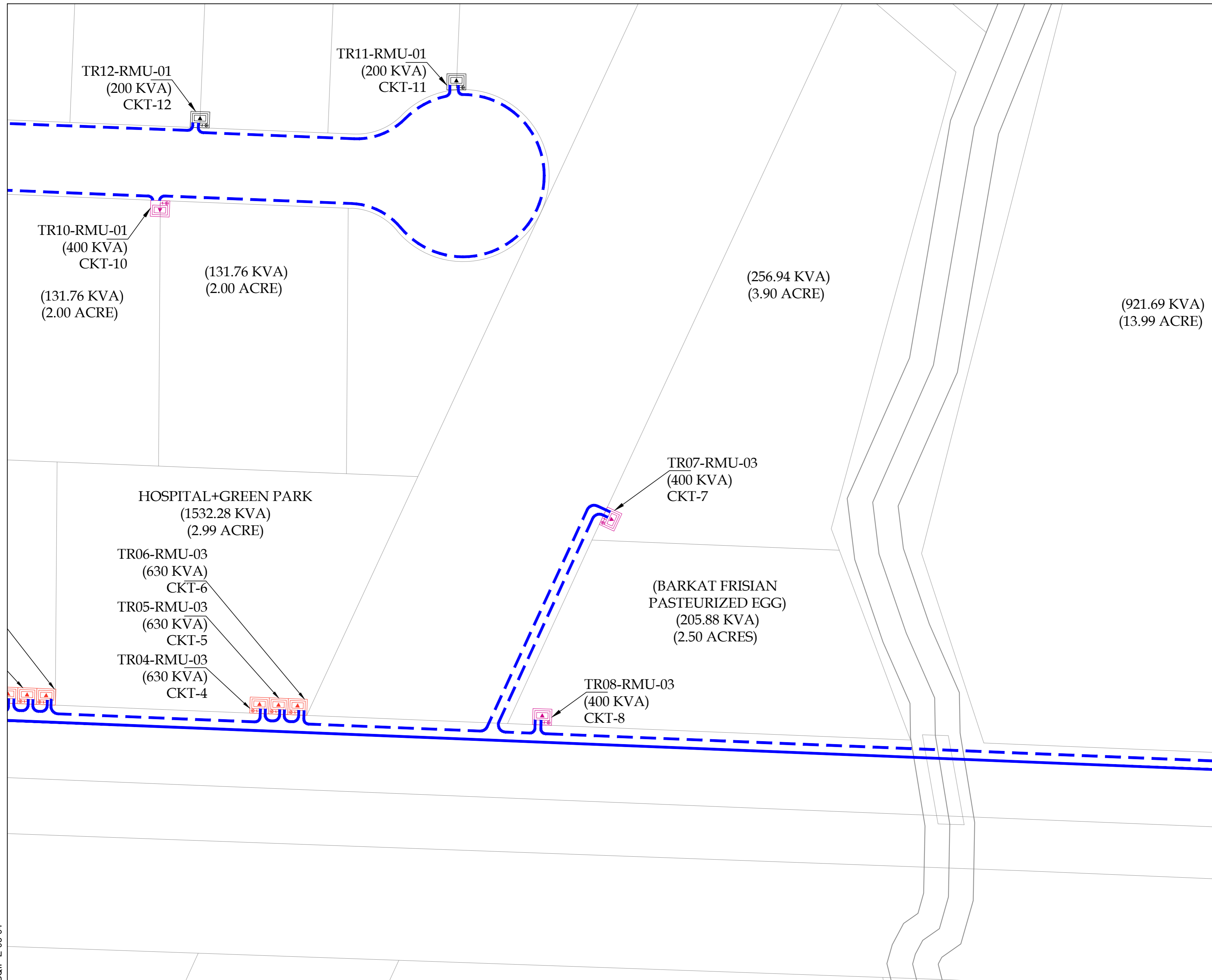
CONSULTANT:  

**ASIAN CONSULTING ENGINEERS PVT.(LTD)**  
 C-3 JHILUM BLOCK, GREEN FORT-II, LAHORE, PAKISTAN  
 TELEPHONE: +92 42 35450914-5 +92 32 142 71101  
 FAX: +92 42 35450916 WEB: www.asiancon.com



BQIP-E-03-04





KEY PLAN

LEGEND

S NO	DESCRIPTION	QUANTITY
1	RING MAIN UNIT-01 (RMU)	01 NO
2	RING MAIN UNIT-02 (RMU)	01 NO
3	RING MAIN UNIT-03 (RMU)	01 NO
4	RING MAIN UNIT-04 (RMU)	01 NO
5	RING MAIN UNIT-05 (RMU)	01 NO
6	RING MAIN UNIT-06 (RMU)	01 NO
7	RING MAIN UNIT-07 (RMU)	01 NO
8	RING MAIN UNIT-08 (RMU)	01 NO
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10	RING MAIN UNIT-10 (RMU)	01 NO
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12	RING MAIN UNIT-12 (RMU)	01 NO
13	RING MAIN UNIT-13 (RMU)	01 NO
14	RING MAIN UNIT-14 (RMU)	01 NO
15	RING MAIN UNIT-15 (RMU)	01 NO
16	RING MAIN UNIT-16 (RMU)	01 NO
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18	RING MAIN UNIT-18 (RMU)	01 NO
19	RING MAIN UNIT-19 (RMU)	01 NO
20	RING MAIN UNIT-20 (RMU)	01 NO
21	TRANSFORMER	
22	TRANSFORMER	
23	TRANSFORMER	
24	TRANSFORMER	
25	3C 120mm <sup>2</sup> ALUMINUM, XLPE/PVC/SWA/PVC CABLE.	

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PROJECT:  
PROCUREMENT OF CONSULTANCY SERVICES FOR DESIGN / DESIGN REVIEW AND CONSTRUCTION SUPERVISION OF INFRASTRUCTURE WORKS AT BIN QASIM INDUSTRIAL PARK (BQIP), PHASE III BIN QASIM TOWN KARACHI

DRAWING TITLE:  
ENLARGED PLAN 11 KV SECONDARY FEEDER LAYOUT FROM RMU,s TO TRANSFORMER

ORIGINAL	DATE	SCALE
A2	JANUARY, 2025	

DATE	DESCRIPTION	DRAWN	APPROVED	PMANAGER
31-01-2025	FOR CLIENT SUBMISSION	M DEN	ENGR FARHAN	ENGR MUNEEB

DRAWING N°:	SHEET	REV
BQIP-E-04	06 OF 22	00

CLIENT:  

**NATIONAL INDUSTRIAL PARKS**  
 DEVELOPMENT & MANAGEMENT COMPANY  
 2nd FLOOR, BLOCK-C, FTC BUILDING  
 SHAHRAN-E-FARSH, KARACHI-74400, PAKISTAN.  
 PHONE: 021-92225035-9, 021-35631046-8.

CONSULTANT:  

**ASIAN CONSULTING ENGINEERS PVT.(LTD)**  
 C-3 JHELUM BLOCK, GREEN FORT-II, LAHORE, PAKISTAN  
 TELEPHONE: +92 42 35450914-5 +92 32 142 11101  
 FAX: +92 42 35450916 WEB: www.asiancon.com

BQIP-E-03-04

(940.8 KVA)  
(14.28 ACRE)

(371.57 KVA)  
(5.64 ACRE)

(HORIZON)  
(4705.88 KVA)  
(6.07 ACRES)

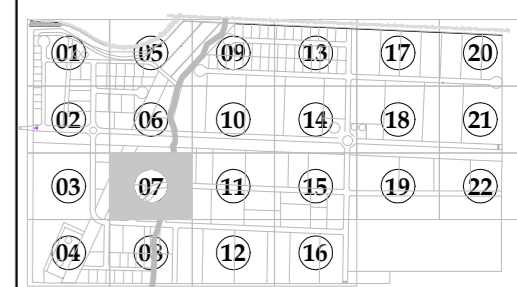
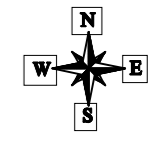
(808.37 KVA)  
(12.27 ACRE)

TR10-RMU-12  
(630 KVA)  
CKT-10  
TR11-RMU-12  
(630 KVA)  
CKT-11

TR01-RMU-07  
(630 KVA)  
CKT-1  
TR02-RMU-07  
(630 KVA)  
CKT-2

RMU-05

RMU-07



KEY PLAN

LEGEND

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3	RING MAIN UNIT-03 (RMU)	01 NO
4	RING MAIN UNIT-04 (RMU)	01 NO
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6	RING MAIN UNIT-06 (RMU)	01 NO
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8	RING MAIN UNIT-08 (RMU)	01 NO
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PROJECT:  
PROCUREMENT OF CONSULTANCY SERVICES FOR DESIGN / DESIGN REVIEW AND CONSTRUCTION SUPERVISION OF INFRASTRUCTURE WORKS AT BIN QASIM INDUSTRIAL PARK (BQIP), PHASE III BIN QASIM TOWN KARACHI

DRAWING TITLE:  
ENLARGED PLAN 11 KV SECONDARY FEEDER LAYOUT FROM RMU,s TO TRANSFORMER

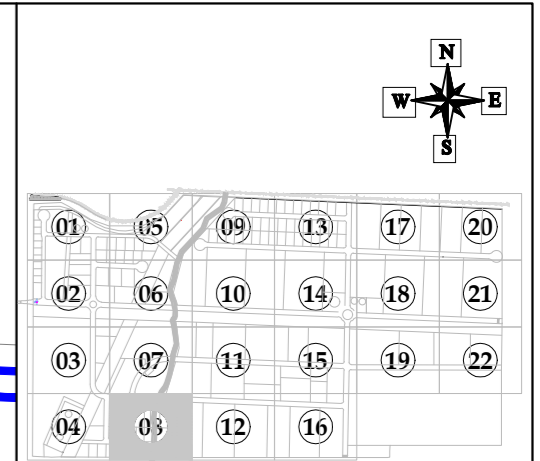
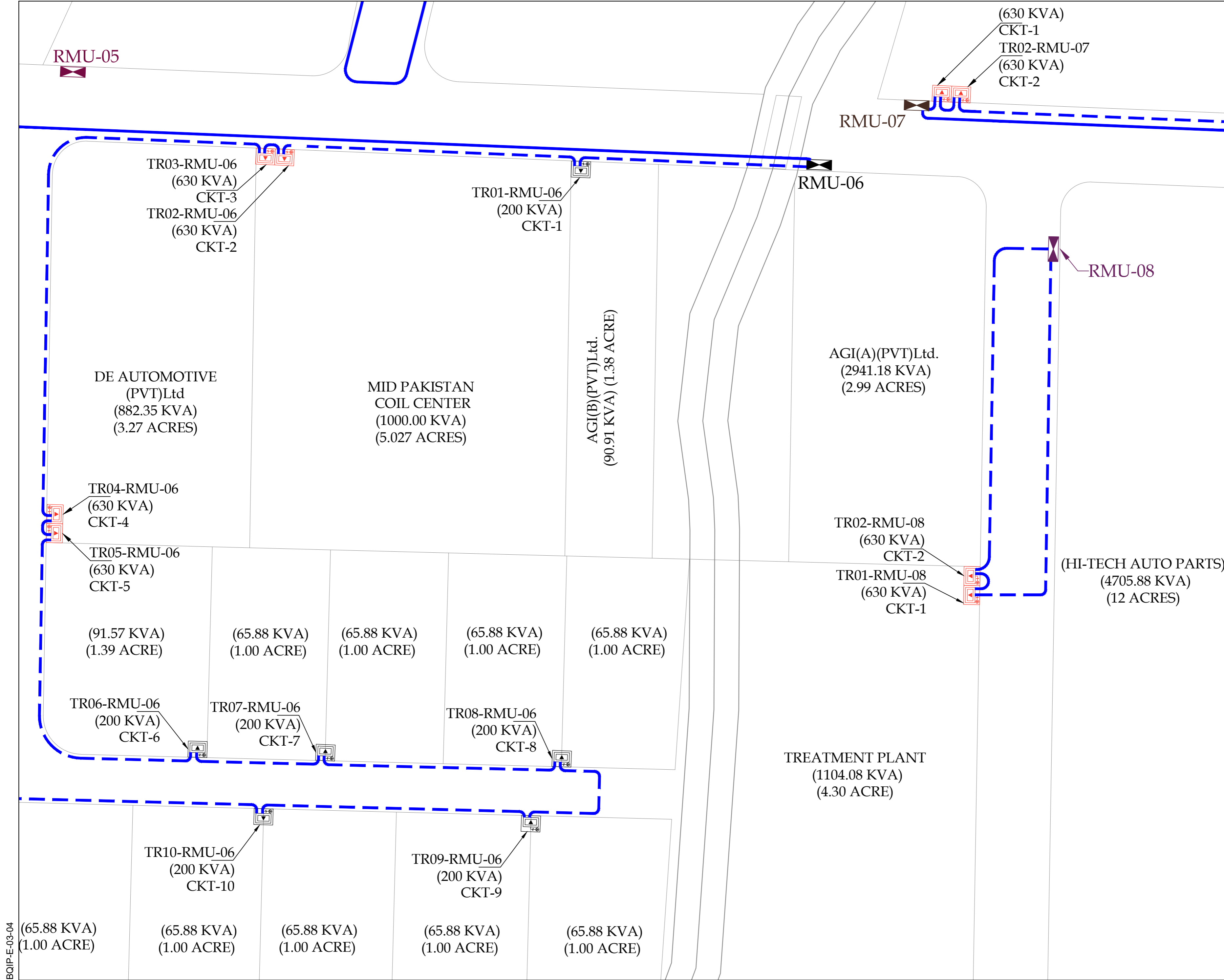
DATE	DESCRIPTION	DRAWN	APPROVED	MANAGER
31-01-2025	FOR CLIENT SUBMISSION	M DEN	ENGR FARHAN	ENGR MUNEEB

DRAWING N°:	SHEET	REV
BQIP-E-04	07 OF 22	00

CLIENT:  
NATIONAL INDUSTRIAL PARKS DEVELOPMENT & MANAGEMENT COMPANY  
2nd FLOOR, BLOCK-C, FTC BUILDING  
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CONSULTANT:  
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BQIP-E-03-04



KEY PLAN

LEGEND

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ENLARGED PLAN 11 KV SECONDARY FEEDER LAYOUT FROM RMU,s TO TRANSFORMER

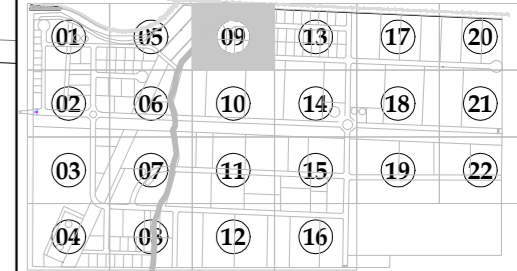
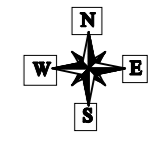
DATE	DESCRIPTION	DRAWN	APPROVED	PMANAGER
31-01-2025	FOR CLIENT SUBMISSION	M DEN	ENGR FARHAN	ENGR MUNEEB

DRAWING N°:	BQIP-E-04	SHEET	08 OF 22	REV	00
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CLIENT:  
NATIONAL INDUSTRIAL PARKS DEVELOPMENT & MANAGEMENT COMPANY  
2nd FLOOR, BLOCK-C, FTC BUILDING  
SHAHRAH-E-FARSH, KARACHI-74400, PAKISTAN.  
PHONE: 021-59225035-9, 021-35631046-8.

CONSULTANT:  
ASIAN CONSULTING ENGINEERS PVT.(LTD)  
C-3 JHELUM BLOCK, GREEN FORT-II, LAHORE, PAKISTAN  
TELEPHONE: +92 42 35450914-5 +92 32 142 71101  
FAX: +92 42 35450916 WEB: www.asiancon.com

BQIP-E-03-04



KEY PLAN

LEGEND

S NO	DESCRIPTION	QUANTITY
1	RING MAIN UNIT-01 (RMU)	01 NO
2	RING MAIN UNIT-02 (RMU)	01 NO
3	RING MAIN UNIT-03 (RMU)	01 NO
4	RING MAIN UNIT-04 (RMU)	01 NO
5	RING MAIN UNIT-05 (RMU)	01 NO
6	RING MAIN UNIT-06 (RMU)	01 NO
7	RING MAIN UNIT-07 (RMU)	01 NO
8	RING MAIN UNIT-08 (RMU)	01 NO
9	RING MAIN UNIT-09 (RMU)	01 NO
10	RING MAIN UNIT-10 (RMU)	01 NO
11	RING MAIN UNIT-11 (RMU)	01 NO
12	RING MAIN UNIT-12 (RMU)	01 NO
13	RING MAIN UNIT-13 (RMU)	01 NO
14	RING MAIN UNIT-14 (RMU)	01 NO
15	RING MAIN UNIT-15 (RMU)	01 NO
16	RING MAIN UNIT-16 (RMU)	01 NO
17	RING MAIN UNIT-17 (RMU)	01 NO
18	RING MAIN UNIT-18 (RMU)	01 NO
19	RING MAIN UNIT-19 (RMU)	01 NO
20	RING MAIN UNIT-20 (RMU)	01 NO
21	TRANSFORMER	
22	TRANSFORMER	
23	TRANSFORMER	
24	TRANSFORMER	
25	3C 120mm <sup>2</sup> ALUMINIUM, XLPE/PVC/SWA/PVC CABLE.	

NOTE:  
SUPPLY AND INSTALLATION OF TRANSFORMER IS NOT PART OF THE CLIENT'S SCOPE. TRANSFORMER AND ITS INSTALLATION SHALL BE THE PART OF CONSUMER'S SCOPE.

