SINDH INDUSTRIAL TRADING ESTATES (GUARANTEE) LIMITED INDUSTRIES & COMMERCE DEPARTMENT GOVERNMENT OF SINDH

REHABILITATION / CONSTRUCTION OF ROADS IN SITE INDUSTRIAL KARACHI (PACKAGE. 02)

PSDP NO. 220 (2024-25)

TENDER AND CONTRACT DOCUMENTS

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INVITATION
FOR BIDS

SINDH INDUSTRIAL TRADING ESTATES (GUARANTEE) LTD

NOTICE OF INVITATION

Sindh Industrial Trading Estates (Guarantee) Limited has received funds from Federal Government for the PSDP scheme No. 220/2024-25 namely "Rehabilitation / construction of Roads in SITE Industrial Karachi". Bids are requested from interested constructors/ contractors/ firms in single stage single envelope procedure who have valid PEC license in Category C2 or above having relevant codes as mentioned in detailed evaluation criteria in five individual tenders in form of packages which are as under:

Sr.No.	Name of Tender	Estimated cost in Million Rs.	Completion period
1	Package-I	969.371	15 month
2	Package-II	975.585	15 month
3	Package-III	961.020	15 month
4	Package-IV	999.897	15 month
5	Package-V	874.376	15 month

Complete sets of bidding document of above tenders can be obtained from the office of SITE Limited **from 23-12-2024 till 14-01-2025** during working hours against tender fee (non-refundable) amounting **Rs.5,000/-** for each tender through pay order from any schedule Bank in favor of SITE Ltd.

The sealed tenders completed in all respect accompanied with earnest money/bid security equal to **2% of the bid amount** in shape of pay order/CDR in favor of SITE Limited will be received on **15-01-2025** at **10:30** a.m. and opened on the same day at **11:00 a.m.** publicly by the procurement committee in the presence of the contractors who opt to be present. Bid offer shall remain valid for 90 days from the date of opening of the tenders. The rates should be quoted inclusive of all direct and indirect taxes in Pak Rupees.

Apart from detailed evaluation criteria and mandatory requirements following documents must be attached with the bid:

1. Valid Registration with Pakistan Engineering Council having relevant category and codes.
2. Affidavit of bidders/ firms that the firm is not black listed and not involved in litigation with any Government or Semi Government Department or any other executing agency.
3. Valid Registration with FBR (NTN) and Sindh Revenue Board (SRB).

Incase public holiday is announced on the opening date than tender will be submitted and opened on the next working date

The above tenders are available at website www.site.com.pk and www.ppms.pprasindh.gov.pk Interested parties can obtain further information from the office of the SITE Limited Karachi on telephone No. 021-99333148 during working hours on any working day.

PROJECT DIRECTOR (PSDP)
SITE LIMITED

INSTRUCTIONS TO BIDDERS

INSTRUCTIONS TO BIDDERS

A. GENERAL

IB.1 Scope of Bid

1.1 Procuring agency as defined in the bidding data hereinafter called "the procuring agency" wishes to receive bids for the construction and completion of works as described in these bidding documents, and summarized in the bidding data hereinafter referred to as the "Works".

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

IB.2 Source of Funds

2.1 Procuring agency has received / allocated applied for loan / grant / Federal / Provincial / Local Government funds from the source(s) indicated in the bidding data in various currencies towards the cost of the project / scheme specified in the bidding data, and it is intended that part of the proceeds of this loan / grant / funds will be applied to eligible payments under the contract for which these bidding documents are issued.

IB.3 Eligible Bidders

3.1 This Invitation for Bids is open to all eligible bidders who are eligible under provisions of Sindh Public Procurement Rules as mentioned below and the criteria given in the Notice Inviting Tender (NIT) / Bidding Document.

Firms and individuals, national or international, may be allowed to bid for any project where international competitive bidding is feasible. Any conditions for participation shall be limited to those that are essential to ensure the bidder's capability to fulfill the contract in question.

(a) Bidders may be excluded if;

(i) As a matter of law or official regulations, commercial relations are prohibited with the bidder's country by the federal government in case of ICB, or

(ii) A firm is blacklisted/ debarred by the procuring agency and the matter has been reported to the Authority, subject to Rule 30 of Sindh Public Procurement Rules 2010.

(b) Government-owned enterprises or institutions may participate only if they can establish that they are;

(i) legally and financially autonomous, and

(ii) Operate under commercial law.

Provided that where government-owned universities or research centers in the country are of a unique and exceptional nature, and their participation is critical to project implementation, they may be allowed to participate; and

Bidders shall include all those contractors who are registered or incorporated in Pakistan, irrespective of the nationality of their owners and professional staff, or

(c) Bidders are:-

(i) Eligible for particular project/scheme;

(ii) registered with Pakistan Engineering Council in particular category and discipline,

(iii) registered with relevant tax authorities (income/sales tax, wherever applicable)

IB.4 One Bid per Bidder

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

IB.5 Cost of Bidding

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

IB.6 Site Visit

6.1 The bidders are advised to visit and examine the site of works and its surroundings and obtain 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.

The bidders and any of their personnel or agents will be granted permission by the procuring agency to enter upon his premises and lands for the purpose of such inspection, but only upon

the express condition that the bidders, their personnel and agents, will release and indemnify the procuring agency, 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 (SSP RULE 21)

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.

a. Instructions to Bidders.
b. Bidding Data.
c. General Conditions of Contract, Part-I (GCC).
d. Special Conditions of Contract, Part-II (SCC)
e. Specifications.
f. Form of Bid and Appendices to Bid.
g. Bill of Quantities (Appendix-D to Bid).
h. Form of Bid Security.
i. Form of Contract Agreement.
j. Forms of Performance Security, Mobilization Advance Guarantee, Integrity Pact and Indenture bond for secured advance.
k. 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 BD will be rejected.

IB.8 Clarification of Bidding Documents (SSP RULE 23(1)):

Any interested bidder requiring any clarification(s) in respect of the bidding documents may notify the procuring agency in writing at the procuring agency's address indicated in the Invitation for Bids/NIT. Procuring agency will respond to any request for clarification provided they are received at least five calendar days prior to the date of opening of bid.

Provided that any clarification in response to query by any bidder; shall be communicated to all parties who have obtained bidding documents.

IB.9 Addendum/Modification of Bidding Documents:

9.1 At any time prior to the deadline for submission of bids, the procuring agency may, for any reason, whether at his own initiative or in response to a clarification requested by a interested bidder, modify the bidding documents by issuing addendum.

9.2 Any addendum thus issued shall be part of the bidding documents pursuant to sub-clause IB 7.1 hereof and shall be communicated in writing to all bidders. Interested bidders shall acknowledge receipt of each addendum in writing to the procuring agency.

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

C. PREPARATION OF BIDS

IB.10 Language of Bid

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

IB.11 Documents Accompanying the Bid

11.1 Each bidder shall:

(a) submit a written authorization on the letterhead of the bidding firm, authorizing the signatory of the bid to act for and on behalf of the bidder;

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

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

And

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

Appendix-E to Bid	Proposed Construction Schedule
Appendix-F to Bid	Method of Performing the Work
Appendix-G to Bid	List of Major Equipment
Appendix-K to Bid	Organization Chart for Supervisory Staff

and other pertinent information such as mobilization programme etc.

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

(a) 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;

(b) the bid, and in case of a successful bid, the Form of Contract Agreement shall be signed by all partners so as to be legally binding on all partners;

(c) the partner-in-charge shall always be duly authorized to deal with the procuring agency 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 on behalf of the joint venture;

(d) all partners of the joint venture shall at all times and under all circumstances be liable jointly and severally for the execution of the contract in accordance with the contract terms and a statement to this effect shall be included in the authorization mentioned under Sub-Para (a) above as well as in the Form of Bid and in the Form of Contract Agreement (in case of a successful bid);

(e) A copy of the agreement entered into by the joint venture partners shall be submitted with the bid stating the conditions under which it will function, its period of duration, the persons authorized to represent and obligate it and which persons will be directly responsible for due performance of the contract and can give valid receipts on behalf of the joint venture, the proportionate participation of the several firms forming the joint venture, and any other information necessary to permit a full appraisal of its functioning. No amendments / modifications whatsoever in the joint venture agreement shall be agreed to between the joint venture partners without prior written consent of the procuring agency;

(f) Submission of an alternative Letter of Intent to execute a Joint Venture Agreement shall be mandatory.

(g) In case of JV, The consortium shall abide all governing laws of Pakistan and fulfill all registrations requirements of FBR, SRB etc.

11.3 Bidders shall also submit proposals of work methods and schedule, in sufficient detail to demonstrate the adequacy of the bidders‟ proposals to meet the technical specifications and the completion time referred to sub- clause IB 1.2 hereof.

IB.12 Bid Prices

12.1 Unless stated otherwise in the bidding documents, the contract shall be for the whole of the works as described in IB 1.1 hereof, based on the unit rates or prices submitted

by the bidder or percentage quoted above or below on the rates of Composite Schedule of Rates (CSR), as the case may be.

12.2 The bidders shall fill in rates and prices for all items of the works described in the Bill of Quantities. Items against which no rate or price is entered by a bidder will not be paid for by the procuring agency when executed and shall be deemed to be covered by rates and prices for other items in the Bill of Quantities. In case of Composite Schedule of Rates, if the bidder fails to mention the percentage above or below, it shall be deemed to be at par with the rates of Composite Schedule of Rates.

12.3 The bid price submitted by the contractor shall include all rates and prices including the taxes. All duties, taxes and other levies payable by the contractor under the contract, or for any other cause during the currency of the execution of the work or otherwise specified in the contract as on the date seven days prior to the deadline for submission of bids.

Additional / reduced duties, taxes and levies due to subsequent additions or changes in legislation shall be reimbursed / deducted as per Sub-Clause 13.7 of the General Conditions of Contract Part-I.

12.4 The rates and prices quoted by the bidders are subject to adjustment during the performance of the contract in accordance with the provisions of Clause 13.7of GCC. The bidders shall furnish the prescribed information for the price adjustment formula in Appendix-C to Bid, and shall submit with their bids such other supporting information as required under the said Clause. Adjustment in prices quoted by bidders shall be allowed as per Sub-Para 4(ii) of Section C of Instructions to bidders and bidding data.

IB.13 Currencies of Bid and Payment

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

13.2 The rates of exchange to be used by the bidder for currency conversion shall be the selling rates published and authorized by the State Bank of Pakistan prevailing on the date, 07 (seven) days prior to the deadline for submission of bids. For the purpose of payments, the exchange rates used in bid preparation shall apply for the duration of the contract.

IB.14 Bid Validity

14.1 Bids shall remain valid for the period stipulated in the bidding data from the date of opening of bid specified in clause IB.23.

14.2 In exceptional circumstances, prior to expiry of the original, the procuring agency may request the bidders to extend the period of validity for a specified additional period, which shall not be for more than one third of the original period of bid validity. The request and the responses thereto, shall be made in writing. A bidder may refuse the request without the forfeiture of the bid security. In case, a bidder agreed to the request, shall not be required or permitted to modify the bid, but will be required to extend the validity of the bid security for the period of the extension, and in compliance with Clause IB.15 in all respects.

IB.15 Bid Security

15.1 Each bidder shall furnish, as part of the bid, a bid security in the amount stipulated in the bidding data in Pak Rupees or an equivalent amount in a freely convertible currency.

15.2 The bid security shall be at the option of the bidder, in the form of deposit at call, Pay order in favor of the procuring agency, which should commensurate with the bid validity period.

15.3 Any bid not accompanied by an acceptable bid security shall be rejected by the procuring agency as non-responsive.

15.4 Bid security shall be released to the unsuccessful bidders once the contract has been signed with the successful bidder or the validity period has expired.

15.5 The bid security of the successful bidder shall be returned when the bidder has furnished the required Performance Security and signed the Contract Agreement.

15.6 The bid security may be forfeited:

(a) if the bidder withdraws his bid except as provided in sub- clause IB 22.1;

(b) if the bidder does not accept the correction of his bid price pursuant to sub-clause IB 27.2 hereof; or

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

(i) furnish the required Performance Security; or
(ii) Sign the Contract Agreement.

IB.16 Alternate Proposals/Bids

16.1 Each bidder shall submit only one bid either by himself, or as a member of a joint venture, until and unless they have been requested or permitted for alternative bid, then he has to purchase separate bidding documents and alternate bid shall be treated as separate bid.

16.2 Alternate proposals are allowed only for procurement of works where technical complexity is involved and more than one designs or technical solutions are being offered. Two stage two envelope bidding procedure will be appropriate when alternate proposal is required.

16.3 Alternate bid(s) shall contain (a) relevant design calculations; (b) technical specifications; (c) proposed construction methodology; and (d) any other relevant details / conditions, provided that the total sum entered on the Form of Bid shall be that which represents complete compliance with the bidding documents.

IB.17 Pre-Bid Meeting

17.1 Procuring agency may, on his own motion or at the request of any bidder, 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, shall be communicated to all bidders. All bidders or their authorized representatives shall be invited to attend such a pre-bid meeting at their own expense.

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

17.3 Minutes of the pre-bid meeting, including the text of the questions raised and the replies given, will be transmitted without delay to all bidders. Any modification of the bidding documents listed in sub- clause IB 7.1 hereof, which may become necessary as a result of the pre-bid meeting shall be made by the procuring agency exclusively through the issue of an Addendum pursuant to Clause IB.9 and not through the minutes of the pre-bid meeting.

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

IB.18 Format and Signing of Bid

18.1 Bidders are particularly directed that the amount entered on the Form of Bid shall be for performing the contract strictly in accordance with the bidding documents.

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

18.3 Alteration is not to be made neither in the form of bid nor in the Appendices thereto except in filling up the blanks as directed. If any such alterations be made or if these instructions be not fully complied with, the bid may be rejected.

18.4 Each bidder shall prepare by filling out the forms without alterations and shall provide an original copy along with photocopies as per the requirement of the procuring agency specified in the bidding data. The original as well as copies of the document shall be clearly marked as “ORIGINAL” and „COPY”, as the case may be. If there is any discrepancy between original and copy(ies) then the original shall prevail.

18.5 The original and all copies of the bid shall be typed or written in indelible ink (in the case of copies, Photostats are also acceptable) and shall be signed by a person(s) duly authorized to sign on behalf of the bidder pursuant to sub- clause IB 11.1(a) hereof. All pages of the bid shall be initialed and stamped by the person(s) signing the bid.

18.6 The bid shall contain no alterations, omissions or additions, except to comply with instructions issued by the procuring agency, or as are necessary to correct errors made by the bidder. Such corrections shall be initialed by the person(s) signing the bid.

18.7 Bidders shall indicate in the space provided in the Form of Bid their full and proper

postal addresses at which notices may be legally served on them and to which all correspondence in connection with their bids and the contract is to be sent.

18.8 Bidders should retain a copy of the bidding documents as their file copy.

D. SUBMISSION OF BIDS

IB.19 Sealing and Marking of Bids

19.1 Each bidder shall submit his bid as under:

(a) ORIGINAL and COPIES of the bid shall be separately sealed and put in separate envelopes and marked as such.

(b) The envelopes containing the ORIGINAL and COPIES shall be put in one sealed envelope and addressed as given in sub – clause IB 19.2 hereof.

19.2 The inner and outer envelopes shall:

(a) be addressed to the procuring agency at the address provided in the bidding data;

(b) bear the name and identification number of the contract as defined in the bidding data; and

(c) Provide a warning not to open before the time and date for bid opening, as specified in the bidding data.

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

19.4 If the outer envelope is not sealed and marked as above, the procuring agency 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 procuring agency at the address specified not 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 shall be entertained for refund of such expenses,

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

(d) Upon request, acknowledgment of receipt of bids will be provided to those

making delivery in person or by messenger.

20.2 The Procuring Agency may, at its discretion, extend the deadline for submission of bids by issuing an amendment in accordance with IB 09. In such case, all rights and obligations of the procuring agency and the bidders shall remain the same as mentioned in the original deadline.

IB.21 Late Bids

(a) Any bid received by the procuring agency after the deadline for submission of bids prescribed in to clause IB 20 shall be returned unopened to such bidder.

(b) Delays in the mail, 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 submit the bid in time.

IB.22 Modification, Substitution and Withdrawal of Bids

22.1 Any bidder may modify**,** substitute or withdraw his bid after bid submission provided that the modification, substitution or written notice of withdrawal is received by the procuring agency 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 to sub - clauses IB 22.1 and IB 27.2.

22.4 Withdrawal of a bid during the interval between the deadlines for submission of bids and the expiration of the period of bid validity specified in the Form of Bid may result in forfeiture of the bid security in pursuance to clause IB 15.

E. BID OPENING AND EVALUATION.

IB.23 Bid Opening

23.1 Procuring agency 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 or their representatives who are in attendance shall sign an attendance sheet.

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

23.3 Procuring agency shall read aloud the name of the bidder, total bid price and price of any Alternate Proposal(s), if any, discounts, bid modifications**,** substitution and withdrawals,

the presence or absence of bid security, and such other details as the procuring agency may consider appropriate, and total amount of each bid, and of any alternative bids if they have been requested or permitted, shall be read aloud and recorded when opened.

23.4 Procuring Agency 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. (SPP Rule 53)

24.1 Information relating to the examination, clarification, evaluation and comparison of bid and recommendations for the award of a contract shall not be disclosed to bidders or any other person not officially concerned with such process before the announcement of bid evaluation report in accordance with the requirements of Rule 45, which states that Procuring agencies shall announce the results of bid evaluation in the form of a report giving reasons for acceptance or rejection of bids. The report shall be hoisted on website of authority and that of procuring agency if it website exists and intimated to all bidders at least seven (7) days prior to the 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 procuring agency's processing of bids or award decisions may result in the rejection of such bidder's bid. Whereas, any bidder feeling aggrieved, may lodge a written complaint as per Rule 31; however mere fact of lodging a complaint shall not warrant suspension of the procurement process.

IB.25 Clarification of Bid (SPP Rule 43)

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

IB.26 Examination of Bids and Determination of Responsiveness

26.1 Prior to the detailed evaluation of bids, the procuring agency will determine whether the bidder fulfills all codal requirements of eligibility criteria given in the tender notice such as registration with tax authorities, registration with PEC (where applicable), turnover statement, experience statement, and any other condition mentioned in the NIT and bidding document. If the bidder does not fulfill any of these conditions, it shall not be evaluated further.

26.2 Once found to be fulfilling the eligibility criteria, as mentioned in sub- clause 26.1, the bids of eligible bidders will be evaluated for technical responsiveness as per specification and criteria given in the bidding documents. Technical and financial evaluations may be carried out in accordance with single stage-single one envelope, single stage-two envelopes, two stage or two stage-two envelopes bidding procedures, depending on the selection procedure adopted by the procuring agency.

26.3 A bid will be considered technically responsive if it (i) has been properly signed; (ii) is

accompanied by the required bid security; and (iii) conforms to all the terms, conditions and specifications of the bidding documents, without material deviation or reservation. A material deviation or reservation is one (i) which affect in any substantial way the scope, quality or performance of the works; (ii) which limits in any substantial way, inconsistent with the bidding documents, the procuring agency's rights or the bidder's obligations under the contract; or (iii) adoption/rectification whereof would affect unfairly the competitive position of other bidders presenting substantially responsive bids.

26.4 If a bid has major deviations to the commercial requirements and technical specifications will be considered technically non responsive. As a general rule, major deviations are those that if accepted, would not fulfill the purposes for which the bid is requested, or would prevent a fair comparison or affect the ranking of the bids that are compliant with the bidding documents.

(A). Major (material) Deviations include:-

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

(B) Minor Deviations

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

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

IB.27 Correction of Errors before Financial Evaluation

27.1 Bids determined to be substantially responsive will be checked by the procuring agency for any arithmetic errors. Errors will be corrected by the procuring agency as

follows:

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

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

27.2 The amount stated in the Form of Bid will be adjusted by the procuring agency in accordance with the above procedure for the correction of errors and with the concurrence of the bidders. The amount thus corrected 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 15.6(b) hereof.

IB.28 Financial Evaluation and Comparison of Bids

28.1 The procuring agency will evaluate and compare only the Bids determined to be substantially responsive in accordance with clause IB 26.

28.2 In evaluating the Bids, the procuring agency will determine for each bid the evaluated bid price by adjusting the bid price as follows:

(a) making any correction for errors pursuant to clause IB 27;
(b) excluding provisional sums (if any), for contingencies in the Summary Bill of Quantities, but including competitively priced Day work; and
(c) Making an appropriate adjustment for any other acceptable variation or deviation.

28.3 The estimated effect of the price adjustment provisions of the conditions of contract, applied over the period of execution of the contract, shall not be taken into account in bid evaluation.

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

28.5 Bidders may be excluded if involved in **"Corrupt and Fraudulent Practices"** means either one or any combination of the practices given below SPP Rule2(q);

(i) "**Coercive Practice**" means any impairing or harming, or threatening to impair or

harm, directly or indirectly, any party or the property of the party to influence the actions of a party to achieve a wrongful gain or to cause a wrongful loss to another party;

(ii) "**Collusive Practice**" means any arrangement between two or more parties to the procurement process or contract execution, designed to achieve with or without the knowledge of the procuring agency to establish prices at artificial, noncompetitive levels for any wrongful gain;

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

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

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

28.6 Evaluation Report (SPP Rule 45)

After the completion of evaluation process, as described in clauses IB 27 and IB 28, the procuring agency shall announce the results of bid evaluation in the form of report (available on the website of the authority) giving reasons for acceptance and rejection of bid. The report shall be hoisted on website of the authority and that of procuring agencies if its website exists and intimated to all bidders at least seven (7) days prior to the award of contract.

F. AWARD OF CONTRACT

IB.29 Award (SPP Rule 49)

29.1 Subject to clauses IB 30 and IB 34 and provision of the rule: The procuring agency shall award the contract to the bidder whose bid has been determined to be substantially responsive to the bidding documents, and who has offered the lowest evaluated bid**,** but not necessarily the lowest submitted price, within the original or extended period of bid validity. Provided that such bidder has been determined to be eligible in accordance with the provisions of clause IB 03 and qualify pursuant to sub-clause IB 29.2.

29.2 Procuring agency, at any stage of the bid evaluation, having credible reasons for or having *prima facie* evidence of any deficiency(ies) in contractor's capacities, may require the contractor to provide information concerning their professional, technical, financial, legal or managerial competence whether already pre-qualified or not for the said project.

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

IB.30 Procuring Agency's Right to reject all Bids or Annul/Cancellation the Bidding Process (SPP Rule 25)

Notwithstanding clause IB 29 and provision of the rule: (1) A procuring agency reserves may cancel the bidding process at any time prior to the acceptance of a bid or proposal; (2) The procuring agency shall incur no liability towards bidders solely by virtue of its invoking sub –rule (1); (3) Intimation of the cancellation of bidding process shall be given promptly to all bidders and bid security shall be returned along with such intimation; (4) The procuring agency shall, upon request by any of the bidders, communicate to such bidder, grounds for cancellation of the bidding process, but is not required to justify such grounds.

IB.31. Notification/Publication of the Award of Contract (SPP Rule 25).

31.1 Prior to expiry of the period of bid validity, including extension, prescribed by the procuring agency, the procuring agency shall notify the successful bidder in writing ("Letter of Acceptance") that his bid has been accepted. This letter shall mention the sum which the procuring agency will pay to the contractor in consideration of the execution and completion of the works by the contractor as prescribed by the contract (hereinafter and in the conditions of contract called the "Contract Price").

31.2 No negotiation with the bidder having evaluated as lowest responsive or any other bidder shall be permitted, however, procuring agency may hold meetings to clarify any item in the bid evaluation report.

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

31.4 Upon furnishing by the successful bidder of a Performance Security and signing of the contract, the procuring agency will promptly notify the name of the successful bidder to all bidders and return their bid securities accordingly.

31.5 Within seven days of the award of contract, procuring agency shall publish on the website of the Authority and on its own website, if such a website exists, the results of the bidding process, identify the bid through procurement identifying numbers, and the following information:

(1) Evaluation Report;
(2) Form of Contract and letter of Award;
(3) Bill of Quantities or Schedule of Requirement.

31.6 Debriefing (SPP Rule 51).

(a) A bidder may ask the procuring agency for reasons for non-acceptance of his bid and may request for a debriefing meeting and procuring agency shall give him the reasons for such non acceptance, either in writing or by holding a debriefing meeting with such a bidder.

(b) The requesting bidder shall bear all the costs of attending such a debriefing.

IB.32 Performance Security (SPP Rule 39)

32.1 The successful bidder shall furnish to the procuring agency a Performance Security in the form of bank guarantee, and the amount stipulated in the bidding data and the Conditions of Contract within a period of 28 days after the receipt of Letter of Acceptance.

32.2 Failure of the successful bidder to comply with the requirements of Sub-clause IB.32.1 or clauses IB 33 or IB 35 shall constitute sufficient grounds for the annulment of the award and forfeiture of the bid security.

32.3 Validity of performance security shall extend 06 Months says beyond the date of completion of contract or at the completion of defect liability period, or as mentioned in the bidding data to cover defects liability period or maintenance period subject to final acceptance by the procuring agency.

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IB.33 Signing of Contract Agreement (SPP Rule 39)

33.1 Within 14 days from the date of furnishing of acceptable Performance Security under the Conditions of Contract, the procuring agency will send the successful bidder the Contract Agreement in the form provided in the bidding documents, incorporating all agreements between the parties.

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

33.3 A procurement contract shall come into force when the procuring agency requires signs contract, the date on which the signatures of both the procuring agency and the successful bidder are affixed to the written contract. Such affixing of signatures shall take place within the time prescribed in the bidding documents.

Provided that the procuring agency may reduce the maximum time limit for signing of contract, as and when required, and shall be mentioned in the bidding documents.

IB.34 General Performance of the Bidders

Procuring agency may in case of consistent poor performance of the contractor and his failure to remedy the underperforming contract may take such action as may be deemed appropriate under the circumstances of the case including the rescinding the contract and/or black listing of such contractor and debarring him from participation in future bidding process.

IB.35 Integrity Pact (SPP Rule 89)

The bidder shall sign and stamp the Integrity Pact provided at Appendix-L to the bidding documents for all Provincial/Local Government procurement contracts exceeding Rupees ten million. Failure to provide such Integrity Pact shall make the bidder non-responsive.

IB.36 Instructions not Part of Contract

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

IB.37 Arbitration (SPP Rule 34)

Any dispute that is not amicably resolved shall be finally settled, unless otherwise specified in the Contract, under the Arbitration Act 1940 updated from time to time and would be held anywhere in the Province of Sindh at the discretion of procuring agency.

BIDDING
DATA

NOTES ON BIDDING DATA

This Section is intended to assist the procuring agency in providing the specific information in relation to corresponding clauses in Instructions to Bidders and should be prepared to suit each individual contract.

The procuring agency should provide in the bidding data information and requirements specific to the circumstances of the procuring agency, the processing of the bid, the applicable rules regarding bid price and currency, and the bid evaluation criteria that will apply to the bids. In preparing this section, the following aspects should be checked:

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

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

Contact/Bidding Data

1.1 Name and address of the procuring agency:
Project Director, Head office of Sindh Industrial Trading Estate (Guarantee) Limited, Manghopir at Plot no. Z/4 SITE area, Manghopir Karachi-75700.

1.2 Name of the Project and Summary of the works:
REHABILITATION / CONSTRUCTION OF ROADS IN SITE INDUSTRIAL AREA KARACHI.

2.1 Name of the Borrower/Source of Financing/Funding Agency/Funding Source;
GOVERNMENT OF PAKISTAN

2.1 Amount and Type of Financing/Scheme Cost and Allocated Funds.
AS PER NIT

8.1 Time limit for clarification:
Prior to 5 working days before submission of bid

10.1 Bid language:
All correspondence will only be done in English language

11.1 Information to be updated (Furnish Company Profile in single stage single envelope):

Mandatory Provisions / Eligibility:

Firms/Contractors must possess

i. Full name of the firm along with organizational structure and permanent address with telephone number, fax number and e-mail.
ii. Original document purchased/ issued to the firm or any addendum from the office of SITE ltd. shall be returned in bind form duly filled, signed & stamped.
iii. List of location for equipment's, transport and machinery available with the contractor for this job.
iv. Valid Registration with certificate of Pakistan Engineering Council of category C-2 or above with relevant discipline i.e. Civil, Electrical having codes CE-01(I), CE-09(I), CE-10(I) or CE-11(I), CE-11(vii), EE-11 (vi).
v. Valid registration with FBR along with Income tax returns of last 03 years.
vi. Valid registration with SRB along with returns of last 03 Months.
vii. Bio-data of the technical staff permanently employed with evidence and available with the firm/contractor. Attach evidence of proposed staff (PEC endorsement, verifiable salary proof i.e. banking transaction or FBR tax deduction certificate) List attached as ANEX A.
viii. Affidavit on Rs. 500/- judicial stamp paper

I. To the effect that the firm/contractor was not involved in any litigation, no work

was rescinded in the past,

II. Firm/contractor was not black listed with any Government or other institute,

III. Undertaking that the information/documents submitted are correct and true,

Not doing so will result in rejection of tender.

ix. List of works where penalty is involved, if any.

x. Attach details of black listing of the company (Attach all details of blacklisting if any).

xi. Details of works executed by the contractors in the past five (05) years indicating scope of works, estimated cost and time taken for completion duly certified by the concerned officials.

I. At least one similar nature of work (Ongoing/Completed) having minimum cost 80% of the estimated cost of work (Attach satisfactory performance/completion certificates).

OR

II. At least two similar nature works (Ongoing/ Completed) each having minimum cost 50% of the estimated cost. (Attach satisfactory performance/completion certificates).

xii. Provide evidence of minimum 1000 million Average Annual turnover of last 3 years, Attach last 3 years certified Financial Audit Reports as evidence.

xiii. Provide documentary evidence of working Capital in hand for this project/work at least 20% of Estimated Cost of this Work.

xiv. Bidder must provide rate analysis of quoted individual item rates.

xv. Quoted 20% below Bid as per engineers estimate will be considered disqualification.

xvi. Quoted Bid must be round off, no decimal is considered in evaluation process.

xvii. Non fulfilment of mandatory requirement would result into direct disqualification without any further assessment of the document of the firm.

ANEX. A

S. No	Staff to be Employed with Qualification	No.	Experience
1	Project Manager - B.E. in Civil	1	Minimum 15 years' experience.
2	Quantity Surveyor – DAE / B.Tech in Civil	1	Minimum 15 years' experience.
3	Site Supervisor - B.Tech. in Civil	1	Minimum 10 years' experience.
4	Site Supervisor- B.Tech. in Electrical	1	Minimum 10 years' experience.

11.2 In case of JV, It is mandatory for consortium to open JV account and register JV NTN in which consortium receive payments on behalf of the joint venture (in case of a successful bid).

13.1 **Bidders to quote entirely in Pak. Rupees.**

14.1 Period of Bid Validity:
Bids are valid for 90days from the date of opening of bids

15.3 Amount of Bid Security:
AS PER NIT (Pay Order/CDR must be from bidder/firm account).

17.1 Venue, time, and date of the pre-Bid meeting:
Not applicable

18.4 Number of copies of the bid to be completed and returned:
01 Original and 01 copy of Technical and 01 original of financial bid (Single stage.

19.2 (a) Procuring Agency's address for the purpose of bid submission:
Head office of Sindh Industrial Trading Estate (Guarantee) Limited, Manghopir at Plot no. Z/4 SITE area, Manghopir Karachi-75700

20.1 (a) Deadline for submission of bids:
As per NIT

(b) Venue, time, and date of bid opening:
As per NIT

32.1 Standard form and amount of Performance Security acceptable to the procuring agency:
10% of the bid amount in the shape of Bank guarantee from scheduled bank of Pakistan valid for the Construction and defect liability period in favor of SITE LTD. (performance security will be release after completion of defect liability period).

32.3 Stamp duty
As per prevailing rules

FORM OF BID
AND
APPENDICES TO BID

FORM OF BID

Bid Reference No. _____
(Name of Contract/Work)

To:

_____
_____
_____

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

2. We/I understand that all the Appendices attached hereto form part of this bid.

3. As security for due performance of the undertakings and obligations of this bid, we/I submit herewith a bid security in the amount of Rupees _____ (Rs._____) drawn in your favor or made payable to procuring agency and valid for a period of _____ days beginning from the date, bid is opened.

4. We/I undertake, if our bid is accepted, to commence the works and to complete the whole of the works comprised in the contract within the time stated in Appendix-A to Bid.

5. We/I agree to abide by this bid for the period of _____ days from the date fixed for opening the same and it shall remain binding upon us and may be accepted at any time before the expiration of that period.

6. Unless and until a formal Agreement is prepared and executed, this bid, together with your written acceptance thereof, shall constitute a binding contract between us.

7. We do hereby declare that the bid is made without any collusion, comparison of figures or arrangement with any other bidder for the works.

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

9. We undertake, if our/my bid is accepted, to execute the Performance Security referred to in Clause 10 of Conditions of Contract for the due performance of the Contract.

10. We confirm, if our bid is accepted, that all partners of the joint venture shall be liable jointly and severally for the execution of the Contract and the composition or the constitution

of the joint venture shall not be altered without the prior consent of the procuring agency.
(Please delete this in case of Bid form a single bidder)

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

Dated this_____day of_____ 20_____

Signature: _____

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

Address:_____
_____
_____

Witness:

Signature:_____
Name: _____

Address: _____
_____

Occupation:_____

.

Appendix-A to Bid

SPECIAL STIPULATIONS
Clause
Conditions of Contract

1.	Engineer representing Consulting Firm hired by the procuring agency to issue variation in case of emergency.	3.1	Up to 2% of the contract price stated in the Letter of Acceptance.
2.	Amount of Performance Security	4.2	10% of bid price submitted as a performance security at the time of agreement.
3.	Time for Furnishing Programme.	8.3	Within 15 days from the date of Receipt of Letter of Acceptance.
4.	Minimum amount of Third Party Insurance	18.3	Rs. 150,000 per occurrence with Number of occurrences unlimited.
5.	Time for Commencement	8.1	Within 10 days from the date of receipt of Engineer's Notice to Commence, this shall be issued within ten (10) days after signing of Contract Agreement.
6.	Time for Completion (works & sections)	8.2 & 10.2	15 Months from the date of receipt of Engineer's Notice to Commence.
7.	Amount of Liquidity Damages / Delay Damages / Penalties	8.7	0.01% Damages per day but total amount will not be more than 10% of contract Price.
8.	Defects Liability Period	11.1	12 Months from the effective Date of Taking Over Certificate.
9.	Percentage of Retention Money	14.2	N / A
10.	Limit of Retention Money	14.2	10% of Contract Price stated in the Letter of Acceptance, (10% performance security at the time of agreement)
11.	Minimum amount of Interim / Running Payment Certificates	14.2	Min. 5% of Contract Amount
12.	Time of Payment from delivery of Engineer's Interim/Running Payment Certificate to the procuring agency.	14.7	30 working days, 15 working days for consultant and 15 working days for client.
13.	Mobilization Advance.	14.2	10% of Contract Price stated in the Letter of Acceptance.

FOREIGN CURRENCY REQUIREMENTS

1. The bidder may indicate herein below his requirements of foreign currency (if any), with reference to various inputs to the works.

2. Foreign Currency Requirement as percentage of the bid price excluding Provisional Sums_____%.

3. Table of Exchange Rates

DELETED / NOT USED

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

PRICE ADJUSTMENT UNDER CLAUSE 70/13.8 OF CONDITIONS OF CONTRACT

A. Weight ages or coefficients are used for price adjustment.

The source of indices and the weight ages or coefficients for use in the adjustment formula under Clause 13.8 shall be as follows:

Cost Element	Description	Weight ages	Applicable index
1	2	3	4
(i)	Fixed Portion		
(ii)	Local Labor		Government of Pakistan (G o P) Federal Bureau of Statistics (FBS) Monthly Statistical Bulletin.
(iii)	Cement – in bags		" " "
(iv)	Reinforcing Steel		" " "
(v)	High Speed Diesel (HSD)		" " "
(vi)	Electric Cables		" " "
(vii)	Bitumen		" " "
	Total		

DLETED / NOT USED

Notes:

1) Indices for "(ii)" to "(vii)" are taken from the Government of Pakistan Federal Bureau of Statistics, Monthly Statistical Bulletin. The base cost indices or prices shall be those applying 28 days prior to the latest day for submission of bids. Current indices or prices shall be those applying 28 days prior to the last day of the billing period.

2) Any fluctuation in the indices or prices of materials other than those given above shall not be subject to adjustment of the Contract Price.

B When Escalation is allowed on the materials only.

Price adjustment on following items shall be allowed:

Cost Element	Description	Base price	Applicable index
1	2	3	4
(i)	Cement – in bags	**DELETED / NOT USED**	Government of Pakistan (GoP) Federal Bureau of Statistics (FBS) Monthly Statistical Bulletin. " "
(ii)	Reinforcing Steel		" " "
(iii)	Bricks		" " "
(iv)	Bitumen		" " "
(v)	Wood (Composite item)		" " "
	Total five items.		

Appendix-D to Bid

BILL OF QUANTITIES

A. Preamble

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

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

3. The rates and prices entered in the priced Bill of Quantities shall, except insofar as it is otherwise provided under the contract include all costs of constructor'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 constructor 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 constructor will have failed to enter a rate or price shall be deemed to be covered by other rates and prices entered in the Bill of Quantities.

5. The whole cost of complying with the provisions of the Contract shall be included in the items provided in the priced Bill of Quantities, and where no items are provided, the cost shall be deemed to be distributed among the rates and prices entered for the related items of the works.

6. General directions and description of work and materials are not necessarily repeated nor summarized in the Bill of Quantities. References to the relevant section of the bidding documents shall be made before entering prices against each item in the priced Bill of Quantities.

7. Provisional sums included and so designated in the bill of Quantities shall be expended in whole or in part at the direction and discretion of the Engineer in accordance with sub-clause 58.2 of Part I, General Conditions of Contract.

8. No cartage of any material arranged by the contractor himself /themselves will be paid in any shape. Cartage and carriage will be covered in quoted rates by the bidder.

9. Only palatable water of approved quality will be used and Contractors shall have to make their own arrangement of palatable water for use in work at his / their own cost.

10. Concrete shall be mixed with mechanically operated Concrete Mixer with due concentration to aggregate and water ratio.

11. All material shall confirm the standard specifications.

12. No any premium shall be allowed on offered rates.

13. All the debris and surplus stuff shall be removed from the site / disposed of by the contractor for which no any extra cost of cartage etc. shall be paid.

14. All RCC / PCC cast in Situ shall be mechanically vibrated by the contractor for which no any extra cost will be paid.

15. Technical specification attached and NHA/CSR GOS specification shall be adopted.

16. All materials / mixes used in structure shall be tested from recognized laboratory and test report shall be submitted without any delay for which no any extra cost etc. shall be paid.

17. Electricity and other utilities needed in the project shall be the responsibility of contractor for which no any extra cost etc. shall be paid.

18. Camp office / stock / go-down etc. as mentioned in Technical specification constructed at site shall be the responsibility of contractor for which no any extra cost etc. shall be paid.

19. All workers within the execution area should wear protection helmets and full boots and ensure all security measures for lives of labors / inhabitants shall be the responsibility of contractor for which no any extra cost etc. shall be paid.

20. Deployment of Engineers, Supervisor, and Foreman etc. as mentioned in technical specification shall be the responsibility of contractor for which no any extra cost etc. shall be paid.

21. Contractor must visit and satisfy himself with the site condition and BOQ items and any addition item if he consider essential shall be submitted in queries for clarification.

22. Inspection request shall be submitted before 24 hrs. Of execution of any new trade.

23. Pour slip to be submitted for approval of all works well before its execution.

24. All required testing as per Engineering practices and as per instruction of Engineer in charge shall be carried out for verification of quality of work for which no any extra payment shall be paid.

SINDH INDUSTRIAL TRADING ESTATE LIMITED

REHBILITATION/CONSTRUCTION OF ROADS IN SITE INDUSTRIAL

BILL OF QUANTITIES

PACKAGE 2

M/S. ATIF NAZAR (PVT.) LTD.
Project Managers, Planners, Architects
& Consulting Engineers.
D-11/A, Block-17 Gulshan e Iqbal,
Karachi, Pakistan.
Tel: +92-21-34982561
Fax: +92-21-34820497
Email: mail@atifnazar.com

SINDH INDUSTRIAL TRADING ESTATE LIMITED

REHABILITATION/CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

PACKAGE: 2

ROAD NO.35,37,44,50,49

S.No	SUMMARY	COST (Rs.)
	ITEMS OF WORKS	
A	**ROAD WORK**	
	SCHEDULE ITEM	374,908,183
	ABOVE/BELOW %PREMIUM	
	TOTAL NON-SCHEDULE ITEM	
	TOTAL AMOUNT OF ROAD WORK	
B	**URBAN DRAIN WORK**	
	SCHEDULE ITEM	545,635,442
	ABOVE/BELOW %PREMIUM	
	TOTAL AMOUNT OF URBAN DRAIN WORK	
C	**DUCT WORK**	
	SCHEDULE ITEM	6,904,918
	ABOVE/BELOW %PREMIUM	
	TOTAL AMOUNT OF DUCT DRAIN WORK	
	TOTAL AMOUNT (A+B+C)	
	ADD 5% SRB	
	TOTAL AMOUNT WITH SRB	

Amount in words:-

NOTE

1.The bid shall be Properly Signed Named & Stamped by the authorized Person of the firm and authorization letter for signatory shall be enclosed with the tender by the authorized Person, if other than the signatory of the firm.

2.All correction/overwriting shall be clearly re-written with initials and duly stamped by the bidder.

3.Arithmetical errors will be rectified on the following basis.If there is a discrepency between the unit price and quantity the unit price shall prevail and the total price shall be corrected. If the bidder does not accept the correction of the errors, it is bid will be rejected and it's bid security may be forfeited.

4.Financial Bid of each component i-e Road Works, Urban Drain Works and Duct Works will be compared with its estimated cost of that component. In case cost is above 15% of Estimated cost than such type of bid will be rejected to avoid forward loadings.

CONTRACTOR:

Stamp & Signature: _____

Date: _____

REHABILITATION/CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

BILL OF QUANTITIES (ROAD WORKS)

S. No	ITEMS	QUANTITY	UNITS	RATES	AMOUNT
A	**SCHEDULE ITEMS-CSR-2024**				
	Road Works				
1	Clearing and grubbing the site by cutting, uprooting and removing all rubbish and shrubs including disposal to (outside limits) designated places. Public Higways Works-CH No.1 Item No.1 Page No.211				
		363,650.98	%Sft	288.17	1,047,933.02
2	Compaction of Natural Ground upto a depth of 20cm (8" inch) below the natural ground level compacted upto 90% density modified AASHTO. Public Higways Works-CH No.1 Item No.2 Page No.211				
		183,558.49	%Sft	468.44	859,861.40
3	Making diagonal grooves of 1-1/2" * 1-1/2" at 2 FT: centre to centre in road surface. Public Higways Works-CH No.12 Item No.7 Page No.221				
		359,173.15	%Sft	792.15	2,845,190.12
4	**2" (50mm) Thick Asphalt Concrete Wearing Course** **Plant Mix** Laying to proper line and grade plant mixed Asphalt concrete paver finished (Hydraulic/Electronic control) Prepared to specified formula according to job mix formula approved by engineer incharge including rolling and finishing to properline, grade level and camber etc (Machinery with POLs cost of material carriage). Public Higways Works-CH No.5 Item No.24-B Page No.218				
		166,715.44	%Sft	19,876.84	33,137,761.26
5	**3" (75mm) Asphaltic Base Course** **Plant Mix** Providing and laying plant mixed Asphalt Concrete Binder course compacted thickness 3 inches (75mm thick) as per approved job mix formula using crush aggregate from approved sources. Using asphalt of grade 60/70 during laying temperature not less than 140C compacted by steel wheel & PTR roller. the procedure of laying binder course material and methodology shall fully comply with AASHTO and as directed by Engineer Incharge. Minimun bitumen content should be 3.5% binder course shall be spreading using paver machine. Rolling & Finishing to design proper grade line level and camber etc. (Machinery with POLs cost of material carriage) Public Higways Works-CH No.5 Item No.23-A Page No.217				
		448,175.52	%Sft	26,689.14	119,614,191.98

REHABILITATION/CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

BILL OF QUANTITIES (ROAD WORKS)

S. No	ITEMS	QUANTITY	UNITS	RATES	AMOUNT
6	Providing and laying Aggregate base course in proper grade and chamber having CBR 80% as per AASHTO standard specifications i/c spreading and compacting by approved mechanical means (Motor grader, Vibratory roller and smooth wheel roller etc) watering to maintain the moisture content the compaction of each layer shall 100 percent to the max dry density (rate i/e all cost of material T&P and carriage upto 3 chains) Public Higways Works-CH No.3 Item No.13-B Page No.214				
		235,490.61	%Cft	13,849.22	32,613,612.66
7	Preparing base course supplying and spreading stone metal of approved quality properly graded to maximum size of 1-1/2" in required thickness to Proper camber and grade including supplying and spreading 15 Cft screenings and non plastic quarry fines, filling depressions with stone initial rolling metal after initial including watering and compaction the same so as to achieve 100% density as per modified AASHTO specifications. (Rate includes providing and using templates, camber plates, screens, forms as directed (Rate includes all cost of materials T&P and carriage upto 3 chins). Public Higways Works-CH No.3 Item No.13-A Page No.213				
		251,167.58	%Cft	15,676.75	39,374,914.22
8	Preparing sub- base course by supplying and spread-ing stone metal 1-1/2"-2" guage of approved quality from approved quarry in required thickness to proper camber and grade including hand packing filling words with 20 cft: of pit / canal and having plasticity index not more than 6% of suitable quality watering and compacting to achieve 984 100% density as per modified AASHO specifiecations (Rate includes all cost of materials T&P and carriage upto 3 chains). Public Higways Works-CH No.2 Item No.11-A Page No.212				
		198,632.62	%Cft	14,630.16	29,060,269.53
9	Scarifying the existing road surface. Public Higways Works-CH No.12 Item No.6 Page No.221				
		41,964.00	% Sft	633.72	265,934.26
10	Applying priming coat or tack with approved binder at the required rate including cleaning the road surface thoroughly, heating to the required temperature pressure as directed etc,complete. and with etc spraying the binder Public Higways Works-CH No.7 Item No.31 Page No.219				
		699,055.68	% Sft	350.29	2,448,722.14
	SOLID WASTE REMOVAL				
11	Cleaning of under ground sewer by mechanical or manual method taking out waste solids etc. and disposing off within one chain etc. complete (without cartage). Public Health Engineering Works -CH No.2 Item No.R-2 Page No.147				
		180,004.55	P/CFT	224.40	40,393,020.52

REHABILITATION/CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

BILL OF QUANTITIES (ROAD WORKS)

S. No	ITEMS	QUANTITY	UNITS	RATES	AMOUNT
	ROAD DRESSING				
12	Preparing sub grade in cluding earth excavation or filling to an average depth of 9" dressing to camber and consolidation with power Roller., Public Higways Works-CH No.2 Item No.9 Page No.212				
		609,069.80	%Sft	1,639.71	9,986,978.42
13	Dressing and levelling of earth work to designed section etc, complete.Gravel work of soft rock not requiring blasting. Public Higways Works-CH No.12 Item No.22-C Page No.223				
		609,069.80	%0Cft	2,376.45	1,447,423.93
	Road Furniture				
14	Pavement marking in Reflective Thermoplastic Paint for lines of 6" width Public Higways Works-CH No.12 Item No.13 Page No.221				
		57,483.12	Rft	86.10	4,949,296.63
15	Supplying and fixing of reflectorize Road Stud Double Face, Flush surface type. Public Higways Works-CH No.12 Item No.12 Page No.221				
		4,700.00	NO.	1,520.42	7,145,974.00
16	Providing & Fixig each Informatory Sign Rectangular shape 4x3" comprizing 2 Nos: 3" Dia G.I pipe Post i/c Painting, writing as directed each. Public Higways Works-CH No.12 Item No.18-C-II Page No.222				
		90.00	NO.	56,706.63	5,103,596.70
17	Providing & fixing Precast Edge Block 3750 PSI Industrial Made Size 6 inches thick x 12 inches long x 18 inches high including the cost of Cartage, excavation, form Work for haunching, 1450 PSI lean concrete, 2250 PSI concrete for haunching, 1:4 cement sand mortor. Public Higways Works-CH No.12 Item No.14 Page No.221				
		17,717.40	Rft	678.38	12,019,129.81
	Electric poles				
18	Providing & fixing of MS tabular pole as following specification to be fixed on pre-cast foundation with the help of hydraulic crane & manual labour. 20ft-(6`` dia) × 5.5ft (5`` dia) × 5.5ft, (4`` dia) = 31ft wall thickness 8 SWG, Base plate 18`` × 18`` × ¾ `` Hole 4 no's stiffeners 4 nos. 9 ½``× 4 ½`` × ½``. Making window in the pole required size with LN key provision. Two coats red oxide (2 coat) as rust preventive & Of required oil paint (2 coat) as per site requirement & instruction of EI. Electricals Works- Item No.110 Page No.237				
		108.00	NO.	117,699.89	12,711,588.12

REHABILITATION/CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

BILL OF QUANTITIES (ROAD WORKS)

S. No	ITEMS	QUANTITY	UNITS	RATES	AMOUNT
19	Construction of RCC foundation as per following specification & instruction of EI for 31ft/40ft long tubular pole. Excavation of soft/hard soil 3`×3`×5.5`, Stone soiling 3`×3`×6`` making lean in the ratio of 1:4:8 Length of MS bolts 6 ½`( ¾ `` dia) 4 no's & making thread on MS rod, Template 16``×16``× ¼``, Rings ¼`` dia round bar 4 no's to the welded with MS rod. RCC foundation ratio 1:2:4 with appropriate size 2`×2`×6.5` Electricals Works- Item No.117 Page No.238				
		108.00	NO.	46,369.16	5,007,869.28
20	Manufacturing providing & fixing GI single Arm double arch as per site requirement with hydraulic crane Instruction of EI with following Specification GI pipe 2``dia 10 SWG 5` long 2 no's MS clamps with nuts & bolts Electricals Works- Item No.121 Page No.239				
		108.00	NO.	18,370.28	1,983,990.56
21	Providing & fixing DP I/C change over switch 500volts 300amp on a prepared board Electricals Works- Item No.174 Page No.243				
		108.00	NO.	56,343.32	6,085,078.56
22	Providing & Fixing of street light 250 watts (SON-T) having IP65 classification with 250w lamp, choke, capacitor & Internal wiring complete in all respect at the height With the help of hydraulic crane as per site requirement and instruction of EI. Electricals Works- Item No.137 Page No.241				
		108.00	NO.	19,076.37	2,060,247.96
23	Providing & laying (MAIN or SUB MAIN) PVC insulated & PVC sheeted with 4 core Armoured copper conductor 600/1000 volts size 16mm2 Electricals Works- Item No.90 Page No.235				
		2,962.51	P.Rft	1,481.86	4,390,027.19
24	Providing & laying (MAIN or SUB MAIN) PVC insulated with size 3-3/.036 copper conductor in ¾'' dia PVC conduit recessed in the wall or column as required. Electricals Works- Item No.23 Page No.230				
		864.00	P.Rft	411.54	355,570.56
	TOTAL COST SCHEDULE ITEM				**374,908,183**

REHABILITATION/CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

BILL OF QUANTITIES (ROAD WORKS)

S. No	ITEMS	QUANTITY	UNITS	RATES	AMOUNT
	NON SCHEDULE ITEM				
1	Removal of solid waste from road, removing by mechanical or manual method taking out waste solids etc. and Dismantling of Existing Drains(Walls,Slabs and Foundations). And disposal of Material at Desginated Place as Per Direction of Engineer Incharge				
		299,893.29	%Cft		
2	Removal of solid waste (Pile), removing by mechanical or manual method taking out waste solids etc. and complete including disposal to (outside limits) designated places.				
		27,300.59	%Cft		
4	Removal of existing kerb stone from road, removing by mechanical or manual method complete including disposal to (outside limits) designated places.				
		17,717.40	Rft		
	TOTAL AMOUNT OF NON-SCHEDULE ITEM				

REHABILITATION/CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI
BILL OF QUANTITIES (DRAIN WORKS)

S. No	ITEMS	QUANTITY	UNITS	RATES	AMOUNT
A	**SCHEDULE ITEMS-CSR-2024**				
	Drain Works				
1	Earth work excavation in irrigation channels, drains etc, dressed to designed section grades and profiles excavated material disposed off and dressed within 50 ft. lead.CH No.1 Item No.5(d) Page No.15				
		904,435.71	P.Cft	20.60	18,631,375.58
2	**Dispose of Excavated Material** Carriage pf 100 Cft/5 Tons of all Material like, Stone aggregate, Spawl, Coal, Lime, Surkhi, etc. B.G Rail, fastening points and crossing bridge, Grider, Pipes Sheets Rail, M.S Bars etc. or 1000 Nos. Bricks (10"5"x3") or 1000 Nos. Tiles (12"x6"x2") or 150 Cft of Timber or 100 Maunds of fuel wood by trucks or any other means owned by contractor.				
		904,435.71	%Cft	1,871.24	16,924,162.74
3	Cement concrete brick or stone ballast 1 1/2" to 2" gauge ratio 1:4:8. CH No.4 Item No.4(b) Page No.24				
		36,753.99	P.Cft	296.69	10,904,541.89
4	Reinforced cement concrete work including all labour and material except the cost of steel reinforcement and its labour for bending and binding which will be paid seperately. This rate also includes all kinds of forms moulds: lifting shuttering and curing (including screening and washing of shingle). R.C.C work in roof slab, beams, column, rafts, lintels and other stuctural members laid in situ or precast laid in position complete in all respects.Ratio 1-1 1/2 :3 CH No.4 Item No.6(ii) Page No.25				
		241,814.85	P.Cft	787.71	190,479,973.92
5	Fabrication of deformed steel reinforcement for cement concrete including cutting,bending, laying in position, making joints and fastenings including cost of binding wire (also includes removeal of rust from bars.) Using Deformed Bar CH No.4 Item No.8(a-i) Page No.26				
		15,852.74	Cwt	18,934.02	300,156,102.64
6	Filling, watering and ramming earth in floors with surplus earth from foundation lead upto one chain and lift jupto 5 feet... CH No.1 Item No.21 Page No.17				
		361,284.75	P.Cft	6.50	2,348,350.86
7	Making & fixing grating in opening including fixing at site with flat iron 2" x 3/8" and 3/4" sq. bars at 4" centre to centre.CH				
		321.94	P/Sft	1,136.43	365,861.37

REHABILITATION/CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI
BILL OF QUANTITIES (DRAIN WORKS)

S. No	ITEMS	QUANTITY	UNITS	RATES	AMOUNT
8	Premoulded Joint Filler 12mm Thick Public Higways Works-CH No.12 Item No.29 Page No.225				
		2,799.06	P/Sft	502.63	1,406,893.97
9	Neoprene Rubber Joint Filler 12mm Thick With Bitumastic Joint Seal. Public Higways Works-CH No.12 Item No.29 Page No.225				
		2,799.06	P/Sft	367.28	1,028,040.54
10	Pvc Water Stops 8'' Size. Public Higways Works-CH No.12 Item No.36 Page No.225				
		3,240.74	P/Rft	1,046.10	3,390,138.97
	TOTAL COST SCHEDULE ITEM				**545,635,442.49**

REHABILITATION/CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

BILL OF QUANTITIES(DUCT WORKS)

S. No	ITEMS	QUANTITY	UNITS	RATES	AMOUNT
A	**SCHEDULE ITEMS-CSR-2024**				
	Duct Works				
1	Earth work excavation in irrigation channels, drains etc, dressed to designed section grades and profiles excavated material disposed off and dressed within 50 ft. lead.CH No.1 Item No.5(d) Page No.15				
		13,245.00	P.Cft	20.60	272,847.00
2	**Dispose of Excavated Material** Carriage pf 100 Cft/5 Tons of all Material like, Stone aggregate, Spawl, Coal, Lime, Surkhi, etc. B.G Rail, fastening points and crossing bridge, Grider, Pipes Sheets Rail, M.S Bars etc. or 1000 Nos. Bricks (10''5''x3'') or 1000 Nos. Tiles (12''x6''x2'') or 150 Cft of Timber or 100 Maunds of fuel wood by trucks or any other means owned by contractor.				
		13,245.00	%Cft	1,871.24	247,845.74
3	Cement concrete brick or stone ballast 1 1/2" to 2" gauge ratio 1:4:8. CH No.4 Item No.4(b) Page No.24				
		1,986.75	P.Cft	296.69	589,448.86
4	Cement concrete plain including placing compacting, finishing and curing, comlete (including screening and washing at stone aggregate without shuttering.Ratio. 1: 1 1/2 :3 . CH No.4 Item No.5(c) Page No.25				
		3,263.57	P.Cft	502.17	1,638,865.94
5	Providing, Laying uPVC pipes of Class 'B' fixing in trench i/c cutting, fitting and jointing with solvent cement i/c testing with water to a head of 61 meter or 200 ft. Public Health Engineering Works-Item No.4 Page No.111				
i	100 mm (4" dia)				
		1,181.16	Rft	406.12	479,692.70
ii	150 mm (6" dia)				
		196.86	Rft	764.46	150,491.60
iii	300 mm (12" dia)				
		196.86	Rft	2,448.12	481,936.90
iv	400 mm (16" dia)				
		196.86	Rft	3,810.85	750,203.93
6	Filling, watering and ramming earth in floors with surplus earth from foundation lead upto one chain and lift jupto 5 feet... CH No.1 Item No.21 Page No.17				
		9,250.31	P.Cft	6.50	60,127.00

REHABILITATION/CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

BILL OF QUANTITIES(DUCT WORKS)

S. No	ITEMS	QUANTITY	UNITS	RATES	AMOUNT
7	Providing, Laying RCC pipes & Collars of Class 'A' and fixing in trench i/c cutting, fitting and jointing with maxphalt composition and cement mortar (1:1) i/c testing with water to a head of 4.5 meter or 15 ft. Public Health Engineering Works-Item No.1 Page No.104				
	900 mm (36" dia)				
		213.27	Rft	2,373.60	506,205.80
8	Constructing manhole for the required dia of circular sewer and 7'-9" depth with walls of B.B in cement mortor 1:3 cement plastered 1:3, 1/2" thick, inside of walls and 1" (25 mm) thick over benching and channel i/c fixing C.I manhole cover with frame of clear opening 2' x 2' (610x610 mm) of 4.5 cwt. embaded in plain C.C 1:2:4 and two way rainforced 6" thickness i/c fixing 1" (25 mm) dia M.S steps 6" (150 mm) wide projecting 4" (102 mm) from the face of wall at 12" (305 mm) C/C duly painted etc, complete as per standard specification and drawing. Public Health Engineering Works-Item No.2 Page No.135				
	e-24" to 4'-6" x 4'x6"x7'-9"				
		10.00	Each	172,725.24	1,727,252.40
	TOTAL COST SCHEDULE ITEM				**6,904,917.87**

Appendix-E to Bid

PROPOSED CONSTRUCTION SCHEDULE

Pursuant to Sub-Clause 43.1 of the General Conditions of Contract, the works shall be completed on or before the date stated in Appendix-A to Bid. The bidder shall provide as Appendix-E to Bid, the Construction Schedule 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 parts of the works may meet procuring agency's completion targets in days noted below and counted from the date of receipt of Engineer's Notice to Commence (Attach sheets as required for the specified form of Construction Schedule):

	Description	**Time for Completion**
1)	Whole works	_____ days
2)	Part-A	_____ days
3)	Part-B	_____ days
4)	_____	_____ days
5)	_____	_____ days

Appendix-F to Bid

METHOD OF PERFORMING THE WORK

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

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

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

3. The method of executing the works, the procedures for installation of equipment and machinery and transportation of equipment and materials to the site.

Appendix-G to Bid

LIST OF MAJOR EQUIPMENT – RELATED ITEMS

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

Appendix-G to Bid

LIST OF MAJOR EQUIPMENT (SAMPLE)

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
1	2	3	4	5	6	7
a. Owned						
b. To be Purchased						
c. To be arranged on Lease						

Appendix-H to Bid

CONSTRUCTION CAMP AND HOUSING FACILITIES

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

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

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

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

2. Provision of Services.

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

3. Construction of Facilities

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

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

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

Appendix-I to Bid

LIST OF SUBCONTRACTORS

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

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

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

ESTIMATED PROGRESS PAYMENTS (SAMPLE)

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 Pakistani Rupees:

Quarter/ Year/ Period	**Amounts (in thousands)**
1	**2**
Ist Quarter	
2nd Quarter	
3rd Quarter	
4th Quarter	
5th Quarter	
6th Quarter	
7th Quarter	
8th Quarter	
9th Quarter	
Bid Price	

Appendix-K to Bid

ORGANIZATION CHART
FOR THE
SUPERVISORY STAFF AND LABOUR

(To be filled in by the bidder)

BL-1
Appendix-L to Bid

(INTEGRITY PACT)

DECLARATION OF FEES, COMMISSION AND BROKERAGE ETC; PAYABLE BY CONTRACTORS.
(FOR CONTRACTS WORTH RS. 10.00 MILLION OR MORE)

Contract No._____Dated_____
Contract Value: _____
Contract Title: _____

…… [name of 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 Sindh (GoS) or any administrative subdivision or agency thereof or any other entity owned or controlled by it (GoS) through any corrupt business practice.

Without limiting the generality of the foregoing, [name of 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, from Procuring Agency (PA) except that which has been expressly declared pursuant hereto.

[name of Contractor] accepts full responsibility and strict liability 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 PA and has not taken any action or will not take any action to circumvent the above declaration, representation or warranty.

[name of 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 PA under any law, contract or other instrument, be voidable at the option of PA.

Notwithstanding any rights and remedies exercised by PA in this regard, [name of Supplier/Contractor/Consultant] agrees to indemnify PA for any loss or damage incurred by it on account of its corrupt business practices and further pay compensation to PA in an amount equivalent to ten time the sum of any commission, gratification, bribe, finder"s fee or kickback given by [name of 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 PA.

……
[Procuring Agency] [Contractor]

FORMS

BID SECURITY
PERFORMANCE SECURITY
CONTRACT AGREEMENT
MOBILIZATION ADVANCE GUARANTEE
INDENTURE BOND FOR SECURED ADVANCE

BID SECURITY
(**Bank Guarantee)**

Security Executed on _____
(Date)
Name of Surety (Bank) with Address: _____
(Scheduled Bank in Pakistan)
Name of Principal (Bidder) with Address _____
_____
Penal Sum of Security Rupees._____(Rs._____)
Bid Reference No. _____
KNOW ALL MEN BY THESE PRESENTS, that in pursuance of the terms of the bid and at the request of the said Principal (Bidder) we, the Surety above named, are held and firmly bound unto _____
(hereinafter called the 'Procuring Agency') in the sum stated above for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators and successors, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that whereas the Bidder has submitted the accompanying bid dated_____for Bid No._____for_____(Particulars of Bid) to the said Procuring Agency; and

WHEREAS, the Procuring Agency has required as a condition for considering said bid that the **bidder** furnishes a bid security in the above said sum from a Scheduled Bank in Pakistan or from a foreign bank duly counter-guaranteed by a Scheduled Bank in Pakistan, to the procuring agency, conditioned as under:

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

(2) that the bid security of unsuccessful bidders will be returned by the procuring agency after expiry of its validity or upon signing of the Contract Agreement; and

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

NOW THEREFORE, if the successful bidder shall, within the period specified therefore, on the prescribed form presented to him for signature enter into a formal Contract with the said procuring agency in accordance with his bid as accepted and furnish within twenty eight (28) days of his being requested to do so, a Performance Security with good and sufficient surety, as may be required, upon the form prescribed by the said procuring agency for the faithful performance and proper fulfilment of the said Contract or in the event of non-withdrawal of the said bid within the time specified for its validity then this obligation shall be void and of no effect, but otherwise to remain in full force and effect.
PROVIDED THAT the Surety shall forthwith pay the procuring agency, the said sum upon first written demand of the procuring agency (without cavil or argument) and without requiring the procuring agency to prove or to show grounds or reasons for such demand,

notice of which shall be sent by the procuring agency by registered post duly addressed to the Surety at its address given above.

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

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

SURETY (Bank)

WITNESS: Signature _____

1. _____ Name _____

_____ Title _____

Corporate Secretary (Seal) Corporate Guarantor (Seal)

2. _____

_____

Name, Title & Address

FORM OF PERFORMANCE SECURITY
(Bank Guarantee)

Guarantee No._____
Executed on _____
Expiry date _____

[Letter by the Guarantor to the Procuring Agency]

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

Name of Principal (Contractor) with address:_____

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

Letter of Acceptance No._____Dated _____

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

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

NOW THEREFORE, if the Principal (Contractor) shall well and truly perform and fulfill all the undertakings, covenants, terms and conditions of the said Documents during the original terms of the said Documents and any extensions thereof that may be granted by the procuring agency, with or without notice to the Guarantor, which notice is, hereby, waived and shall also well and truly perform and fulfill all the undertakings, covenants terms and conditions of the Contract and of any and all modifications of said Documents that may hereafter be made, notice of which modifications to the Guarantor being hereby waived, then, this obligation to be void; otherwise to remain in full force and virtue till all requirements of Clause 49, Defects Liability, of Conditions of Contract are fulfilled.

Our total liability under this Guarantee is limited to the sum stated above and it is a condition of any liability attaching to us under this Guarantee that the claim for payment in writing shall be received by us within the validity period of this Guarantee, failing which we shall be discharged of our liability, if any, under this Guarantee.

We,_____(the Guarantor), waiving all objections and defenses under the Contract, do hereby irrevocably and independently guarantee to pay to the procuring agency without delay upon the procuring agency's first written demand without

cavil or arguments and without requiring the procuring agency to prove or to show grounds or reasons for such demand any sum or sums up to the amount stated above, against the procuring agency's written declaration that the Principal has refused or failed to perform the obligations under the Contract which payment will be effected by the Guarantor to Procuring Agency‟s designated Bank & Account Number.

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

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

_____
Guarantor (Bank)

Witness:

1. _____ Signature _____

_____ Name_____
Corporate Secretary (Seal)

Title _____

2. _____

_____ _____
Name, Title & Address Corporate Guarantor (Seal)

FORM OF CONTRACT AGREEMENT

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

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

NOW this Agreement witnesseth-- as follows:

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the Conditions of Contract hereinafter referred to.

2. The following documents after incorporating addenda, if any, except those parts relating to Instructions to bidders shall be deemed to form and be read and construed as part of this Agreement, viz:

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

3. In consideration of the payments to be made by the procuring agency to the Contractor as hereinafter mentioned, the Contractor hereby covenants with the procuring agency to execute and complete the works and remedy defects therein in conformity and in all respects with the provisions of the contract.

4. Procuring agency hereby covenants to pay the contractor, in consideration of the execution and completion of the works as per provisions of the contract, the contract Price or such other sum as may become payable under the provisions of the contract at the times and in the manner prescribed by the contract.

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

Signature of the Contactor	Signature of Procuring Agency
_____	_____
(Seal)	(Seal)
Signed, Sealed and Delivered in the presence of:	
Witness:	Witness:
_____	_____
(Name, Title and Address)	(Name, Title and Address)

MG-1

MOBILIZATION ADVANCE GUARANTEE

Bank Guarantee No._____Date _____

WHEREAS_____(hereinafter called the 'Procuring Agency') has entered into a Contract for _____
(Particulars of Contract)
with_____(hereinafter called the "Contractor').

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

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

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

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

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

This Guarantee shall remain in force until the advance is fully adjusted against payments from the Interim Payment Certificates of the Contractor or until _____whichever is earlier.
(Date)
The Guarantor's liability under this Guarantee shall not in any case exceed the sum of Rupees _____(Rs_____).

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

GUARANTOR

1. Signature _____
2. Name _____
3. Title _____

WITNESS

1. _____

_____
Corporate Secretary (Seal)

2. _____ _____
(Name Title & Address) Corporate Guarantor (Seal)

INDENTURE FOR SECURED ADVANCES.

(For use in cases in which is contract is for finished work and the contractor has entered into an agreement for the execution of a certain specified quantity of work in a given time).

This INDENTURE made the …….. day of ..... ……. 20…… BETWEEN (hereinafter called "the Contractor" which expression shall where the context so admits or implied be deemed to include his heirs, executors, administrators and assigns) of the one part and THE GOVERNOR OF SINDH (hereinafter called "the Government" of the other part).

WHEREAS by an agreement, dated (hereinafter called the said agreement, the contractor has agreed to perform the under-mentioned works (hereinafter referred to as the said work):-

(Here enter (the description of the works).[1]

AND WHEREAS the contractor has applied to the …….. ……..……..for an advance to him of Rupees ……..…… (Rs. .....) on the security of materials absolutely belonging to him and brought by him to the site of the said works the subject of the said agreement for use in the construction of such of the said works as he has undertaken to execute at rates fixed for the finished work (inclusive of the cost of materials and labour and other charge) AND WHEREAS the Government has agreed to advance to the Contractor the sum of Rupees, (Rs. .....) on the security of materials the quantities and other particulars of which are detailed in Part II of Running Account Bill (B). the said works signed by the contractor

Fin R.Form.l7.A

On ……..……..……..…….. and on such covenants and conditions as are hereinafter contained and the Government has reserved to itself the option of marking any further advance or advances on the security of other materials brought by the Contractor to the site of the said works.

NOW THIS INDENTURE WTTNESSETH that in pursuance of the said agreement and in consideration of the sum of Rupees…….. (Rs. ……) on or before the execution of these presents paid to the Contractor by the Government (the receipt whereof the Contractor doth hereby acknowledge) and of such further advances (if any) as may be made to him as aforesaid (all of which advances are hereinafter collectively referred to as the said amount) the Contractor doth hereby assign unto the Government the said materials by way of security for the said amount

And doth hereby covenant and agree with the Government and declare as follow :-

(1) That the said sum of Rupees.....RS. ……) so advanced by the Government to the Contractor as aforesaid and all or any further sum or sums which may be advanced as aforesaid shall be employed by the contractor in or towards expending the execution of the said works and for no other purpose whatsoever.

(2) That the materials detailed in the said Running Account Bill (B) which have been offered to and accepted by (he Government as security for the said amount are

absolutely by the Contractors own property free from encumbrances of any kind and the Contractor will not make any application for or receive a further advance on the security of materials which are not absolutely his own property and free from encumbrances of any kind and the contractor hereby agrees, at all times, to indemnify and save harmless the Government against all claims whatsoever to any materials in respect of which an advance has been made to him as aforesaid.

(3) That the said materials detailed in the said Running Account Bill (B) and all other materials on the security of which any further advance or advances may hereafter be made as aforesaid (hereinafter called the said materials) shall be used by the Contractor solely in *the* execution of the said works in accordance with the directions of the Divisional Officer (hereinafter called the Divisional Officer) and in the terms of the said agreement.

(4) That the Contractor shall make at his own cost all necessary and adequate arrangement for the proper watch, safe custody and protection against all risks of the said material and that until used in construction as aforesaid the said materials shall remain at jthe site of the said works in the Contractor's custody and at his own risk and on his own responsibility and shall at all times be open to inspection by (he Divisional Officer or any officer authorized by him. In the event of the said materials of any part (hereof being stolen, destroyed or damaged or becoming deteriorated in a greater degree than is due to reasonable use and wear thereof Contractor will forthwith replace the same with other materials of like qualify or repair and make good the same as required by the Divisional Officer and the materials so brought to replace the said materials so repaired and made good shall also be considered as security for the said amount.

(5) 'Hurt the said materials shall not on any account be removed from the site of the said works except with the written permission of the Divisional Officer or an officer authorized by him in that behalf

(6) That the said amount shall be payable in full when or before the Contractor receives payment, from the Government of the price payable to him for the said works under the terms and provisions of the said agreement PROVIDED THAT if any intermediate payments are made to the contractor on account of work done then on the occasion of each such payment the Government will be at liberty to make a recovery from the Contractors Bill for such payment by deducting there from in the value of the said materials (hen actually used in the construction and in respect of which recovery has not been made previously the value for this purpose being determined in respect of each description of material at (he rates at which the amount of the advances made under these presents were calculated.

(7) at if the Contractor shall at any time make any default in the performance or observation in any respect of any of the terms and provisions of the said agreement or of these presents the total amount of the advance or advances that may still be owing to the Government shall immediately on the happening of such default be repayable by the Contractor to the Government together with interest thereon at twelve percent per annum from the date or respective dates of such advance or advances to the date or repayment and with all costs, charges, damages and expenses incurred by the Government in or for the recovery thereof or the enforcement of this security or otherwise by reason of (he default of the Contractor and any moneys so becoming due and payable shall constitute a debt due from the Contractor to the Government and the Contractor hereby covenants and agrees with the Government to repay and the same respectively to it accordingly.

(8) That the Contractor hereby charges all the said materials with the repayment to the Government of the said sum of Rupees..... .....
(Rs. .....) and any further sum
or sums which may be advanced as aforesaid and all costs charges damages and expenses payable under these present PROVIDED ALWAYS and it is hereby agreed and declared that not, withstanding anything in the said agreement and without prejudice to the powers contained therein if and whether the covenant for payment and repayment hereinbefore contained shall become enforceable and the money owing shall not be paid to accordingly.
Once there with the Government may at any time thereafter adopt all or any of following courses as it may deem best ;-

(a) Seize and utilize the said materials or any part thereof in the completion of the said works on behalf of the Contractor in accordance with the provisions in that

behalf contained in the said agreement debiting the Contractor with the actual cost of effecting such completion the amount due in respect of advances under these presents and crediting the Contractor with the value of work done as he had carried it out in accordance with the said agreement and at the rates thereby provided. If the balance is against the Contractor he is to pay the same to the Government on demand.

(b) Remove and sell by public auction the seized materials or any part thereof and out of the moneys arising from the sale retain all the sums aforesaid repayable to the Government under these presents and pay over the surplus (if any) to the Contractor.

(c) Deduct all or any part of the moneys owing out of the security deposit or any sum due to the Contractor under the said agreement.

(9) That except as is expressly provided by the presents interest on the said advance shall not be payable.

(10) That in the event of any conflict between the provisions of these presents and the said agreement the provisions of these presents shall prevail and in the event of any dispute or difference arising over the construction or effect of these presents the settlement of which has not been hereinbefore expressly provided for the same shall be referred to the Superintending Engineer/Executive District Officer/Officer one grade higher to officer signed the agreement Circle whose ..... decision shall be final and the provisions of the Arbitration Act 1940 for the time being in force so far as they are applicable shall apply to any such reference.

Singed, sealed and delivered by*
In the presence of

SEAL

1st witness
2nd witness

Signed, sealed and delivered by*
In the presence of

SEAL

1st witness
2nd witness

General Conditions

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General Conditions

General Provisions

1.1
Definitions

In the Conditions of Contract ("these Conditions"), which include Particular Conditions, Parts A and B, and these General Conditions, the following words and expressions shall have the meanings stated. Words indicating persons or parties include corporations and other legal entities, except where the context requires otherwise.

1.1.1
The Contract

1.1.1.1 "Contract" means the Contract Agreement, the Letter of Acceptance, the Letter of Tender, these Conditions, the Specification, the Drawings, the Schedules, and the further documents (if any) which are listed in the Contract Agreement or in the Letter of Acceptance.

1.1.1.2 "Contract Agreement" means the contract agreement referred to in Sub-Clause 1.6 [Contract Agreement].

1.1.1.3 "Letter of Acceptance" means the letter of formal acceptance, signed by the Employer, of the Letter of Tender, including any annexed memoranda comprising agreements between and signed by both Parties. If there is no such letter of acceptance, the expression "Letter of Acceptance" means the Contract Agreement and the date of issuing or receiving the Letter of Acceptance means the date of signing the Contract Agreement.

1.1.1.4 "Letter of Tender" means the document entitled letter of tender or letter of bid, which was completed by the Contractor and includes the signed offer to the Employer for the Works.

1.1.1.5 "Specification" means the document entitled specification, as included in the Contract, and any additions and modifications to the specification in accordance with the Contract. Such document specifies the Works.

1.1.1.6 "Drawings" means the drawings of the Works, as included in the Contract, and any additional and modified drawings issued by (or on behalf of) the Employer in accordance with the Contract.

1.1.1.7 "Schedules" means the document(s) entitled schedules, completed by the Contractor and submitted with the Letter of Tender, as included in the Contract. Such document may include the Bill of Quantities, data, lists, and schedules of rates and/or prices.

1.1.1.8 "Tender" means the Letter of Tender and all other documents which the Contractor submitted with the Letter of Tender, as included in the Contract.

1.1.1.9 "Bill of Quantities", "Day work Schedule" and "Schedule of Payment Currencies" mean the documents so named (if any) which are comprised in the Schedules.

1.1.1.10 "Contract Data" means the pages completed by the Employer entitled contract data which constitute Part A of the Particular Conditions.

1.1.2

Parties and Persons

1.1.2.1 “Party” means the Employer or the Contractor, as the context requires.

1.1.2.2 “Employer” means the person named as employer in the Contract Data and the legal successors in title to this person.

1.1.2.3 “Contractor” means the person(s) named as contractor in the Letter of Tender accepted by the Employer and the legal successors in title to this person(s).

1.1.2.4 “Engineer” means the person appointed by the Employer to act as the Engineer for the purposes of the Contract and named in the Contract Data, or other person appointed from time to time by the Employer and notified to the Contractor under Sub-Clause 3.4 [Replacement of the Engineer].

1.1.2.5 “Contractor’s Representative” means the person named by the Contractor in the Contract or appointed from time to time by the Contractor under Sub-Clause 4.3 [Contractor’s Representative], who acts on behalf of the Contractor.

1.1.2.6 “Employer’s Personnel” means the Engineer, the assistants referred to in Sub-Clause 3.2 [Delegation by the Engineer] and all other staff, labor and other employees of the Engineer and of the Employer; and any other personnel notified to the Contractor, by the Employer or the Engineer, as Employer’s Personnel.