PROJECT:  
PROCUREMENT OF CONSULTANCY SERVICES FOR DESIGN / DESIGN REVIEW AND CONSTRUCTION SUPERVISION OF INFRASTRUCTURE WORKS AT BIN QASIM INDUSTRIAL PARK (BQIP), PHASE III BIN QASIM TOWN KARACHI

DRAWING TITLE:  
ENLARGED PLAN 11 KV SECONDARY FEEDER LAYOUT FROM RMU,s TO TRANSFORMER

ORIGINAL	DATE	SCALE
A2	JANUARY, 2025	

DATE	DESCRIPTION	DRAWN	APPROVED	PMANAGER
31-01-2025	FOR CLIENT SUBMISSION	M DEN	ENGR FARHAN	ENGR MUNEEB

DRAWING N°:	SHEET	REV
BQIP-E-04	09 OF 22	00

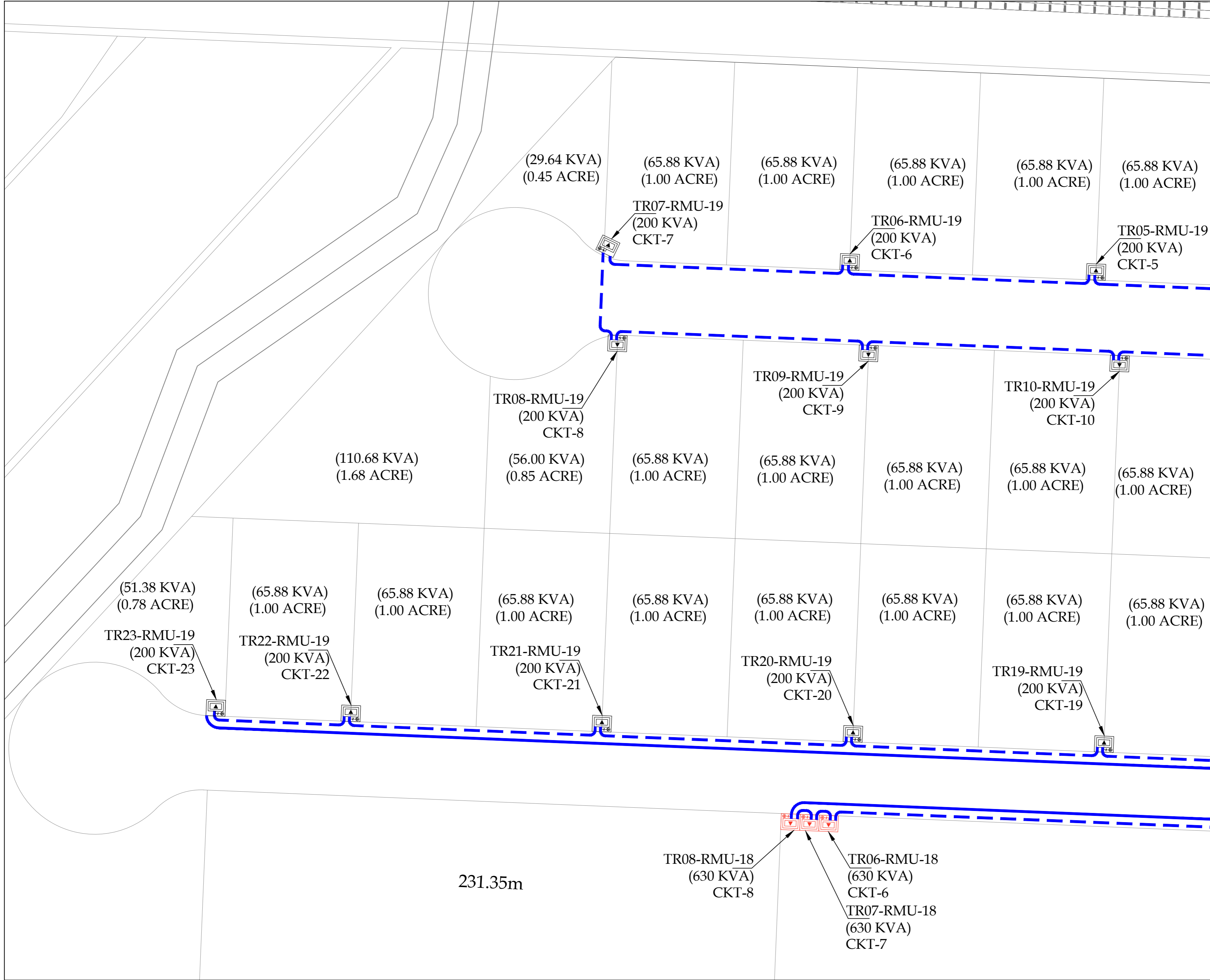
CLIENT:  

**NATIONAL INDUSTRIAL PARKS DEVELOPMENT & MANAGEMENT COMPANY**  
 2nd FLOOR, BLOCK-C, FTC BUILDING  
 SHAHRAN-E-FARSH, KARACHI-74400, PAKISTAN.  
 PHONE: 021-99225035-9, 021-35631046-8.

CONSULTANT:  

**ASIAN CONSULTING ENGINEERS PVT.(LTD)**  
 C-3 JHELUM BLOCK, GREEN FORT-II, LAHORE, PAKISTAN  
 TELEPHONE: +92 42 35450914-5 +92 32 142 71101  
 FAX: +92 42 35450916 WEB: www.asiancon.com

BQIP-E-03-04



231.35m

TR08-RMU-18  
(630 KVA)  
CKT-8

TR06-RMU-18  
(630 KVA)  
CKT-6

TR07-RMU-18  
(630 KVA)  
CKT-7

(29.64 KVA)  
(0.45 ACRE)

(65.88 KVA)  
(1.00 ACRE)

(65.88 KVA)  
(1.00 ACRE)

(65.88 KVA)  
(1.00 ACRE)

(65.88 KVA)  
(1.00 ACRE)

(65.88 KVA)  
(1.00 ACRE)

TR07-RMU-19  
(200 KVA)  
CKT-7

TR06-RMU-19  
(200 KVA)  
CKT-6

TR05-RMU-19  
(200 KVA)  
CKT-5

(110.68 KVA)  
(1.68 ACRE)

TR08-RMU-19  
(200 KVA)  
CKT-8

(56.00 KVA)  
(0.85 ACRE)

(65.88 KVA)  
(1.00 ACRE)

(65.88 KVA)  
(1.00 ACRE)

(65.88 KVA)  
(1.00 ACRE)

(65.88 KVA)  
(1.00 ACRE)

(65.88 KVA)  
(1.00 ACRE)

(65.88 KVA)  
(1.00 ACRE)

TR09-RMU-19  
(200 KVA)  
CKT-9

TR10-RMU-19  
(200 KVA)  
CKT-10

(51.38 KVA)  
(0.78 ACRE)

(65.88 KVA)  
(1.00 ACRE)

(65.88 KVA)  
(1.00 ACRE)

(65.88 KVA)  
(1.00 ACRE)

(65.88 KVA)  
(1.00 ACRE)

(65.88 KVA)  
(1.00 ACRE)

(65.88 KVA)  
(1.00 ACRE)

(65.88 KVA)  
(1.00 ACRE)

(65.88 KVA)  
(1.00 ACRE)

TR23-RMU-19  
(200 KVA)  
CKT-23

TR22-RMU-19  
(200 KVA)  
CKT-22

TR21-RMU-19  
(200 KVA)  
CKT-21

TR20-RMU-19  
(200 KVA)  
CKT-20

TR19-RMU-19  
(200 KVA)  
CKT-19

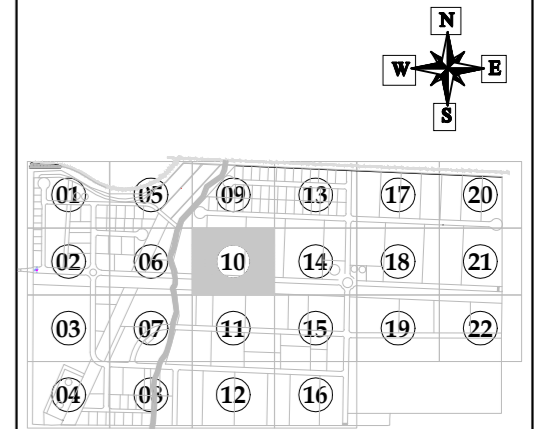
350.00m

(1317.64 KVA)  
(20.00 ACRE)

(1317.64 KVA)  
(20.00 ACRE)

TR10-RMU-03  
(630 KVA)  
CKT-10  
TR09-RMU-03  
(630 KVA)  
CKT-9

TR13-RMU-03  
(630 KVA)  
CKT-13  
TR12-RMU-03  
(630 KVA)  
CKT-12  
TR11-RMU-03  
(630 KVA)  
CKT-11



KEY PLAN

LEGEND

S NO	DESCRIPTION	QUANTITY
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4	RING MAIN UNIT-04 (RMU)	01 NO
5	RING MAIN UNIT-05 (RMU)	01 NO
6	RING MAIN UNIT-06 (RMU)	01 NO
7	RING MAIN UNIT-07 (RMU)	01 NO
8	RING MAIN UNIT-08 (RMU)	01 NO
9	RING MAIN UNIT-09 (RMU)	01 NO
10	RING MAIN UNIT-10 (RMU)	01 NO
11	RING MAIN UNIT-11 (RMU)	01 NO
12	RING MAIN UNIT-12 (RMU)	01 NO
13	RING MAIN UNIT-13 (RMU)	01 NO
14	RING MAIN UNIT-14 (RMU)	01 NO
15	RING MAIN UNIT-15 (RMU)	01 NO
16	RING MAIN UNIT-16 (RMU)	01 NO
17	RING MAIN UNIT-17 (RMU)	01 NO
18	RING MAIN UNIT-18 (RMU)	01 NO
19	RING MAIN UNIT-19 (RMU)	01 NO
20	RING MAIN UNIT-20 (RMU)	01 NO
21	TRANSFORMER	
22	TRANSFORMER	
23	TRANSFORMER	
24	TRANSFORMER	
25	3C 120mm <sup>2</sup> ALUMINUM, XLPE/PVC/SWA/PVC CABLE.	

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PROJECT:  
PROCUREMENT OF CONSULTANCY SERVICES FOR DESIGN / DESIGN REVIEW AND CONSTRUCTION SUPERVISION OF INFRASTRUCTURE WORKS AT BIN QASIM INDUSTRIAL PARK (BQIP), PHASE III BIN QASIM TOWN KARACHI

DRAWING TITLE:  
ENLARGED PLAN 11 KV SECONDARY FEEDER LAYOUT FROM RMU,s TO TRANSFORMER

DATE	DESCRIPTION	DRAWN	APPROVED	PMANAGER
31-01-2025	FOR CLIENT SUBMISSION	M DEN	ENGR FARHAN	ENGR MUNEEB

DRAWING N°:  
BQIP-E-04

SHEET  
10 OF 22

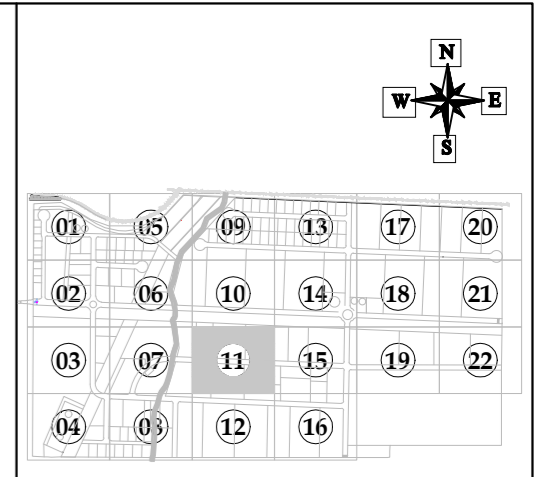
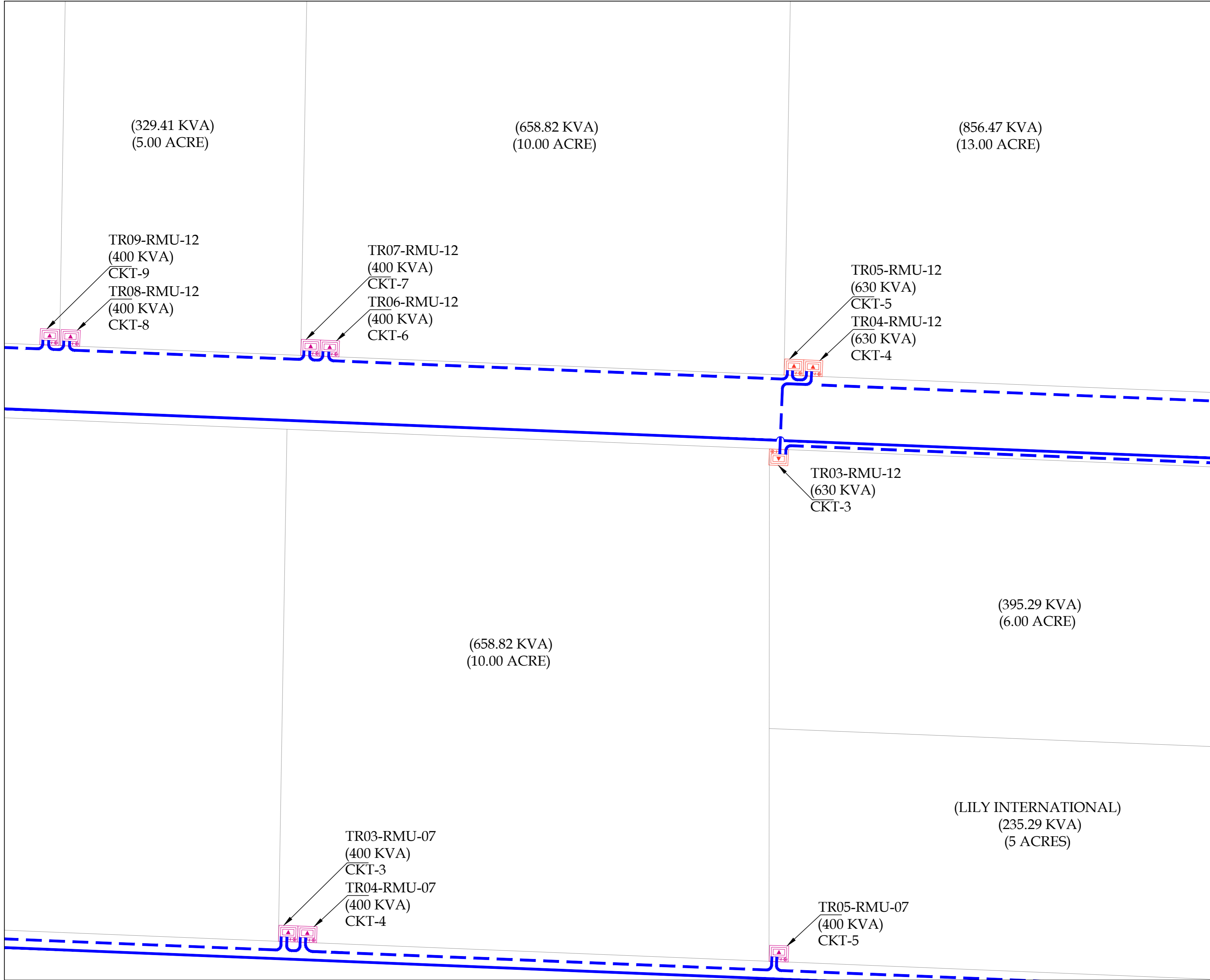
REV  
00

CLIENT:  
NATIONAL INDUSTRIAL PARKS DEVELOPMENT & MANAGEMENT COMPANY  
2nd FLOOR, BLOCK-G, FTC BUILDING  
SHAHRAH-E-FARSH, KARACHI-74400, PAKISTAN.  
PHONE: 021-99225035-9, 021-35631046-8.

CONSULTANT:  
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BQIP-E-03-04

BQIP-E-03-04



KEY PLAN

LEGEND

S NO	DESCRIPTION	QUANTITY
1	RING MAIN UNIT-01 (RMU)	01 NO
2	RING MAIN UNIT-02 (RMU)	01 NO
3	RING MAIN UNIT-03 (RMU)	01 NO
4	RING MAIN UNIT-04 (RMU)	01 NO
5	RING MAIN UNIT-05 (RMU)	01 NO
6	RING MAIN UNIT-06 (RMU)	01 NO
7	RING MAIN UNIT-07 (RMU)	01 NO
8	RING MAIN UNIT-08 (RMU)	01 NO
9	RING MAIN UNIT-09 (RMU)	01 NO
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13	RING MAIN UNIT-13 (RMU)	01 NO
14	RING MAIN UNIT-14 (RMU)	01 NO
15	RING MAIN UNIT-15 (RMU)	01 NO
16	RING MAIN UNIT-16 (RMU)	01 NO
17	RING MAIN UNIT-17 (RMU)	01 NO
18	RING MAIN UNIT-18 (RMU)	01 NO
19	RING MAIN UNIT-19 (RMU)	01 NO
20	RING MAIN UNIT-20 (RMU)	01 NO
21	TRANSFORMER	
22	TRANSFORMER	
23	TRANSFORMER	
24	TRANSFORMER	
25	3C 120mm <sup>2</sup> ALUMINUM, XLPE/PVC/SWA/PVC CABLE.	

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PROJECT:  
PROCUREMENT OF CONSULTANCY SERVICES FOR DESIGN / DESIGN REVIEW AND CONSTRUCTION SUPERVISION OF INFRASTRUCTURE WORKS AT BIN QASIM INDUSTRIAL PARK (BQIP), PHASE III BIN QASIM TOWN KARACHI

DRAWING TITLE:  
ENLARGED PLAN 11 KV SECONDARY FEEDER LAYOUT FROM RMU,s TO TRANSFORMER

DATE	DESCRIPTION	DRAWN	APPROVED	PMANAGER
31-01-2025	FOR CLIENT SUBMISSION	M DEN	ENGR FARHAN	ENGR MUNEEB

DRAWING N°:	SHEET	REV
BQIP-E-04	11 OF 22	00

CLIENT:  

**NATIONAL INDUSTRIAL PARKS**  
 DEVELOPMENT & MANAGEMENT COMPANY  
 2nd FLOOR, BLOCK-C, FTC BUILDING  
 SHAHRAN-E-FAYDAL, KARACHI-74400, PAKISTAN.  
 PHONE: 021-99225035-9, 021-35631046-8.

CONSULTANT:  

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 TELEPHONE: +92 42 35450914-5 +92 32 142 71101  
 FAX: +92 42 35450916 WEB: www.asiancon.com

(LILY INTERNATIONAL)  
(235.29 KVA)  
(5 ACRES)

TR03-RMU-07  
(400 KVA)  
CKT-3  
TR04-RMU-07  
(400 KVA)  
CKT-4

TR05-RMU-07  
(400 KVA)  
CKT-5

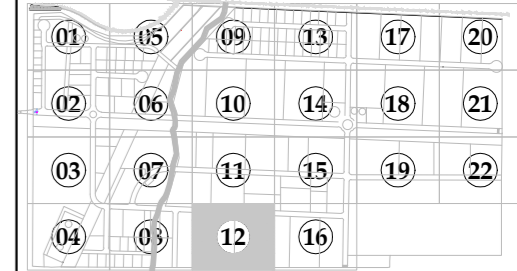
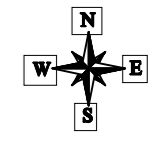
(MASTER AUTO ENGINEERING)  
(2352.94 KVA)  
(15 ACRES)

TR09-RMU-10  
(630 KVA)  
CKT-9  
TR08-RMU-10  
(630 KVA)  
CKT-8

TR05-RMU-10  
(630 KVA)  
CKT-5  
TR06-RMU-10  
(630 KVA)  
CKT-6  
TR07-RMU-10  
(630 KVA)  
CKT-7

TR03-RMU-10  
(630 KVA)  
CKT-3  
TR04-RMU-10  
(630 KVA)  
CKT-4

(988.23 KVA)  
(15.00 ACRE)



KEY PLAN

LEGEND

S NO	DESCRIPTION	QUANTITY
1	RING MAIN UNIT-01 (RMU)	01 NO
2	RING MAIN UNIT-02 (RMU)	01 NO
3	RING MAIN UNIT-03 (RMU)	01 NO
4	RING MAIN UNIT-04 (RMU)	01 NO
5	RING MAIN UNIT-05 (RMU)	01 NO
6	RING MAIN UNIT-06 (RMU)	01 NO
7	RING MAIN UNIT-07 (RMU)	01 NO
8	RING MAIN UNIT-08 (RMU)	01 NO
9	RING MAIN UNIT-09 (RMU)	01 NO
10	RING MAIN UNIT-10 (RMU)	01 NO
11	RING MAIN UNIT-11 (RMU)	01 NO
12	RING MAIN UNIT-12 (RMU)	01 NO
13	RING MAIN UNIT-13 (RMU)	01 NO
14	RING MAIN UNIT-14 (RMU)	01 NO
15	RING MAIN UNIT-15 (RMU)	01 NO
16	RING MAIN UNIT-16 (RMU)	01 NO
17	RING MAIN UNIT-17 (RMU)	01 NO
18	RING MAIN UNIT-18 (RMU)	01 NO
19	RING MAIN UNIT-19 (RMU)	01 NO
20	RING MAIN UNIT-20 (RMU)	01 NO
21	TRANSFORMER	
22	TRANSFORMER	
23	TRANSFORMER	
24	TRANSFORMER	
25	3C 120mm <sup>2</sup> ALUMINUM, XLPE/PVC/SWA/PVC CABLE.	

NOTE:  
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PROJECT:  
PROCUREMENT OF CONSULTANCY SERVICES FOR DESIGN / DESIGN REVIEW AND CONSTRUCTION SUPERVISION OF INFRASTRUCTURE WORKS AT BIN QASIM INDUSTRIAL PARK (BQIP), PHASE III BIN QASIM TOWN KARACHI

DRAWING TITLE:  
ENLARGED PLAN 11 KV SECONDARY FEEDER LAYOUT FROM RMU,s TO TRANSFORMER

DATE	DESCRIPTION	DRAWN	APPROVED	PMANAGER
31-01-2025	FOR CLIENT SUBMISSION	M DEN	ENGR FARHAN	ENGR MUNEEB

DRAWING N°:  
BQIP-E-04

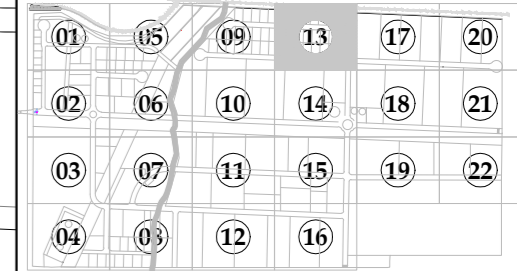
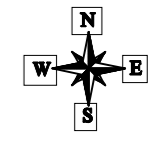
SHEET  
12 OF 22

REV  
00

CLIENT:  
NATIONAL INDUSTRIAL PARKS DEVELOPMENT & MANAGEMENT COMPANY  
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BQIP-E-03-04



KEY PLAN

LEGEND

S NO	DESCRIPTION	QUANTITY
1	RING MAIN UNIT-01 (RMU)	01 NO
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16	RING MAIN UNIT-16 (RMU)	01 NO
17	RING MAIN UNIT-17 (RMU)	01 NO
18	RING MAIN UNIT-18 (RMU)	01 NO
19	RING MAIN UNIT-19 (RMU)	01 NO
20	RING MAIN UNIT-20 (RMU)	01 NO
21		TRANSFORMER
22		TRANSFORMER
23		TRANSFORMER
24		TRANSFORMER
25		3C 120mm <sup>2</sup> ALUMINIUM, XLPE/PVC/SWA/PVC CABLE.

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PROJECT:  
PROCUREMENT OF CONSULTANCY SERVICES FOR DESIGN / DESIGN REVIEW AND CONSTRUCTION SUPERVISION OF INFRASTRUCTURE WORKS AT BIN QASIM INDUSTRIAL PARK (BQIP), PHASE III BIN QASIM TOWN KARACHI

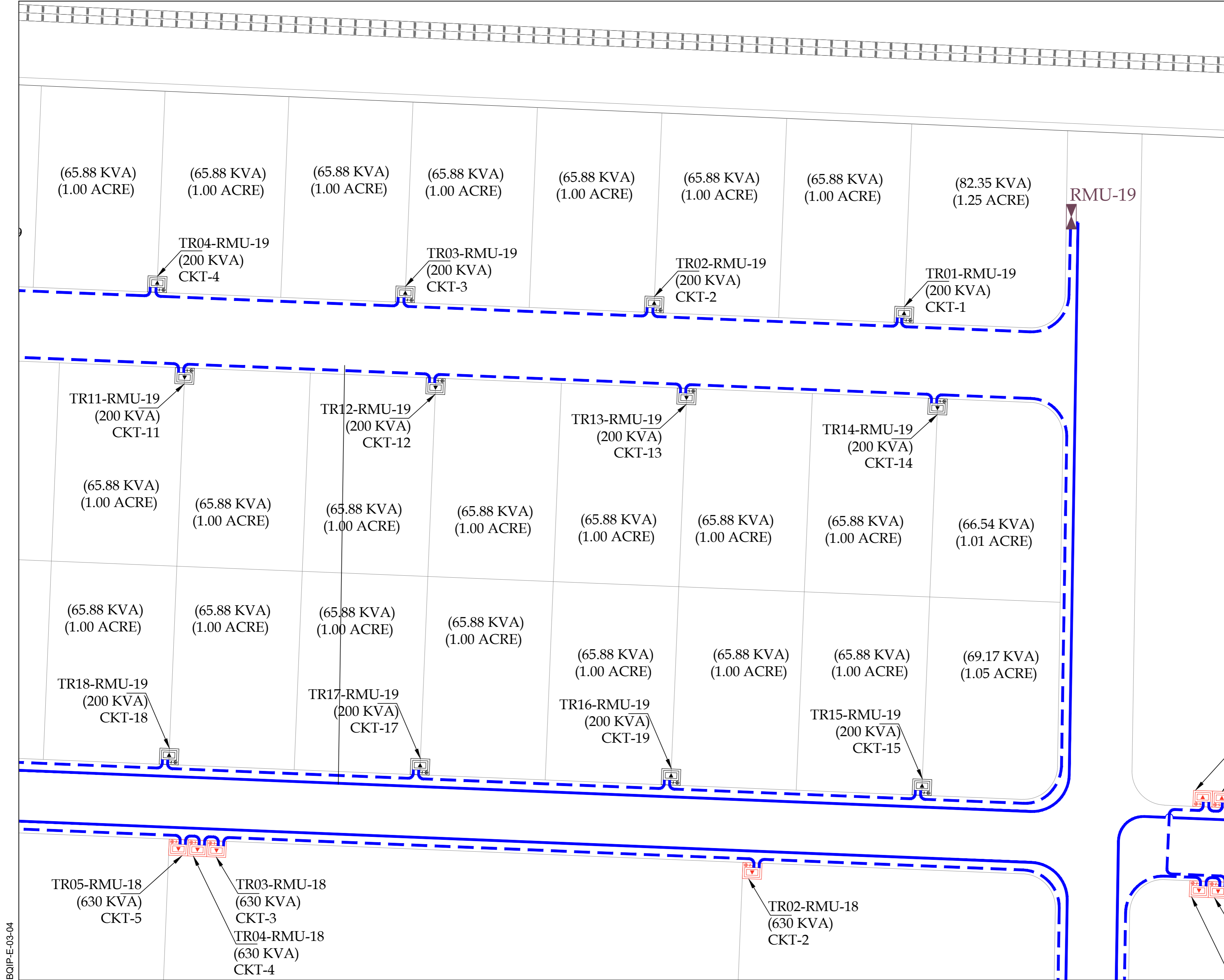
DRAWING TITLE:  
ENLARGED PLAN 11 KV SECONDARY FEEDER LAYOUT FROM RMU,s TO TRANSFORMER

DATE	DESCRIPTION	DRAWN	APPROVED	PMANAGER
31-01-2025	FOR CLIENT SUBMISSION	M DEEN	ENGR FARHAN	ENGR MUNEEB

DRAWING N°:	SHEET	REV
BQIP-E-04	13 OF 22	00

CLIENT:  
 NATIONAL INDUSTRIAL PARKS DEVELOPMENT & MANAGEMENT COMPANY  
2nd FLOOR, BLOCK-C, FTC BUILDING  
SHAHRAH-E-FARABI, KARACHI-74400, PAKISTAN.  
PHONE: 021-95225035-9, 021-35631046-8.

CONSULTANT:  
 ASIAN CONSULTING ENGINEERS PVT.(LTD)  
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BQIP-E-03-04



BQIP-E-03-04

(1317.64 KVA)  
(20.00 ACRE)

(495.43 KVA)  
(7.52 ACRE)

MASJID+PARK  
(436.18 KVA)  
(3.64 ACRE)

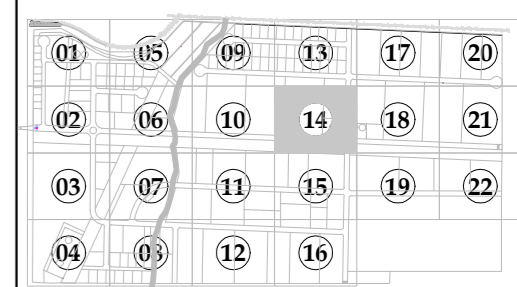
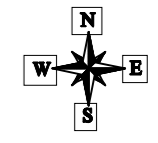
SSGC  
(707.20 KVA)  
(1.38 ACRES)

TR01-RMU-18  
(630 KVA)  
CKT-1

RMU-18

TR05-RMU-17  
(630 KVA)  
CKT-5

TR04-RMU-17  
(630 KVA)  
CKT-4



KEY PLAN

LEGEND

S NO	DESCRIPTION	QUANTITY
1	RING MAIN UNIT-01 (RMU)	01 NO
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PROJECT:  
PROCUREMENT OF CONSULTANCY SERVICES FOR DESIGN / DESIGN REVIEW AND CONSTRUCTION SUPERVISION OF INFRASTRUCTURE WORKS AT BIN QASIM INDUSTRIAL PARK (BQIP), PHASE III BIN QASIM TOWN KARACHI

DRAWING TITLE:  
ENLARGED PLAN 11 KV SECONDARY FEEDER LAYOUT FROM RMU,s TO TRANSFORMER

DATE	DESCRIPTION	DRAWN	APPROVED	PMANAGER
31-01-2025	FOR CLIENT SUBMISSION	M DEN	ENGR FARHAN	ENGR MUNEEB

DRAWING N°:  
BQIP-E-04  
SHEET 14 OF 22  
REV 00

CLIENT:  
NATIONAL INDUSTRIAL PARKS DEVELOPMENT & MANAGEMENT COMPANY  
2nd FLOOR, BLOCK-C, FTC BUILDING  
SHAHRAH-E-FARSH, KARACHI-74400, PAKISTAN.  
PHONE: 021-99225035-9, 021-35631046-8

CONSULTANT:  
ASIAN CONSULTING ENGINEERS PVT.(LTD)  
C-3 JHELLUM BLOCK, GREEN FORT-II, LAHORE, PAKISTAN  
TELEPHONE: +92 42 35450914-5 +92 32 142 71101  
FAX: +92 42 35450916 WEB: www.asiancon.com

RMU-20

UNIVERSAL CARTOON  
INDUSTRIES PVT)Ltd.  
(2941.18 KVA)  
(6 ACRE)

BILAL METAL  
(2941.18 KVA)  
(11 ACRES)

TR02-RMU-12  
(400 KVA)  
CKT-2

LUCRO  
(176.47 KVA)  
(3 ACRES)

(395.29 KVA)  
(6.00 ACRE)

TR01-RMU-12  
(400 KVA)  
CKT-1

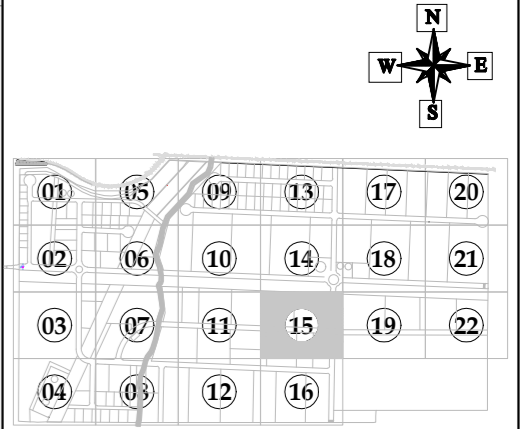
CHEMICAL HUB  
(235.29 KVA)  
(2 ACRES)

KANCO STEEL  
(PVT)Ltd.  
(5294.121 KVA)  
(3 ACRES)

RMU-12

LUCKY AUTOMOTIVE  
INDUSTRIES (PVT)Ltd.  
(2562.35 KVA)  
(5 ACRES)

RMU-13



KEY PLAN

LEGEND

S NO	DESCRIPTION	QUANTITY
1	RING MAIN UNIT-01 (RMU)	01 NO
2	RING MAIN UNIT-02 (RMU)	01 NO
3	RING MAIN UNIT-03 (RMU)	01 NO
4	RING MAIN UNIT-04 (RMU)	01 NO
5	RING MAIN UNIT-05 (RMU)	01 NO
6	RING MAIN UNIT-06 (RMU)	01 NO
7	RING MAIN UNIT-07 (RMU)	01 NO
8	RING MAIN UNIT-08 (RMU)	01 NO
9	RING MAIN UNIT-09 (RMU)	01 NO
10	RING MAIN UNIT-10 (RMU)	01 NO
11	RING MAIN UNIT-11 (RMU)	01 NO
12	RING MAIN UNIT-12 (RMU)	01 NO
13	RING MAIN UNIT-13 (RMU)	01 NO
14	RING MAIN UNIT-14 (RMU)	01 NO
15	RING MAIN UNIT-15 (RMU)	01 NO
16	RING MAIN UNIT-16 (RMU)	01 NO
17	RING MAIN UNIT-17 (RMU)	01 NO
18	RING MAIN UNIT-18 (RMU)	01 NO
19	RING MAIN UNIT-19 (RMU)	01 NO
20	RING MAIN UNIT-20 (RMU)	01 NO
21	TRANSFORMER	
22	TRANSFORMER	
23	TRANSFORMER	
24	TRANSFORMER	
25	3C 120mm <sup>2</sup> ALUMINUM, XLPE/PVC/SWA/PVC CABLE.	

NOTE:  
SUPPLY AND INSTALLATION OF TRANSFORMER IS NOT PART OF THE CLIENT'S SCOPE. TRANSFORMER AND ITS INSTALLATION SHALL BE THE PART OF CONSUMER'S SCOPE.

PROJECT:  
PROCUREMENT OF CONSULTANCY SERVICES FOR DESIGN / DESIGN REVIEW AND CONSTRUCTION SUPERVISION OF INFRASTRUCTURE WORKS AT BIN QASIM INDUSTRIAL PARK (BQIP), PHASE III BIN QASIM TOWN KARACHI

DRAWING TITLE:  
ENLARGED PLAN 11 KV SECONDARY FEEDER LAYOUT FROM RMU,s TO TRANSFORMER

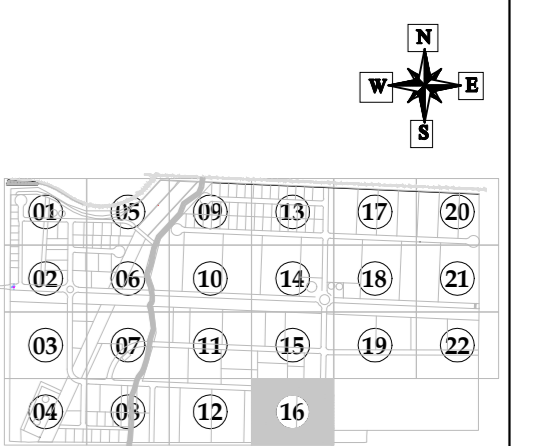
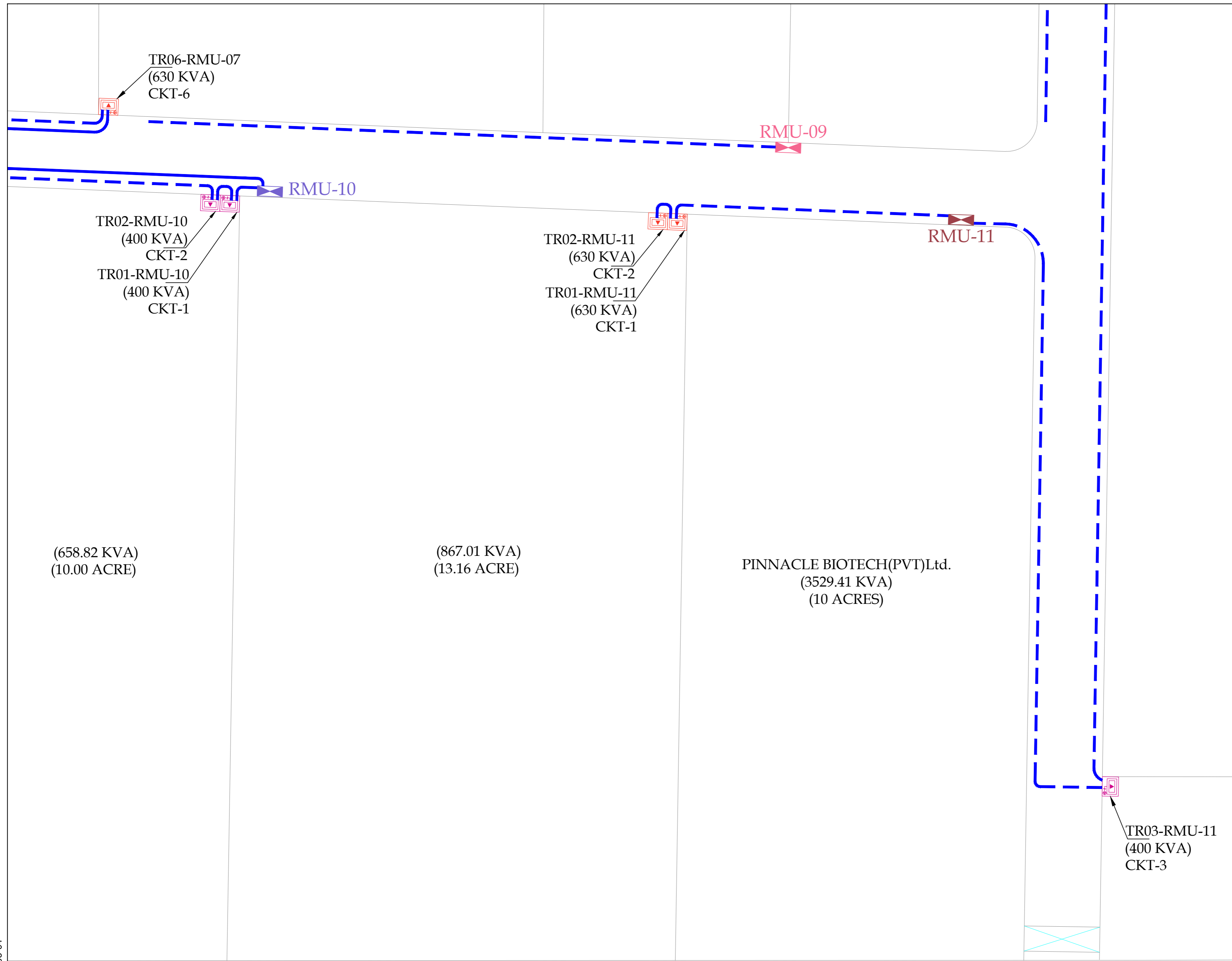
DATE	DESCRIPTION	DRAWN	APPROVED	PMANAGER
31-01-2025	FOR CLIENT SUBMISSION	M DEN	ENGR FARHAN	ENGR MUNEEB

DRAWING N°:	SHEET	REV
BQIP-E-04	15 OF 22	00

CLIENT:  
NATIONAL INDUSTRIAL PARKS DEVELOPMENT & MANAGEMENT COMPANY  
2nd FLOOR, BLOCK-G, FTC BUILDING  
SHAHRAH-E-FARSH, KARACHI-74400, PAKISTAN.  
PHONE: 021-99225035-9, 021-35531046-8.