1.1.2.7 “Contractor’s Personnel” means the Contractor’s Representative and all personnel whom the Contractor utilizes on Site, who may include the staff, labor and other employees of the Contractor and of each Subcontractor; and any other personnel assisting the Contractor in the execution of the Works.

1.1.2.8 “Subcontractor” means any person named in the Contract as a subcontractor, or any person appointed as a subcontractor, for a part of the Works; and the legal successors in title to each of these persons.

1.1.2.9 “DB” means the person or three persons appointed under Sub-Clause 20.2 [Appointment of the Dispute Board] or Sub-Clause 20.3 [Failure to Agree on the Composition of the Dispute Board].

1.1.2.10 “FIDIC” means the Federation International des Ingénieurs-Conseils, the international federation of consulting engineers.

1.1.2.11 “Bank” means the financing institution (if any) named in the Contract Data.

1.1.2.12 “Borrower” means the person (if any) named as the borrower in the Contract Data.

1.1.3
Dates, Tests, Periods and Completion

1.1.3.1 “Base Date” means the date 28 days prior to the latest date for submission and completion of the Tender.

1.1.3.2 “Commencement Date” means the date notified under Sub-Clause 8.1 [Commencement of Works].

1.1.3.3 “Time for Completion” means the time for completing the Works or a Section (as the case may be) under Sub-Clause 8.2 [Time for Completion], as stated in the Contract

Data (with any extension under Sub-Clause 8.4 [Extension of Time for Completion]), calculated from the Commencement Date.

1.1.3.4 "Tests on Completion" means the tests which are specified in the Contract or agreed by both Parties or instructed as a Variation, and which are carried out under Clause 9 [Tests on Completion] before the Works or a Section (as the case may be) are taken over by the Employer.

1.1.3.5 "Taking-Over Certificate" means a certificate issued under Clause 10 [Employer's Taking Over].

1.1.3.6 "Tests after Completion" means the tests (if any) which are specified in the Contract and which are carried out in accordance with the Specification after the Works or a Section (as the case may be) are taken over by the Employer.

1.1.3.7 "Defects Notification Period" means the period for notifying defects in the Works or a Section (as the case may be) under Sub-Clause 11.1 [Completion of Outstanding Work and Remedying Defects], which extends over twelve months except if otherwise stated in the Contract Data (with any extension under Sub-Clause 11.3 [Extension of Defects Notification Period]), calculated from the date on which the Works or Section is completed as certified under Sub-Clause 10.1 [Taking Over of the Works and Sections].

1.1.3.8 "Performance Certificate" means the certificate issued under Sub-Clause 11.9 [Performance Certificate].

1.1.3.9 "Day" means a calendar day and "year" means 365 days.

1.1.4
Money and Payments

1.1.4.1 "Accepted Contract Amount" means the amount accepted in the Letter of Acceptance for the execution and completion of the Works and the remedying of any defects.

1.1.4.2 "Contract Price" means the price defined in Sub-Clause 14.1 [The Contract Price], and includes adjustments in accordance with the Contract.

1.1.4.3 "Cost" means all expenditure reasonably incurred (or to be incurred) by the Contractor, whether on or off the Site, including overhead and similar charges, but does not include profit.

1.1.4.4 "Final Payment Certificate" means the payment certificate issued under Sub-Clause 14.13 [Issue of Final Payment Certificate].

1.1.4.5 "Final Statement" means the statement defined in Sub-Clause 14.11 [Application for Final Payment Certificate].

1.1.4.6 "Foreign Currency" means a currency in which part (or all) of the Contract Price is payable, but not the Local Currency.

1.1.4.7 "Interim Payment Certificate" means a payment certificate issued under Clause 14 [Contract Price and Payment], other than the Final Payment Certificate.

1.1.4.8 "Local Currency" means the currency of the Country.

1.1.4.9 "Payment Certificate" means a payment certificate issued under Clause 14 [Contract Price and Payment].

1.1.4.10 “Provisional Sum” means a sum (if any) which is specified in the Contract as a provisional sum, for the execution of any part of the Works or for the supply of Plant, Materials or services under Sub-Clause 13.5 [Provisional Sums].

1.1.4.11 “Retention Money” means the accumulated retention moneys which the Employer retains under Sub-Clause 14.3 [Application for Interim Payment Certificates] and pays under Sub-Clause
.

1.1.4.12 “Statement” means a statement submitted by the Contractor as part of an application, under Clause 14 [Contract Price and Payment], for a payment certificate.

1.1.5
Works and Goods

1.1.5.1 “Contractor’s Equipment” means all apparatus, machinery, vehicles and other things required for the execution and completion of the Works and the Remedying of any defects. However, Contractor’s Equipment excludes Temporary Works, Employer’s Equipment (if any), Plant, Materials and any other things intended to form or forming part of the Permanent Works.

1.1.5.2 “Goods” means Contractor’s Equipment, Materials, Plant and Temporary Works, or any of them as appropriate.

1.1.5.3 “Materials” means things of all kinds (other than Plant) intended to form or forming part of the Permanent Works, including the supply-only materials (if any) to be supplied by the Contractor under the Contract.

1.1.5.4 “Permanent Works” means the permanent works to be executed by the Contractor under the Contract.

1.1.5.5 “Plant” means the apparatus, machinery and vehicles intended to form or forming part of the Permanent Works, including vehicles purchased for the Employer and relating to the construction or operation of the Works.

1.1.5.6 “Section” means a part of the Works specified in the Contract Data as a Section (if any).

1.1.5.7 “Temporary Works” means all temporary works of every kind (other than Contractor’s Equipment) required on Site for the execution and completion of the Permanent Works and the remedying of any defects.

1.1.5.8 “Works” mean the Permanent Works and the Temporary Works, or either of them as appropriate.

1.1.6
Other Definitions

1.1.6.1 “Contractor’s Documents” means the calculations, computer programs and other software, drawings, manuals, models and other documents of a technical nature (if any) supplied by the Contractor under the Contract.

1.1.6.2 “Country” means the country in which the Site (or most of it) is located, where the Permanent Works are to be executed.

1.1.6.3 “Employer’s Equipment” means the apparatus, machinery and vehicles (if any) made available by the Employer for the use of the Contractor in the execution of the Works, as stated in the Specification; but does not include Plant which has not been taken over by the Employer.

1.1.6.4 “Force Majeure” is defined in Clause 19 [Force Majeure].

1.1.6.5 “Laws” means all national (or state) legislation, statutes, ordinances and other laws, and regulations and by-laws of any legally constituted public authority.

1.1.6.6 “Performance Security” means the security (or securities, if any) under Sub-Clause 4.2 [Performance Security].

1.1.6.7 “Site” means the places where the Permanent Works are to be executed, including storage and working areas, and to which Plant and Materials are to be delivered, and any other places as may be specified in the Contract as forming part of the Site..

1.1.6.8 “Unforeseeable” means not reasonably foreseeable by an experienced contractor by the Base Date.

1.1.6.9 “Variation” means any change to the Works, which is instructed or approved as a variation under Clause 13 [Variations and Adjustments].

1.2

Interpretation

In the Contract, except where the context requires otherwise:

(a) words indicating one gender include all genders;
(b) words indicating the singular also include the plural and words indicating the plural also include the singular;
(c) provisions including the word “agree”, “agreed” or “agreement” require the agreement to be record in writing;
(d) “written” or “in writing” means hand-written, type-written, printed or electronically made, and resulting in a permanent record; and
(e) the word “tender” is synonymous with “bid”, and “tenderer” with “bidder” and the words “tender documents” with “bidding documents".

The marginal words and other headings shall not be taken into consideration in the interpretation of these Conditions.

In these Conditions, provisions including the expression “Cost plus profit” require this
profit to be one-twentieth (5%) of this Cost unless otherwise indicated in the Contract
Data.

1.3

Communications

Wherever these Conditions provide for the giving or issuing of approvals, certificates, consents, determinations, notices, requests and discharges, these communications
shall be:

(a) in writing and delivered by hand (against receipt), sent by mail or courier, or transmitted using any of the agreed systems of electronic transmission as stated in the Contract Data; and
(b) delivered, sent or transmitted to the address for the recipient’s communications as stated in the Contract Data. However:

(i) if the recipient gives notice of another address, communications shall thereafter be delivered accordingly; and
(ii) if the recipient has not stated otherwise when requesting an approval or consent, it may be sent to the address from which the request was issued.

Approvals, certificates, consents and determinations shall not be unreasonably withheld or delayed. When a certificate is issued to a Party, the certifier shall send a copy to the other Party. When a notice is issued to a Party, by the other Party or the Engineer, a copy shall be sent to the Engineer or the other Party, as the case may be.

1.4
Law and Language

The Contract shall be governed by the law of the country or other jurisdiction stated in the Contract Data.

The ruling language of the Contract shall be that stated in the Contract Data.

The language for communications shall be that stated in the Contract Data. If no language is stated there, the language for communications shall be the ruling language of the Contract.

1.5
Priority of Documents

The documents forming the Contract are to be taken as mutually explanatory of one another. For the purposes of interpretation, the priority of the documents shall be in accordance with the following sequence:

(a) the Contract Agreement (if any),
(b) the Letter of Acceptance,
(c) the Tender,
(d) the Particular Conditions - Part A,
(e) the Particular Conditions - Part B,
(f) these General Conditions,
(g) the Specification,
(h) the Drawings, and
(i) the Schedules and any other documents forming part of the Contract.

If an ambiguity or discrepancy is found in the documents, the Engineer shall issue any necessary clarification or instruction.

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PART II - SPECIAL /PARTICULAR CONDITIONS OF CONTRACT

1.1 Definitions

1.1.1.4 "Form of Bid" is synonymous with "Letter of Tender".

1.1.1.5 "Bid" is synonymous with "Tender".

1.1.1.10 "Bidding" is synonymous with "contract".

The following paragraph is added:

1.1.1.11"Programme" means the programme to be submitted by the contractor in accordance with Sub-Clause 8.3 and any approved revisions thereto.

1.12.2 "Employer" is synonymous with "Procuring Agency"

1.1.2.9 "DB" is synonymous with "Committee".

1.1.3.1 Replace 28 days by 7 days in LCB and 15 days in ICB..

1.1.3.7 "Defects notification Period" is synonymous with "Defects liability Period".

3.1 Engineer's Duties and Authority.

The following paragraph is added after duties:

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

4.3 Contractor's Representative

The following text is to be added after last line:

The contractor's authorized representative and his other professional engineers working at site shall register themselves with the Pakistan Engineering Council.

6.10 Records of Contractor's Personnel and Equipment

The following paragraph is added:

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

The following sub-clause 7.9 is added in (GCC):

7.9 Use of Pakistani Materials and Services

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

8.1 Commencement of Works

The last para is deleted and substituted with the following:

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

8.11 Prolonged Suspension Replace 84 days by 120 days.

8.3 Programme

The following text is to be added after [Commencement of Works]
The programme shall be submitted in the either form of:

a) Bar Chart identifying the critical activities.
b) Critical Path Method (CPM) identifying the critical path/activities.
c) Program Evaluation and Review Techniques (PERT).
(Procuring Agency to select appropriate one)

13.1 Right to vary

In the last line of Para, after the word "Variation", the word "in writing" is added.

13.3 Variation procedure

In the tenth line, after the words "as soon as practicable" following is added: "and within a period not exceeding one-eighth of the completion time"

13.8 Adjustment for changes in cost

This clause will be applicable for Foreign funded Project/ Schemes or ICB Contracts (locally & foreign funded) only.

The following provision is added for Local funded Project/ Schemes/National Competitive Bidding Contracts:

The amounts payable to the Contractor, pursuant to Sub-Clause 14.6, shall be adjusted in respect of the rise or fall in the cost of materials only, and will be paid to the contractor on those items mentioned in the **Appendix –C (B)**.

Similarly reduction in the cost of these materials will also be recovered from the contractor accordingly

14.1 The Contract Price Sub-para (d) is deleted.

14.2 Advance Payment

The Text is deleted and replaced with following:

Advance Payment/Mobilization Advance shall be made available to the Contractor by the procuring agency on following conditions:

Mobilization Advance/Advance Payment

(i) Mobilization advance up to 10 % of the Contract Price may be paid by the procuring agency to the Contractor on the works costing Rs2.5 million or above on following conditions:

a. on submission by the Contractor of a mobilization advance guarantee for the full amount of the advance in the specified form, from a Scheduled Bank in Pakistan, acceptable to the procuring agency;
b. This Advance [XXX] shall be recovered in 5 equal installments from the 5 R.A bills and in case the number of bills is less than 5 then 1/5 of the advance [XXX] shall be recovered from each bill and the balance [XXX] be recovered from the final bill. It may be insured that there is sufficient amount in the final bill to enable recovery of the Mobilization Advance.

14.5 Plants and Materials intended for Works

Add the following paragraph as sub-clause 14.5 (d) for Secured Advance on non – perishable materials and sub-clauses (a), (b) and (c) will be applicable for plants only :-

(I) The Contractor shall be entitled to receive from the procuring agency Secured Advance against an INDENTURE BOND in Public Works Account Form No.31 (Fin. R. Form No. 2) acceptable to the procuring agency of such sum as the Engineer may consider proper in respect of non-perishable materials brought at the site but not yet incorporated in the Permanent Works provided that:

(i) The materials are in accordance with the specifications for the permanent works;

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

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

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

(v) Ownership of such materials shall be deemed to vest in the procuring agency and these materials shall not be removed from the site or otherwise disposed of without written permission of the procuring agency;

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

(vii) Secured Advance shall not be allowed unless and until the previous advance, if any, is fully recovered;

(viii) Detailed account of advances must be kept in part II of running account bill or a separate statement; and

(ix) Secured Advance may be permitted only against materials/quantities anticipated to be consumed / utilized on the work within a period of 3 months from the date of issue of secured advance and in no case for full quantities of materials for the entire work/contract.

(II) Recovery of Secured Advance:

Secured Advance paid on non-perishable materials to the Contractor under the above provisions shall be effected from the monthly payments on actual consumption basis, but not later than period specified in the rules not more than three months (even if unutilized);

14.8 **Delayed Payment**

Second Para is replaced with following text:

In the event of the failure of the Procuring Agency to make the payment within the time stated, the procuring agency shall pay to the contractor in case of **ICB contracts only,** the compensation at rate of KIBOR+2% per annum in local currency and Libor+1% for foreign currency, Libor all sums to be paid from the date of which the same would have been paid.

DELETED / NOT USED

14.9 Performance Money will be paid back after completion of defect liability period.

15.2 *The following Para is added at the end of the sub-clause:*

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

15.6 **Corrupt and fraudulent Practices.**

The following text is to be added as 3rd paragraph:

Successful Contractor has to provide Integrity Pact (for contracts worth Rs.10.0 million and above).

If the Contractor or any of his Subcontractors, agents or servants is found to have violated or involved in violation of the Integrity Pact signed by the Contractor as Appendix-L to his Bid, then the procuring agency shall be entitled to:

(a) recover from the Contractor an amount equivalent to ten times the sum of any commission, gratification, bribe, finder's fee or kickback given by the Contractor or any of his Subcontractors, agents or servants;

(b) terminate the Contract; and

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

The termination under sub-para (b) of this Sub-Clause shall proceed in the manner prescribed under sub-clauses **15.2** & 15.5 and the payment under Sub-Clause 15.4 shall be made after having deducted the amounts due to the procuring agency under Sub-Para (a) and (c) of this Sub-Clause.

16.4 **Payment on Termination**

Sub-paragraph (c) is deleted.

17.3 **Employer's/ Procuring Agency's Risks**

Sub-Clause 17.3 (h) is deleted.

The following text is added in Clause 18.1 (GCC):

18.1 **General Requirements for Insurance**

The contractor shall be obliged to place all insurances relating to the contract (including, but not limited to, the insurances referred to in Clauses 18.1,18.2,18.3,18.4) with Insurance

Company having at least AAA rating from PACRA/JCR in favor of the Employer//Procuring Agency valid for a period 28 days after beyond the Bid Validity date.
Costs of such insurances shall be borne by the contractor.

19.6 Optional Termination, Payment and release by the Employer

Sub-clauses (c), (d) and (e) are deleted.

20.6 Arbitration

Text will be replaced as under;

any dispute in respect of which:

(a) the decision, of the Dispute Board has not become final and binding pursuant to sub-clause 20.2, and

(b) amicable settlement has not been reached within the period stated in sub-clause 20.5, shall be finally settled, under the provisions of the Arbitration Act, 1940 as amended or any statutory modification/Rules of Conciliation And Arbitration PEC Islamabad or re-enactment thereof for the time being in force.

PART II –SPECIAL/PARTICULAR CONDITIONS OF CONTRACT

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SPECIFICATIONS

GENERAL

Introduction

1. 1.1 General

The General Conditions of Contract & Special Conditions of Contract shall form an integral part of these General Requirements.

The Constructor shall notify all sub-Constructor of the provisions of the Conditions of Contract and the General Requirement of this Specification.

The arrangement and divisions of these Specifications is not to be construed as establishing the limits of responsibility of sub-trades.

The Constructor is responsible for delineating the scope of Sub-Contracts and for coordinating all the Works.

All works shall be carried out in accordance with the following specifications, supplemented by detailed specifications contained in the following sections. Any inconsistencies or ambiguities shall be brought to the notice of the Engineer for his clarification/decision. Decision and direction of the Engineer, in all such cases shall be final and binding.

The Constructor shall make himself thoroughly familiar with the site conditions, foresee any and all problems likely to the encountered during execution of the works, and shall be able and ready to solve them effectively. Proposals for solutions to the problems shall be submitted to the Consultant / Engineer In Charge/Engineer In-charge for approval before proceeding with the work.

The Tender Drawings, Design Criteria and Specifications are to be read in conjunction and shall be mutually explanatory. In case of any conflict the order of preference shall be as under duly followed by the Special and General Conditions of Contract in Volume I of Tender & Contract documents.

i) Specifications
ii) Tender Drawings
iii) Bill of Quantities

2. Scope of Work

The scope of work comprises "**REHABILITATION / CONSTRUCTION OF ROADS IN SITE INDUSTRIAL KARACHI"** as per drawings and specification as defined hereunder and as specified in subsequent sections of tender documents. The Constructor shall perform all relevant engineering, procurement, installation, construction and execution, coordination with other services, testing and commissioning including all documentation, drawings, calculations and supply of manuals as required completing the work. The Constructor shall also be responsible to supply and install all other items not specifically mentioned in these documents but which are necessary for proper completion of the works included in the scope of this Contract.

3. Applicable Codes and Standards

In the absence of other Standards being required by the Contract Documents, all work and materials shall meet the requirement of the Uniform Building Code of the United States, and/or applicable American Society for Testing Materials (ASTM) American Association of State Highway and Transportation Officials (AASHTO) Specifications and the latest American Concrete Institute Manual of Concrete Practice and American.

Institute of Steel Construction (AISC) Manual relevant to the Works except in cases where the Pakistan Building Code requires s higher standard. In such cases the Pakistani Code shall govern, where the abbreviations listed below are used, it refers to the latest code, standards, or publications of

the following organizations:

AASHTO	American Association of State Highway and Transportation Officials.
ACI	American Concrete Institute
AISC	American Institute of Steel Construction
ANSI	American National Standards Institute
ASA	American Standard Association
ASCE	American Society of Civil Engineers
ASTM	American Society for Testing and Material
AWS	American Welding Society
BSI	British Standards Institute
ICAO	International Civil Aviation Organization
BSICP	British Standard Institute Code of
PCA	Practice Portland cement Association
PSI	Pakistan Standard Institute
UBC	Uniform Building Code

Should the Constructor, at any time and for any specific reasons, wish to deviate from the above standards or desires to use materials or equipment other than those provided for by the above standards, then he shall state the exact nature of the change giving the reasons for making the change and shall submit complete specifications of the materials and descriptions of the equipment for the Engineer's approval, whose decisions shall be conclusive and binding upon the Constructor.

4. Codes, Standards, Certificates

The Constructor shall supply and have at his site office:

Copies of all latest editions of codes and standards referred to in these specifications by number, or equivalent codes and standards approved by the Engineer.

Catalogues and published, recommendations from manufacturers supplying products and materials for the project.

The Constructor shall provide manufacturer's or supplier's certificates to the Engineer for all products and materials which must meet the requirements of a specific code or standard as stated in these Specifications.

5. Units of Measurements

The British System of Units (FPS) shall be used throughout this Project.

6. Manufacturer's Recommendations

Installation of manufactured items shall be in accordance with procedures recommended by the manufacturer or as approved by the Engineer.

7. Existing Condition at Site

Drawings and information pertaining to existing project conditions are furnished for reference. Neither the Employer nor the Engineer warrants the adequacy or correctness of these.

8. Protection and Precautions

The Constructor and his sub-Constructor shall afford all necessary protection to existing structures and will be required to make good at his own expense any damage done to such structures through his own or his representatives or sub Constructor' fault and negligence.

The Constructor and his sub-Constructor shall afford all necessary protection to existing roads in the area. He will clear and make good at his own expense any damage to or debris on these roads through his own fault and negligence. He must at all-time ensure the free and normal flow of traffic and shall not cause obstruction to the traffic system. The Constructor and his sub-Constructor shall provide and maintain necessary protection and precautionary measures such as warning signs, warning lamps and barricades etc. to prevent accidents.

The Constructor shall promptly correct all such damage to original condition at no additional expense to the Employer.

The Constructor shall cooperate with trades performing work under other Contracts as necessary for completion.

9. Setting Out of Work

Establish all boundaries, markers, leveling stakes and benchmarks on the site to adequately set out all work. Verify all data and their relationship to establish and Engineer's survey control points and public benchmarks and report discrepancies to the Engineer.

Permanently mark the necessary controls for distance and elevation sufficient to serve throughout the Contract and protect these control points adequately against damage and displacement.

Project setting out is for the use of all trades; each trade is responsible for the layout of its own work.

10. Sequence of Construction

The Constructor shall submit his proposal for approval of the Engineer the sequence of Construction, prior to starting the works. The works shall be executed as per approved sequence of construction.

11. Lines and Levels

Survey control points will be established by' the Engineer. The Constructor shall be responsible for verifying these and shall be responsible for all requirements necessary for the execution of any work to the locations, lines, and levels specified or shown on the drawings, subject to such modifications as the Engineer may require as work progresses.

12. Partial Possession

Whenever, as determined by the Employer any portion of work performed by the Constructor is in a condition suitable for use, the Employer may take possession of or use such portion.

Such use by the Employer shall in no instance be construed as constituting final acceptance, and shall neither relieve the Constructor of any of his responsibilities under the Contract, nor acts a waiver by the Employer of any of the conditions thereof, provided that the Constructor shall not be liable for the cost of repairs, re-work, or renewals which may be required due to ordinary wear and tear resulting from such use. However, if such use increases the cost or delays to the completion of remaining portions of work, the Constructor will be entitled to an equitable adjustment.

If, as a result of the Constructor's failure to comply with the provision of the Contract, such use proves to be unsatisfactory, the Consultant / Engineer In Charge/E will have the right to continue such use until such portion of the work can, without injury to the Consultant / Engineer In Charge, be taken out of service for correction of defects, errors, omissions, or replacement of unsatisfactory

materials or equipment, as necessary for such work to comply with the Contract; provided that the period of such operation or pending completion of appropriate remedial action shall not exceed twelve months unless otherwise mutually agreed upon in writing between the parties.

13. Existing Services

The Constructor shall search for, find locate and protect any visible/un visible wiring, cable, duct, pipe work, etc., within or immediately adjoining the site area.

The Constructor shall take full responsibly for safety of existing service lines, utilities and utility structures uncovered or encountered during excavation, dismantling and construction operations.

The Constructor shall take full responsibility for damaging any such service lines, utility/utility structure and any cost and/or expense that arises or issues from any such damage shall be borne directly by himself. Should any damage to any such service occur the Constructor shall forthwith take remedial action, initiate safety precautions, install temporary services and carryout repair all at his own cost and expense and inform the Engineer and notify all relevant authorities.

Existing utilities which are to remain in service or after the works are to be determined by the Constructor. If any existing service lines, utilities and utility structures which are to remain in service are uncovered or encountered during these operations, they shall be safeguarded, protected from damage, and supported.

14. Plant and Equipment

The Constructor shall submit a detailed list of plant and equipment, which he shall undertake to bring to the site to carry out the work. The list shall satisfy the Engineer as to type, size and quantity. The list shall include for each piece of equipment the type, manufacturer, model, identification number and year of manufacture. The Constructor shall provide on the site of the work at his cost all of the equipment listed and all subsequent equipment required for approval of the detailed program of work and such equipment which may be directed by the Engineer. The Constructor shall supply all plant and equipment necessary for the construction of each phase of the work and it must be on site, inspected and approved by the Engineer.

15. Construction Area and Access

The Constructor shall confine his operations to the areas that are actually required for the Works and shall fence the area accordingly Arrangements for access roads, storage areas and routes for haulage of materials are to be made by the Constructor at his own cost, subject to the approval of the Engineer.

16. Storage & Handling Facilities

The Employer will provide the Constructor possible space within or nearby the area of site of works for the storage of plant, equipment and materials and for Constructor's temporary office, during the currency of the Contract. In case the adjacent area as required by the Constructor is not available within the Project boundary for storage of plant, equipment and machines then the Constructor shall arrange at his own expense possible space for storage of plant, equipment and machines at his own cost and expense. On no account shall such temporary installations conflict/ interfere with any of the permanent installations, services and any operational function of Employer. The handling and storage of all plants, equipment and materials at site shall be the sole responsibility of the Constructor and at no risk and cost to the Employer.

The Constructor shall protect all material against corrosion, mechanical damage or deterioration during storage and erection on site. The protection methods shall be to the approval of the Engineer.

17. Test Laboratory and Testing

17.1 GENERAL

The Contractor shall provide and maintain a field laboratory equipped with approved equipment to perform all the tests required by the Engineer. The quality control testing and quality control programmer to be established by the Contractor and approved by the Engineer. The Engineer may however, require certain test to be perform in any other laboratory designated by him.

The Contractor shall provide laboratory helpers to Engineer for testing. The laboratory shall be run by a qualified material Engineer and Laboratory Technician to be employed by the Contractor with the approval of the Consultant.
The field Laboratory, including all equipment and staff shall be placed at the disposal and direction of the Engineer during the Contract.

The Contractor shall keep a complete record of all quality test perform on Site.

All quality control and test shall be carried out in accordance with applicable with applicable standards and codes.

17.2 Files Laboratory Equipment Requirements.

The laboratory shall be equipped with new unused and latest equipment to perform test as per technical specifications and General Conditions of contact. Additional equipment/materials shall be supplied by the Contractors as and when required by the Engineer to perform any specified any test, at no additional cost of the employer.

The Laboratory shall also be equipped with new unused furniture, fitting and fixtures. If any equipment, furniture, fitting or fixture becomes unserviceable for any reason what so ever, the Contactor shall promptly replace the same as an when directed by the Engineer.

17.3 Method of Payment.

The cost of providing running and maintenance of the laboratory, equipment, materials and staff, testing charges of material supplied and all other tests to be performed in any other laboratory designated by the Engineer shall be deemed to be included in the price quoted by the Contactor and no separate claim for payment on this account shall be entertained by the Engineer.
In case the Contractors does not provide the specified equipment and testing facility, cost of testing plus 100% overheads shall be recovered from his bill.

18 Construction & Checking At Site

The Constructor shall submit to the Engineer in due time for approval and discussion, his proposals and plans as to the method and procedure to be adopted for the temporary and permanent works involved.

The submitting to these suggestions and arrangements, and the approval thereof by the Engineer shall not relieve the Constructor of his responsibilities and duties under the Contract.

The carrying out of all work included In the Contract is to be supervised by a sufficient number of qualified representatives of the Constructor and full facilities and assistance are to be afforded by the Constructor for the Engineer or his Representative to check & examine the execution of the work.

The Engineer reserves the right to inspect all parts of the works but may at his discretion waive

inspection on certain items. This shall in no way absolve the Constructor from his responsibilities. This particularly applies to the checking of materials, the accurate setting out of foundations, and to the leveling, setting and aligning of the various parts, and to the proper fitting and adjustment of manufactured and finished materials and fixtures in position.

If the Engineer or his Representative find that the work progress is slow in such a way that the works or parts thereof will not be completed in the time specified, then he shall order the Constructor to work overtime or in shifts and the Constructor shall comply. These arrangements will be free of all financial encumbrances and at no additional costs to the Employer.

In the event of night work, the Constructor shall provide sufficient and adequate lighting to the satisfaction of the Engineer or his Representative and shall supply the necessary manpower for satisfactory continuation of the work after normal hours.

19 Bar Bending Schedule

Bar bending (reinforcement bars) schedule of all drawings shall be prepared by the Constructor and submitted to Consultant / Engineer In Charges' Head Office for approval. The approved bar bending scheduled shall be followed for cutting of steel and preparation of bills.

20 Drawings

20.1 Tender Drawings: The drawings listed in the General Conditions of contract, Volume I and provided in Volume III are referred to as Tender Drawings and these show the scope of work to be performed by the Constructor. Tender Drawings shall not be used as a basis for fabrication or construction but may be used as a basis for placing preliminary order for materials, subject to corrections based on the future issue of Drawings as provided under sub-clause 19.2 Drawings Issued for Construction. Tender Drawings are subject to be modified and supplemented by additional detail by the Engineer.

20.2 Drawings Issued for Construction: After Award of Contract, Tender Drawings shall be replaced by Drawings Issued for Construction including supplementary Specifications as may be necessary. Such drawings and specifications shall be construed to be included in the expression Custody of Drawings under Sub-Clause 6.1 of General Conditions of Contract Part I. Drawings Issued for Construction may include some of the Tender Drawings with or without modification and additional drawings as required to express design intent in greater detail. Such drawings may also be modified from time to time. Drawings Issued for Construction will be the drawings from which shop, fabrication, erection installation, concrete placing, formwork, or other construction detail drawings shall be prepared by the Constructor. The work shall be executed in conformity with Drawings Issued for Construction. The Constructor shall prepare a schedule of Drawings Issued for Construction of various parts of the Works based on Construction program approved by the Engineer for issuance to the Constructor from time to time.

20.3 Study of Drawings: The Constructor shall study all Drawings Issued for Construction carefully as soon as practicable after receipt thereof, and any errors discovered shall promptly be brought to the knowledge of the Engineer for his instructions.

20.4 Copies of Drawing: Drawings will be issued to the Constructor free of charge as follows:

Drawings Issued for Construction - Two copies as specified in sub-clause 6.1 Custody of Drawings, of General Conditions of Contract - Part I Volume I.

20.5 Drawings to be furnished by the Constructor:

Shop Drawings

All shop drawings required for the work including all kinds of fabrication, field erection,

installation, placement and layout drawings shall be furnished by the Constructor for approval of the Engineer. If additional detail drawings are necessary to complete any part of the work, such including reinforcing steel, drawings shall be prepared by the Constructor and submitted to the Engineer. for approval. All drawings shall be complete and shall be submitted in due time and in logical order to facilitate proper coordination.

a. Lift and placement Drawings.

At least thirty calendar. Days prior to starting construction of any concrete lift or other placement, the Constructor shall submit lift or other placement drawings to the Engineer for approval. Lift or other placement drawings shall be submitted for each lift or other placement of concrete to be placed. These drawings shall be to such scale as to clearly show all recesses, openings, and embedded parts, including embedded structural steel, mechanical and electrical items, reinforcement placement in each lift in sufficient detail for proper execution of the work.

b. Construction Plant Layout Drawings.

Three prints of drawings, showing the layout of construction plant and equipment the Constructor proposes to use on the work, shall be submitted by the Constructor for review to the Engineer. The drawings shall show the locations of the principal components of the construction plant, offices, storage areas and yards which the Constructor proposes to construct or use at the site of the work and elsewhere. The drawings shall also show the unloading facilities for materials and equipment at the work site.

c. Submissions and Approvals:

Except as otherwise specified, three copies of each drawing for approval or review shall be furnished to the Consultant / Engineer In Charge. Within thirty calendar days after receipt the Consultant / Engineer In Charge will send one copy to the Constructor marked Approved, Approved/Except as Noted, or Returned for Correction. The notations approved and approved/except as Noted will authorize the Constructor to proceed with the fabrication of the materials and equipment covered by such drawings subject to the corrections, if any, indicated thereon. Drawings returned for correction will be resubmitted for approval in the same manner as for new drawings. Every revision made during the life of the Contract shall be shown by number, date and subject in a revision block.

Upon receipt of prints which have been Approved or Approved Except as Noted, the Constructor shall furnish three prints plus one reproducible of each drawing to the Engineer. If revisions are made after a drawing has been approved, the Constructor shall furnish 3 additional prints and one reproducible subsequent to each approved revision.

d. Shop drawings to be prepared by a Sub-Constructor shall be submitted in the same manner as (a) & (b) above but they will be submitted through the Constructor.

e. All of the applicable requirements of this Clause with reference to drawings to be prepared by the Constructor, including Sub Constructor, shall apply equally to catalogue cuts, illustrations, printed specifications, or other data submitted for approval.

f. Any work done on Constructor's drawings shall be at the Constructor's risk. The Engineer will have the right to request any additional details and to require the Constructor to make any changes in the drawings which are necessary to conform to the provisions and intent of design and specifications without additional cost to the Employer. The approval of the drawings by the Consultant / Engineer In Charge shall not be construed as a complete check but will indicate only that the general method of construction and detailing is satisfactory. Approval by the· Engineer of the Constructor's drawings shall not be held to relieve the Constructor of his obligation to meet all the requirements of the Specifications or of his responsibility for the correctness of the Constructor's drawings or of his responsibility for correct fit of assembled parts in final position or of his·

responsibility for the adequacy of method of construction.

21 As-Built Drawings

The Constructor shall, at all times, keep on the site one copy of all drawings and approved samples together with copies of all building, mechanical, electrical and public safety codes and relevant standards applicable to the works. All such material shall be made available to the Engineer.

In addition, the Constructor shall, at all times, keep on site a separate set of prints on which shall be noted neatly, accurately and promptly as the work progresses all significant changes between the work shown on the drawings and that which is actually constructed. The sub-Constructor shall each keep on site, at all times, a separate set of prints of the drawings showing their parts of the work on which shall be noted, neatly accurately and promptly as work progresses the exact physical location and configuration of the works as actually installed, including any revisions or deviation from the Contract Documents.

At the completion of the works, the Constructor shall at his expense, supply to the Engineer six copies and one reproducible copy of all drawings along with CD containing all as built drawings amended to comply with the work "As Built". The Constructor shall provide in the same format as the original drawings, any additional drawing required to record the work.

22 Restoration and Cleaning

The Constructor shall do regular cleaning and clean away all rubbish and excess materials that may accumulate from time to time on completion and before handing over. Upon completion of the works he shall obliterate all signs of temporary construction facilities such as work areas, structures, foundations of temporary structures, stock piles of excess or waste materials, or any other vestiges of construction, unless otherwise directed by the Consultant / Engineer In Charge/Engineer In charge. The works and site shall be left in a clean and satisfactory state for immediate use and occupation. Care shall be taken not to use any cleaning materials which may cause damage to the surface to be cleaned.

23 Protection of the Works

The Constructor shall whenever necessary cover up and protect the works from Weather damage by his own or other workmen performing subsequent operation. He shall provide all necessary dust sheets, barriers and guard rails and clear away the same at completion.

The Constructor shall take all proper steps for protection at all places on or about the works which may be dangerous to his workmen or any other person or to traffic. The Constructor shall provide and maintain warning signs, warning lamps and barricades as necessary.

24 Product Data

Manufacture's standard schematic drawings shall be modified or deleted to indicate only information which is applicable to the project. Such standard information shall be supplemented to provide all additional applicable information.

Manufacturer's catalogue sheets, brochures, diagrams, schedules, performance charts, illustrations and other standard descriptive literature shall be clearly marked to identify pertinent materials products or models. Dimensions and required clearances shall be indicated. Shop performance characteristics and capacities shall be noted.

25 Samples

25.2 The Constructor shall furnish for approval of the Engineer with reasonable Promptness all

samples as directed by the Consultant / Engineer In Charge or specifically called for in these Specifications. The Consultant / Engineer In Charge shall check and approve such samples with reasonable promptness for compliance with the requirements of Contract Documents. All work shall be in accordance with approved samples.

25.3 Duplicate final approved samples, in addition to any required for the Constructor's use, shall be furnished to the Consultant / Engineer In Charge, one for office use and the other for the Site.

25.4 Samples shall be furnished so as not to delay fabrication, allowing the Consultant / Engineer In Charge/Engineer In charge reasonable time for consideration of the sample' submitted.

25.5 Each sample shall be properly labeled with the name and quality of the material, manufacturers name, name of the project, the Constructor's name and the date of submission, and the Specifications Article number to which the sample refers.

25.6 The manufacturer's installation directions shall be provided with each sample. The Constructor shall pay all transportation costs and deliver samples to the Engineer's office &Consultant / Engineer In Charges' Head office, Site or testing laboratory as directed by the Engineer. Samples will not be returned unless return is requested at the time of submission; all packing and transportation costs for the return of samples shall be paid by the Constructor.

25.7 Samples shall be of adequate size and number to permit proper evaluation of the material by the Consultant / Engineer In Charge/Engineer In charge. Where variations in color, texture, dimensions or other characteristics are to be expected, the Constructor shall submit samples showing the maximum range of variation. Materials exceeding the range of variation of the approved samples shall not be used on the Work.

25.8 If both Shop Drawings and samples are required for the same item, the Consultant / Engineer In Charge/Engineer In charge may require both to be submitted before approving either, 25.7 No acceptance or approval of any Shop Drawings or sample, or any indication or directions by the Engineer on any Shop Drawings shall constitute an authorization for any increase in the Contract Sum.

In the event that the site cannot be connected to a local electricity network or where the available power is insufficient the Constructor has to make his own provision and maintain such installation.

A temporary lighting system shall be furnished, installed and maintained by the Constructor as required to satisfy the minimum requirements for safety and security. The temporary lighting system shall afford adequate general illumination to all building areas. Adequate outdoor lighting shall be provided to illuminate staging trenches and the like to the satisfaction of the Engineer In charge and general illumination throughout adequate for watchmen and emergency personnel. .

Temporary equipment and wiring for power and lighting shall be in· accordance with the applicable provisions of governing codes. Temporary wiring shall be maintained in a safe manner and utilized so as not to constitute a hazard to persons or property.

When the permanent electrical power and lighting systems are in an operating condition, they may be used for temporary power and lighting for construction purposes provided that the Constructor obtains the written approval of the Client and assumes full responsibility for the entire power and lighting system and pays all charges/costs for operation and maintenance of the system mutually agreed between the Employer and the Constructor.

Approval, license etc. if required under local laws will be obtained by the Constructor on his own responsibility and cost.

At completion of construction work, or at such time as the Constructor makes use of permanent electrical equipment and devices, temporary electricity services shall be removed by the Constructor as his own expense.

25.6.1 Waste Disposal

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

25.6.2 Fire Protection

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

Gasoline and other flammable liquids shall be stored in and dispensed from safety containers approved by the Engineer In charge and storage shall not be within building.

Torch-cutting and welding operations performed by the Constructor shall have the approval of the Engineer In charge before such work is started and a chemical extinguisher is to be available at the location where such work is in progress.

The Constructor shall follow the instructions and specifications of the relevant department and or other local authority.

25.6.3 Telephone

The Constructor shall immediately after receiving the Letter of Acceptance take the necessary steps to obtain mobile and land line telephone on site. He shall be responsible for all installation and connection charges and periodic mobile and landline telephone accounts. The telephone shall be made available to the Engineer for the due performance of his duties at all times and free of charges during construction and defects liability period.

26 Construction Schedule

A Construction schedule shall be maintained in accordance with the provisions of the General Conditions of Contract.

The schedule shall be accompanied with sufficient data and information including all necessary particulars of constructional plant, equipment machinery, temporary Works, arrival of plant, equipment at site and their installation, method of operation, work forces employed, etc., for an activities of the Works.

Should the Consultant / Engineer In Charge / Engineer consider any alteration or addition in the program and time schedule, the Constructor shall conform thereto without any cost to the Employer.

Whenever necessary and wherever the progress of the actual work shows departure, the program and time schedule shall be undated and submitted to the Consultant / Engineer In Charge/Engineer In charge for his approval.

27 Night Work

When work is done at night the Constructor shall maintain from sunset to sunrise such lights on or about his work and plant as the Engineer may deem necessary for the proper observations of the work

and the efficient prosecution hereof.

28 Weather

No work is to be undertaken when, in the opinion of the Engineer, the weather is so unsuitable that proper protection of the work cannot be ensured.

29 Co-Ordination with Other Constructor

The Constructor shall make all necessary coordination with other Constructor and shall make sure that all embedding components such as pipes, steel bases etc. (as required for completion of electrical works) are properly, accurately and timely installed. The Constructor shall inform the other Constructor· the schedule of any construction activity well in advance giving him sufficient time to finish his part of job, before any compaction/concreting etc. The Constructor shall get the signature of the authorized representation of the other Constructor before carrying out any construction activity.

If any part of electrical work is damaged or has to be dismantled or redone due to negligence omissions / incorrect position of the embedding etc. on part of the Constructor, all such losses/expensed shall be borne by the Constructor.

All expenses incurred for the above works including coordination are deemed to be covered in his tendered cost and no separate/extra payment shall be paid against such item.

30 Submission Requirements

30.2 Schedule submission at least sixty days before the dates when reviewed submittals will be needed.

30.3 Submit Shop Drawings as per provision given in Sub-Clause 20.5 (a) and number of copies of Product Data which the Constructor requires for distribution plus four copies which will be retained by the Engineer.

30.4 Submit three samples unless otherwise specified.

30.5 Accompany submittals with transmittal letter, in duplicate, containing: Date Project title and number Constructor's name and address The number of each Shop Drawing, Product Data and the Sample submitted. Notification of deviations from Contract Documents. Other pertinent data.

31 Resubmission Requirements Shop Drawings:

Revise initial drawings as required and resubmit as specified for initial submittal. Indicate on drawings any changes which have been made by the Engineer. Product Data and Samples: Submit new data and samples as required for initial submittal.

32 Survey Instruments

All the instruments, equipment, stakes and other material necessary to perform all work shall be provided by the Constructor. The survey work shall be carried out by competent staff consistent with the current practices. The Constructor shall maintain on site surveying instruments in perfect working conditions to enable the Engineer to check lines and level at all times.

Survey instruments and equipment shall include but not limit to the following:

Electronic Total Station

Laser Meter

Precision Level invert Staff

Automatic Levels

Power level

Compass, steel tape, ranging poles

33 Weekly Progress Report and Photographs

33.2 During the continuance of the Contract, the Constructor shall submit weekly progress reports on forms as approved by the Consultant / Engineer In Charge. Such weekly reports shall show the actual progress completed as of date of the report plotted against the schedule as given by the Constructor at the start of work and shall be broken down so as to indicate status of all activities associated - with mobilization design, material procurement, manufacture, surveys works, tests with regard to the agreed contract program.

33.3 The Employer and the Engineer reserve the right to coordinate the schedules of this Constructor and other Constructor working at the Site, and to adjust and/or change any and all such schedules as required during the course of construction in order to achieve a coordinated project in harmony with the Employer’s completion date.

33.4 Commencing after the first week of construction, and continuing every week until completion, the Constructor shall take and submit photographs to the Engineer's Representative, to show progress of his work and completion of each structure or major feature.

34 Constructor to Notify Delays Etc.

Any delay which will affect the completion of Works shall be detailed by the Constructor who shall state the action he is taking for effective completion of the Contract program.

The Constructor shall submit a report in respect of the various sections of the Works, the equipment in use or held in readiness, 'a return of labor and supervisory staff, and details of any matters arising which may generally affect the progress of the work.

The Constructor shall give a summary of the detailed progress report giving the position with regard to the agreed Contract program.

The progress reports shall be set out in a format to the approval of the Consultant / Engineer In Charge, and forwarded promptly so that on receipt the information contained therein is not more than 21 days out of date.

If during execution of the Contract, the Employer considers the progress position of any section of the work to be unsatisfactory, or for any other reason relating to the Contract, he will be at liberty to convene a meeting and the Constructor's Representatives are to attend such meeting.

The Constructor's Site Office shall prepare and submit 6 copies of a weekly progress report to the Employer and Engineer's Site Office. This report shall summarize site activities and record and details where difficulties in maintaining the agreed program are being experienced or are likely to cause subsequent delay.

The Constructor's Site Office shall also prepare and submit to the Engineer's Site Office 2 copies of Daily Activity Report summarizing the main activities to be undertaken each day, noting special activities such a tests, alignment checks, etc. The Constructor shall be responsible for expediting the delivery of all material and equipment to be provided by him and his sub Constructor.

35 Photographs

As soon as work commences on Site, the Constructor shall provide photographs (at least 10 to 12) of the works from positions to be selected by the Engineer. Each photographic print shall not be less

than 297 mm x 210 mm and shall bear a printed description, a serial number and the date when taken.

The negatives of all photographs shall be held at the Constructor's Site Office, numbered and handed over to the Employer at the completion of the Contract.

36 Facilities for the Engineer

36.1 Site Office

The Constructor shall construct, provide and maintain Consultant / Engineer In Charge's Site Office of about 60 - 80 square meter covered area as per the specifications. A preliminary layout of the site office shall be provided by the Consultant / Engineer In Charge. After receiving letter of award the Constructor will submit to the Engineer detailed shop drawings for review and approval. Specifications for construction of site office shall be the same as provided in Volume-II of the tender documents.

The Consultant / Engineer In Charge's site office shall be furnished and equipped with new and unused furniture, equipment, air-conditioners, electrical fittings etc., as per the list given below:

1	Wooden office table with drawers and side racks	4 (Four) No.
2	Office Chairs	4 (Four) No.
3	Wooden sitting visitors chairs with arms (standard size)	10 (Ten) No.
4	Steel filing cabinet (standard size)	4 (Four) No.
5	Split type (1-1/2 ton)	2 (Two) No.
6	Electric Kettle	01 (One) No.
7	Laptop Core i9, 9th generation 8gb ram, 500Gb Hard Disk (Samsung, Dell or Hp).	03 (Three) No.
8	Internet DSL Facility (ZONG 4G / EVO or equivalent)	1 (One) No.
9	Black and white photocopier (Printer A3)	02 (Two) No.
10	Conference Table (3.0 meter x 1.2 meter) & chairs 12Nos.	1 (One) set.

Mobile or Landline Telephone with connections1 (One) No. Each Engineer. The Constructor shall furnish Rupees 1500/= per month to the Engineer for the Mobile Cards.

If any equipment, furniture and installations become unserviceable for any reason whatsoever the Constructor shall promptly replace the same as and when directed by the Consultant / Engineer In Charge. The Consultant / Engineer In Charge’s Site office with fittings, fixtures and all other equipment/accessories shall be maintained and operated for the entire duration of construction period as well as for the duration of subsequent defects liability period.
The Site Office including fittings, fixtures, furniture, furnishing and all other equipment/accessories shall be the property of the Employer on completion of the Contract.

36.2 Transport

The Constructor shall provide, operate and maintain Two brand new, Corolla Yaris or equivalent (1300 CC), (with AC) or the equivalent facility will be provided on Rental car facility for the use of the Consultant site supervision/Head Office monitoring team to meet his transportation needs for the entire duration of actual construction period as well as for the duration of subsequent defects liability period. The use of such transport facility shall be under the control of the Consultant, and the Constructor shall be wholly responsible for providing at all times satisfactory operating services for the Engineer/Consultant. The Constructor shall furnish, supply and provide, as may be necessary without specific direction of the Engineer/Consultant, all fuels, lubricants, tires and other supplies, all maintenance, repairs and running costs and suitably qualified drivers at all times. The Constructor shall furnish Rupees 35,000/= per month per car to the Engineer/Consultant for the fuel (CNG / Petrol) purposes.

Prior to Ordering the Vehicles, the Constructor shall furnish to the Engineer/Consultant for approval, detailed specification, name of manufacturer and model no. of the vehicles to be supplied. These data shall be presented within one week from the date of Engineer's/Consultant Order to proceed with the works and the vehicles shall be furnished to the Engineer/Consultant upon approval within two weeks from the date of Engineer's/Consultant Order to supply the Vehicle. Failure of the Constructor to do so shall make him liable' to bear its cost up to Rest. 180,000 per month, per car. The vehicles shall be right hand drive, and shall be brand new, properly serviced and ready for use. The Constructor shall provide vehicle to replace any such motor vehicle that is temporarily or permanently rendered unserviceable for any reason or declared to be beyond repair by the Engineer/Consultant. At no additional cost to the Employer. The vehicles shall become the property of the Constructor on completion of the Contract including defects liability period. If the Constructor fails to provide the facilities as per tender documents then deductions as specified in tender documents will be made from Constructor running bill and same will be compensated / paid to Consultant.

37 Constructor's Employees

The Constructor shall provide and employ on the Site for the purpose of or in connection with the Contract:

S. No	Staff to be Employed with Qualification	No.	Experience
1	Project Manager - B.E. in Civil	1	Minimum 15 years' experience
2	Quantity Surveyor – DAE in Civil	1	Minimum 15 years' experience
3	Site Supervisor - B.Tech. in Civil	1	Minimum 10 years' experience.
4	Site Supervisor- B.Tech. in Electrical	1	Minimum 10 years' experience.
5	Work Superintendents	3	Metric / non-metric with 10 to 15 years' experience in the construction of Roads/RCC work and can understand drawings well
Remaining staff be employed by the Constructor as required at site as per schedule of Work and also as per instruction of Consultant / Engineer In Charge whenever needed for execution of any work			

38. Payment of Work

No payment shall be made for the works involved within the scope of this section of specification. The cost thereof shall be deemed to have been included in the quoted unit rate of other items of the Bills of Quantities.

HEALTH AND SAFETY MEASURES

1. Start with safety training

All workers must hold a current white card before they commence work on-site. Site-specific induction training should also be completed by each worker, to point out any high risk areas and provide instructions for emergency management.

2. Minimize and manage risk

Due to the nature of construction work, it's impossible to eliminate all safety risks. However, many common safety issues can be avoided by conducting regular safety audits and having procedures in place to report, assess and address potential risks.

3. Site security

Restricted site access should not only be put in place to simply protect equipment from damage or theft. Security in and outside of work hours is integral to protect pedestrians from potential construction hazards. This includes supervision or authorized site visitors.

Strict security and safety protocols will also protect Constructor from liability and negligence in the case of a safety incident or security breach.

4. Safe work method assessment

A safe work method statement (SWMS) must be prepared for all high risk construction projects, before work commences. The SWMS should outline the scope of work involved, any potential safety issues, and how risks will be prevented and managed. By law, construction work must not commence until SWMS standards are met.

5. Use clear signage throughout the site

The site SWMS should be clearly displayed at the construction site, so that all safety protocols are readily available - including a 24 hour emergency contact number and a map or directions to the site office. Visible signage should also indicate site amenities (such as toilets), entry and exit points, and first aid or emergency fire equipment.

6. Entry and exit points

Separate entry and exit points should be established for heavy machinery/vehicle access, to strengthen pedestrian safety at high traffic points.

7. Compliant chemical storage

Chemicals need to be stored very carefully to minimize fires, explosions, asphyxiation, chemical injury and pollution on worksites. Use high quality, compliant outdoor storage solutions such as explosive storage cabinets to segregate chemicals and reduce spillage.

8. Environmental conditions

Extreme weather conditions can cause serious safety hazards. Your on-site emergency plan should provide clear guidelines for workers who need to stop work in the event of natural disaster, severe environmental conditions or other emergency circumstances.

9. First aid

For the construction industry, it's best practice to provide one first aid officer per 25 workers. First aid kits and equipment must be placed in an easily accessible area on site.

10. Provide personal protective (PPS) equipment

In many situations an employer is obligated to provide PPS such as high vis vests, safety goggles and safety harnesses to construction site workers. To find what PPS you are required to provide for a specific project, contact Safe Work Australia.

11. Dropped objects

It is your responsibility to secure objects onsite and minimize the risk of them falling. This video explains the risks and how they can be avoided by putting preventative safety measures in place.

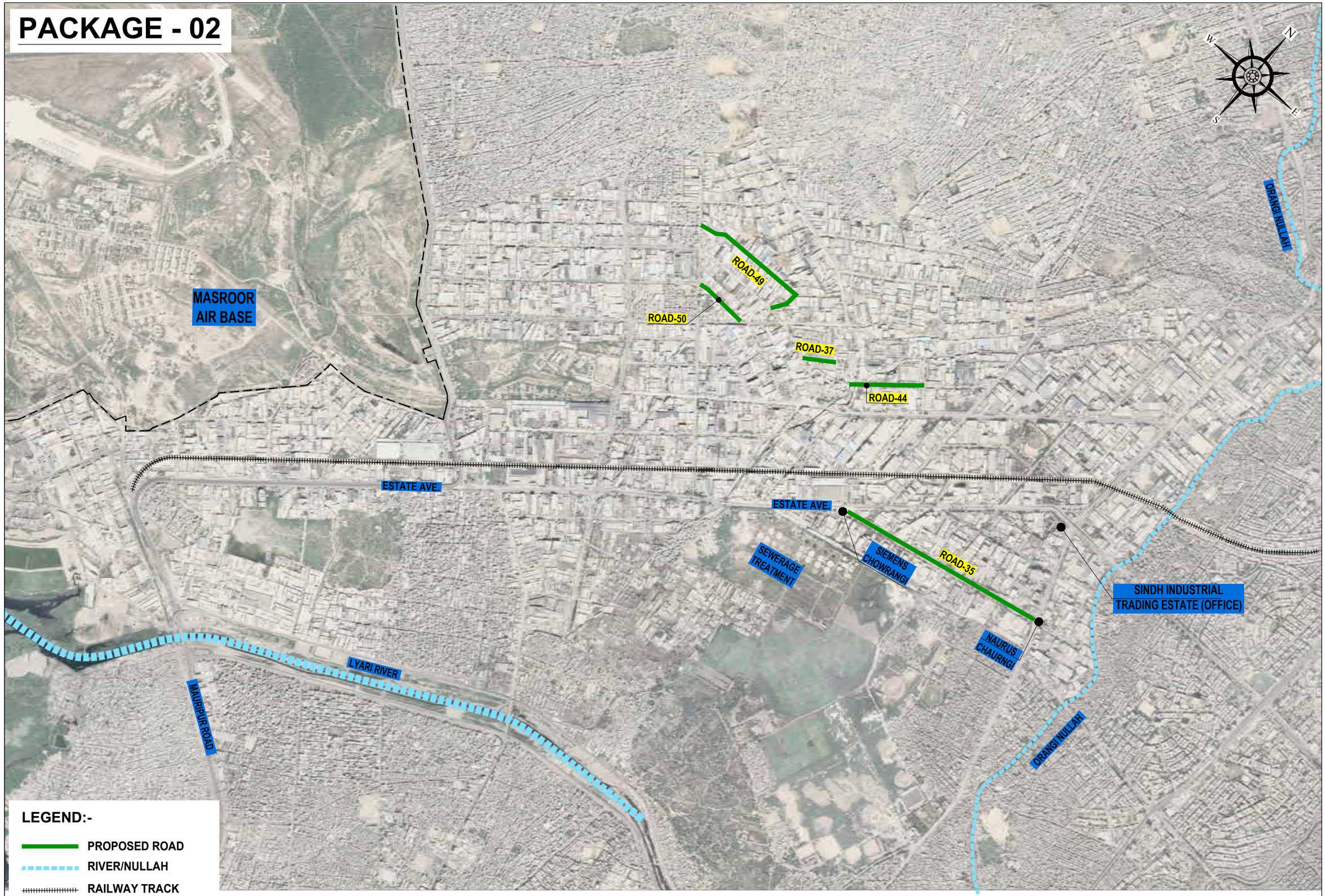
Construction safety doesn't end once the project is completed, and your workers have gone home. All parties involved in the construction process have a responsibility in ensuring that the right equipment and quality materials are used, so that safety risks are avoided long into the future.

11. Payment of Work

No payment shall be made for the works involved within the scope of this section of specification. The cost thereof shall be deemed to have been included in the quoted unit rate of other items of the Bills of Quantities.

DRAWINGS

PACKAGE - 02


N
W
E
S
MASROOR AIR BASE
ROAD-49
ROAD-50
ROAD-37
ROAD-44
ORANGI NULLAH
ESTATE AVE.
ESTATE AVE.
SEWERAGE TREATMENT
SIEMENS CHOWRANGI
ROAD-35
NAURUS CHAURNGI
SINDH INDUSTRIAL TRADING ESTATE (OFFICE)
LYARI RIVER
MAURIPUR ROAD
ORANGI NULLAH
LEGEND:-
PROPOSED ROAD
RIVER/NULLAH
RAILWAY TRACK

SINDH INDUSTRIAL TRADING ESTATES LIMITED

PROJECT:

REHABILITATION / CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

ROAD - 35

ROAD, DRAINAGE, STRUCTURE & ELECTRICAL WORKS

TENDER DRAWINGS
JANUARY, 2023

CONSULTANT:

ATIF NAZAR (PVT.) LTD.

PROJECT MANAGERS, PLANNERS, ARCHITECTS &
CONSULTING ENGINEERS
D-11/A, BLOCK NO-17, GULSHAN-E-IQBAL, KARACHI.
P.H. 34820497 - 34982561

GENERAL NOTES

1. GRID COORDINATES & ELEVATIONS ARE BASED ON UNIVERSAL TRANSVERSE MERCATOR (UTM WGS84).
2. EACH DRAWING SHALL BE READ IN CONJUNCTION WITH OTHER DRAWINGS.
3. NOTES GIVEN ON DRAWINGS ADJACENT TO A SECTION OR DETAIL PERTAIN TO THAT PARTICULAR DETAIL ONLY.
4. TENDER DRAWINGS ARE INDICATIVE ONLY. CONSTRUCTION DRAWINGS SHALL BE ISSUED IN DUE COURSE OF TIME, AS THE CONSTRUCTION PROCEEDS.
5. THE BIDDERS SHOULD CAREFULLY EXAMINE THE BOQ ITEMS AND RATES SHOULD BE QUOTED ACCORDINGLY.
6. LOCATION OF UNDERGROUND CABLES/UTILITIES SHOWN ON PLAN ARE APPROXIMATE. EXACT LOCATION SHALL BE DETERMINED BY THE CONTRACTOR AT NO EXTRA COST TO THE EMPLOYER.
7. THE CONTRACTOR SHALL ENDEAVOR MAXIMUM TO MAINTAIN UNINTERRUPTED FLOW OF TRAFFIC ON BOTH SIDES OF EXISTING ROAD AND ITS ADJOINING CROSS ROADS.
8. ANY DAMAGE CAUSED TO THE UTILITIES DURING EXCAVATION/EXECUTION OF WORK SHALL BE REPAIRED BY THE CONTRACTOR AT NO EXTRA COST TO THE EMPLOYER.
9. PROFILE DRAWINGS SHALL BE FINALIZED AFTER TAKING JOINT X-SECTIONS WITH CONSULTANT BEFORE STARTING CONSTRUCTION ACTIVITIES.
10. CONTRACTOR SHALL PREPARE AND SUBMIT, FOR ENGINEER'S APPROVAL, SHOP DRAWINGS FOR STRUCTURES, PAVEMENT MARKINGS (LOCATION, TYPE AND SIZE), ROAD SIGNS ETC. BEFORE EXECUTION OF RELATED WORKS WITHOUT ANY EXTRA COST TO THE EMPLOYER.
11. SERVICE DUCTS SHALL BE PROVIDED AT JUNCTION LOCATIONS OR AT AN INTERVAL AS DIRECTED BY THE ENGINEER.
12. STRUCTURES SHOWN ON PLAN ARE SYMBOLIC. FOR DETAIL OF STRUCTURES SEE RELEVANT DRAWINGS.
13. THE LENGTHS, SIZES, SLOPE, INVERT LEVELS AND OTHERS DETAILS AS SHOWN IN DRAWINGS ARE TENTATIVE. THE CONTRACTOR SHALL PREPARE SHOP DRAWINGS OF EACH STRUCTURE LOCATIONS WITH THE REQUIRED SKEW ANGLE AS PER SITE REQUIREMENTS AND SHALL SUBMIT THE SAME TO THE ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION EXECUTION.
14. THE CONTRACTOR SHALL BE RESPONSIBLE TO CATER FOR ALL TEMPORARY TRAFFIC DIVERSION DURING CONSTRUCTION TO THE SATISFACTION OF THE ENGINEER INCLUDING DETOUR ROAD AND ITS MAINTENANCE, SPRINKLING OF WATER, GRADING AND COMPACTION WHEN AND WHERE REQUIRED WITHOUT ANY EXTRA COST TO EMPLOYER.
15. ROADWAY EXCAVATION MATERIAL SHALL BE UTILIZED IN MOST EFFECTIVE MANNER IN THE EMBANKMENT EVEN WITH BLENDING/ MIXING THE SUPERIOR MATERIALS (IF REQUIRED WITHOUT AT ANY EXTRA COST).ROADWAY EXCAVATION SHALL NOT BE DISPOSED OFF OUTSIDE RIGHT OF WAY WITHOUT WRITTEN APPROVAL OF THE EMPLOYER.
16. 600MM SIGN BOARD SHALL BE USED ALONG CARRIAGEWAY.
17. THE EXISTING UTILITIES SHALL BE SHIFTED AND REPAIRED WITHIN THE CONSTRUCTION LIMITS DURING EXECUTION OF THE WORK. THE CONTRACTOR SHALL ASSIST AND COORDINATE WITH THE RESPECTIVE AGENCIES FOR THIS PURPOSE.
18. RETAINING/DRAINAGE STRUCTURES FOUNDATION SHALL BE PLACED ON FIRM/HARD STRATA AS DIRECTED BY THE ENGINEER.

REV.	DESCRIPTION	DATE	APPROVED
T0	TENDER ISSUE	20-01-2023	WASIF

CLIENT:- SINDH INDUSTRIAL TRADING ESTATES LIMITED

PROJECT:- REHABILITATION / CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

CONSULTANT:-

ATIF NAZAR (PVT.) LTD.
PROJECT MANAGERS, PLANNERS, ARCHITECTS & CONSULTING ENGINEERS
D-11/A, BLOCK NO-17, GULSHAN-E-IQBAL, KARACHI. P.H. 34820497 - 34982561

DRAWN BY	ARSHAD
DESIGN BY	SAMEED
CHECKED BY	WAZI IQBAL
APPROVED BY	WASIF

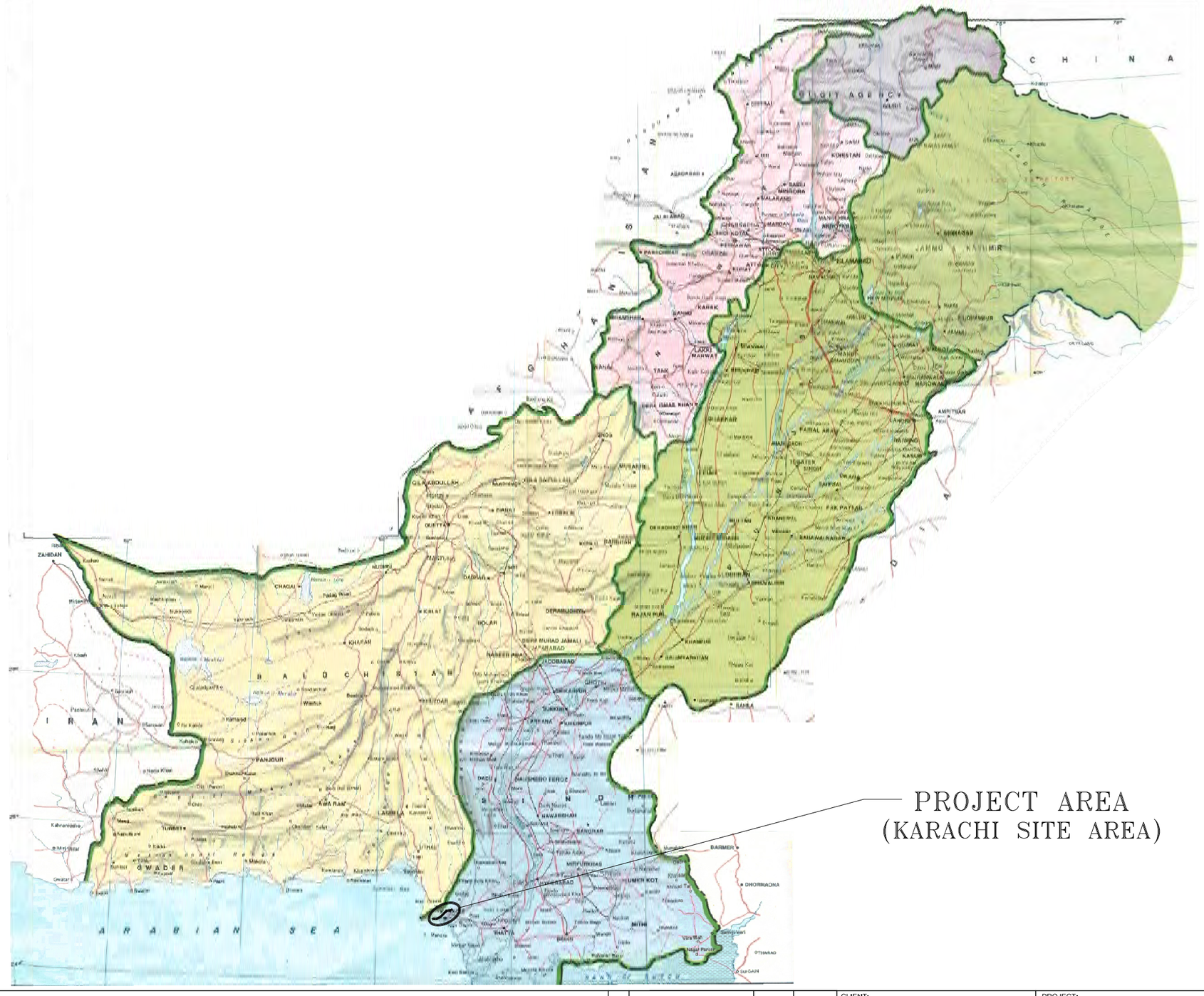
PROJECT NO: RSK | DATE:- 20-01-2023
SCALE: N.T.S | SHEET: 01/01 (A3)

SHEET TITLE:- GENERAL NOTES

Drawing No. 2210-01-01-02-03-R002 | REVISION T0

Drawing file path & name: D:\Projects\01_Rehabilition Construction Of Roads In Site Industrial Estate Karachi\00_Submital\Tender\Working\02_Road\General Drawings\000_GN\2210-01-01-02-03-R002.dwg
User and Plot Date: Arshad - Tue, 07 Feb 2023 - 5:03pm

LOCATION MAP



NOTES:–

1. ALL DIMENSIONS ARE IN METERS/MILIMETERS UNLESS OTHERWISE STATED.

REV.	DESCRIPTION	DATE	APPROVED
T0	TENDER ISSUE	20-01-2023	WASIF

CLIENT:-
SINDH INDUSTRIAL TRADING ESTATES LIMITED

PROJECT:-
REHABILITATION / CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

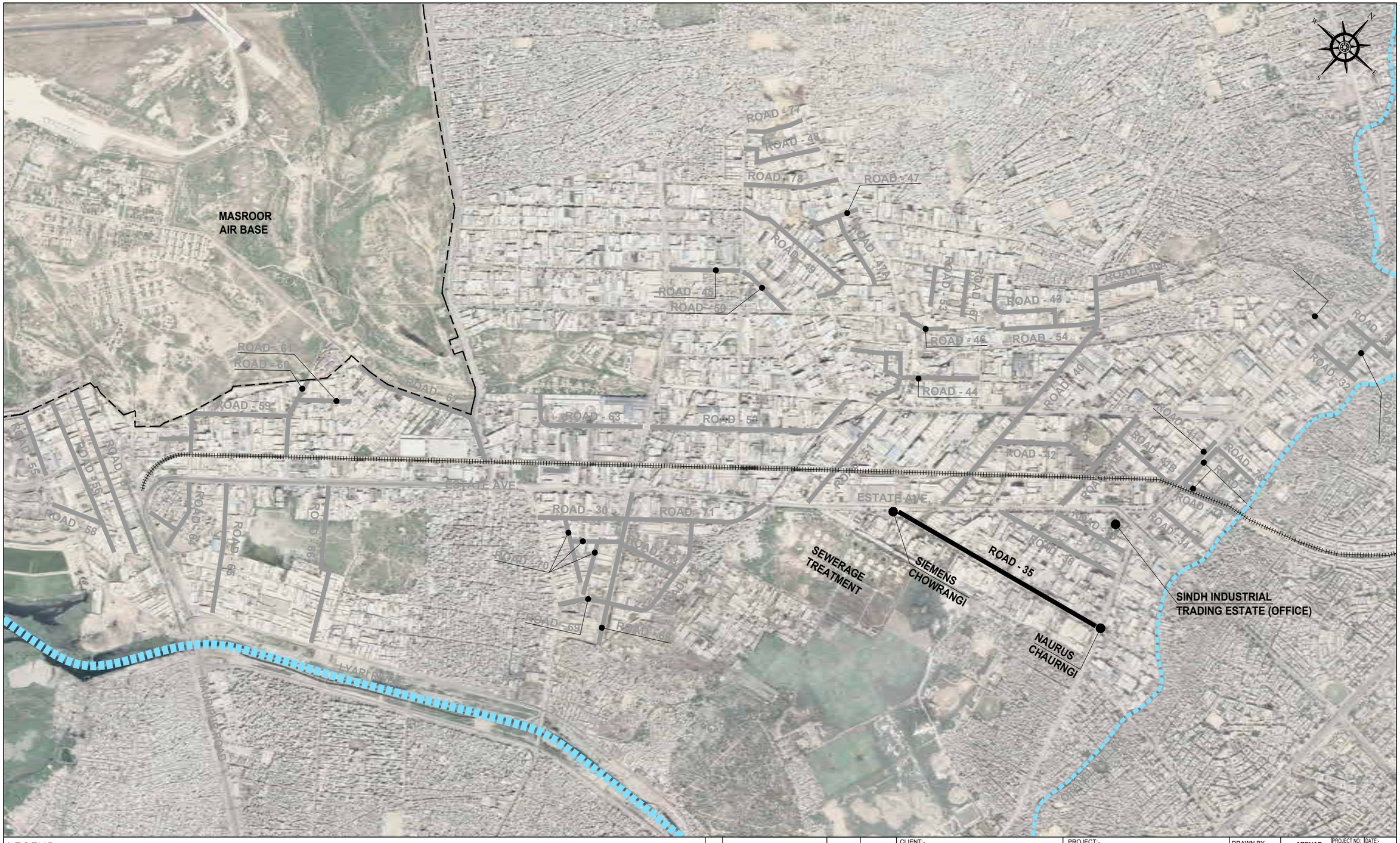
CONSULTANT:-
ATIF NAZAR (PVT.) LTD.
PROJECT MANAGERS, PLANNERS, ARCHITECTS & CONSULTING ENGINEERS
D-11/A, BLOCK NO-17, GULSHAN-E-IQBAL, KARACHI. P.H. 34820497 - 34982561

		PROJECT NO:	DATE:-
DRAWN BY	ARSHAD	RSK	20-01-2023
DESIGN BY	---		
CHECKED BY	WAZI IQBAL	SCALE: N.T.S	SHEET: 01/01 (A3)
APPROVED BY	WASIF		

SHEET TITLE:-
KEY MAP

Drawing No. 2210-01-01-02-03-R003
REVISION 00

Drawing file path & name: D:\Projects\01_Rehabilition Construction Of Roads in Site Industrial Estate Karachi\00_Submital\Tender Working\02_Road\Road - 30\01_Location Plan\2210-01-01-02-03-R003.dwg
User and Plot Date: Arshad - Tue, 07 Feb 2023 - 5:05pm



LEGEND:–

- ROADS
- RIVER/NULLAH
- RAILWAY TRACK

REV.	DESCRIPTION	DATE	APPROVED
T0	TENDER ISSUE	20-01-2023	WASIF

CLIENT:-
SINDH INDUSTRIAL TRADING ESTATES LIMITED

PROJECT:-
REHABILITATION / CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

CONSULTANT:-
ATIF NAZAR (PVT.) LTD.
PROJECT MANAGERS, PLANNERS, ARCHITECTS & CONSULTING ENGINEERS
D-11/A, BLOCK NO-17, GULSHAN-E-IQBAL, KARACHI. P.H. 34820497 - 34982561

		PROJECT NO:	DATE:-
DRAWN BY	ARSHAD	RSK	20-01-2023
DESIGN BY	SAMEED		
CHECKED BY	WAZI IQBAL	SCALE: N.T.S	SHEET: 01/01 (A3)
APPROVED BY	WASIF		

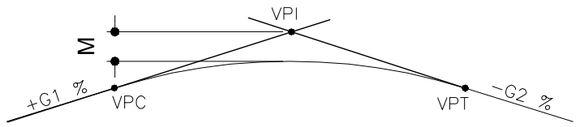
SHEET TITLE:-
ROAD - 35
LOCATION PLAN

Drawing No. 2210-01-01-02-03-R004
REVISION T0

Drawing file path & name: D:\Projects\01_Rehabilition Construction Of Roads In Site Industrial Estate Karachi\00_Submital\Tender\Working\02_Road\Road – 35\01_Location Plan\2210-01-01-02-03-R004.dwg
User and Plot Date: Arshad – Tue, 07 Feb 2023 – 8:26pm

GENERAL DRAWINGS

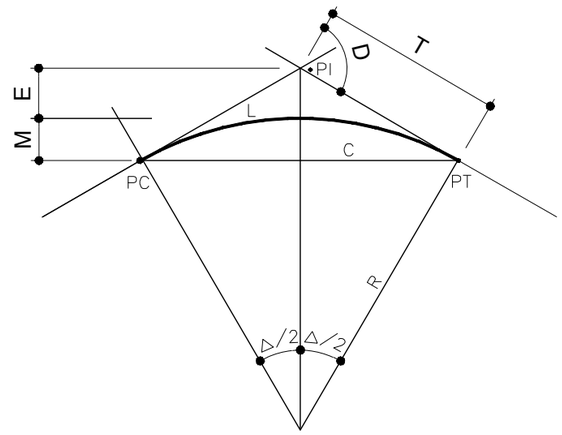
DETAIL OF VERTICAL CURVE



VPC : VERTICAL POINT OF CURVATURE
VPI : VERTICAL POINT OF INTERSECTION
VPT : VERTICAL POINT OF TANGENCY
L : LENGTH OF VERTICAL CURVE
M : VERTICAL OFFSET

+G : UPWARD VERTICAL GRADE
−G : DOWNWARD VERTICAL GRADE
K : RATE OF GRADE CHANGE = $\frac{G2-G1}{L}$
A : TOTAL CHANGE IN VERTICAL GRADE BETWEEN TANGENTS = G2−G1

DETAIL OF HORIZONTAL CURVE



CIRCULAR CURVE PARAMETERS

PI : POINT OF INTERSECTION
PC : POINT OF CURVATURE
PT : POINT OF TANGENCY
Δ : DEFLECTION ANGLE
Da : DEGREE OF CURVE (ARC DEFINITION)
Dc : DEGREE OF CURVE (CHORD DEFINITION)

T : TANGENT LENGTH
R : RADIUS
L : LENGTH OF CURVE
C : CHORD LENGTH
E : EXTERNAL ORDINATE
M : MIDDLE ORDINATE

S.NO	DESIGN PARAMETERS	UNITS	VALUES
1	DESIGN SPEED	Km/h	60
2	LANE WIDTH	m	3.65
3	NUMBER. OF LANES	No.	2
4	TOTAL PAVEMENT WIDTH	m	9.2
5	PAVEMENT CROSS SLOPE	%	1.5
6	RIGHT OF WAY (ROW)	m	53.6
7	MINIMUM RADIUS OF HORIZONTAL CURVE	m	135
8	MINIMUM STOPPING SIGHT DISTANCE (SSD)	m	85
9	MINIMUM PASSING SIGHT DISTANCE (PSD)	m	180
10	K VALUE FOR CREST CURVE (SSD)	m%	11
11	K VALUE FOR CREST CURVE (PSD)	m%	38
12	K VALUE FOR SAG CURVE	m%	18
13	RCC DRAIN (WIDTH)	m	0.6 ~2.5
14	MINIMUM VERTICAL CLEARENCE	m	5.5

NOTES:−

1. ALL DIMENSIONS ARE IN METERS/MILIMETERS UNLESS OTHERWISE STATED.

REV.	DESCRIPTION	DATE	APPROVED
T0	TENDER ISSUE	20-01-2023	WASIF

CLIENT:- SINDH INDUSTRIAL TRADING ESTATES LIMITED

PROJECT:- REHABILITATION / CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

CONSULTANT:- ATIF NAZAR (PVT.) LTD.
PROJECT MANAGERS, PLANNERS, ARCHITECTS & CONSULTING ENGINEERS
D-11/A, BLOCK NO-17, GULSHAN-E-IQBAL, KARACHI. P.H. 34820497 - 34982561

DRAWN BY	ARSHAD	PROJECT NO: RSK	DATE:- 20-01-2023
DESIGN BY	SAMEED		
CHECKED BY	WAZI IQBAL	SCALE: N.T.S	SHEET: 01/01 (A3)
APPROVED BY	WASIF		

SHEET TITLE:- GEOMETRIC DESIGN PARAMETERS

Drawing No. 2210-01-01-02-03-G901 | REVISION T0

Drawing file path & name D:\Projects\01_Rehabilitation Construction Of Roads In Site Industrial Estate Karachi\00_Submittal\Tender\Working\02_Road\Road - 35\08_General Drawings\2210-01-01-02-03-G901.dwg
User and Plot Date : Arshad - Tue, 07 Feb 2023 - 8:40pm

SETTING - OUT DATA

ROAD - 35
(SETTING OUT DATA)

S.N	PI - POINT	P.I. Coordinates EASTING	P.I. Coordinates NORTHING	G.DIST	GRID BEAR	DEFLECTION ANGLE	L/R	RADIUS	LENGTH OF TANGENT (LT)	LENGTH OF CURVE (LC)	E (m)	STATION @ PI	CH @ PC	CH @ PT
BOP	A - POINT	298291.252	2755688.906											
1	PI - 1	298418.216	2755711.373	128.936	79° 57' 54"	0° 49' 4"	L	5000.0	35.688	71.374	0.127	0 + 128.936	0 + 93.249	0 + 164.623
2	PI - 2	298504.912	2755727.994	88.275	79° 8' 50"	0° 16' 35"	R	10000.0	24.113	48.225	0.029	0 + 217.210	0 + 193.098	0 + 241.323
3	PI - 3	299336.673	2755883.301	846.136	79° 25' 25"	0° 6' 9"	R	10000.0	8.942	17.884	0.004	1 + 63.346	1 + 54.404	1 + 72.288
EOP	PI - POINT	299643.133	2755939.957	311.653	79° 31' 33"							1 + 375.000	1 + 375.000	1 + 375.000

NOTES:–

1. ALL DIMENSIONS ARE IN METERS/MILIMETERS UNLESS OTHERWISE STATED.

REV.	DESCRIPTION	DATE	APPROVED
T0	TENDER ISSUE	20-01-2023	WASIF

CLIENT:- SINDH INDUSTRIAL TRADING ESTATES LIMITED

PROJECT:- REHABILITATION / CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

CONSULTANT:- ATIF NAZAR (PVT.) LTD.
PROJECT MANAGERS, PLANNERS, ARCHITECTS & CONSULTING ENGINEERS
D-11/A, BLOCK NO-17, GULSHAN-E-IQBAL, KARACHI. P.H. 34820497 - 34982561

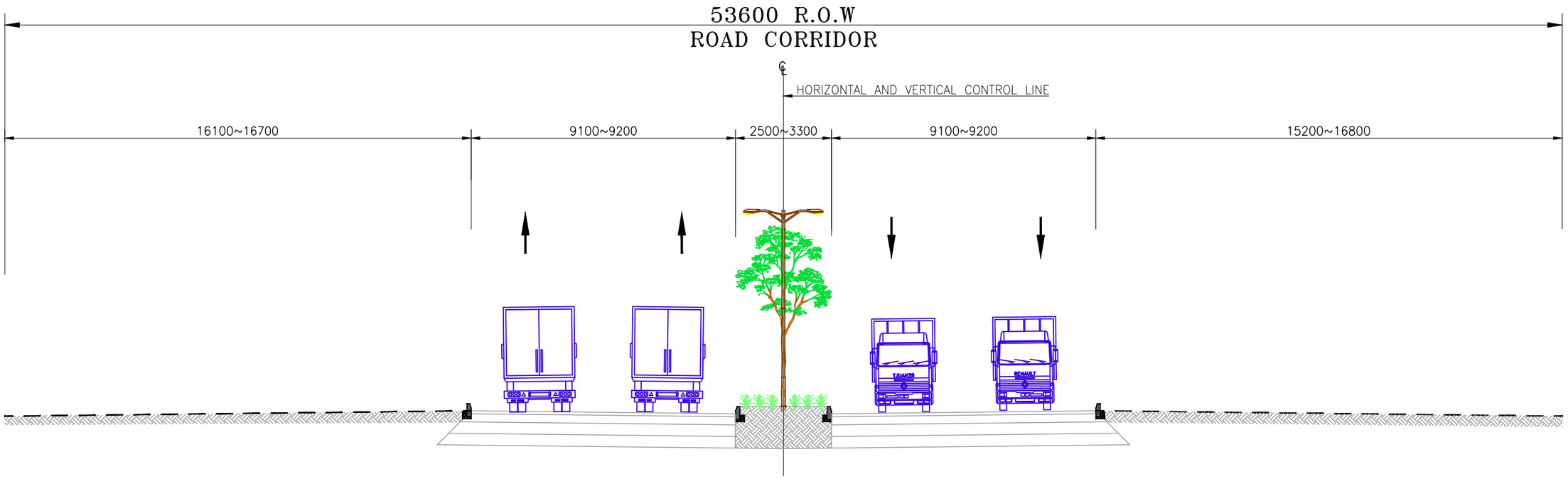
DRAWN BY	ARSHAD	PROJECT NO: RSK	DATE:- 20-01-2023
DESIGN BY	SAMEED		
CHECKED BY	WAZI IQBAL	SCALE: N.T.S	SHEET: 01/01 (A3)
APPROVED BY	WASIF		

SHEET TITLE:- SETTING OUT DATA

Drawing No. 2210-01-01-02-03-R400 | REVISION T0

Drawing file path & name D:\Projects\01_Rehabilition Construction Of Roads in Site Industrial Estate Karachi\00_Submital\Tender\Working\02_Road\Road - 35\05_Setting Out Data\2210-01-01-02-03-R400.dwg
User and Plot Date:- Arshad - Tue, 07 Feb 2023 - 8:37pm

EXISTING CROSS SECTIONS



EXISTING CROSS SECTION

STA=0+000.000 TO 0+203.00

NOTES:–

1. ALL DIMENSIONS ARE IN METERS/MILIMETERS UNLESS OTHERWISE STATED.

REV.	DESCRIPTION	DATE	APPROVED
T0	TENDER ISSUE	20-01-2023	WASIF

CLIENT:- SINDH INDUSTRIAL TRADING ESTATES LIMITED

PROJECT:- REHABILITATION / CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

CONSULTANT:-

ATIF NAZAR (PVT.) LTD.