CONSULTANT:  
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FAX: +92 42 35450916 WEB: www.asiancon.com

BQIP-E-03-04



**KEY PLAN**

**LEGEND**

S NO	DESCRIPTION	QUANTITY
1	RING MAIN UNIT-01 (RMU)	01 NO
2	RING MAIN UNIT-02 (RMU)	01 NO
3	RING MAIN UNIT-03 (RMU)	01 NO
4	RING MAIN UNIT-04 (RMU)	01 NO
5	RING MAIN UNIT-05 (RMU)	01 NO
6	RING MAIN UNIT-06 (RMU)	01 NO
7	RING MAIN UNIT-07 (RMU)	01 NO
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12	RING MAIN UNIT-12 (RMU)	01 NO
13	RING MAIN UNIT-13 (RMU)	01 NO
14	RING MAIN UNIT-14 (RMU)	01 NO
15	RING MAIN UNIT-15 (RMU)	01 NO
16	RING MAIN UNIT-16 (RMU)	01 NO
17	RING MAIN UNIT-17 (RMU)	01 NO
18	RING MAIN UNIT-18 (RMU)	01 NO
19	RING MAIN UNIT-19 (RMU)	01 NO
20	RING MAIN UNIT-20 (RMU)	01 NO
21	TRANSFORMER	
22	TRANSFORMER	
23	TRANSFORMER	
24	TRANSFORMER	
25	3C 120mm <sup>2</sup> ALUMINUM, XLPE/PVC/SWA/PVC CABLE.	

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**PROJECT:**  
 PROCUREMENT OF CONSULTANCY SERVICES FOR DESIGN / DESIGN REVIEW AND CONSTRUCTION SUPERVISION OF INFRASTRUCTURE WORKS AT BIN QASIM INDUSTRIAL PARK (BQIP), PHASE III BIN QASIM TOWN KARACHI

**DRAWING TITLE:**  
 ENLARGED PLAN 11 KV SECONDARY FEEDER LAYOUT FROM RMU,s TO TRANSFORMER

ORIGINAL	DATE	SCALE
A2	JANUARY, 2025	

DATE	DESCRIPTION	DRAWN	APPROVED	PMANAGER
31-01-2025	FOR CLIENT SUBMISSION	M DEN	ENGR FARHAN	ENGR MUNEEB

**DRAWING N°:**  
 BQIP-E-04

**SHEET** 16 OF 22  
**REV** 00

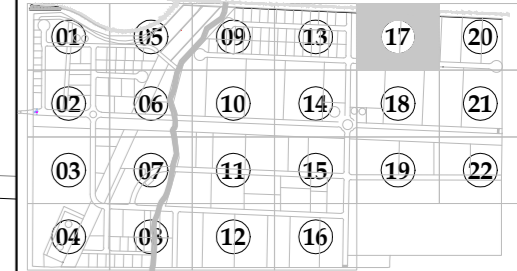
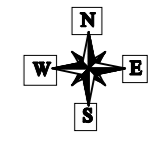
**CLIENT:**  

 NATIONAL INDUSTRIAL PARKS DEVELOPMENT & MANAGEMENT COMPANY  
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BQIP-E-03-04



KEY PLAN

LEGEND

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19	RING MAIN UNIT-19 (RMU)	01 NO
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PROJECT:  
PROCUREMENT OF CONSULTANCY SERVICES FOR DESIGN / DESIGN REVIEW AND CONSTRUCTION SUPERVISION OF INFRASTRUCTURE WORKS AT BIN QASIM INDUSTRIAL PARK (BQIP), PHASE III BIN QASIM TOWN KARACHI

DRAWING TITLE:  
ENLARGED PLAN 11 KV SECONDARY FEEDER LAYOUT FROM RMU,s TO TRANSFORMER

DATE	DESCRIPTION	DRAWN	APPROVED	PMANAGER
31-01-2025	FOR CLIENT SUBMISSION	M DEN	ENGR FARHAN	ENGR MUNEEB

DRAWING N°:  
BQIP-E-04

SHEET  
17 OF 22

REV  
00

CLIENT:  

**NATIONAL INDUSTRIAL PARKS**  
 DEVELOPMENT & MANAGEMENT COMPANY  
 2nd FLOOR, BLOCK-C, FTC BUILDING  
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 FAX: +92 42 35450916 WEB: www.asiancon.com

(745.78 KVA)  
(11.32 ACRE)

(527.05 KVA)  
(8.00 ACRE)

(527.05 KVA)  
(8.00 ACRE)

(527.05 KVA)  
(8.00 ACRE)

TR08-RMU-17  
(630 KVA)  
CKT-8  
TR09-RMU-17  
(630 KVA)  
CKT-9

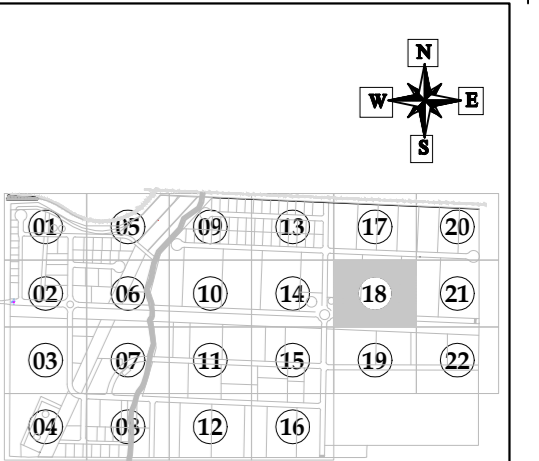
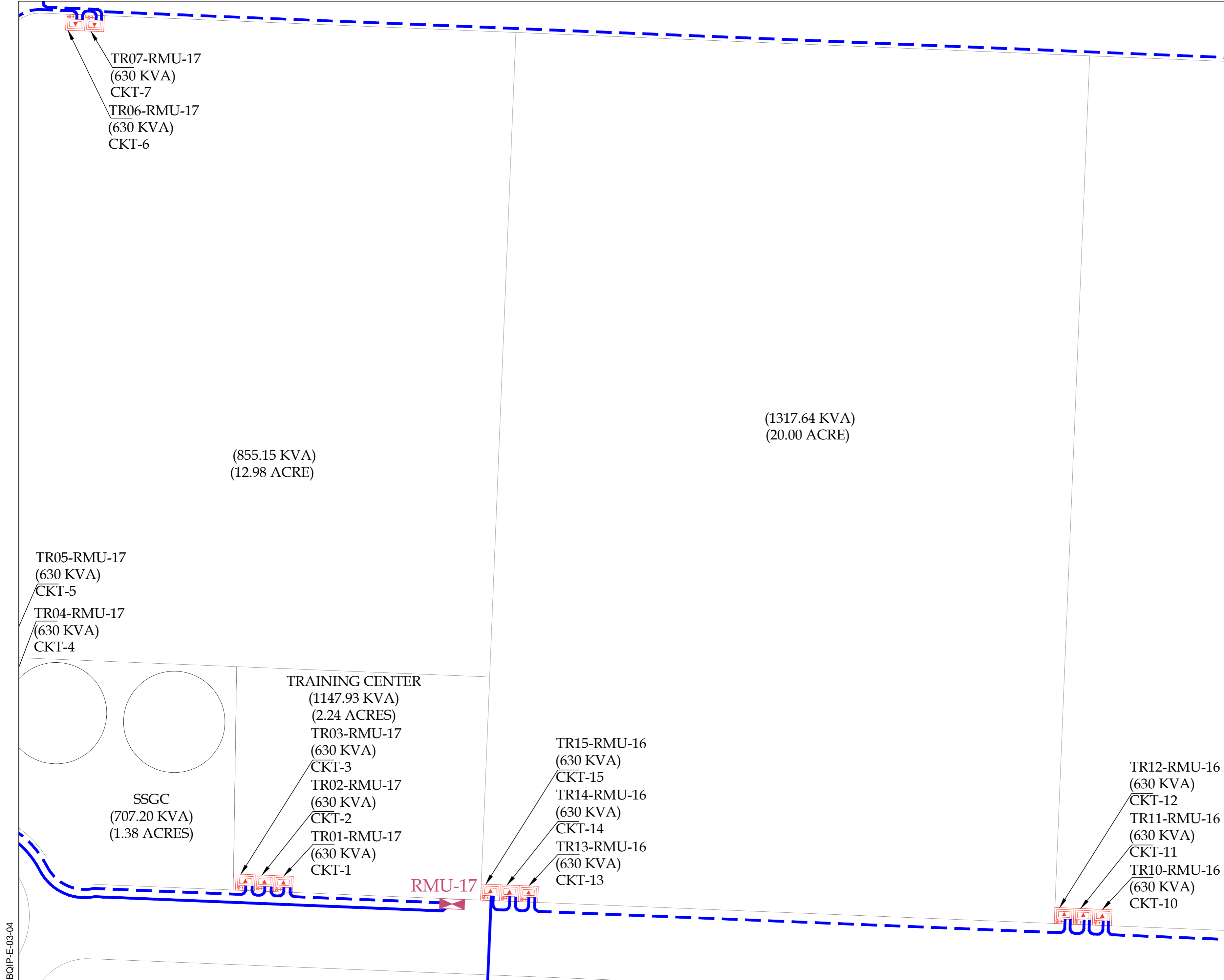
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(630 KVA)  
CKT-10

TR11-RMU-17  
(630 KVA)  
CKT-11

TR12-RMU-17  
(630 KVA)  
CKT-12

TR07-RMU-17  
(630 KVA)  
CKT-7  
TR06-RMU-17  
(630 KVA)  
CKT-6

BQIP-E-03-04



**KEY PLAN**

**LEGEND**

S NO	DESCRIPTION	QUANTITY
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25	3C 120mm <sup>2</sup> ALUMINUM, XLPE/PVC/SWA/PVC CABLE.	

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**PROJECT:**  
 PROCUREMENT OF CONSULTANCY SERVICES FOR DESIGN / DESIGN REVIEW AND CONSTRUCTION SUPERVISION OF INFRASTRUCTURE WORKS AT BIN QASIM INDUSTRIAL PARK (BQIP), PHASE III BIN QASIM TOWN KARACHI

**DRAWING TITLE:**  
 ENLARGED PLAN 11 KV SECONDARY FEEDER LAYOUT FROM RMU,s TO TRANSFORMER

ORIGINAL	DATE	SCALE
A2	JANUARY, 2025	

DATE	DESCRIPTION	DRAWN	APPROVED	PMANAGER
31-01-2025	FOR CLIENT SUBMISSION	M DEN	ENGR FARHAN	ENGR MUNEEB

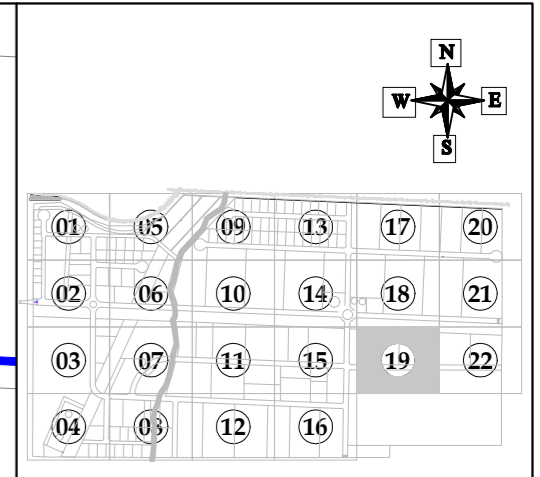
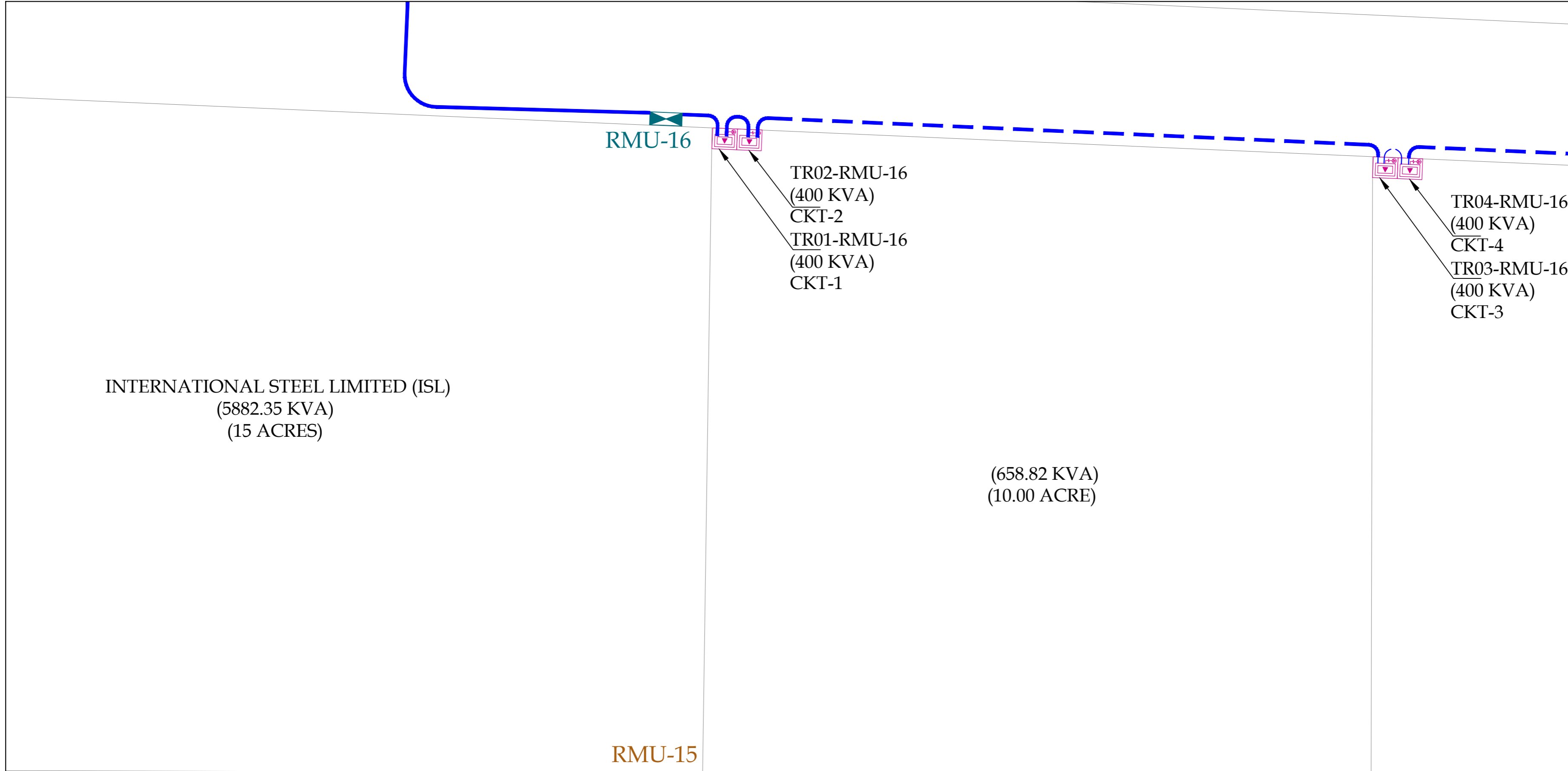
DRAWING N°:	SHEET	REV
BQIP-E-04	18 OF 22	00

**CLIENT:**  
 NATIONAL INDUSTRIAL PARKS DEVELOPMENT & MANAGEMENT COMPANY  
 2nd FLOOR, BLOCK-C, FTC BUILDING  
 SHAHRAN-E-FARSH, KARACHI-74400, PAKISTAN.  
 PHONE: 021-99225035-9, 021-35631046-8

**CONSULTANT:**  
 ASIAN CONSULTING ENGINEERS PVT.(LTD)  
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BQIP-E-03-04

BQIP-E-03-04



**LEGEND**

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16	RING MAIN UNIT-16 (RMU)	01 NO
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18	RING MAIN UNIT-18 (RMU)	01 NO
19	RING MAIN UNIT-19 (RMU)	01 NO
20	RING MAIN UNIT-20 (RMU)	01 NO
21	TRANSFORMER	
22	TRANSFORMER	
23	TRANSFORMER	
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25	3C 120mm <sup>2</sup> ALUMINUM, XLPE/PVC/SWA/PVC CABLE.	

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**PROJECT:**  
PROCUREMENT OF CONSULTANCY SERVICES FOR DESIGN / DESIGN REVIEW AND CONSTRUCTION SUPERVISION OF INFRASTRUCTURE WORKS AT BIN QASIM INDUSTRIAL PARK (BQIP), PHASE III BIN QASIM TOWN KARACHI

**DRAWING TITLE:**  
ENLARGED PLAN 11 KV SECONDARY FEEDER LAYOUT FROM RMU,s TO TRANSFORMER

DATE	DESCRIPTION	DRAWN	APPROVED	MANAGER
31-01-2025	FOR CLIENT SUBMISSION	M DEN	ENGR FARHAN	ENGR MUNEEB

**DRAWING N°:**  
BQIP-E-04

**SHEET:** 19 OF 22

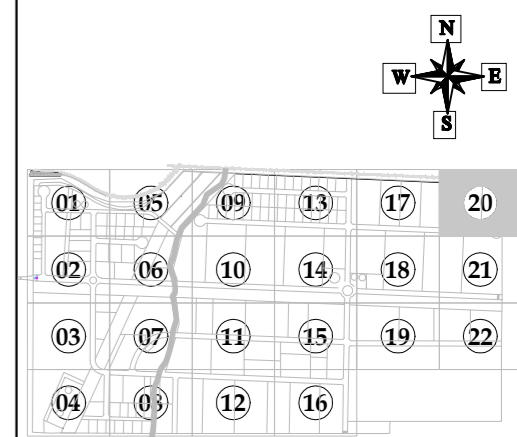
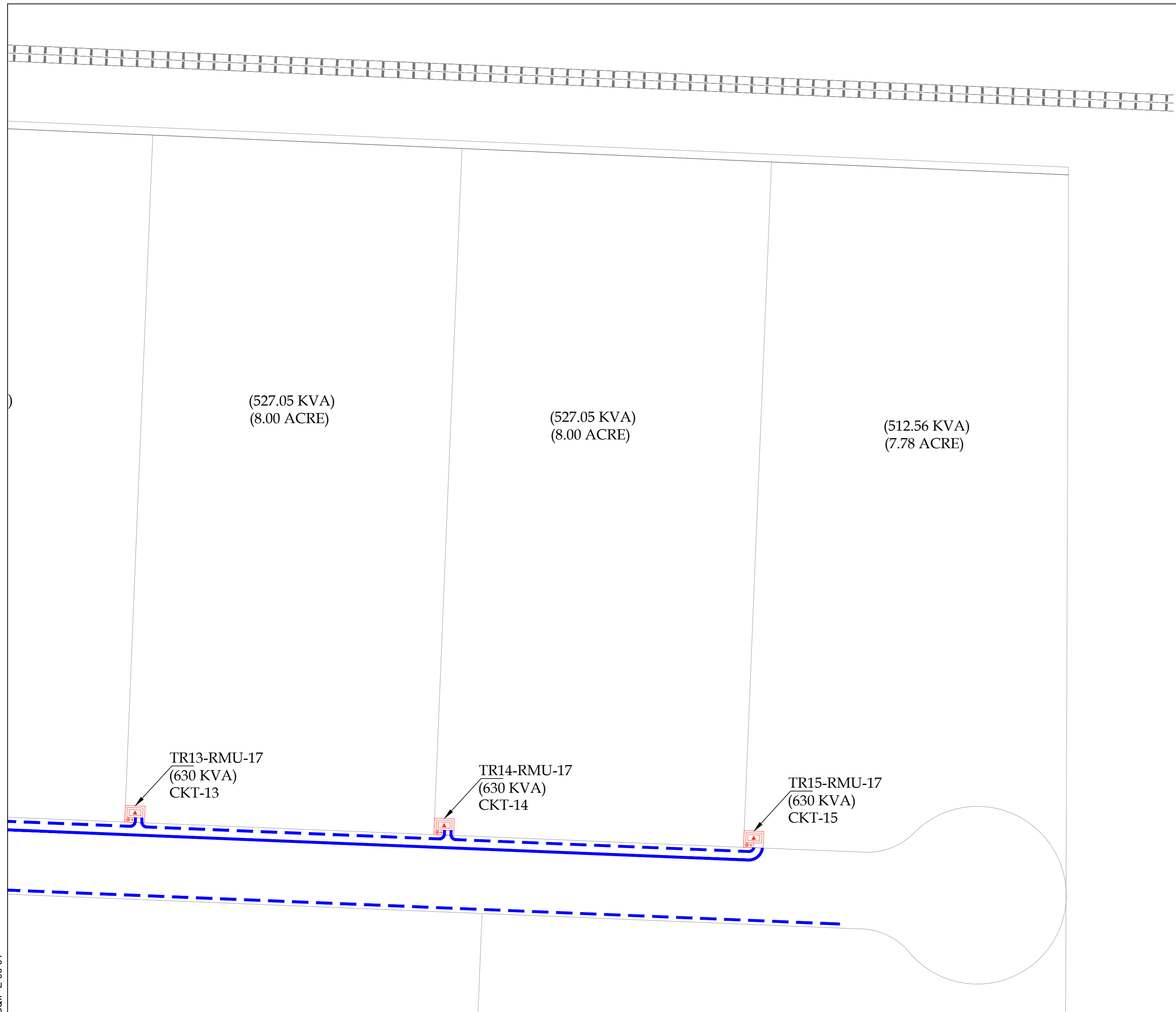
**REV:** 00

**CLIENT:**

**NATIONAL INDUSTRIAL PARKS**  
DEVELOPMENT & MANAGEMENT COMPANY  
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KEY PLAN

LEGEND

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19	RING MAIN UNIT-19 (RMU)	01 NO
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PROJECT:  
PROCUREMENT OF CONSULTANCY SERVICES FOR DESIGN / DESIGN REVIEW AND CONSTRUCTION SUPERVISION OF INFRASTRUCTURE WORKS AT BIN QASIM INDUSTRIAL PARK (BQIP), PHASE III BIN QASIM TOWN KARACHI

DRAWING TITLE:  
ENLARGED PLAN 11 KV SECONDARY FEEDER LAYOUT FROM RMU,s TO TRANSFORMER

DATE	DESCRIPTION	DRAWN	APPROVED	PMANAGER
31-01-2025	FOR CLIENT SUBMISSION	M DEN	ENGR FARHAN	ENGR MUNEEB

DRAWING N°:	SHEET	REV
BQIP-E-04	20 OF 22	00

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 DEVELOPMENT & MANAGEMENT COMPANY  
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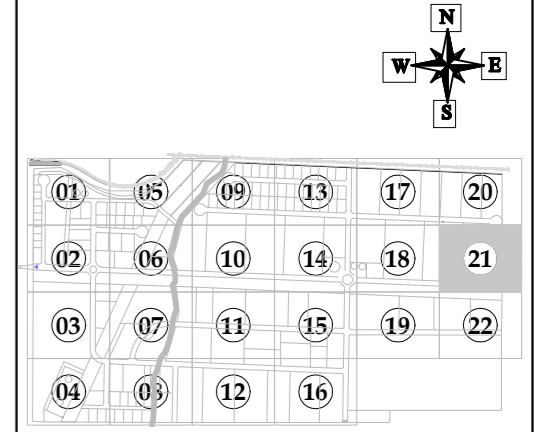
BQIP-E-03-04

(1317.64 KVA)  
(20.00 ACRE)

(1324.89 KVA)  
(20.11 ACRE)

TR09-RMU-16  
(630 KVA)  
CKT-9  
TR08-RMU-16  
(630 KVA)  
CKT-8  
TR07-RMU-16  
(630 KVA)  
CKT-7

PROPOSED  
GATE



KEY PLAN

LEGEND

S NO	DESCRIPTION	QUANTITY
1	RING MAIN UNIT-01 (RMU)	01 NO
2	RING MAIN UNIT-02 (RMU)	01 NO
3	RING MAIN UNIT-03 (RMU)	01 NO
4	RING MAIN UNIT-04 (RMU)	01 NO
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PROJECT:  
PROCUREMENT OF CONSULTANCY SERVICES FOR DESIGN / DESIGN REVIEW AND CONSTRUCTION SUPERVISION OF INFRASTRUCTURE WORKS AT BIN QASIM INDUSTRIAL PARK (BQIP), PHASE III BIN QASIM TOWN KARACHI

DRAWING TITLE:  
ENLARGED PLAN 11 KV SECONDARY FEEDER LAYOUT FROM RMU,s TO TRANSFORMER

DATE	DESCRIPTION	DRAWN	APPROVED	MANAGER
31-01-2025	FOR CLIENT SUBMISSION	M DIEN	ENGR FARHAN	ENGR MUNEEB

DRAWING N°:	BQIP-E-04	SHEET	21 OF 22	REV	00
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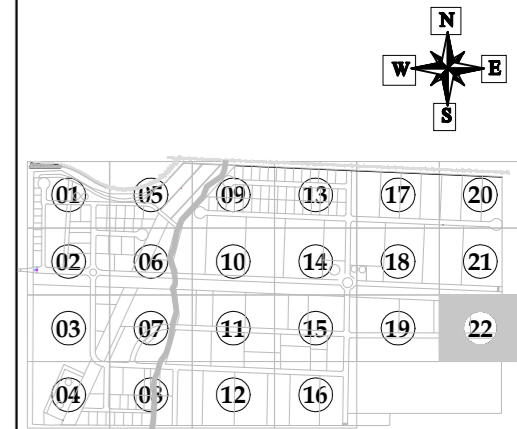
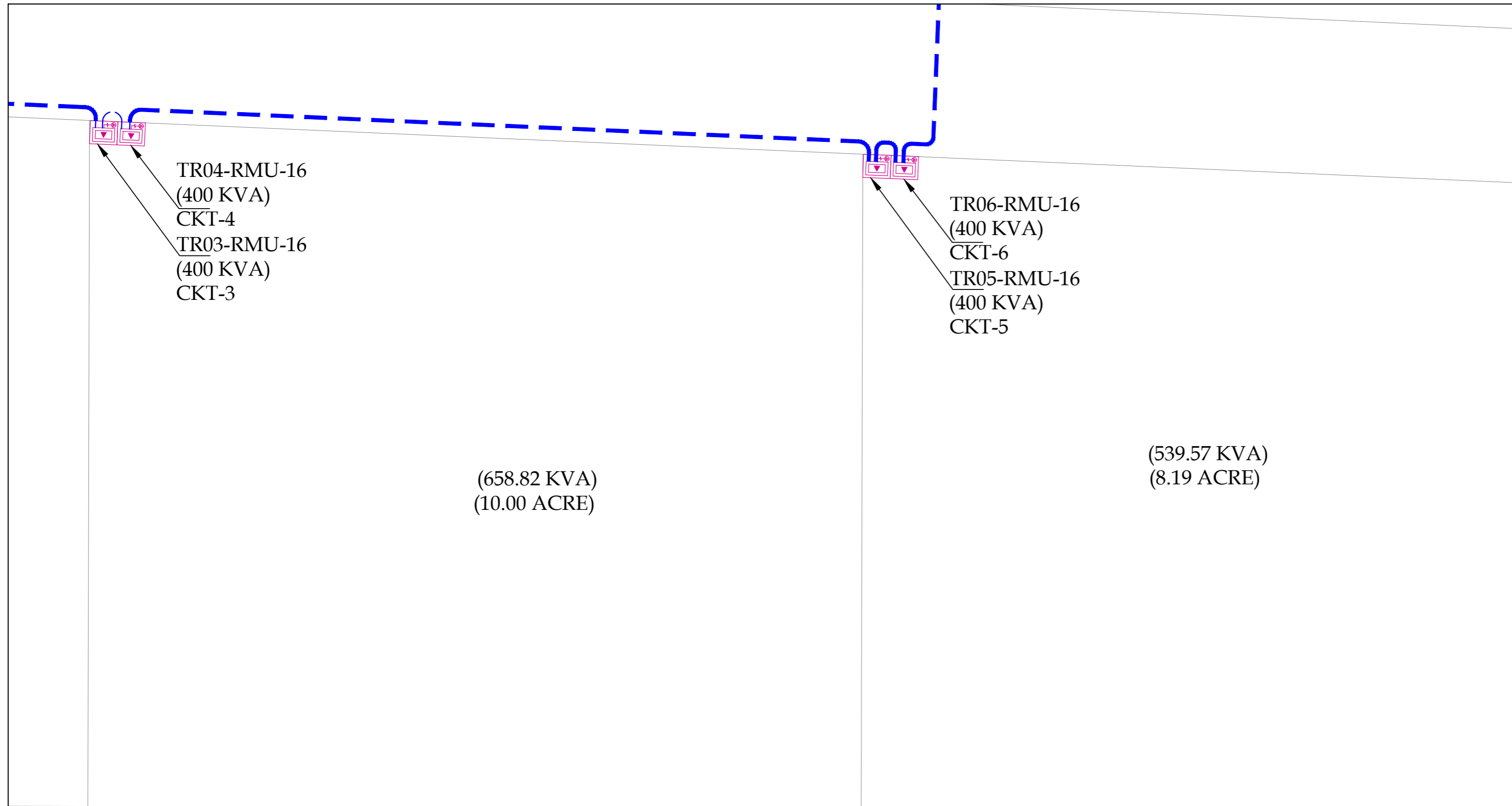
CLIENT:  

**NATIONAL INDUSTRIAL PARKS**  
 DEVELOPMENT & MANAGEMENT COMPANY  
 2nd FLOOR, BLOCK-C, FTC BUILDING  
 SHAHRAN-E-FARSH, KARACHI-74400, PAKISTAN.  
 PHONE: 021-99225035-9, 021-35631046-8.

CONSULTANT:  

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 FAX: +92 42 35450916 WEB: www.asiancon.com





KEY PLAN

LEGEND

S NO	DESCRIPTION	QUANTITY
1	RING MAIN UNIT-01 (RMU)	01 NO
2	RING MAIN UNIT-02 (RMU)	01 NO
3	RING MAIN UNIT-03 (RMU)	01 NO
4	RING MAIN UNIT-04 (RMU)	01 NO
5	RING MAIN UNIT-05 (RMU)	01 NO
6	RING MAIN UNIT-06 (RMU)	01 NO
7	RING MAIN UNIT-07 (RMU)	01 NO
8	RING MAIN UNIT-08 (RMU)	01 NO
9	RING MAIN UNIT-09 (RMU)	01 NO
10	RING MAIN UNIT-10 (RMU)	01 NO
11	RING MAIN UNIT-11 (RMU)	01 NO
12	RING MAIN UNIT-12 (RMU)	01 NO
13	RING MAIN UNIT-13 (RMU)	01 NO
14	RING MAIN UNIT-14 (RMU)	01 NO
15	RING MAIN UNIT-15 (RMU)	01 NO
16	RING MAIN UNIT-16 (RMU)	01 NO
17	RING MAIN UNIT-17 (RMU)	01 NO
18	RING MAIN UNIT-18 (RMU)	01 NO
19	RING MAIN UNIT-19 (RMU)	01 NO
20	RING MAIN UNIT-20 (RMU)	01 NO
21	TRANSFORMER	
22	TRANSFORMER	
23	TRANSFORMER	
24	TRANSFORMER	
25	3C 120mm² ALUMINUM, XLPE/PVC/SWA/PVC CABLE.	

NOTE:  
SUPPLY AND INSTALLATION OF TRANSFORMER IS NOT PART OF THE CLIENT'S SCOPE. TRANSFORMER AND ITS INSTALLATION SHALL BE THE PART OF CONSUMER'S SCOPE.

PROJECT:  
PROCUREMENT OF CONSULTANCY SERVICES FOR DESIGN / DESIGN REVIEW AND CONSTRUCTION SUPERVISION OF INFRASTRUCTURE WORKS AT BIN QASIM INDUSTRIAL PARK (BQIP), PHASE III BIN QASIM TOWN KARACHI

DRAWING TITLE:  
ENLARGED PLAN 11 KV SECONDARY FEEDER LAYOUT FROM RMU,s TO TRANSFORMER

DATE	DESCRIPTION	DRAWN	APPROVED	PMANAGER
31-01-2025	FOR CLIENT SUBMISSION	M DEN	ENGR FARHAN	ENGR MUNEEB

DRAWING N°:	BQIP-E-04	SHEET	22 OF 22	REV	00
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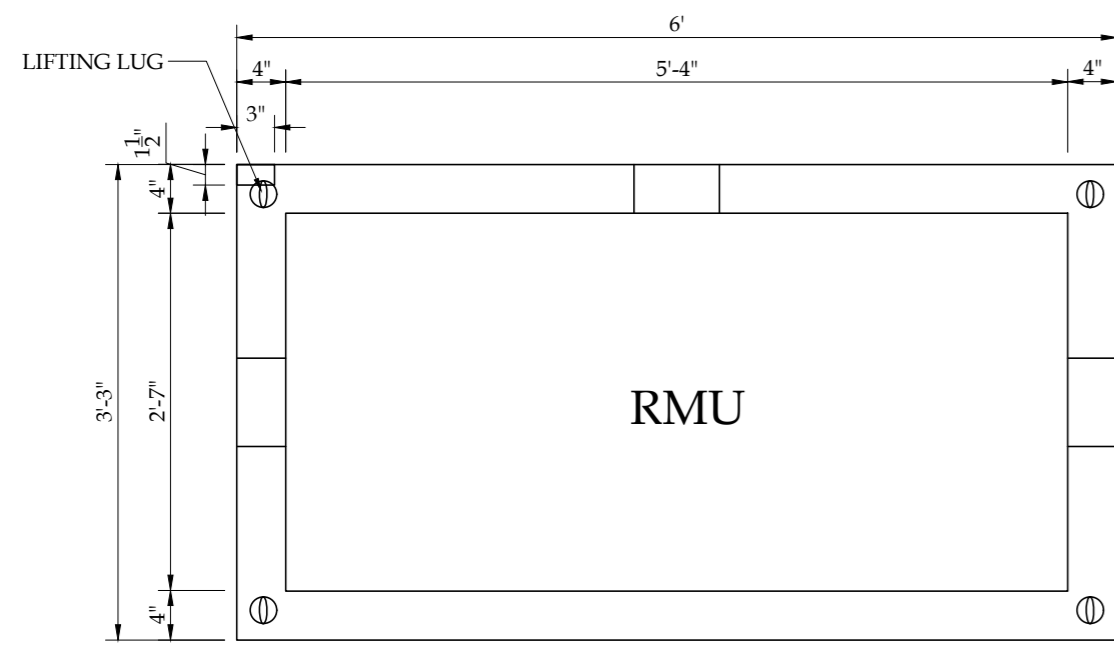
CLIENT:  