PROJECT MANAGERS, PLANNERS, ARCHITECTS & CONSULTING ENGINEERS
D-11/A, BLOCK NO-17, GULSHAN-E-IQBAL, KARACHI. P.H. 34820497 - 34982561

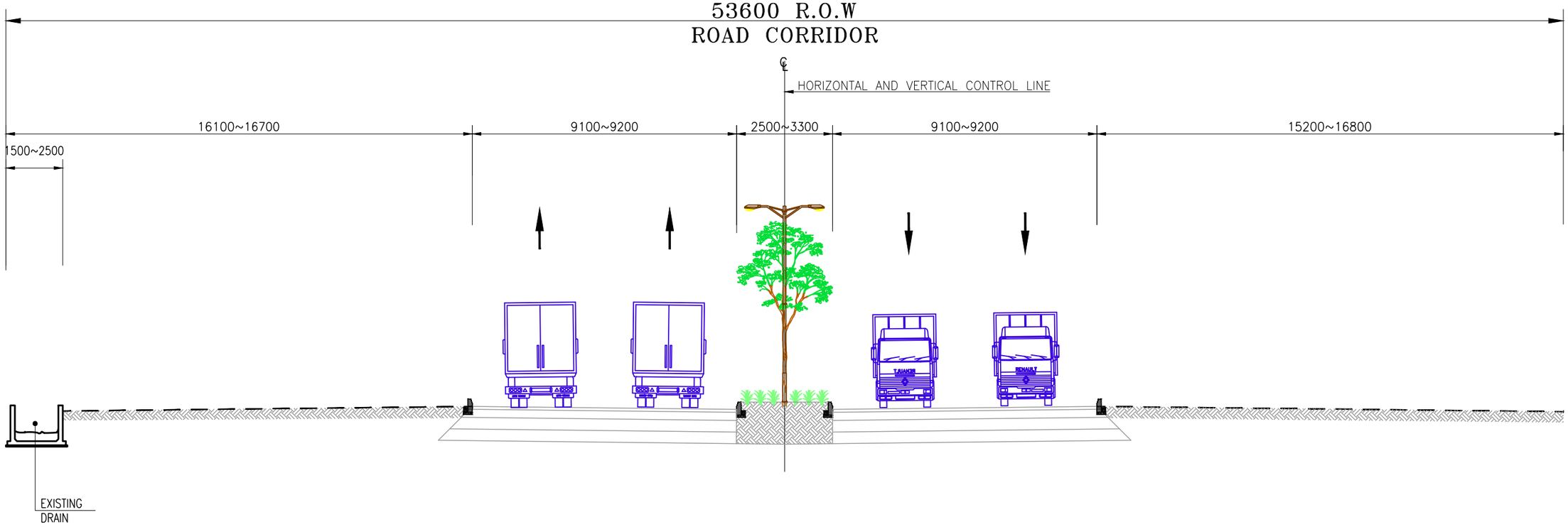
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DESIGN BY	SAMEED	RSK	20-01-2023
CHECKED BY	WAZI IQBAL	SCALE:	SHEET:
APPROVED BY	WASIF	N.T.S	01/10 (A3)

SHEET TITLE:- EXISTING CROSS SECTION

Drawing No. 2210-01-01-02-03-R201

REVISION T0

Drawing file path & name D:\Projects\01_Rehabilition Construction Of Roads in Site Industrial Estate Karachi\00_Submital\Tender\Working\02_Road\Road - 35\06_Typical Sections\2210-01-01-02-03-R200 TO 21010.dwg
User and Plot Date:- Arshad - Wed, 08 Feb 2023 - 7:51pm



EXISTING CROSS SECTION

STA=0+203.00 TO 0+318.00

NOTES:–

1. ALL DIMENSIONS ARE IN METERS/MILIMETERS UNLESS OTHERWISE STATED.

REV.	DESCRIPTION	DATE	APPROVED
T0	TENDER ISSUE	20-01-2023	WASIF

CLIENT:- SINDH INDUSTRIAL TRADING ESTATES LIMITED

PROJECT:- REHABILITATION / CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

CONSULTANT:-

ATIF NAZAR (PVT.) LTD.

PROJECT MANAGERS, PLANNERS, ARCHITECTS & CONSULTING ENGINEERS
D-11/A, BLOCK NO-17, GULSHAN-E-IQBAL, KARACHI. P.H. 34820497 - 34982561

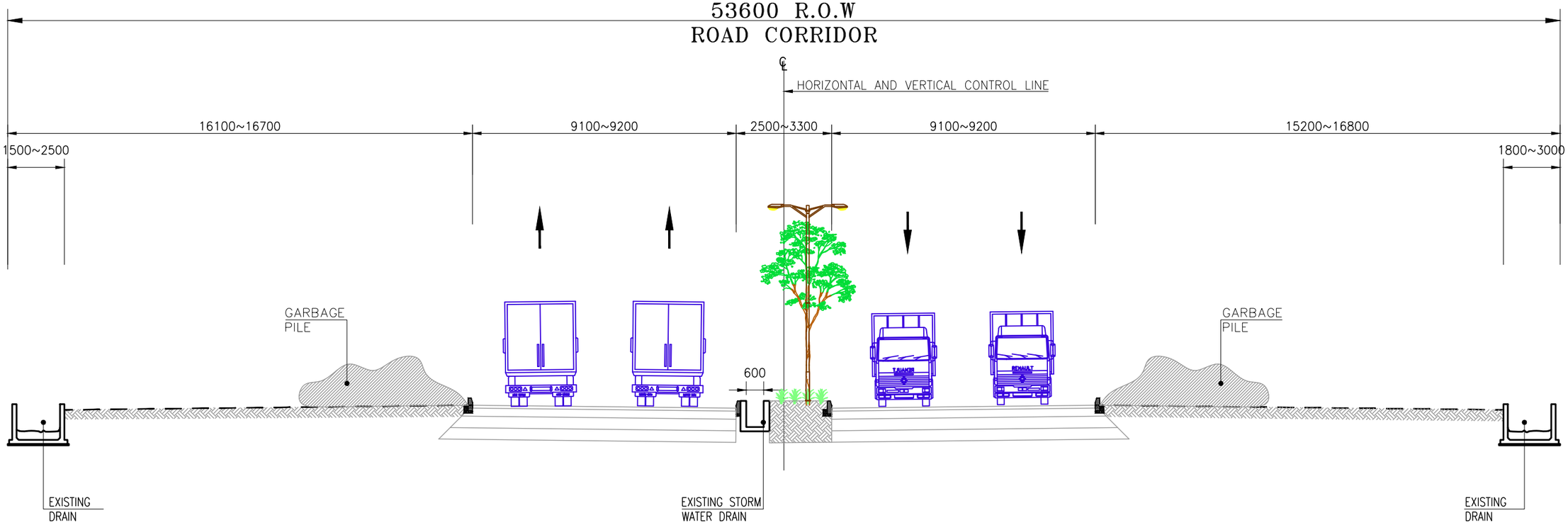
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DRAWN BY	ARSHAD	RSK	20-01-2023
DESIGN BY	SAMEED		
CHECKED BY	WAZI IQBAL	SCALE: N.T.S	SHEET: 02/10 (A3)
APPROVED BY	WASIF		

SHEET TITLE:- EXISTING CROSS SECTION

Drawing No. 2210-01-01-02-03-R202

REVISION T0

Drawing file path & name: D:\Projects\01_Rehabilition Construction Of Roads in Site Industrial Estate Karachi\00_Submital\Tender\Working\02_Road\Road - 35\06_Typical Sections\2210-01-01-02-03-R200 TO 210T0.dwg
User and Plot Date: Arshad - Wed, 08 Feb 2023 - 7:51pm



EXISTING CROSS SECTION

STA=0+318.00 TO 1+375.000

NOTES:–

1. ALL DIMENSIONS ARE IN METERS/MILIMETERS UNLESS OTHERWISE STATED.

REV.	DESCRIPTION	DATE	APPROVED
T0	TENDER ISSUE	20-01-2023	WASIF

CLIENT:- SINDH INDUSTRIAL TRADING ESTATES LIMITED

PROJECT:- REHABILITATION / CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

		PROJECT NO:	DATE:-
DRAWN BY	ARSHAD	RSK	20-01-2023
DESIGN BY	SAMEED		
CHECKED BY	WAZI IQBAL	SCALE: N.T.S	SHEET: 03/10 (A3)
APPROVED BY	WASIF		

CONSULTANT:-

ATIF NAZAR (PVT.) LTD.

PROJECT MANAGERS, PLANNERS, ARCHITECTS & CONSULTING ENGINEERS
D-11/A, BLOCK NO-17, GULSHAN-E-IQBAL, KARACHI. P.H. 34820497 - 34982561

SHEET TITLE:- EXISTING CROSS SECTION

Drawing No.	REVISION
2210-01-01-02-03-R203	T0

Drawing file path & name: D:\Projects\01_Rehabilition Construction Of Roads In Site Industrial Estate Karachi\00_Submital\Tender\Working\02_Road\Road - 35\06_Typical Sections\2210-01-01-02-03-R200 TO 21010.dwg
User and Plot Date: Arshad - Wed, 08 Feb 2023 - 7:51pm

CONSTRUCTION / REHABILITATING METHODOLOGY CROSS SECTIONS

METHODOLOGY

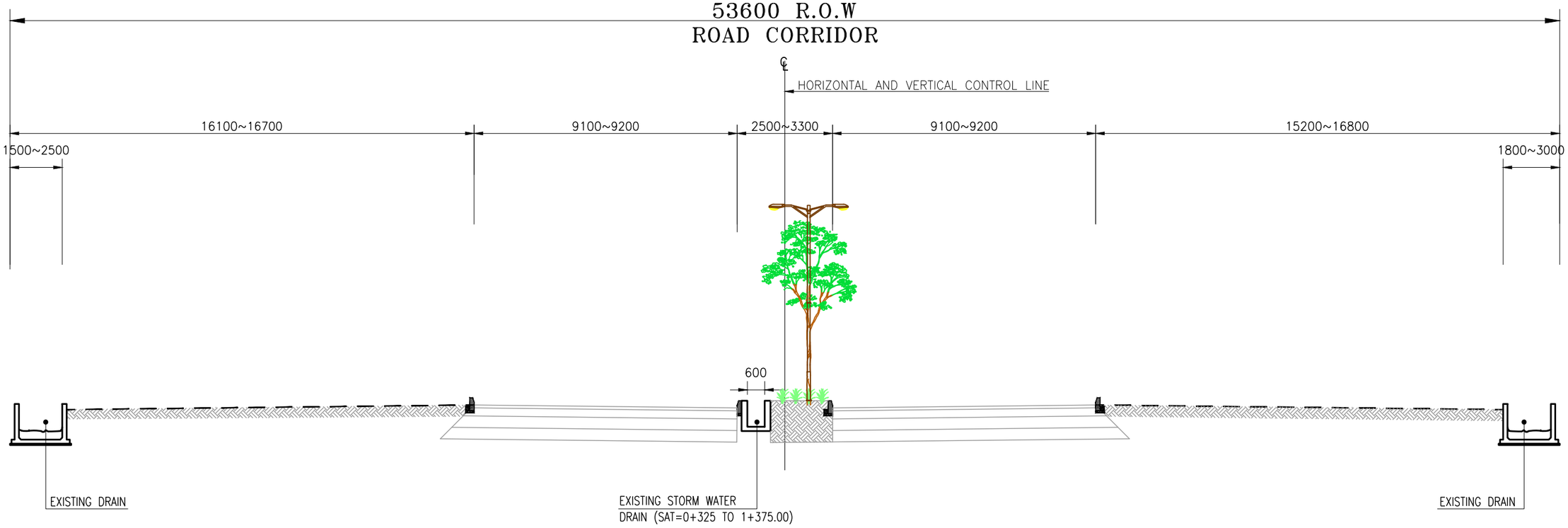
STEP-01

1. REMOVE ALL THE SOLID WASTE & BUSHES FROM ENTIRE CORRIDOR INCLUDING DRAIN. CLEAN THE EXISTING CULVERT & NALLAH UPTO 500m LENGTH WHERE CULVERT IS CONNECTING AND DUMP THE WASTE TO DESIGNATED AREA AT GONPASS OR AS DIRECTED BY THE ENGINEER.

2. CONTRACTOR SHALL TAKE JOINT CROSS SECTIONS OF ROAD CORRIDOR & INVERT LEVELS OF DRAIN WITH CONSULTANT TO VERIFY ANY CHANGE IN DESIGN BEFORE THE EXECUTION OF WORK.

3. RELOCATE THE EXISTING UTILITIES (ELECTRIC POLES, TREES & ETC.) FROM CENTER MEDIAN (SAT=0+000 TO 0+325).

4. THE CONTRACTOR SHALL TAKE THE WRITTEN APPROVAL FROM SUPERVISORY CONSULTANT OF SATISFACTORY COMPLETION OF STEP-01 , PRIOR TO PROCEED STEP-02.



EXISTING CROSS SECTION

NOTES:-

1. ALL DIMENSIONS ARE IN METERS/MILIMETERS UNLESS OTHERWISE STATED.

REV.	DESCRIPTION	DATE	APPROVED
T0	TENDER ISSUE	20-01-2023	WASIF

CLIENT:- SINDH INDUSTRIAL TRADING ESTATES LIMITED

PROJECT:- REHABILITATION / CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

CONSULTANT:- ATIF NAZAR (PVT.) LTD.
PROJECT MANAGERS, PLANNERS, ARCHITECTS & CONSULTING ENGINEERS
D-11/A, BLOCK NO-17, GULSHAN-E-IQBAL, KARACHI. P.H. 34820497 - 34982561

DRAWN BY	ARSHAD	PROJECT NO: RSK	DATE:- 20-01-2023
DESIGN BY	SAMEED		
CHECKED BY	WAZI IQBAL	SCALE: N.T.S	SHEET: 04/10 (A3)
APPROVED BY	WASIF		

SHEET TITLE:- STEP - 01 CROSS SECTION

Drawing No. 2210-01-01-02-03-R204

REVISION T0

Drawing file path & name D:\Projects\01_Rehabilition Construction Of Roads in Site Industrial Estate Karachi\00_Submital\Tender Working\02_Road\Road - 35\06_Typical Sections\2210-01-01-02-03-R200 TO 21010.dwg
User and Plot Date : Arshad - Wed, 08 Feb 2023 - 7:51pm

METHODOLOGY

STEP -02

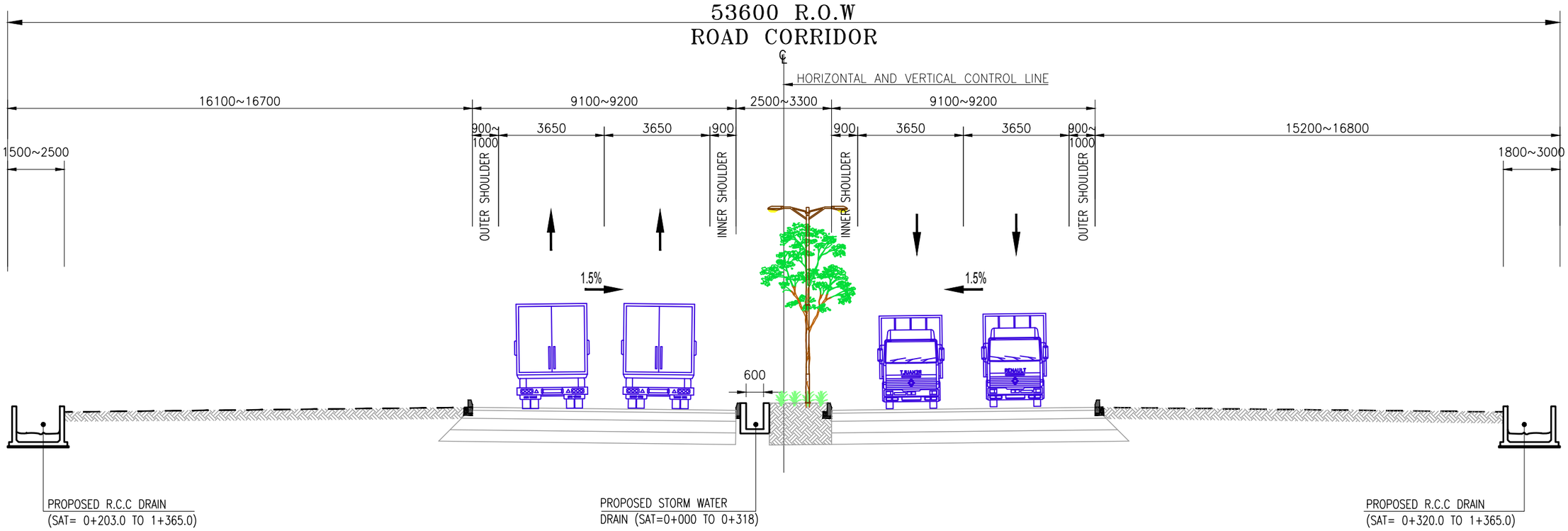
1. THE CONTRACTOR SHALL MAKE THE SHOP DRAWING OF DRAIN & TAKE PRIOR APPROVAL FROM THE ENGINEER, BEFORE EXECUTION OF DRAIN WORK.

2. RECTIFY THE EXISTING DRAIN WHERE REQUIRED OR AS DIRECTED BY THE ENGINEER.

3. THE NEW R.C.C DRAIN LOCATION & INVERT LEVELS SHALL BE FINALIZED BY THE ENGINEER AS PER SITE CONDITION.

4. CONSTRUCT THE R.C.C DRAINS ACCORDING TO INVERT LEVELS PROVIDED IN PLAN AND PROFILE DRAWINGS. REFER STRUCTURAL DRAWING FOR DRAIN DIMENSIONS AND DETAILS.

5. THE CONTRACTOR SHALL TAKE THE WRITTEN APPROVAL FROM SUPERVISORY CONSULTANT OF SATISFACTORY COMPLETION OF STEP-02 , PRIOR TO PROCEED STEP-03.



PROPOSED CROSS SECTION

STA=0+000.00 TO 1+375.00

NOTES:–

1. ALL DIMENSIONS ARE IN METERS/MILIMETERS UNLESS OTHERWISE STATED.

REV.	DESCRIPTION	DATE	APPROVED
T0	TENDER ISSUE	20-01-2023	WASIF

CLIENT:- SINDH INDUSTRIAL TRADING ESTATES LIMITED

PROJECT:- REHABILITATION / CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

CONSULTANT:- ATIF NAZAR (PVT.) LTD.
PROJECT MANAGERS, PLANNERS, ARCHITECTS & CONSULTING ENGINEERS
D-11/A, BLOCK NO-17, GULSHAN-E-IQBAL, KARACHI. P.H. 34820497 - 34982561

DRAWN BY	ARSHAD	PROJECT NO.	DATE:-
DESIGN BY	SAMEED	RSK	20-01-2023
CHECKED BY	WAZI IQBAL	SCALE:	SHEET:
APPROVED BY	WASIF	N.T.S	05/10 (A3)

SHEET TITLE:- STEP - 02 CROSS SECTION

Drawing No. 2210-01-01-02-03-R205 | REVISION T0

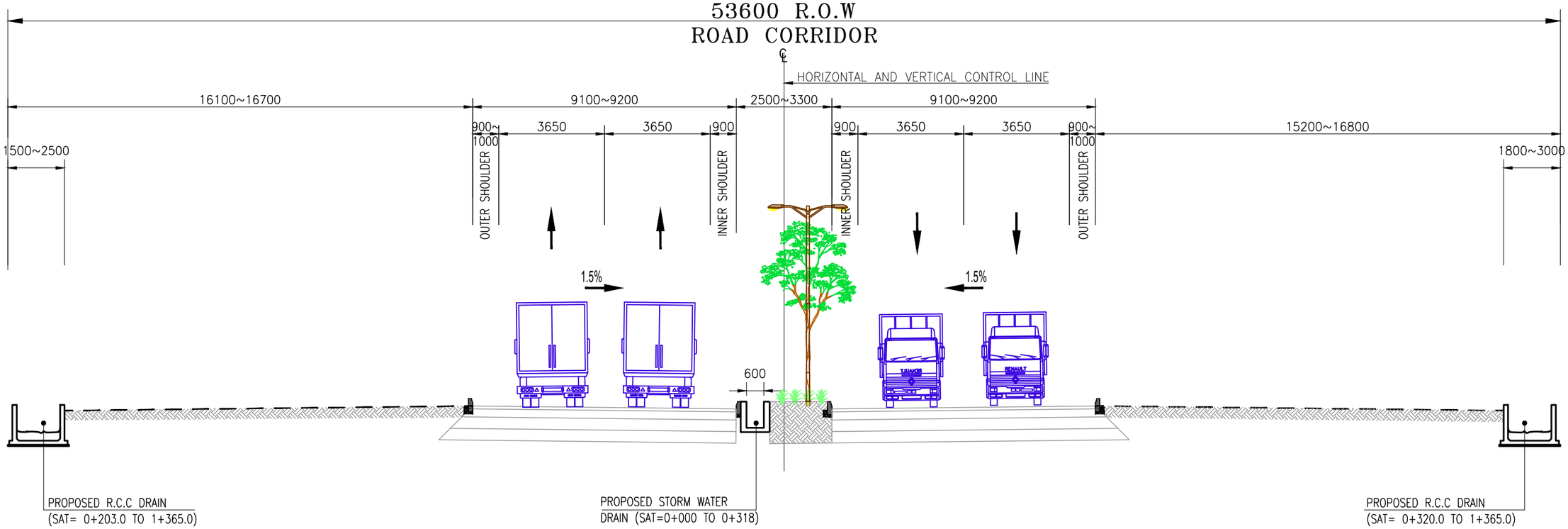
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User and Plot Date:- Arshad - Wed, 08 Feb 2023 - 7:51pm

METHODOLOGY

STEP-03

1. PROVIDE NEW SERVICE DUCT AND REPAIR ALL EXISTING UTILITY DUCTS AS PER SITE REQUIREMENTS OR AS DIRECTED BY THE SITE ENGINEER. REFER STRUCTURAL DRAWING FOR DIMENSION AND DETAILS.

2. THE CONTRACTOR SHALL TAKE THE WRITTEN APPROVAL FROM SUPERVISORY CONSULTANT OF SATISFACTORY COMPLETION OF STEP-03 , PRIOR TO PROCEED STEP-04.



PROPOSED CROSS SECTION

STA=0+000.00 TO 1+375.00

NOTES:–

1. ALL DIMENSIONS ARE IN METERS/MILIMETERS UNLESS OTHERWISE STATED.

REV.	DESCRIPTION	DATE	APPROVED
T0	TENDER ISSUE	20-01-2023	WASIF

CLIENT:- SINDH INDUSTRIAL TRADING ESTATES LIMITED

PROJECT:- REHABILITATION / CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

CONSULTANT:- ATIF NAZAR (PVT.) LTD.
PROJECT MANAGERS, PLANNERS, ARCHITECTS & CONSULTING ENGINEERS
D-11/A, BLOCK NO-17, GULSHAN-E-IQBAL, KARACHI. P.H. 34820497 - 34982561

		PROJECT NO.	DATE:-
DRAWN BY	ARSHAD	RSK	20-01-2023
DESIGN BY	SAMEED		
CHECKED BY	WAZI IQBAL	SCALE: N.T.S	SHEET: 06/10 (A3)
APPROVED BY	WASIF		

SHEET TITLE:- STEP - 03 CROSS SECTION

Drawing No. 2210-01-01-02-03-R206 | REVISION T0

Drawing file path & name D:\Projects\01_Rehabilition Construction Of Roads In Site Industrial Estate Karachi\00_Submital\Tender\Working\02_Road\Road - 35\06_Typical Sections\2210-01-01-02-03-R200 TO 21010.dwg
User and Plot Date:- Arshad - Wed, 08 Feb 2023 - 7:52pm

METHODOLOGY

STEP-04

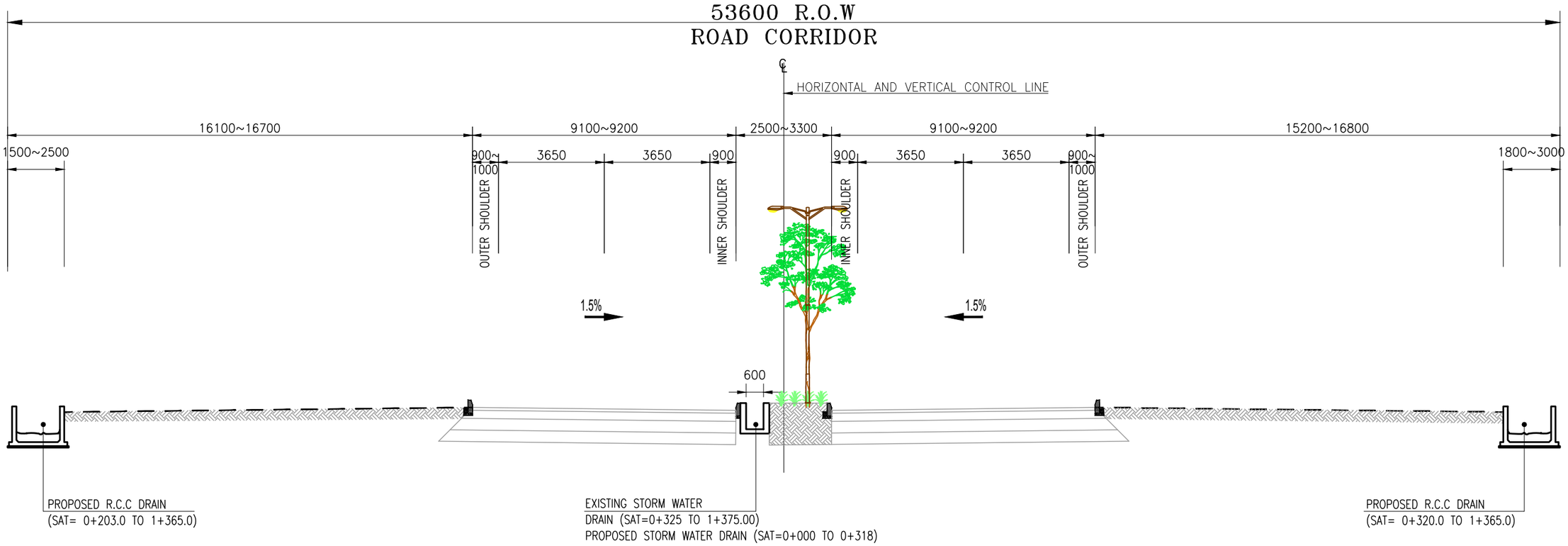
1. REMOVE THE EXISTING CURB.

2. THE CONTRACTOR SHALL MAKE THE SHOP DRAWING & TAKE PRIOR APPROVAL FROM THE ENGINEER, BEFORE EXECUTION OF ROAD WORKS.

3. GROOVE & CLEAN THE EXISTING ASPHALTIC SURFACE.

4. APPLY TACK COAT ON GROOVED SURFACE.

5. THE CONTRACTOR SHALL TAKE THE WRITTEN APPROVAL FROM SUPERVISORY CONSULTANT OF SATISFACTORY COMPLETION OF STEP-04 , PRIOR TO PROCEED STEP-05.



PROPOSED CROSS SECTION

STA=0+000.00 TO 1+375.00

NOTES:–

1. ALL DIMENSIONS ARE IN METERS/MILIMETERS UNLESS OTHERWISE STATED.

REV.	DESCRIPTION	DATE	APPROVED
T0	TENDER ISSUE	20-01-2023	WASIF

CLIENT:- SINDH INDUSTRIAL TRADING ESTATES LIMITED

PROJECT:- REHABILITATION / CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

CONSULTANT:- ATIF NAZAR (PVT.) LTD.
PROJECT MANAGERS, PLANNERS, ARCHITECTS & CONSULTING ENGINEERS
D-11/A, BLOCK NO-17, GULSHAN-E-IQBAL, KARACHI. P.H. 34820497 - 34982561

DRAWN BY	ARSHAD	PROJECT NO: RSK	DATE:- 20-01-2023
DESIGN BY	SAMEED		
CHECKED BY	WAZI IQBAL	SCALE: N.T.S	SHEET: 07/10 (A3)
APPROVED BY	WASIF		

SHEET TITLE:- STEP - 04 CROSS SECTION

Drawing No. 2210-01-01-02-03-R207 | REVISION T0

Drawing file path & name D:\Projects\01_Rehabilitation Construction Of Roads In Site Industrial Estate Karachi\00_Submital\Tender\Working\02_Road\Road - 35\06_Typical Sections\2210-01-01-02-03-R200 TO 21010.dwg
User and Plot Date : Arshad - Wed, 08 Feb 2023 - 7:52pm

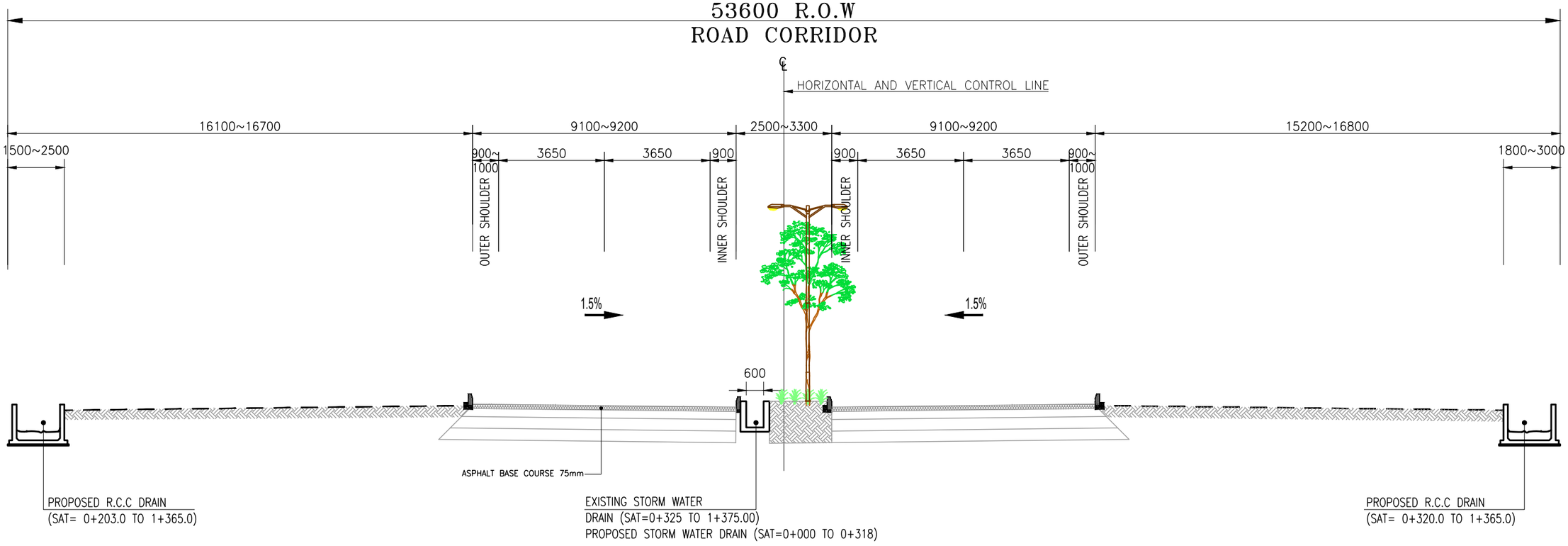
METHODOLOGY

STEP-05

1. LAY MINIMUM 75mm ASPHALT BASE COURSE & VARY DEPENDING ON DESIGN PROFILE.

2. APPLY TACK COAT ON TOP OF ASPHALTIC BASE COURSE.

3. THE CONTRACTOR SHALL TAKE THE WRITTEN APPROVAL FROM SUPERVISORY CONSULTANT OF SATISFACTORY COMPLETION OF STEP-05 , PRIOR TO PROCEED STEP-06.



PROPOSED CROSS SECTION

STA=0+000.00 TO 1+375.00

NOTES:–

1. ALL DIMENSIONS ARE IN METERS/MILIMETERS UNLESS OTHERWISE STATED.

REV.	DESCRIPTION	DATE	APPROVED
T0	TENDER ISSUE	20-01-2023	WASIF

CLIENT:- **SINDH INDUSTRIAL TRADING ESTATES LIMITED**

PROJECT:- **REHABILITATION / CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI**

CONSULTANT:- **ATIF NAZAR (PVT.) LTD.**
PROJECT MANAGERS, PLANNERS, ARCHITECTS & CONSULTING ENGINEERS
D-11/A, BLOCK NO-17, GULSHAN-E-IQBAL, KARACHI. P.H. 34820497 - 34982561

		PROJECT NO:	DATE:-
DRAWN BY	ARSHAD	RSK	20-01-2023
DESIGN BY	SAMEED		
CHECKED BY	WAZI IQBAL	SCALE: N.T.S	SHEET: 08/10 (A3)
APPROVED BY	WASIF		

SHEET TITLE:- STEP - 05 CROSS SECTION

Drawing No. 2210-01-01-02-03-R208

REVISION T0

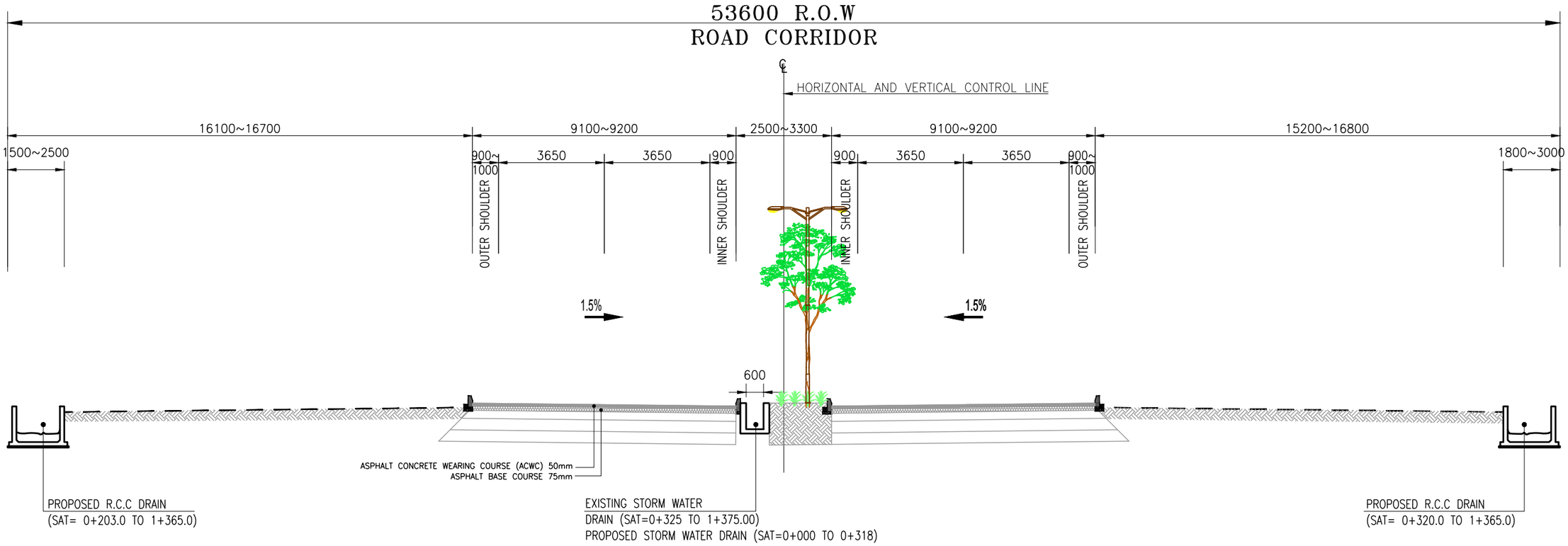
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User and Plot Date: Arshad – Wed, 08 Feb 2023 – 7:52pm

METHODOLOGY

STEP-06

1. LAY 50mm ASPHALT WEARING COURSE.

2. THE CONTRACTOR SHALL TAKE THE WRITTEN APPROVAL FROM SUPERVISORY CONSULTANT OF SATISFACTORY COMPLETION OF STEP-06 , PRIOR TO PROCEED STEP-07.



PROPOSED CROSS SECTION

STA=0+000.00 TO 1+375.00

NOTES:–

1. ALL DIMENSIONS ARE IN METERS/MILIMETERS UNLESS OTHERWISE STATED.

REV.	DESCRIPTION	DATE	APPROVED
T0	TENDER ISSUE	20-01-2023	WASIF

CLIENT:- SINDH INDUSTRIAL TRADING ESTATES LIMITED

PROJECT:- REHABILITATION / CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

CONSULTANT:-

ATIF NAZAR (PVT.) LTD.

PROJECT MANAGERS, PLANNERS, ARCHITECTS & CONSULTING ENGINEERS
D-11/A, BLOCK NO-17, GULSHAN-E-IQBAL, KARACHI. P.H. 34820497 - 34982561

		PROJECT NO:	DATE:-
DRAWN BY	ARSHAD	RSK	20-01-2023
DESIGN BY	SAMEED		
CHECKED BY	WAZI IQBAL	SCALE: N.T.S	SHEET: 09/10 (A3)
APPROVED BY	WASIF		

SHEET TITLE:- STEP - 06 CROSS SECTION

Drawing No. 2210-01-01-02-03-R209

REVISION T0

Drawing file path & name D:\Projects\01_Rehabilition Construction Of Roads In Site Industrial Estate Karachi\00_Submital\Tender\Working\02_Road\Road - 35\06_Typical Sections\2210-01-01-02-03-R200 TO 210T0.dwg
User and Plot Date:- Arshad - Wed, 08 Feb 2023 - 7:52pm

METHODOLOGY

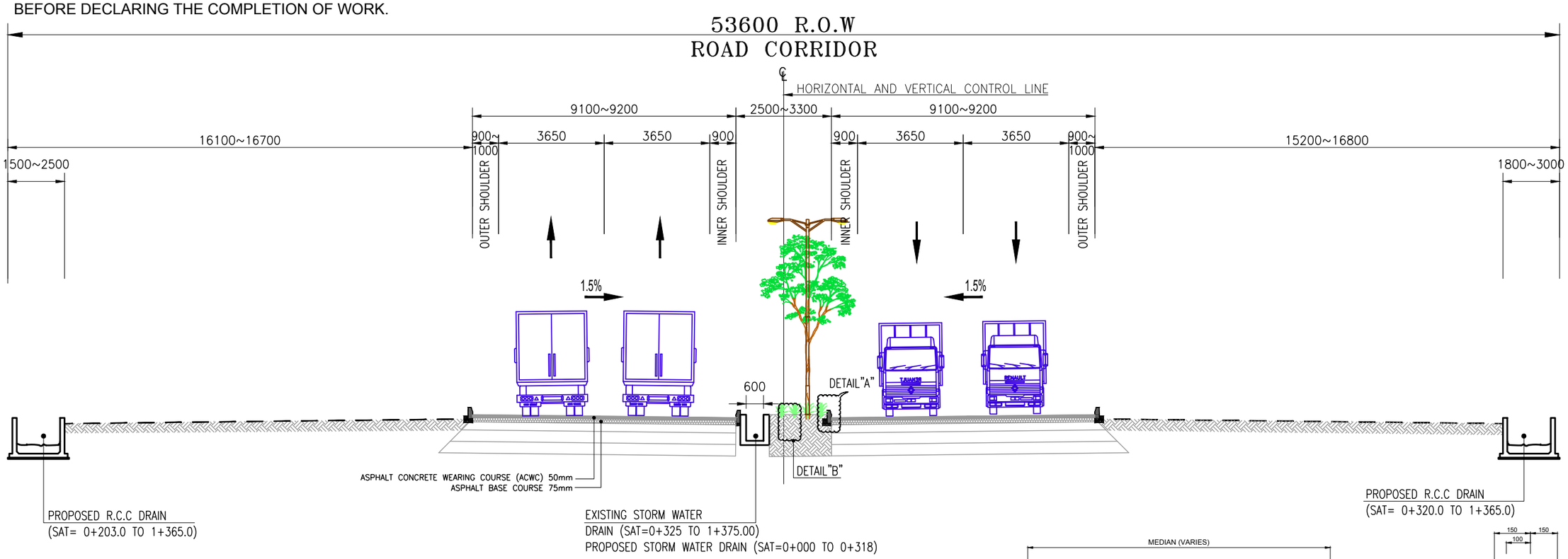
STEP-07

1. INSTALL THE CURB & ELECTRIC POLES.

2. PROVIDE ANY CUT & FILL ALONG THE ROAD SIDES FOR LEVELING.

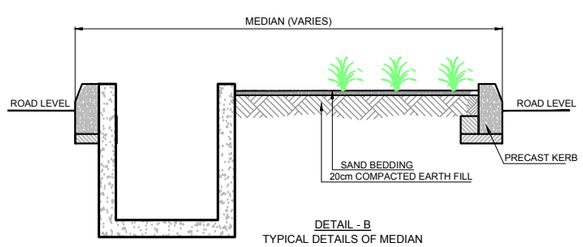
3. PROPER COMPACTION AND DRESSING MUST BE ENSURED BEFORE INSTALLATION OF CATEYES AND PAVEMENT MARKING.

4. THE CONTRACTOR SHALL TAKE THE WRITTEN APPROVAL FROM SUPERVISORY CONSULTANT ON SATISFACTORY COMPLETION OF STEP-07, BEFORE DECLARING THE COMPLETION OF WORK.

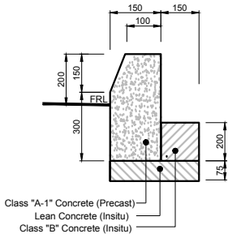


PROPOSED CROSS SECTION

STA=0+000.00 TO 1+375.00



DETAIL - B
TYPICAL DETAILS OF MEDIAN



DETAIL - A
TYPICAL DETAILS OF KERB STONE

NOTES:–

1. ALL DIMENSIONS ARE IN METERS/MILIMETERS UNLESS OTHERWISE STATED.

REV.	DESCRIPTION	DATE	APPROVED
T0	TENDER ISSUE	20-01-2023	WASIF

CLIENT:- SINDH INDUSTRIAL TRADING ESTATES LIMITED

PROJECT:- REHABILITATION / CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

CONSULTANT:- ATIF NAZAR (PVT.) LTD.
PROJECT MANAGERS, PLANNERS, ARCHITECTS & CONSULTING ENGINEERS
D-11/A, BLOCK NO-17, GULSHAN-E-IQBAL, KARACHI. P.H. 34820497 - 34982561

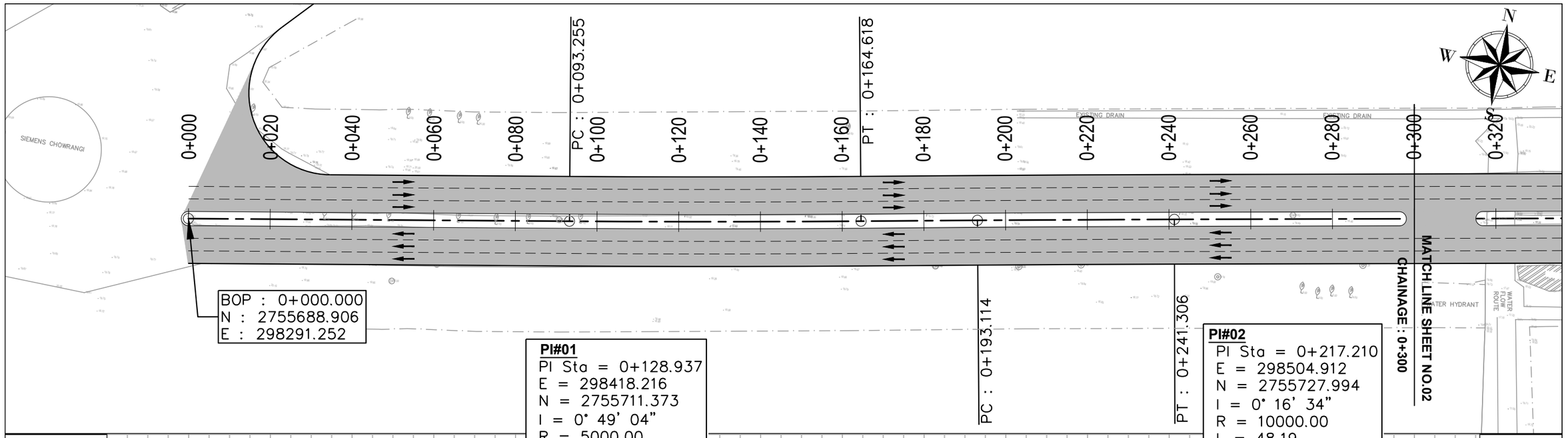
		PROJECT NO:	DATE:-
DRAWN BY	ARSHAD	RSK	20-01-2023
DESIGN BY	SAMEED		
CHECKED BY	WAZI IQBAL	SCALE: N.T.S	SHEET: 10/10 (A3)
APPROVED BY	WASIF		

SHEET TITLE:- STEP - 07 CROSS SECTION

Drawing No. 2210-01-01-02-03-R210 | REVISION T0

Drawing file path & name D:\Projects\01_Rehabilition Construction Of Roads In Site Industrial Estate Karachi\00_Submital\Tender\Working\02_Road\Road - 35\06_Typical Sections\2210-01-01-02-03-R200 TO 21010.dwg
User and Plot Date: Arshad - Wed, 08 Feb 2023 - 7:52pm

ROAD
PLAN & PROFILE



FRL	19.962	19.955	19.948	19.940	19.933	19.925	19.915	19.870	19.783	19.687	19.611	19.583	19.583	19.584	19.584	19.582
EGL	19.830	19.827	19.858	19.822	19.770	19.746	19.738	19.731	19.635	19.561	19.487	19.518	19.560	19.479	19.357	19.354
STATION	0+000	0+020	0+040	0+060	0+080	0+100	0+120	0+140	0+160	0+180	0+200	0+220	0+240	0+260	0+280	0+300

NOTES:–

1. ALL DIMENSIONS ARE IN METERS/MILIMETERS UNLESS OTHERWISE STATED.

LEGEND

- PROPOSED CENTER LINE
- PROPOSED KERB
- PROPOSED LANE MARKING

REV.	DESCRIPTION	DATE	APPROVED
T0	TENDER ISSUE	20-01-2023	WASIF

CLIENT:- SINDH INDUSTRIAL TRADING ESTATES LIMITED

PROJECT:- REHABILITATION / CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

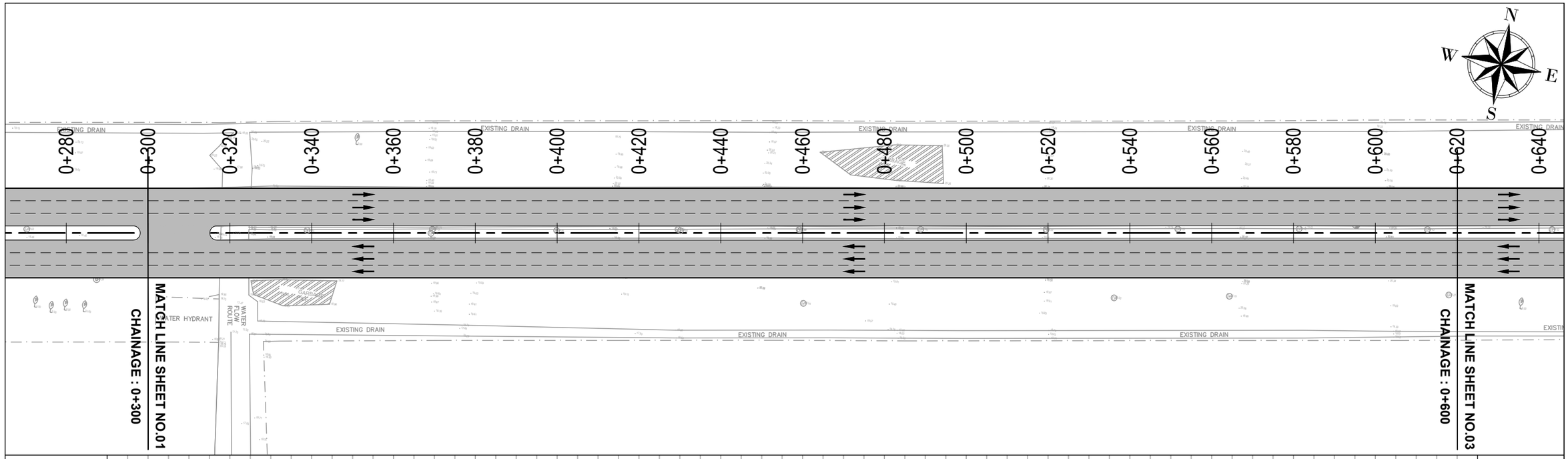
CONSULTANT:- ATIF NAZAR (PVT.) LTD.
PROJECT MANAGERS, PLANNERS, ARCHITECTS & CONSULTING ENGINEERS
D-11/A, BLOCK NO-17, GULSHAN-E-IQBAL, KARACHI. P.H. 34820497 - 34982561

DRAWN BY	ARSHAD	PROJECT NO.	DATE:-
DESIGN BY	SAMEED	RSK	20-01-2023
CHECKED BY	WAZI IQBAL	SCALE: HOR=1:1000 VER=1:10	SHEET: 01/05 (A3)
APPROVED BY	WASIF		

SHEET TITLE:-
ROAD - 35
PLAN & PROFILE
(SAT=0+000 TO 0+300)

Drawing No. 2210-01-01-02-03-R301 | REVISION T0

Drawing file path & name: D:\Projects\01_Rehabilition Construction Of Roads In Site Industrial Estate Karachi\00_Submital\Tender\Working\02_Road\Road - 35\07_Plan&Profile\Road Profile\2210-01-01-02-03-R301.dwg
User and Plot Date: Arshad - Tue, 07 Feb 2023 - 8:46pm



FRL	19.582	19.579	19.576	19.607	19.693	19.802	19.898	19.963	20.010	20.057	20.104	20.151	20.199	20.248	20.300	20.353	20.407
EGL	19.354	19.484	19.479	19.476	19.541	19.672	19.776	19.799	19.846	19.917	19.944	19.955	20.046	20.138	20.194	20.231	20.280
STATION	0+300	0+320	0+340	0+360	0+380	0+400	0+420	0+440	0+460	0+480	0+500	0+520	0+540	0+560	0+580	0+600	0+620

NOTES:–

1. ALL DIMENSIONS ARE IN METERS/MILIMETERS UNLESS OTHERWISE STATED.

LEGEND

PROPOSED CENTER LINE
PROPOSED KERB
PROPOSED LANE MARKING

REV.	DESCRIPTION	DATE	APPROVED
T0	TENDER ISSUE	20-01-2023	WASIF

CLIENT:-
SINDH INDUSTRIAL TRADING ESTATES LIMITED

PROJECT:-
REHABILITATION / CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

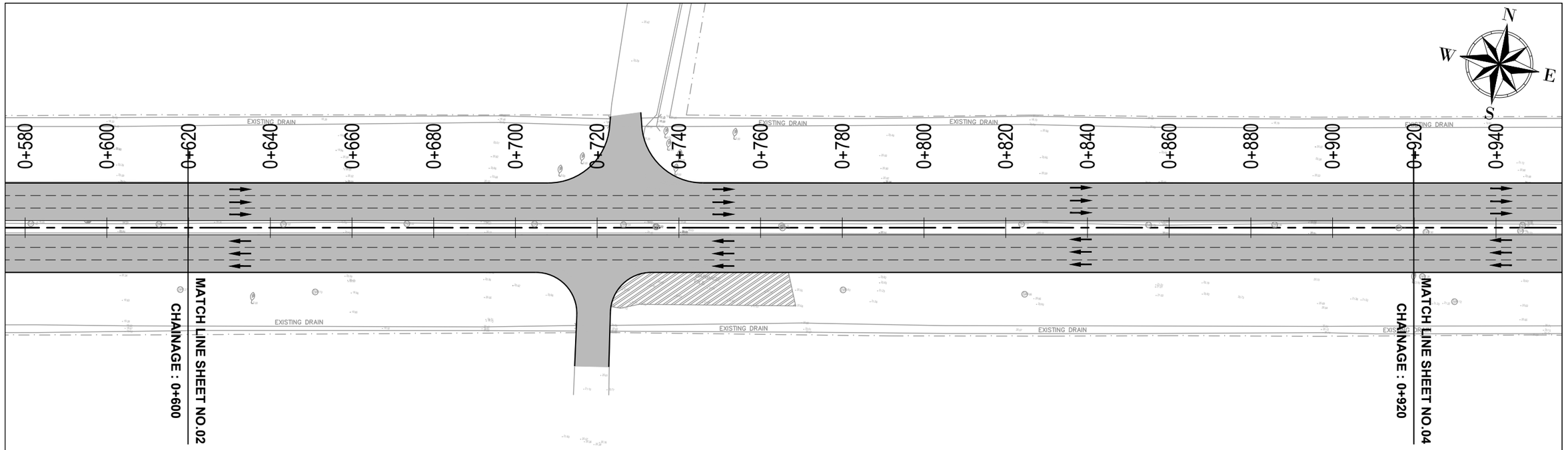
CONSULTANT:-
ATIF NAZAR (PVT.) LTD.
PROJECT MANAGERS, PLANNERS, ARCHITECTS & CONSULTING ENGINEERS
D-11/A, BLOCK NO-17, GULSHAN-E-IQBAL, KARACHI. P.H. 34820497 - 34982561

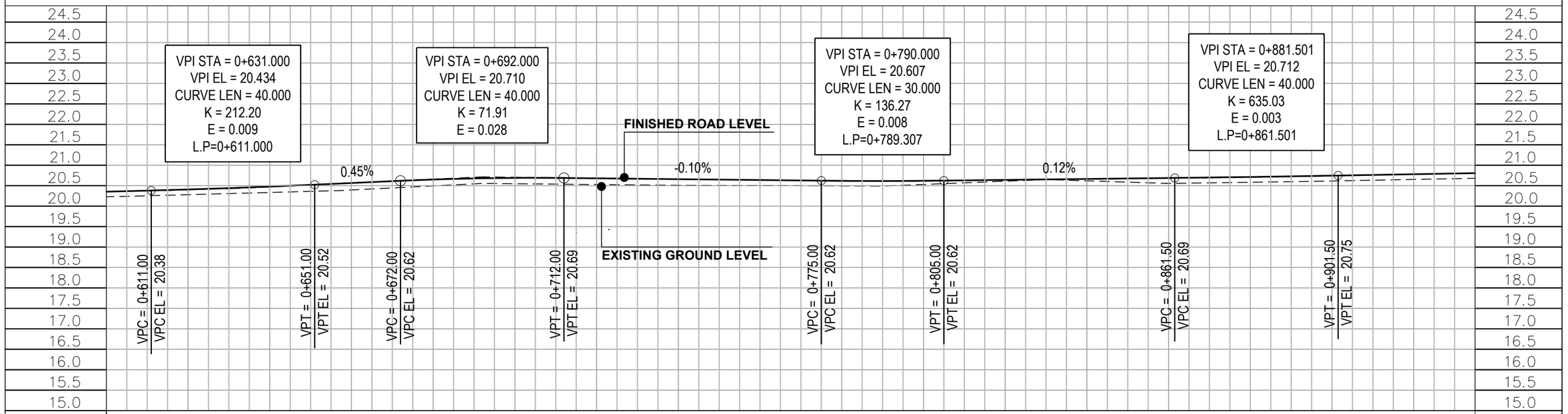
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DESIGN BY	SAMEED	RSK	20-01-2023
CHECKED BY	WAZI IQBAL	SCALE: HOR=1:1000 VER=1:10	SHEET: 02/05 (A3)
APPROVED BY	WASIF		

SHEET TITLE:-
ROAD - 35
PLAN & PROFILE
(SAT=0+300 TO 0+620)

Drawing No. 2210-01-01-02-03-R302
REVISION T0

Drawing file path & name: D:\Projects\01_Rehabilition Construction Of Roads In Site Industrial Estate Karachi\00_Submital\Tender\Working\02_Road\Road - 35\07_Plan&Profile\Road Profile\2210-01-01-02-03-R301.dwg
User and Plot Date: Arshad - Tue, 07 Feb 2023 - 8:46pm





FRL	20.407	20.478	20.565	20.651	20.691	20.680	20.659	20.638	20.618	20.619	20.641	20.664	20.687	20.713	20.745	20.781
EGL	20.280	20.334	20.395	20.495	20.548	20.529	20.510	20.502	20.494	20.530	20.610	20.618	20.555	20.584	20.615	20.653
STATION	0+620	0+640	0+660	0+680	0+700	0+720	0+740	0+760	0+780	0+800	0+820	0+840	0+860	0+880	0+900	0+920

NOTES:–

1. ALL DIMENSIONS ARE IN METERS/MILIMETERS UNLESS OTHERWISE STATED.

LEGEND

PROPOSED CENTER LINE
PROPOSED KERB
PROPOSED LANE MARKING

REV.	DESCRIPTION	DATE	APPROVED
T0	TENDER ISSUE	20-01-2023	WASIF

CLIENT:- SINDH INDUSTRIAL TRADING ESTATES LIMITED

PROJECT:- REHABILITATION / CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

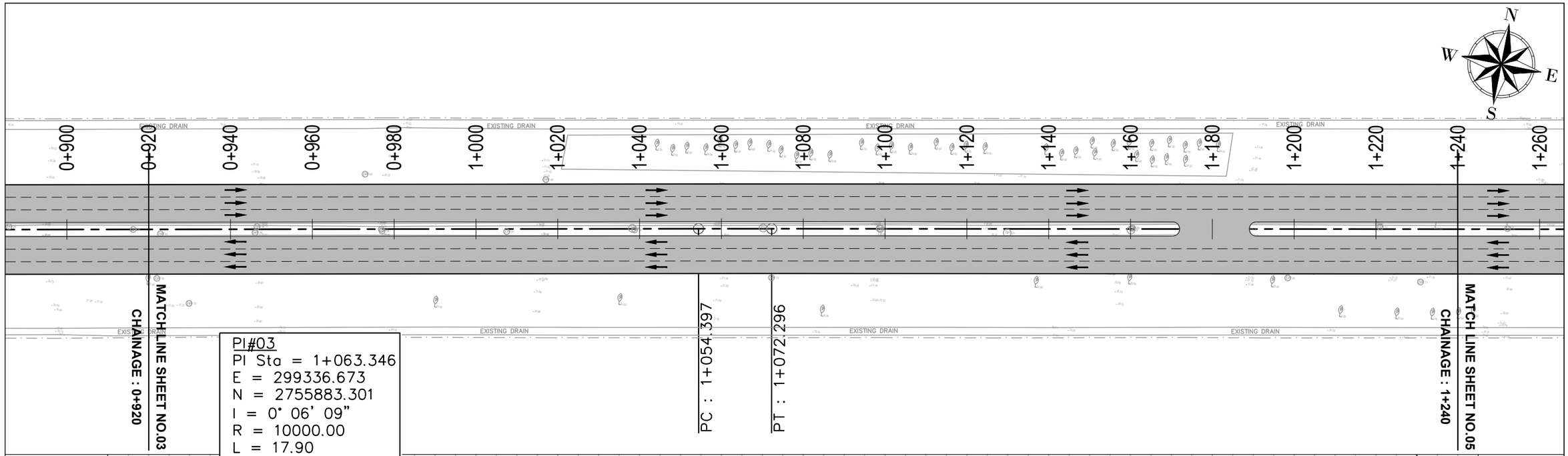
CONSULTANT:- ATIF NAZAR (PVT.) LTD.
PROJECT MANAGERS, PLANNERS, ARCHITECTS & CONSULTING ENGINEERS
D-11/A, BLOCK NO-17, GULSHAN-E-IQBAL, KARACHI. P.H. 34820497 - 34982561

DRAWN BY	ARSHAD	PROJECT NO.	DATE:-
DESIGN BY	SAMEED	RSK	20-01-2023
CHECKED BY	WAZI IQBAL	SCALE: HOR=1:1000 VER=1:10	SHEET: 03/05 (A3)
APPROVED BY	WASIF		

SHEET TITLE:- ROAD - 35 PLAN & PROFILE (SAT=0+620 TO 0+920)

Drawing No. 2210-01-01-02-03-R303 | REVISION T0

Drawing file path & name D:\Projects\01_Rehabilition Construction Of Roads In Site Industrial Estate Karachi\00_Submital\Tender\Working\02_Road\Road - 35\07_Plan&Profile\Road Profile\2210-01-01-02-03-R301.dwg
User and Plot Date : Arshad - Tue, 07 Feb 2023 - 8:46pm



FRL	20.781	20.816	20.852	20.888	20.923	20.955	20.981	21.005	21.030	21.055	21.078	21.090	21.086	21.080	21.073	21.066	21.062
EGL	20.653	20.692	20.703	20.706	20.771	20.816	20.798	20.780	20.820	20.860	20.940	20.965	20.972	20.945	20.919	20.927	20.935
STATION	0+920	0+940	0+960	0+980	1+000	1+020	1+040	1+060	1+080	1+100	1+120	1+140	1+160	1+180	1+200	1+220	1+240

NOTES:–

1. ALL DIMENSIONS ARE IN METERS/MILIMETERS UNLESS OTHERWISE STATED.

LEGEND

- PROPOSED CENTER LINE
- PROPOSED KERB
- PROPOSED LANE MARKING

REV.	DESCRIPTION	DATE	APPROVED
T0	TENDER ISSUE	20-01-2023	WASIF

CLIENT:-
SINDH INDUSTRIAL TRADING ESTATES LIMITED

PROJECT:-
REHABILITATION / CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

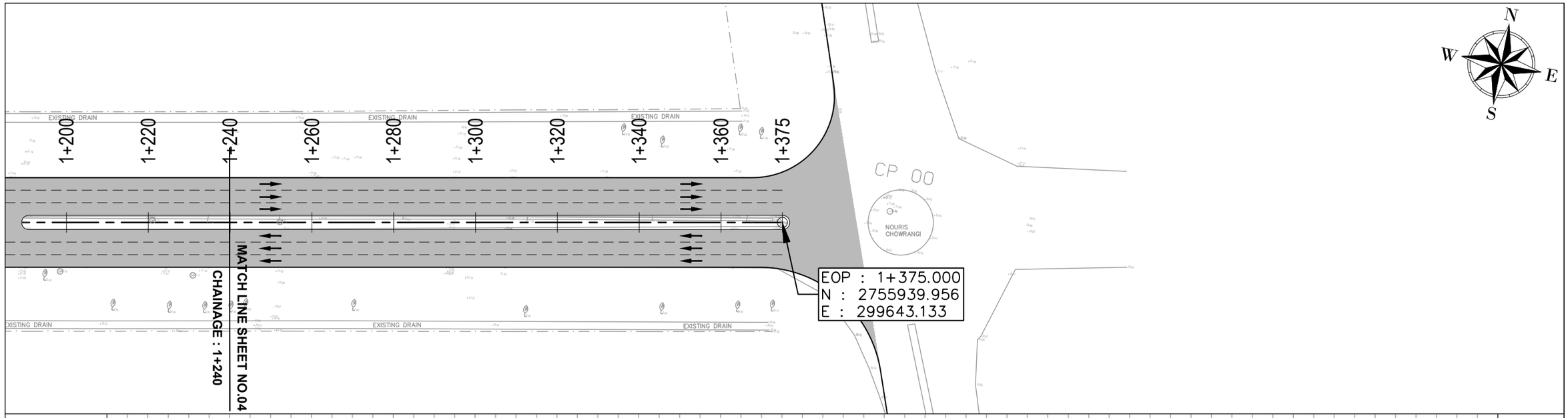
CONSULTANT:-
ATIF NAZAR (PVT.) LTD.
PROJECT MANAGERS, PLANNERS, ARCHITECTS & CONSULTING ENGINEERS
D-11/A, BLOCK NO-17, GULSHAN-E-IQBAL, KARACHI. P.H. 34820497 - 34982561

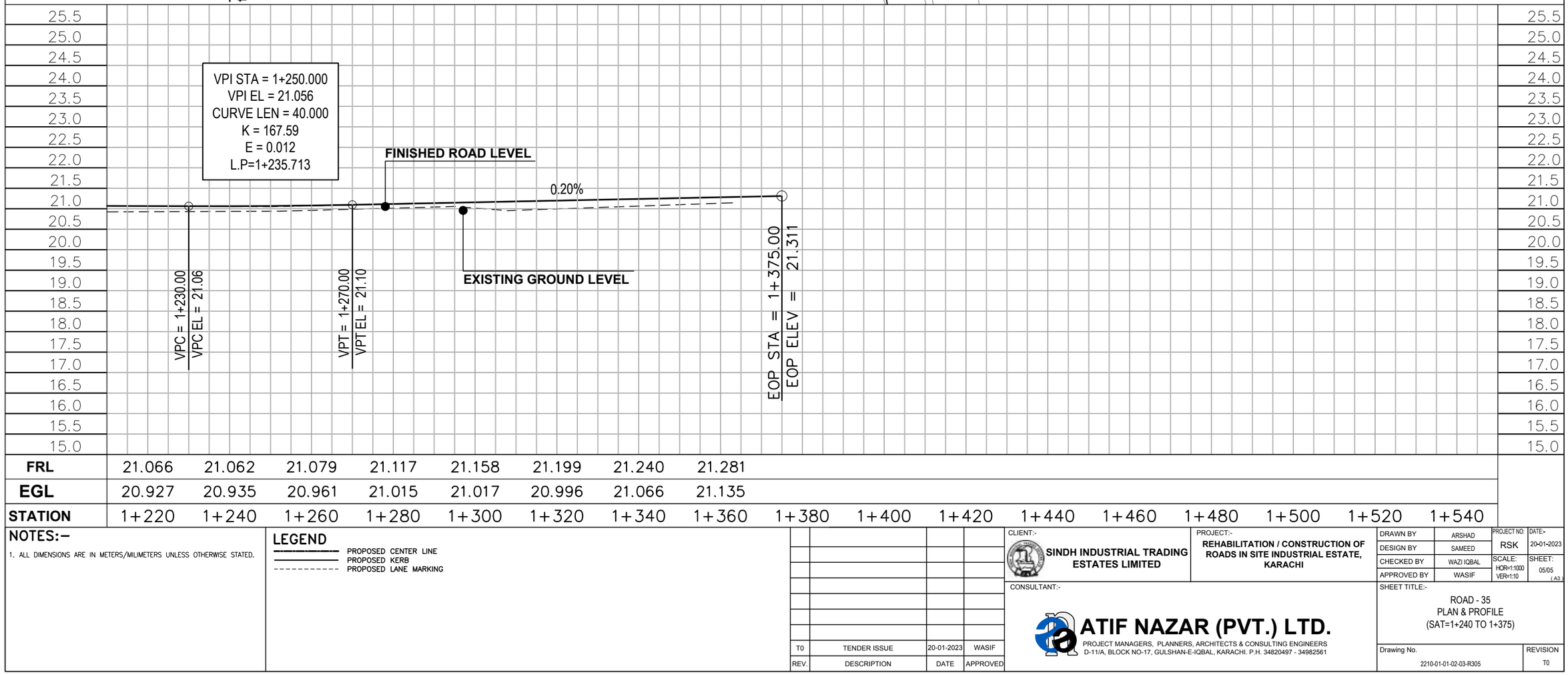
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DESIGN BY	SAMEED		
CHECKED BY	WAZI IQBAL	SCALE: HOR=1:1000 VER=1:10	SHEET: 04/05 (A3)
APPROVED BY	WASIF		

SHEET TITLE:-
ROAD - 35
PLAN & PROFILE
(SAT=0+925 TO 1+240)

Drawing No. 2210-01-01-02-03-R304
REVISION T0

Drawing file path & name: D:\Projects\01_Rehabilition Construction Of Roads In Site industrial Estate Karachi\00_Submittal\Tender\Working\02_Road\Road - 35\07_Plan&Profile\Road Profile\2210-01-01-02-03-R301.dwg
User and Plot Date: Arshad - Tue, 07 Feb 2023 - 8:47pm





FRL	21.066	21.062	21.079	21.117	21.158	21.199	21.240	21.281									
EGL	20.927	20.935	20.961	21.015	21.017	20.996	21.066	21.135									
STATION	1+220	1+240	1+260	1+280	1+300	1+320	1+340	1+360	1+380	1+400	1+420	1+440	1+460	1+480	1+500	1+520	1+540

NOTES:–

1. ALL DIMENSIONS ARE IN METERS/MILIMETERS UNLESS OTHERWISE STATED.

LEGEND

PROPOSED CENTER LINE
PROPOSED KERB
PROPOSED LANE MARKING

REV.	DESCRIPTION	DATE	APPROVED
T0	TENDER ISSUE	20-01-2023	WASIF

CLIENT:-
SINDH INDUSTRIAL TRADING ESTATES LIMITED

PROJECT:-
REHABILITATION / CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

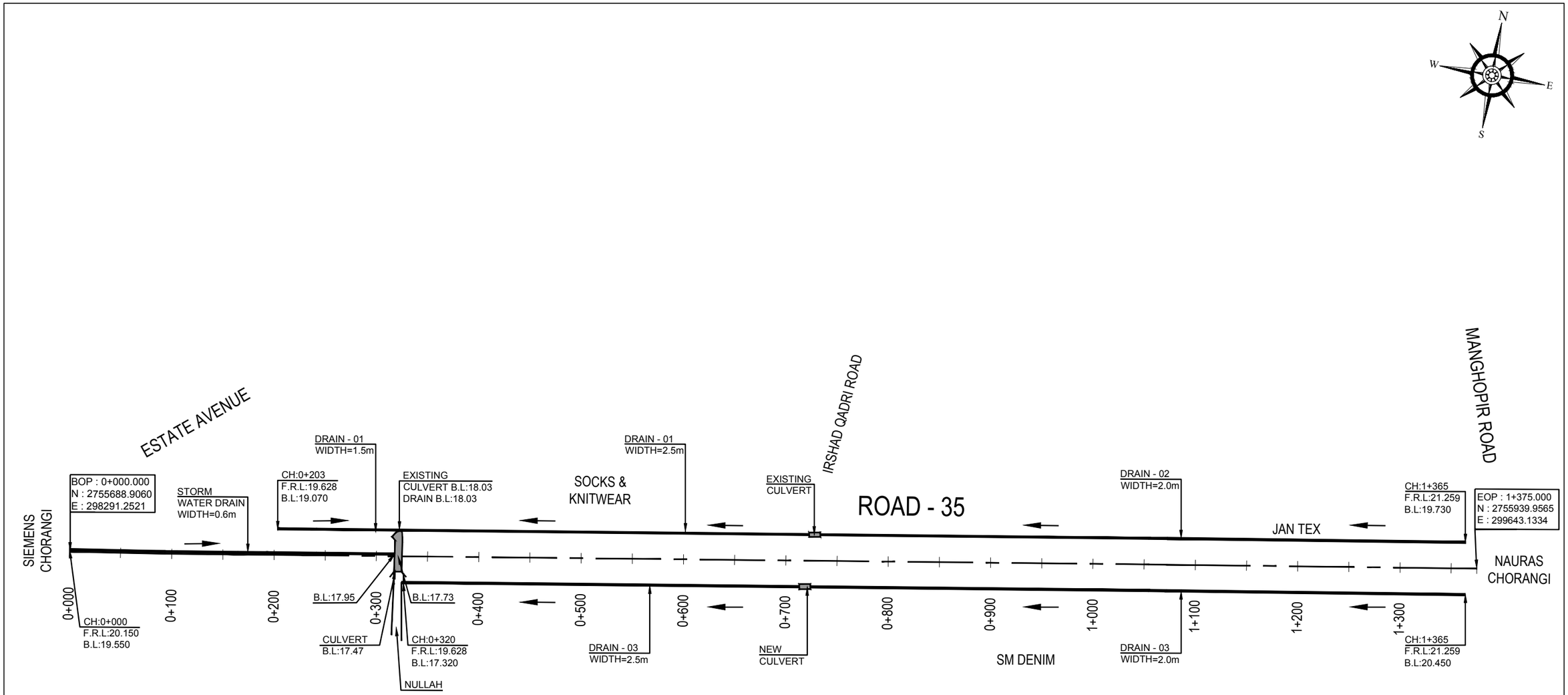
CONSULTANT:-
ATIF NAZAR (PVT.) LTD.
PROJECT MANAGERS, PLANNERS, ARCHITECTS & CONSULTING ENGINEERS
D-11/A, BLOCK NO-17, GULSHAN-E-IQBAL, KARACHI. P.H. 34820497 - 34982561

		PROJECT NO.	DATE:-
DRAWN BY	ARSHAD	RSK	20-01-2023
DESIGN BY	SAMEED		
CHECKED BY	WAZI IQBAL	SCALE: HOR=1:1000 VER=1:10	SHEET: 05/05 (A3)
APPROVED BY	WASIF		