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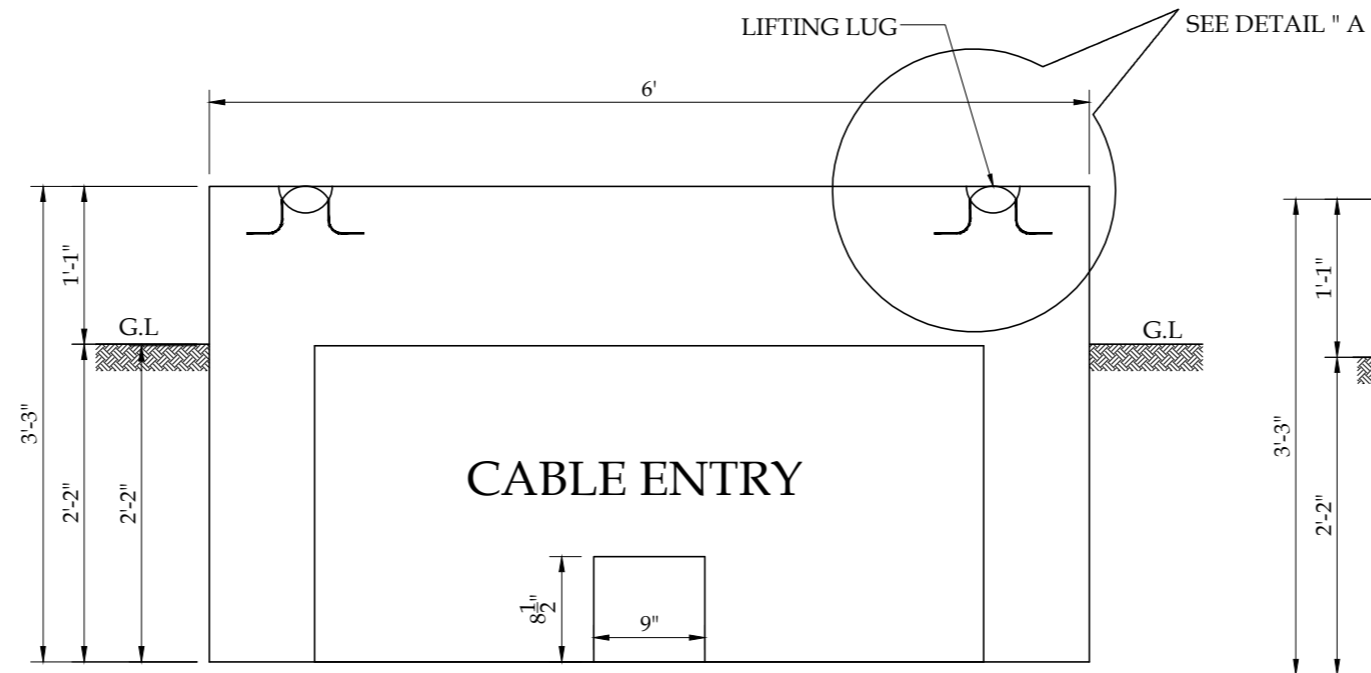
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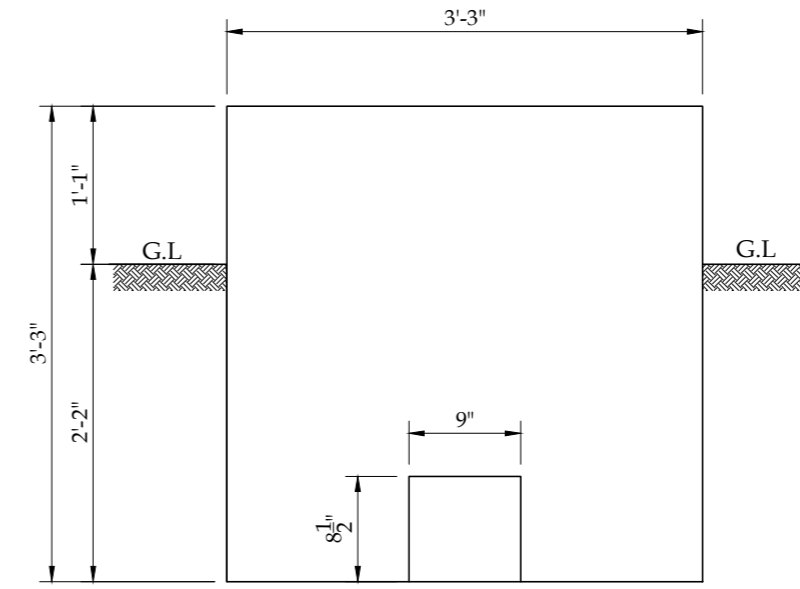
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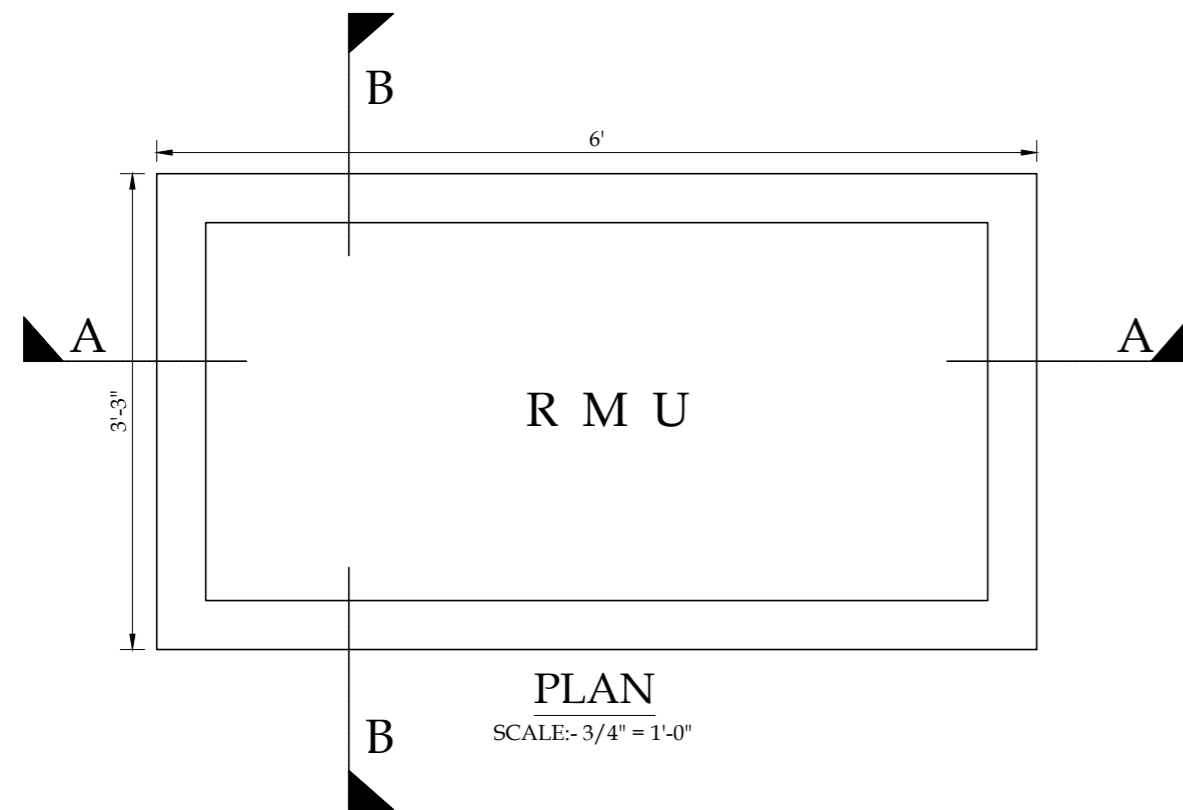
**PLAN**  
SCALE:- 3/4" = 1'-0"



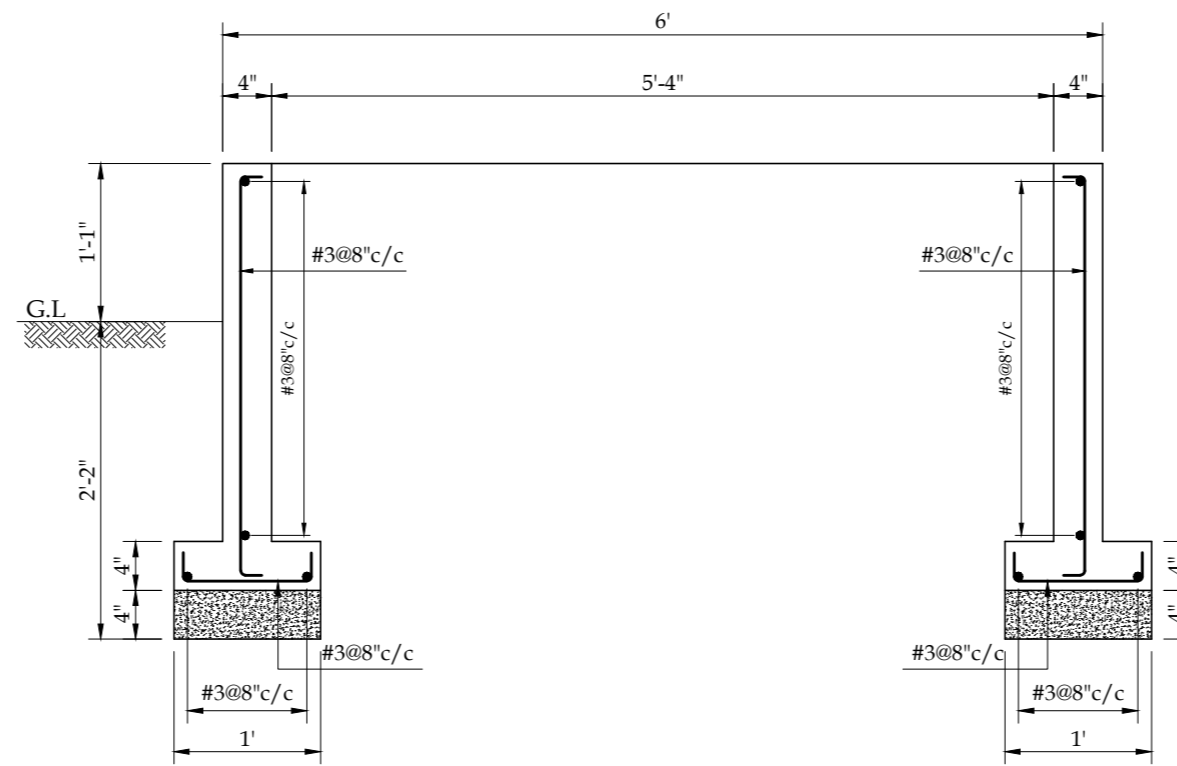
**FRONT VIEW**  
SCALE:- 3/4" = 1'-0"



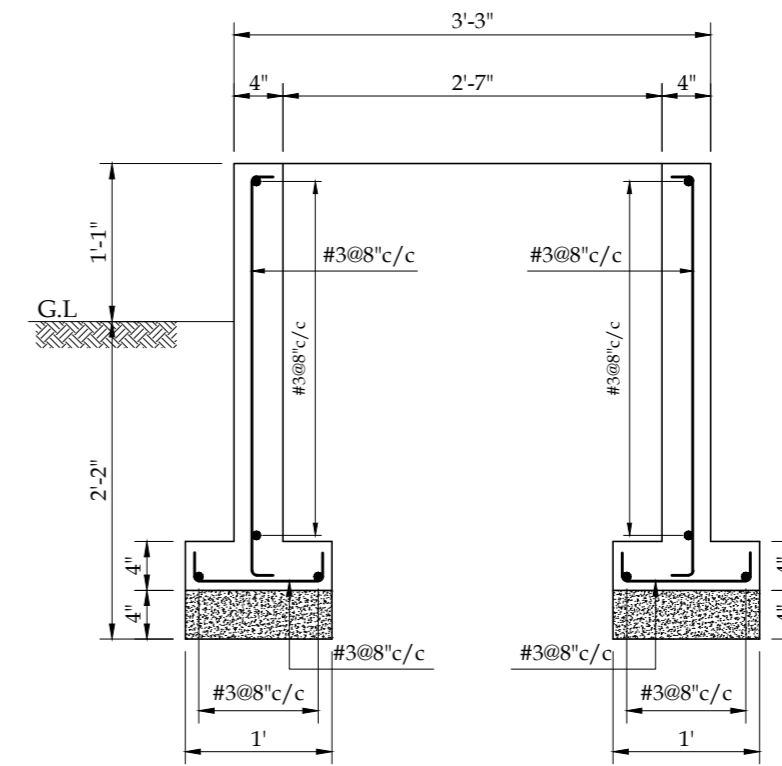
**SIDE VIEW**  
SCALE:- 3/4" = 1'-0"



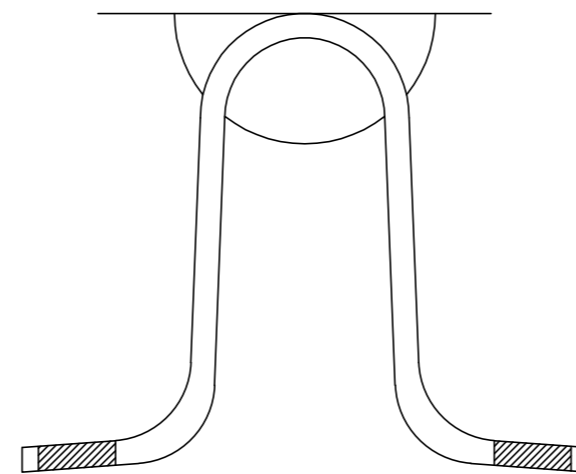
**PLAN**  
SCALE:- 3/4" = 1'-0"



**SECTION A-A**  
SCALE:- 3/4" = 1'-0"



**SECTION B-B**  
SCALE:- 3/4" = 1'-0"



LIFTING LUG (HOT DIP GALVANIZED DIA 16mm)  
**DETAIL "A"**  
SCALE:- 1" = 1'-0"

PROJECT:  
PROCUREMENT OF CONSULTANCY SERVICES FOR  
DESIGN / DESIGN REVIEW AND CONSTRUCTION  
SUPERVISION OF INFRASTRUCTURE WORKS AT BIN  
QASIM INDUSTRIAL PARK (BQIP), PHASE III  
BIN QASIM TOWN KARACHI

DRAWING TITLE:  
**FOUNDATION DETAIL OF  
RING MAIN UNIT (RMU)**

DATE	DESCRIPTION	DRAWN	APPROVED	PMANAGER
31-01-2025	FOR CLIENT SUBMISSION	M DEN	ENGR FARHAN	ENGR MUNEEB

DRAWING NO:  
**BQIP-E-FD-05**

SHEET  
SHEET 1 OF 1

REV  
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CLIENT:  
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## Pakistan Industrial Development Corporation (PIDC) (Pvt.) Ltd.

Development of Internal Electrical Distribution System and Allied work at Bin Qasim Industrial Park (BQIP), Karachi

# VOLUME – II: TECHNICAL SPECIFICATION

February-2025



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## Quality Control Sheet



QUALITY CONTROL SHEET				
DOCUMENT	<b>Volume - II: Technical Specification</b>			
PROJECT	<b>“Power Distribution Network at Bin Qasim Industrial Park, Karachi (Package#IX)”</b>			
CODE	<b>9200099</b>			
REVISION NO.	<b>Rv.001 <input checked="" type="checkbox"/></b>	Rv.002	Rv.003	Rv.004
AUTHOR				
VERIFIED				
TO [Client]	<b>Pakistan Industrial Development Corporation (PIDC) (Pvt.) Ltd.</b>			
NOTES				

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## SECTION - 1: 11KV PAD MOUNTED RMU

This specification has been prepared by Technical Process Re-Engineering Department. This specification is intended for the purpose of technical specification only for the procurement of material and does not include provisions of contract, unless otherwise provided in the contract. The RMU will be as per K-Electric Specification K-TPRE-RMU-53 (Rev-05).

### 1.1 Scope

This standard specifies SF6 insulated metal enclosed ring-main unit designed for outdoor use for alternating current of 630A at rated voltage of 12kV and 50Hz frequency. The equipment is required for KE MV distribution network for ring and T-Off.

The ring main unit shall conform to the following standard specifications and IEC publications 62271-102, 62271-103, 62271-200 (latest applicable).

The specification stipulates the minimum requirements for RMU, it shall be the responsibility of supplier/manufacturer to ensure adequacy of the design, good workmanship and good engineering practice in the manufacturing of RMU.

### 1.2 Reference Standards

The switches shall be designed, manufactured and tested in accordance with the following standards amended to date:

IEC 62271-1	High voltage switchgear and control gear, Part 1: Common specification
IEC 62271 – 100	High-voltage switchgear and control gear - Part 100: High Voltage Alternating Current Circuit Breakers
IEC 62271 – 102	High voltage switchgear and control gear, Part 102: Alternating current disconnectors and earthing switches
IEC 62271 – 103	High-voltage switchgear and control gear - Part 103: Switches for rated voltages above 1 kV up to and including 52 kV
IEC 62271 – 200	High voltage switchgear and control gear – Part 200: AC Metal-enclosed switchgear and control gear for rated voltages above 1kV and up to and including 52kV
IEC 60255	Measuring relays and protection equipment
IEC 61243-5	Voltage Detecting Systems (VDS)
IEC 62271-206	High-voltage switchgear and control gear - Part 206: Voltage presence indicating systems for rated voltages above 1 kV and up to and including 52 kV



### 1.3 General Requirements:

The ring main unit should be prefabricated, filled with SF6 gas, & should be tested in accordance to IEC 62271-100 and 62271-200 (latest applicable) or equivalent / updated standards. It should be ready for operation on delivery.

The offer must have the following features:

- a) Compact construction
- b) High operator safety
- c) Maximum reliability
- d) Maintenance free
- e) Possibility of various cable sizes for connections
- f) Recommended spares with separate prices

The complete RMU shall be outdoor type, complying with IP 54 (with or without enclosure).

The RMU unit can be housed in a hot dip galvanized sheet steel enclosure with paint thickness of 90 - 100 microns or stainless-steel housing with paint thickness of 50 - 60 microns, having 2 mm thickness with rubber gasket, confirming with IP 54 protection.

In case of enclosure, IP54, Internal Arc and Temperature rise tests shall be performed on complete unit (RMU with enclosure) or test reports from any independent lab along with complete type test reports shall be submitted.

The loss of service continuity class shall be LSC2 for RMU.

The partition class shall be PM.

For internal arc (IAC-AFLR) test requirements, the direction of escaping gases shall be upward and same should be verified by drawings and type test reports submitted with bid.

### 1.4 RMU Types

The ring main unit shall be of following combinations:

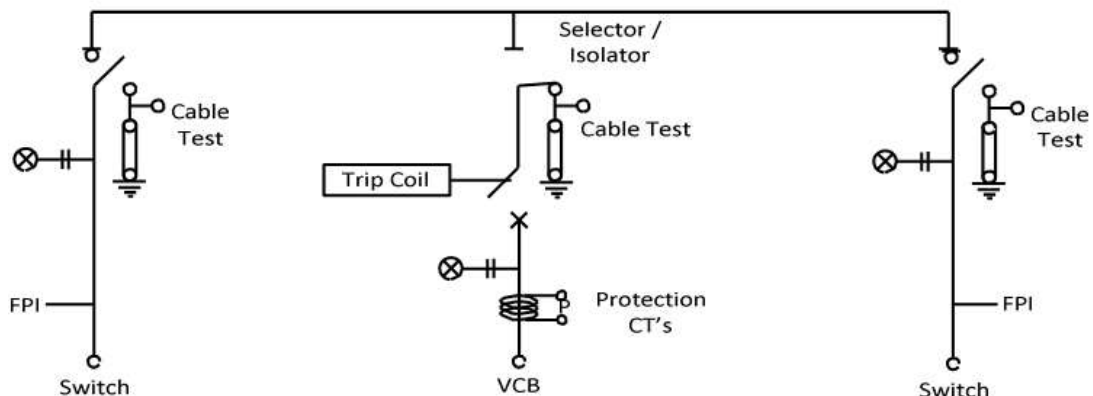
- i. Three Way RMU
- ii. Four Way RMU

#### 1.4.1 3 Way RMU with one side protection:

- The configuration shall be Load break switch, VCB and Load break switch.
- Ring-main feeders with Vacuum Circuit Breaker (630 Amps each side) shall be provided with protection relay.
- Ring-main feeder with Load Break Switch (630 Amps) shall be without protection

- Bus-bar side shall be isolated. Feeder’ s side shall be earthed.
- FPI shall be provided on switch side

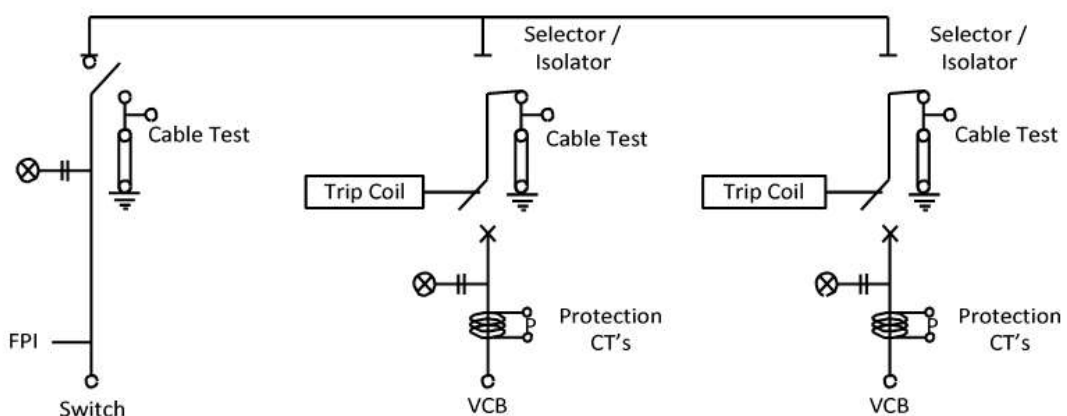
**A) Single Line Diagram**



**1.4.2 3 Way RMU with 2 Side Protection**

- The configuration shall be Load break switch, VCB, VCB.
- The incoming feeder shall be terminated at the LBS side and the outgoing shall be taken out from circuit breaker units.
- Ring-main feeders with Vacuum Circuit Breaker (630 Amps each side) shall be provided with protection relay.
- Ring-main feeder with Load Break Switch (630 Amps) shall be without protection
- Bus-bar side shall be isolated.
- Feeder’ s side shall be earthed.
- FPI shall be provided on switch side

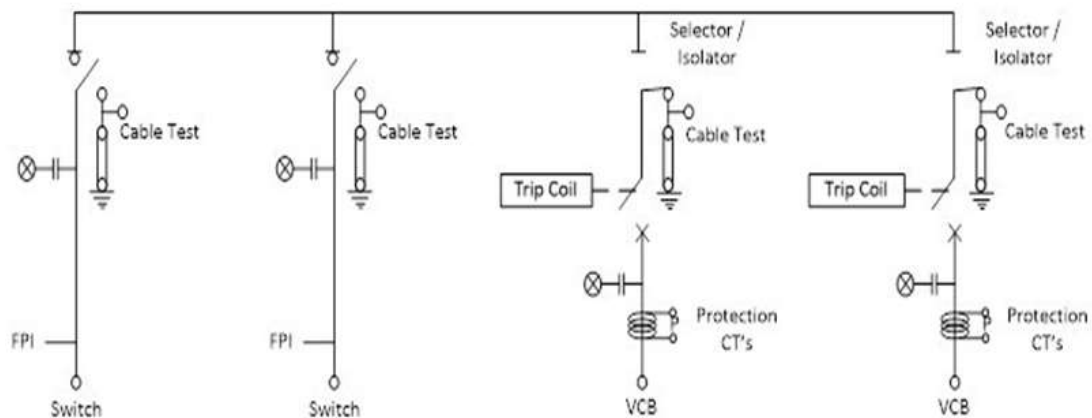
**A) Single line diagram:**



### 1.4.3 4 Way RMU with 2 side protection

- The configuration shall be LBS, LBS, VCB, VCB.
- The incoming feeder shall be terminated at the LBS side and the outgoing shall be taken out from circuit breaker units.
- Ring-main feeders with Vacuum Circuit Breaker (630 Amps each side) shall be provided with protection relay.
- Ring-main feeder with Load Break Switch (630 Amps) shall be without protection.
- Bus-bar side shall be isolated.
- Feeder’ s side shall be earthed.
- FPI shall be provided on switch side.