SHEET TITLE:-
ROAD - 35
PLAN & PROFILE
(SAT=1+240 TO 1+375)

Drawing No. 2210-01-01-02-03-R305
REVISION T0

Drawing file path & name: D:\Projects\01_Rehabilition Construction Of Roads In Site Industrial Estate Karachi\00_Submittal\Tender\Working\02_Road\Road - 35\07_Plan&Profile\Road Profile\2210-01-01-02-03-R301.dwg
User and Plot Date: Arshad – Tue, 07 Feb 2023 – 8:47pm



NOTES:–

1. ALL DIMENSIONS ARE IN METERS/MILIMETERS UNLESS OTHERWISE STATED.

LEGEND:–

- ROAD CENTER LINE
- R.C.C DRAIN
- FLOW DIRECTION
- CH = CHAINAGE
- F.R.L = FINISHED ROAD
- B.L = DRAIN BED LEVEL

REV.	DESCRIPTION	DATE	APPROVED
T0	TENDER ISSUE	20-01-2023	WASIF

CLIENT:-
SINDH INDUSTRIAL TRADING ESTATES LIMITED

PROJECT:-
REHABILITATION / CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

CONSULTANT:-
ATIF NAZAR (PVT.) LTD.
PROJECT MANAGERS, PLANNERS, ARCHITECTS & CONSULTING ENGINEERS
D-11/A, BLOCK NO-17, GULSHAN-E-IQBAL, KARACHI. P.H. 34820497 - 34982561

DRAWN BY	ARSHAD	PROJECT NO:	DATE:-
DESIGN BY	SAMEED	RSK	20-01-2023
CHECKED BY	WAZI IQBAL	SCALE:	SHEET:
APPROVED BY	WASIF	N.T.S	01/01 (A3)

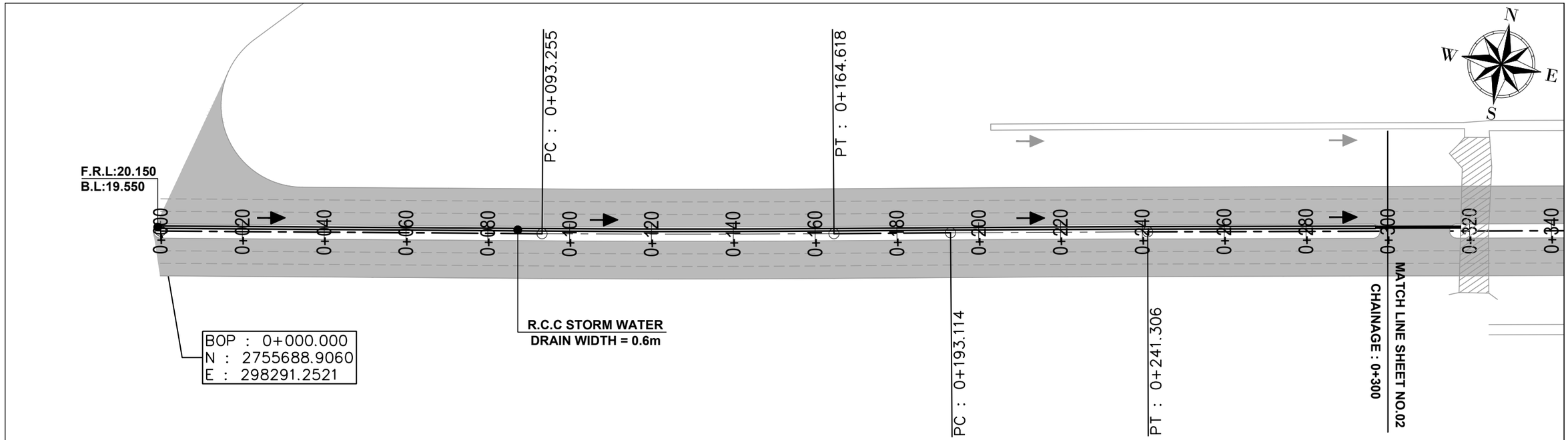
SHEET TITLE:-
ROAD - 35
DRAINAGE LAYOUT PLAN

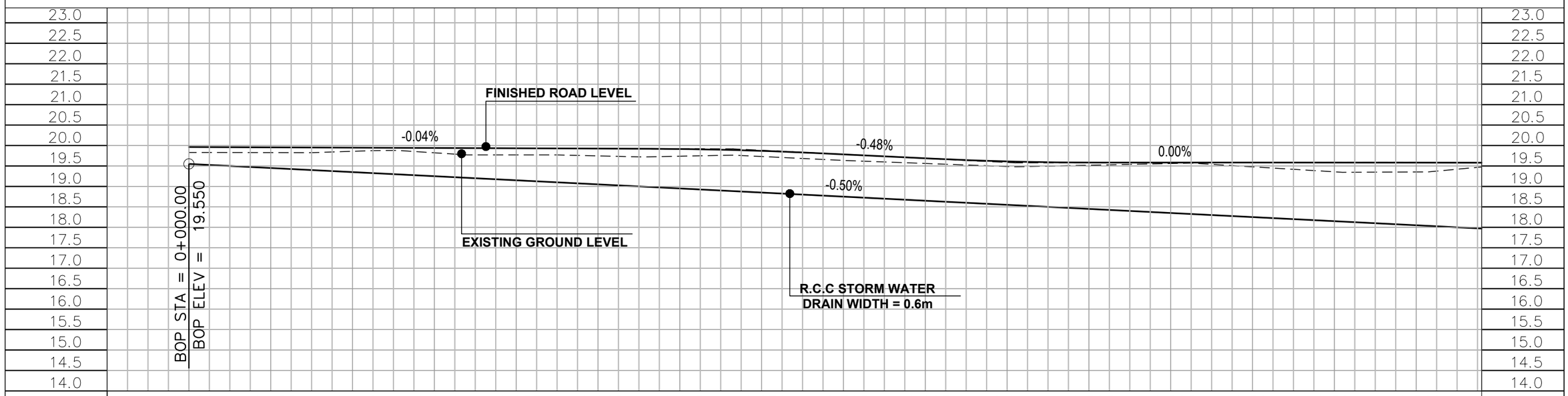
Drawing No. 2210-01-01-02-03-D100
REVISION T0

Drawing file path & name: D:\Projects\01_Rehabilition Construction Of Roads In Site Industrial Estate Karachi\00_Submital\Tender\Working\02_Road\Road - 35\09_Drainage Master Plan\2210-01-01-02-03-D100.dwg
User and Plot Date: Arshad - Tue, 07 Feb 2023 - 9:03pm

STORM WATER DRAIN

PLAN & PROFILE





FRL	19.962	19.955	19.948	19.940	19.933	19.925	19.915	19.870	19.783	19.687	19.611	19.583	19.583	19.584	19.584	19.582
EGL	19.830	19.827	19.858	19.822	19.770	19.746	19.738	19.731	19.635	19.561	19.487	19.518	19.560	19.479	19.357	19.354
B.L	19.550	19.450	19.350	19.250	19.150	19.050	18.950	18.850	18.750	18.650	18.550	18.450	18.350	18.250	18.150	18.050
STATION	0+000	0+020	0+040	0+060	0+080	0+100	0+120	0+140	0+160	0+180	0+200	0+220	0+240	0+260	0+280	0+300

NOTES:–

1. ALL DIMENSIONS ARE IN METERS/MILIMETERS UNLESS OTHERWISE STATED.

LEGEND

- PROPOSED CENTER LINE
- PROPOSED KERB
- PROPOSED LANE MARKING
- R.C.C DRAIN
- DRAIN CROSSING CLOSED (DCC)
- FLOW DIRECTION

REV.	DESCRIPTION	DATE	APPROVED
T0	TENDER ISSUE	20-01-2023	WASIF

CLIENT:-
SINDH INDUSTRIAL TRADING ESTATES LIMITED

PROJECT:-
REHABILITATION / CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

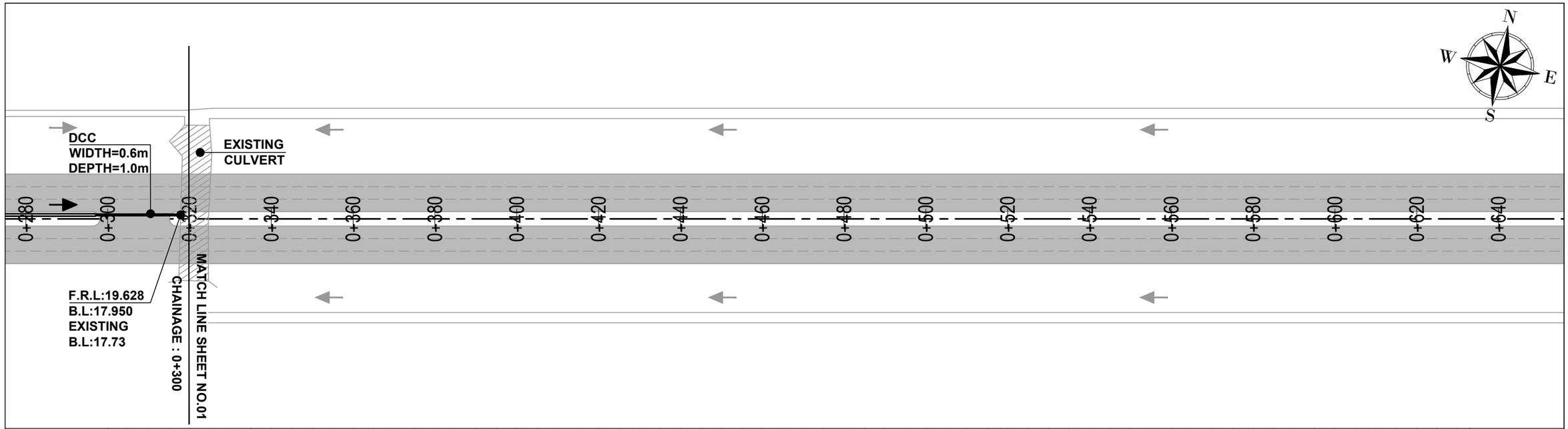
CONSULTANT:-
ATIF NAZAR (PVT.) LTD.
PROJECT MANAGERS, PLANNERS, ARCHITECTS & CONSULTING ENGINEERS
D-11/A, BLOCK NO-17, GULSHAN-E-IQBAL, KARACHI. P.H. 34820497 - 34982561

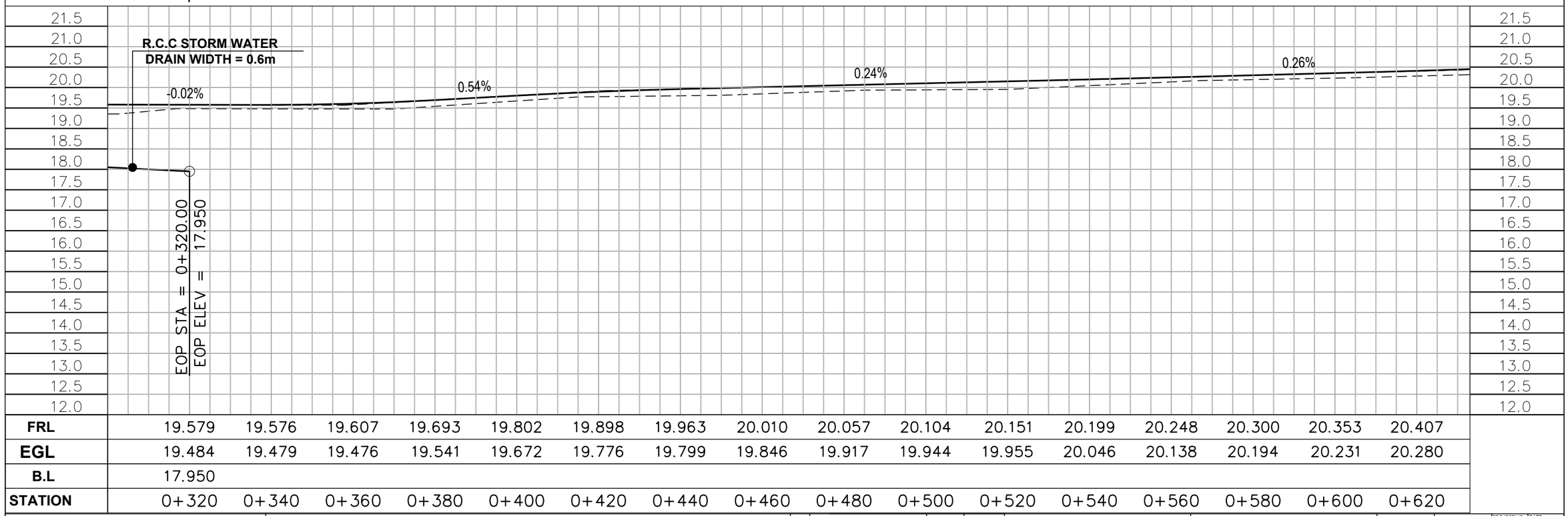
DRAWN BY	ARSHAD
DESIGN BY	SAMEED
CHECKED BY	WAZI IQBAL
APPROVED BY	WASIF
PROJECT NO:	RSK
DATE:	20-01-2023
SCALE:	HOR=1:1000 VER=1:10
SHEET:	01/02 (A3)

SHEET TITLE:-
ROAD - 36
PLAN & PROFILE (STORM WATER DRAIN)
(SAT=0+000 TO 0+300)

Drawing No. 2210-01-01-02-03-D301
REVISION T0

Drawing file path & name: D:\Projects\01_Rehabilition Construction Of Roads In Site Industrial Estate Karachi\00_Submital\Tender\Working\02_Road\Road - 35\07_Plan&Profile\Storm Water Drain Profile\2210-01-01-02-03-D301.dwg
User and Plot Date: Arshad - Tue, 07 Feb 2023 - 8:53pm





FRL	19.579	19.576	19.607	19.693	19.802	19.898	19.963	20.010	20.057	20.104	20.151	20.199	20.248	20.300	20.353	20.407
EGL	19.484	19.479	19.476	19.541	19.672	19.776	19.799	19.846	19.917	19.944	19.955	20.046	20.138	20.194	20.231	20.280
B.L	17.950															
STATION	0+320	0+340	0+360	0+380	0+400	0+420	0+440	0+460	0+480	0+500	0+520	0+540	0+560	0+580	0+600	0+620

NOTES:–

1. ALL DIMENSIONS ARE IN METERS/MILIMETERS UNLESS OTHERWISE STATED.

LEGEND

- PROPOSED CENTER LINE
- PROPOSED KERB
- PROPOSED LANE MARKING
- R.C.C DRAIN
- DRAIN CROSSING CLOSED (DCC)
- FLOW DIRECTION

REV.	DESCRIPTION	DATE	APPROVED
T0	TENDER ISSUE	20-01-2023	WASIF

CLIENT:-
SINDH INDUSTRIAL TRADING ESTATES LIMITED

PROJECT:-
REHABILITATION / CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

CONSULTANT:-
ATIF NAZAR (PVT.) LTD.
PROJECT MANAGERS, PLANNERS, ARCHITECTS & CONSULTING ENGINEERS
D-11/A, BLOCK NO-17, GULSHAN-E-IQBAL, KARACHI. P.H. 34820497 - 34982561

DRAWN BY	ARSHAD	PROJECT NO.	DATE:-
DESIGN BY	SAMEED	RSK	20-01-2023
CHECKED BY	WAZI IQBAL	SCALE: HOR=1:1000 VER=1:10	SHEET: 02/02 (A3)
APPROVED BY	WASIF		

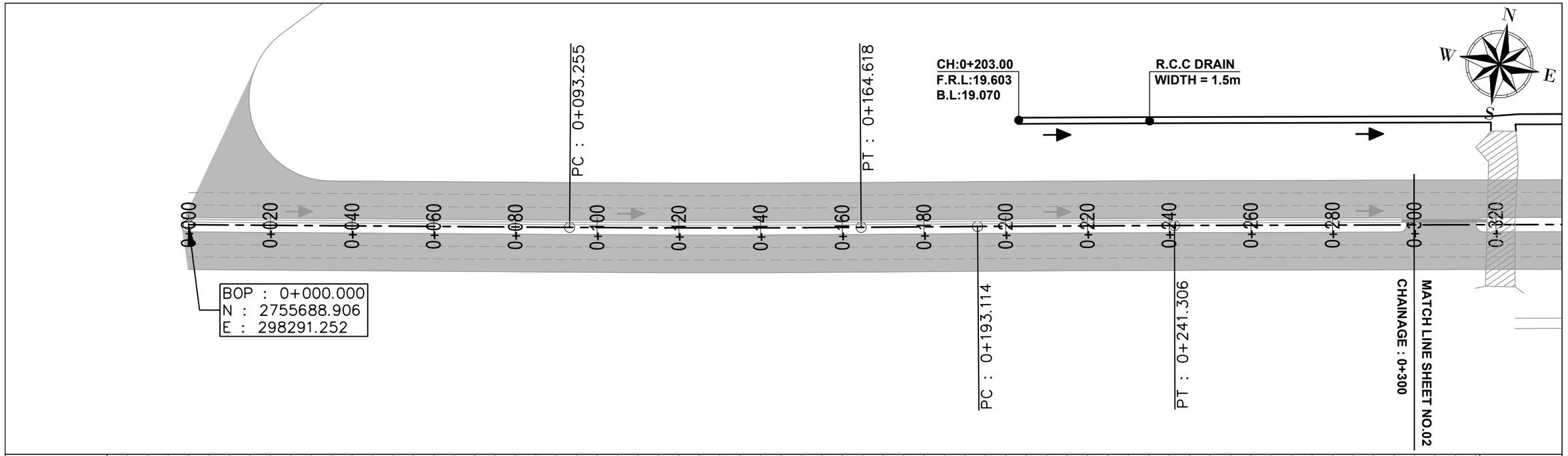
SHEET TITLE:-
ROAD - 36
PLAN & PROFILE (STORM WATER DRAIN)
(SAT=0+300 TO 0+320)

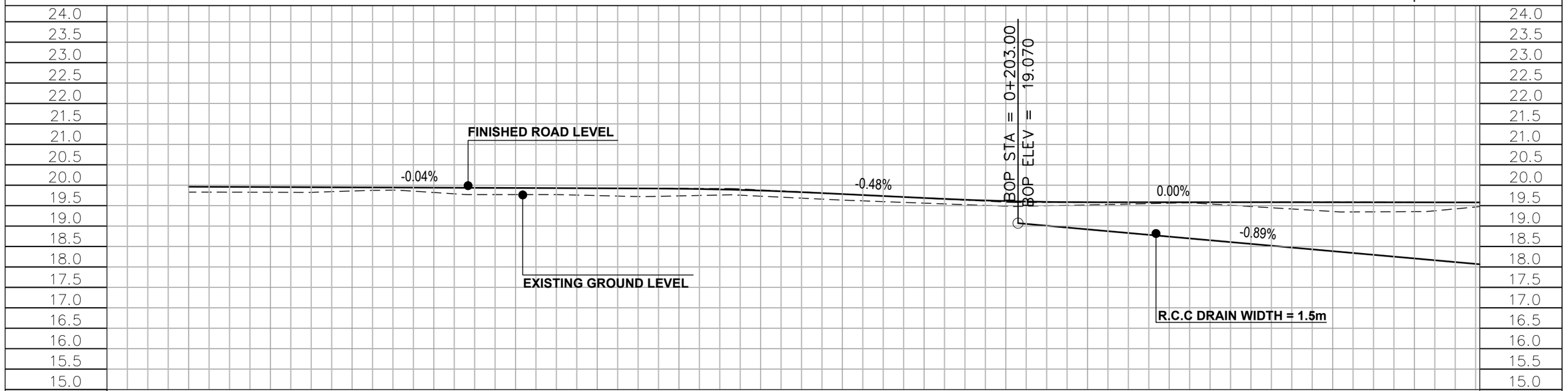
Drawing No. 2210-01-01-02-03-D302
REVISION T0

Drawing file path & name: D:\Projects\01_Rehabilition Construction Of Roads in Site Industrial Estate Karachi\00_Submital\Tender\Working\02_Road\Road - 35\07_Plan&Profile\Storm Water Drain Profile\2210-01-01-02-03-D301.dwg
User and Plot Date:- Arshad - Tue, 07 Feb 2023 - 8:53pm

STORM & SEWER DRAIN
PLAN & PROFILE

DRAIN - 01





FRL	19.962	19.955	19.948	19.940	19.933	19.925	19.915	19.870	19.783	19.687	19.611	19.583	19.583	19.584	19.584	19.582
EGL	19.830	19.827	19.858	19.822	19.770	19.746	19.738	19.731	19.635	19.561	19.487	19.518	19.560	19.479	19.357	19.354
B.L												18.919	18.741	18.563	18.386	18.208
STATION	0+000	0+020	0+040	0+060	0+080	0+100	0+120	0+140	0+160	0+180	0+200	0+220	0+240	0+260	0+280	0+300

NOTES:–

1. ALL DIMENSIONS ARE IN METERS/MILIMETERS UNLESS OTHERWISE STATED.

LEGEND

- PROPOSED CENTER LINE
- PROPOSED KERB
- PROPOSED LANE MARKING
- R.C.C DRAIN
- FLOW DIRECTION

REV.	DESCRIPTION	DATE	APPROVED
T0	TENDER ISSUE	20-01-2023	WASIF

CLIENT:-
SINDH INDUSTRIAL TRADING ESTATES LIMITED

PROJECT:-
REHABILITATION / CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

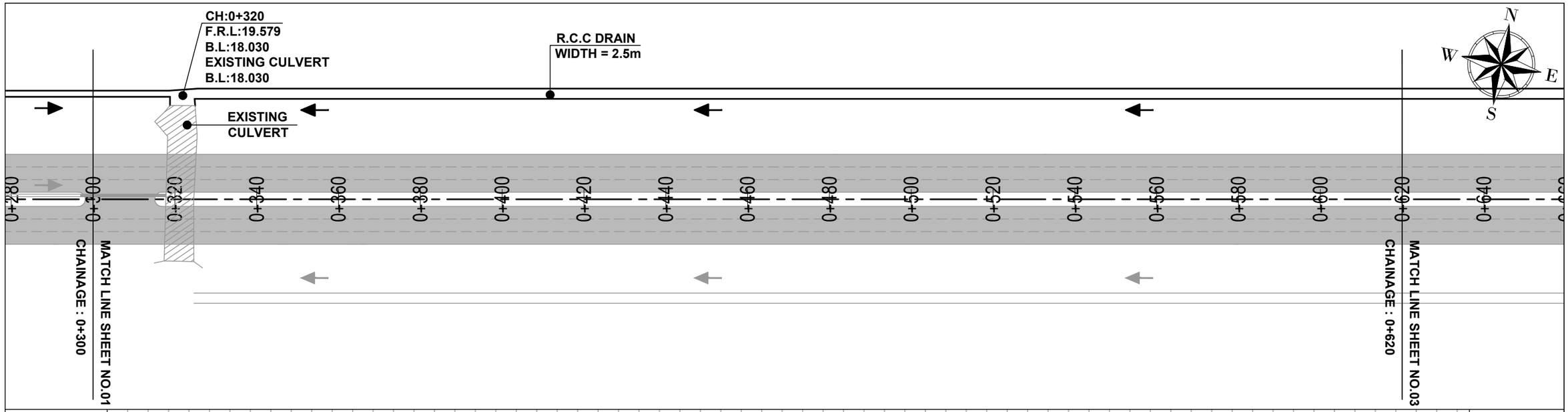
CONSULTANT:-
ATIF NAZAR (PVT.) LTD.
PROJECT MANAGERS, PLANNERS, ARCHITECTS & CONSULTING ENGINEERS
D-11/A, BLOCK NO-17, GULSHAN-E-IQBAL, KARACHI. P.H. 34820497 - 34982561

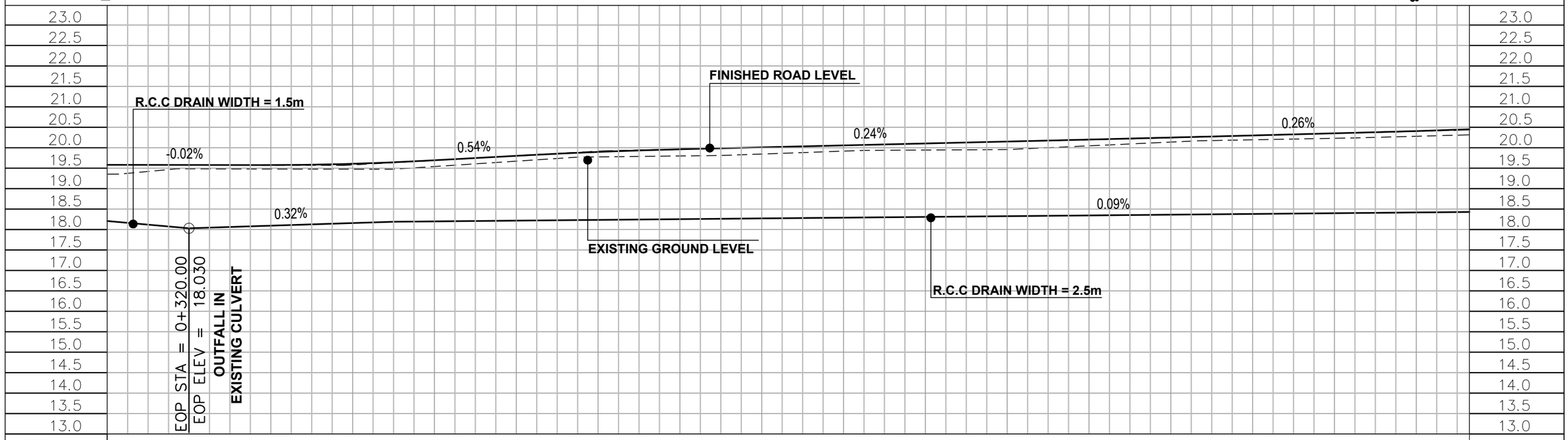
DRAWN BY	ARSHAD	PROJECT NO:	DATE-
DESIGN BY	SAMEED	RSK	20-01-2023
CHECKED BY	WAZI IQBAL	SCALE: HOR=1:1000 VER=1:10	SHEET: 01/03 (A3)
APPROVED BY	WASIF		

SHEET TITLE:-
ROAD - 36
PLAN & PROFILE (DRAIN - 01)
(SAT=0+000 TO 0+300)

Drawing No. 2210-01-01-02-03-D301
REVISION T0

Drawing file path & name: D:\Projects\01_Rehabilition Construction Of Roads In Site Industrial Estate Karachi\00_Submital\Tender\Working\02_Road\Road - 35\07_Plan&Profile\Drain-01\2210-01-01-02-03-D301.dwg
User and Plot Date: Arshad - Tue, 07 Feb 2023 - 8:49pm





FRL	19.579	19.576	19.607	19.693	19.802	19.898	19.963	20.010	20.057	20.104	20.151	20.199	20.248	20.300	20.353	20.407
EGL	19.484	19.479	19.476	19.541	19.672	19.776	19.799	19.846	19.917	19.944	19.955	20.046	20.138	20.194	20.231	20.280
B.L	18.030	18.094	18.158	18.199	18.217	18.235	18.254	18.272	18.290	18.308	18.326	18.345	18.363	18.381	18.399	18.417
STATION	0+320	0+340	0+360	0+380	0+400	0+420	0+440	0+460	0+480	0+500	0+520	0+540	0+560	0+580	0+600	0+620

NOTES:–

1. ALL DIMENSIONS ARE IN METERS/MILIMETERS UNLESS OTHERWISE STATED.

LEGEND

- PROPOSED CENTER LINE
- PROPOSED KERB
- PROPOSED LANE MARKING
- R.C.C DRAIN
- FLOW DIRECTION

REV.	DESCRIPTION	DATE	APPROVED
T0	TENDER ISSUE	20-01-2023	WASIF

CLIENT:-
SINDH INDUSTRIAL TRADING ESTATES LIMITED

PROJECT:-
REHABILITATION / CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

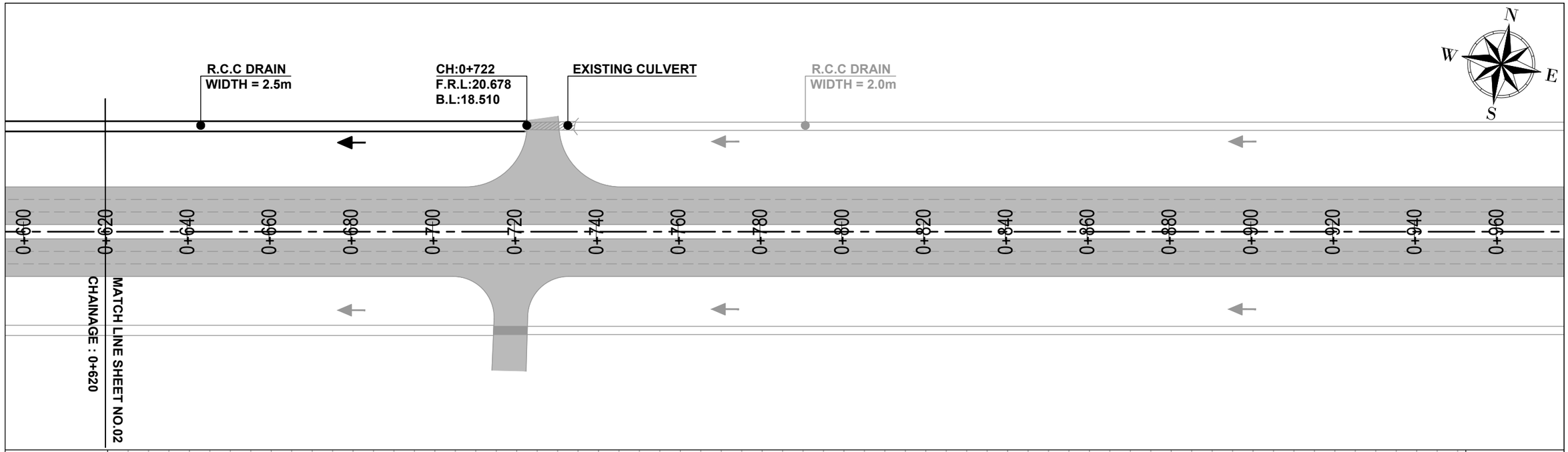
CONSULTANT:-
ATIF NAZAR (PVT.) LTD.
PROJECT MANAGERS, PLANNERS, ARCHITECTS & CONSULTING ENGINEERS
D-11/A, BLOCK NO-17, GULSHAN-E-IQBAL, KARACHI. P.H. 34820497 - 34982561

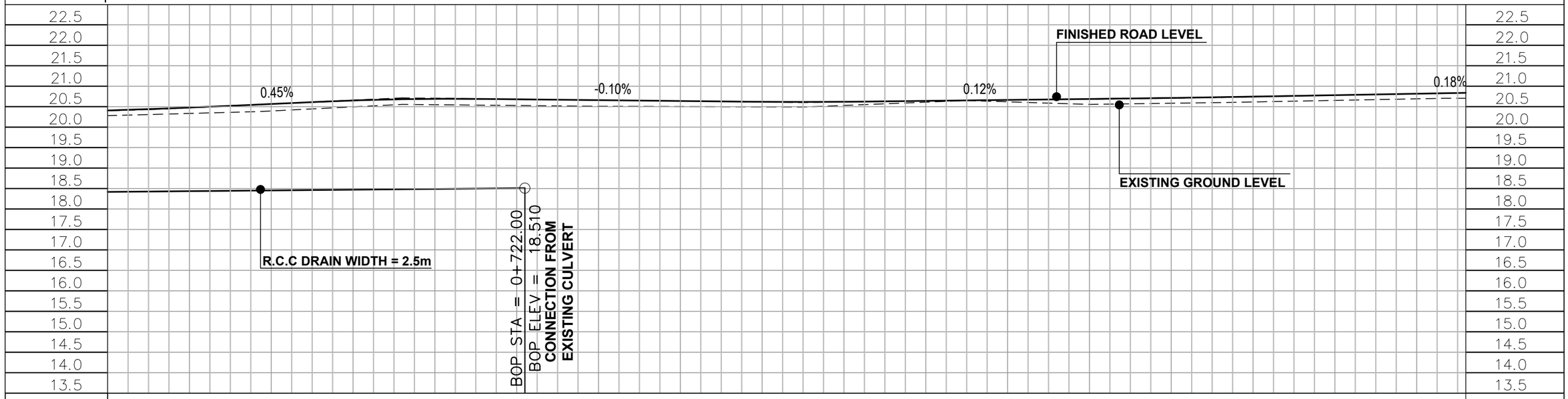
DRAWN BY	ARSHAD	PROJECT NO:	DATE:-
DESIGN BY	SAMEED	RSK	20-01-2023
CHECKED BY	WAZI IQBAL	SCALE: HOR=1:1000 VER=1:10	SHEET: 02/03 (A3)
APPROVED BY	WASIF		

SHEET TITLE:-
ROAD - 36
PLAN & PROFILE (DRAIN - 01)
(SAT=0+300 TO 0+620)

Drawing No.	REVISION
2210-01-01-02-03-D302	T0

Drawing file path & name: D:\Projects\01_Rehabilition Construction Of Roads In Site Industrial Estate Karachi\00_Submital\Tender\Working\02_Road\Road - 35\07_Plan&Profile\Drain-01\2210-01-01-02-03-D301.dwg
User and Plot Date: Arshad - Tue, 07 Feb 2023 - 8:49pm





FRL	20.478	20.565	20.651	20.691	20.680	20.659	20.638	20.618	20.619	20.641	20.664	20.687	20.713	20.745	20.781	20.816
EGL	20.334	20.395	20.495	20.548	20.529	20.510	20.502	20.494	20.530	20.610	20.618	20.555	20.584	20.615	20.653	20.692
B.L	18.435	18.454	18.472	18.490	18.508											
STATION	0+640	0+660	0+680	0+700	0+720	0+740	0+760	0+780	0+800	0+820	0+840	0+860	0+880	0+900	0+920	0+940

NOTES:–

1. ALL DIMENSIONS ARE IN METERS/MILIMETERS UNLESS OTHERWISE STATED.

LEGEND

- PROPOSED CENTER LINE
- PROPOSED KERB
- PROPOSED LANE MARKING
- R.C.C DRAIN
- FLOW DIRECTION

REV.	DESCRIPTION	DATE	APPROVED
T0	TENDER ISSUE	20-01-2023	WASIF

CLIENT:- SINDH INDUSTRIAL TRADING ESTATES LIMITED

PROJECT:- REHABILITATION / CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

CONSULTANT:- ATIF NAZAR (PVT.) LTD.
PROJECT MANAGERS, PLANNERS, ARCHITECTS & CONSULTING ENGINEERS
D-11/A, BLOCK NO-17, GULSHAN-E-IQBAL, KARACHI. P.H. 34820497 - 34982561

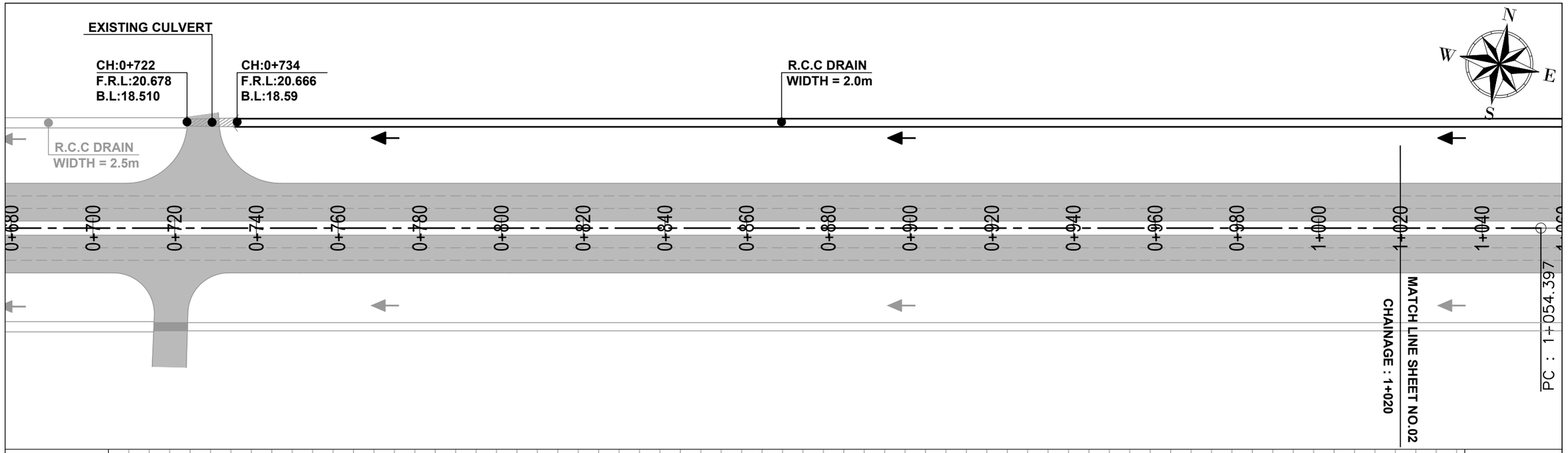
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DESIGN BY	SAMEED		
CHECKED BY	WAZI IQBAL	SCALE: HOR=1:1000 VER=1:10	SHEET: 03/03 (A3)
APPROVED BY	WASIF		

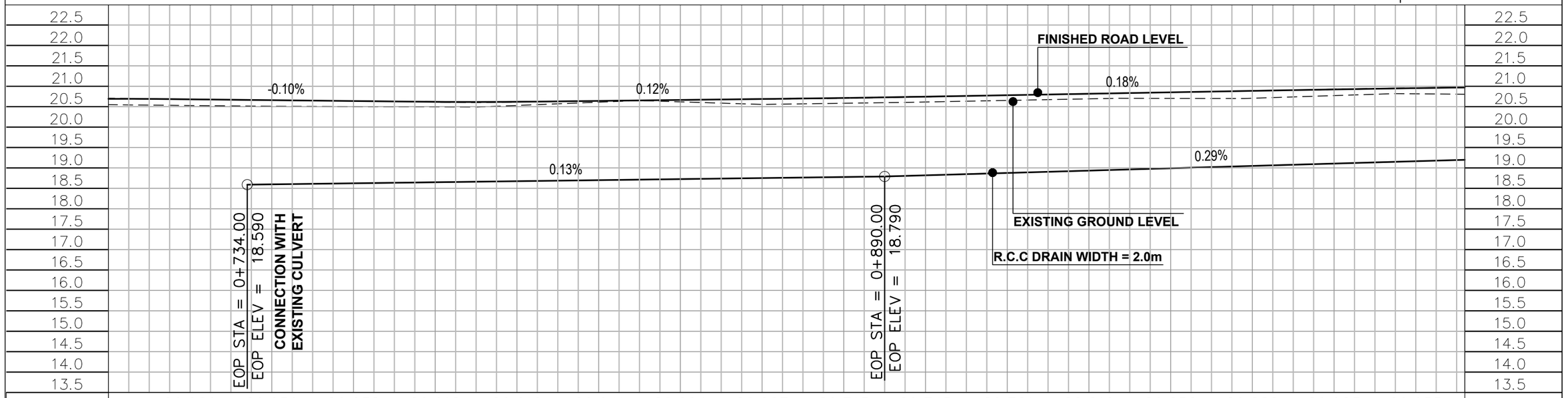
SHEET TITLE:-
ROAD - 36
PLAN & PROFILE (DRAIN - 01)
(SAT=0+620 TO 0+722)

Drawing No. 2210-01-01-02-03-D303 | REVISION T0

Drawing file path & name D:\Projects\01_Rehabilition Construction Of Roads In Site Industrial Estate Karachi\00_Submital\Tender\Working\02_Road\Road - 35\07_Plan&Profile\Drain-01\2210-01-01-02-03-D301.dwg
User and Plot Date:- Arshad - Tue, 07 Feb 2023 - 8:49pm

DRAIN - 02





FRL	20.680	20.659	20.638	20.618	20.619	20.641	20.664	20.687	20.713	20.745	20.781	20.816	20.852	20.888	20.923	20.955
EGL	20.529	20.510	20.502	20.494	20.530	20.610	20.618	20.555	20.584	20.615	20.653	20.692	20.703	20.706	20.771	20.816
B.L		18.598	18.623	18.649	18.675	18.700	18.726	18.752	18.777	18.819	18.876	18.934	18.991	19.049	19.106	19.164
STATION	0+720	0+740	0+760	0+780	0+800	0+820	0+840	0+860	0+880	0+900	0+920	0+940	0+960	0+980	1+000	1+020

NOTES:–

1. ALL DIMENSIONS ARE IN METERS/MILIMETERS UNLESS OTHERWISE STATED.

LEGEND

- PROPOSED CENTER LINE
- PROPOSED KERB
- PROPOSED LANE MARKING
- R.C.C DRAIN
- FLOW DIRECTION

REV.	DESCRIPTION	DATE	APPROVED
T0	TENDER ISSUE	20-01-2023	WASIF

CLIENT:-
SINDH INDUSTRIAL TRADING ESTATES LIMITED

PROJECT:-
REHABILITATION / CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

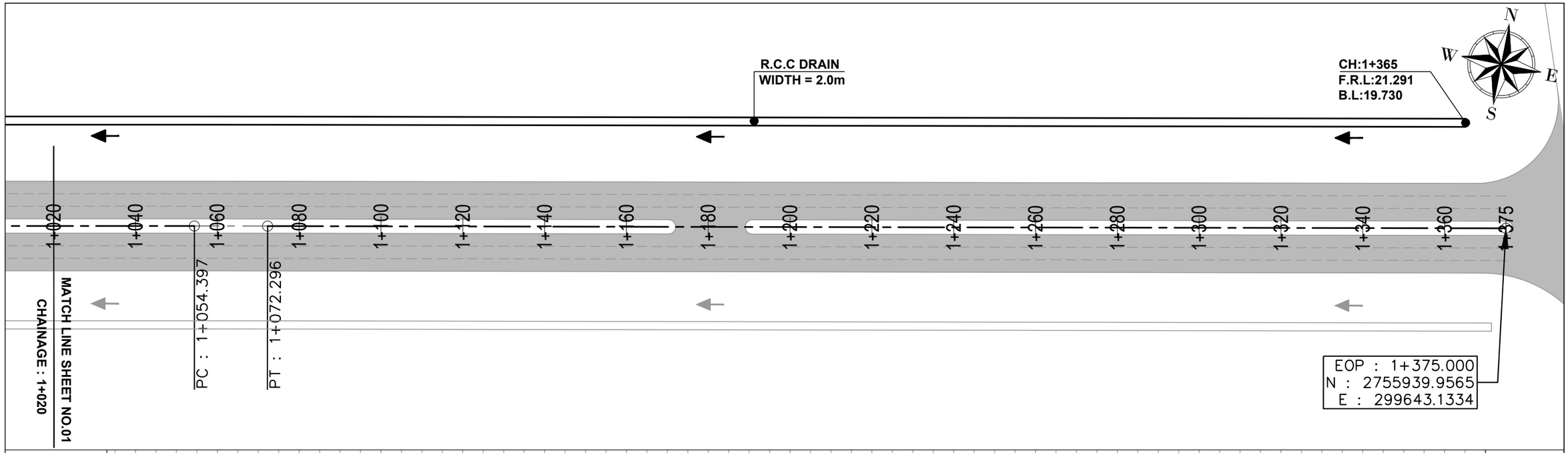
CONSULTANT:-
ATIF NAZAR (PVT.) LTD.
PROJECT MANAGERS, PLANNERS, ARCHITECTS & CONSULTING ENGINEERS
D-11/A, BLOCK NO-17, GULSHAN-E-IQBAL, KARACHI. P.H. 34820497 - 34982561

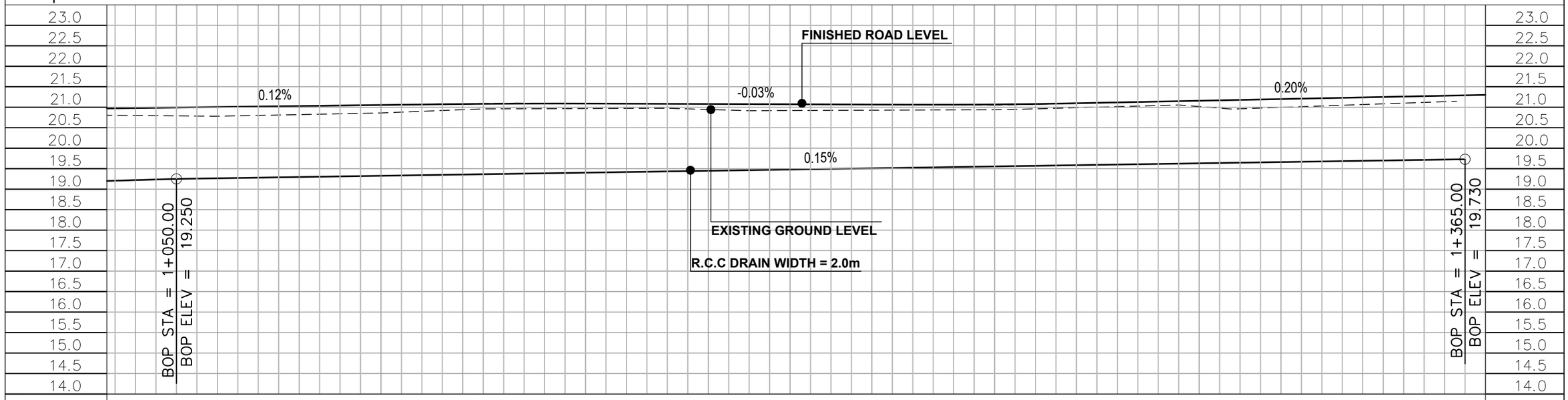
DRAWN BY	ARSHAD	PROJECT NO: RSK	DATE:- 20-01-2023
DESIGN BY	SAMEED		
CHECKED BY	WAZI IQBAL	SCALE: HOR=1:1000 VER=1:10	SHEET: 01/02 (A3)
APPROVED BY	WASIF		

SHEET TITLE:-
ROAD - 36
PLAN & PROFILE (DRAIN - 02)
(SAT=0+734 TO 1+020)

Drawing No. 2210-01-01-02-03-D301 | REVISION T0

Drawing file path & name: D:\Projects\01_Rehabilition Construction Of Roads In Site Industrial Estate Karachi\00_Submital\Tender\Working\02_Road\Road - 35\07_Plan&Profile\Drain-02\2210-01-01-02-03-D301.dwg
User and Plot Date: Arshad - Tue, 07 Feb 2023 - 8:50pm





FRL	20.981	21.005	21.030	21.055	21.078	21.090	21.086	21.080	21.073	21.066	21.062	21.079	21.117	21.158	21.199	21.240	21.281
EGL	20.798	20.780	20.820	20.860	20.940	20.965	20.972	20.945	20.919	20.927	20.935	20.961	21.015	21.017	20.996	21.066	21.135
B.L	19.221	19.265	19.296	19.326	19.357	19.387	19.418	19.448	19.479	19.509	19.540	19.570	19.600	19.631	19.661	19.692	19.722
STATION	1+040	1+060	1+080	1+100	1+120	1+140	1+160	1+180	1+200	1+220	1+240	1+260	1+280	1+300	1+320	1+340	1+360

NOTES:–

1. ALL DIMENSIONS ARE IN METERS/MILIMETERS UNLESS OTHERWISE STATED.

LEGEND

- PROPOSED CENTER LINE
- PROPOSED KERB
- PROPOSED LANE MARKING
- R.C.C DRAIN
- FLOW DIRECTION

REV.	DESCRIPTION	DATE	APPROVED
T0	TENDER ISSUE	20-01-2023	WASIF

CLIENT:- SINDH INDUSTRIAL TRADING ESTATES LIMITED

PROJECT:- REHABILITATION / CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

CONSULTANT:- ATIF NAZAR (PVT.) LTD.
PROJECT MANAGERS, PLANNERS, ARCHITECTS & CONSULTING ENGINEERS
D-11/A, BLOCK NO-17, GULSHAN-E-IQBAL, KARACHI. P.H. 34820497 - 34982561

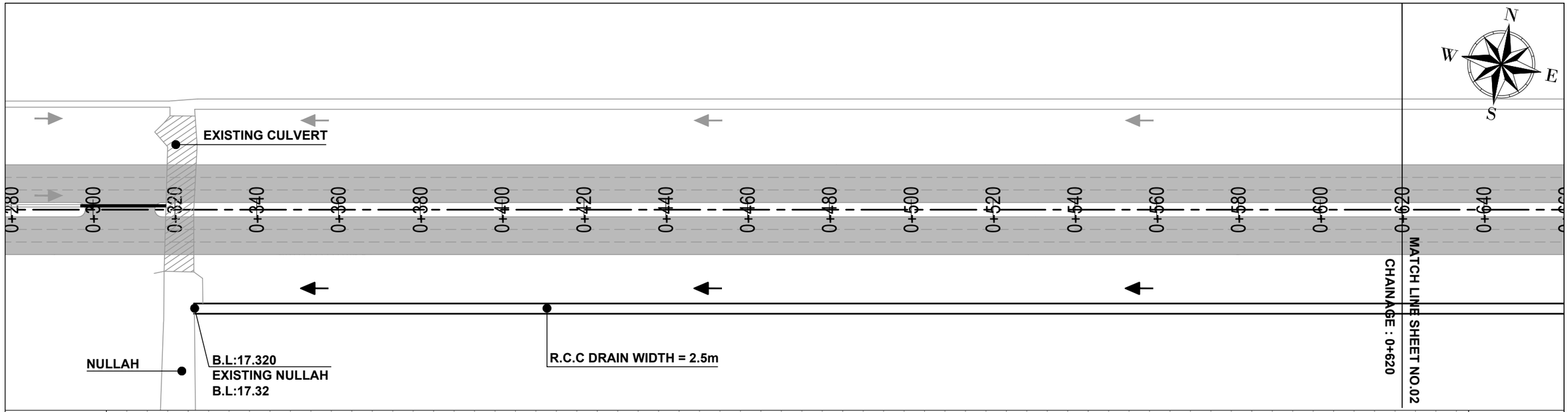
DRAWN BY	ARSHAD	PROJECT NO: RSK	DATE:- 20-01-2023
DESIGN BY	SAMEED		
CHECKED BY	WAZI IQBAL	SCALE: HOR=1:1000 VER=1:10	SHEET: 02/02 (A3)
APPROVED BY	WASIF		

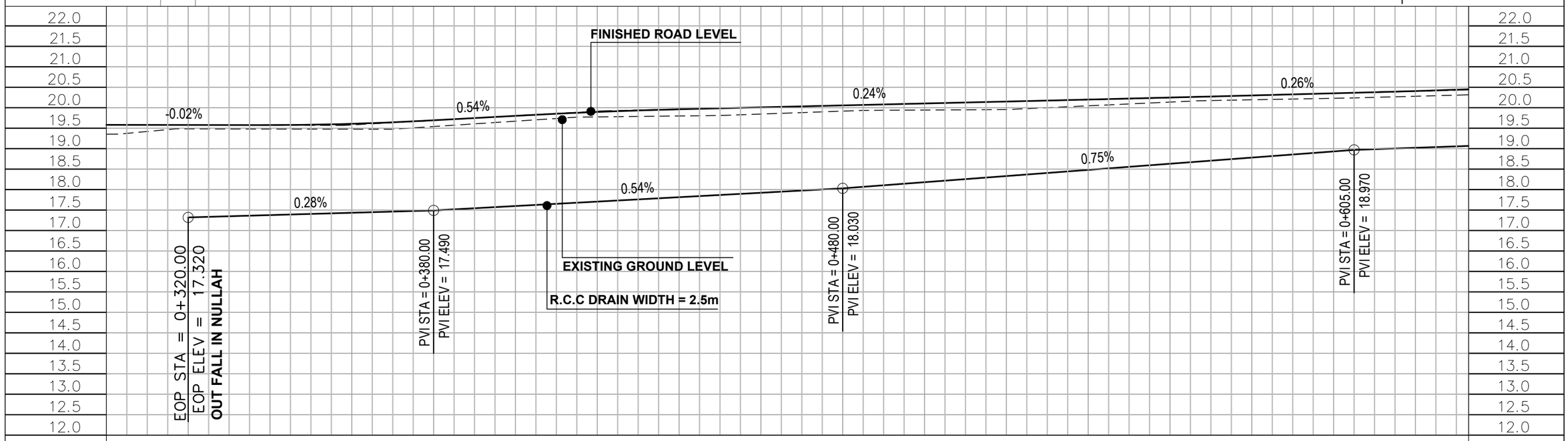
SHEET TITLE:-
ROAD - 36
PLAN & PROFILE (DRAIN - 02)
(SAT=1+020 TO 1+365)

Drawing No. 2210-01-01-02-03-D302 | REVISION T0

Drawing file path & name: D:\Projects\01_Rehabilition Construction Of Roads In Site Industrial Estate Karachi\00_Submital\Tender\Working\02_Road\Road - 35\07_Plan&Profile\Drain-02\2210-01-01-02-03-D301.dwg
User and Plot Date: Arshad - Tue, 07 Feb 2023 - 8:50pm

DRAIN - 03





FRL	19.579	19.576	19.607	19.693	19.802	19.898	19.963	20.010	20.057	20.104	20.151	20.199	20.248	20.300	20.353	20.407
EGL	19.484	19.479	19.476	19.541	19.672	19.776	19.799	19.846	19.917	19.944	19.955	20.046	20.138	20.194	20.231	20.280
B.L	17.320	17.377	17.433	17.490	17.598	17.706	17.814	17.922	18.030	18.180	18.331	18.481	18.632	18.782	18.932	19.022
STATION	0+320	0+340	0+360	0+380	0+400	0+420	0+440	0+460	0+480	0+500	0+520	0+540	0+560	0+580	0+600	0+620

NOTES:–

1. ALL DIMENSIONS ARE IN METERS/MILIMETERS UNLESS OTHERWISE STATED.

LEGEND

- PROPOSED CENTER LINE
- PROPOSED KERB
- PROPOSED LANE MARKING
- R.C.C DRAIN
- DRAIN CROSSING CLOSED (DCC)
- FLOW DIRECTION

REV.	DESCRIPTION	DATE	APPROVED
T0	TENDER ISSUE	20-01-2023	WASIF

CLIENT:- SINDH INDUSTRIAL TRADING ESTATES LIMITED

PROJECT:- REHABILITATION / CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

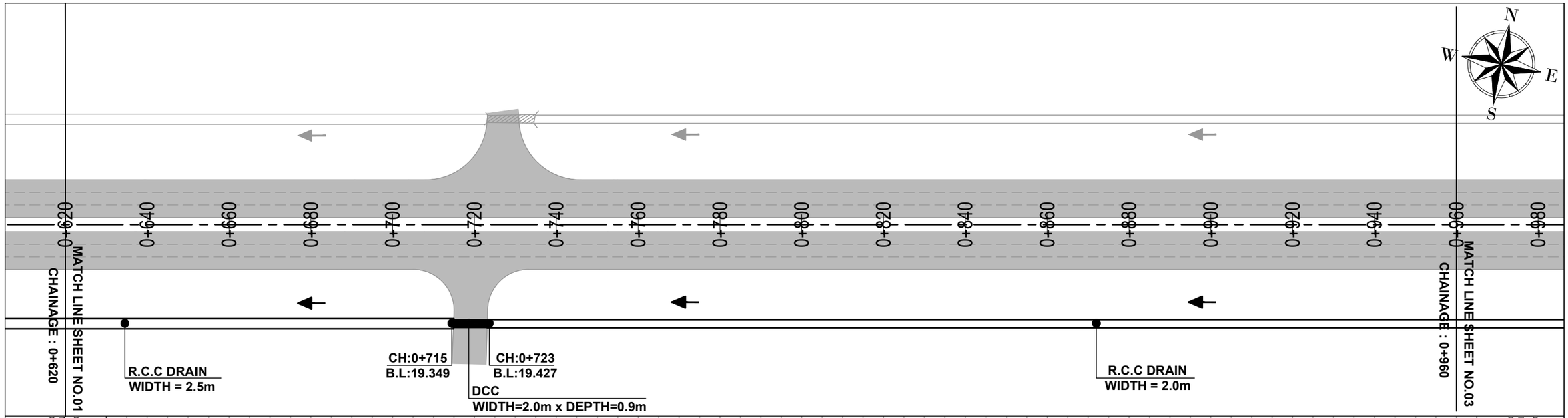
CONSULTANT:- ATIF NAZAR (PVT.) LTD.
PROJECT MANAGERS, PLANNERS, ARCHITECTS & CONSULTING ENGINEERS
D-11/A, BLOCK NO-17, GULSHAN-E-IQBAL, KARACHI. P.H. 34820497 - 34982561

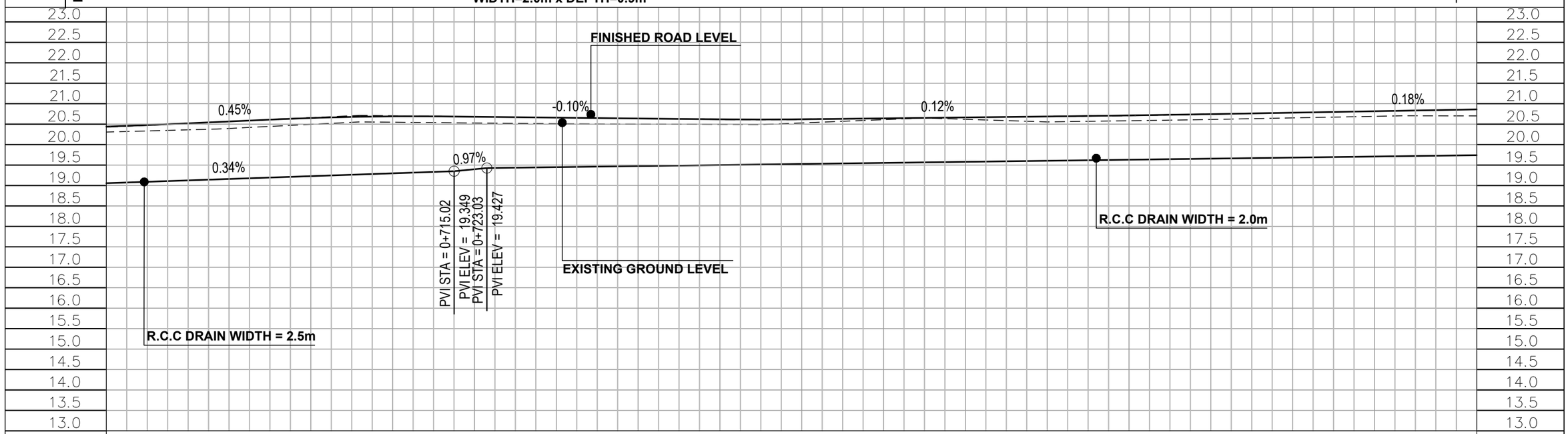
DRAWN BY	ARSHAD	PROJECT NO:	DATE:-
DESIGN BY	SAMEED	RSK	20-01-2023
CHECKED BY	WAZI IQBAL	SCALE: HOR=1:1000 VER=1:10	SHEET: 01/04 (A3)
APPROVED BY	WASIF		

SHEET TITLE:-
ROAD - 36
PLAN & PROFILE (DRAIN - 03)
(SAT=0+320 TO 0+620)

Drawing No. 2210-01-01-02-03-D301 | REVISION T0

Drawing file path & name: D:\Projects\01_Rehabilition Construction Of Roads In Site Industrial Estate Karachi\00_Submital\Tender\Working\02_Road\Road - 35\07_Plan&Profile\Drain-03\2210-01-01-02-03-D301.dwg
User and Plot Date: Arshad - Tue, 07 Feb 2023 - 8:51pm





FRL	20.478	20.565	20.651	20.691	20.680	20.659	20.638	20.618	20.619	20.641	20.664	20.687	20.713	20.745	20.781	20.816	20.852
EGL	20.334	20.395	20.495	20.548	20.529	20.510	20.502	20.494	20.530	20.610	20.618	20.555	20.584	20.615	20.653	20.692	20.703
B.L	19.091	19.160	19.229	19.298	19.398	19.449	19.475	19.501	19.527	19.553	19.579	19.604	19.630	19.656	19.682	19.708	19.734
STATION	0+640	0+660	0+680	0+700	0+720	0+740	0+760	0+780	0+800	0+820	0+840	0+860	0+880	0+900	0+920	0+940	0+960

NOTES:–

1. ALL DIMENSIONS ARE IN METERS/MILIMETERS UNLESS OTHERWISE STATED.

LEGEND

- PROPOSED CENTER LINE
- PROPOSED KERB
- PROPOSED LANE MARKING
- R.C.C DRAIN
- DRAIN CROSSING CLOSED (DCC)
- FLOW DIRECTION

REV.	DESCRIPTION	DATE	APPROVED
T0	TENDER ISSUE	20-01-2023	WASIF

CLIENT:-
SINDH INDUSTRIAL TRADING ESTATES LIMITED

PROJECT:-
REHABILITATION / CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

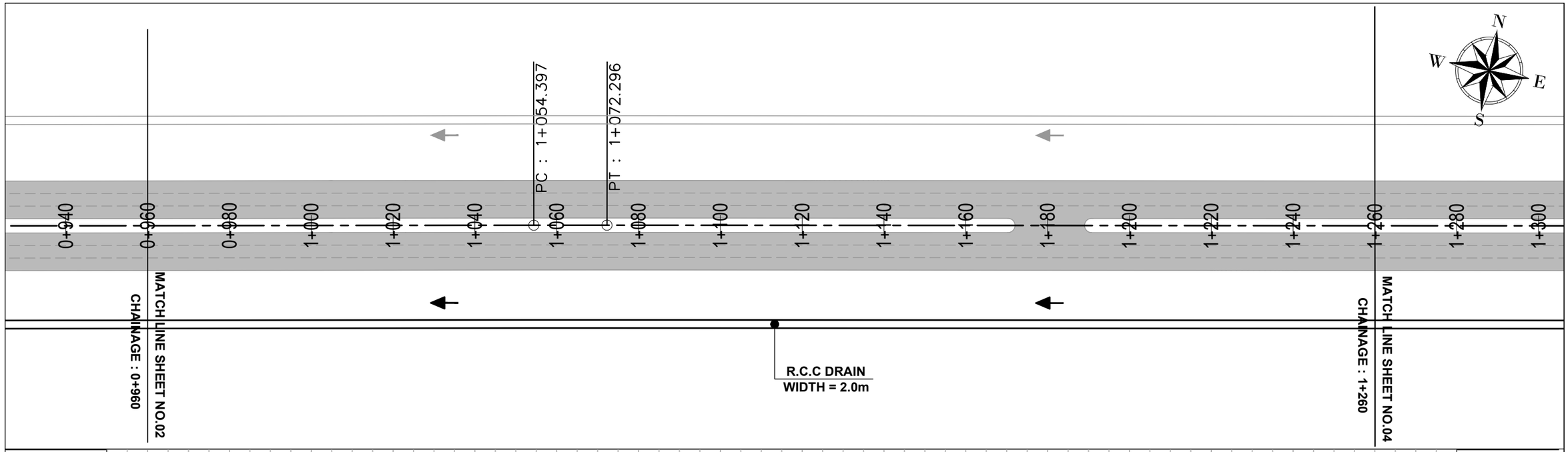
CONSULTANT:-
ATIF NAZAR (PVT.) LTD.
PROJECT MANAGERS, PLANNERS, ARCHITECTS & CONSULTING ENGINEERS
D-11/A, BLOCK NO-17, GULSHAN-E-IQBAL, KARACHI. P.H. 34820497 - 34982561

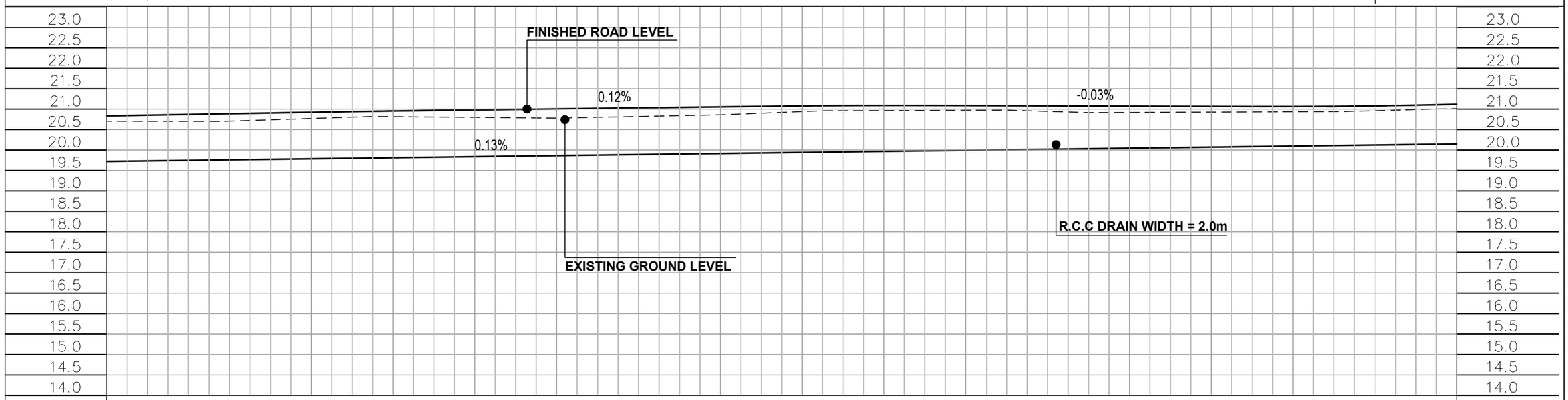
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DESIGN BY	SAMEED		
CHECKED BY	WAZI IQBAL	SCALE: HOR=1:1000 VER=1:10	SHEET: 02/04 (A3)
APPROVED BY	WASIF		

SHEET TITLE:-
ROAD - 36
PLAN & PROFILE (DRAIN - 03)
(SAT=0+620 TO 0+960)

Drawing No. 2210-01-01-02-03-D302 | REVISION T0

Drawing file path & name: D:\Projects\01_Rehabilition Construction Of Roads In Site Industrial Estate Karachi\00_Submittal\Tender\Working\02_Road\Road - 35\07_Plan&Profile\Drain-03\2210-01-01-02-03-D301.dwg
User and Plot Date: Arshad - Tue, 07 Feb 2023 - 8:52pm





FRL	20.852	20.888	20.923	20.955	20.981	21.005	21.030	21.055	21.078	21.090	21.086	21.080	21.073	21.066	21.062	21.079
EGL	20.703	20.706	20.771	20.816	20.798	20.780	20.820	20.860	20.940	20.965	20.972	20.945	20.919	20.927	20.935	20.961
B.L	19.734	19.760	19.786	19.812	19.838	19.863	19.889	19.915	19.941	19.967	19.993	20.019	20.045	20.071	20.097	20.123
STATION	0+960	0+980	1+000	1+020	1+040	1+060	1+080	1+100	1+120	1+140	1+160	1+180	1+200	1+220	1+240	1+260

NOTES:–

1. ALL DIMENSIONS ARE IN METERS/MILIMETERS UNLESS OTHERWISE STATED.

LEGEND

- PROPOSED CENTER LINE
- PROPOSED KERB
- PROPOSED LANE MARKING
- R.C.C DRAIN
- DRAIN CROSSING CLOSED (DCC)
- FLOW DIRECTION

REV.	DESCRIPTION	DATE	APPROVED
T0	TENDER ISSUE	20-01-2023	WASIF

CLIENT:-
SINDH INDUSTRIAL TRADING ESTATES LIMITED

PROJECT:-
REHABILITATION / CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

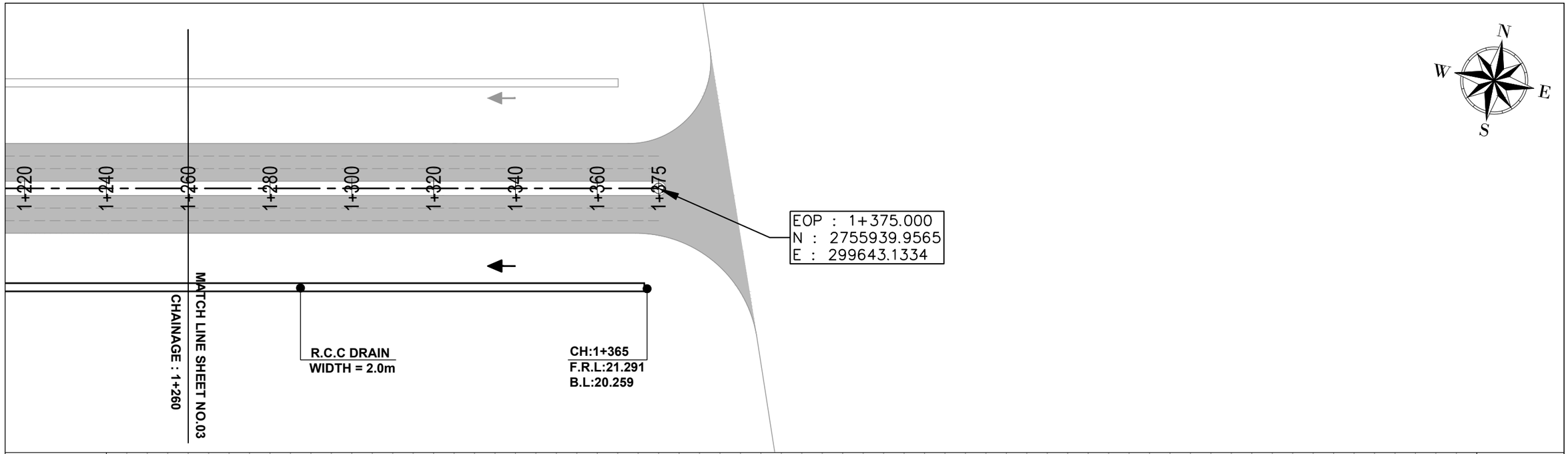
CONSULTANT:-
ATIF NAZAR (PVT.) LTD.
PROJECT MANAGERS, PLANNERS, ARCHITECTS & CONSULTING ENGINEERS
D-11/A, BLOCK NO-17, GULSHAN-E-IQBAL, KARACHI. P.H. 34820497 - 34982561

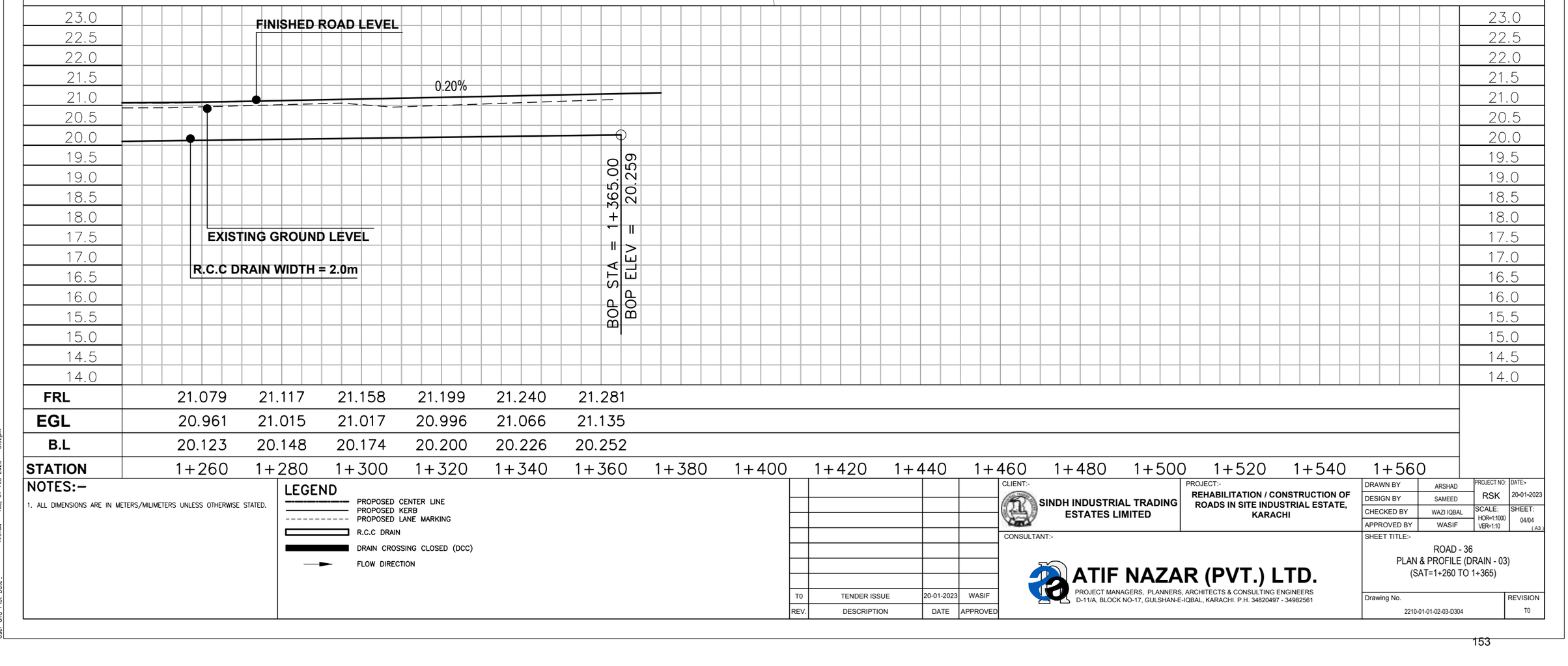
DRAWN BY	ARSHAD	PROJECT NO: RSK	DATE- 20-01-2023
DESIGN BY	SAMEED		
CHECKED BY	WAZI IQBAL	SCALE: HOR=1:1000 VER=1:10	SHEET: 03/04 (A3)
APPROVED BY	WASIF		

SHEET TITLE:-
ROAD - 36
PLAN & PROFILE (DRAIN - 03)
(SAT=0+960 TO 1+260)

Drawing No. 2210-01-01-02-03-D303 | REVISION T0

Drawing file path & name: D:\Projects\01_Rehabilition Construction Of Roads in Site Industrial Estate Karachi\00_Submital\Tender\Working\02_Road\Road - 35\07_Plan&Profile\Drain-03\2210-01-01-02-03-D301.dwg
User and Plot Date: Arshad - Tue, 07 Feb 2023 - 8:52pm





FRL	21.079	21.117	21.158	21.199	21.240	21.281											
EGL	20.961	21.015	21.017	20.996	21.066	21.135											
B.L	20.123	20.148	20.174	20.200	20.226	20.252											
STATION	1+260	1+280	1+300	1+320	1+340	1+360	1+380	1+400	1+420	1+440	1+460	1+480	1+500	1+520	1+540	1+560	

NOTES:–

1. ALL DIMENSIONS ARE IN METERS/MILIMETERS UNLESS OTHERWISE STATED.

LEGEND

- PROPOSED CENTER LINE
- PROPOSED KERB
- PROPOSED LANE MARKING
- R.C.C DRAIN
- DRAIN CROSSING CLOSED (DCC)
- FLOW DIRECTION

REV.	DESCRIPTION	DATE	APPROVED
T0	TENDER ISSUE	20-01-2023	WASIF

CLIENT:-
SINDH INDUSTRIAL TRADING ESTATES LIMITED

PROJECT:-
REHABILITATION / CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

CONSULTANT:-
ATIF NAZAR (PVT.) LTD.
PROJECT MANAGERS, PLANNERS, ARCHITECTS & CONSULTING ENGINEERS
D-11/A, BLOCK NO-17, GULSHAN-E-IQBAL, KARACHI. P.H. 34820497 - 34982561

DRAWN BY	ARSHAD	PROJECT NO.	DATE:-
DESIGN BY	SAMEED	RSK	20-01-2023
CHECKED BY	WAZI IQBAL	SCALE: HOR=1:1000 VER=1:10	SHEET: 04/04 (A3)
APPROVED BY	WASIF		

SHEET TITLE:-
ROAD - 36
PLAN & PROFILE (DRAIN - 03)
(SAT=1+260 TO 1+365)

Drawing No. 2210-01-01-02-03-D304

REVISION T0

Drawing file path & name: D:\Projects\01_Rehabilition Construction Of Roads in Site Industrial Estate Karachi\00_Submital\Tender\Working\02_Road\Road - 35\07_Plan&Profile\Drain-03\2210-01-01-02-03-D301.dwg
User and Plot Date:- Arshad - Tue, 07 Feb 2023 - 8:52pm

SINDH INDUSTRIAL TRADING ESTATES LIMITED

PROJECT:

REHABILITATION / CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

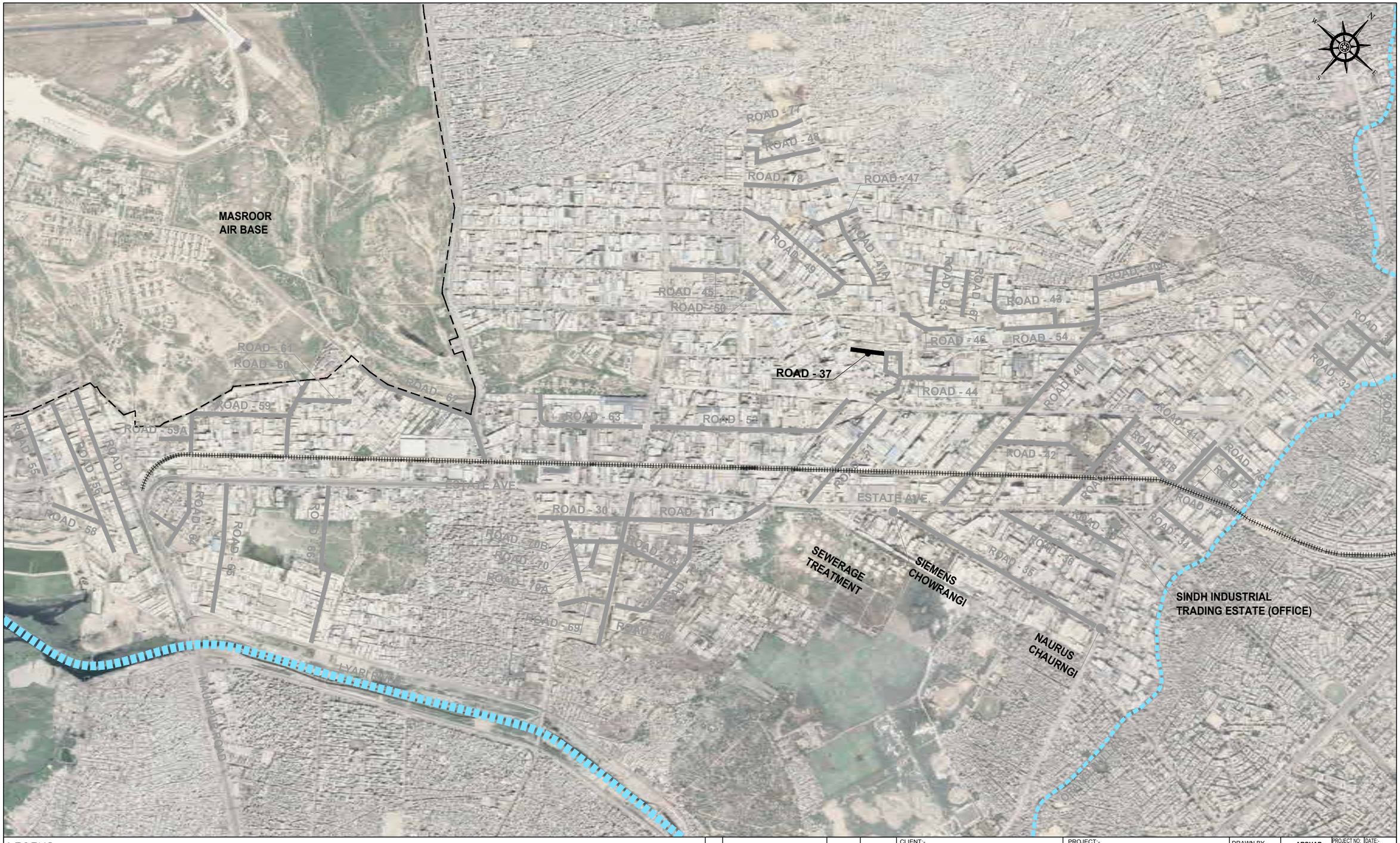
ROAD - 37

ROAD, DRAINAGE, STRUCTURE & ELECTRICAL WORKS

TENDER DRAWINGS
JANUARY, 2023

CONSULTANT:

ATIF NAZAR (PVT.) LTD.
PROJECT MANAGERS, PLANNERS, ARCHITECTS &
CONSULTING ENGINEERS
D-11/A, BLOCK NO-17, GULSHAN-E-IQBAL, KARACHI.
P.H. 34820497 - 34982561



LEGEND:–

- ROADS
- RIVER/NULLAH
- RAILWAY TRACK

REV.	DESCRIPTION	DATE	APPROVED
T0	TENDER ISSUE	20-01-2023	WASIF

CLIENT:-
SINDH INDUSTRIAL TRADING ESTATES LIMITED

PROJECT:-
REHABILITATION / CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

CONSULTANT:-
ATIF NAZAR (PVT.) LTD.
PROJECT MANAGERS, PLANNERS, ARCHITECTS & CONSULTING ENGINEERS
D-11/A, BLOCK NO-17, GULSHAN-E-IQBAL, KARACHI. P.H. 34820497 - 34982561

DRAWN BY	ARSHAD	PROJECT NO: RSK	DATE:- 20-01-2023
DESIGN BY	MAHRUKH		
CHECKED BY	WAZI IQBAL	SCALE: N.T.S	SHEET: 01/01 (A3)
APPROVED BY	WASIF		

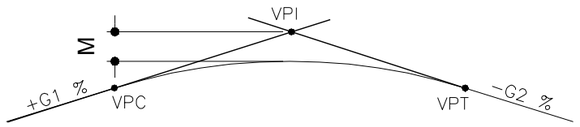
SHEET TITLE:-
ROAD - 37
LOCATION PLAN

Drawing No. 2210-01-01-02-03-R004 | REVISION T0

Drawing file path & name: D:\Projects\01_Rehabilitation Construction Of Roads In Site Industrial Estate Karachi\00_Submital\Tender\Working\02_Road\Road – 37\01_Location Plan\2210-01-01-02-03-R004.dwg
User and Plot Date: Arshad – Wed, 08 Feb 2023 – 10:47am

GENERAL DRAWINGS

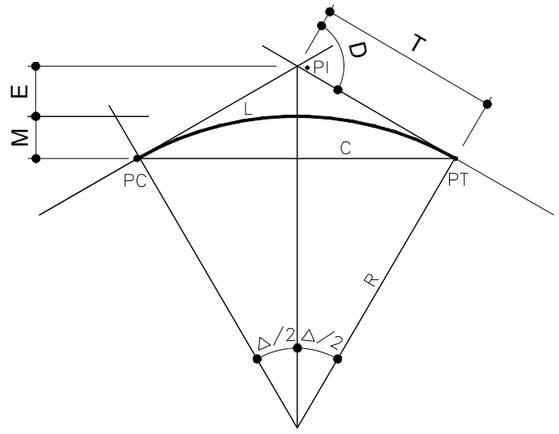
DETAIL OF VERTICAL CURVE



VPC : VERTICAL POINT OF CURVATURE
VPI : VERTICAL POINT OF INTERSECTION
VPT : VERTICAL POINT OF TANGENCY
L : LENGTH OF VERTICAL CURVE
M : VERTICAL OFFSET

+G : UPWARD VERTICAL GRADE
−G : DOWNWARD VERTICAL GRADE
K : RATE OF GRADE CHANGE = $\frac{G2-G1}{L}$
A : TOTAL CHANGE IN VERTICAL GRADE BETWEEN TANGENTS = G2−G1

DETAIL OF HORIZONTAL CURVE



CIRCULAR CURVE PARAMETERS

PI : POINT OF INTERSECTION
PC : POINT OF CURVATURE
PT : POINT OF TANGENCY
Δ : DEFLECTION ANGLE
Da : DEGREE OF CURVE (ARC DEFINITION)
Dc : DEGREE OF CURVE (CHORD DEFINITION)

T : TANGENT LENGTH
R : RADIUS
L : LENGTH OF CURVE
C : CHORD LENGTH
E : EXTERNAL
M : MIDDLE ORDINATE

S.NO	DESIGN PARAMETERS	UNITS	VALUES
1	DESIGN SPEED	Km/h	40
2	LANE WIDTH	m	3.65
3	NUMBER. OF LANES	No.	2
4	TOTAL PAVEMENT WIDTH	m	7.9
5	PAVEMENT CROSS SLOPE	%	1.5
6	RIGHT OF WAY (ROW)	m	12
7	MINIMUM RADIUS OF HORIZONTAL CURVE	m	47
8	MINIMUM STOPPING SIGHT DISTANCE (SSD)	m	50
9	MINIMUM PASSING SIGHT DISTANCE (PSD)	m	140
10	K VALUE FOR CREST CURVE (SSD)	m%	4
11	K VALUE FOR CREST CURVE (PSD)	m%	23
12	K VALUE FOR SAG CURVE	m%	9
13	RCC OPEN DRAIN	m	0.914
14	MINIMUM VERTICAL CLEARENCE	m	5.5

NOTES:−

1. ALL DIMENSIONS ARE IN METERS/MILIMETERS UNLESS OTHERWISE STATED.

REV.	DESCRIPTION	DATE	APPROVED
T0	TENDER ISSUE	20-01-2023	WASIF

CLIENT:- SINDH INDUSTRIAL TRADING ESTATES LIMITED

PROJECT:- REHABILITATION / CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

CONSULTANT:-

ATIF NAZAR (PVT.) LTD.
PROJECT MANAGERS, PLANNERS, ARCHITECTS & CONSULTING ENGINEERS
D-11/A, BLOCK NO-17, GULSHAN-E-IQBAL, KARACHI. P.H. 34820497 - 34982561

DRAWN BY	ARSHAD	PROJECT NO: RSK	DATE:- 20-01-2023
DESIGN BY	MAHRUKH		
CHECKED BY	WAZI IQBAL	SCALE: N.T.S	SHEET: 01/01 (A3)
APPROVED BY	WASIF		

SHEET TITLE:- GEOMETRIC DESIGN PARAMETERS

Drawing No. 2210-01-01-02-03-G901 | REVISION T0

Drawing file path & name D:\Projects\01_Rehabilition Construction Of Roads In Site Industrial Estate Karachi\00_Submital\Tender\Working\02_Road\Road - 37\08_General Drawings\2210-01-01-02-03-G901.dwg
User and Plot Date:- Arshad - Wed, 08 Feb 2023 - 10:59am

SETTING - OUT DATA

ROAD - 37
(SETTING OUT DATA)

S.N	PI - POINT	P.I. Coordinates EASTING	P.I. Coordinates NORTHING	G.DIST	GRID BEAR	DEFLECTION ANGLE	L/R	RADIUS	LENGTH OF TANGENT (LT)	LENGTH OF CURVE (LC)	E (m)	STATION @ PI	CH @ PC	CH @ PT
BOP	A - POINT	297394.854	2756264.644											
1	PI - 1	297394.940	2756269.440	4.797	1° 1' 38"	56° 22' 15"	R	9.0	4.796	8.806	1.204	0 + 4.797	0 + 0.001	0 + 8.806
EOP	B - POINT	297574.930	2756384.557	213.655	57° 23' 53"							0 + 217.665	0 + 217.665	0 + 217.665

NOTES:-

1. ALL DIMENSIONS ARE IN METERS/MILIMETERS UNLESS OTHERWISE STATED.

REV.	DESCRIPTION	DATE	APPROVED
T0	TENDER ISSUE	20-01-2023	WASIF

CLIENT:-
SINDH INDUSTRIAL TRADING ESTATES LIMITED

PROJECT:-
REHABILITATION / CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

CONSULTANT:-
ATIF NAZAR (PVT.) LTD.
PROJECT MANAGERS, PLANNERS, ARCHITECTS & CONSULTING ENGINEERS
D-11/A, BLOCK NO-17, GULSHAN-E-IQBAL, KARACHI. P.H. 34820497 - 34982561

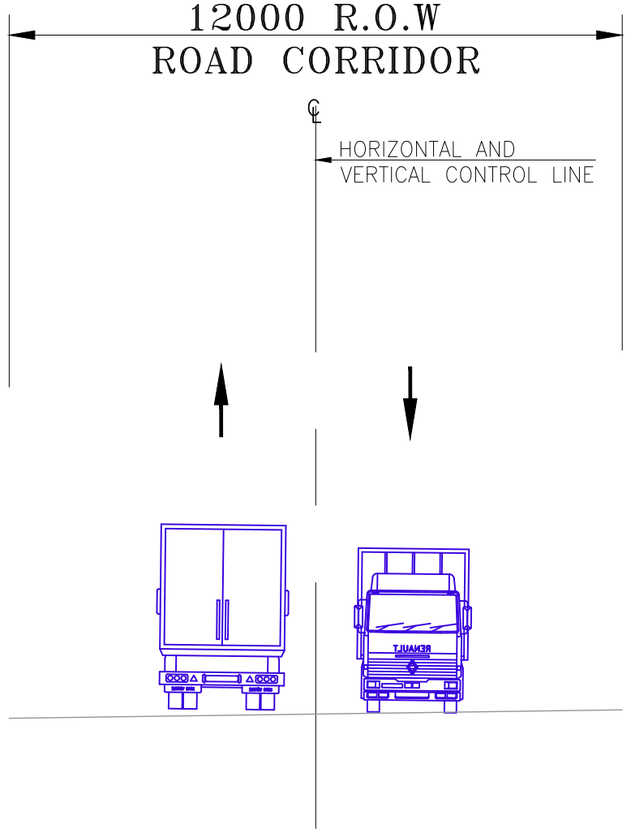
DRAWN BY	ARSHAD	PROJECT NO:	DATE:-
DESIGN BY	MAHRUKH	RSK	20-01-2023
CHECKED BY	WAZI IQBAL	SCALE:	SHEET:
APPROVED BY	WASIF	N.T.S	01/01 (A3)

SHEET TITLE:-
SETTING OUT DATA

Drawing No. 2210-01-01-02-03-R400
REVISION T0

Drawing file path & name: D:\Projects\01_Rehabilitation Construction Of Roads In Site Industrial Estate Karachi\00_Submittal\Tender\Working\02_Road\Road - 37\05_Setting Out Data\2210-01-01-02-03-R400.dwg
User and Plot Date: Arshad - Wed, 08 Feb 2023 - 10:58am

EXISTING CROSS SECTIONS



EXISTING CROSS SECTION
(STA:0+000 TO 0+217.67)

NOTES:–

1. ALL DIMENSIONS ARE IN METERS/MILIMETERS UNLESS OTHERWISE STATED.

REV.	DESCRIPTION	DATE	APPROVED
T0	TENDER ISSUE	20-01-2023	WASIF

CLIENT:- **SINDH INDUSTRIAL TRADING ESTATES LIMITED**

PROJECT:- **REHABILITATION / CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI**

CONSULTANT:-

ATIF NAZAR (PVT.) LTD.

PROJECT MANAGERS, PLANNERS, ARCHITECTS & CONSULTING ENGINEERS
D-11/A, BLOCK NO-17, GULSHAN-E-IQBAL, KARACHI. P.H. 34820497 - 34982561

DRAWN BY	ARSHAD	PROJECT NO: RSK	DATE:- 20-01-2023
DESIGN BY	MAHRUKH		
CHECKED BY	WAZI IQBAL	SCALE: N.T.S	SHEET: 01/10 (A3)
APPROVED BY	WASIF		

SHEET TITLE:- EXISTING CROSS SECTION

Drawing No. 2210-01-01-02-03-R201 REVISION T0

Drawing file path & name: D:\Projects\01_Rehabilitation Construction Of Roads In Site Industrial Estate Karachi\00_Submittal\Tender\Working\02_Road\Road – 37\06_Typical Sections\2210-01-01-02-03-R201 T0 21010.dwg
User and Plot Date: Arshad – Wed, 08 Feb 2023 – 10:43am

CONSTRUCTION / REHABILITATING METHODOLOGY CROSS SECTIONS

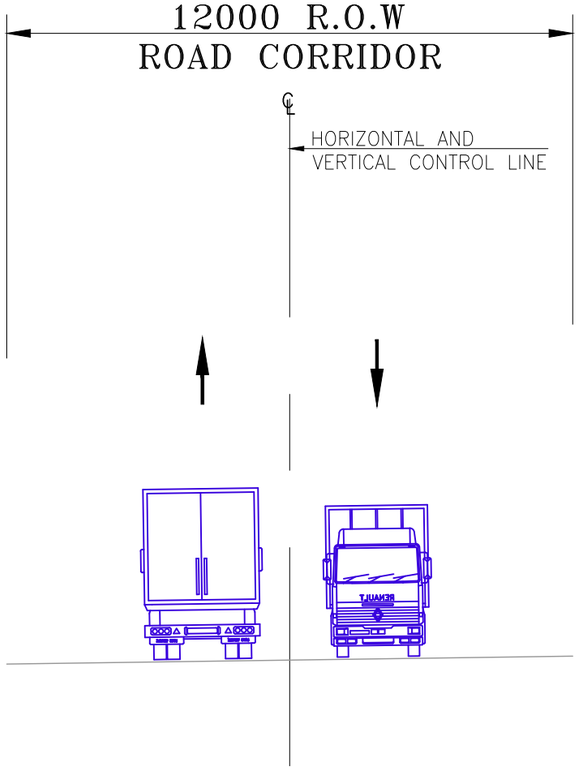
METHODOLOGY

STEP-01

1. REMOVE ALL THE SOLID WASTE & BUSHES FROM ENTIRE CORRIDOR INCLUDING DRAIN. DUMP THE WASTE TO THE DESIGNATED AREA AT GONPASS OR AS DIRECTED BY THE ENGINEER.

2. CONTRACTOR SHALL TAKE JOINT CROSS SECTIONS OF ROAD CORRIDOR & INVERT LEVELS OF DRAIN WITH CONSULTANT TO VERIFY ANY CHANGE IN DESIGN BEFORE THE EXECUTION OF WORK.

3. THE CONTRACTOR SHALL TAKE THE WRITTEN APPROVAL FROM SUPERVISORY CONSULTANT OF SATISFACTORY COMPLETION OF STEP-01 , PRIOR TO PROCEED STEP-02.



EXISTING CROSS SECTION

(STA:0+000 TO 0+217.67)

NOTES:-

1. ALL DIMENSIONS ARE IN METERS/MILIMETERS UNLESS OTHERWISE STATED.

REV.	DESCRIPTION	DATE	APPROVED
T0	TENDER ISSUE	20-01-2023	WASIF

CLIENT:- SINDH INDUSTRIAL TRADING ESTATES LIMITED

PROJECT:- REHABILITATION / CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

CONSULTANT:- ATIF NAZAR (PVT.) LTD.
PROJECT MANAGERS, PLANNERS, ARCHITECTS & CONSULTING ENGINEERS
D-11/A, BLOCK NO-17, GULSHAN-E-IQBAL, KARACHI. P.H. 34820497 - 34982561

DRAWN BY	ARSHAD	PROJECT NO:	DATE:-
DESIGN BY	MAHRUKH	RSK	20-01-2023
CHECKED BY	WAZI IQBAL	SCALE:	SHEET:
APPROVED BY	WASIF	N.T.S	02/10 (A3)

SHEET TITLE:- STEP - 01 CROSS SECTION

Drawing No. 2210-01-01-02-03-R202 | REVISION T0

Drawing file path & name: D:\Projects\01_Rehabilition Construction Of Roads In Site Industrial Estate Karachi\00_Submital\Tender\Working\02_Road\Road - 37\06_Typical Sections\2210-01-01-02-03-R201 TO 21010.dwg
User and Plot Date: Arshad - Wed, 08 Feb 2023 - 10:43am

METHODOLOGY

STEP -02

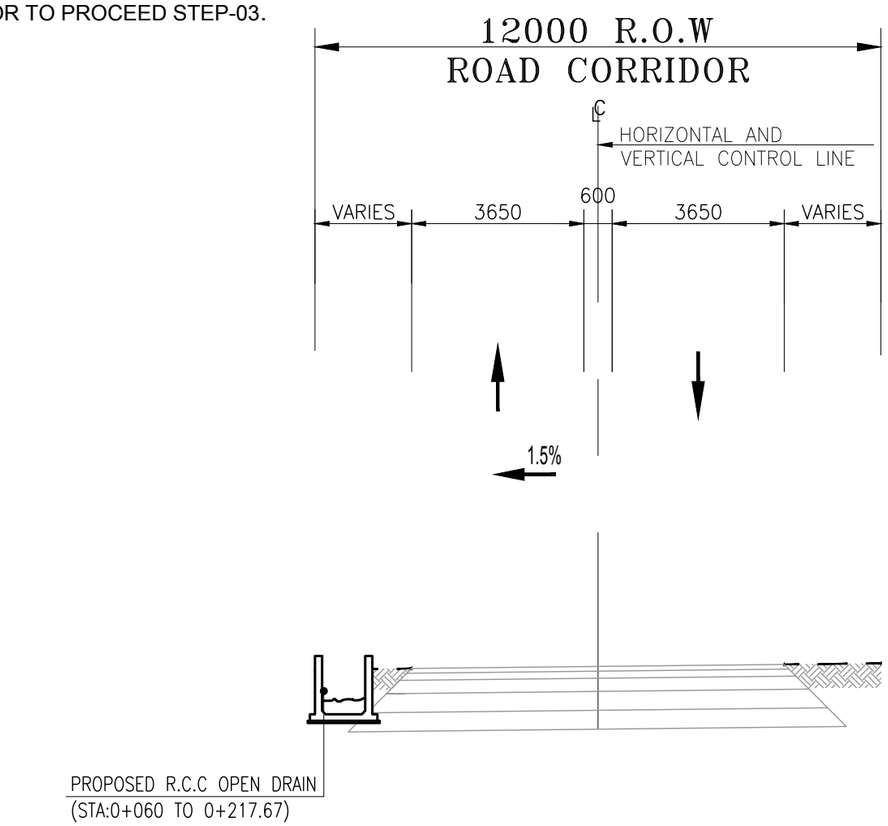
1. THE CONTRACTOR SHALL MAKE THE SHOP DRAWING OF DRAIN & TAKE PRIOR APPROVAL FROM THE ENGINEER, BEFORE EXECUTION OF DRAIN WORK.

2. RECTIFY THE EXISTING DRAIN WHERE REQUIRED OR AS DIRECTED BY THE ENGINEER.

3. THE NEW R.C.C DRAIN LOCATION & INVERT LEVELS SHALL BE FINALIZED BY THE ENGINEER AS PER SITE CONDITION.

4. CONSTRUCT THE R.C.C DRAINS ACCORDING TO INVERT LEVELS PROVIDED IN PLAN AND PROFILE DRAWINGS. REFER STRUCTURAL DRAWING FOR DRAIN DIMENSIONS AND DETAILS.

5. THE CONTRACTOR SHALL TAKE THE WRITTEN APPROVAL FROM SUPERVISORY CONSULTANT OF SATISFACTORY COMPLETION OF STEP-02 , PRIOR TO PROCEED STEP-03.



PROPOSED CROSS SECTION
(STA:0+000 TO 0+217.67)

NOTES:–

1. ALL DIMENSIONS ARE IN METERS/MILIMETERS UNLESS OTHERWISE STATED.

REV.	DESCRIPTION	DATE	APPROVED
T0	TENDER ISSUE	20-01-2023	WASIF

CLIENT:- SINDH INDUSTRIAL TRADING ESTATES LIMITED

PROJECT:- REHABILITATION / CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

CONSULTANT:- ATIF NAZAR (PVT.) LTD.
PROJECT MANAGERS, PLANNERS, ARCHITECTS & CONSULTING ENGINEERS
D-11/A, BLOCK NO-17, GULSHAN-E-IQBAL, KARACHI. P.H. 34820497 - 34982561

DRAWN BY	ARSHAD	PROJECT NO:	DATE:-
DESIGN BY	MAHRUKH	RSK	20-01-2023
CHECKED BY	WAZI IQBAL	SCALE:	SHEET:
APPROVED BY	WASIF	N.T.S	03/10 (A3)

SHEET TITLE:- STEP - 02 CROSS SECTION

Drawing No. 2210-01-01-02-03-R203 | REVISION T0

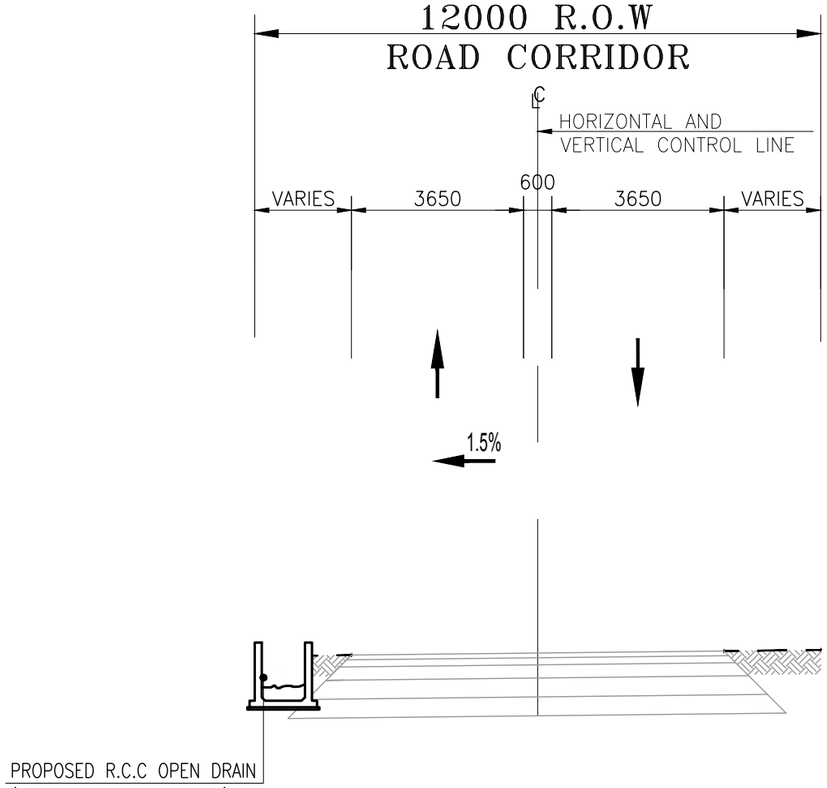
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User and Plot Date: Arshad - Wed, 08 Feb 2023 - 10:43am

METHODOLOGY

STEP-03

1. PROVIDE NEW SERVICE DUCT AND REPAIR ALL EXISTING UTILITY DUCTS AS PER SITE REQUIREMENTS OR AS DIRECTED BY THE SITE ENGINEER. REFER STRUCTURAL DRAWING FOR DIMENSION AND DETAILS.

2. THE CONTRACTOR SHALL TAKE THE WRITTEN APPROVAL FROM SUPERVISORY CONSULTANT OF SATISFACTORY COMPLETION OF STEP-03 , PRIOR TO PROCEED STEP-04.



PROPOSED CROSS SECTION
(STA:0+000 TO 0+217.67)

NOTES:–

1. ALL DIMENSIONS ARE IN METERS/MILIMETERS UNLESS OTHERWISE STATED.

REV.	DESCRIPTION	DATE	APPROVED
T0	TENDER ISSUE	20-01-2023	WASIF

CLIENT:- SINDH INDUSTRIAL TRADING ESTATES LIMITED

PROJECT:- REHABILITATION / CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

CONSULTANT:- ATIF NAZAR (PVT.) LTD.
PROJECT MANAGERS, PLANNERS, ARCHITECTS & CONSULTING ENGINEERS
D-11/A, BLOCK NO-17, GULSHAN-E-IQBAL, KARACHI. P.H. 34820497 - 34982561

		PROJECT NO.	DATE:-
DRAWN BY	ARSHAD	RSK	20-01-2023
DESIGN BY	MAHRUKH		
CHECKED BY	WAZI IQBAL	SCALE: N.T.S	SHEET: 04/10 (A3)
APPROVED BY	WASIF		

SHEET TITLE:- STEP - 03 CROSS SECTION

Drawing No. 2210-01-01-02-03-R204 | REVISION T0

Drawing file path & name: D:\Projects\01_Rehabilition Construction Of Roads In Site Industrial Estate Karachi\00_Submital\Tender\Working\02_Road\Road - 37\06_Typical Sections\2210-01-01-02-03-R201 T0 21010.dwg
User and Plot Date: Arshad - Wed, 08 Feb 2023 - 10:43am

METHODOLOGY

STEP-04

1. REMOVE COMPLETE ASPHALTIC LAYERS WHERE EXIST & RE-COMPACT THE EXISTING SURFACE.

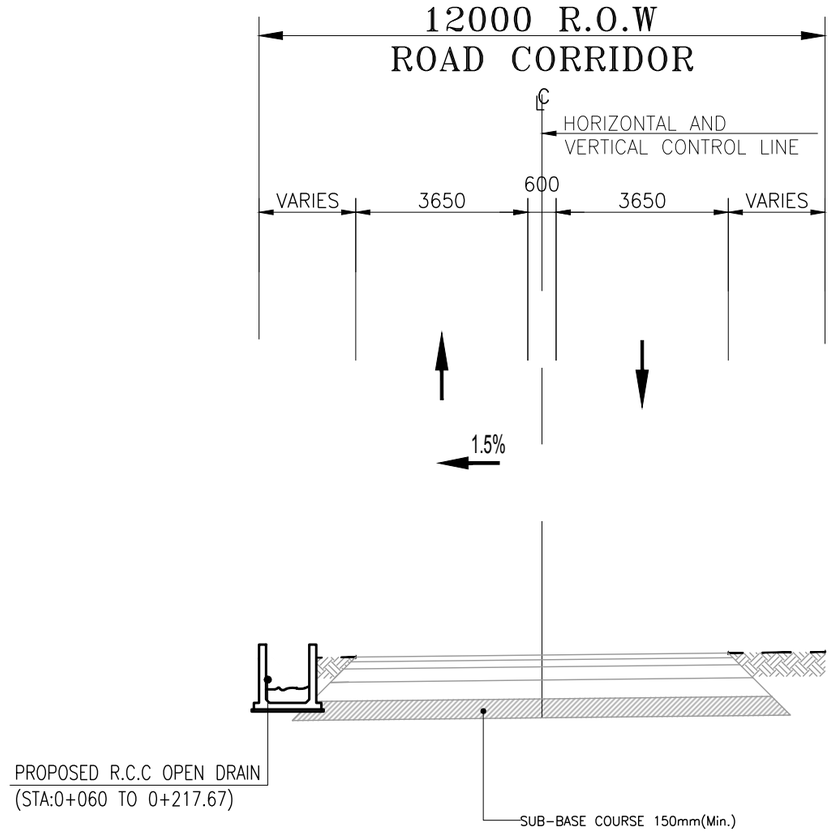
2. IF REQUIRED, THE CONTRACTOR SHALL EXCAVATE THE EXISTING SURFACE TO LAY THE FULL DEPTH OF PAVEMENT LAYERS AS PER ROAD PROFILE.

3. THE CONTRACTOR SHALL MAKE THE SHOP DRAWING & TAKE PRIOR APPROVAL FROM THE ENGINEER, BEFORE EXECUTION OF ROAD WORKS.

4. CLEAN, LEVEL & COMPACT THE EXISTING SURFACE.

5. LAY MINIMUM 150mm SUB BASE COURSE AND VARY DEPENDING ON DESIGN PROFILE OF ROAD. EACH LAYER SHALL NOT EXCEED MORE THAN 75mm & COMPACT UPTO 98% MDD.

6. THE CONTRACTOR SHALL TAKE THE WRITTEN APPROVAL FROM SUPERVISORY CONSULTANT ON SATISFACTORY COMPLETION OF STEP-04, PRIOR TO PROCEED STEP-05.



PROPOSED CROSS SECTION
(STA:0+000 TO 0+217.67)

NOTES:–

1. ALL DIMENSIONS ARE IN METERS/MILIMETERS UNLESS OTHERWISE STATED.

REV.	DESCRIPTION	DATE	APPROVED
T0	TENDER ISSUE	20-01-2023	WASIF

CLIENT:- SINDH INDUSTRIAL TRADING ESTATES LIMITED

PROJECT:- REHABILITATION / CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

CONSULTANT:- ATIF NAZAR (PVT.) LTD.
PROJECT MANAGERS, PLANNERS, ARCHITECTS & CONSULTING ENGINEERS
D-11/A, BLOCK NO-17, GULSHAN-E-IQBAL, KARACHI. P.H. 34820497 - 34982561

		PROJECT NO:	DATE:-
DRAWN BY	ARSHAD	RSK	20-01-2023
DESIGN BY	MAHRUKH		
CHECKED BY	WAZI IQBAL	SCALE: N.T.S	SHEET: 05/10 (A3)
APPROVED BY	WASIF		

SHEET TITLE:- STEP - 04 CROSS SECTION

Drawing No. 2210-01-01-02-03-R205 | REVISION T0

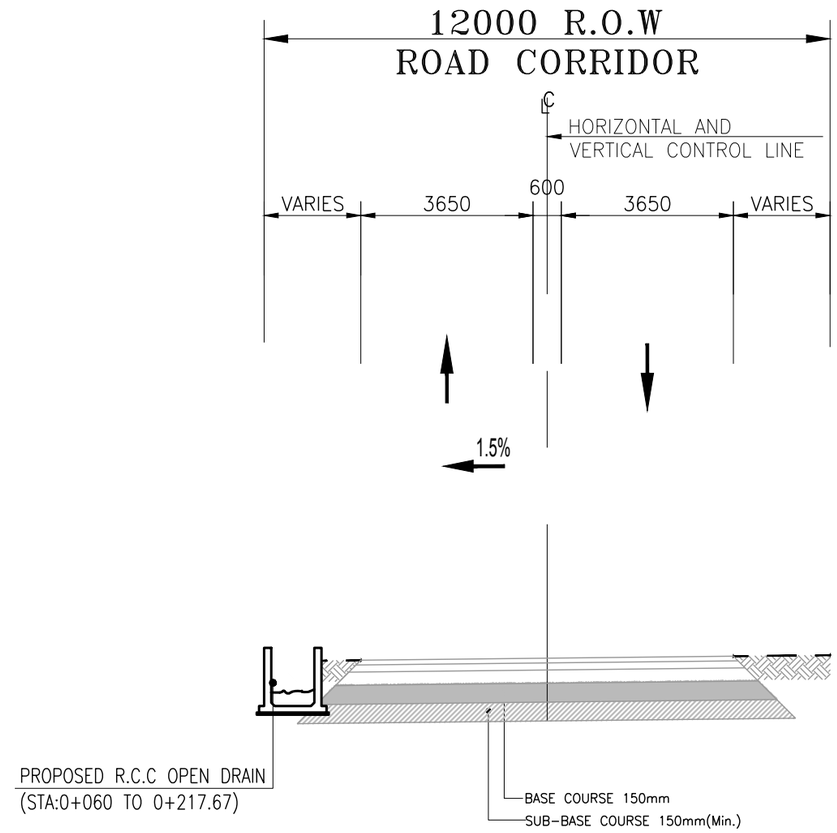
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User and Plot Date: Arshad - Wed, 08 Feb 2023 - 10:43am

METHODOLOGY

STEP-05

1. LAY 150mm BASE COURSE AND VARY DEPENDING ON DESIGN PROFILE OF ROAD. EACH LAYER SHALL NOT EXCEED MORE THAN 75mm & COMPACT UPTO 100% MDD.

2. THE CONTRACTOR SHALL TAKE THE WRITTEN APPROVAL FROM SUPERVISORY CONSULTANT ON SATISFACTORY COMPLETION OF STEP-04, PRIOR TO PROCEED STEP-05.



PROPOSED CROSS SECTION

(STA:0+000 TO 0+217.67)

NOTES:-

1. ALL DIMENSIONS ARE IN METERS/MILIMETERS UNLESS OTHERWISE STATED.

REV.	DESCRIPTION	DATE	APPROVED
T0	TENDER ISSUE	20-01-2023	WASIF

CLIENT:- SINDH INDUSTRIAL TRADING ESTATES LIMITED

PROJECT:- REHABILITATION / CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

CONSULTANT:- ATIF NAZAR (PVT.) LTD.
PROJECT MANAGERS, PLANNERS, ARCHITECTS & CONSULTING ENGINEERS
D-11/A, BLOCK NO-17, GULSHAN-E-IQBAL, KARACHI. P.H. 34820497 - 34982561

DRAWN BY	ARSHAD	PROJECT NO. RSK	DATE:- 20-01-2023
DESIGN BY	MAHRUKH		
CHECKED BY	WAZI IQBAL	SCALE: N.T.S	SHEET: 06/10 (A3)
APPROVED BY	WASIF		

SHEET TITLE:- STEP - 05 CROSS SECTION

Drawing No. 2210-01-01-02-03-R206 | REVISION T0

Drawing file path & name D:\Projects\01_Rehabilition Construction Of Roads in Site Industrial Estate Karachi\00_Submital\Tender\Working\02_Road\Road - 37\06_Typical Sections\2210-01-01-02-03-R201 T0 21010.dwg
User and Plot Date:- Arshad - Wed, 08 Feb 2023 - 10:43am

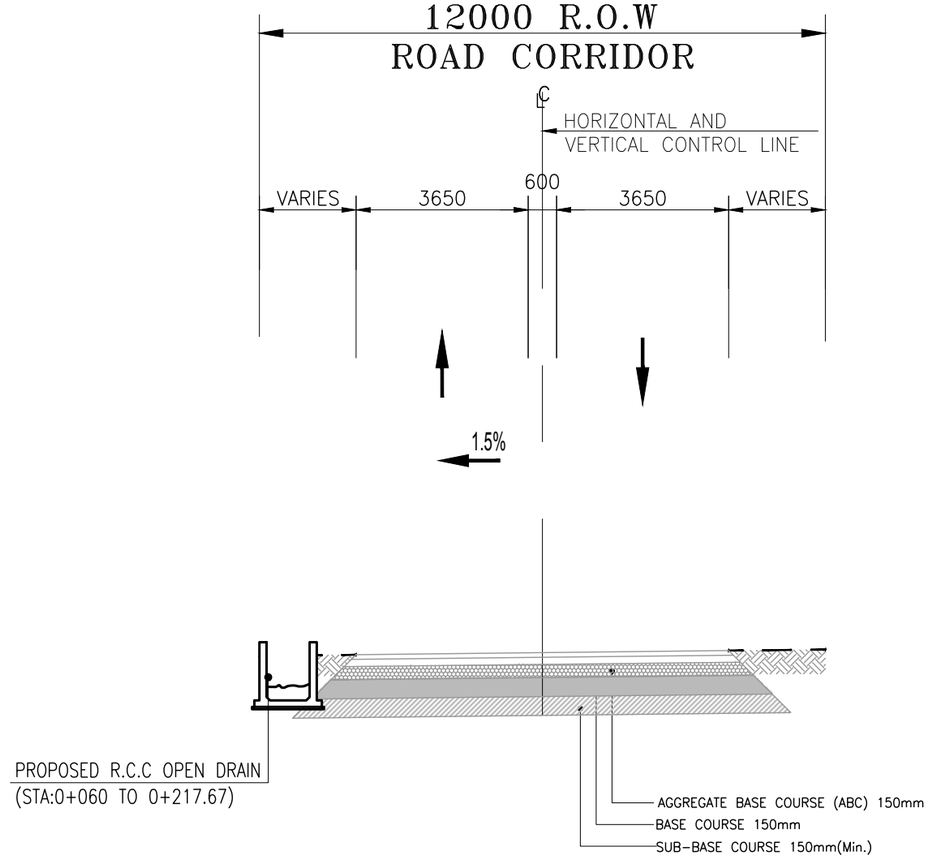
METHODOLOGY

STEP-06

1. LAY 150mm AGGREGATE BASE COURSE. COMPACT THE AGGREGATE BASE COURSE UPTO COMPACTION OF 100% MDD.

2. APPLY PRIME COAT ON TOP OF AGGREGATE BASE COURSE. MEASUREMENT SHALL BE MADE BY USING END AREA METHOD.

3. THE CONTRACTOR SHALL TAKE THE WRITTEN APPROVAL FROM SUPERVISORY CONSULTANT ON SATISFACTORY COMPLETION OF STEP-06, PRIOR TO PROCEED STEP-07.



PROPOSED CROSS SECTION
(STA:0+000 TO 0+217.67)

NOTES:–

1. ALL DIMENSIONS ARE IN METERS/MILIMETERS UNLESS OTHERWISE STATED.

REV.	DESCRIPTION	DATE	APPROVED
T0	TENDER ISSUE	20-01-2023	WASIF

CLIENT:- SINDH INDUSTRIAL TRADING ESTATES LIMITED

PROJECT:- REHABILITATION / CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

CONSULTANT:- ATIF NAZAR (PVT.) LTD.
PROJECT MANAGERS, PLANNERS, ARCHITECTS & CONSULTING ENGINEERS
D-11/A, BLOCK NO-17, GULSHAN-E-IQBAL, KARACHI. P.H. 34820497 - 34982561

		PROJECT NO:	DATE:-
DRAWN BY	ARSHAD	RSK	20-01-2023
DESIGN BY	MAHRUKH		
CHECKED BY	WAZI IQBAL	SCALE: N.T.S	SHEET: 07/10 (A3)
APPROVED BY	WASIF		

SHEET TITLE:- STEP - 06 CROSS SECTION

Drawing No. 2210-01-01-02-03-R207 | REVISION T0

Drawing file path & name: D:\Projects\01_Rehabilition Construction Of Roads In Site Industrial Estate Karachi\00_Submital\Tender\Working\02_Road\Road - 37\06_Typical Sections\2210-01
User and Plot Date: Arshad - Wed, 08 Feb 2023 - 10:43am

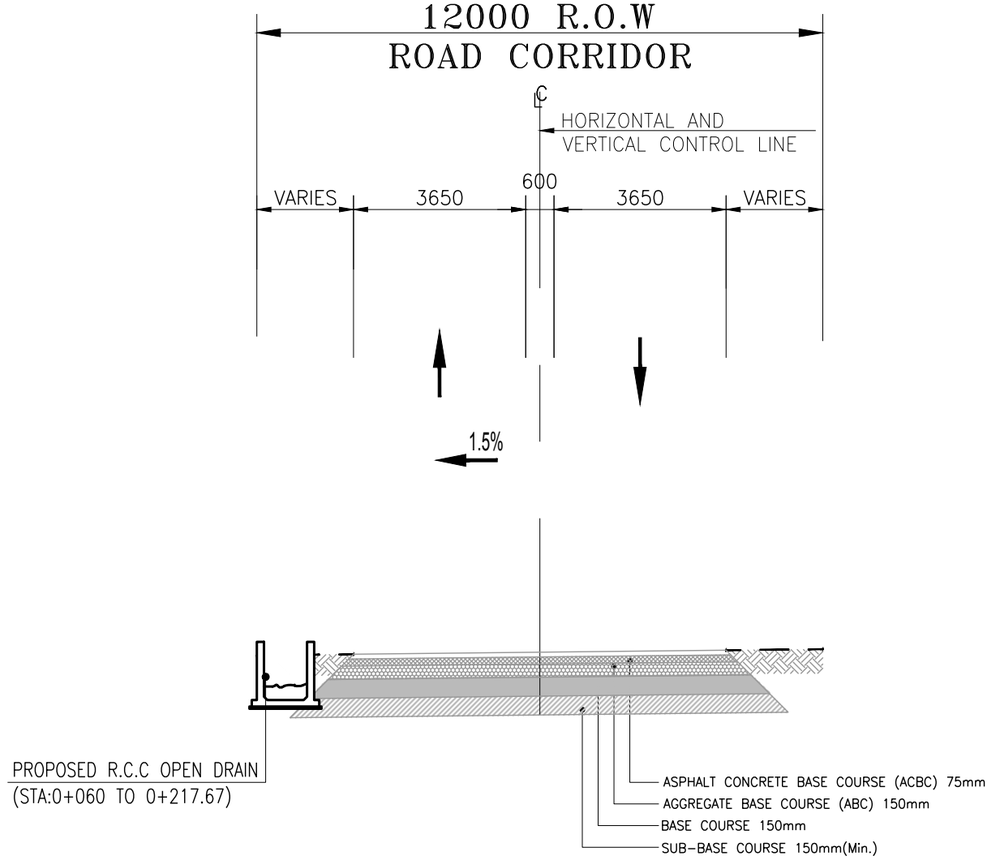
METHODOLOGY

STEP-07

1. LAY 75mm ASPHALT BASE COURSE.

2. APPLY TACK COAT ON TOP OF ASPHALTIC BASE COURSE.

3. THE CONTRACTOR SHALL TAKE THE WRITTEN APPROVAL FROM SUPERVISORY CONSULTANT ON SATISFACTORY COMPLETION OF STEP-07, PRIOR TO PROCEED STEP-08.



PROPOSED CROSS SECTION
(STA:0+000 TO 0+217.67)

NOTES:-

1. ALL DIMENSIONS ARE IN METERS/MILIMETERS UNLESS OTHERWISE STATED.

REV.	DESCRIPTION	DATE	APPROVED
T0	TENDER ISSUE	20-01-2023	WASIF

CLIENT:- SINDH INDUSTRIAL TRADING ESTATES LIMITED

PROJECT:- REHABILITATION / CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

CONSULTANT:- ATIF NAZAR (PVT.) LTD.
PROJECT MANAGERS, PLANNERS, ARCHITECTS & CONSULTING ENGINEERS
D-11/A, BLOCK NO-17, GULSHAN-E-IQBAL, KARACHI. P.H. 34820497 - 34982561

		PROJECT NO:	DATE:-
DRAWN BY	ARSHAD	RSK	20-01-2023
DESIGN BY	MAHRUKH		
CHECKED BY	WAZI IQBAL	SCALE: N.T.S	SHEET: 08/10 (A3)
APPROVED BY	WASIF		

SHEET TITLE:- STEP - 07 CROSS SECTION

Drawing No. 2210-01-01-02-03-R208 | REVISION T0

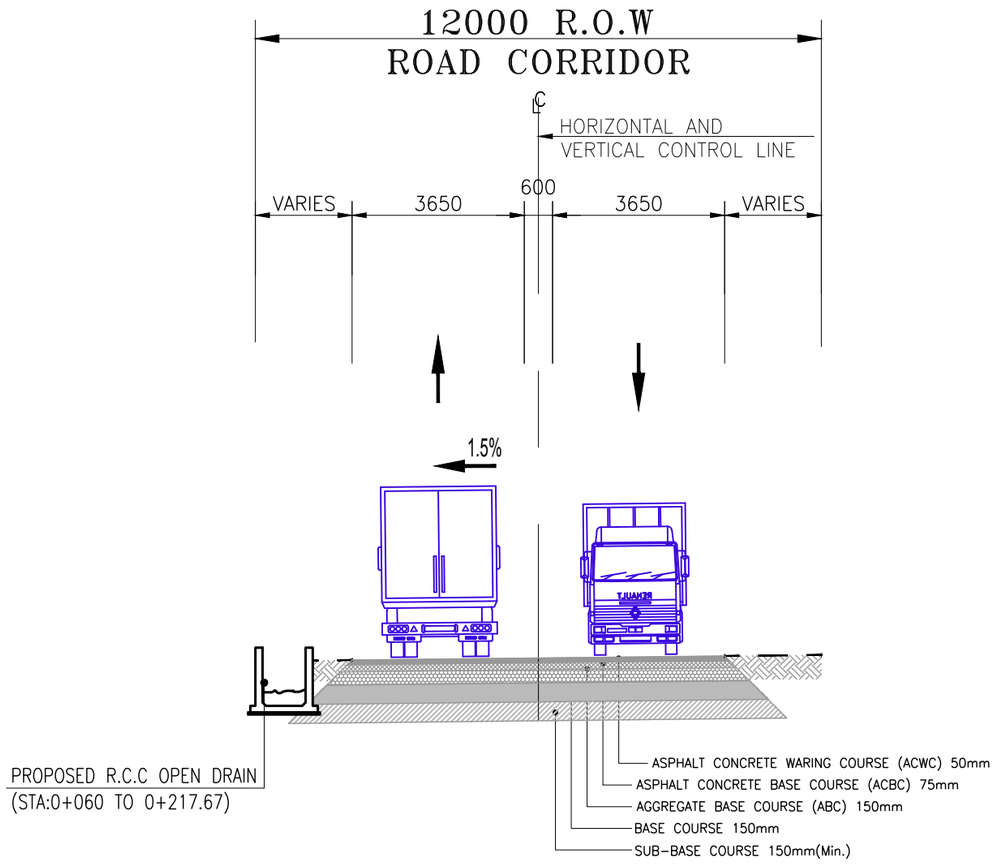
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User and Plot Date: Arshad - Wed, 08 Feb 2023 - 10:43am

METHODOLOGY

STEP-08

1. LAY 50mm ASPHALT WEARING COURSE.

2. THE CONTRACTOR SHALL TAKE THE WRITTEN APPROVAL FROM SUPERVISORY CONSULTANT ON SATISFACTORY COMPLETION OF STEP-08, PRIOR TO PROCEED STEP-09.



PROPOSED CROSS SECTION

(STA:0+000 TO 0+217.67)

NOTES:–

1. ALL DIMENSIONS ARE IN METERS/MILIMETERS UNLESS OTHERWISE STATED.

REV.	DESCRIPTION	DATE	APPROVED
T0	TENDER ISSUE	20-01-2023	WASIF

CLIENT:- SINDH INDUSTRIAL TRADING ESTATES LIMITED

PROJECT:- REHABILITATION / CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

CONSULTANT:- ATIF NAZAR (PVT.) LTD.
PROJECT MANAGERS, PLANNERS, ARCHITECTS & CONSULTING ENGINEERS
D-11/A, BLOCK NO-17, GULSHAN-E-IQBAL, KARACHI. P.H. 34820497 - 34982561

		PROJECT NO:	DATE:-
DRAWN BY	ARSHAD	RSK	20-01-2023
DESIGN BY	MAHRUKH		
CHECKED BY	WAZI IQBAL	SCALE: N.T.S	SHEET: 09/10 (A3)
APPROVED BY	WASIF		

SHEET TITLE:- STEP - 08 CROSS SECTION

Drawing No. 2210-01-01-02-03-R209 | REVISION T0

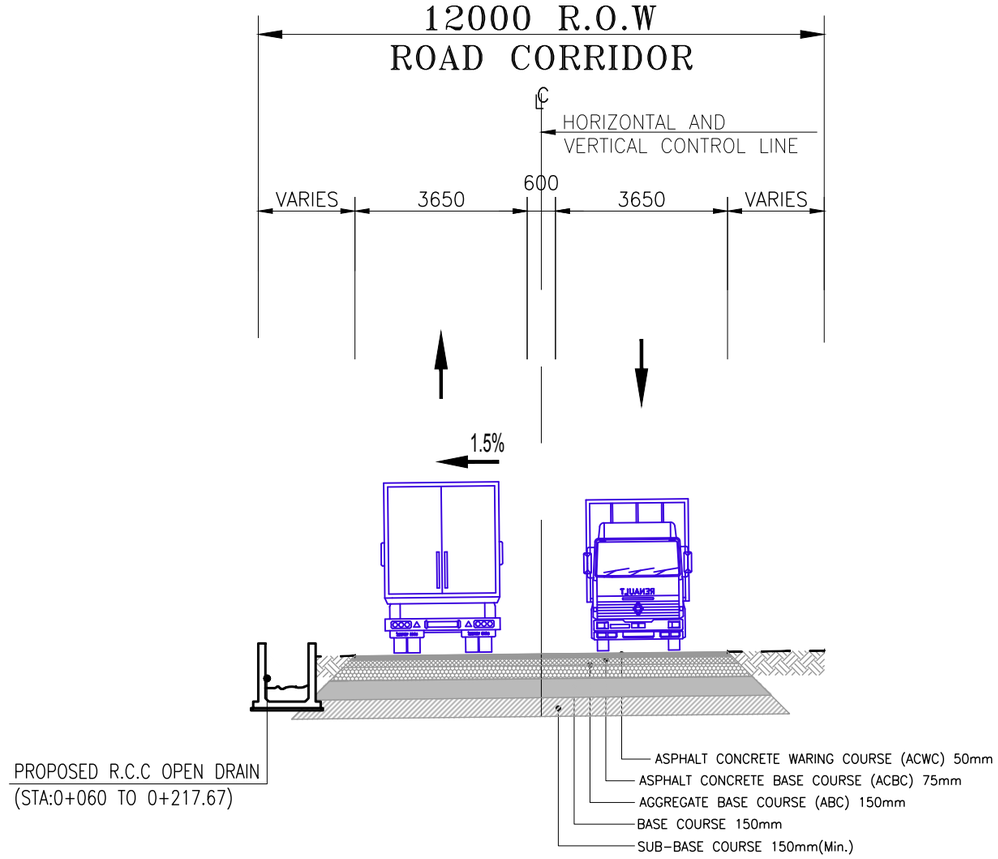
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User and Plot Date:- Arshad - Wed, 08 Feb 2023 - 10:43am

METHODOLOGY

STEP-09

1. PROVIDE ANY CUT & FILL ALONG THE ROAD SIDES. PROPER COMPACTION AND DRESSING MUST BE ENSURED BEFORE INSTALLATION OF CATEYES AND PAVEMENT MARKING.

2. THE CONTRACTOR SHALL TAKE THE WRITTEN APPROVAL FROM SUPERVISORY CONSULTANT ON SATISFACTORY COMPLETION OF STEP-09, BEFORE DECLARING THE COMPLETION OF WORK.



PROPOSED CROSS SECTION

(STA:0+000 TO 0+217.67)

NOTES:-

1. ALL DIMENSIONS ARE IN METERS/MILIMETERS UNLESS OTHERWISE STATED.

REV.	DESCRIPTION	DATE	APPROVED
T0	TENDER ISSUE	20-01-2023	WASIF

CLIENT:- SINDH INDUSTRIAL TRADING ESTATES LIMITED

PROJECT:- REHABILITATION / CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

CONSULTANT:- ATIF NAZAR (PVT.) LTD.
PROJECT MANAGERS, PLANNERS, ARCHITECTS & CONSULTING ENGINEERS
D-11/A, BLOCK NO-17, GULSHAN-E-IQBAL, KARACHI. P.H. 34820497 - 34982561

		PROJECT NO:	DATE:-
DRAWN BY	ARSHAD	RSK	20-01-2023
DESIGN BY	MAHRUKH		
CHECKED BY	WAZI IQBAL	SCALE: N.T.S	SHEET: 10/10 (A3)
APPROVED BY	WASIF		

SHEET TITLE:- STEP - 09 CROSS SECTION

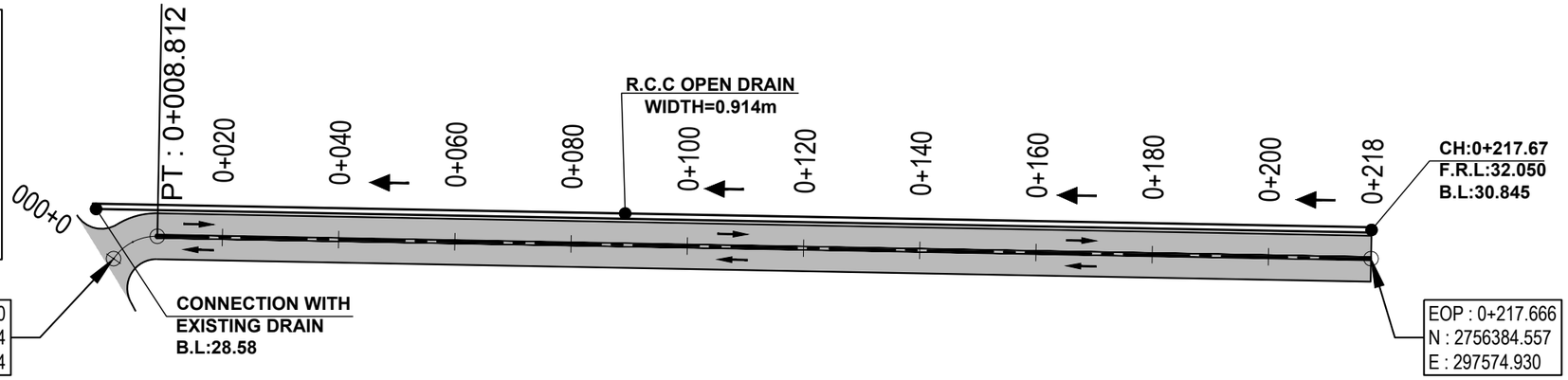
Drawing No. 2210-01-01-02-03-R210 | REVISION T0

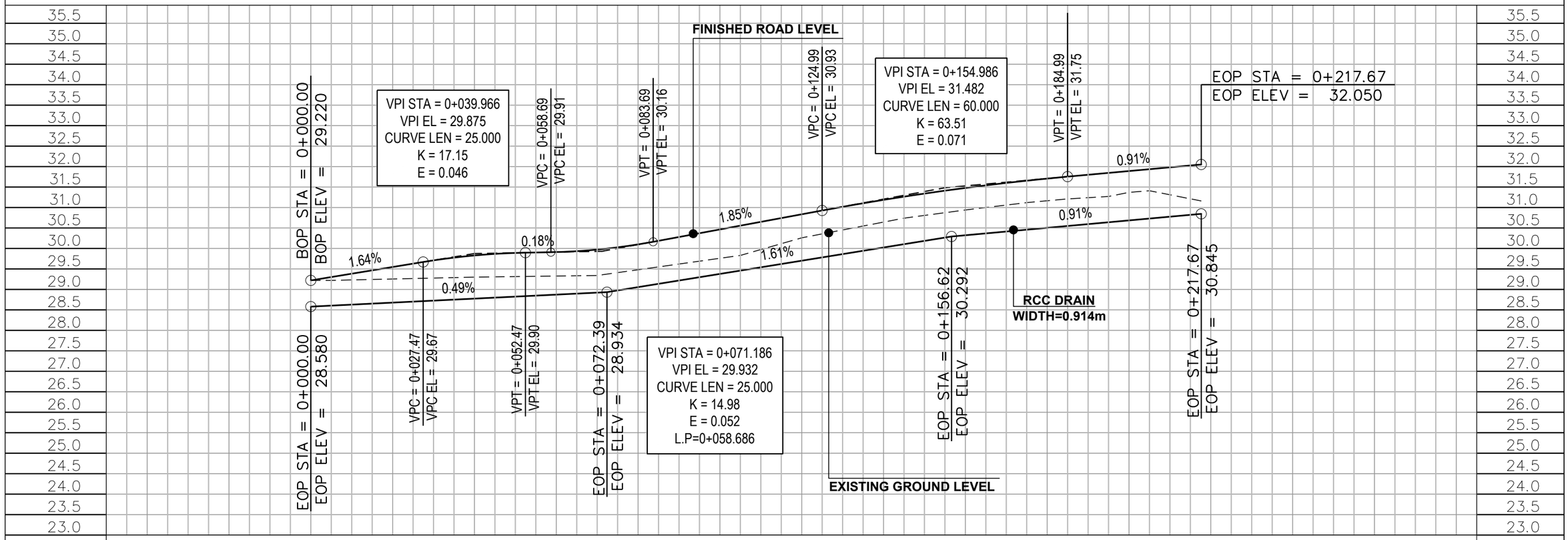
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User and Plot Date:- Arshad - Wed, 08 Feb 2023 - 10:43am

ROAD, STORM WATER & SEWER DRAIN

PLAN & PROFILE

PI#01
PI Sta = 0+004.800
E = 297394.94
N = 2756269.44
I = 56° 24' 44"
R = 8.95
L = 8.81
T = 4.80
C = 8.46
E = 1.21





FRL			29.220	29.548	29.830	29.912	30.099	30.465	30.835	31.187	31.479	31.707	31.890			
EGL			29.220	29.254	29.300	29.327	29.480	29.760	30.260	30.644	30.940	31.165	31.370			
B.L			28.580	28.678	28.775	28.873	29.056	29.379	29.702	30.024	30.323	30.504	30.685			
STATION	−0+040	−0+020	0+000	0+020	0+040	0+060	0+080	0+100	0+120	0+140	0+160	0+180	0+200	0+220	0+240	0+260	0+280

NOTES:−

1. ALL DIMENSIONS ARE IN METERS/MILIMETERS UNLESS OTHERWISE STATED.

LEGEND

- PROPOSED CENTER LINE
- PROPOSED KERB
- PROPOSED LANE MARKING
- R.C.C DRAIN
- DRAIN CROSSING CLOSED (DCC)
- FLOW DIRECTION

REV.	DESCRIPTION	DATE	APPROVED
T0	TENDER ISSUE	20-01-2023	WASIF

CLIENT:-
SINDH INDUSTRIAL TRADING ESTATES LIMITED

PROJECT:-
REHABILITATION / CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

DRAWN BY	ARSHAD	PROJECT NO: RSK	DATE:- 20-01-2023
DESIGN BY	MAHRUKH		
CHECKED BY	WAZI IQBAL	SCALE: HOR=1:1000 VER=1:10	SHEET: 01/01 (A3)
APPROVED BY	WASIF		

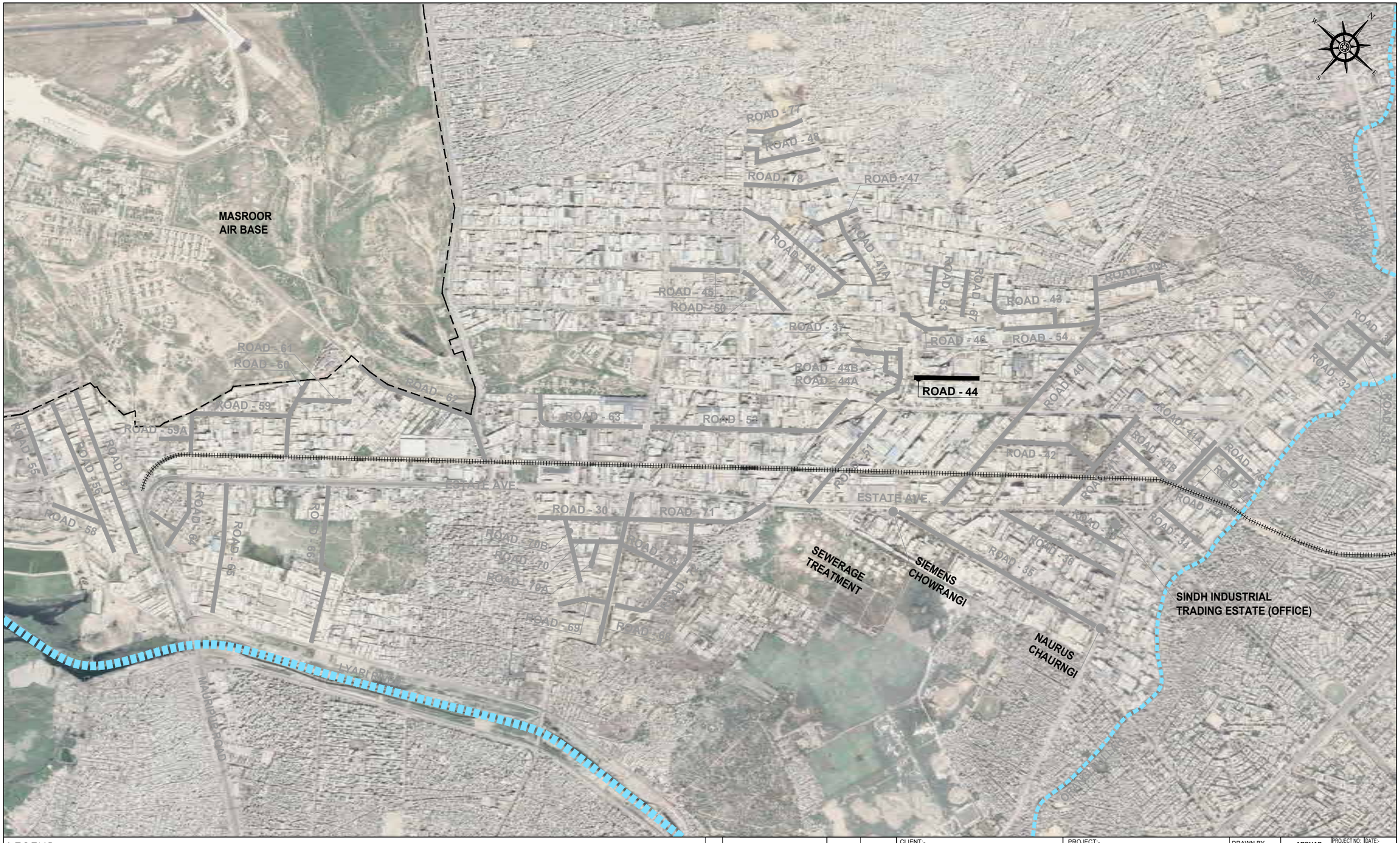
CONSULTANT:-
ATIF NAZAR (PVT.) LTD.
PROJECT MANAGERS, PLANNERS, ARCHITECTS & CONSULTING ENGINEERS
D-11/A, BLOCK NO-17, GULSHAN-E-IQBAL, KARACHI. P.H. 34820497 - 34982561

SHEET TITLE:-
ROAD - 37
PLAN & PROFILE (ROAD & DRAIN)
(SAT=0+000 TO 0+217.67)

Drawing No. 2210-01-01-02-03-R301
REVISION T0

Drawing file path & name: D:\Projects\01_Rehabilition Construction Of Roads In Site Industrial Estate Karachi\00_Submital\Tender\Working\02_Road\Road - 37\07_Plan&Profile\2210-01-01-02-03-R301.dwg
User and Plot Date: Arshad - Wed, 08 Feb 2023 - 11:00am

ROAD - 44



LEGEND:–

- ROADS
- RIVER/NULLAH
- RAILWAY TRACK

REV.	DESCRIPTION	DATE	APPROVED
T0	TENDER ISSUE	20-01-2023	WASIF

CLIENT:-
SINDH INDUSTRIAL TRADING ESTATES LIMITED

PROJECT:-
REHABILITATION / CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

CONSULTANT:-
ATIF NAZAR (PVT.) LTD.
PROJECT MANAGERS, PLANNERS, ARCHITECTS & CONSULTING ENGINEERS
D-11/A, BLOCK NO-17, GULSHAN-E-IQBAL, KARACHI. P.H. 34820497 - 34982561

DRAWN BY	ARSHAD	PROJECT NO:	DATE:-
DESIGN BY	MAHRUKH	RSK	20-01-2023
CHECKED BY	WAZI IQBAL	SCALE:	SHEET:
APPROVED BY	WASIF	N.T.S	01/01 (A3)

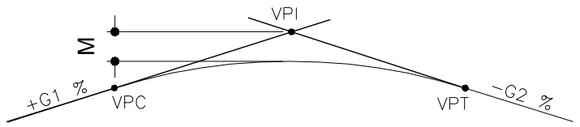
SHEET TITLE:-
ROAD - 44
LOCATION PLAN

Drawing No. 2210-01-01-02-03-R004
REVISION T0

Drawing file path & name: D:\Projects\01_Rehabilition Construction Of Roads In Site Industrial Estate Karachi\00_Submital\Tender\Working\02_Road\Road – 44\Road-44A\01_Location Plan\2210-01-01-02-03-R004.dwg
User and Plot Date: Arshad – Wed, 08 Feb 2023 – 7:02pm

GENERAL DRAWINGS

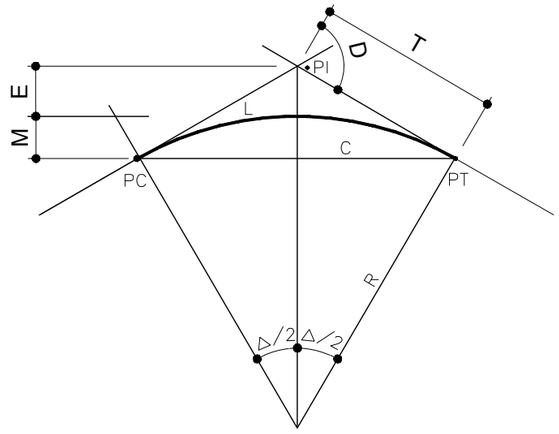
DETAIL OF VERTICAL CURVE



VPC : VERTICAL POINT OF CURVATURE
VPI : VERTICAL POINT OF INTERSECTION
VPT : VERTICAL POINT OF TANGENCY
L : LENGTH OF VERTICAL CURVE
M : VERTICAL OFFSET

+G : UPWARD VERTICAL GRADE
−G : DOWNWARD VERTICAL GRADE
K : RATE OF GRADE CHANGE = $\frac{G2-G1}{L}$
A : TOTAL CHANGE IN VERTICAL GRADE BETWEEN TANGENTS = G2−G1

DETAIL OF HORIZONTAL CURVE



CIRCULAR CURVE PARAMETERS

PI : POINT OF INTERSECTION
PC : POINT OF CURVATURE
PT : POINT OF TANGENCY
Δ : DEFLECTION ANGLE
Da : DEGREE OF CURVE (ARC DEFINITION)
Dc : DEGREE OF CURVE (CHORD DEFINITION)

T : TANGENT LENGTH
R : RADIUS
L : LENGTH OF CURVE
C : CHORD LENGTH
E : EXTERNAL
M : MIDDLE ORDINATE

S.NO	DESIGN PARAMETERS	UNITS	VALUES
1	DESIGN SPEED	Km/h	40
2	LANE WIDTH	m	3.65
3	NUMBER. OF LANES	No.	2
4	TOTAL PAVEMENT WIDTH	m	7.9
5	PAVEMENT CROSS SLOPE	%	1.5
6	RIGHT OF WAY (ROW)	m	30
7	MINIMUM RADIUS OF HORIZONTAL CURVE	m	47
8	MINIMUM STOPPING SIGHT DISTANCE (SSD)	m	50
9	MINIMUM PASSING SIGHT DISTANCE (PSD)	m	140
10	K VALUE FOR CREST CURVE (SSD)	m%	4
11	K VALUE FOR CREST CURVE (PSD)	m%	23
12	K VALUE FOR SAG CURVE	m%	9
13	RCC OPEN DRAIN	m	1.2
14	MINIMUM VERTICAL CLEARENCE	m	5.5

NOTES:−

1. ALL DIMENSIONS ARE IN METERS/MILIMETERS UNLESS OTHERWISE STATED.

REV.	DESCRIPTION	DATE	APPROVED
T0	TENDER ISSUE	20-01-2023	WASIF

CLIENT:- SINDH INDUSTRIAL TRADING ESTATES LIMITED

PROJECT:- REHABILITATION / CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

CONSULTANT:- ATIF NAZAR (PVT.) LTD.
PROJECT MANAGERS, PLANNERS, ARCHITECTS & CONSULTING ENGINEERS
D-11/A, BLOCK NO-17, GULSHAN-E-IQBAL, KARACHI. P.H. 34820497 - 34982561

DRAWN BY	ARSHAD	PROJECT NO: RSK	DATE:- 20-01-2023
DESIGN BY	MAHRUKH		
CHECKED BY	WAZI IQBAL	SCALE: N.T.S	SHEET: 01/01 (A3)
APPROVED BY	WASIF		

SHEET TITLE:- GEOMETRIC DESIGN PARAMETERS

Drawing No. 2210-01-01-02-03-G901 | REVISION T0

Drawing file path & name D:\Projects\01_Rehabilitation Construction Of Roads In Site Industrial Estate Karachi\00_Submittal\Tender\Working\02_Road\Road - 44\Road-44\08_General Drawings\2210-01-01-02-03-G901.dwg
User and Plot Date:- Arshad - Sat, 04 Feb 2023 - 4:20pm

SETTING - OUT DATA

ROAD - 44
(SETTING OUT DATA)

S.N	PI - POINT	P.I. Coordinates EASTING	P.I. Coordinates NORTHING	G.DIST	GRID BEAR	DEFLECTION ANGLE	L/R	RADIUS	LENGTH OF TANGENT (LT)	LENGTH OF CURVE (LC)	E (m)	STATION @ PI	CH @ PC	CH @ PT
BOP	A - POINT	297795.671	2756387.973											
EOP	B - POINT	298107.628	2756641.091	401.729	50° 56' 40"							0 + 401.729	0 + 401.729	0 + 401.729

NOTES:-

1. ALL DIMENSIONS ARE IN METERS/MILIMETERS UNLESS OTHERWISE STATED.

REV.	DESCRIPTION	DATE	APPROVED
T0	TENDER ISSUE	20-01-2023	WASIF

CLIENT:- SINDH INDUSTRIAL TRADING ESTATES LIMITED

PROJECT:- REHABILITATION / CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

CONSULTANT:-

ATIF NAZAR (PVT.) LTD.

PROJECT MANAGERS, PLANNERS, ARCHITECTS & CONSULTING ENGINEERS
D-11/A, BLOCK NO-17, GULSHAN-E-IQBAL, KARACHI. P.H. 34820497 - 34982561

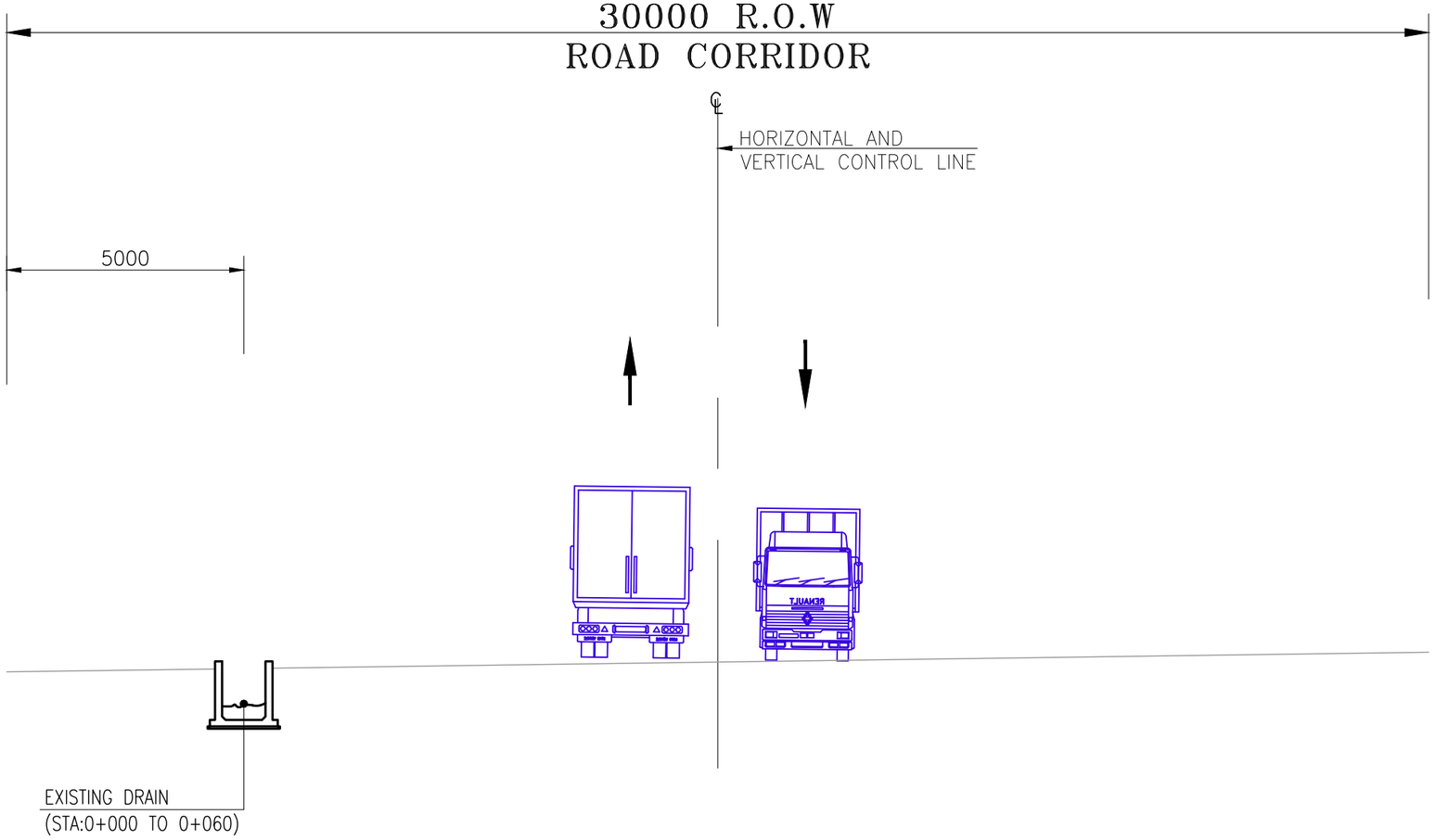
DRAWN BY	ARSHAD	PROJECT NO.	DATE:-
DESIGN BY	MAHRUKH	RSK	20-01-2023
CHECKED BY	WAZI IQBAL	SCALE:	SHEET:
APPROVED BY	WASIF	N.T.S	01/01 (A3)

SHEET TITLE:- SETTING OUT DATA

Drawing No. 2210-01-01-02-03-R400 | REVISION T0

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User and Plot Date: Arshad - Sat, 04 Feb 2023 - 4:20pm

EXISTING CROSS SECTIONS



EXISTING CROSS SECTION
(STA:0+000 TO 0+401.729)

NOTES:–

1. ALL DIMENSIONS ARE IN METERS/MILIMETERS UNLESS OTHERWISE STATED.

REV.	DESCRIPTION	DATE	APPROVED
T0	TENDER ISSUE	20-01-2023	WASIF

CLIENT:- SINDH INDUSTRIAL TRADING ESTATES LIMITED

PROJECT:- REHABILITATION / CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

CONSULTANT:-

ATIF NAZAR (PVT.) LTD.