#### A) Single Line Diagram



The relay shall confirm to KE Specification # K-TPRE-Numerical Relay-418 (latest applicable). The relay shall be dual powered & have the features of OC, SC, EF & Wire Broken.

The current transformers (CTs) shall be provided with manufacturer design, as per IEC- 61869-2 (latest applicable).

The CT ratio shall be 600/5-1A, 400/5-1A or as specified in tender enquiry documents.

The manufacturer can offer their own design for HT CTs if other than of KE Specifications for consideration.

The CTs shall be easily approachable and replaceable in case of fault.

RMU shall be with either heat/cold shrink or slip on type cable boots.

### 1.5 Enclosure (SF<sub>6</sub> Gas Tank & Pressure Relief Device)

The ring main unit shall be metal enclosed and SF<sub>6</sub> insulated. The design should be such that normal service, inspection and maintenance operations including the usual checking phase sequence, earthing of connected

cables, locating of cables faults, voltage tests on connected cables or other apparatus and the elimination of dangerous electrostatic charges, can be carried out safely.

For replenish gas system, a non return valve for refilling of SF<sub>6</sub> gas shall be provided on main tank. The valve shall be protected and sealed with a removable cap.

The gas pressure gauge shall be provided to monitor the gas pressure of SF<sub>6</sub> tank and should be temperature compensated & visible from front.

The container must be equipped with a suitable pressure relief device as per requirement of IAC AFLR.

Four or three number of counters (one on each side, CB/LBS) shall be provided for counting/monitoring number of mechanical operations performed on RMU and should be visible from front.

Lifting lugs are to be fitted on the top of each RMU such that the lugs do not hinder the operation and maintenance of the RMU.

## 1.6 High Voltage Switch

The high voltage switch shall comply with IEC 62271-103 & IEC 62271-10 updated standards and shall be of spring assisted / stored-energy mechanism.

## 1.7 Earthing Switch

The earthing switch shall comply with IEC 62271-102 and shall be spring operated and of independent manual operation type.

## 1.8 Internal Wiring

Control wiring shall be with single core PVC insulated copper conductor of sizes 1 mmsq. (minimum). All control wiring shall be through channels with removable covers to provide ease in inspection/replacement. The end of wires shall have permanent fiber or plastic identification ferrules, dully marked with appropriate corresponding end - terminals.

## 1.9 Operation

The switching shall be actuated by a three-position switch capable of performing all the functions specified in IEC 62271-103 (latest applicable). The three positions shall be “CLOSED, OPEN” and “EARTHED” .

## 1.10 Earthing

Earthing shall be as specified in IEC 62271-102 (latest applicable).

### 1.11 SF6 Gas in Ring Main Unit

The SF6 shall be in accordance with IEC 60376 (latest applicable). The tank shall be hermetically sealed and pressure of SF6 gas should be maintained for a service life of 30 years (minimum).

Switching functions as general-purpose switch disconnecter shall be according to IEC 62271-103 & IEC 62271-102 (Latest applicable).

Each switch shall be provided with an integral earthing device to earth the live parts of the switch during maintenance. During the operation the integral earthing device shall not endanger the operator.

The below mentioned accessories will be provided with RMU if and only if mentioned in the tender enquiry, otherwise no accessories are to be provided with the offered RMU/included in the bidding documents.

- a) Complete set of gas filling device along with SF6 gas cylinder with 50 Kg SF6 gas and gas filling pipe with sufficient length
- b) SF6 hand leak detector
- c) Spare boots
- d) CTs of appropriate ratings

### 1.12 Interlocking System

The switchgear must be equipped with a comprehensive interlocking system, which prevents any inadmissible control process and does not allow any mal-operations. The following interlocks should be possible: -

- a) Direct operation of the three-position switch from ‘OPEN’ to ‘EARTHED’ position and vice versa.
- b) The opening of covers of each cables compartments unless the appropriate feeders have been isolated and earthed.
- c) The closing of the transformer switch when the CB compartment is open.
- d) The closing of the feeder switches when the appropriate compartments are opened.

### 1.13 Cable Connection

The cable connections shall be of conventional cable sealing ends such as shrink-on or push-on types. The connections should be suitable for 3-core 95 to 400 mm<sup>2</sup> XLPE cables for ring main and transformer feeders.

In case of enclosure, all the cable termination shall be front access.

The front cover must be integrated in the comprehensive interlocking system.

The cable doors should be removable / detachable type so as to facilitate easy connection of cables and not to allow any hindrance to the maintenance staff while doing maintenance.

The RMU shall be equipped with supporting adjustable clamps (95 to 400 mm Sq 3-core arm cable) for cable terminations to avoid loading at the bushing of the Ring Main Unit.

Additional adjustable supports shall be provided for holding the HT cables in order to reduce stresses on HT bushing (where ever required).

### 1.14 Cable Testing Facilities

The cable testing must be possible without dismantling the cable plugs and cables.

Separate test bushing for test of cable is to be provided along with each unit.

The cable testing for transformer feeder should even be possible when the bus-bars are live.

There should be facilities for fault location and D.C. voltage testing cables. In case a test adapter is to be used it should be assumed to be a part of ring main unit & should be supplied with each unit.

### 1.15 Pad Locking

Provision shall be made for padlocking the load break switches and the earthing switches in either OPEN or CLOSED position, a parking position for the padlock shall be provided for each padlocking device.

### 1.16 Operating Handle, Mimic Diagram

One common operating handle for high voltage and earthing switch shall be provided with each switchgear.

There must be a user friendly control panel with a single line diagram and integrated position indicators for all switching devices at the front side of the RMU.

The following operations must be possible from the front of RMU: -

- a) Inspection of gas pressure
- b) Switching
- c) Mechanical position indicators
- d) Mechanical operation
- e) Voltage indication

### 1.17 Secondary Equipment's

The ring main unit should be equipped with the following control and operating devices: -

#### 1.17.1 Voltage Detecting System

- Every cable feeder and transformer feeder must be equipped with a three phase integrated voltage detection system.

- The energy for the system should be from the coils present at the outer cone of connection bushings

Fault Passage Indicator (only for feeder/T-Off without protection or transformer)

- Fault passage indicator is to be provided with every cable feeder (LBS), which can easily be watched on the front panel.
- The transducers for the short circuit indicators have to be mounted onto the outer cone of the connection bushings or on the incoming cables to the RMU. The display of the FPI should be LEDs/LCD. It should be capable of indicating the phase and ground faults.

### 1.18 Name Plate

The name plates shall be in accordance with IEC-62271-200 and IEC-62271-1.

### 1.19 Finish

1. The switchgear as a whole unit shall be designed / constructed for use in a hot and damp coastal climate conditions and shall be maintenance free.
2. Oven baked painting having durable weather resistant properties or outdoor powder coat paint shall be preferred with all the properties & qualities as mentioned above.
3. The finish color shall be grey having shade RAL 7032.
4. Bolts and nuts used in construction shall be of stainless steel and in conformance with ISO Standard (metric).
5. QR code shall be pasted on each RMU to easily access product information and following information is required to be linked with item codes.
  - a. Complete set of drawings
  - b. Installation/Operation manuals (both in English & Urdu) along with video tutorials
  - c. Safety precautions
  - d. Manufacturer service team contact details in case of emergency/fault etc.

### 1.20 Technical Specification for RMU

#### 1.20.1 11KV Busbar

i.	Material	Copper
ii.	Current carrying capacity	
	a) @ 40 deg C	630 Amps
	b) @ 50 deg C	570 Amps
iii.	Short time rating current	20kA for 3 sec
iv.	Busbar insulation	SF6

### 1.20.2 High Voltage Switch

i.	Nominal system voltage	11 kV
ii.	Highest system voltage	12 kV
iii.	Highest voltage for equipment	12 kV
iv.	Rated impulse withstand voltage	95 kV
v.	One minute power frequency withstand voltage	38 kV
vi.	Rated frequency	50 Hz
vii.	Rated normal current	630 Amps
viii.	Rated short-time current	20 kA for 3 sec
ix.	Rated peak withstand current	50 kA
x.	Rated short circuit making capacity	50 kA
xi.	Insulating gas	SF6
xii.	Endurance Class (As per IEC 62271-103 latest publication)	
	a) Mechanical Endurance (As per clause 3.4.103.4)	M2 (5,000)
	b) Electrical Endurance (As per clause 3.4.103.3)	E3

### 1.20.3 11KV Circuit Breaker

i.	Nominal system voltage	11 kV
ii.	Highest system voltage	12 kV
iii.	Highest voltage for equipment	12 kV
iv.	Rated insulation level	
	▪ Rated lightning Impulse withstand voltage.	95 kV
	▪ Rated one minute power frequency voltage	38 kV
v.	Rated frequency	50 Hz
vi.	Rated Current	630 Amps
vii.	Rated short Circuit withstand current	20 kA for 3 Sec
viii.	Rated short-current making current	50 kA
ix.	Operating sequence	O - 3min – CO -3min – CO
x.	Endurance Class (As per IEC 62271-100 latest publication)	
	a) Mechanical Endurance	M2 (10,000)
	b) Electrical Endurance	E2

### 1.20.4 Earthing Switch

i.	Nominal system voltage	11 kV
ii.	Highest system voltage	12 kV
iii.	Highest voltage for equipment	12 kV
iv.	Rated insulation level	
	▪ Rated lightning Impulse withstand voltage.	95 kV
	▪ Rated one minute power frequency voltage	38 kV



v.	Rated frequency	50 Hz
vi.	Rated duration of short circuit	3 Sec
vii.	Rated short-time withstands current.	20 kA
viii.	Rated peak withstand current.	50 kA
ix.	Rated short-current/making current	50 kA
x.	Endurance Class (As per IEC 62271-102 latest publication)	
	a) Mechanical Endurance	M0 (1,000)
	b) Electrical Endurance	E2

## 1.21 Type and Routine Tests (Ref. IEC 62271-200 & IEC 62271-1)

### 1.21.1 Type Tests

The tests shall be made on complete switchgear and control gear (filled with gas at specified pressure) on their operating devices and their auxiliary equipment.

The following type tests will be conducted on one of the representative unit separately on switch as per IEC-62271-200 & IEC 62271-1 (latest applicable) standard:

Sr. No.	Tests	Test Values*
<b>1.0</b>	<b>Mechanical endurance</b>	
1.1	Switch manual	
1.2	Earthing Switch	
<b>2.0</b>	<b>Dielectric test</b>	
2.1	Lightening impulse	
2.2	Power frequency on minute	
2.3	PD measurement	
<b>3.0</b>	<b>Short circuit test</b>	
3.1	Main circuit switch	
3.2	Earthing Switch	
<b>4.0</b>	<b>Make break test</b>	
4.1	Active load	
4.2	Closed loop	
4.3	Capacitive	
4.4	Earth fault	
4.5	Cable charge	
<b>5.0</b>	<b>Making test</b>	
5.1	Switch	
5.2	Earthing switch	
<b>6.0</b>	<b>Temperature rise test</b>	
6.1	Main circuit / switch on sealed switch (without enclosure)	

Sr. No.	Tests	Test Values*
6.2	Main circuit / switch on sealed switch (with enclosure)	
<b>7.0</b>	<b>Mech. Operating tests</b>	
7.1	Gas leakage test	0.25% p.a.
7.2	Interlock	
8.0	Measurement of resistance of the Main circuit	
9.0	Arc fault test	
9.1	IAC classification AFLR	20 kA for 1s
<b>10.0</b>	<b>Design and visual check</b>	
10.1	Paint thickness	
<b>11.0</b>	<b>IP 54 test</b>	
11.1	Without enclosure	
11.2	With enclosure	

The above tests shall be conducted at KEMA High Powered Testing Laboratories or any other International Independent Testing Laboratory of world repute. The tests should be witnessed by KE engineers

Validity of type test reports of RMU shall be ten years from the date of testing.

If type tests already carried out at an independent laboratory of international repute for the same RMU and supplied in reasonable quantity to KE or other utility, the reports shall be attached with the bid, for evaluation.

Type test reports for individual components as Relay, CTs, FPIs, earthing switch and other components shall be submitted with the bid as per requirements of related specifications.

The results of all type tests shall be recorded in type-test reports containing sufficient data to prove compliance with this specification, and sufficient information shall be included so that the essential parts of the ring main unit tested can be identified.

### 1.21.2 Routine Tests (as per IEC-62271-200)

The following routine tests shall be carried out on all the ordered units at the manufacturer’ s work & will be witnessed by one of KE Engineer.

- a) Withstand voltage at power frequency for all current carrying parts including wiring
- b) Measurement of resistance of the main circuit
- c) Gas leakage test
- d) Partial discharge test
- e) Withstand voltage on auxiliary circuit.
- f) Operation of function locks, interlocks, signaling devices and auxiliary devices.

- g) Suitability & control operation of protection, control instruments and electrical connections of the circuit breaker operating mechanism (primary & secondary injection).
- h) Suitability and correct operation of protections, control instruments and electrical connections of the circuit breaker operating mechanism.
- i) Verification of wiring
- j) Visual inspection

## 1.22 Transport, Storage, Erection and Maintenance

The RMU unit shall be supplied in assembled form from the factory. The RMU shall be packed so as to avoid any damage due to rain, weather and jerks during transit from factory to warehouse. Packing shall be suitable for storage in outdoor area for up to 6 months. Each RMU shall be securely wrapped with thick plastic sheet and in case of longer distance (more than 100km) from manufacturer place to K.E central store, wooden box packing shall be provided.

Proper identification marks shall be stamped on the packing so as to know the type, make and rating of the equipment. It shall also show in bold, “PROPERTY OF KE” . Proper transportation and unpacking instructions (center of gravity, lifting direction, total weight etc.) shall also accompany the equipment besides information on maintenance requirements after installation including overhaul of operating mechanism and lubrication of any part.

The complete unit shall be delivered with seaworthy packing.

### 1.22.1 Data Sheet and Documentations

#### A) Documentation

The following documents are to be submitted with the bid.

- a). Report of type tests
- b). Detailed color dimensional drawings
- c). Technical leaflets of all the components used in unit along with type test reports where applicable.

## 1.23 Training and Operating / User Manual

Successful bidder shall arrange comprehensive training program intended for guidance of concerned KE field staff for proper installation, maintenance and repair of offered outdoor type SF6 Insulated RMU if mentioned in TE/PO.

Colored User Manual for proper handling instruction shall be provided with each RMU.

## 1.24 Warranty

The supplier shall provide warranty for replacement of any fault / damaged part solely due to transportation to KE store or otherwise. The RMU shall be under warranty for two (02) years after delivery to KE specified store. Manufacturer is responsible to replace any damage part and provide service without any extra cost during the warranty period.

## 1.25 Dimensional Limitation

The dimension limitations for 3 Way & 4 Way RMU design shall be as per the following table with  $\pm 10\%$  tolerance.

Sr. No.	RMU Design	Depth (mm)	Width (mm)	Height (mm)
01	3 Way	750	1150	1700
02	4 Way	750	1550	1700

## 1.26 Technical Data Sheet

The bidder to fill-in the data sheets in triplicate.

Sr. No.	Description	High Voltage Switch	Earthing Switch	Circuit Breaker
01	Sr. Number			
02	Manufacturer			
03	Single Line Diagram			
04	Type Designation			
05	Rated Voltage, kV			
06	Highest Voltage for Equipment			
07	Rated One Min. Power Frequency Voltage, kV			
08	Rated Frequency, Hz			
09	Rated Normal Current, Amps			
10	Rated Breaking Capacity, Amps			
11	Rated 3 Sec. Short Time Current, kA			
12	Rated Peak Withstand Current, kA			
13	Rated Short Circuit Making Capacity, kA			

Sr. No.	Description	High Voltage Switch	Earthing Switch	Circuit Breaker
14	Mechanical Endurance Class			
15	Electrical Endurance Class			
16	Loss of Service Continuity Class			
17	Partition Class			
18	Dimensions (Ring Main Unit) <ul style="list-style-type: none"> <li>• Width, mm</li> <li>• Height, mm</li> <li>• Depth, mm</li> </ul>			
19	Details of Relay			
20	Details of CTs			
21	Details of Indicating Instruments			

The submission of documentations and completely filled-in data sheets is a mandatory requirement of the specification. In case of non-submission, the bid is liable to be rejected.

### 1.27 Reference List

Reference of previous supplied to be given particularly the supplied done in tropical countries.

## SECTION - 2: 11 KV POWER CABLES

### 2.1 11 KV Power Cables

#### 2.2 Material

The cable shall be XLPE insulated stranded circular compacted aluminium conductor armoured power cable suitable for operation at a nominal service voltage of 11 KV. The cable shall be suitable for operation in a 5000Volts, 50 c/s three phase distribution system. Three core cables shall be operated in a three phase, three wire system with the transformer neutral solidly grounded. Single core cables

shall be used on either three phase four wire or a single phase two wire. The cable shall be suitable for direct burial or installation in duct. The duct and soil conditions vary from dry to wet. The ambient temperature shall be from minus 10 °C to 50 °C. The XLPE insulated cable shall be fully complies to the requirements of IEC 502.

#### 2.3 Construction

##### 2.3.1 Single Core Cables

This conductor shall consist of stranded circular compacted Aluminum of electrical grade purity in accordance with IEC-60228 having tensile strength between 843.6 and 1406 kg/cm<sup>2</sup>. It shall be covered by an extruding semi-conducting layer, which shall adhere firmly to it.

The insulation shall be made of cross-linked polyethylene. The insulation shall be applied over the semi-conducting layer and shall be permanently and completely bounded to it without any voids.

A semi-conducting varnish layer shall be applied over the surface of the insulation and shall adhere firmly to the surface. In order to protect the varnish layer a semi conducting tape shall be applied with minimum 10% overlap. However, it shall be capable of being removed clearly and conveniently for jointing purposes.

An annealed copper shielding tape shall be applied helically top the surface of the insulation over the semi-conducting tape with an over-lap of 50% of the tape width. The copper of the tape shall be oxygen free.

An over-all black polyvinyl chloride sheath (ST2 Type) shall then be applied over the Cu-shielding and shall fit tightly over it.