PROJECT MANAGERS, PLANNERS, ARCHITECTS & CONSULTING ENGINEERS
D-11/A, BLOCK NO-17, GULSHAN-E-IQBAL, KARACHI. P.H. 34820497 - 34982561

DRAWN BY	ARSHAD	PROJECT NO.	DATE:-
DESIGN BY	MAHRUKH	RSK	20-01-2023
CHECKED BY	WAZI IQBAL	SCALE:	SHEET:
APPROVED BY	WASIF	N.T.S	01/10 (A3)

SHEET TITLE:- EXISTING CROSS SECTION

Drawing No. 2210-01-01-02-03-R201

REVISION T0

Drawing file path & name: D:\Projects\01_Rehabilition Construction Of Roads In Site Industrial Estate Karachi\00_Submital\Tender\Working\02_Road\Road - 44\Road-44\06_Typical Sections\2210-01-01-02-03-R201 TO 21070.dwg
User and Plot Date: Arshad - Wed, 08 Feb 2023 - 6:56pm

CONSTRUCTION / REHABILITATING METHODOLOGY CROSS SECTIONS

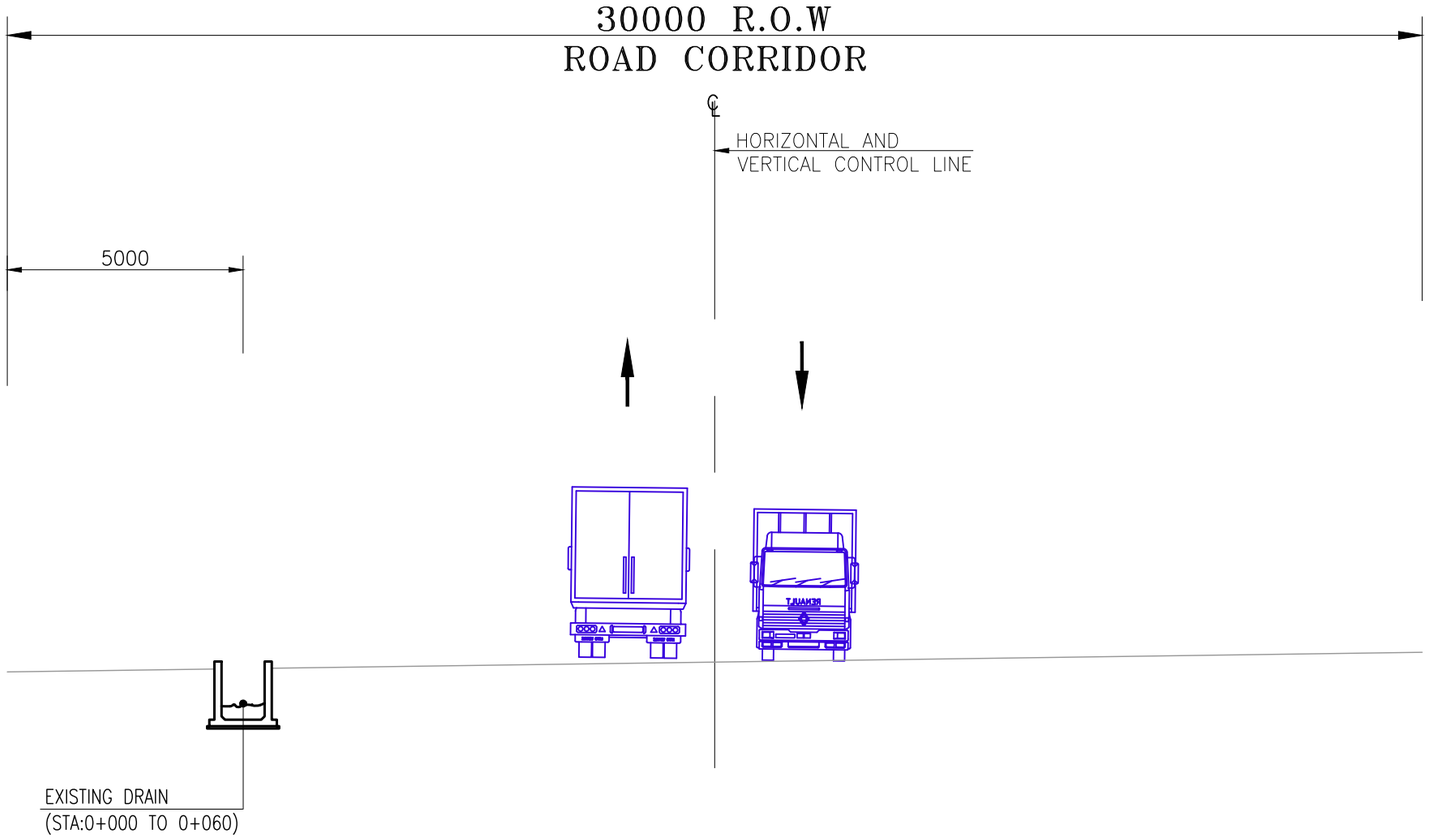
METHODOLOGY

STEP-01

1. REMOVE ALL THE SOLID WASTE & BUSHES FROM ENTIRE CORRIDOR INCLUDING DRAIN. DUMP THE WASTE TO THE DESIGNATED AREA AT GONPASS OR AS DIRECTED BY THE ENGINEER.

2. CONTRACTOR SHALL TAKE JOINT CROSS SECTIONS OF ROAD CORRIDOR & INVERT LEVELS OF DRAIN WITH CONSULTANT TO VERIFY ANY CHANGE IN DESIGN BEFORE THE EXECUTION OF WORK.

3. THE CONTRACTOR SHALL TAKE THE WRITTEN APPROVAL FROM SUPERVISORY CONSULTANT OF SATISFACTORY COMPLETION OF STEP-01 , PRIOR TO PROCEED STEP-02.



EXISTING CROSS SECTION
(STA:0+000 TO 0+401.729)

NOTES:–

1. ALL DIMENSIONS ARE IN METERS/MILIMETERS UNLESS OTHERWISE STATED.

REV.	DESCRIPTION	DATE	APPROVED
T0	TENDER ISSUE	20-01-2023	WASIF

CLIENT:- SINDH INDUSTRIAL TRADING ESTATES LIMITED

PROJECT:- REHABILITATION / CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

CONSULTANT:- ATIF NAZAR (PVT.) LTD.
PROJECT MANAGERS, PLANNERS, ARCHITECTS & CONSULTING ENGINEERS
D-11/A, BLOCK NO-17, GULSHAN-E-IQBAL, KARACHI. P.H. 34820497 - 34982561

DRAWN BY	ARSHAD	PROJECT NO: RSK	DATE:- 20-01-2023
DESIGN BY	MAHRUKH		
CHECKED BY	WAZI IQBAL	SCALE: N.T.S	SHEET: 02/10 (A3)
APPROVED BY	WASIF		

SHEET TITLE:- STEP - 01 CROSS SECTION

Drawing No. 2210-01-01-02-03-R202 | REVISION T0

Drawing file path & name: D:\Projects\01_Rehabilition Construction Of Roads In Site Industrial Estate Karachi\00_Submittal\Tender\Working\02_Road\Road – 44\Road-44\06_Typical Sections\2210-01-01-02-03-R201 TO 210T0.dwg
User and Plot Date: Arshad – Wed, 08 Feb 2023 – 6:56pm

METHODOLOGY

STEP -02

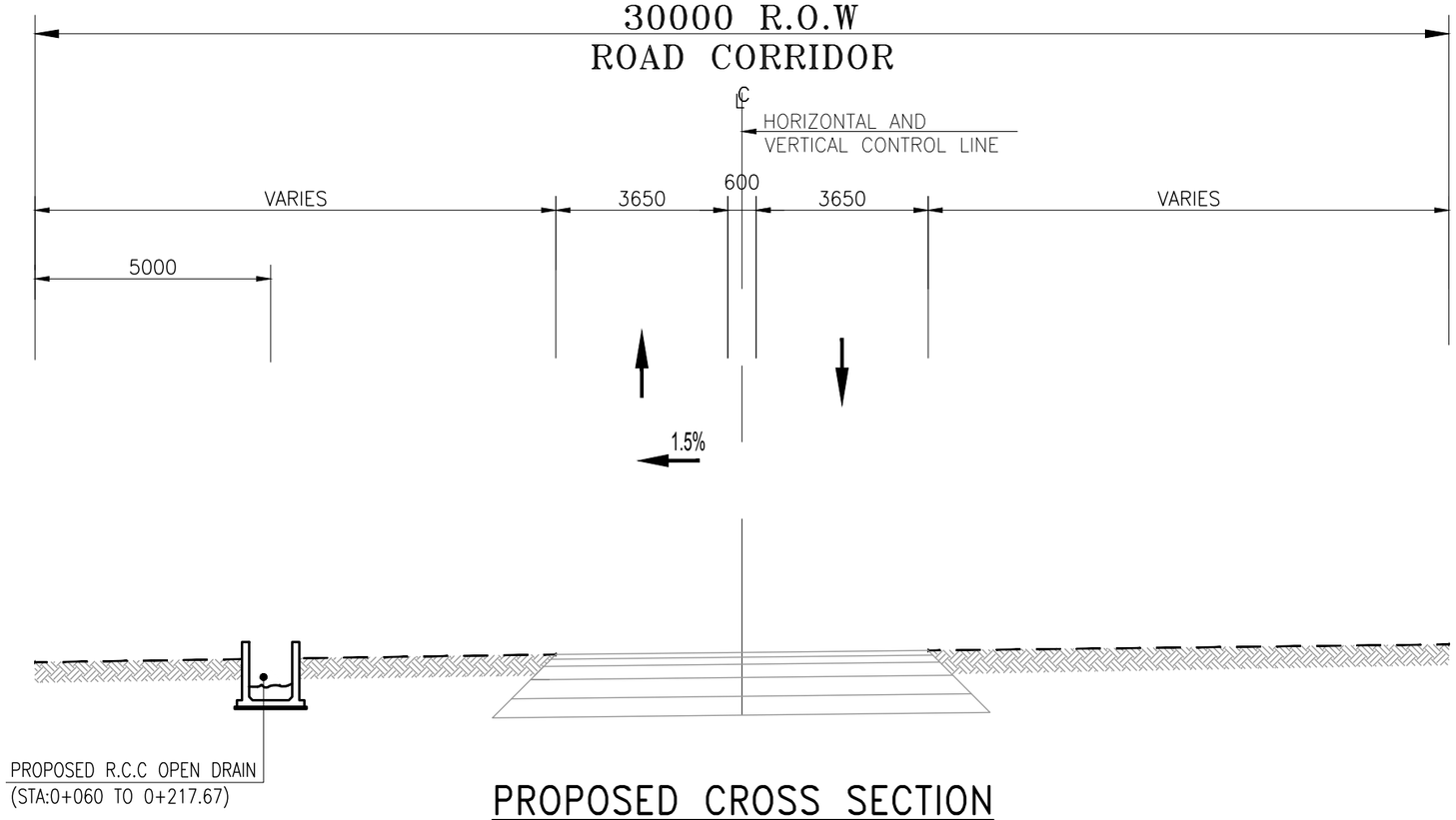
1. THE CONTRACTOR SHALL MAKE THE SHOP DRAWING OF DRAIN & TAKE PRIOR APPROVAL FROM THE ENGINEER, BEFORE EXECUTION OF DRAIN WORK.

2. RECTIFY THE EXISTING DRAIN WHERE REQUIRED OR AS DIRECTED BY THE ENGINEER.

3. THE NEW R.C.C DRAIN LOCATION & INVERT LEVELS SHALL BE FINALIZED BY THE ENGINEER AS PER SITE CONDITION.

4. CONSTRUCT THE R.C.C DRAINS ACCORDING TO INVERT LEVELS PROVIDED IN PLAN AND PROFILE DRAWINGS. REFER STRUCTURAL DRAWING FOR DRAIN DIMENSIONS AND DETAILS.

5. THE CONTRACTOR SHALL TAKE THE WRITTEN APPROVAL FROM SUPERVISORY CONSULTANT OF SATISFACTORY COMPLETION OF STEP-02 , PRIOR TO PROCEED STEP-03.



PROPOSED CROSS SECTION
(STA:0+000 TO 0+401.729)

NOTES:-

1. ALL DIMENSIONS ARE IN METERS/MILIMETERS UNLESS OTHERWISE STATED.

REV.	DESCRIPTION	DATE	APPROVED
T0	TENDER ISSUE	20-01-2023	WASIF

CLIENT:- SINDH INDUSTRIAL TRADING ESTATES LIMITED

PROJECT:- REHABILITATION / CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

CONSULTANT:- ATIF NAZAR (PVT.) LTD.
PROJECT MANAGERS, PLANNERS, ARCHITECTS & CONSULTING ENGINEERS
D-11/A, BLOCK NO-17, GULSHAN-E-IQBAL, KARACHI. P.H. 34820497 - 34982561

DRAWN BY	ARSHAD	PROJECT NO:	DATE:-
DESIGN BY	MAHRUKH	RSK	20-01-2023
CHECKED BY	WAZI IQBAL	SCALE: N.T.S	SHEET: 03/10 (A3)
APPROVED BY	WASIF		

SHEET TITLE:- STEP - 02 CROSS SECTION

Drawing No. 2210-01-01-02-03-R203 | REVISION T0

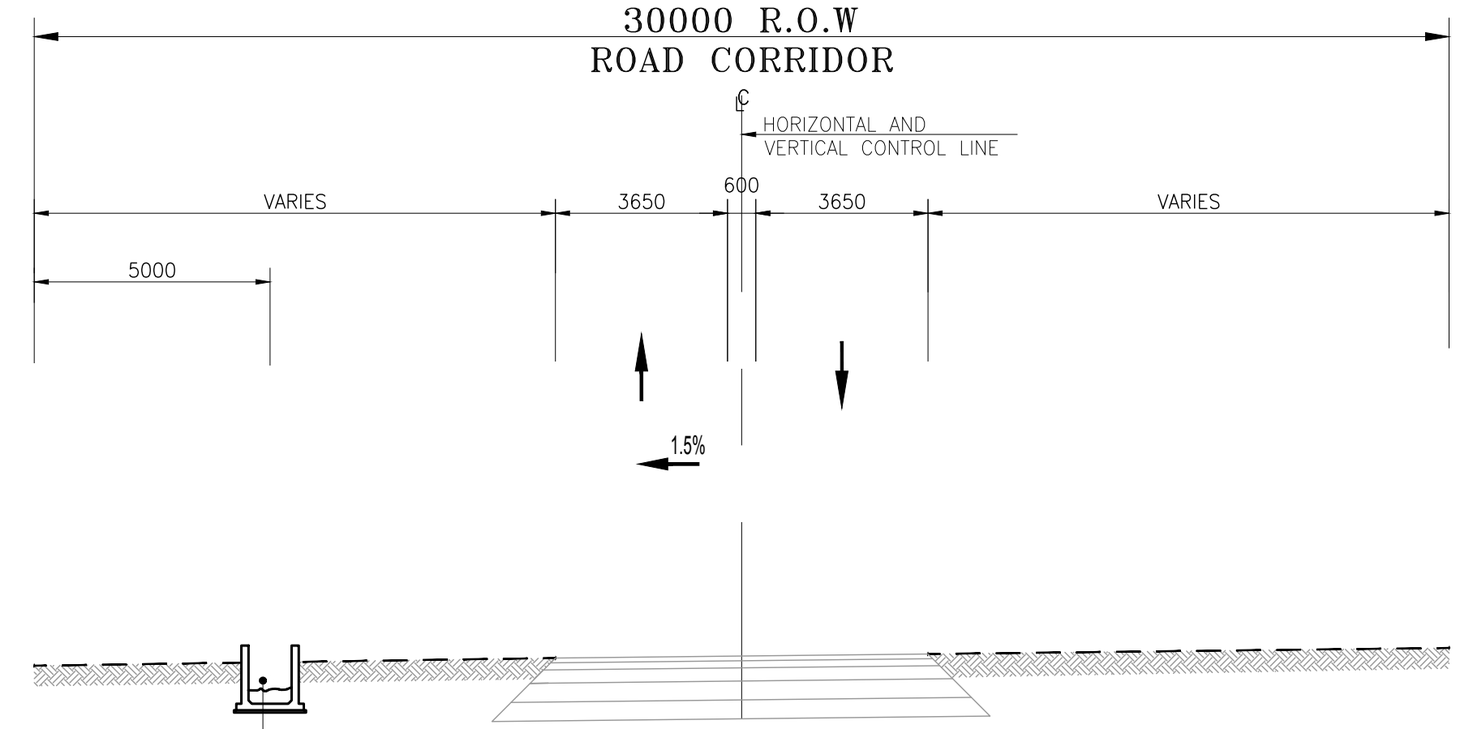
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User and Plot Date: Arshad - Wed, 08 Feb 2023 - 6:56pm

METHODOLOGY

STEP-03

1. PROVIDE NEW SERVICE DUCT AND REPAIR ALL EXISTING UTILITY DUCTS AS PER SITE REQUIREMENTS OR AS DIRECTED BY THE SITE ENGINEER. REFER STRUCTURAL DRAWING FOR DIMENSION AND DETAILS.

2. THE CONTRACTOR SHALL TAKE THE WRITTEN APPROVAL FROM SUPERVISORY CONSULTANT OF SATISFACTORY COMPLETION OF STEP-03 , PRIOR TO PROCEED STEP-04.



PROPOSED CROSS SECTION
(STA:0+000 TO 0+401.729)

NOTES:–

1. ALL DIMENSIONS ARE IN METERS/MILIMETERS UNLESS OTHERWISE STATED.

REV.	DESCRIPTION	DATE	APPROVED
T0	TENDER ISSUE	20-01-2023	WASIF

CLIENT:- SINDH INDUSTRIAL TRADING ESTATES LIMITED

PROJECT:- REHABILITATION / CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

CONSULTANT:- ATIF NAZAR (PVT.) LTD.
PROJECT MANAGERS, PLANNERS, ARCHITECTS & CONSULTING ENGINEERS
D-11/A, BLOCK NO-17, GULSHAN-E-IQBAL, KARACHI. P.H. 34820497 - 34982561

DRAWN BY	ARSHAD	PROJECT NO: RSK	DATE:- 20-01-2023
DESIGN BY	MAHRUKH		
CHECKED BY	WAZI IQBAL	SCALE: N.T.S	SHEET: 04/10 (A3)
APPROVED BY	WASIF		

SHEET TITLE:-
STEP - 03
CROSS SECTION

Drawing No. 2210-01-01-02-03-R204
REVISION T0

Drawing file path & name D:\Projects\01_Rehabilition Construction Of Roads in Site Industrial Estate Karachi\00_Submital\Tender\Working\02_Road\Road - 44\Road-44\06_Typical Sections\2210-01-01-02-03-R201 TO 210T0.dwg
User and Plot Date : Arshad - Wed, 08 Feb 2023 - 6:56pm

METHODOLOGY

STEP-04

1. REMOVE COMPLETE ASPHALTIC LAYERS WHERE EXIST & RE-COMPACT THE EXISTING SURFACE.

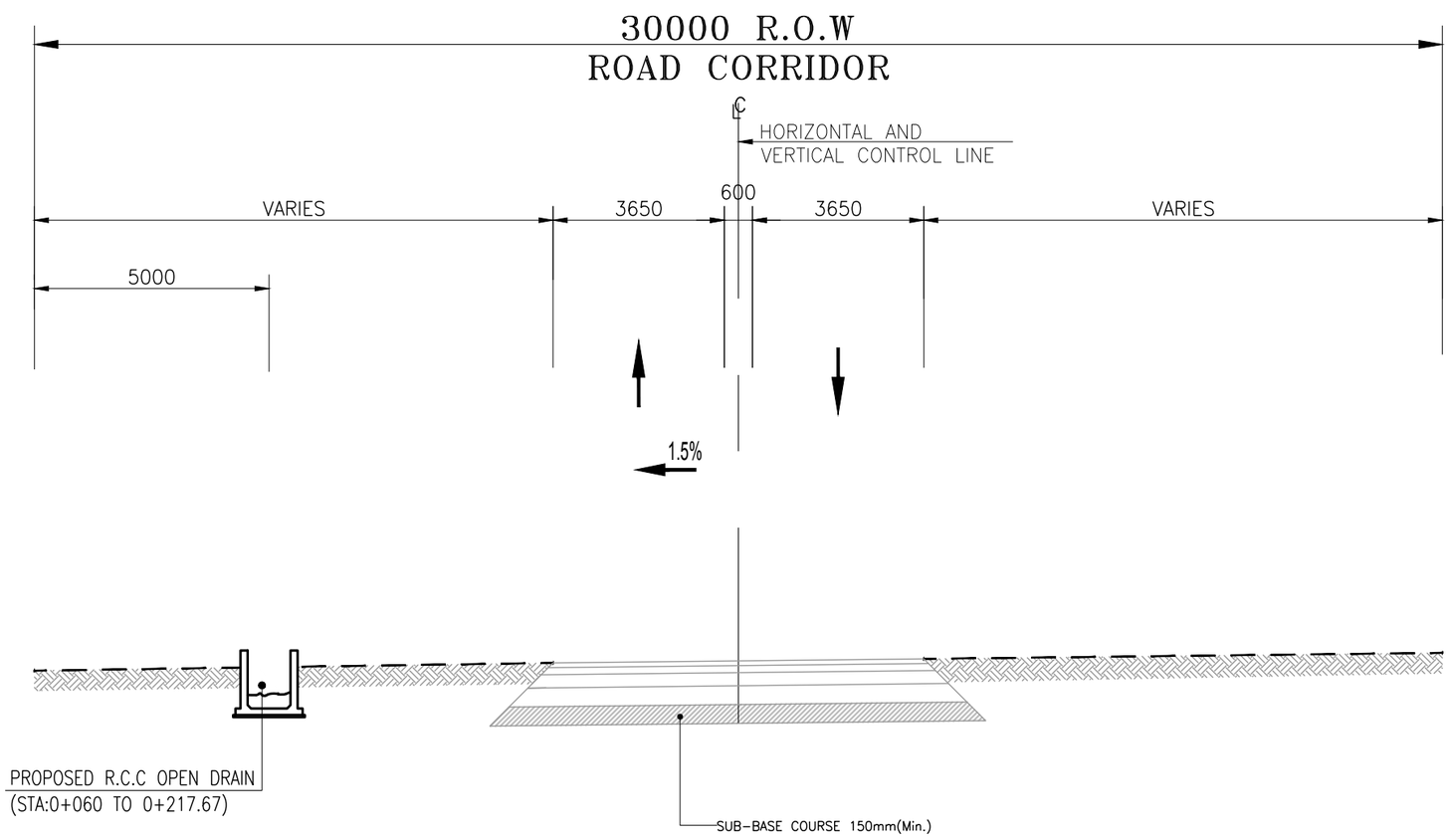
2. IF REQUIRED, THE CONTRACTOR SHALL EXCAVATE THE EXISTING SURFACE TO LAY THE FULL DEPTH OF PAVEMENT LAYERS AS PER ROAD PROFILE.

3. THE CONTRACTOR SHALL MAKE THE SHOP DRAWING & TAKE PRIOR APPROVAL FROM THE ENGINEER, BEFORE EXECUTION OF ROAD WORKS.

4. CLEAN, LEVEL & COMPACT THE EXISTING SURFACE.

5. LAY MINIMUM 150mm SUB BASE COURSE AND VARY DEPENDING ON DESIGN PROFILE OF ROAD. EACH LAYER SHALL NOT EXCEED MORE THAN 75mm & COMPACT UPTO 98% MDD.

6. THE CONTRACTOR SHALL TAKE THE WRITTEN APPROVAL FROM SUPERVISORY CONSULTANT ON SATISFACTORY COMPLETION OF STEP-04, PRIOR TO PROCEED STEP-05.



PROPOSED CROSS SECTION
(STA:0+000 TO 0+401.729)

NOTES:-

1. ALL DIMENSIONS ARE IN METERS/MILIMETERS UNLESS OTHERWISE STATED.

REV.	DESCRIPTION	DATE	APPROVED
T0	TENDER ISSUE	20-01-2023	WASIF

CLIENT:- SINDH INDUSTRIAL TRADING ESTATES LIMITED

PROJECT:- REHABILITATION / CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

CONSULTANT:- ATIF NAZAR (PVT.) LTD.
PROJECT MANAGERS, PLANNERS, ARCHITECTS & CONSULTING ENGINEERS
D-11/A, BLOCK NO-17, GULSHAN-E-IQBAL, KARACHI. P.H. 34820497 - 34982561

		PROJECT NO.	DATE:-
DRAWN BY	ARSHAD	RSK	20-01-2023
DESIGN BY	MAHRUKH		
CHECKED BY	WAZI IQBAL	SCALE: N.T.S	SHEET: 05/10 (A3)
APPROVED BY	WASIF		

SHEET TITLE:- STEP - 04 CROSS SECTION

Drawing No. 2210-01-01-02-03-R205 | REVISION T0

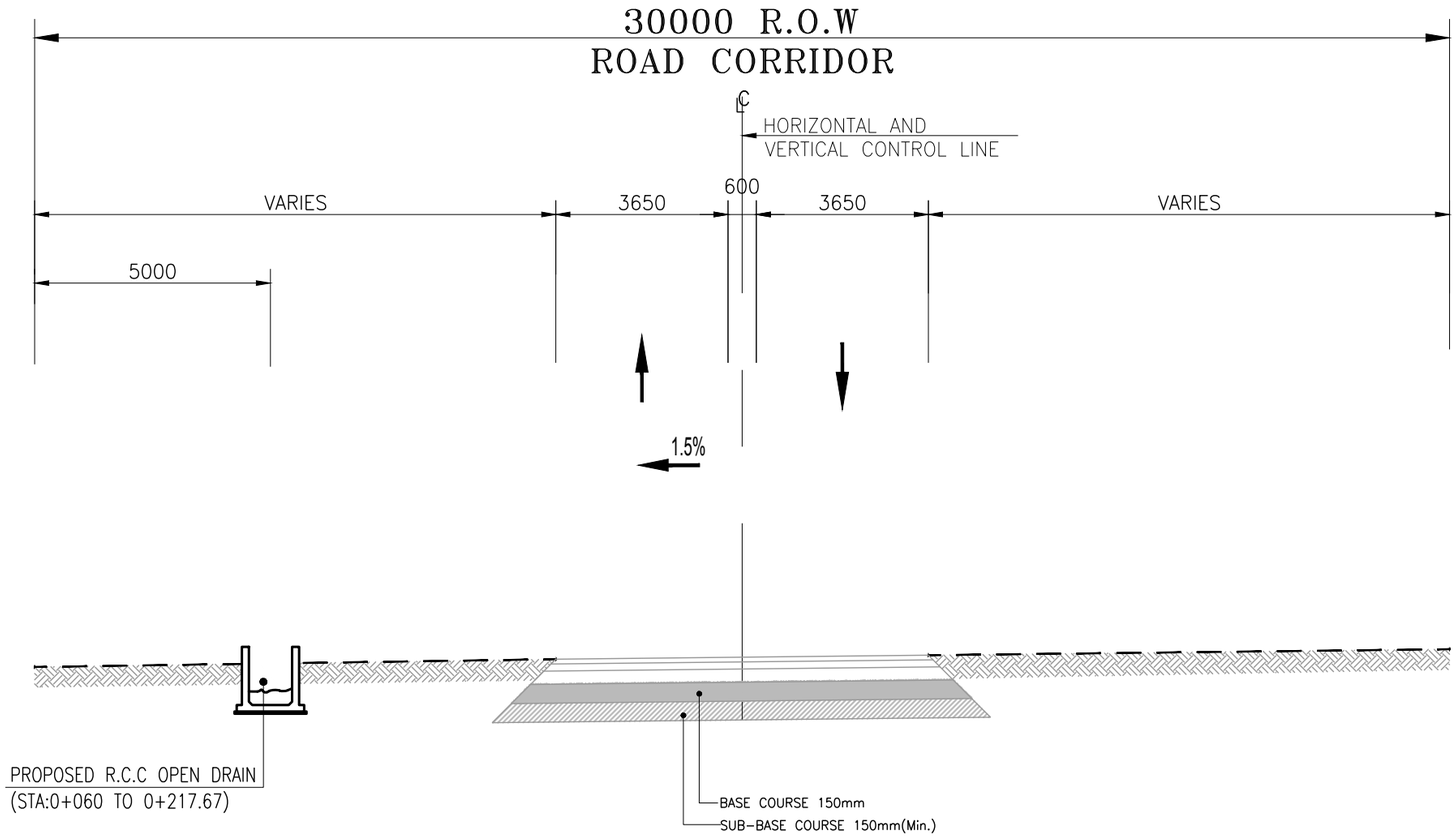
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User and Plot Date: Arshad - Wed, 08 Feb 2023 - 6:56pm

METHODOLOGY

STEP-05

1. LAY 150mm BASE COURSE AND VARY DEPENDING ON DESIGN PROFILE OF ROAD. EACH LAYER SHALL NOT EXCEED MORE THAN 75mm & COMPACT UPTO 100% MDD.

2. THE CONTRACTOR SHALL TAKE THE WRITTEN APPROVAL FROM SUPERVISORY CONSULTANT ON SATISFACTORY COMPLETION OF STEP-05, PRIOR TO PROCEED STEP-06.



PROPOSED CROSS SECTION

(STA:0+000 TO 0+401.729)

NOTES:-

1. ALL DIMENSIONS ARE IN METERS/MILIMETERS UNLESS OTHERWISE STATED.

REV.	DESCRIPTION	DATE	APPROVED
T0	TENDER ISSUE	20-01-2023	WASIF

CLIENT:- SINDH INDUSTRIAL TRADING ESTATES LIMITED

PROJECT:- REHABILITATION / CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

CONSULTANT:- ATIF NAZAR (PVT.) LTD.
PROJECT MANAGERS, PLANNERS, ARCHITECTS & CONSULTING ENGINEERS
D-11/A, BLOCK NO-17, GULSHAN-E-IQBAL, KARACHI. P.H. 34820497 - 34982561

DRAWN BY	ARSHAD	PROJECT NO: RSK	DATE:- 20-01-2023
DESIGN BY	MAHRUKH		
CHECKED BY	WAZI IQBAL	SCALE: N.T.S	SHEET: 06/10 (A3)
APPROVED BY	WASIF		

SHEET TITLE:- STEP - 05 CROSS SECTION

Drawing No. 2210-01-01-02-03-R206 | REVISION T0

Drawing file path & name: D:\Projects\01_Rehabilition Construction Of Roads In Site Industrial Estate Karachi\00_Submittal\Tender\Working\02_Road\Road - 44\Road-44\06_Typical Sections\2210-01-01-02-03-R201 TO 21070.dwg
User and Plot Date: Arshad - Wed, 08 Feb 2023 - 6:56pm

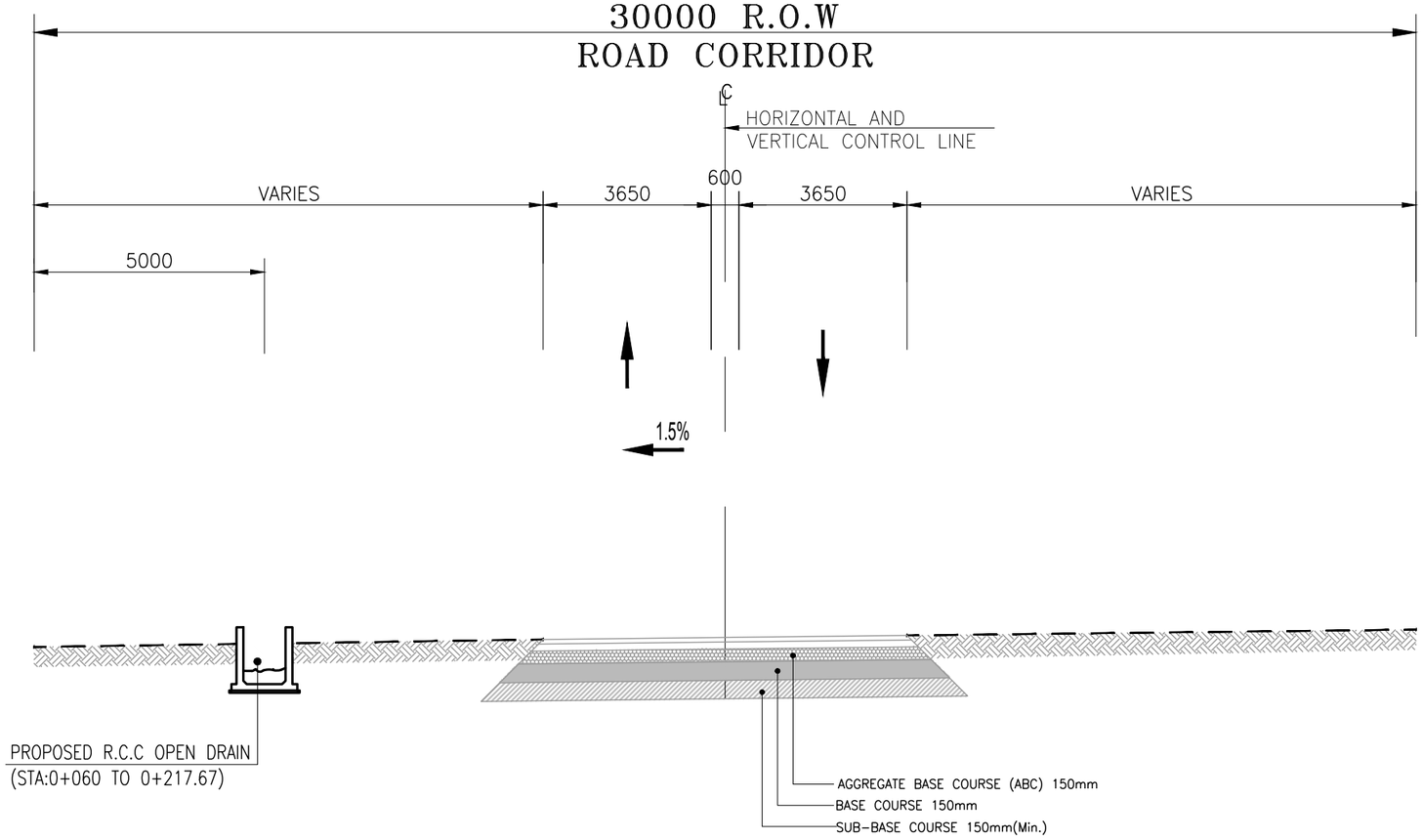
METHODOLOGY

STEP-06

1. LAY 150mm AGGREGATE BASE COURSE. COMPACT THE AGGREGATE BASE COURSE UPTO COMPACTION OF 100% MDD.

2. APPLY PRIME COAT ON TOP OF AGGREGATE BASE COURSE. MEASUREMENT SHALL BE MADE BY USING END AREA METHOD.

3. THE CONTRACTOR SHALL TAKE THE WRITTEN APPROVAL FROM SUPERVISORY CONSULTANT ON SATISFACTORY COMPLETION OF STEP-06, PRIOR TO PROCEED STEP-07.



PROPOSED CROSS SECTION

(STA:0+000 TO 0+401.729)

NOTES:-

1. ALL DIMENSIONS ARE IN METERS/MILIMETERS UNLESS OTHERWISE STATED.

REV.	DESCRIPTION	DATE	APPROVED
T0	TENDER ISSUE	20-01-2023	WASIF

CLIENT:- SINDH INDUSTRIAL TRADING ESTATES LIMITED

PROJECT:- REHABILITATION / CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

CONSULTANT:- ATIF NAZAR (PVT.) LTD.
PROJECT MANAGERS, PLANNERS, ARCHITECTS & CONSULTING ENGINEERS
D-11/A, BLOCK NO-17, GULSHAN-E-IQBAL, KARACHI. P.H. 34820497 - 34982561

DRAWN BY	ARSHAD	PROJECT NO:	DATE:-
DESIGN BY	MAHRUKH	RSK	20-01-2023
CHECKED BY	WAZI IQBAL	SCALE:	SHEET:
APPROVED BY	WASIF	N.T.S	07/10 (A3)

SHEET TITLE:- STEP - 06 CROSS SECTION

Drawing No. 2210-01-01-02-03-R207

REVISION T0

Drawing file path & name: D:\Projects\01_Rehabilition Construction Of Roads in Site Industrial Estate Karachi\00_Submital\Tender\Working\02_Road\Road - 44\Road-44\06_Typical Sections\2210-01-01-02-03-R201 TO 210T0.dwg
User and Plot Date: Arshad - Wed, 08 Feb 2023 - 6:56pm

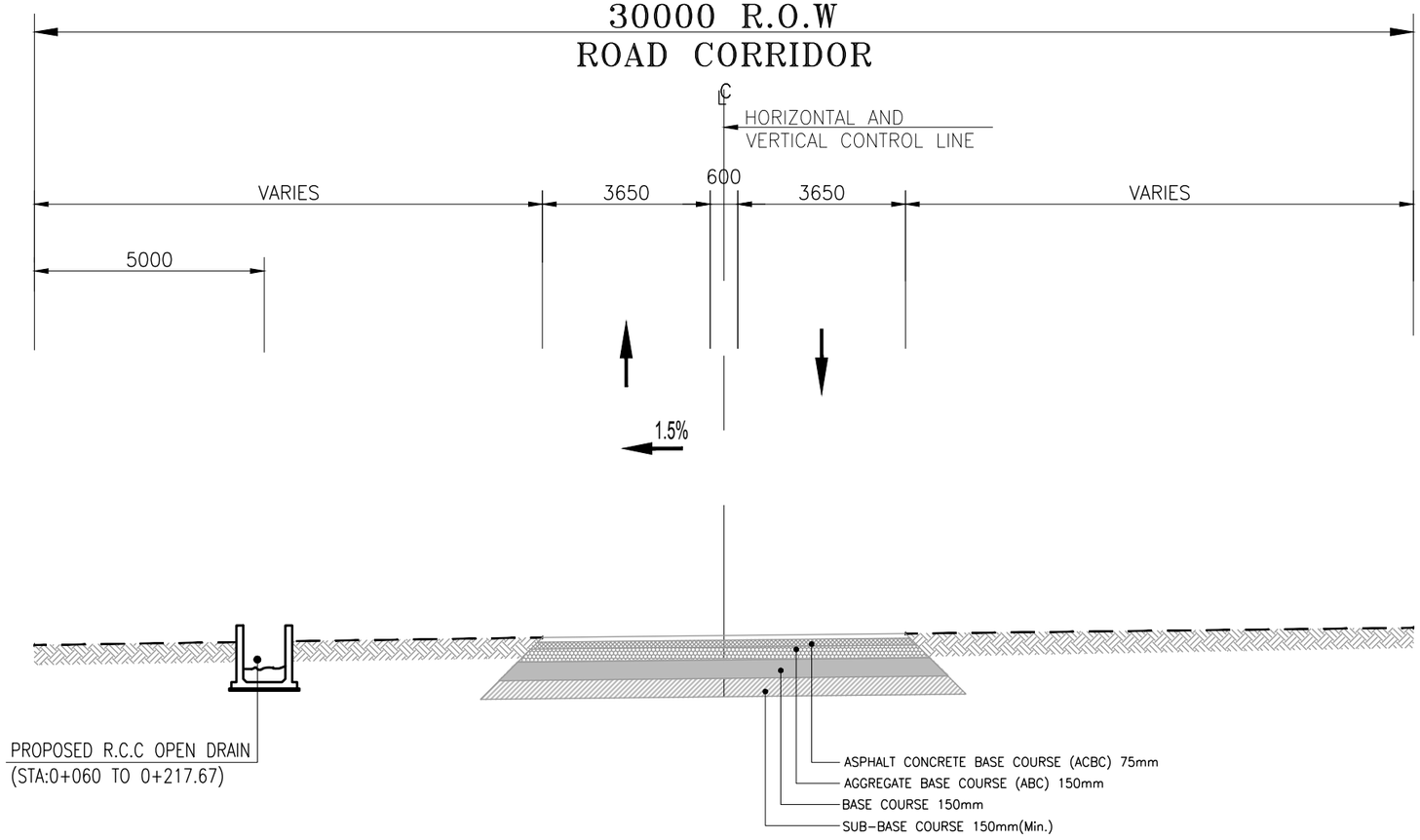
METHODOLOGY

STEP-07

1. LAY 75mm ASPHALT BASE COURSE.

2. APPLY TACK COAT ON TOP OF ASPHALTIC BASE COURSE.

3. THE CONTRACTOR SHALL TAKE THE WRITTEN APPROVAL FROM SUPERVISORY CONSULTANT ON SATISFACTORY COMPLETION OF STEP-07, PRIOR TO PROCEED STEP-08.



PROPOSED CROSS SECTION
(STA:0+000 TO 0+401.729)

NOTES:-

1. ALL DIMENSIONS ARE IN METERS/MILIMETERS UNLESS OTHERWISE STATED.

REV.	DESCRIPTION	DATE	APPROVED
T0	TENDER ISSUE	20-01-2023	WASIF

CLIENT:- SINDH INDUSTRIAL TRADING ESTATES LIMITED

PROJECT:- REHABILITATION / CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

CONSULTANT:- ATIF NAZAR (PVT.) LTD.
PROJECT MANAGERS, PLANNERS, ARCHITECTS & CONSULTING ENGINEERS
D-11/A, BLOCK NO-17, GULSHAN-E-IQBAL, KARACHI. P.H. 34820497 - 34982561

		PROJECT NO:	DATE:-
DRAWN BY	ARSHAD	RSK	20-01-2023
DESIGN BY	MAHRUKH		
CHECKED BY	WAZI IQBAL	SCALE: N.T.S	SHEET: 08/10 (A3)
APPROVED BY	WASIF		

SHEET TITLE:- STEP - 07 CROSS SECTION

Drawing No. 2210-01-01-02-03-R208 | REVISION T0

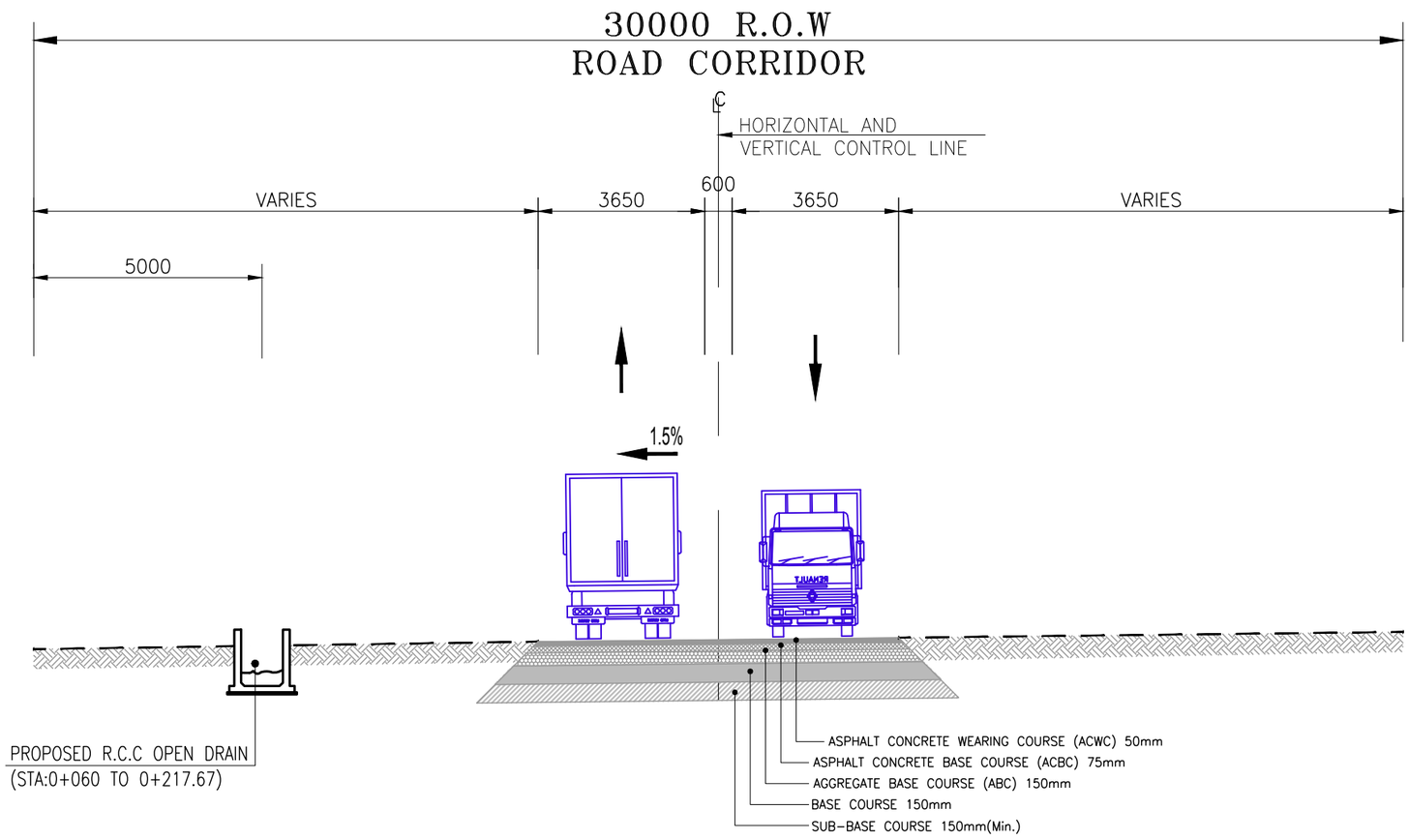
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User and Plot Date: Arshad - Wed, 08 Feb 2023 - 6:56pm

METHODOLOGY

STEP-08

1. LAY 50mm ASPHALT WEARING COURSE.

2. THE CONTRACTOR SHALL TAKE THE WRITTEN APPROVAL FROM SUPERVISORY CONSULTANT ON SATISFACTORY COMPLETION OF STEP-08, PRIOR TO PROCEED STEP-09.



PROPOSED CROSS SECTION

(STA:0+000 TO 0+401.729)

NOTES:–

1. ALL DIMENSIONS ARE IN METERS/MILIMETERS UNLESS OTHERWISE STATED.

REV.	DESCRIPTION	DATE	APPROVED
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CLIENT:- SINDH INDUSTRIAL TRADING ESTATES LIMITED

PROJECT:- REHABILITATION / CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

CONSULTANT:- ATIF NAZAR (PVT.) LTD.
PROJECT MANAGERS, PLANNERS, ARCHITECTS & CONSULTING ENGINEERS
D-11/A, BLOCK NO-17, GULSHAN-E-IQBAL, KARACHI. P.H. 34820497 - 34982561

		PROJECT NO.	DATE:-
DRAWN BY	ARSHAD	RSK	20-01-2023
DESIGN BY	MAHRUKH		
CHECKED BY	WAZI IQBAL	SCALE: N.T.S	SHEET: 09/10 (A3)
APPROVED BY	WASIF		

SHEET TITLE:- STEP - 08 CROSS SECTION

Drawing No. 2210-01-01-02-03-R209 | REVISION T0

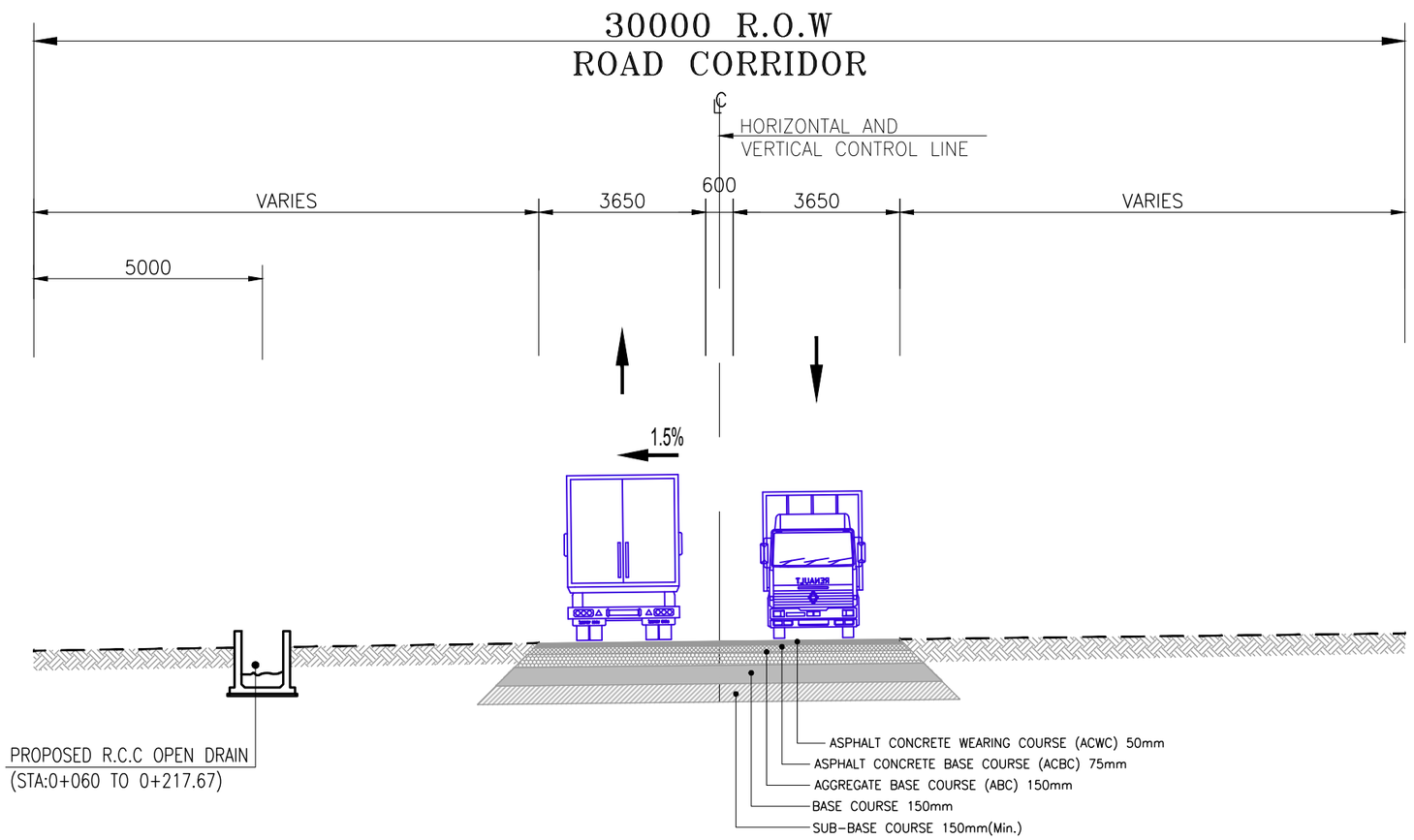
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User and Plot Date: Arshad - Wed, 08 Feb 2023 - 6:57pm

METHODOLOGY

STEP-09

1. PROVIDE ANY CUT & FILL ALONG THE ROAD SIDES. PROPER COMPACTION AND DRESSING MUST BE ENSURED BEFORE INSTALLATION OF CATEYES AND PAVEMENT MARKING.

2. THE CONTRACTOR SHALL TAKE THE WRITTEN APPROVAL FROM SUPERVISORY CONSULTANT ON SATISFACTORY COMPLETION OF STEP-09, BEFORE DECLARING THE COMPLETION OF WORK.



PROPOSED CROSS SECTION

(STA:0+000 TO 0+401.729)

NOTES:–

1. ALL DIMENSIONS ARE IN METERS/MILIMETERS UNLESS OTHERWISE STATED.

REV.	DESCRIPTION	DATE	APPROVED
T0	TENDER ISSUE	20-01-2023	WASIF

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		PROJECT NO:	DATE:-
DRAWN BY	ARSHAD	RSK	20-01-2023
DESIGN BY	MAHRUKH		
CHECKED BY	WAZI IQBAL	SCALE: N.T.S	SHEET: 10/10 (A3)
APPROVED BY	WASIF		

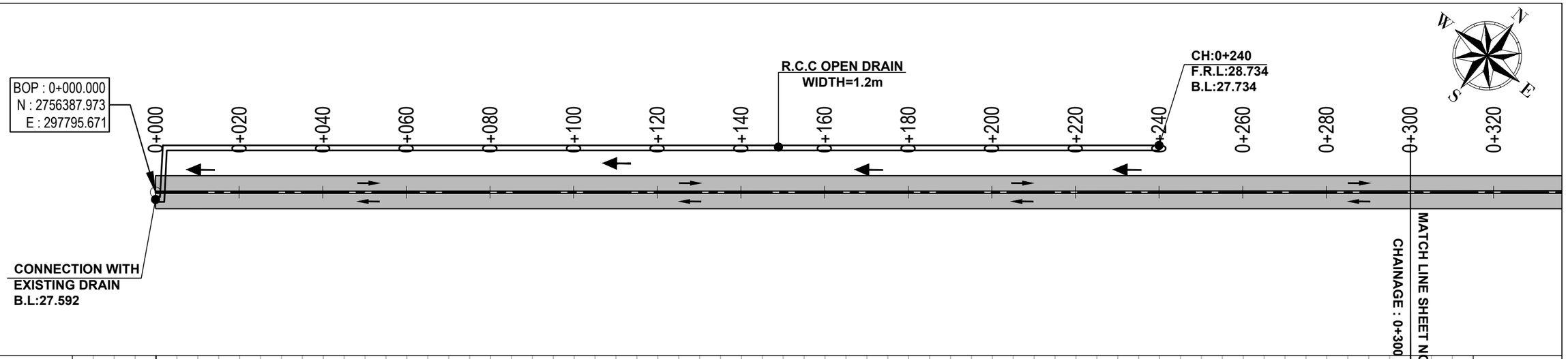
SHEET TITLE:- STEP - 09 CROSS SECTION

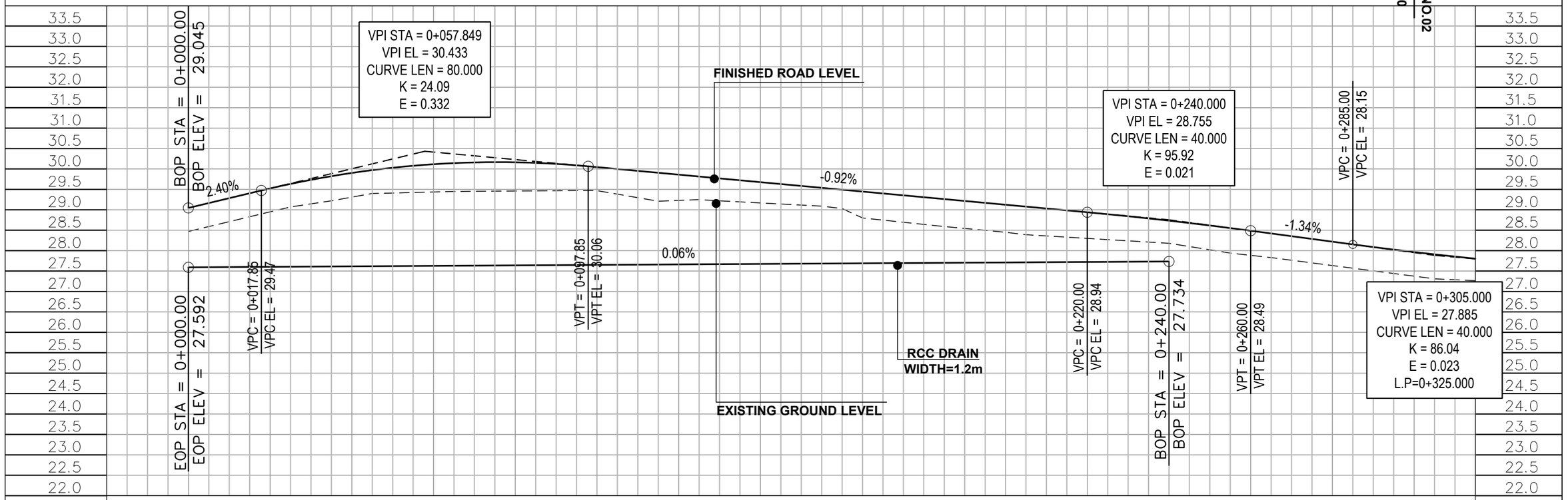
Drawing No. 2210-01-01-02-03-R210 | REVISION T0

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User and Plot Date: Arshad - Wed, 08 Feb 2023 - 6:57pm

ROAD, STORM WATER & SEWER DRAIN

PLAN & PROFILE





FRL	29.045	29.524	29.903	30.116	30.163	30.045	29.861	29.676	29.492	29.308	29.124	28.939	28.734	28.487	28.220	27.965
EGL	28.470	28.950	29.310	29.437	29.460	29.470	29.230	29.168	29.030	28.642	28.450	28.300	28.180	27.885	27.635	27.375
B.L	27.592	27.604	27.616	27.628	27.639	27.651	27.663	27.675	27.687	27.699	27.710	27.722	27.734			
STATION	0+000	0+020	0+040	0+060	0+080	0+100	0+120	0+140	0+160	0+180	0+200	0+220	0+240	0+260	0+280	0+300

NOTES:–

1. ALL DIMENSIONS ARE IN METERS/MILIMETERS UNLESS OTHERWISE STATED.

LEGEND

- PROPOSED CENTER LINE
- PROPOSED KERB
- PROPOSED LANE MARKING
- R.C.C DRAIN
- DRAIN CROSSING CLOSED (DCC)
- FLOW DIRECTION

REV.	DESCRIPTION	DATE	APPROVED
T0	TENDER ISSUE	20-01-2023	WASIF

CLIENT:-
SINDH INDUSTRIAL TRADING ESTATES LIMITED

PROJECT:-
REHABILITATION / CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

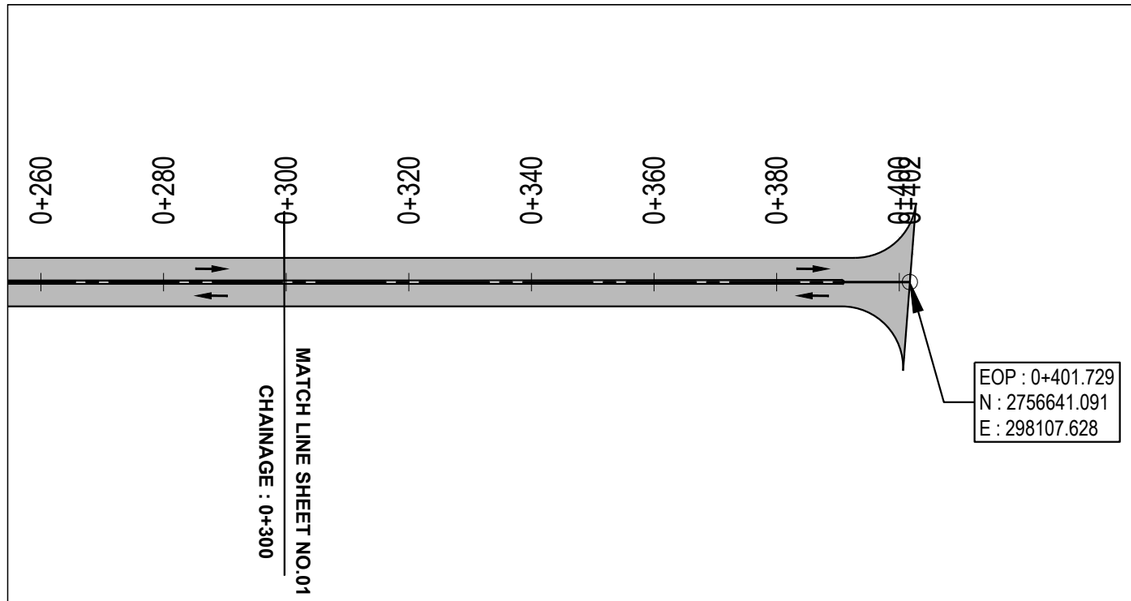
CONSULTANT:-
ATIF NAZAR (PVT.) LTD.
PROJECT MANAGERS, PLANNERS, ARCHITECTS & CONSULTING ENGINEERS
D-11/A, BLOCK NO-17, GULSHAN-E-IQBAL, KARACHI. P.H. 34820497 - 34982561

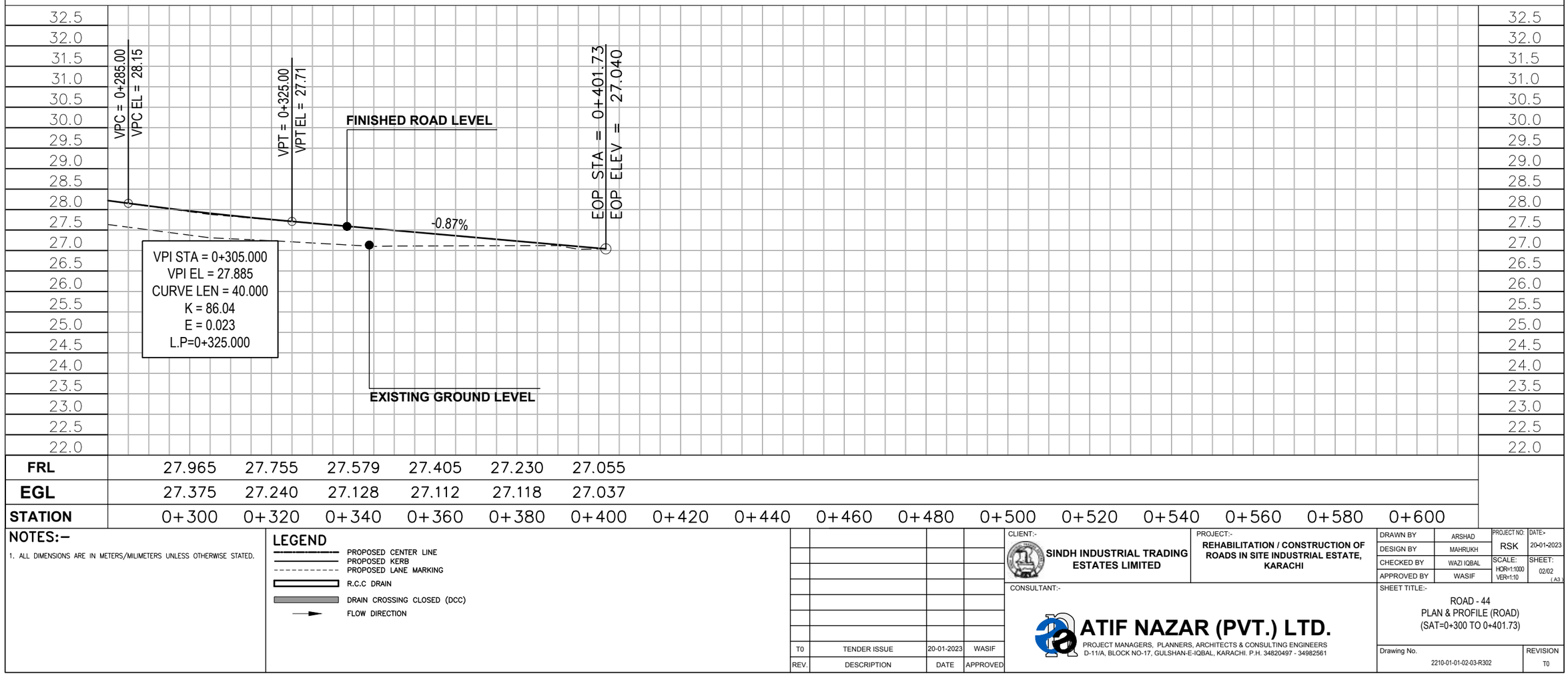
		PROJECT NO:	DATE:-
DRAWN BY	ARSHAD	RSK	20-01-2023
DESIGN BY	MAHRUKH		
CHECKED BY	WAZI IQBAL	SCALE: HOR=1:1000 VER=1:10	SHEET: 01/02 (A3)
APPROVED BY	WASIF		

SHEET TITLE:-
ROAD - 44
PLAN & PROFILE (ROAD & DRAIN)
(SAT=0+000 TO 0+300)

Drawing No.	REVISION
2210-01-01-02-03-R301	T0

Drawing file path & name: D:\Projects\01_Rehabilition Construction Of Roads In Site Industrial Estate Karachi\00_Submital\Tender\Working\02_Road\Road - 44\Road-44\07_Plan&Profile\2210-01-01-02-03-R301.dwg
User and Plot Date: Arshad - Sat, 04 Feb 2023 - 4:19pm





FRL	27.965	27.755	27.579	27.405	27.230	27.055										
EGL	27.375	27.240	27.128	27.112	27.118	27.037										
STATION	0+300	0+320	0+340	0+360	0+380	0+400	0+420	0+440	0+460	0+480	0+500	0+520	0+540	0+560	0+580	0+600

NOTES:–

1. ALL DIMENSIONS ARE IN METERS/MILIMETERS UNLESS OTHERWISE STATED.

LEGEND

- PROPOSED CENTER LINE
- PROPOSED KERB
- PROPOSED LANE MARKING
- R.C.C DRAIN
- DRAIN CROSSING CLOSED (DCC)
- FLOW DIRECTION

REV.	DESCRIPTION	DATE	APPROVED
T0	TENDER ISSUE	20-01-2023	WASIF

CLIENT:- **SINDH INDUSTRIAL TRADING ESTATES LIMITED**

PROJECT:- **REHABILITATION / CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI**

CONSULTANT:-

ATIF NAZAR (PVT.) LTD.

PROJECT MANAGERS, PLANNERS, ARCHITECTS & CONSULTING ENGINEERS
D-11/A, BLOCK NO-17, GULSHAN-E-IQBAL, KARACHI. P.H. 34820497 - 34982561

DRAWN BY	ARSHAD	PROJECT NO: RSK	DATE:- 20-01-2023
DESIGN BY	MAHRUKH		
CHECKED BY	WAZI IQBAL	SCALE: HOR=1:1000 VER=1:10	SHEET: 02/02 (A3)
APPROVED BY	WASIF		

SHEET TITLE:-
ROAD - 44
PLAN & PROFILE (ROAD)
(SAT=0+300 TO 0+401.73)

Drawing No. 2210-01-01-02-03-R302 | REVISION T0

Drawing file path & name: D:\Projects\01_Rehabilition Construction Of Roads In Site Industrial Estate Karachi\00_Submital\Tender\Working\02_Road\Road - 44\Road-44\07_Plan&Profile\2210-01-01-02-03-R301.dwg
User and Plot Date:- Arshad - Sat, 04 Feb 2023 - 4:19pm

SINDH INDUSTRIAL TRADING ESTATES LIMITED

PROJECT:

REHABILITATION / CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

ROAD - 50

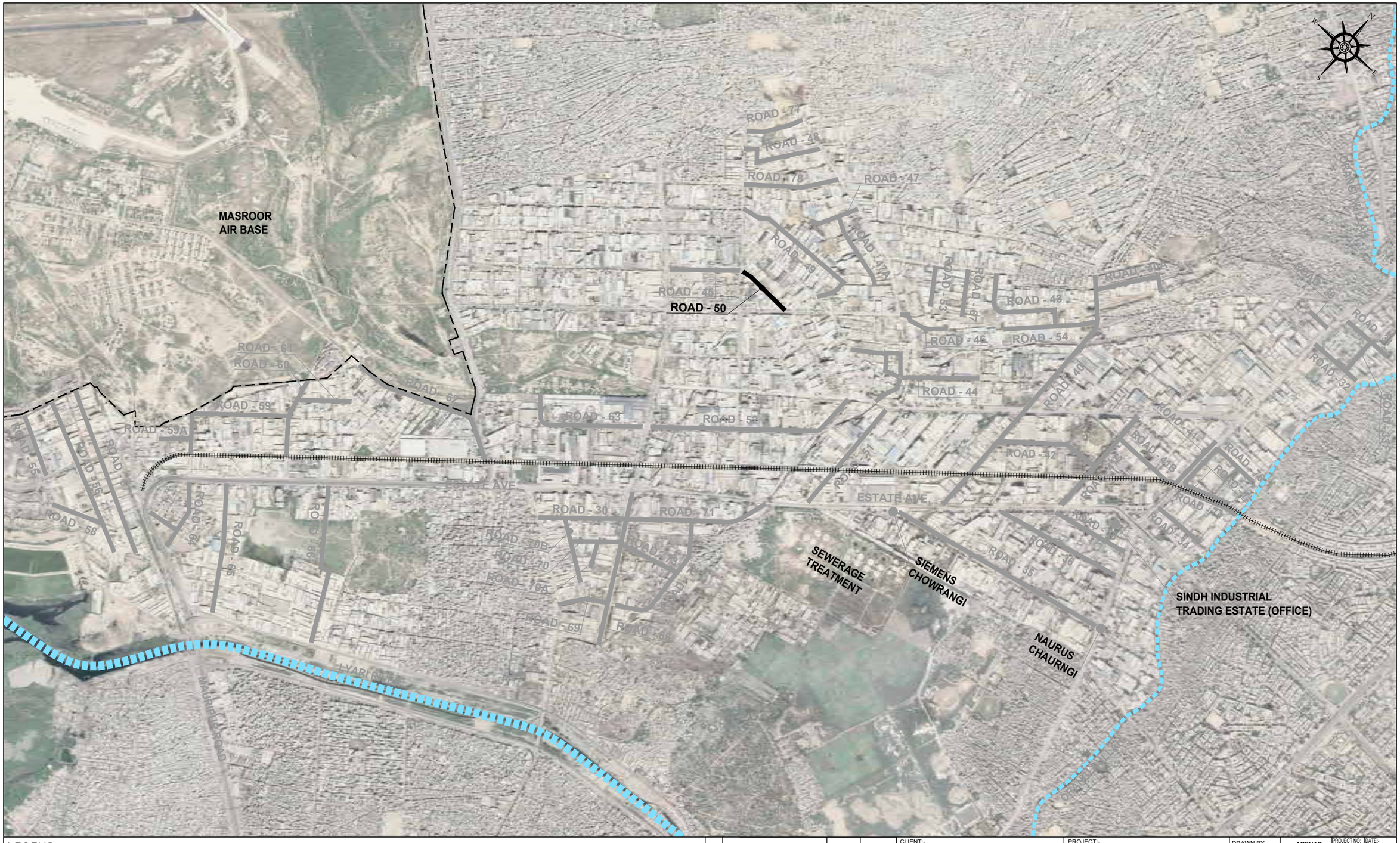
ROAD, DRAINAGE, STRUCTURE & ELECTRICAL WORKS

TENDER DRAWINGS
JANUARY, 2023

CONSULTANT:

ATIF NAZAR (PVT.) LTD.

PROJECT MANAGERS, PLANNERS, ARCHITECTS &
CONSULTING ENGINEERS
D-11/A, BLOCK NO-17, GULSHAN-E-IQBAL, KARACHI.
P.H. 34820497 - 34982561



LEGEND:–

- ROADS
- RIVER/NULLAH
- RAILWAY TRACK

REV.	DESCRIPTION	DATE	APPROVED
T0	TENDER ISSUE	20-01-2023	WASIF

CLIENT:-
SINDH INDUSTRIAL TRADING ESTATES LIMITED

PROJECT:-
REHABILITATION / CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

CONSULTANT:-
ATIF NAZAR (PVT.) LTD.
PROJECT MANAGERS, PLANNERS, ARCHITECTS & CONSULTING ENGINEERS
D-11/A, BLOCK NO-17, GULSHAN-E-IQBAL, KARACHI. P.H. 34820497 - 34982561

		PROJECT NO:	DATE:-
DRAWN BY	ARSHAD	RSK	20-01-2023
DESIGN BY	MAHRUKH		
CHECKED BY	WAZI IQBAL	SCALE: N.T.S	SHEET: 01/01 (A3)
APPROVED BY	WASIF		

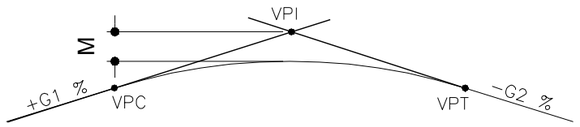
SHEET TITLE:-
ROAD - 50
LOCATION PLAN

Drawing No. 2210-01-01-02-03-R004
REVISION T0

Drawing file path & name: D:\Projects\01_Rehabilition Construction Of Roads In Site Industrial Estate Karachi\00_Submital\Tender\Working\02_Road\Road – 50\01_Location Plan\2210-01-01-02-03-R004.dwg
User and Plot Date: Arshad – Fri, 03 Feb 2023 – 8:01pm

GENERAL DRAWINGS

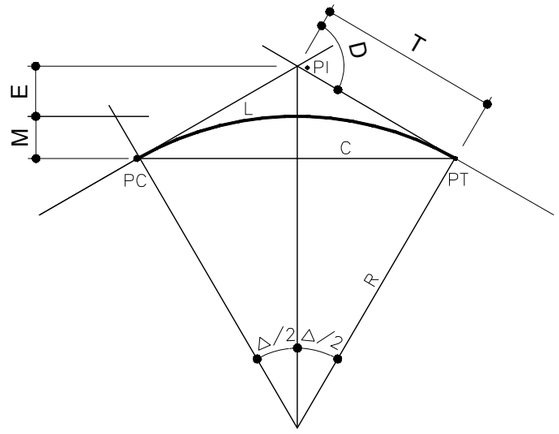
DETAIL OF VERTICAL CURVE



VPC : VERTICAL POINT OF CURVATURE
VPI : VERTICAL POINT OF INTERSECTION
VPT : VERTICAL POINT OF TANGENCY
L : LENGTH OF VERTICAL CURVE
M : VERTICAL OFFSET

+G : UPWARD VERTICAL GRADE
−G : DOWNWARD VERTICAL GRADE
K : RATE OF GRADE CHANGE = $\frac{G2-G1}{L}$
A : TOTAL CHANGE IN VERTICAL GRADE BETWEEN TANGENTS = G2−G1

DETAIL OF HORIZONTAL CURVE



CIRCULAR CURVE PARAMETERS

PI : POINT OF INTERSECTION
PC : POINT OF CURVATURE
PT : POINT OF TANGENCY
Δ : DEFLECTION ANGLE
Da : DEGREE OF CURVE (ARC DEFINITION)
Dc : DEGREE OF CURVE (CHORD DEFINITION)

T : TANGENT LENGTH
R : RADIUS
L : LENGTH OF CURVE
C : CHORD LENGTH
E : EXTERNAL
M : MIDDLE ORDINATE

S.NO	DESIGN PARAMETERS	UNITS	VALUES
1	DESIGN SPEED	Km/h	40
2	LANE WIDTH	m	3.65
3	NUMBER. OF LANES	No.	2
4	TOTAL PAVEMENT WIDTH	m	7.9
5	PAVEMENT CROSS SLOPE	%	1.5
6	RIGHT OF WAY (ROW)	m	17
7	MINIMUM RADIUS OF HORIZONTAL CURVE	m	47
8	MINIMUM STOPPING SIGHT DISTANCE (SSD)	m	50
9	MINIMUM PASSING SIGHT DISTANCE (PSD)	m	140
10	K VALUE FOR CREST CURVE (SSD)	m%	4
11	K VALUE FOR CREST CURVE (PSD)	m%	23
12	K VALUE FOR SAG CURVE	m%	9
13	RCC OPEN DRAIN	m	1.2
14	MINIMUM VERTICAL CLEARENCE	m	5.5

NOTES:−

1. ALL DIMENSIONS ARE IN METERS/MILIMETERS UNLESS OTHERWISE STATED.

REV.	DESCRIPTION	DATE	APPROVED
T0	TENDER ISSUE	20-01-2023	WASIF

CLIENT:- SINDH INDUSTRIAL TRADING ESTATES LIMITED

PROJECT:- REHABILITATION / CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

CONSULTANT:-

ATIF NAZAR (PVT.) LTD.
PROJECT MANAGERS, PLANNERS, ARCHITECTS & CONSULTING ENGINEERS
D-11/A, BLOCK NO-17, GULSHAN-E-IQBAL, KARACHI. P.H. 34820497 - 34982561

DRAWN BY	ARSHAD	PROJECT NO: RSK	DATE:- 20-01-2023
DESIGN BY	MAHRUKH		
CHECKED BY	WAZI IQBAL	SCALE: N.T.S	SHEET: 01/01 (A3)
APPROVED BY	WASIF		

SHEET TITLE:- GEOMETRIC DESIGN PARAMETERS

Drawing No. 2210-01-01-02-03-G901 REVISION T0

Drawing file path & name D:\Projects\01_Rehabilitation Construction Of Roads In Site Industrial Estate Karachi\00_Submital\Tender\Working\02_Road\Road - 50\08_General Drawings\2210-01-01-02-03-G901.dwg
User and Plot Date : Arshad - Fri, 03 Feb 2023 - 8:11pm

SETTING - OUT DATA

ROAD - 50
(SETTING OUT DATA)

S.N	PI - POINT	P.I. Coordinates EASTING	P.I. Coordinates NORTHING	G.DIST	GRID BEAR	DEFLECTION ANGLE	L/R	RADIUS	LENGTH OF TANGENT (LT)	LENGTH OF CURVE (LC)	E (m)	STATION @ PI	CH @ PC	CH @ PT
BOP	A - POINT	296559.694	2756194.285											
1	PI - 1	296608.780	2756209.630	51.429	72° 38' 24"	22° 20' 30"	R	220.0	43.445	85.786	4.249	0 + 51.429	0 + 7.984	0 + 93.770
2	PI - 2	296799.450	2756193.010	191.393	94° 58' 54"	5° 22' 2"	R	1000.0	46.872	93.676	1.098	0 + 241.718	0 + 194.846	0 + 288.522
EOP	B - POINT	296886.640	2756177.088	88.632	100° 20' 56"							0 + 330.281	0 + 330.281	0 + 330.281

NOTES:–

1. ALL DIMENSIONS ARE IN METERS/MILIMETERS UNLESS OTHERWISE STATED.

REV.	DESCRIPTION	DATE	APPROVED
T0	TENDER ISSUE	20-01-2023	WASIF

CLIENT:-
SINDH INDUSTRIAL TRADING ESTATES LIMITED

PROJECT:-
REHABILITATION / CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

CONSULTANT:-
ATIF NAZAR (PVT.) LTD.
PROJECT MANAGERS, PLANNERS, ARCHITECTS & CONSULTING ENGINEERS
D-11/A, BLOCK NO-17, GULSHAN-E-IQBAL, KARACHI. P.H. 34820497 - 34982561

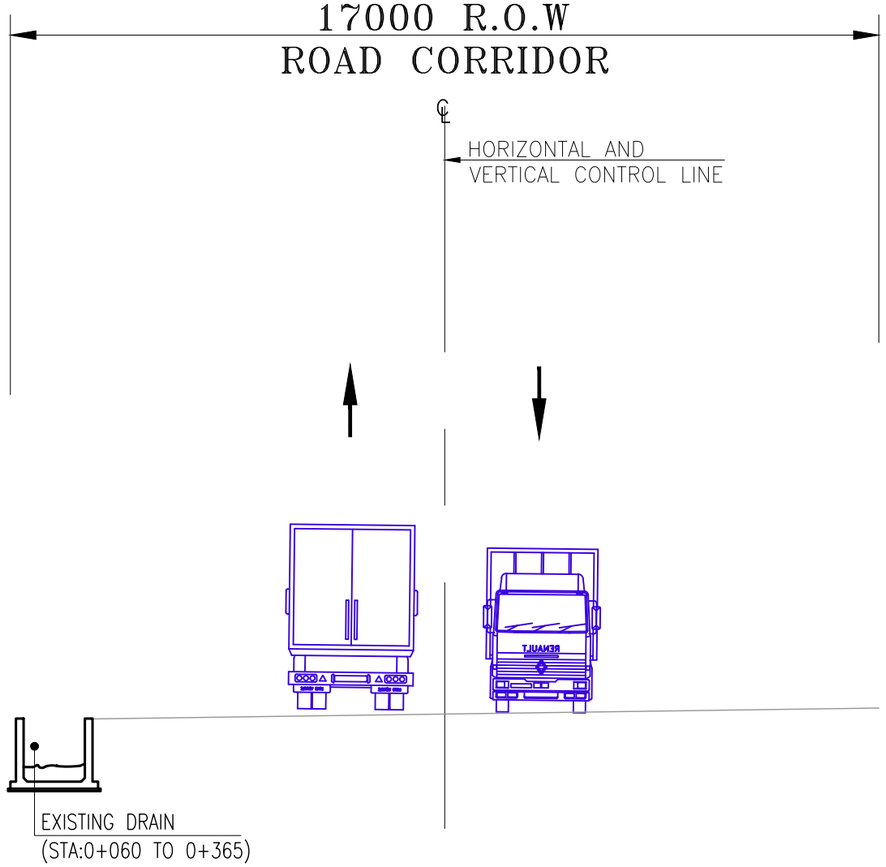
DRAWN BY	ARSHAD	PROJECT NO: RSK	DATE:- 20-01-2023
DESIGN BY	MAHRUKH		
CHECKED BY	WAZI IQBAL	SCALE: N.T.S	SHEET: 01/01 (A3)
APPROVED BY	WASIF		

SHEET TITLE:-
SETTING OUT DATA

Drawing No. 2210-01-01-02-03-R400
REVISION T0

Drawing file path & name D:\Projects\01_Rehabilition Construction Of Roads In Site Industrial Estate Karachi\00_Submital\Tender\Working\02_Road\Road - 50\05_Setting Out Data\2210-01-01-02-03-R400.dwg
User and Plot Date:- Arshad - Fri, 03 Feb 2023 - 8:09pm

EXISTING CROSS SECTIONS



EXISTING CROSS SECTION
(STA:0+000 TO 0+330.28)

NOTES:–

1. ALL DIMENSIONS ARE IN METERS/MILIMETERS UNLESS OTHERWISE STATED.

REV.	DESCRIPTION	DATE	APPROVED
T0	TENDER ISSUE	20-01-2023	WASIF

CLIENT:- **SINDH INDUSTRIAL TRADING ESTATES LIMITED**

PROJECT:- **REHABILITATION / CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI**

CONSULTANT:- **ATIF NAZAR (PVT.) LTD.**
PROJECT MANAGERS, PLANNERS, ARCHITECTS & CONSULTING ENGINEERS
D-11/A, BLOCK NO-17, GULSHAN-E-IQBAL, KARACHI. P.H. 34820497 - 34982561

		PROJECT NO:	DATE:-
DRAWN BY	ARSHAD	RSK	20-01-2023
DESIGN BY	MAHRUKH		
CHECKED BY	WAZI IQBAL	SCALE: N.T.S	SHEET: 01/10 (A3)
APPROVED BY	WASIF		

SHEET TITLE:- EXISTING CROSS SECTION

Drawing No. 2210-01-01-02-03-R201 | REVISION T0

Drawing file path & name: D:\Projects\01_Rehabilition Construction Of Roads In Site Industrial Estate Karachi\00_Submital\Tender\Working\02_Road\Road – 50\06_Typical Sections\2210-01-01-02-03-R201 TO 21010.dwg
User and Plot Date:- Arshad – Thu, 09 Feb 2023 – 12:38pm

CONSTRUCTION / REHABILITATING METHODOLOGY CROSS SECTIONS

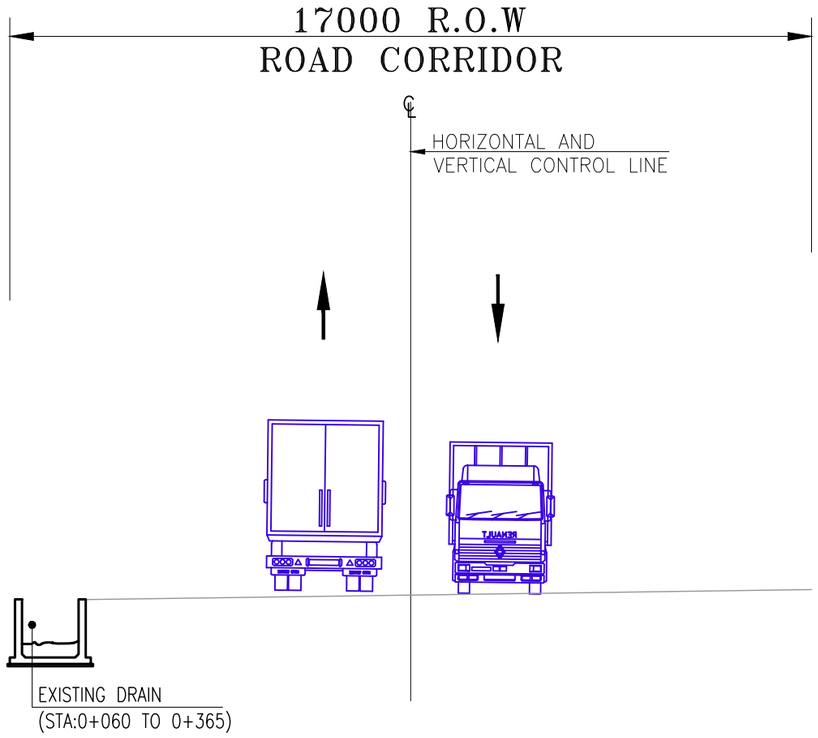
METHODOLOGY

STEP-01

1. REMOVE ALL THE SOLID WASTE & BUSHES FROM ENTIRE CORRIDOR INCLUDING DRAIN. DUMP THE WASTE TO THE DESIGNATED AREA AT GONPASS OR AS DIRECTED BY THE ENGINEER.

2. CONTRACTOR SHALL TAKE JOINT CROSS SECTIONS OF ROAD CORRIDOR & INVERT LEVELS OF DRAIN WITH CONSULTANT TO VERIFY ANY CHANGE IN DESIGN BEFORE THE EXECUTION OF WORK.

3. THE CONTRACTOR SHALL TAKE THE WRITTEN APPROVAL FROM SUPERVISORY CONSULTANT OF SATISFACTORY COMPLETION OF STEP-01 , PRIOR TO PROCEED STEP-02.



EXISTING CROSS SECTION
(STA:0+000 TO 0+330.28)

NOTES:–

1. ALL DIMENSIONS ARE IN METERS/MILIMETERS UNLESS OTHERWISE STATED.

REV.	DESCRIPTION	DATE	APPROVED
T0	TENDER ISSUE	20-01-2023	WASIF

CLIENT:- SINDH INDUSTRIAL TRADING ESTATES LIMITED

PROJECT:- REHABILITATION / CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

CONSULTANT:- ATIF NAZAR (PVT.) LTD.
PROJECT MANAGERS, PLANNERS, ARCHITECTS & CONSULTING ENGINEERS
D-11/A, BLOCK NO-17, GULSHAN-E-IQBAL, KARACHI. P.H. 34820497 - 34982561

DRAWN BY	ARSHAD	PROJECT NO: RSK	DATE:- 20-01-2023
DESIGN BY	MAHRUKH		
CHECKED BY	WAZI IQBAL	SCALE: N.T.S	SHEET: 02/10 (A3)
APPROVED BY	WASIF		

SHEET TITLE:- STEP - 01 CROSS SECTION

Drawing No. 2210-01-01-02-03-R202 | REVISION T0

Drawing file path & name D:\Projects\01_Rehabilition Construction Of Roads In Site Industrial Estate Karachi\00_Submital\Tender\Working\02_Road\Road - 50\06_Typical Sections\2210-01-01-02-03-R201 T0 21010.dwg
User and Plot Date:- Arshad - Thu, 09 Feb 2023 - 12:38pm

METHODOLOGY

STEP -02

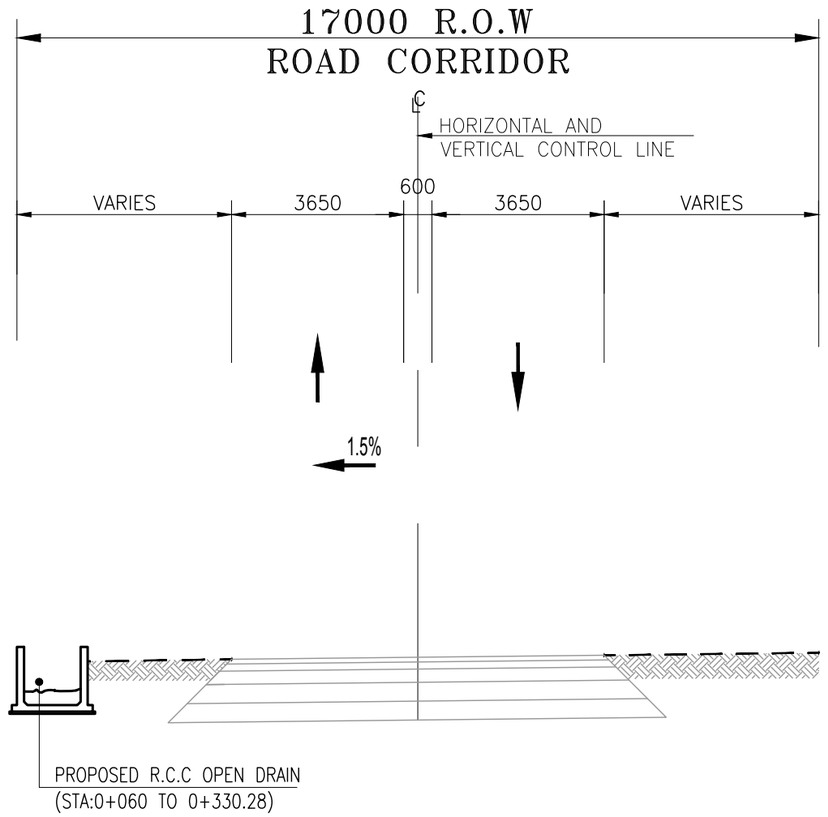
1. THE CONTRACTOR SHALL MAKE THE SHOP DRAWING OF DRAIN & TAKE PRIOR APPROVAL FROM THE ENGINEER, BEFORE EXECUTION OF DRAIN WORK.

2. RECTIFY THE EXISTING DRAIN WHERE REQUIRED OR AS DIRECTED BY THE ENGINEER.

3. THE NEW R.C.C DRAIN LOCATION & INVERT LEVELS SHALL BE FINALIZED BY THE ENGINEER AS PER SITE CONDITION.

4. CONSTRUCT THE R.C.C DRAINS ACCORDING TO INVERT LEVELS PROVIDED IN PLAN AND PROFILE DRAWINGS. REFER STRUCTURAL DRAWING FOR DRAIN DIMENSIONS AND DETAILS.

5. THE CONTRACTOR SHALL TAKE THE WRITTEN APPROVAL FROM SUPERVISORY CONSULTANT OF SATISFACTORY COMPLETION OF STEP-02 , PRIOR TO PROCEED STEP-03.



PROPOSED CROSS SECTION
(STA:0+000 TO 0+330.28)

NOTES:–

1. ALL DIMENSIONS ARE IN METERS/MILIMETERS UNLESS OTHERWISE STATED.

REV.	DESCRIPTION	DATE	APPROVED
T0	TENDER ISSUE	20-01-2023	WASIF

CLIENT:- SINDH INDUSTRIAL TRADING ESTATES LIMITED

PROJECT:- REHABILITATION / CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

CONSULTANT:- ATIF NAZAR (PVT.) LTD.
PROJECT MANAGERS, PLANNERS, ARCHITECTS & CONSULTING ENGINEERS
D-11/A, BLOCK NO-17, GULSHAN-E-IQBAL, KARACHI. P.H. 34820497 - 34982561

		PROJECT NO:	DATE:-
DRAWN BY	ARSHAD	RSK	20-01-2023
DESIGN BY	MAHRUKH		
CHECKED BY	WAZI IQBAL	SCALE: N.T.S	SHEET: 03/10 (A3)
APPROVED BY	WASIF		

SHEET TITLE:- STEP - 02 CROSS SECTION

Drawing No. 2210-01-01-02-03-R203 | REVISION T0

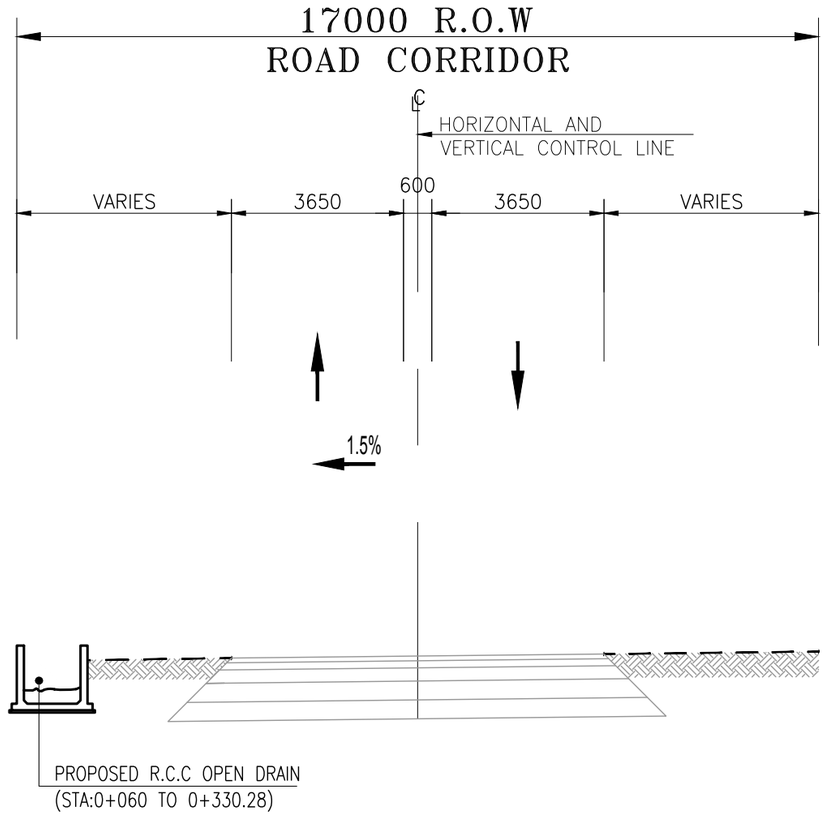
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User and Plot Date : Arshad – Thu, 09 Feb 2023 – 12:38pm

METHODOLOGY

STEP-03

1. PROVIDE NEW SERVICE DUCT AND REPAIR ALL EXISTING UTILITY DUCTS AS PER SITE REQUIREMENTS OR AS DIRECTED BY THE SITE ENGINEER. REFER STRUCTURAL DRAWING FOR DIMENSION AND DETAILS.

2. THE CONTRACTOR SHALL TAKE THE WRITTEN APPROVAL FROM SUPERVISORY CONSULTANT OF SATISFACTORY COMPLETION OF STEP-03 , PRIOR TO PROCEED STEP-04.



PROPOSED CROSS SECTION
(STA:0+000 TO 0+330.28)

NOTES:–

1. ALL DIMENSIONS ARE IN METERS/MILIMETERS UNLESS OTHERWISE STATED.

REV.	DESCRIPTION	DATE	APPROVED
T0	TENDER ISSUE	20-01-2023	WASIF

CLIENT:- SINDH INDUSTRIAL TRADING ESTATES LIMITED

PROJECT:- REHABILITATION / CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

CONSULTANT:-

ATIF NAZAR (PVT.) LTD.
PROJECT MANAGERS, PLANNERS, ARCHITECTS & CONSULTING ENGINEERS
D-11/A, BLOCK NO-17, GULSHAN-E-IQBAL, KARACHI. P.H. 34820497 - 34982561

		PROJECT NO.	DATE:-
DRAWN BY	ARSHAD	RSK	20-01-2023
DESIGN BY	MAHRUKH		
CHECKED BY	WAZI IQBAL	SCALE: N.T.S	SHEET: 04/10 (A3)
APPROVED BY	WASIF		

SHEET TITLE:-
STEP - 03
CROSS SECTION

Drawing No. 2210-01-01-02-03-R204 | REVISION T0

Drawing file path & name: D:\Projects\01_Rehabilition Construction Of Roads In Site Industrial Estate Karachi\00_Submital\Tender\Working\02_Road\Road - 50\06_Typical Sections\2210-01-01-02-03-R201 T0 21010.dwg
User and Plot Date: Arshad - Thu, 09 Feb 2023 - 12:38pm

METHODOLOGY

STEP-04

1. REMOVE COMPLETE ASPHALTIC LAYERS WHERE EXIST & RE-COMPACT THE EXISTING SURFACE.

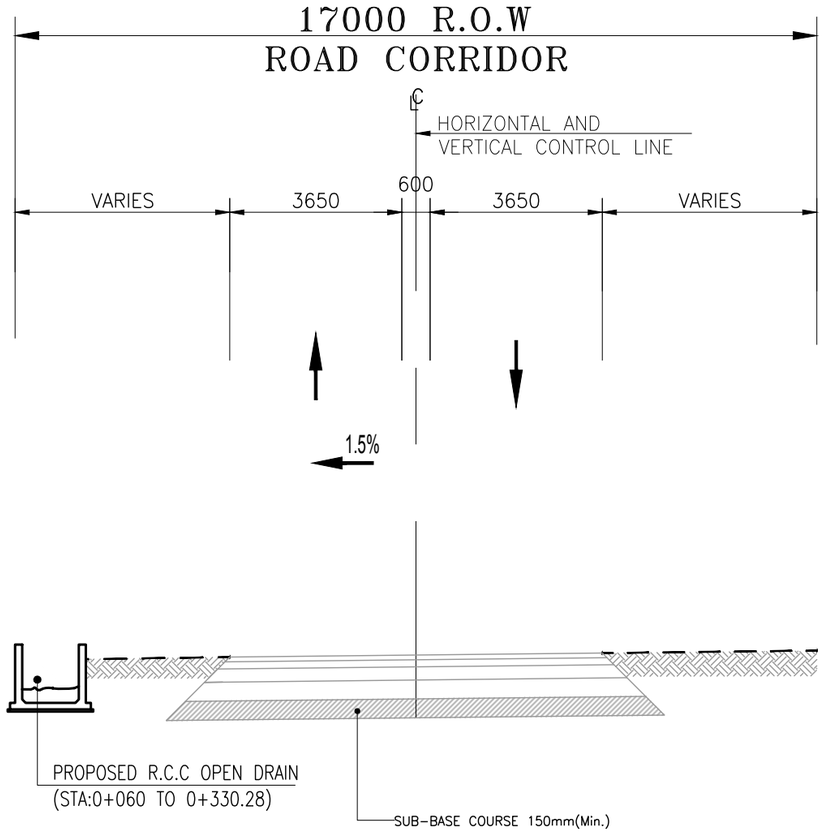
2. IF REQUIRED, THE CONTRACTOR SHALL EXCAVATE THE EXISTING SURFACE TO LAY THE FULL DEPTH OF PAVEMENT LAYERS AS PER ROAD PROFILE.

3. THE CONTRACTOR SHALL MAKE THE SHOP DRAWING & TAKE PRIOR APPROVAL FROM THE ENGINEER, BEFORE EXECUTION OF ROAD WORKS.

4. CLEAN, LEVEL & COMPACT THE EXISTING SURFACE.

5. LAY MINIMUM 150mm SUB BASE COURSE AND VARY DEPENDING ON DESIGN PROFILE OF ROAD. EACH LAYER SHALL NOT EXCEED MORE THAN 75mm & COMPACT UPTO 98% MDD.

6. THE CONTRACTOR SHALL TAKE THE WRITTEN APPROVAL FROM SUPERVISORY CONSULTANT ON SATISFACTORY COMPLETION OF STEP-04, PRIOR TO PROCEED STEP-05.



PROPOSED CROSS SECTION
(STA:0+000 TO 0+330.28)

NOTES:–

1. ALL DIMENSIONS ARE IN METERS/MILIMETERS UNLESS OTHERWISE STATED.

REV.	DESCRIPTION	DATE	APPROVED
T0	TENDER ISSUE	20-01-2023	WASIF

CLIENT:- SINDH INDUSTRIAL TRADING ESTATES LIMITED

PROJECT:- REHABILITATION / CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

CONSULTANT:- ATIF NAZAR (PVT.) LTD.
PROJECT MANAGERS, PLANNERS, ARCHITECTS & CONSULTING ENGINEERS
D-11/A, BLOCK NO-17, GULSHAN-E-IQBAL, KARACHI. P.H. 34820497 - 34982561

		PROJECT NO:	DATE:-
DRAWN BY	ARSHAD	RSK	20-01-2023
DESIGN BY	MAHRUKH		
CHECKED BY	WAZI IQBAL	SCALE: N.T.S	SHEET: 05/10 (A3)
APPROVED BY	WASIF		

SHEET TITLE:- STEP - 04 CROSS SECTION

Drawing No. 2210-01-01-02-03-R205 | REVISION T0

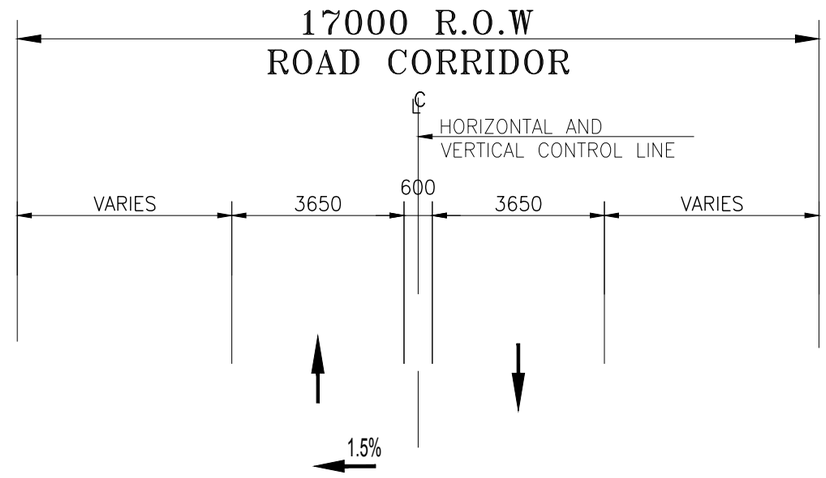
Drawing file path & name: D:\Projects\01_Rehabilition Construction Of Roads In Site Industrial Estate Karachi\00_Submital\Tender\Working\02_Road\Road - 50\06_Typical Sections\2210-01-01-02-03-R201 T0 21010.dwg
User and Plot Date: Arshad - Thu, 09 Feb 2023 - 12:38pm

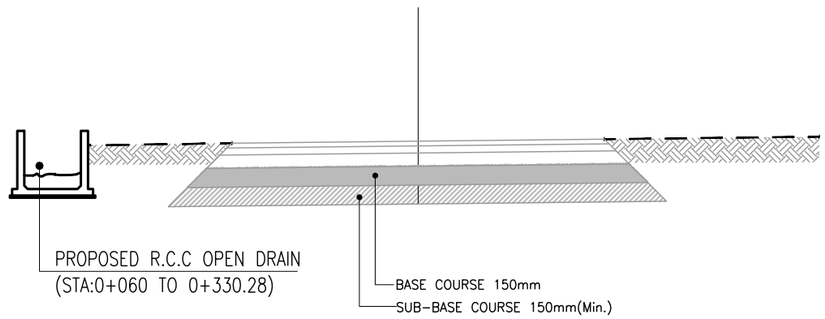
METHODOLOGY

STEP-05

1. LAY 150mm BASE COURSE AND VARY DEPENDING ON DESIGN PROFILE OF ROAD. EACH LAYER SHALL NOT EXCEED MORE THAN 75mm & COMPACT UPTO 100% MDD.

2. THE CONTRACTOR SHALL TAKE THE WRITTEN APPROVAL FROM SUPERVISORY CONSULTANT ON SATISFACTORY COMPLETION OF STEP-05, PRIOR TO PROCEED STEP-06.





PROPOSED CROSS SECTION
(STA:0+000 TO 0+330.28)

NOTES:-

1. ALL DIMENSIONS ARE IN METERS/MILIMETERS UNLESS OTHERWISE STATED.

REV.	DESCRIPTION	DATE	APPROVED
T0	TENDER ISSUE	20-01-2023	WASIF

CLIENT:- SINDH INDUSTRIAL TRADING ESTATES LIMITED

PROJECT:- REHABILITATION / CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

CONSULTANT:- ATIF NAZAR (PVT.) LTD.
PROJECT MANAGERS, PLANNERS, ARCHITECTS & CONSULTING ENGINEERS
D-11/A, BLOCK NO-17, GULSHAN-E-IQBAL, KARACHI. P.H. 34820497 - 34982561

DRAWN BY	ARSHAD	PROJECT NO. RSK	DATE:- 20-01-2023
DESIGN BY	MAHRUKH		
CHECKED BY	WAZI IQBAL	SCALE: N.T.S	SHEET: 06/10 (A3)
APPROVED BY	WASIF		

SHEET TITLE:- STEP - 05 CROSS SECTION

Drawing No. 2210-01-01-02-03-R206 | REVISION T0

Drawing file path & name D:\Projects\01_Rehabilition Construction Of Roads in Site Industrial Estate Karachi\00_Submital\Tender\Working\02_Road\Road - 50\06_Typical Sections\2210-01-01-02-03-R201 T0 21010.dwg
User and Plot Date:- Arshad - Thu, 09 Feb 2023 - 12:38pm

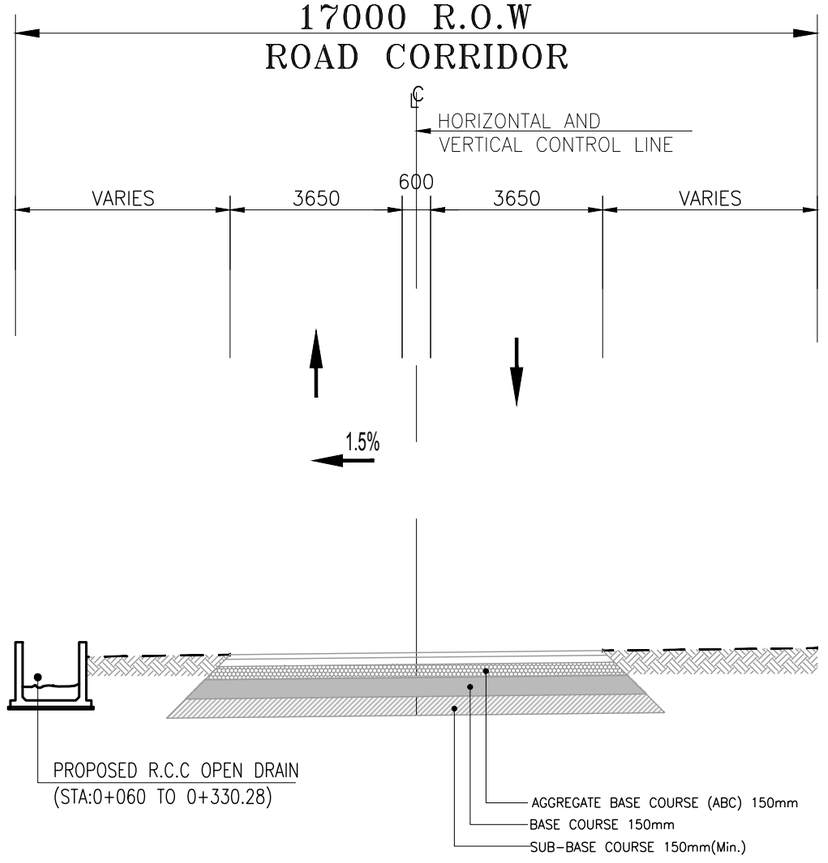
METHODOLOGY

STEP-06

1. LAY 150mm AGGREGATE BASE COURSE. COMPACT THE AGGREGATE BASE COURSE UPTO COMPACTION OF 100% MDD.

2. APPLY PRIME COAT ON TOP OF AGGREGATE BASE COURSE. MEASUREMENT SHALL BE MADE BY USING END AREA METHOD.

3. THE CONTRACTOR SHALL TAKE THE WRITTEN APPROVAL FROM SUPERVISORY CONSULTANT ON SATISFACTORY COMPLETION OF STEP-06, PRIOR TO PROCEED STEP-07.



PROPOSED CROSS SECTION
(STA:0+000 TO 0+330.28)

NOTES:-

1. ALL DIMENSIONS ARE IN METERS/MILIMETERS UNLESS OTHERWISE STATED.

REV.	DESCRIPTION	DATE	APPROVED
T0	TENDER ISSUE	20-01-2023	WASIF

CLIENT:- SINDH INDUSTRIAL TRADING ESTATES LIMITED

PROJECT:- REHABILITATION / CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

CONSULTANT:- ATIF NAZAR (PVT.) LTD.
PROJECT MANAGERS, PLANNERS, ARCHITECTS & CONSULTING ENGINEERS
D-11/A, BLOCK NO-17, GULSHAN-E-IQBAL, KARACHI. P.H. 34820497 - 34982561

		PROJECT NO:	DATE:-
DRAWN BY	ARSHAD	RSK	20-01-2023
DESIGN BY	MAHRUKH		
CHECKED BY	WAZI IQBAL	SCALE: N.T.S	SHEET: 07/10 (A3)
APPROVED BY	WASIF		

SHEET TITLE:- STEP - 06 CROSS SECTION

Drawing No. 2210-01-01-02-03-R207 | REVISION T0

Drawing file path & name: D:\Projects\01_Rehabilition Construction Of Roads In Site Industrial Estate Karachi\00_Submital\Tender\Working\02_Road\Road - 50\06_Typical Sections\2210-01
User and Plot Date: Arshad - Thu, 09 Feb 2023 - 12:38pm

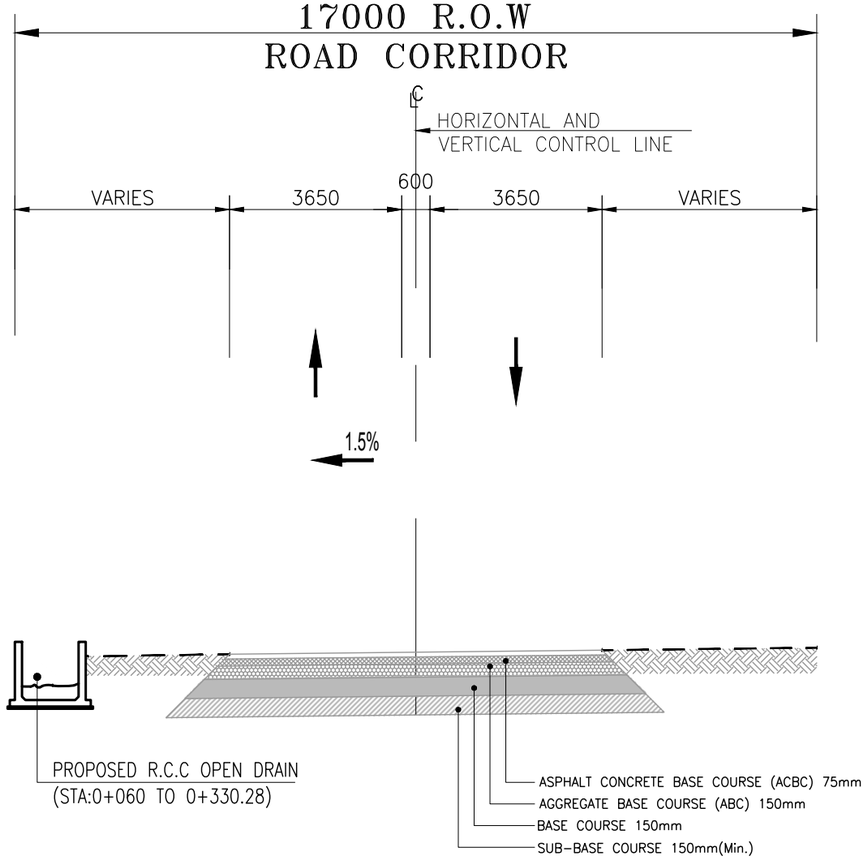
METHODOLOGY

STEP-07

1. LAY 75mm ASPHALT BASE COURSE.

2. APPLY TACK COAT ON TOP OF ASPHALTIC BASE COURSE.

3. THE CONTRACTOR SHALL TAKE THE WRITTEN APPROVAL FROM SUPERVISORY CONSULTANT ON SATISFACTORY COMPLETION OF STEP-07, PRIOR TO PROCEED STEP-08.



PROPOSED CROSS SECTION
(STA:0+000 TO 0+330.28)

NOTES:-

1. ALL DIMENSIONS ARE IN METERS/MILIMETERS UNLESS OTHERWISE STATED.

REV.	DESCRIPTION	DATE	APPROVED
T0	TENDER ISSUE	20-01-2023	WASIF

CLIENT:- SINDH INDUSTRIAL TRADING ESTATES LIMITED

PROJECT:- REHABILITATION / CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

CONSULTANT:- ATIF NAZAR (PVT.) LTD.
PROJECT MANAGERS, PLANNERS, ARCHITECTS & CONSULTING ENGINEERS
D-11/A, BLOCK NO-17, GULSHAN-E-IQBAL, KARACHI. P.H. 34820497 - 34982561

		PROJECT NO:	DATE:-
DRAWN BY	ARSHAD	RSK	20-01-2023
DESIGN BY	MAHRUKH		
CHECKED BY	WAZI IQBAL	SCALE: N.T.S	SHEET: 08/10 (A3)
APPROVED BY	WASIF		

SHEET TITLE:-
STEP - 07
CROSS SECTION

Drawing No. 2210-01-01-02-03-R208

REVISION T0

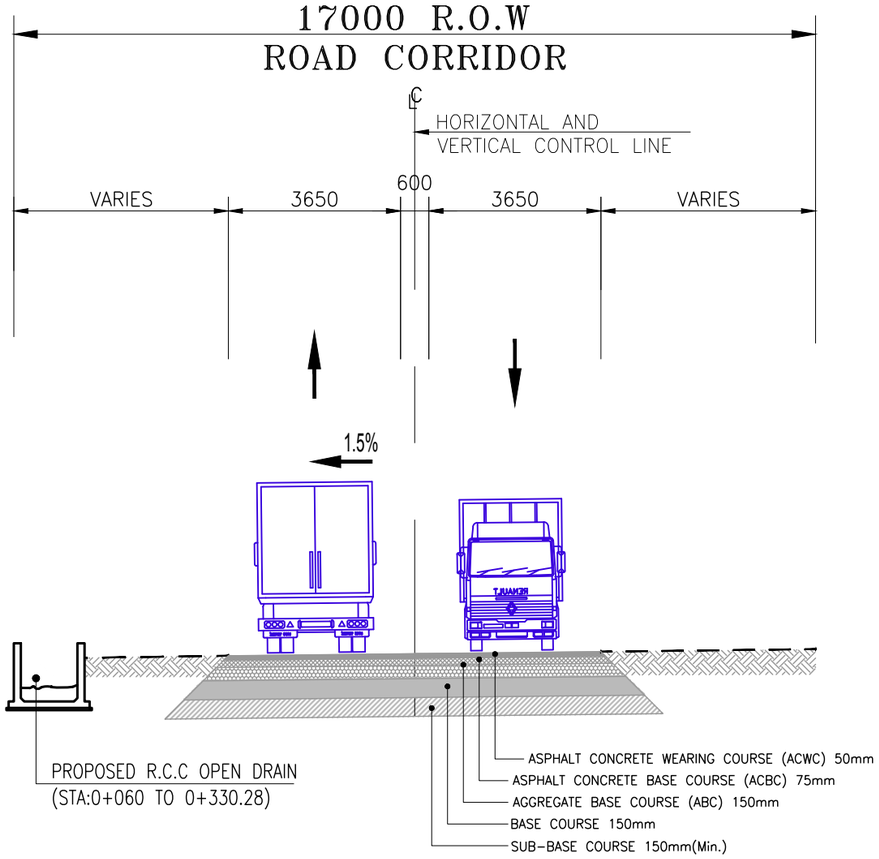
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User and Plot Date: Arshad - Thu, 09 Feb 2023 - 12:38pm

METHODOLOGY

STEP-08

1. LAY 50mm ASPHALT WEARING COURSE.

2. THE CONTRACTOR SHALL TAKE THE WRITTEN APPROVAL FROM SUPERVISORY CONSULTANT ON SATISFACTORY COMPLETION OF STEP-08, PRIOR TO PROCEED STEP-09.



PROPOSED CROSS SECTION

(STA:0+000 TO 0+330.28)

NOTES:-

1. ALL DIMENSIONS ARE IN METERS/MILIMETERS UNLESS OTHERWISE STATED.

REV.	DESCRIPTION	DATE	APPROVED
T0	TENDER ISSUE	20-01-2023	WASIF

CLIENT:- SINDH INDUSTRIAL TRADING ESTATES LIMITED

PROJECT:- REHABILITATION / CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

CONSULTANT:- ATIF NAZAR (PVT.) LTD.
PROJECT MANAGERS, PLANNERS, ARCHITECTS & CONSULTING ENGINEERS
D-11/A, BLOCK NO-17, GULSHAN-E-IQBAL, KARACHI. P.H. 34820497 - 34982561

DRAWN BY	ARSHAD	PROJECT NO.	DATE:-
DESIGN BY	MAHRUKH	RSK	20-01-2023
CHECKED BY	WAZI IQBAL	SCALE:	SHEET:
APPROVED BY	WASIF	N.T.S	09/10 (A3)

SHEET TITLE:- STEP - 08 CROSS SECTION

Drawing No. 2210-01-01-02-03-R209

REVISION T0

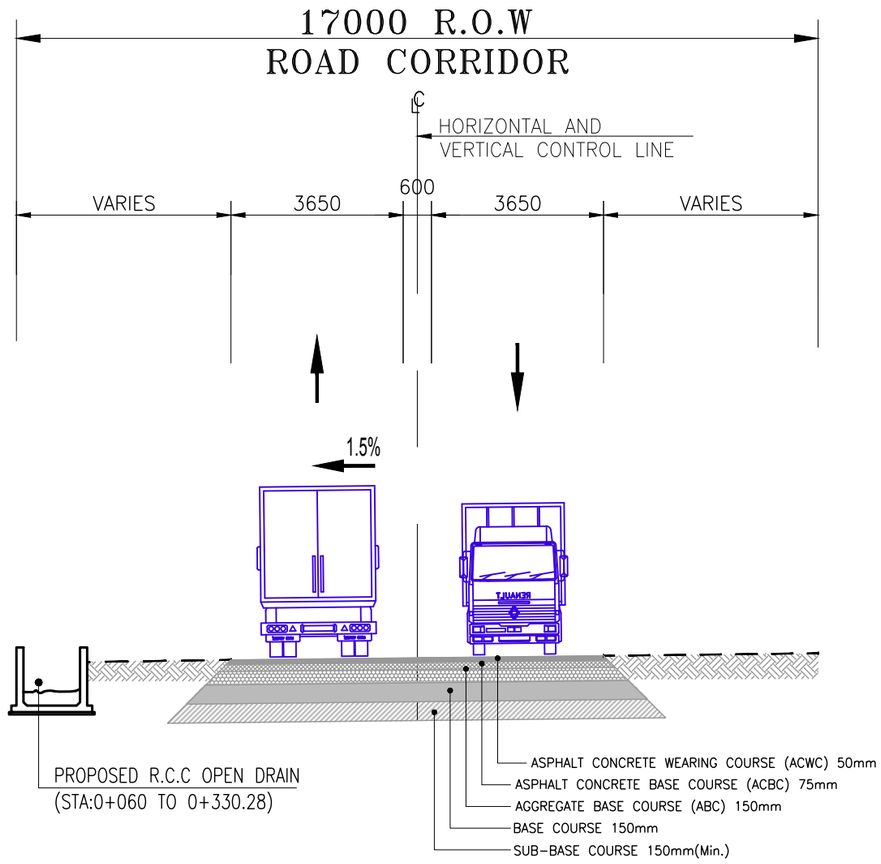
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User and Plot Date:- Arshad - Thu, 09 Feb 2023 - 12:38pm

METHODOLOGY

STEP-09

1. PROVIDE ANY CUT & FILL ALONG THE ROAD SIDES. PROPER COMPACTION AND DRESSING MUST BE ENSURED BEFORE INSTALLATION OF CATEYES AND PAVEMENT MARKING.

2. THE CONTRACTOR SHALL TAKE THE WRITTEN APPROVAL FROM SUPERVISORY CONSULTANT ON SATISFACTORY COMPLETION OF STEP-09, BEFORE DECLARING THE COMPLETION OF WORK.



PROPOSED CROSS SECTION

(STA:0+000 TO 0+330.28)

NOTES:-

1. ALL DIMENSIONS ARE IN METERS/MILIMETERS UNLESS OTHERWISE STATED.

REV.	DESCRIPTION	DATE	APPROVED
T0	TENDER ISSUE	20-01-2023	WASIF

CLIENT:- SINDH INDUSTRIAL TRADING ESTATES LIMITED

PROJECT:- REHABILITATION / CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

CONSULTANT:- ATIF NAZAR (PVT.) LTD.
PROJECT MANAGERS, PLANNERS, ARCHITECTS & CONSULTING ENGINEERS
D-11/A, BLOCK NO-17, GULSHAN-E-IQBAL, KARACHI. P.H. 34820497 - 34982561

		PROJECT NO:	DATE:-
DRAWN BY	ARSHAD	RSK	20-01-2023
DESIGN BY	MAHRUKH		
CHECKED BY	WAZI IQBAL	SCALE: N.T.S	SHEET: 10/10 (A3)
APPROVED BY	WASIF		

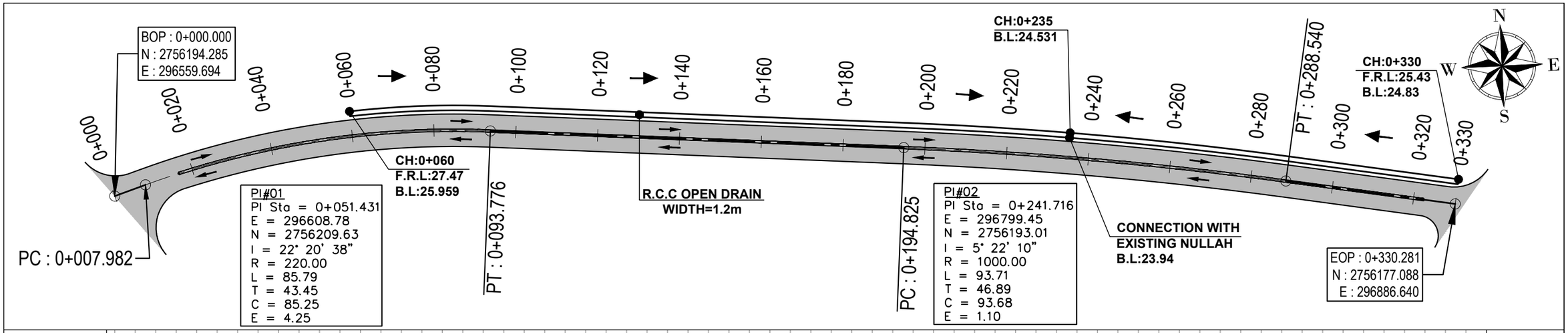
SHEET TITLE:- STEP - 09 CROSS SECTION

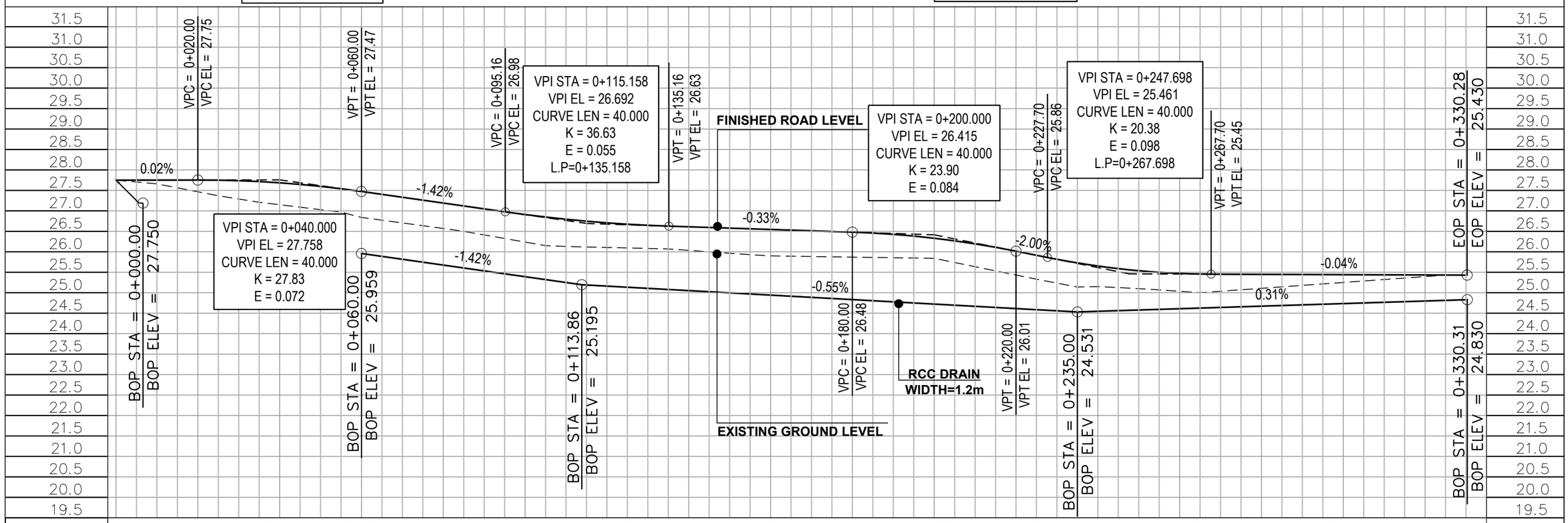
Drawing No. 2210-01-01-02-03-R210 | REVISION T0

Drawing file path & name: D:\Projects\01_Rehabilition Construction Of Roads In Site Industrial Estate Karachi\00_Submital\Tender\Working\02_Road\Road - 50\06_Typical Sections\2210-01-01-02-03-R201 T0 21010.dwg
User and Plot Date: Arshad - Thu, 09 Feb 2023 - 12:38pm

ROAD, STORM WATER & SEWER DRAIN

PLAN & PROFILE





FRL	27.750	27.754	27.686	27.474	27.190	26.910	26.707	26.611	26.546	26.480	26.331	26.015	25.652	25.471	25.449	25.441	25.434
EGL	27.750	27.467	27.150	26.840	26.570	26.238	26.106	26.035	25.900	25.870	25.840	25.432	25.150	25.035	25.108	25.251	25.394
B.L				25.959	25.675	25.392	25.162	25.052	24.942	24.832	24.723	24.613	24.546	24.609	24.672	24.735	24.798
STATION	0+000	0+020	0+040	0+060	0+080	0+100	0+120	0+140	0+160	0+180	0+200	0+220	0+240	0+260	0+280	0+300	0+320

NOTES:–

1. ALL DIMENSIONS ARE IN METERS/MILIMETERS UNLESS OTHERWISE STATED.

LEGEND

- PROPOSED CENTER LINE
- PROPOSED KERB
- PROPOSED LANE MARKING
- R.C.C DRAIN
- DRAIN CROSSING CLOSED (DCC)
- FLOW DIRECTION

REV.	DESCRIPTION	DATE	APPROVED
T0	TENDER ISSUE	20-01-2023	WASIF

CLIENT:-
SINDH INDUSTRIAL TRADING ESTATES LIMITED

PROJECT:-
REHABILITATION / CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

CONSULTANT:-
ATIF NAZAR (PVT.) LTD.
PROJECT MANAGERS, PLANNERS, ARCHITECTS & CONSULTING ENGINEERS
D-11/A, BLOCK NO-17, GULSHAN-E-IQBAL, KARACHI. P.H. 34820497 - 34982561

DRAWN BY	ARSHAD	PROJECT NO.	DATE:-
DESIGN BY	MAHRUKH	RSK	20-01-2023
CHECKED BY	WAZI IQBAL	SCALE: HOR=1:1000 VER=1:10	SHEET: 01/01 (A3)
APPROVED BY	WASIF		

SHEET TITLE:-
ROAD - 50
PLAN & PROFILE (ROAD & DRAIN)
(SAT=0+000 TO 0+330)

Drawing No. 2210-01-01-02-03-R301 | REVISION T0

Drawing file path & name: D:\Projects\01_Rehabilition Construction Of Roads In Site Industrial Estate Karachi\00_Submital\Tender\Working\02_Road\Road - 50\07_Plan&Profile\2210-01-01-02-03-R301.dwg
User and Plot Date:- Arshad - Thu, 09 Feb 2023 - 12:42pm

SINDH INDUSTRIAL TRADING ESTATES LIMITED

PROJECT:

REHABILITATION / CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

ROAD - 49

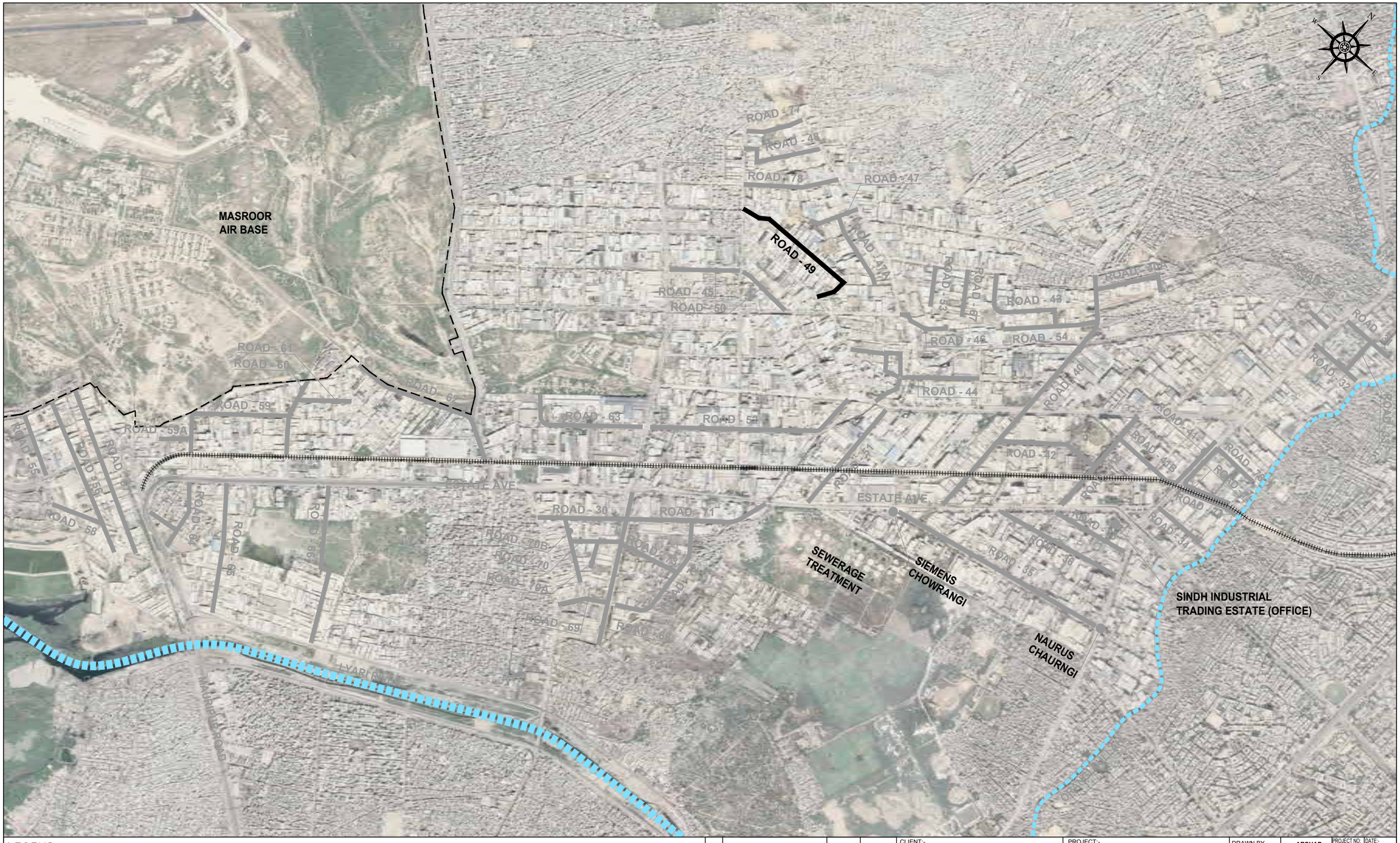
ROAD, DRAINAGE, STRUCTURE & ELECTRICAL WORKS

TENDER DRAWINGS
JANUARY, 2023

CONSULTANT:

ATIF NAZAR (PVT.) LTD.

PROJECT MANAGERS, PLANNERS, ARCHITECTS &
CONSULTING ENGINEERS
D-11/A, BLOCK NO-17, GULSHAN-E-IQBAL, KARACHI.
P.H. 34820497 - 34982561



LEGEND:–

- ROADS
- RIVER/NULLAH
- RAILWAY TRACK

REV.	DESCRIPTION	DATE	APPROVED
T0	TENDER ISSUE	20-01-2023	WASIF

CLIENT:-
SINDH INDUSTRIAL TRADING ESTATES LIMITED

PROJECT:-
REHABILITATION / CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

CONSULTANT:-
ATIF NAZAR (PVT.) LTD.
PROJECT MANAGERS, PLANNERS, ARCHITECTS & CONSULTING ENGINEERS
D-11/A, BLOCK NO-17, GULSHAN-E-IQBAL, KARACHI. P.H. 34820497 - 34982561

		PROJECT NO:	DATE:-
DRAWN BY	ARSHAD	RSK	20-01-2023
DESIGN BY	MAHRUKH		
CHECKED BY	WAZI IQBAL	SCALE: N.T.S	SHEET: 01/01 (A3)
APPROVED BY	WASIF		

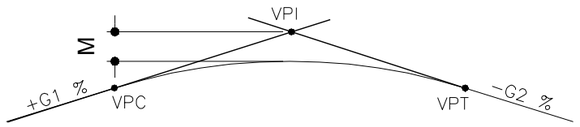
SHEET TITLE:-
ROAD - 49
LOCATION PLAN

Drawing No. 2210-01-01-02-03-R004
REVISION T0

Drawing file path & name: D:\Projects\01_Rehabilition Construction Of Roads In Site Industrial Estate Karachi\00_Submital\Tender\Working\02_Road\Road – 49\01_Location Plan\2210-01-01-02-03-R004.dwg
User and Plot Date: Arshad – Fri, 03 Feb 2023 – 11:52am

GENERAL DRAWINGS

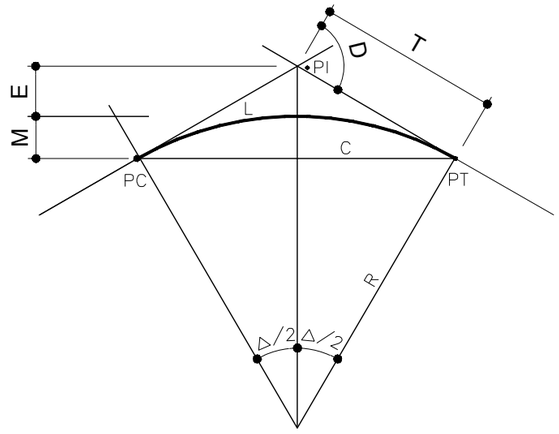
DETAIL OF VERTICAL CURVE



VPC : VERTICAL POINT OF CURVATURE
VPI : VERTICAL POINT OF INTERSECTION
VPT : VERTICAL POINT OF TANGENCY
L : LENGTH OF VERTICAL CURVE
M : VERTICAL OFFSET

+G : UPWARD VERTICAL GRADE
−G : DOWNWARD VERTICAL GRADE
K : RATE OF GRADE CHANGE = $\frac{G2-G1}{L}$
A : TOTAL CHANGE IN VERTICAL GRADE BETWEEN TANGENTS = G2−G1

DETAIL OF HORIZONTAL CURVE



CIRCULAR CURVE PARAMETERS

PI : POINT OF INTERSECTION
PC : POINT OF CURVATURE
PT : POINT OF TANGENCY
Δ : DEFLECTION ANGLE
Da : DEGREE OF CURVE (ARC DEFINITION)
Dc : DEGREE OF CURVE (CHORD DEFINITION)

T : TANGENT LENGTH
R : RADIUS
L : LENGTH OF CURVE
C : CHORD LENGTH
E : EXTERNAL
M : MIDDLE ORDINATE

S.NO	DESIGN PARAMETERS	UNITS	VALUES
1	DESIGN SPEED	Km/h	40
2	LANE WIDTH	m	3.65
3	NUMBER. OF LANES	No.	2
4	TOTAL PAVEMENT WIDTH	m	7.9
5	PAVEMENT CROSS SLOPE	%	1.5
6	RIGHT OF WAY (ROW)	m	15
7	MINIMUM RADIUS OF HORIZONTAL CURVE	m	47
8	MINIMUM STOPPING SIGHT DISTANCE (SSD)	m	50
9	MINIMUM PASSING SIGHT DISTANCE (PSD)	m	140
10	K VALUE FOR CREST CURVE (SSD)	m%	4
11	K VALUE FOR CREST CURVE (PSD)	m%	23
12	K VALUE FOR SAG CURVE	m%	9
13	RCC OPEN DRAIN	m	1.2
14	MINIMUM VERTICAL CLEARENCE	m	5.5

NOTES:−

1. ALL DIMENSIONS ARE IN METERS/MILIMETERS UNLESS OTHERWISE STATED.

REV.	DESCRIPTION	DATE	APPROVED
T0	TENDER ISSUE	20-01-2023	WASIF

CLIENT:- SINDH INDUSTRIAL TRADING ESTATES LIMITED

PROJECT:- REHABILITATION / CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

CONSULTANT:-

ATIF NAZAR (PVT.) LTD.
PROJECT MANAGERS, PLANNERS, ARCHITECTS & CONSULTING ENGINEERS
D-11/A, BLOCK NO-17, GULSHAN-E-IQBAL, KARACHI. P.H. 34820497 - 34982561

DRAWN BY	ARSHAD	PROJECT NO: RSK	DATE:- 20-01-2023
DESIGN BY	MAHRUKH		
CHECKED BY	WAZI IQBAL	SCALE: N.T.S	SHEET: 01/01 (A3)
APPROVED BY	WASIF		

SHEET TITLE:- GEOMETRIC DESIGN PARAMETERS

Drawing No. 2210-01-01-02-03-G901 REVISION T0

Drawing file path & name D:\Projects\01_Rehabilitation Construction Of Roads In Site Industrial Estate Karachi\00_Submital\Tender\Working\02_Road\Road - 49\08_General Drawings\2210-01-01-02-03-G901.dwg
User and Plot Date :- Arshad - Fri, 03 Feb 2023 - 12:04pm

SETTING - OUT DATA

ROAD - 49
(SETTING OUT DATA)

S.N	PI - POINT	P.I. Coordinates EASTING	P.I. Coordinates NORTHING	G.DIST	GRID BEAR	DEFLECTION ANGLE	L/R	RADIUS	LENGTH OF TANGENT (LT)	LENGTH OF CURVE (LC)	E (m)	STATION @ PI	CH @ PC	CH @ PT
BOP	A - POINT	296317.258	2756497.233											
1	PI - 1	296331.580	2756504.140	15.901	64° 15' 13"	16° 36' 44"	R	50.0	7.300	14.497	0.530	0 + 15.901	0 + 8.601	0 + 23.098
2	PI - 2	296425.930	2756519.310	95.562	80° 51' 57"	28° 15' 34"	L	35.0	8.811	17.263	1.092	0 + 111.360	0 + 102.549	0 + 119.812
3	PI - 3	296472.700	2756555.060	58.868	52° 36' 23"	36° 9' 31"	R	40.0	13.058	25.243	2.077	0 + 169.870	0 + 156.812	0 + 182.055
4	PI - 4	296664.730	2756559.200	192.075	88° 45' 54"	2° 15' 38"	R	1000.0	19.730	39.456	0.195	0 + 361.072	0 + 341.341	0 + 380.797
5	PI - 5	296872.530	2756555.480	207.833	91° 1' 32"	0° 23' 34"	R	3000.0	10.282	20.563	0.018	0 + 568.900	0 + 558.618	0 + 579.181
6	PI - 6	297083.360	2756550.260	210.895	91° 25' 6"	93° 29' 54"	R	18.0	19.134	29.373	8.270	0 + 779.794	0 + 760.660	0 + 790.034
7	PI - 7	297076.670	2756472.490	78.057	184° 54' 60"	25° 6' 14"	R	40.0	8.906	17.526	0.979	0 + 848.957	0 + 840.051	0 + 857.577
8	PI - 8	297045.190	2756418.010	62.921	210° 1' 14"	6° 7' 49"	R	300.0	16.064	32.098	0.430	0 + 911.592	0 + 895.528	0 + 927.626
9	PI - 9	297024.040	2756389.060	35.853	216° 9' 3"	5° 44' 60"	L	50.0	2.511	5.018	0.063	0 + 947.414	0 + 944.903	0 + 949.921
EOP	B - POINT	297018.404	2756379.454	11.137	210° 24' 3"							0 + 958.547	0 + 958.547	0 + 958.547

NOTES:–

1. ALL DIMENSIONS ARE IN METERS/MILIMETERS UNLESS OTHERWISE STATED.

REV.	DESCRIPTION	DATE	APPROVED
T0	TENDER ISSUE	20-01-2023	WASIF

CLIENT:- SINDH INDUSTRIAL TRADING ESTATES LIMITED

PROJECT:- REHABILITATION / CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

CONSULTANT:-

ATIF NAZAR (PVT.) LTD.
PROJECT MANAGERS, PLANNERS, ARCHITECTS & CONSULTING ENGINEERS
D-11/A, BLOCK NO-17, GULSHAN-E-IQBAL, KARACHI. P.H. 34820497 - 34982561

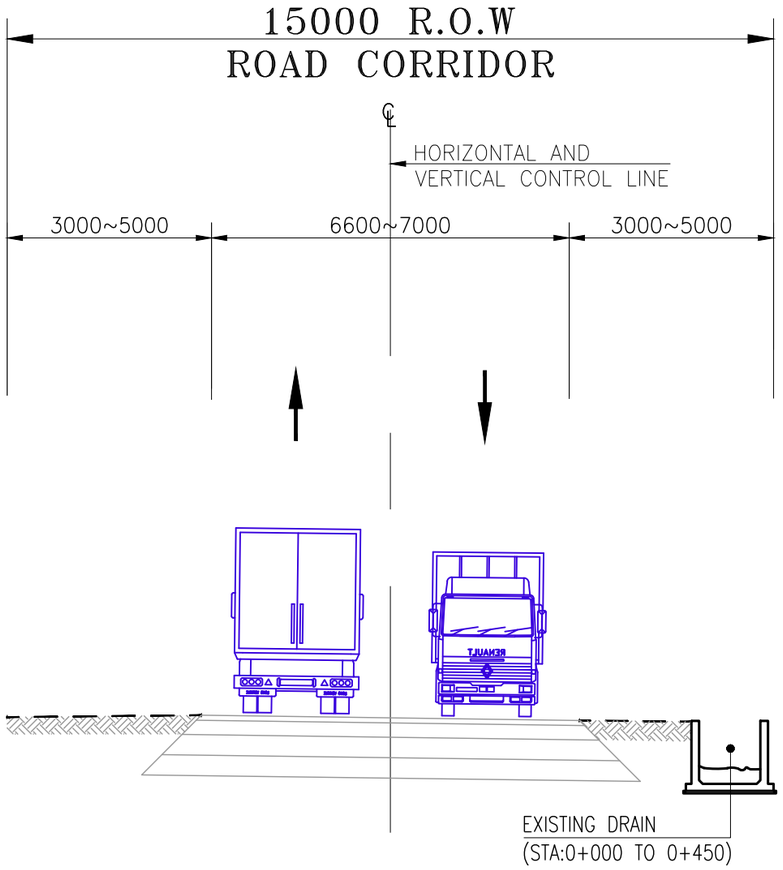
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DESIGN BY	MAHRUKH		
CHECKED BY	WAZI IQBAL	SCALE: N.T.S	SHEET: 01/01 (A3)
APPROVED BY	WASIF		

SHEET TITLE:- SETTING OUT DATA

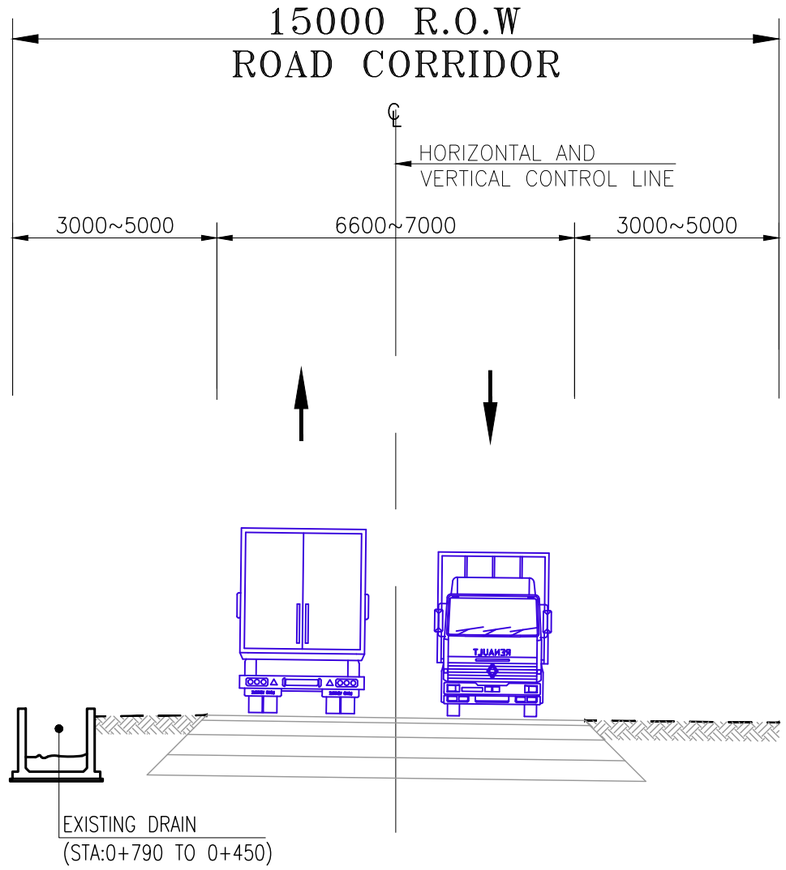
Drawing No. 2210-01-01-02-03-R400 | REVISION T0

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User and Plot Date: Arshad - Fri, 03 Feb 2023 - 12:00pm

EXISTING CROSS SECTIONS



EXISTING CROSS SECTION
(STA:0+000 TO 0+595.00)



EXISTING CROSS SECTION
(STA:0+000 TO 0+595.00)

NOTES:–

1. ALL DIMENSIONS ARE IN METERS/MILIMETERS UNLESS OTHERWISE STATED.

REV.	DESCRIPTION	DATE	APPROVED
T0	TENDER ISSUE	20-01-2023	WASIF

CLIENT:- SINDH INDUSTRIAL TRADING ESTATES LIMITED

PROJECT:- REHABILITATION / CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

CONSULTANT:- ATIF NAZAR (PVT.) LTD.
PROJECT MANAGERS, PLANNERS, ARCHITECTS & CONSULTING ENGINEERS
D-11/A, BLOCK NO-17, GULSHAN-E-IQBAL, KARACHI. P.H. 34820497 - 34982561

DRAWN BY	ARSHAD	PROJECT NO.	DATE:-
DESIGN BY	MAHRUKH	RSK	20-01-2023
CHECKED BY	WAZI IQBAL	SCALE:	SHEET:
APPROVED BY	WASIF	N.T.S	01/08 (A3)

SHEET TITLE:- EXISTING CROSS SECTION

Drawing No. 2210-01-01-02-03-R201

REVISION T0

Drawing file path & name D:\Projects\01_Rehabilition Construction Of Roads In Site Industrial Estate Karachi\00_Submital\Tender\Working\02_Road\Road - 49\06_Typical Sections\2210-01-01-02-03-R201 T0 20810.dwg
User and Plot Date : Arshad - Thu, 09 Feb 2023 - 12:04pm

CONSTRUCTION / REHABILITATING METHODOLOGY CROSS SECTIONS

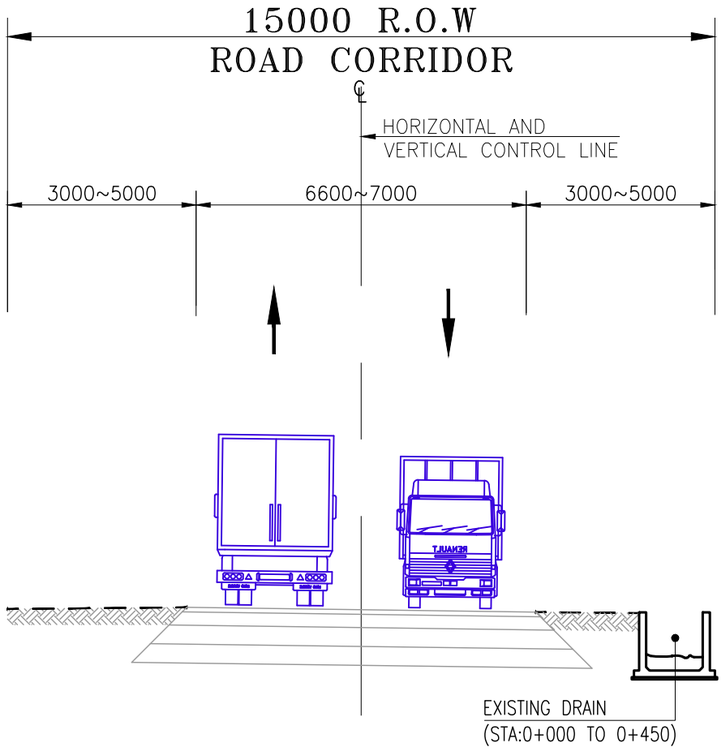
METHODOLOGY

STEP-01

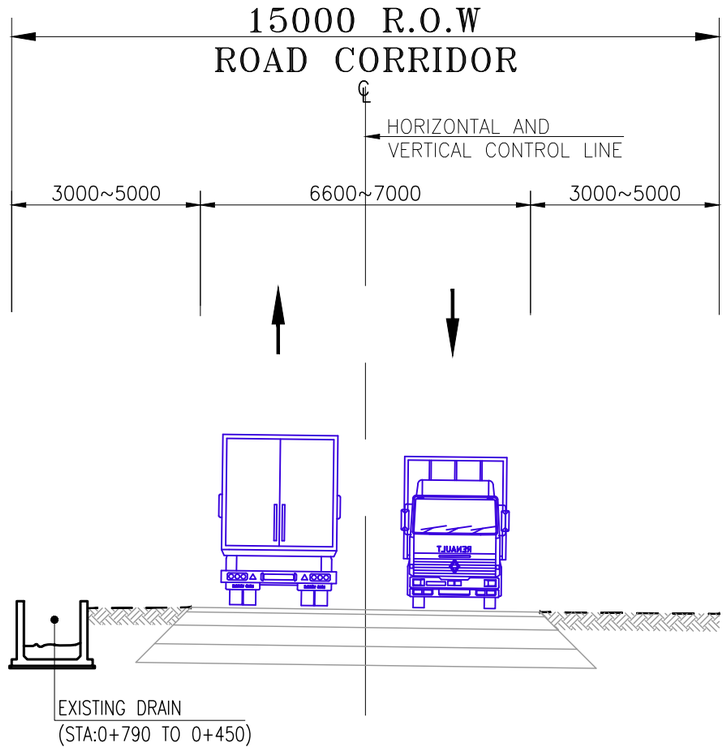
1. REMOVE ALL THE SOLID WASTE & BUSHES FROM ENTIRE CORRIDOR INCLUDING DRAIN. DUMP THE WASTE TO DESIGNATED AREA AT GONPASS OR AS DIRECTED BY THE ENGINEER.

2. CONTRACTOR SHALL TAKE JOINT CROSS SECTIONS OF ROAD CORRIDOR & INVERT LEVELS OF DRAIN WITH CONSULTANT TO VERIFY ANY CHANGE IN DESIGN BEFORE THE EXECUTION OF WORK.

3. THE CONTRACTOR SHALL TAKE THE WRITTEN APPROVAL FROM SUPERVISORY CONSULTANT OF SATISFACTORY COMPLETION OF STEP-01 , PRIOR TO PROCEED STEP-02.



EXISTING CROSS SECTION
(STA:0+000 TO 0+595.00)



EXISTING CROSS SECTION
(STA:0+000 TO 0+595.00)

NOTES:–

1. ALL DIMENSIONS ARE IN METERS/MILIMETERS UNLESS OTHERWISE STATED.

REV.	DESCRIPTION	DATE	APPROVED
T0	TENDER ISSUE	20-01-2023	WASIF

CLIENT:- SINDH INDUSTRIAL TRADING ESTATES LIMITED

PROJECT:- REHABILITATION / CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

CONSULTANT:- ATIF NAZAR (PVT.) LTD.
PROJECT MANAGERS, PLANNERS, ARCHITECTS & CONSULTING ENGINEERS
D-11/A, BLOCK NO-17, GULSHAN-E-IQBAL, KARACHI. P.H. 34820497 - 34982561

DRAWN BY	ARSHAD	PROJECT NO: RSK	DATE:- 20-01-2023
DESIGN BY	MAHRUKH		
CHECKED BY	WAZI IQBAL	SCALE: N.T.S	SHEET: 02/08 (A3)
APPROVED BY	WASIF		

SHEET TITLE:- STEP - 01 CROSS SECTION

Drawing No. 2210-01-01-02-03-R202 | REVISION T0

Drawing file path & name D:\Projects\01_Rehabilitation Construction Of Roads In Site Industrial Estate Karachi\00_Submittal\Tender\Working\02_Road\Road - 49\06_Typical Sections\2210-01
User and Plot Date : Arshad - Thu, 09 Feb 2023 - 12:04pm

METHODOLOGY

STEP -02

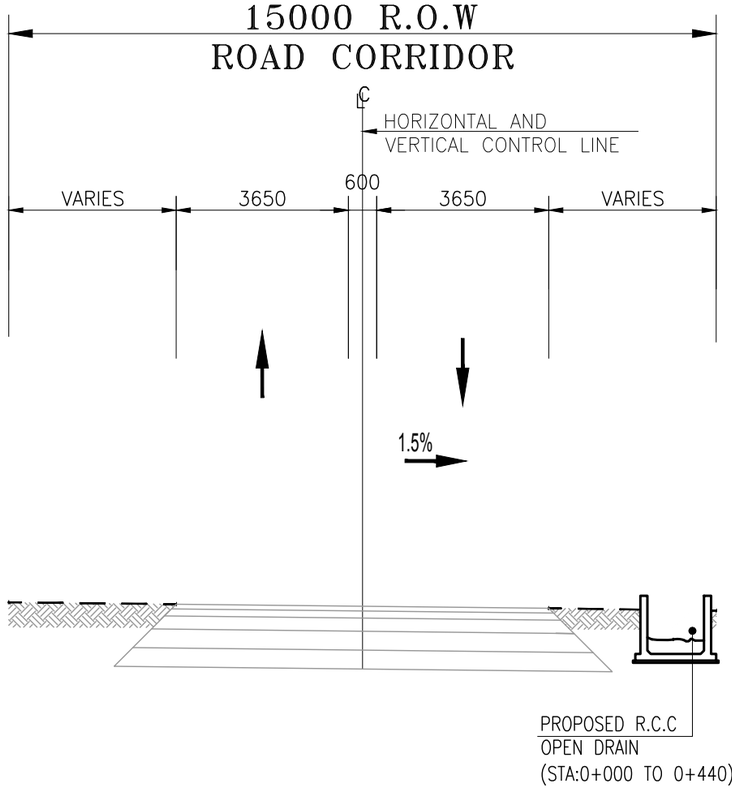
1. THE CONTRACTOR SHALL MAKE THE SHOP DRAWING OF DRAIN & TAKE PRIOR APPROVAL FROM THE ENGINEER, BEFORE EXECUTION OF DRAIN WORK.

2. RECTIFY THE EXISTING DRAIN WHERE REQUIRED OR AS DIRECTED BY THE ENGINEER.

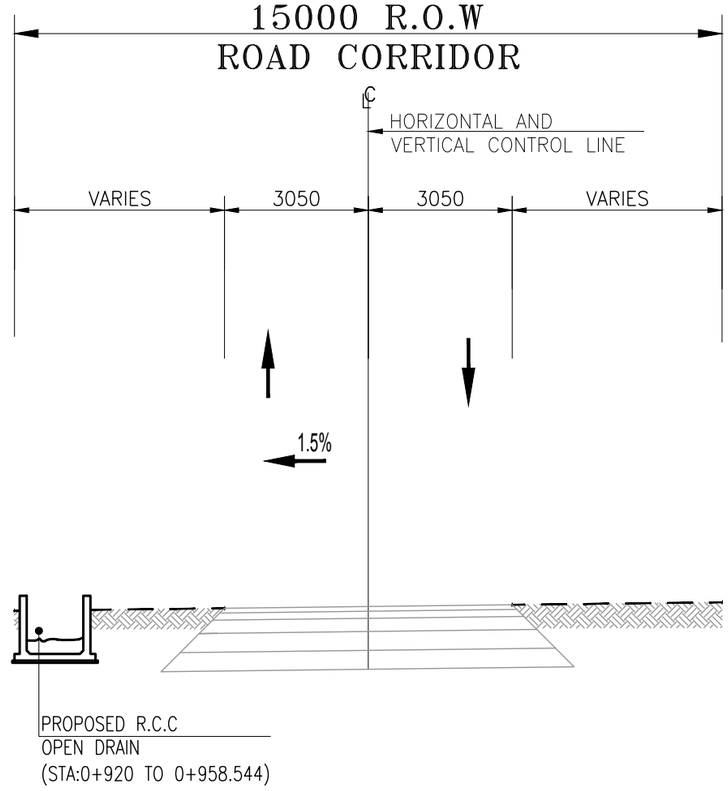
3. THE NEW R.C.C DRAIN LOCATION & INVERT LEVELS SHALL BE FINALIZED BY THE ENGINEER AS PER SITE CONDITION.

4. CONSTRUCT THE R.C.C DRAINS ACCORDING TO INVERT LEVELS PROVIDED IN PLAN AND PROFILE DRAWINGS. REFER STRUCTURAL DRAWING FOR DRAIN DIMENSIONS AND DETAILS.