##### A) Three Core Cable

The construction of the individual core of three core cable shall be the same as for single metallic shielded core cable stated in clause (i) above, except that the overall sheath as indicted in sub-clause (v) shall not be applied.

The three individual metallic shielded cores shall be laid up together with left or right hand lay. A left/right hand lay is defined as a counter clock wise/clockwise twist away from the observer. The length of the lay of individual core shall not exceed 35 times the individual core diameter: The interstices shall be filled with polypropylene fillers.

A suitable thick non-hygroscopic binding tape made of polypropylene shall then be applied helically over the laid-up cores with a suitable overlap to form a compact circular assembly.

The cable shall then be covered tightly with a separator sheath made of extruded layer of black polyvinyl chloride compatible with the operating temperature of the cable and complying with the requirements for type ST2 of sheathing compound based on PVC.

A steel wire armoring shall be applied helically over the inner PVC bedding (separator sheath).

An extruded layer of overall black PVC compound complying with the requirements for type ST2 shall then be applied over the armoring. As with the bedding this is compatible with the operating temperature of the cable.

The cores shall be positively identified with either numbers and or colors printed on the semi-conducting tape of the core screen.

The cable shall conform to K-ELECTRIC/DISCO's Latest Specification.

### **2.3.2 Marking on Cable**

The jacket for all cables shall be marked by embossing at intervals not exceeding one meter with the following minimum information:

1. The manufacturer's name
2. Voltage designation
3. Type of insulation,
4. Conductor size and material
5. Year of manufacture
6. Cumulative length at every one meter with the highest length mark on the outer end of the cable.

All cables shall be marked with "Property of BQIP".

All marking/numbering shall be indelible, marking by matrix print shall not be acceptable.

## **2.4 Test**

The Power cable shall be tested in accordance with the latest relevant IEC standard. The test shall be made at an ambient temperature of 5 OC to 49 OC. the cable manufacturer shall submit the test report. Following test shall

be carried out according to NTDC/K-ELECTRIC/DISCO Standard Specification; P-29:2010;

- Routine Test
- Partial Discharge
- Power Frequency Voltage Test
- Sample
- Pulling Tension test
- Drum Test at delivery
- After Laying Test
- End to End testing AC High Pot @ 1.5 times of Rated Voltage
- Type Test
  - Electrical test
  - Non-Electrical test

## 2.5 Laying of Cables

In general, the installation of cables shall be carried out in accordance with the manufacturer's recommendations and IEE Regulations. The bending radius (as a multiple of the overall cable diameter, do) shall not be less than

600/1000V PVC cable	12do
8700/15000V XLPE cable	15do

even during handling, pulling, and installation. A total maximum of 5% of the cable length shall be provided as slack (at termination positions, in draw-pits, etc).

Cables shall generally be laid parallel to roads and footpaths, within the appropriate services reservations as per drawing. During excavation, laying, and backfilling, the adjacent and intersecting service pipes and runs shall not be damaged or disturbed.

Cable drums shall be carried on suitable trailers and unloaded near point of use. Any rolling shall only be in the direction of the arrow marked on the drum. If hoisting equipment is not available, ramp boards (max 1:4) with a winch or a coil of rope around the drum shall be used. The cable shall be paid out by jacking/propping the drum on an axle/spindle, and a braking plank installed below. Care shall be taken to see that the manufacturers recommended pulling tension is not exceeded. Cable rollers shall be installed at maximum 2m spacing (1.2 m for heavy cables) and at bends. A cable stocking or pulling eye shall be attached to the leading edge of the cable for pulling purposes. Cables shall not be laid if the temperature is below 0 degree Centigrade.

Power cables shall be installed in cable ducts, directly buried, or in under floor cable trenches or as shown in drawing or as required.



The following methods shall be employed for laying cables:

1. Paying out from a trailer
2. Laying by hand
3. Laying by motor-driven rollers
4. Pulling by winches

If cable is to be carried by hand (un-supported by rollers), men shall stand 4 to 6 m apart along the route. Flaking of cables ("figure-eight method") may be employed, taking care to prevent infringement of the minimum bending radius requirement.

Directly buried cable shall be laid with the minimum cover shown below:

Type of Cables / Raceway	In Open Ground and under pavement (mm)	Under Road Way (mm)
MV Cables	800	1000
RCC Pipes	450	600
uPVC Pipes	600	----

For directly buried cable, excavation shall be carried out in accordance with BS-6031, and shall be kept free of water and protected against damage or collapse. Before cables are laid, the bottom of the trench shall be graded evenly, cleared of loose stones, and then covered for the full width of the trench with 100 mm thick fine river sand bedding (in compacted 50mm layers). After cables are laid, a 150 mm thick sand cover shall be laid over the cable, with 75 mm thick protective brick/tiles provided along the entire length. The first layer of backfill shall be placed manually and compacted by hand punning until a thickness of 150 mm over the cover tile is reached. Additional layer shall be laid in 150mm increments and may be compacted mechanically.

When cable trenches are opened all cables shall be laid as quickly as possible. The engineer's approval shall be obtained before a trench is backfilled, but generally backfilling shall be commenced within 24 hours of cable laying and the work completed speedily.

Cable route warning/marker tapes for use during installation shall be continuously installed 300 mm below the ground level. The Polyethylene tapes shall have a thickness not less than 0.5 mm gauge, shall be 300 mm wide and manufactured from high grade polyethylene pigmented in bright colours. The following message in English shall be continuously printed in a contrasting colour in characters not less than 40 mm high specially protected against deterioration and fading.

- Danger
- 11 kV Medium Voltage Cables Below

The minimum spacing between cables of various types shall be as shown below:

Type of Cable	HT (mm)	LT (mm)	Communication (mm)	Equipment, Pipe work etc. (mm)
MV	50	300	300	300
LV	300	25	150	300
Communication	300	150	50	200

On completion of laying, terminating and jointing of the cables and CPC, a plan (1:500) shall be prepared, containing the following details:

- i. Type of cables, X-sectional area of conductors, rated voltage.
- ii. Year of manufacture, month and year of laying
- iii. Actual laid lengths between centres of the joints and between them and the sealing ends.
- iv. Exact locations and depths of cables and joints in relation to fixed points.

The electrical values of the completed installation shall be measured and recorded:

- i. Insulation resistance, between conductors and between conductors and earth/armour.
- ii. Conductor resistance, using a suitable measuring bridge of all cores.
- iii. Capacitance, between conductors and between conductors and earth/armour.

## 2.6 Cable Markers

Markers of approved design/inscription shall be installed to indicate the location of all joint boxes at every point where a cable enters a building, sub-station, plinth or feeder pillar and will be provided all along the cable route at regular intervals of 30m when a straight run occurs or when the route changes direction. The XLPE cables will terminate with approved stress cone in panels.

Cable markers shall be made of concrete as shown on drawing. The wording shall be "MV CABLE", as appropriate, together with circuit details, as instructed by the Engineer; in addition, the word "JOINT" shall be added where appropriate.

## 2.7 Termination for XLPE 11-KV Power Cables

Cable terminations, joints and accessories shall meet with the cable manufacturer's approval, and specialists who are fully qualified and competent shall carry out work.

## 2.7.1 Material

### A) 11 kV Power Cable Terminations

The terminations covered are of pre-moulded cold, heat shrinkable and slip-on type for indoor and outdoor use, suitable for rapid and easy installation and for maintaining safety of the persons and the equipment. The terminations shall be suitable for operation at the ambient temperature of 50 °c. The relative humidity may range up to 100%. The termination kits shall be suitable for a three-phase 11kV distribution system of the following characteristics:

1.	Nominal System Voltage	11 kV
2.	System Highest Voltage	15 kV
3.	Frequency	50 Hz
4.	Maximum Short circuit rating	25 kV

indoor termination shall be made in pad mounted steel enclosures and switchgear panels where dust and severe condensation is liable to occur.

The termination kits shall confirm to K-ELECTRIC/DISCO's Latest Specifications

### B) 11kV Power Cable Splices

The joint and termination kits shall be suitable for cable of following description:

#### Core Cable:

- This conductor is of aluminium, covered by a semi-conducting layer approximately 0.25 mm thick.
- The conductor insulation is made of cross-linked polyethylene of 4.5 mm thickness applied over semi-conducting layer.
  - ''' A semi-conducting tape or layer approximately 0.51 mm thick is applied over the insulation.
  - ''' A tinned annealed copper foil shielding tape of thickness 0.127 mm is applied helically to the surface of the insulation with an overlap of about 50 percent of the tape width.
- An overall polyvinyl chloride sheath of 2mm thickness is applied over the core.

#### Three Cable:

- This construction of the individual cores of three-core cable shall be the same as for single core cable stated in clause a (i) above except that the overall sheath shall not be applied.
- A suitable binding tape shall be applied helically over the laid-up cores with a suitable overlap.

- The cable shall be covered with an inner jacket made of polyvinyl chloride compound of 2 mm thickness.
- A bedding tape of approximately 1mm thickness made of rubberized cotton or jute shall be applied over the inner PVC jacket.
- A steel tape armour of 0.75 mm thickness shall be applied over the bedding. The armour shall consist either of two layers of galvanized steel tape or a single layer of interlocked galvanized steel tape.
- An overall PVC sheath of approximately 2.8 mm thickness shall be applied over the armour.

The kits supplied for terminations, tee and straight joints shall be suitable for continuous operation at an ambient temperature of maximum 50°C and for a conductor operating temperature of 90°C.

Terminations shall be made in pad mounted steel enclosure where severe condensation is liable to occur.

Tee and straight joints shall be suitable for direct burial underground or installation in ducts. The duct and soil conditions vary from dry to wet. Highly corrosive salts are encountered in soil.

The splices and terminations shall be suitable for operation at ambient temperature of 50°C maximum and suitable for three phase underground 11kV distribution system of the following characteristics:

- |                                |        |
|--------------------------------|--------|
| • Nominal System Voltage       | 11 kV  |
| • System Highest Voltage       | 15 kV  |
| • Frequency                    | 50 Hz  |
| • Maximum short circuit rating | 250 kV |

The material kits shall be according to K-ELECTRIC Latest Specifications (amended to-date)

### 2.7.2 Installations

The power cable shall be terminated and connected at the termination points through proper sized lugs. Cable entries into panels shall be made with brass cable glands, to BS-6121 of the correct sizes and types to ensure proper support and sealing of the cable and good earthing of the armour. The installation of termination kits and jointing splices shall be as per manufacturer instructions and to the approved by the Engineer. The following instructions shall be observed while installation of termination kits and splicing joints for cable jointing:

#### A) Termination Kits

A protective covering of suitable materials having anti-track and erosion-resistant properties for use as an external covering of insulated cores for indoor and outdoor use shall be provided. Where required, sealants may be

used to effect seals on joints.

A tube or pre-moulded cone of suitable material having properties to provide electric stress control over insulated cores of the terminations of indoor and outdoor use shall be provided.

A suitable tubing for enclosing and sealing prepared lug for indoor and outdoor terminations shall be provided. The tube shall have anti-track and erosion resistant properties.

The trifurcated tube of suitable material for sealing a prepared crotch (for three core cables) for indoor and outdoor terminations shall be provided. It shall have excellent Water proof and erosion resistant properties.

Rain sheds of suitable material shall be provided for application over prepared outdoor terminations. The material shall have excellent anti-tracking and erosion resistant properties.

The internal surface of the tubular part shall be coated with suitable adhesive compound or provided with adhesive tape for proper fixing of the shed.

Indoor termination shall be provided with Lugs. Outdoor termination shall be provided with Sleeves and Connectors.

All Bolts, Nuts and Spring Washers used in connectors shall be of steel and electrolytically galvanized. The thickness of coating shall be such as to withstand two, one minute's dips in a copper sulphate solution.

A suitable copper flexible earthing strap of one meter in length shall be provided for soldering with the metallic shield of the cable. Alternate earthing devices can also be offered for which technical details will be provided.

## **B) Cable Jointing**

Earth joint and termination kit shall contain all materials in adequate amounts necessary to made to splice or termination as per drawings listed above. The approximate quantity of materials to make terminations splices and tee joints. Each splice and termination kit shall contain the following materials to K-ELECTRIC/DISCO specifications:

- High voltage splicing tapes.
- Pressure sensitive tape (Adhesive tapes) or Glass tape with epoxy resin compound and a brush for applying the compound over the joint.
- Semi-conducting tapes.
- Tinned coppers mesh tape.
- Grounding strap.
- Jumper wire or strap.

- Cotton tape for binding.
- Compression connectors, sleeves or tee joints or lugs as may be the case.
- Jointing solder 50:50.
- Soldering flux.
- Insulation putty.
- Cleaning fluid.
- Abrasive cloth.
- Cleaning cloth.

The outer coverings of splices and terminations shall be completely non-hygroscopic, moisture and track resistant. This may be achieved by the application of epoxy resin compound over the protective tape.

All connectors shall be filled with inhibiting compound and ends covered with rubber plastic caps. The caps shall fit over the ends tightly to prevent leakage of the compound.

The tape shall consist of an un-vulcanized or partially vulcanized polyethylene base insulating compound with or without synthetic resins and shall be self-bonding, self-fusing, Ozone and Cornea resistant. The tape shall be suitable for use with cross linked polyethylene, butyl rubber and PVC insulation or a continuous operating temperature of 90°C.

The characteristics of the insulating tape shall be as follows:

- |                           |   |
|---------------------------|---|
| • Tensile strength min    | 17.5 kg/sq. cm  |
| • Elongation at break     | 500%  |
| • Dielectric strength min | 2 KV/ mm  |
| • Volume resistivity      | 1015 ohm-cm   |
| • Ozone resistance        | No effect when exposed to 0.04% Ozone by volume for 3 hours |

The tape shall meet the fusion and thickness tests specified in relevant clause of the specification.

The tape shall be wound in roils with a separator between layers. The separator shall be parchment paper or glazed sheet which shall be interposed between adjacent layers and shall cover the outside of the tape.

The dimensions of the tape shall be as under:

- |                     |          |
|---------------------|----------|
| • Width             | 20 mm    |
| • Thickness minimum | 0.5 mm   |
| • Lengths per roll  | 10 meter |

The average thickness shall not vary from the nominal thickness more than 0.075 mm and the average length in any roll shall not be more than 5% from

the nominal specified.

Pressure sensitive tapes shall be suitable for providing protective covering over the cable joints and shall be resistant to heat, ozone and moisture. The tape shall be made of plasticized polyvinyl chloride compound or synthetic rubber coated on one side with pressure sensitive adhesives. The tapes shall be suitable for a minimum continuous operating temperature of 70°C. The tape shall be free from sulphur.

The instruction for installation of cable termination kits and cable jointing as contained in K-ELECTRIC/DISCO specification mentioned against item a & b above may be followed.

## SECTION - 3: EARTHING SYSTEM

### 3.1 Scope of Work

The work under this section consists of supply, installing, testing and commissioning of all material and services of the complete earthing system as specified herein, as shown on the Tender Drawings and given in the Bill of Quantities.

The Contractor shall discuss the electrical layout with the Engineer and co-ordinate at Site with other services for exact route, location and position of the electrical lines and equipment.

The Earthing system shall also comply with the General Specifications for Electrical Works and with other relevant provisions of the Tender Documents.

### 3.2 General

The work will include supply, installation, testing and commissioning of Earthing System and conforming to the technical specification including the termination of the earth conductor from each earth pit to the main earth bus inside the building.

The earthing system consists of Earth Electrodes, Earthing leads, Earth connecting points, Earth testing point, continuity conductors and all accessories necessary for the satisfactory operation of the associated electrical system.

### 3.3 Applicable Standards / Codes

The latest editions of following standards/ codes shall be applicable for the materials in scope of this section:

8895	Earthing clamps
CP1013	Earthing
BS2874	Nuts, Bolts, washers, screws and rivets for use on copper
BS1433	Hard drawn bare copper conductor for earthing
BS6346	PVC insulated cables.
IEEE	Std 80

### 3.4 Materials

The Earthing system shall consist of Earth electrodes, Earthing leads, Earth connecting point, Earth continuity conductor and all accessories necessary for the satisfactory operation of the associated electrical system. All Earthing material should be made of copper.



### 3.4.1 Grounding Electrodes

The grounding electrode shall be of Copper Rod 20 mm dia 3 m long. The contractor shall carry out resistivity test over the site area and submit the result to the Engineer. The number of grounding electrodes and the method of installation shall be approved by the Engineer depending on test results.

### 3.4.2 Earth Connecting Points

The earthing leads from the rod shall terminate at the earth connecting points which shall be of tinned copper bar, rectangular in shape, having dimensional 250mm x 50mm x 8mm, installed on the wall of the inspection chamber at the ground level. Further connections to respective locations shall be made from this bar by earth conductors of various sizes as shown on the drawings. All below Grade Earthing connection should be Cad Weld

### 3.4.3 Inspection Chamber

At the ground level an inspection chamber shall be provided. The inspection chamber sizes and detail shall be as per drawing. The cover shall have "EARTH BELOW" inscribed on its top. The Contractor shall provide and install the cover flush with the ground level.

### 3.4.4 Earth Lead/ Earth Continuity Conductor

The earthing lead shall connect the earth electrode to earth connecting point or equipment. It shall be single core PVC or hard drawn bare Copper Conductor as per drawing.

## 3.5 Installation of Earth Electrode (Copper Rod)

The earthing system by copper rod shall consist of 20mm dia and 4-meter-long copper rods. These shall be of 99.9% purity copper. These shall have screw able head to accommodate other rods in series with the help of dowel as is shown in the drawings. The driven head shall consist of a hardened tip. These rods shall be connected to the earthing lead whose other end shall be connected to the earth connecting points to be provided in the inspection chamber. From the earth connecting points earth connection shall be made to individual point as marked in drawing.

Installation of Earth Electrode where the condition not suitable for achieving Earthing ohms Where the rock lie just below the surface or water table are very deep then earth electrode shall be installed through drilling or digging method. Due to certain ground conditions make it difficult to obtain a reliable earth resistance, whilst particular installations may require a very low resistance, in such cases, Marconite concrete shall be used as backfill for a conventional earth rod achieve a lower earth electrode resistance. The method already is shown in the miscellaneous drawing

### **3.6 Equipment Grounding**

#### **3.6.1 On-current carrying metal parts:**

Bond and ground non-current carrying metal parts of electrical apparatus and equipment provided under work of any section of specifications.

#### **3.6.2 Grounding of Fence:**

All metallic fences shall be grounded by driving earth rods at a distance of 50 meter.

### **3.7 Earth Resistance & Inspection Test**

Earth resistance test will be made by the Contractor on the complete earthing system, separating and reconnecting each earth connection. If it is indicated that soil treatment or other corrective measures are required to lower the ground resistance values, the Engineer will determine the extent of such corrective measure's Electrical resistance of ECC together with the resistance of electrode to any other positioning the complete installation will not exceed one Ohm.

The earth resistance test shall be performed as per Standard requirements. Where more than one earth electrode is installed the earth resistance test of each electrode will be measured by means of resistance bridge instrument. Complete system shall be tested for continuity and earth resistance. The combined earth resistance at any point in the system shall not exceed 5 Ohms maximum.

Earth resistance test shall be made by the Contractor in the presence of the Engineer. The test result shall conform to BS 7430 (formerly CP 1013), IEEE 80 and BS 6651 (Formerly CP 326). To obtain the desired result more earth rods shall be provided.