5. THE CONTRACTOR SHALL TAKE THE WRITTEN APPROVAL FROM SUPERVISORY CONSULTANT OF SATISFACTORY COMPLETION OF STEP-02 , PRIOR TO PROCEED STEP-03.



PROPOSED CROSS SECTION
(STA:0+000 TO 0+536.129)



PROPOSED CROSS SECTION
(STA:0+000 TO 0+536.129)

NOTES:–

1. ALL DIMENSIONS ARE IN METERS/MILIMETERS UNLESS OTHERWISE STATED.

REV.	DESCRIPTION	DATE	APPROVED
T0	TENDER ISSUE	20-01-2023	WASIF

CLIENT:- SINDH INDUSTRIAL TRADING ESTATES LIMITED

PROJECT:- REHABILITATION / CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

CONSULTANT:- ATIF NAZAR (PVT.) LTD.
PROJECT MANAGERS, PLANNERS, ARCHITECTS & CONSULTING ENGINEERS
D-11/A, BLOCK NO-17, GULSHAN-E-IQBAL, KARACHI. P.H. 34820497 - 34982561

		PROJECT NO:	DATE:-
DRAWN BY	ARSHAD	RSK	20-01-2023
DESIGN BY	MAHRUKH		
CHECKED BY	WAZI IQBAL	SCALE: N.T.S	SHEET: 03/08 (A3)
APPROVED BY	WASIF		

SHEET TITLE:- STEP - 02 CROSS SECTION

Drawing No. 2210-01-01-02-03-R203 | REVISION T0

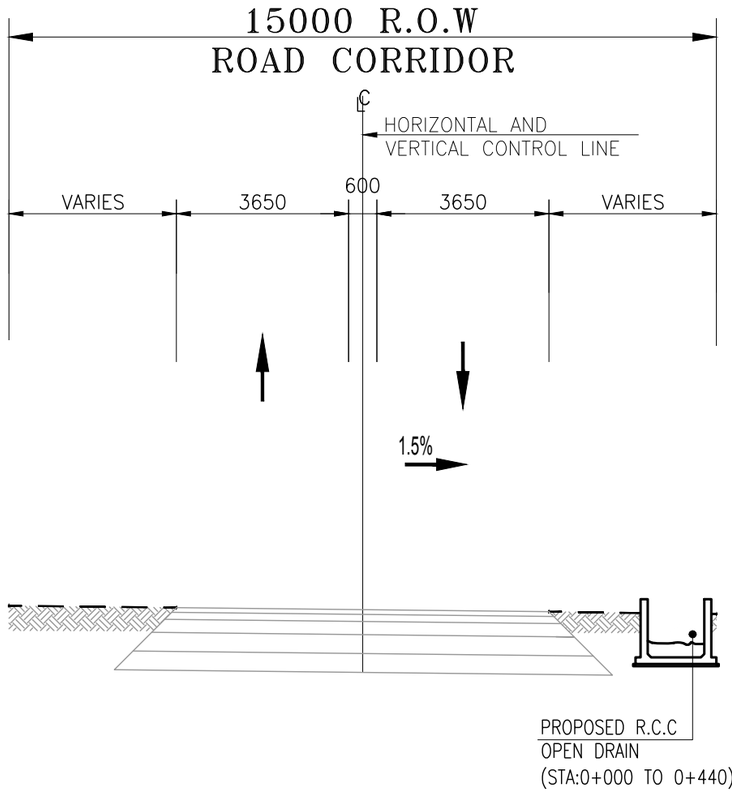
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User and Plot Date:- Arshad - Thu, 09 Feb 2023 - 12:04pm

METHODOLOGY

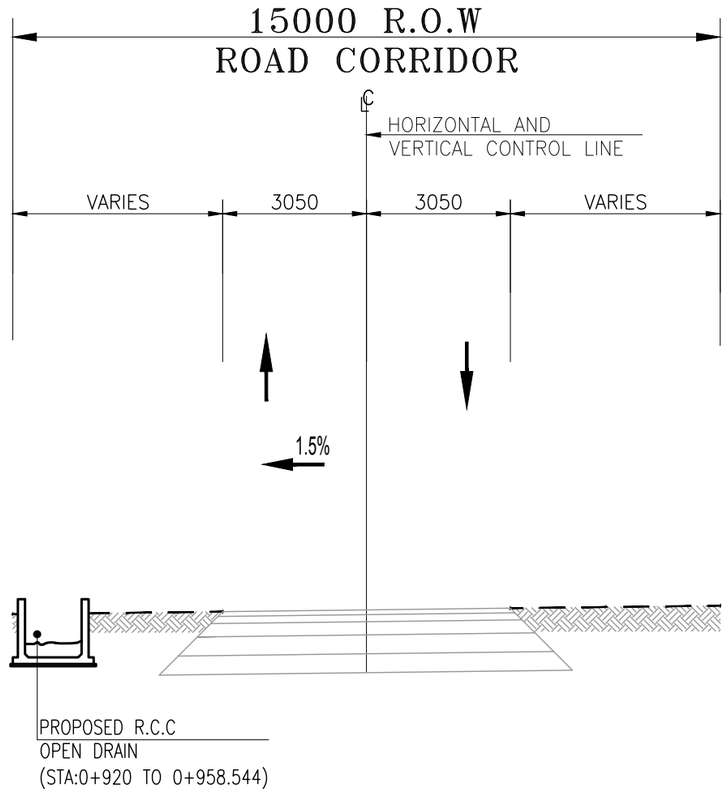
STEP-03

1. PROVIDE NEW SERVICE DUCT AND REPAIR ALL EXISTING UTILITY DUCTS AS PER SITE REQUIREMENTS OR AS DIRECTED BY THE SITE ENGINEER. REFER STRUCTURAL DRAWING FOR DIMENSION AND DETAILS.

2. THE CONTRACTOR SHALL TAKE THE WRITTEN APPROVAL FROM SUPERVISORY CONSULTANT OF SATISFACTORY COMPLETION OF STEP-03 , PRIOR TO PROCEED STEP-04.



PROPOSED CROSS SECTION
(STA:0+000 TO 0+536.129)



PROPOSED CROSS SECTION
(STA:0+000 TO 0+536.129)

NOTES:–

1. ALL DIMENSIONS ARE IN METERS/MILIMETERS UNLESS OTHERWISE STATED.

REV.	DESCRIPTION	DATE	APPROVED
T0	TENDER ISSUE	20-01-2023	WASIF

CLIENT:- SINDH INDUSTRIAL TRADING ESTATES LIMITED

PROJECT:- REHABILITATION / CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

CONSULTANT:-

ATIF NAZAR (PVT.) LTD.
PROJECT MANAGERS, PLANNERS, ARCHITECTS & CONSULTING ENGINEERS
D-11/A, BLOCK NO-17, GULSHAN-E-IQBAL, KARACHI. P.H. 34820497 - 34982561

DRAWN BY	ARSHAD	PROJECT NO. RSK	DATE:- 20-01-2023
DESIGN BY	MAHRUKH		
CHECKED BY	WAZI IQBAL	SCALE: N.T.S	SHEET: 04/08 (A3)
APPROVED BY	WASIF		

SHEET TITLE:- STEP - 03 CROSS SECTION

Drawing No. 2210-01-01-02-03-R204

REVISION T0

Drawing file path & name D:\Projects\01_Rehabilition Construction Of Roads in Site Industrial Estate Karachi\00_Submital\Tender\Working\02_Road\Road - 49\06_Typical Sections\2210-01-01-02-03-R201 T0 20810.dwg
User and Plot Date:- Arshad - Thu, 09 Feb 2023 - 12:04pm

METHODOLOGY

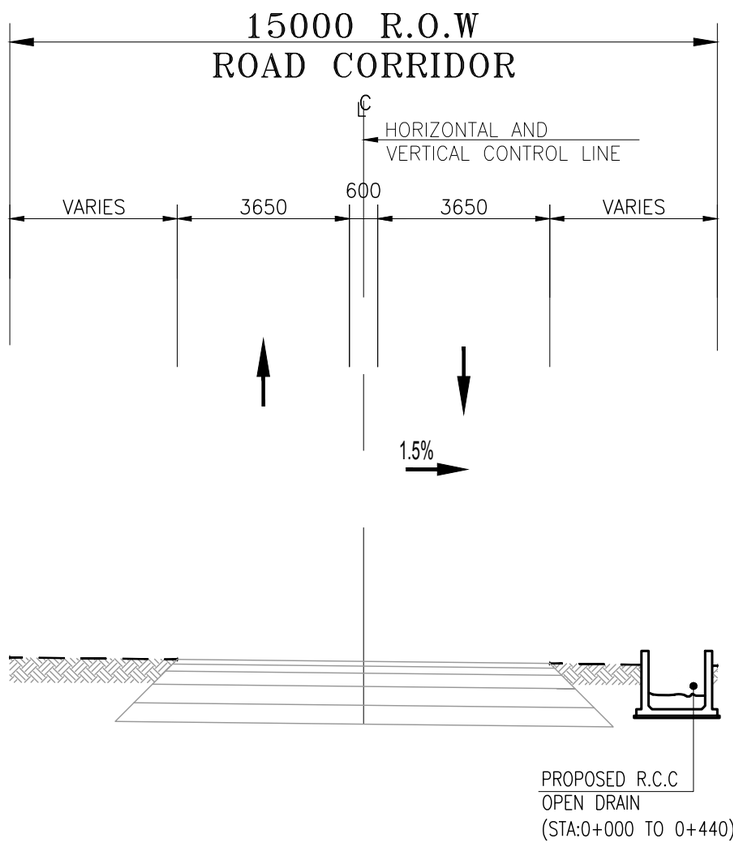
STEP-04

1. THE CONTRACTOR SHALL MAKE THE SHOP DRAWING & TAKE PRIOR APPROVAL FROM THE ENGINEER, BEFORE EXECUTION OF ROAD WORKS.

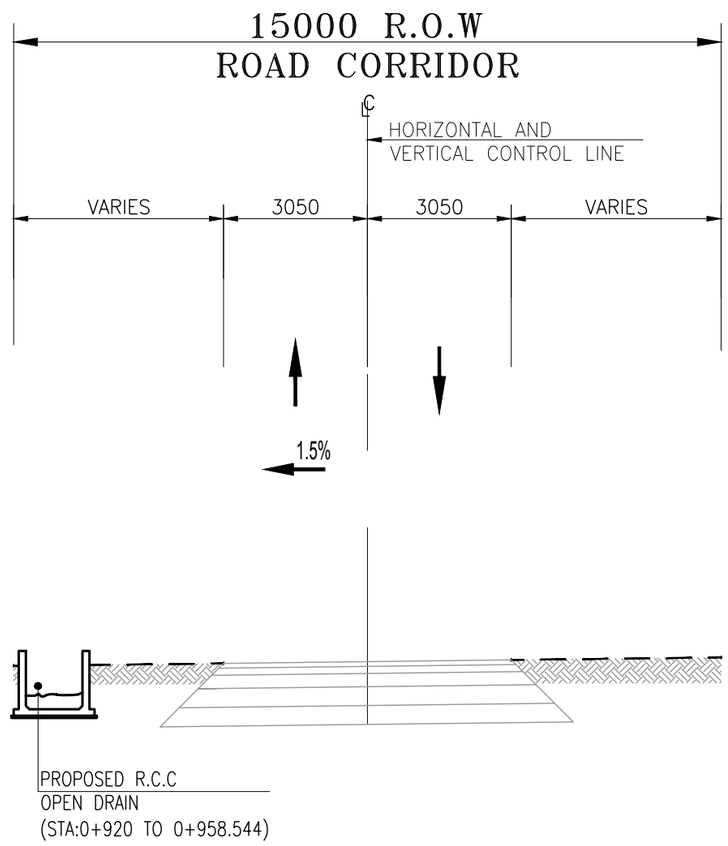
2. GROOVE & CLEAN THE EXISTING ASPHALTIC SURFACE.

3. APPLY TACK COAT ON GROOVED SURFACE.

4. THE CONTRACTOR SHALL TAKE THE WRITTEN APPROVAL FROM SUPERVISORY CONSULTANT OF SATISFACTORY COMPLETION OF STEP-04 , PRIOR TO PROCEED STEP-05.



PROPOSED CROSS SECTION
(STA:0+000 TO 0+536.129)



PROPOSED CROSS SECTION
(STA:0+000 TO 0+536.129)

NOTES:–

1. ALL DIMENSIONS ARE IN METERS/MILIMETERS UNLESS OTHERWISE STATED.

REV.	DESCRIPTION	DATE	APPROVED
T0	TENDER ISSUE	20-01-2023	WASIF

CLIENT:- SINDH INDUSTRIAL TRADING ESTATES LIMITED

PROJECT:- REHABILITATION / CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

CONSULTANT:- ATIF NAZAR (PVT.) LTD.
PROJECT MANAGERS, PLANNERS, ARCHITECTS & CONSULTING ENGINEERS
D-11/A, BLOCK NO-17, GULSHAN-E-IQBAL, KARACHI. P.H. 34820497 - 34982561

DRAWN BY	ARSHAD	PROJECT NO. RSK	DATE:- 20-01-2023
DESIGN BY	MAHRUKH		
CHECKED BY	WAZI IQBAL	SCALE: N.T.S	SHEET: 05/08 (A3)
APPROVED BY	WASIF		

SHEET TITLE:- STEP - 04 CROSS SECTION

Drawing No. 2210-01-01-02-03-R205 | REVISION T0

Drawing file path & name D:\Projects\01_Rehabilition Construction Of Roads In Site Industrial Estate Karachi\00_Submital\Tender\Working\02_Road\Road - 49\06_Typical Sections\2210-01-01-02-03-R201 TO 20810.dwg
User and Plot Date:- Arshad - Thu, 09 Feb 2023 - 12:04pm

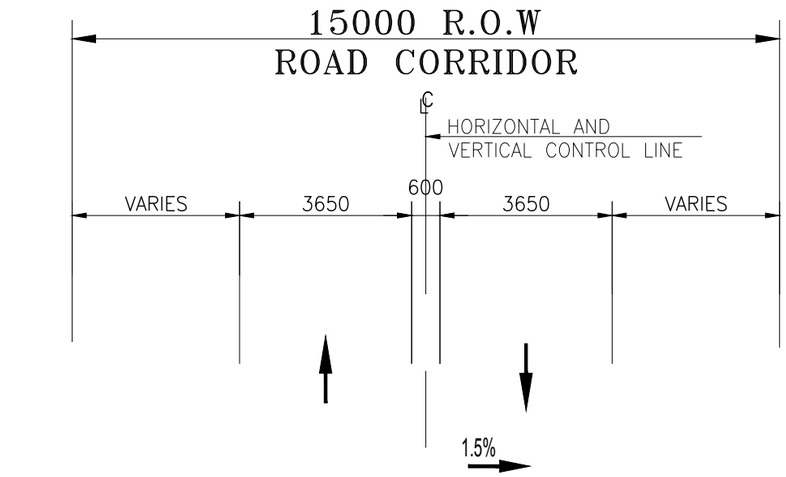
METHODOLOGY

STEP-05

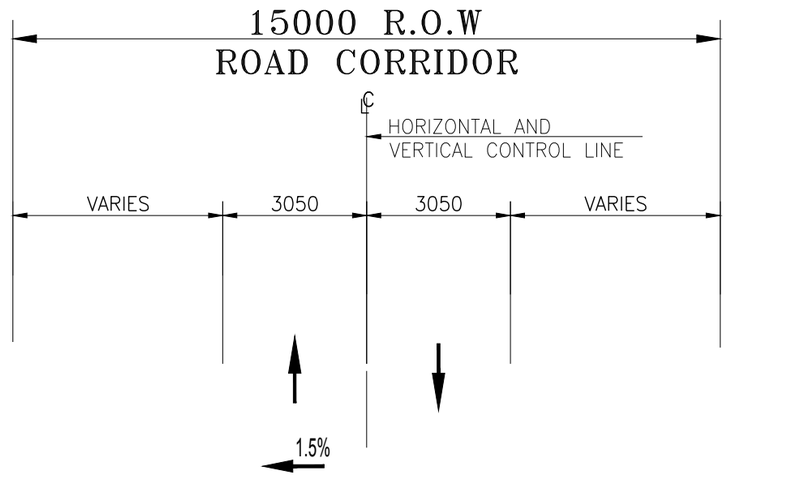
1. LAY MINIMUM 75mm ASPHALT BASE COURSE & VARY DEPENDING ON DESIGN PROFILE.

2. APPLY TACK COAT ON TOP OF ASPHALTIC BASE COURSE.

3. THE CONTRACTOR SHALL TAKE THE WRITTEN APPROVAL FROM SUPERVISORY CONSULTANT OF SATISFACTORY COMPLETION OF STEP-05 , PRIOR TO PROCEED STEP-06.



PROPOSED CROSS SECTION
(STA:0+000 TO 0+536.129)



PROPOSED CROSS SECTION
(STA:0+000 TO 0+536.129)

NOTES:–

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REV.	DESCRIPTION	DATE	APPROVED
T0	TENDER ISSUE	20-01-2023	WASIF

CLIENT:- SINDH INDUSTRIAL TRADING ESTATES LIMITED

PROJECT:- REHABILITATION / CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

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PROJECT MANAGERS, PLANNERS, ARCHITECTS & CONSULTING ENGINEERS
D-11/A, BLOCK NO-17, GULSHAN-E-IQBAL, KARACHI. P.H. 34820497 - 34982561

		PROJECT NO.	DATE:-
DRAWN BY	ARSHAD	RSK	20-01-2023
DESIGN BY	MAHRUKH		
CHECKED BY	WAZI IQBAL	SCALE: N.T.S	SHEET: 06/08 (A3)
APPROVED BY	WASIF		

SHEET TITLE:- STEP - 05 CROSS SECTION

Drawing No. 2210-01-01-02-03-R206 | REVISION T0

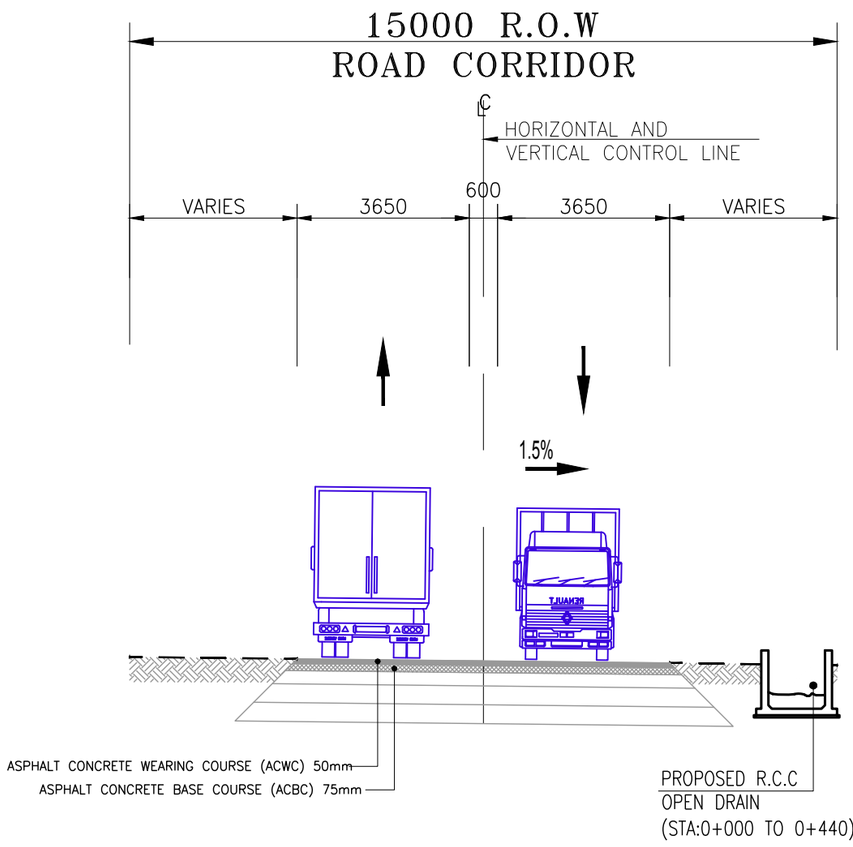
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User and Plot Date:- Arshad - Thu, 09 Feb 2023 - 12:04pm

METHODOLOGY

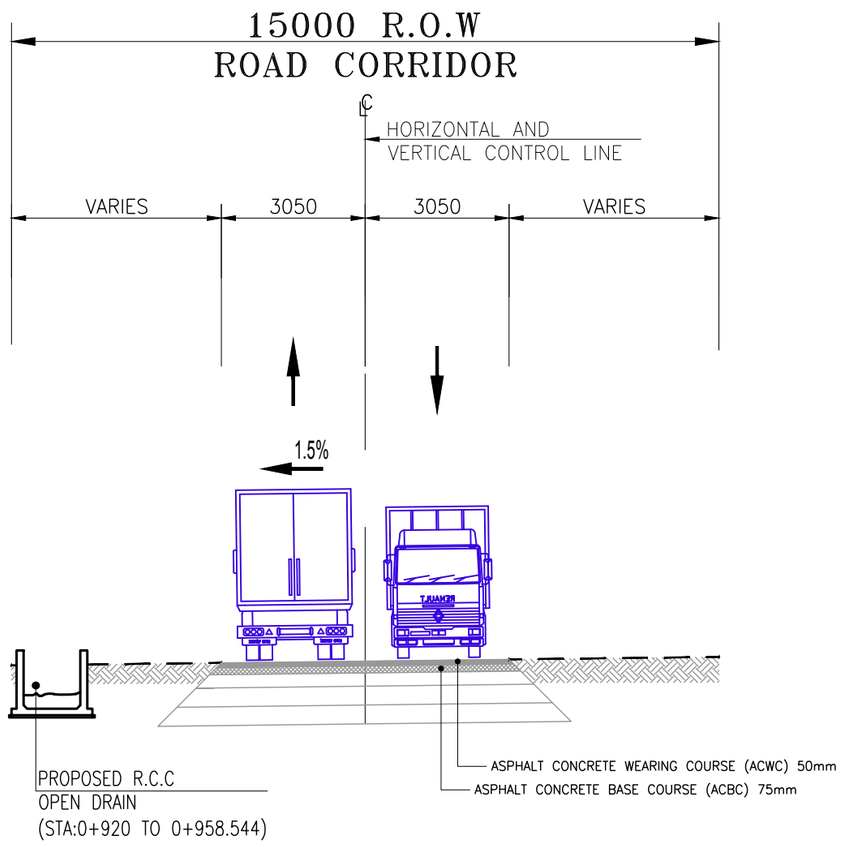
STEP-06

1. LAY 50mm ASPHALT WEARING COURSE.

2. THE CONTRACTOR SHALL TAKE THE WRITTEN APPROVAL FROM SUPERVISORY CONSULTANT OF SATISFACTORY COMPLETION OF STEP-06 , PRIOR TO PROCEED STEP-07.



PROPOSED CROSS SECTION
(STA:0+000 TO 0+536.129)



PROPOSED CROSS SECTION
(STA:0+000 TO 0+536.129)

NOTES:–

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REV.	DESCRIPTION	DATE	APPROVED
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CLIENT:- SINDH INDUSTRIAL TRADING ESTATES LIMITED

PROJECT:- REHABILITATION / CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

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PROJECT MANAGERS, PLANNERS, ARCHITECTS & CONSULTING ENGINEERS
D-11/A, BLOCK NO-17, GULSHAN-E-IQBAL, KARACHI. P.H. 34820497 - 34982561

DRAWN BY	ARSHAD	PROJECT NO: RSK	DATE:- 20-01-2023
DESIGN BY	MAHRUKH		
CHECKED BY	WAZI IQBAL	SCALE: N.T.S	SHEET: 07/08 (A3)
APPROVED BY	WASIF		

SHEET TITLE:- STEP - 06 CROSS SECTION

Drawing No. 2210-01-01-02-03-R207 | REVISION T0

Drawing file path & name D:\Projects\01_Rehabilition Construction Of Roads In Site Industrial Estate Karachi\00_Submital\Tender\Working\02_Road\Road - 49\06_Typical Sections\2210-01-01-02-03-R201 T0 20810.dwg
User and Plot Date:- Arshad - Thu, 09 Feb 2023 - 12:04pm

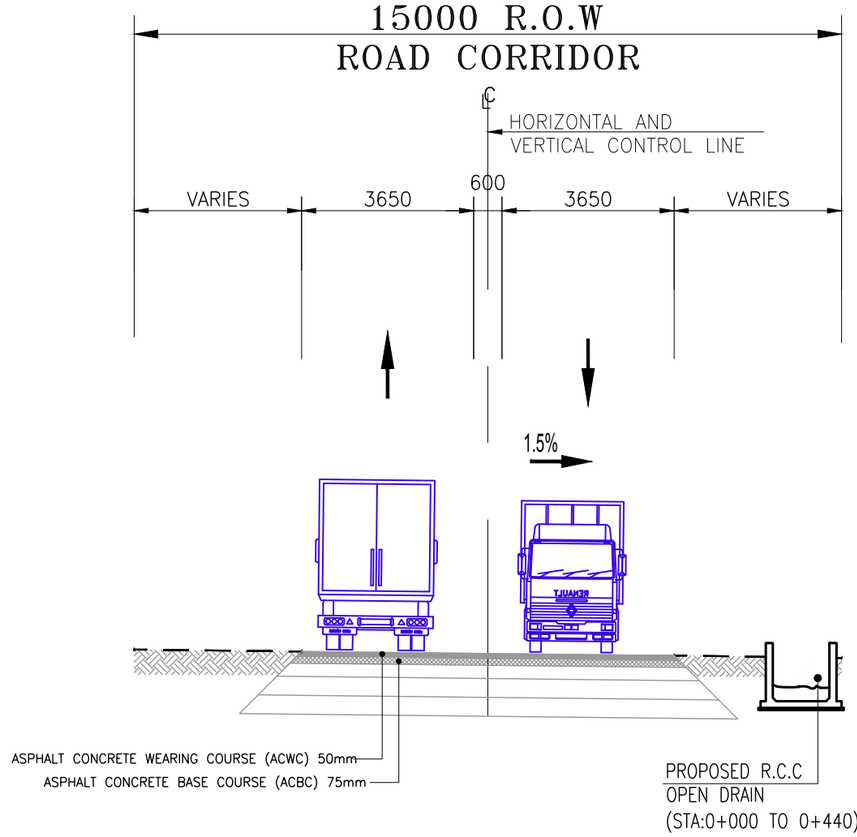
METHODOLOGY

STEP-07

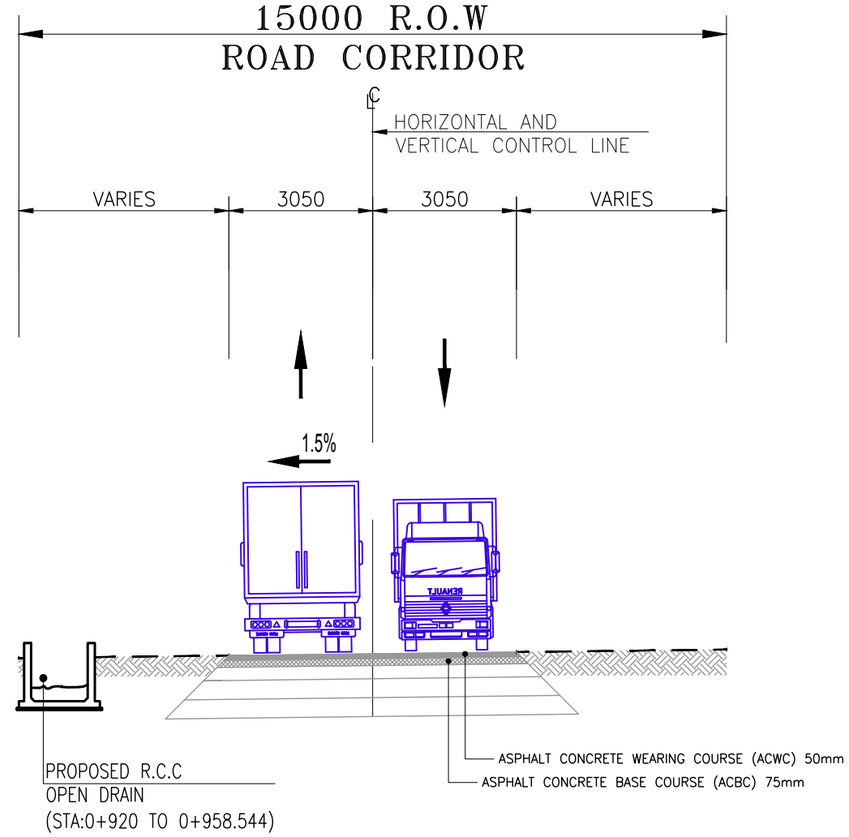
1. PROVIDE ANY CUT & FILL ALONG THE ROAD SIDES FOR LEVELING.

2. PROPER COMPACTION AND DRESSING MUST BE ENSURED BEFORE INSTALLATION OF CATEYES AND PAVEMENT MARKING.

3. THE CONTRACTOR SHALL TAKE THE WRITTEN APPROVAL FROM SUPERVISORY CONSULTANT ON SATISFACTORY COMPLETION OF STEP-07, BEFORE DECLARING THE COMPLETION OF WORK.



PROPOSED CROSS SECTION
(STA:0+000 TO 0+536.129)



PROPOSED CROSS SECTION
(STA:0+000 TO 0+536.129)

NOTES:–

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REV.	DESCRIPTION	DATE	APPROVED
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PROJECT:-
REHABILITATION / CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

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D-11/A, BLOCK NO-17, GULSHAN-E-IQBAL, KARACHI. P.H. 34820497 - 34982561

		PROJECT NO:	DATE:-
DRAWN BY	ARSHAD	RSK	20-01-2023
DESIGN BY	MAHRUKH		
CHECKED BY	WAZI IQBAL	SCALE: N.T.S	SHEET: 08/08 (A3)
APPROVED BY	WASIF		

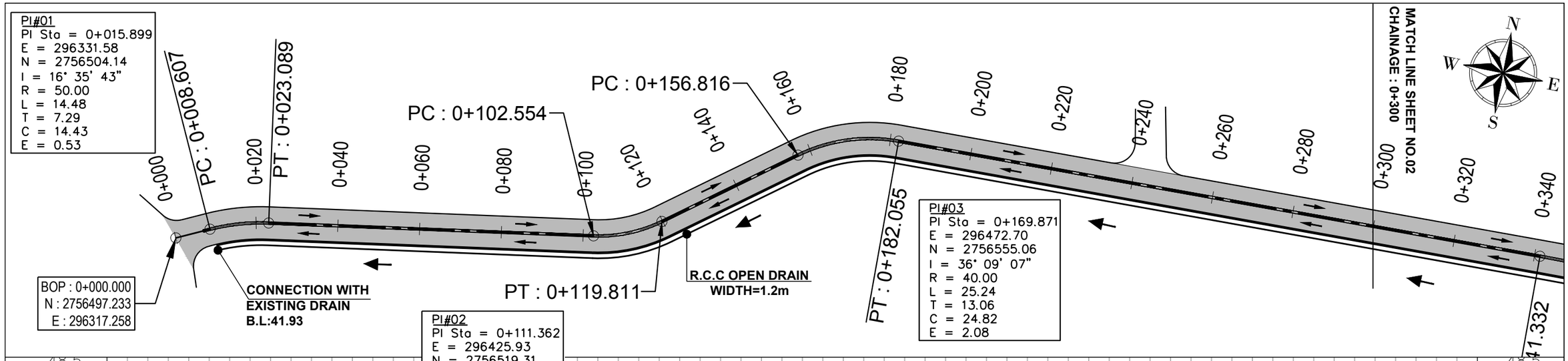
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STEP - 07
CROSS SECTION

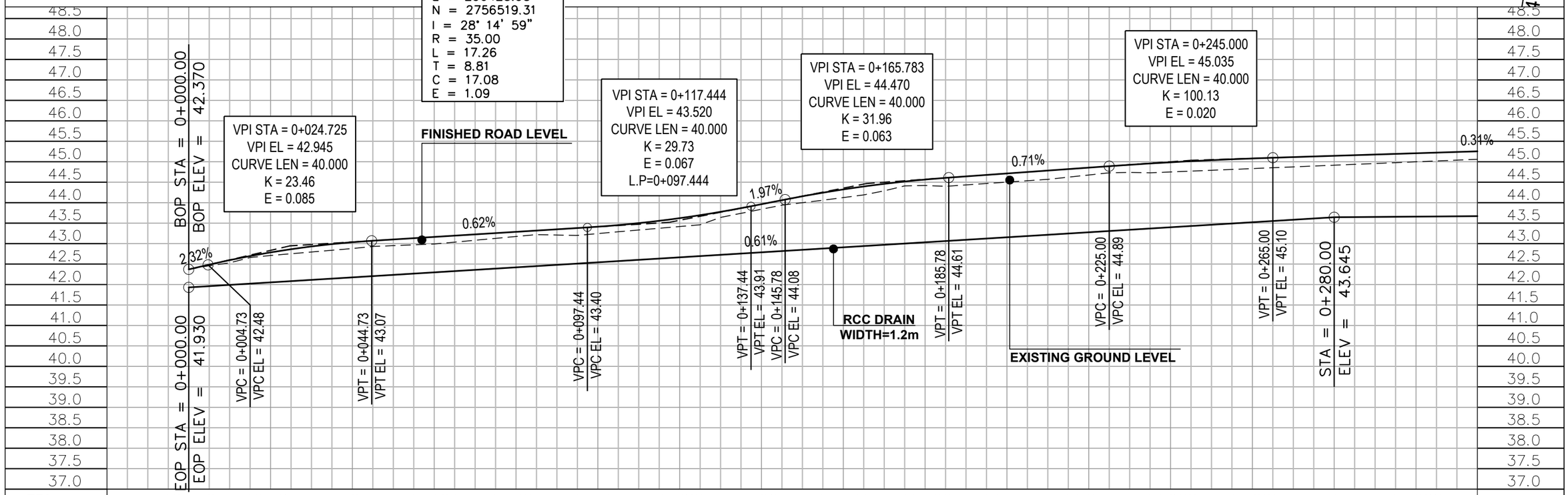
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REVISION T0

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User and Plot Date: Arshad - Thu, 09 Feb 2023 - 12:04pm

ROAD, STORM WATER & SEWER DRAIN

PLAN & PROFILE





FRL	42.370	42.785	43.035	43.164	43.287	43.413	43.621	43.963	44.324	44.566	44.714	44.857	44.988	45.081	45.145	45.208
EGL	42.370	42.710	42.880	42.990	43.174	43.245	43.418	43.840	44.125	44.420	44.502	44.677	44.751	44.833	44.916	44.999
B.L	41.930	42.052	42.175	42.297	42.420	42.542	42.665	42.787	42.910	43.032	43.155	43.277	43.400	43.522	43.645	43.660
STATION	0+000	0+020	0+040	0+060	0+080	0+100	0+120	0+140	0+160	0+180	0+200	0+220	0+240	0+260	0+280	0+300

NOTES:–

1. ALL DIMENSIONS ARE IN METERS/MILIMETERS UNLESS OTHERWISE STATED.

LEGEND

- PROPOSED CENTER LINE
- PROPOSED KERB
- PROPOSED LANE MARKING
- R.C.C DRAIN
- DRAIN CROSSING CLOSED (DCC)
- FLOW DIRECTION

REV.	DESCRIPTION	DATE	APPROVED
T0	TENDER ISSUE	20-01-2023	WASIF

CLIENT:-
SINDH INDUSTRIAL TRADING ESTATES LIMITED

PROJECT:-
REHABILITATION / CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

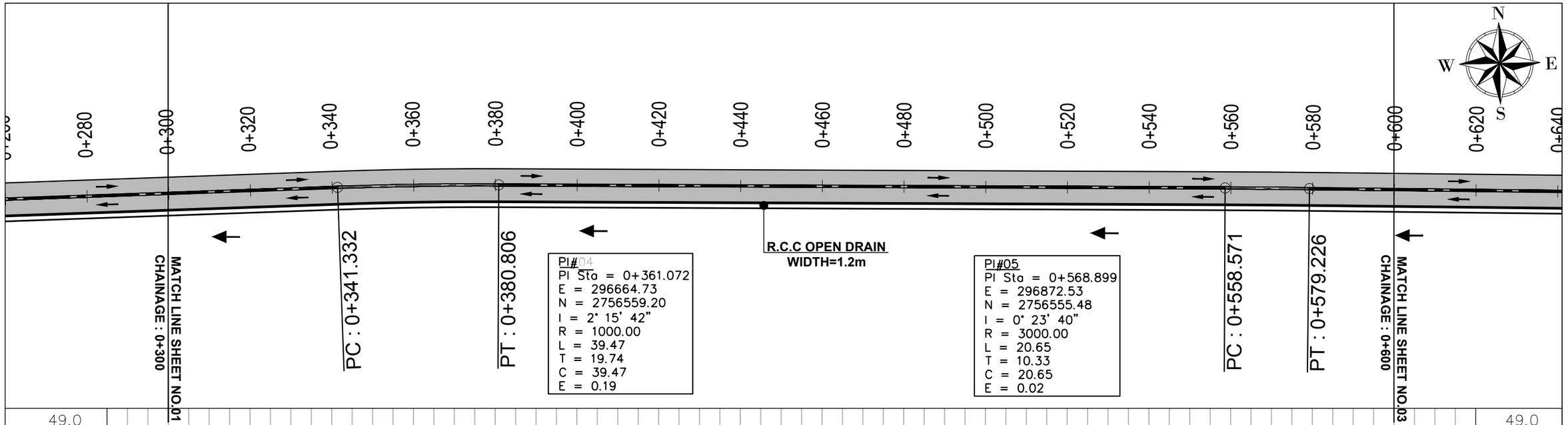
CONSULTANT:-
ATIF NAZAR (PVT.) LTD.
PROJECT MANAGERS, PLANNERS, ARCHITECTS & CONSULTING ENGINEERS
D-11/A, BLOCK NO-17, GULSHAN-E-IQBAL, KARACHI. P.H. 34820497 - 34982561

DRAWN BY	ARSHAD	PROJECT NO: RSK	DATE:- 20-01-2023
DESIGN BY	MAHRUKH		
CHECKED BY	WAZI IQBAL	SCALE: HOR=1:1000 VER=1:10	SHEET: 01/04 (A3)
APPROVED BY	WASIF		

SHEET TITLE:-
ROAD - 49
PLAN & PROFILE (ROAD & DRAIN)
(SAT=0+000 TO 0+300)

Drawing No. 2210-01-01-02-03-R301 | REVISION T0

Drawing file path & name: D:\Projects\01_Rehabilition Construction Of Roads in Site Industrial Estate Karachi\00_Submital\Tender\Working\02_Road\Road - 49\07_Plan&Profile\2210-01-01-02-03-R301 TO 304.dwg
User and Plot Date: Arshad - Fri, 03 Feb 2023 - 11:49am



FRL	45.208	45.271	45.334	45.396	45.449	45.468	45.462	45.455	45.459	45.495	45.549	45.604	45.658	45.681	45.637	45.556
EGL	44.999	45.081	45.164	45.247	45.329	45.340	45.335	45.336	45.331	45.370	45.430	45.450	45.440	45.413	45.423	45.349
B.L	43.660	43.675	43.690	43.705	43.720	43.735	43.750	43.764	43.779	43.794	43.809	43.824	43.839	43.854	43.869	43.884
STATION	0+300	0+320	0+340	0+360	0+380	0+400	0+420	0+440	0+460	0+480	0+500	0+520	0+540	0+560	0+580	0+600

NOTES:–

1. ALL DIMENSIONS ARE IN METERS/MILIMETERS UNLESS OTHERWISE STATED.

LEGEND

- PROPOSED CENTER LINE
- PROPOSED KERB
- PROPOSED LANE MARKING
- R.C.C DRAIN
- DRAIN CROSSING CLOSED (DCC)
- FLOW DIRECTION

REV.	DESCRIPTION	DATE	APPROVED
T0	TENDER ISSUE	20-01-2023	WASIF

CLIENT:-
SINDH INDUSTRIAL TRADING ESTATES LIMITED

PROJECT:-
REHABILITATION / CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

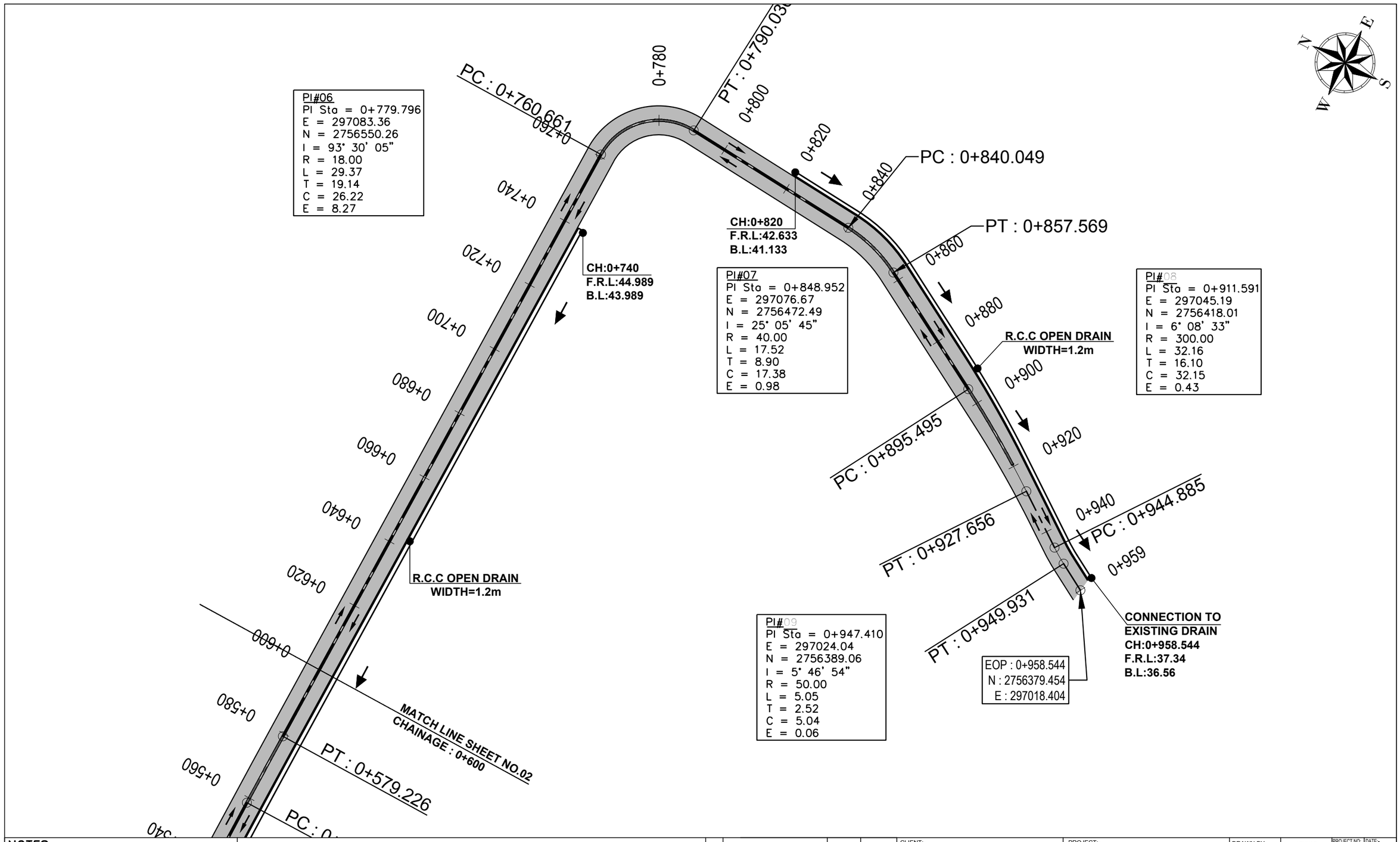
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DESIGN BY	MAHRUKH	RSK	20-01-2023
CHECKED BY	WAZI IQBAL	SCALE: HOR=1:1000 VER=1:10	SHEET: 02/04 (A3)
APPROVED BY	WASIF		

CONSULTANT:-
ATIF NAZAR (PVT.) LTD.
PROJECT MANAGERS, PLANNERS, ARCHITECTS & CONSULTING ENGINEERS
D-11/A, BLOCK NO-17, GULSHAN-E-IQBAL, KARACHI. P.H. 34820497 - 34982561

SHEET TITLE:-
ROAD - 49
PLAN & PROFILE (ROAD & DRAIN)
(SAT=0+300 TO 0+600)

Drawing No. 2210-01-01-02-03-R302 | REVISION T0

Drawing file path & name: D:\Projects\01_Rehabilition Construction Of Roads in Site Industrial Estate Karachi\00_Submital\Tender\Working\02_Road\Road - 49\07_Plan&Profile\2210-01-01-02-03-R301 TO 304.dwg
User and Plot Date: Arshad – Fri, 03 Feb 2023 – 11:49am



NOTES:–

1. ALL DIMENSIONS ARE IN METERS/MILIMETERS UNLESS OTHERWISE STATED.

LEGEND

- PROPOSED CENTER LINE
- PROPOSED KERB
- PROPOSED LANE MARKING
- R.C.C DRAIN
- DRAIN CROSSING CLOSED (DCC)
- FLOW DIRECTION

REV.	DESCRIPTION	DATE	APPROVED
T0	TENDER ISSUE	20-01-2023	WASIF

CLIENT:- SINDH INDUSTRIAL TRADING ESTATES LIMITED

PROJECT:- REHABILITATION / CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

CONSULTANT:- ATIF NAZAR (PVT.) LTD.
PROJECT MANAGERS, PLANNERS, ARCHITECTS & CONSULTING ENGINEERS
D-11/A, BLOCK NO-17, GULSHAN-E-IQBAL, KARACHI. P.H. 34820497 - 34982561

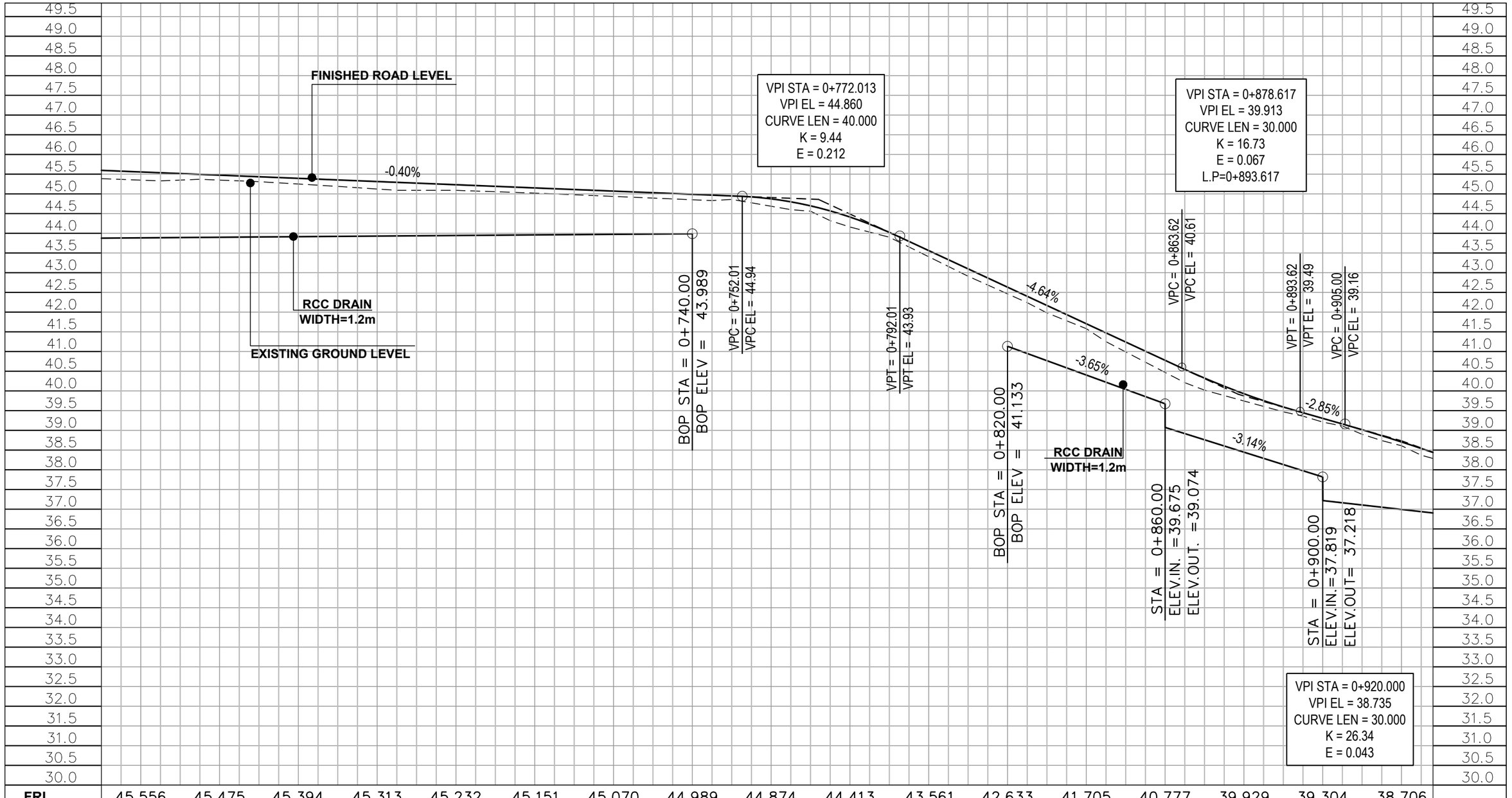
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DESIGN BY	MAHRUKH		
CHECKED BY	WAZI IQBAL	SCALE: HOR=1:1000 VER=1:10	SHEET: 03/04 (A3)
APPROVED BY	WASIF		

SHEET TITLE:-
ROAD - 49
PLAN (ROAD & DRAIN)
(SAT=0+600 TO 0+920)

Drawing No. 2210-01-01-02-03-R303A

REVISION T0

Drawing file path & name: D:\Projects\01_Rehabition Construction Of Roads In Site Industrial Estate Karachi\00_Submittal\Tender\Working\02_Road\Road – 49\07_Plan&Profile\2210-01-01-02-03-R301 TO 304.dwg
User and Plot Date:- Arshad – Fri, 03 Feb 2023 – 11:50am



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EGL	45.349	45.350	45.250	45.123	45.090	45.020	44.936	44.851	44.687	44.160	43.405	42.463	41.580	40.470	39.745	39.210	38.610
B.L	43.884	43.899	43.914	43.929	43.944	43.959	43.974	43.989									
B.L												41.133	40.404	39.675	38.447	37.819	36.993
STATION	0+600	0+620	0+640	0+660	0+680	0+700	0+720	0+740	0+760	0+780	0+800	0+820	0+840	0+860	0+880	0+900	0+920

NOTES:–

1. ALL DIMENSIONS ARE IN METERS/MILIMETERS UNLESS OTHERWISE STATED.

LEGEND

- PROPOSED CENTER LINE
- PROPOSED KERB
- PROPOSED LANE MARKING
- R.C.C DRAIN
- DRAIN CROSSING CLOSED (DCC)
- FLOW DIRECTION

REV.	DESCRIPTION	DATE	APPROVED
T0	TENDER ISSUE	20-01-2023	WASIF

CLIENT:-
SINDH INDUSTRIAL TRADING ESTATES LIMITED

PROJECT:-
REHABILITATION / CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

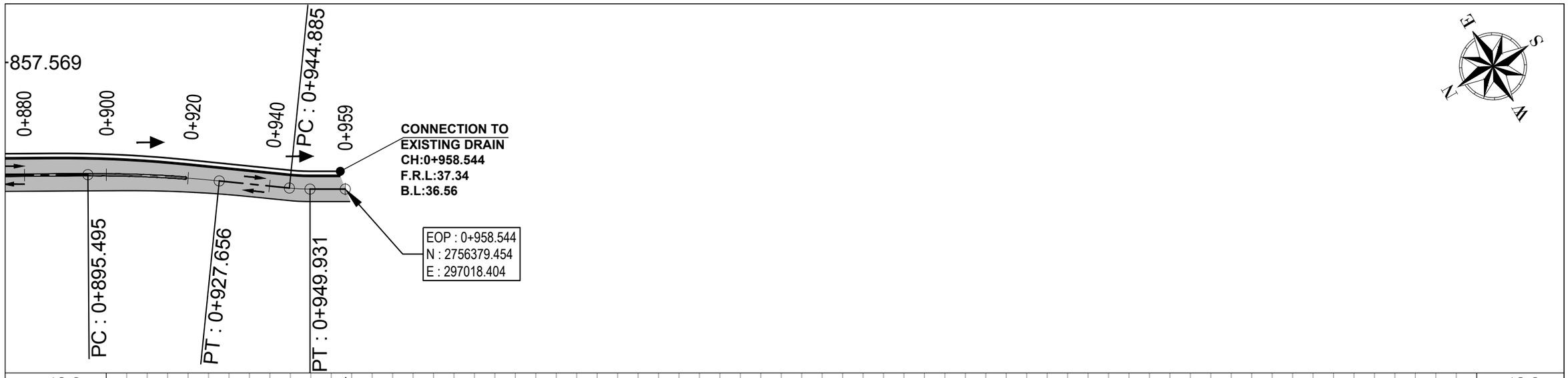
CONSULTANT:-
ATIF NAZAR (PVT.) LTD.
PROJECT MANAGERS, PLANNERS, ARCHITECTS & CONSULTING ENGINEERS
D-11/A, BLOCK NO-17, GULSHAN-E-IQBAL, KARACHI. P.H. 34820497 - 34982561

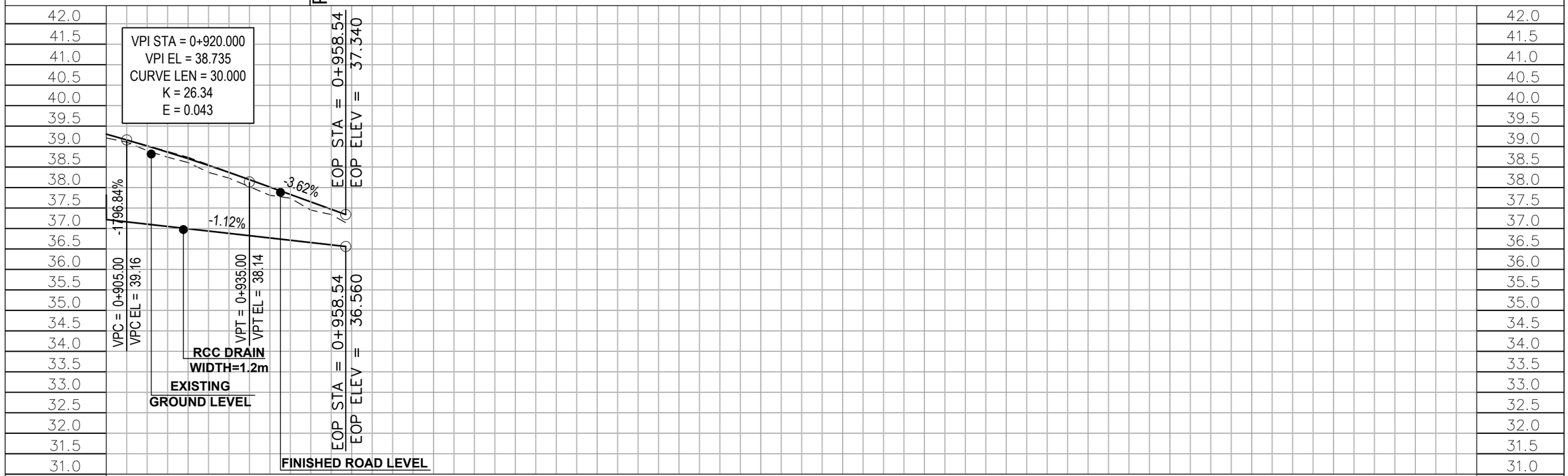
DRAWN BY	ARSHAD
DESIGN BY	MAHRUKH
CHECKED BY	WAZI IQBAL
APPROVED BY	WASIF
PROJECT NO:	RSK
DATE:-	20-01-2023
SCALE:	HOR=1:1000 VER=1:10
SHEET:	03/04 (A3)

SHEET TITLE:-
ROAD - 49
PROFILE (ROAD & DRAIN)
(SAT=0+600 TO 0+920)

Drawing No. 2210-01-01-02-03-R303B
REVISION T0

Drawing file path & name: D:\Projects\01_Rehabilition Construction Of Roads In Site Industrial Estate Karachi\00_Submital\Tender\Working\02_Road\Road - 49\07_Plan&Profile\2210-01-01-02-03-R301 TO 304.dwg
User and Plot Date: Arshad - Fri, 03 Feb 2023 - 11:50am





FRL	38.706	38.011
EGL	38.610	37.810
B.L	36.993	36.768
STATION	0+920	0+940 0+960 0+980 1+000 1+020 1+040 1+060 1+080 1+100 1+120 1+140 1+160 1+180 1+200 1+220

NOTES:–

1. ALL DIMENSIONS ARE IN METERS/MILIMETERS UNLESS OTHERWISE STATED.

LEGEND

- PROPOSED CENTER LINE
- PROPOSED KERB
- PROPOSED LANE MARKING
- R.C.C DRAIN
- DRAIN CROSSING CLOSED (DCC)
- FLOW DIRECTION

REV.	DESCRIPTION	DATE	APPROVED
T0	TENDER ISSUE	20-01-2023	WASIF

CLIENT:-
SINDH INDUSTRIAL TRADING ESTATES LIMITED

PROJECT:-
REHABILITATION / CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

CONSULTANT:-
ATIF NAZAR (PVT.) LTD.
PROJECT MANAGERS, PLANNERS, ARCHITECTS & CONSULTING ENGINEERS
D-11/A, BLOCK NO-17, GULSHAN-E-IQBAL, KARACHI. P.H. 34820497 - 34982561

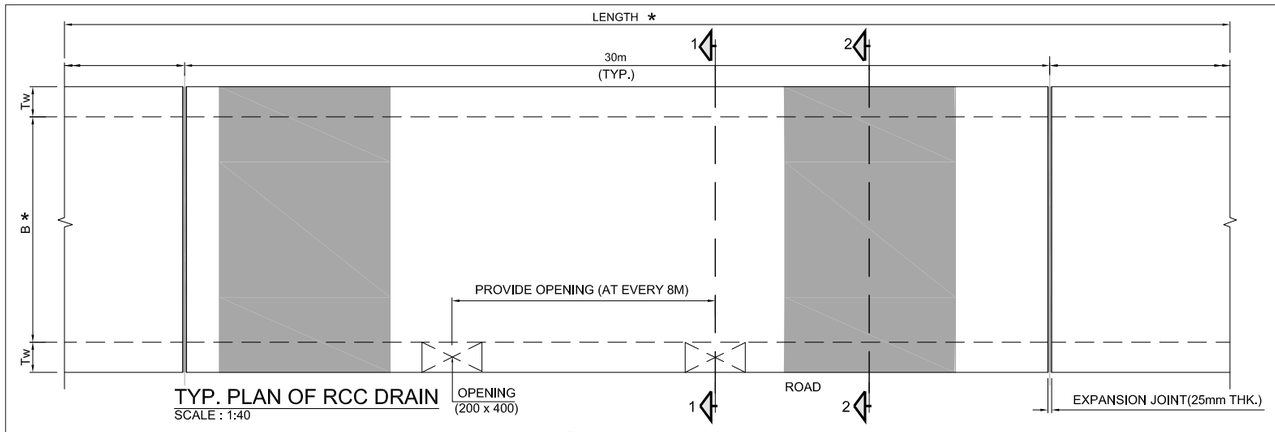
DRAWN BY	ARSHAD	PROJECT NO.	DATE:-
DESIGN BY	MAHRUKH	RSK	20-01-2023
CHECKED BY	WAZI IQBAL	SCALE: HOR=1:1000 VER=1:10	SHEET: 04/04 (A3)
APPROVED BY	WASIF		

SHEET TITLE:-
ROAD - 49
PLAN & PROFILE (ROAD & DRAIN)
(SAT=0+920 TO 0+958.54)

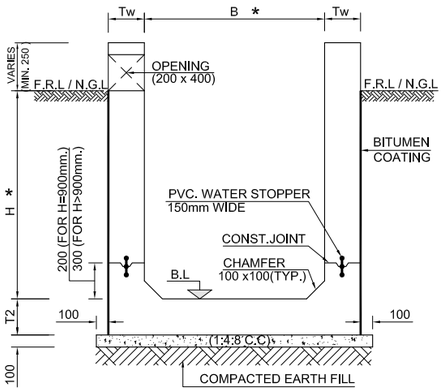
Drawing No. 2210-01-01-02-03-R304
REVISION T0

Drawing file path & name: D:\Projects\01_Rehabilition Construction Of Roads In Site Industrial Estate Karachi\00_Submital\Tender\Working\02_Road\Road - 49\07_Plan&Profile\2210-01-01-02-03-R301 T0 304.dwg
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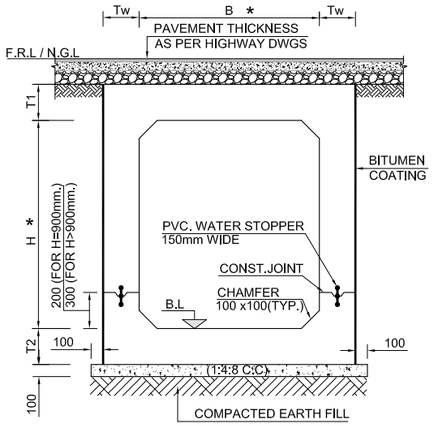
STRUCTURE DRAWINGS



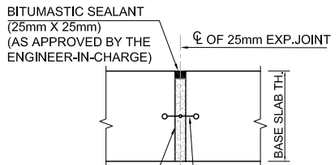
TYP. PLAN OF RCC DRAIN
SCALE : 1:40



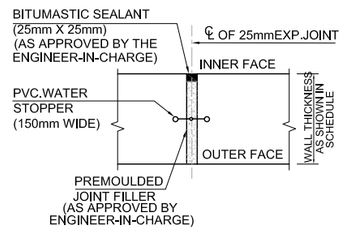
TYP.SECTION 1-1(AT OPEN DRAIN)
(DIMENSIONAL DETAIL)
SCALE : 1:50



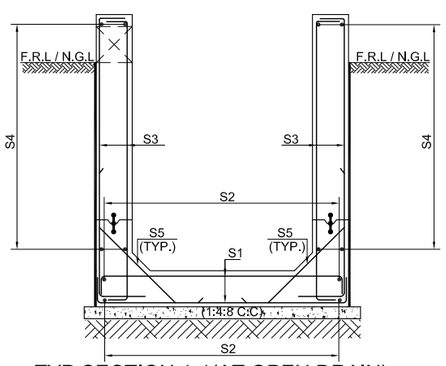
TYP.SECTION 2-2(AT CROSSING / GATE
(DIMENSIONAL DETAIL)
SCALE : 1:50



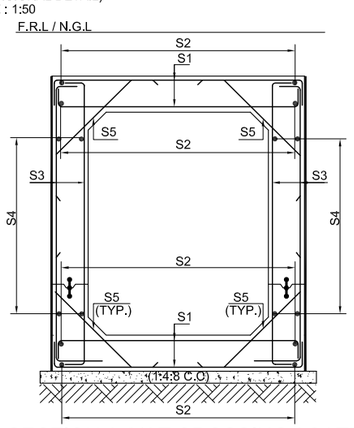
TYP.DETAIL OF HORIZONTAL EXPANSION JOINT
SCALE : 1:20



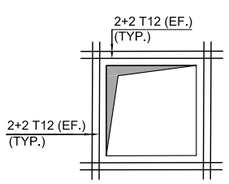
TYP.DETAIL OF VERTICAL EXPANSION JOINT
SCALE : 1:20



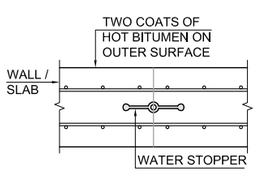
TYP.SECTION 1-1(AT OPEN DRAIN)
(REINFORCEMENT DETAIL)
SCALE : 1:50



TYP.SECTION 2-2(AT CROSSING / GATE
(REINFORCEMENT DETAIL)
SCALE : 1:50



TYP.OPENING DETAIL
SCALE : 1:20



CONSTRUCTION JOINT DETAIL
SCALE : 1:20

SCHEDULE OPEN DRAIN

DIMENSIONAL DETAILS				REINFORCEMENT DETAILS									
WIDTH	HEIGHT	BASE THICK.	WALL THICK.	S1		S2		S3		S4		S5	
B *	H *	T2	Tw	DIA	SPACING	DIA	SPACING	DIA	SPACING	DIA	SPACING	DIA	SPACING
≤1500	≤1500	200	200	T12	150	T12	200	T12	150	T12	200	T10	150
	2000	250	250	T16	150	T12	200	T16	150	T12	200	T10	150
	2500	300	300	T16	150	T12	200	T16	150	T12	200	T10	150
	3000	350	350	T16	150	T12	150	T16	150	T12	150	T10	150
	3500	400	400	T20	150	T12	150	T20	150	T12	150	T10	150
>1500	≤1500	200	200	T12	150	T12	200	T12	150	T12	200	T10	150
	2000	250	250	T16	150	T12	200	T16	150	T12	200	T10	150
	2500	300	300	T16	150	T12	200	T16	150	T12	200	T10	150
	3000	350	350	T16	150	T12	150	T16	150	T12	150	T10	150
	3500	400	400	T20	150	T12	150	T20	150	T12	150	T10	150
*	FOR DRAIN LENGTH WIDTH & INVERT LEVEL / BED LEVEL REFER HIGHWAY PLAN & PROFILE DWGS.												

SCHEDULE OF DRAIN AT CROSSING

DIMENSIONAL DETAILS					REINFORCEMENT DETAILS									
WIDTH	HEIGHT	TOP THICK.	BASE THICK.	WALL THICK.	S1		S2		S3		S4		S5	
B *	H *	T1	T2	Tw	DIA	SPACING	DIA	SPACING	DIA	SPACING	DIA	SPACING	DIA	SPACING
≤1500	≤1500	200	200	200	T16	150	T12	200	T16	150	T12	200	T10	150
	2000	250	250	250	T16	150	T12	200	T12	150	T12	200	T10	150
	2500	300	300	300	T16	150	T12	200	T12	150	T12	200	T10	150
	3000	350	350	350	T16	150	T12	150	T16	150	T12	150	T10	150
	3500	400	400	400	T20	150	T12	150	T20	150	T12	150	T10	150
>1500	≤1500	225	225	225	T16	150	T12	200	T16	150	T12	200	T10	150
	2000	250	250	250	T16	150	T12	200	T12	150	T12	200	T10	150
	2500	300	300	300	T16	150	T12	200	T12	150	T12	200	T10	150
	3000	350	350	350	T16	150	T12	150	T16	150	T12	150	T10	150
	3500	400	400	400	T20	150	T12	150	T20	150	T12	150	T10	150
*	FOR DRAIN LENGTH WIDTH & INVERT LEVEL / BED LEVEL REFER HIGHWAY PLAN & PROFILE DWGS.													

NOTES:

1- ALL DIMENSIONS ARE IN MILLIMETERS ELSE OTHERWISE NOTED.

2- THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH ROAD PLAN, PROFILE SECTION & STORM WATER DRAINAGE DRAWINGS.

3- SULPHATE RESISTANT CEMENT (SRC) TO BE USED IN ALL CONCRETE WORKS.

4- MINIMUM CLEAR COVER TO REINFORCEMENT SHALL BE:-
1) TOP SLAB = 25mm
2) WALLS = 50mm
3) BOTTOM SLAB = 50mm

5- ALL WORKS SHALL BE CARRIED OUT IN DRY CONDITIONS.

6- MATERIAL PROPERTIES:-
A. COMPRESSIVE CYLINDER STRENGTH OF THE CONCRETE SHALL BE 3000 PSI @ 28 DAYS.
B. ALL REINFORCING BAR SHALL BE HOT ROLLED HIGH TENSILE DEFORMED BAR HAVING MINIMUM CHARACTERISTIC YIELD STRENGTH Fy=60,000 Psi.

7- THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS AND BAR BENDING SCHEDULES, 21 DAYS IN ADVANCE FOR APPROVAL, TO THE ENGINEER BEFORE PROCEEDING WITH THE WORK.

8- THE CONTRACTOR SHALL COORDINATE WITH ALL ROAD AND VARIOUS SERVICES DRAWINGS FOR SIZE AND LOCATION OF ALL STRUCTURAL MEMBERS, OPENING & ETC.

9- BACKFILLING SHALL BE DONE IN LAYERS NOT EXCEEDING 6 INCH. IN THICKNESS AND COMPACTED UPTO 95% MODIFIED AASHTO DRY DENSITY.

10- EXPANSION JOINT SHALL BE PROVIDED MAXIMUM AT 30 M. INTERVALS.

11- ALL CONCRETE SURFACES IN CONTACT WITH EARTH SHALL BE TREATED WITH TWO COATS OF HOT BITUMEN EMULSION OF GRADE 60/70.

12- P.V.C WATER STOPPER 150mm WIDE OF APPROVED QUALITY SHALL BE USED AT LOCATION SHOWN & FOR DRAIN DEPTH > 900mm, ELSE OTHER WISE SHALL NOT BE PAYABLE.

LEGENDS

1. C.J = CONSTRUCTION JOINT.
2. B.L = BED LEVEL
3. F.R.L = FINISHED ROAD LEVEL.
4. N.G.L = NATURAL GROUND LEVEL.

REV.	DESCRIPTION	DATE	APPROVED
T0	TENDER ISSUE	20-01-2023	WASIF

CLIENT:-
SINDH INDUSTRIAL TRADING ESTATES LIMITED

PROJECT:-
REHABILITATION / CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

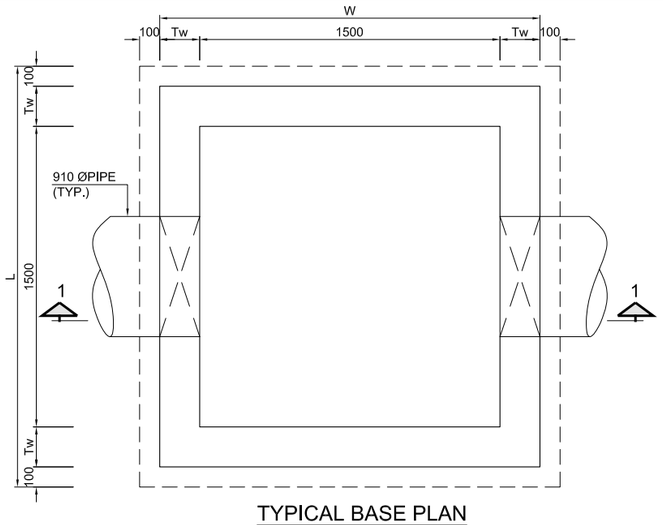
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DESIGN BY	SALMAN		
CHECKED BY	KAMRAN ALAM	SCALE: N.T.S	SHEET: 01/01 (A3)
APPROVED BY	WASIF		

CONSULTANT:-
ATIF NAZAR (PVT.) LTD.
PROJECT MANAGERS, PLANNERS, ARCHITECTS & CONSULTING ENGINEERS
D-11/A, BLOCK NO-17, GULSHAN-E-IQBAL, KARACHI. P.H. 34820497 - 34982561

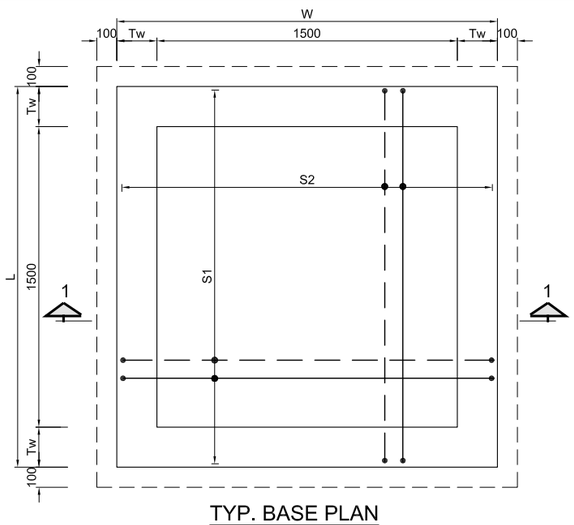
SHEET TITLE:-
TYP. PLAN & SECTION OF RCC OPEN DRAIN, CROSSING DRAIN & SCHEDULE

Drawing No. 2210-STR-DR-001
REVISION T0

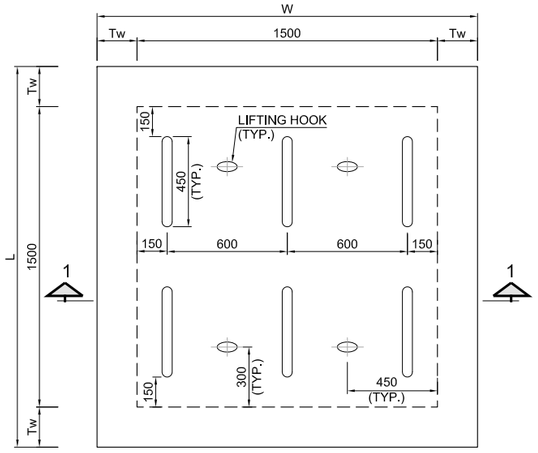
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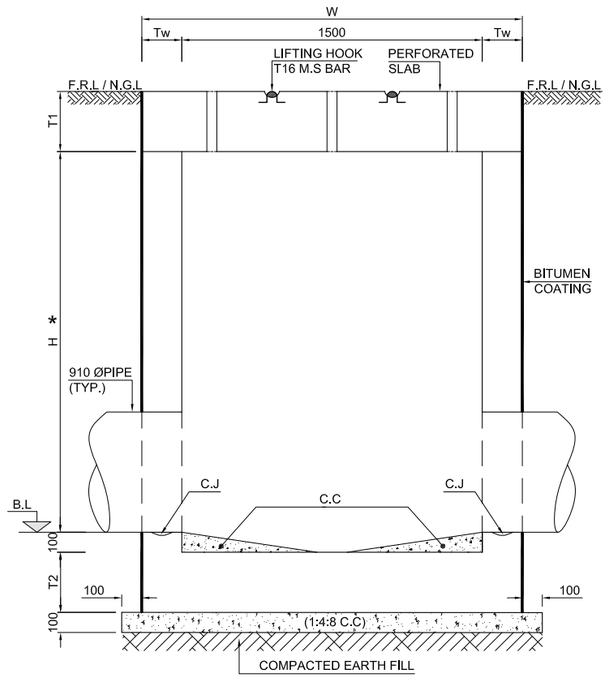
TYPICAL BASE PLAN
(DIMENSIONAL DETAIL)
SCALE : 1:30



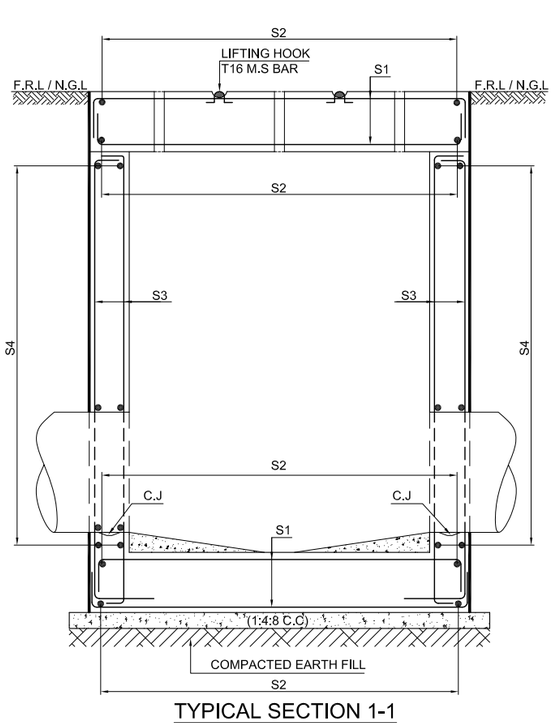
TYP. BASE PLAN
(REINFORCEMENT DETAIL)
SCALE : 1:30



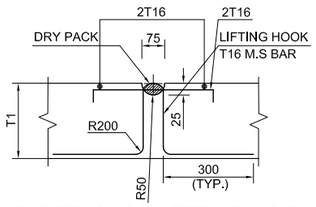
TYPICAL PLAN OF PERFORATED SLAB
(DIMENSIONAL DETAIL)
SCALE : 1:30



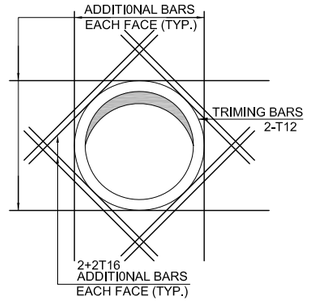
TYPICAL SECTION 1-1
(REINFORCEMENT DETAIL)
SCALE : 1:30



TYPICAL SECTION 1-1
(REINFORCEMENT DETAIL)
SCALE : 1:30



TYP.DETAIL OF LIFTING HOOK
(DIMENSIONAL DETAIL)
SCALE : 1:20



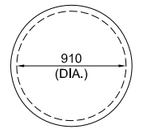
TYP. OPENING DETAIL
SCALE : 1:50

NOTES:

1. ALL DRAWINGS SHOULD BE READ IN CONJUNCTION WITH RELEVANT ROAD, SEWERAGE / WATER SUPPLY NETWORK DRAWINGS.
2. UNLESS OTHERWISE NOTED ON THE DRAWINGS, ALL DIMENSIONS ARE IN mm.
3. S.R CEMENT SHALL BE USE FOR ALL CONCRETE WORKS.
4. ALL WORKS SHALL BE CARRIED OUT IN DRY CONDITIONS.
5. MATERIAL PROPERTIES:-
   A. COMPRESSIVE CYLINDER STRENGTH OF THE CONCRETE SHALL BE 3000 PSI @ 28 DAYS.
   B. ALL REINFORCING BAR SHALL BE HOT ROLLED HIGH TENSILE DEFORMED BAR ASTM-A615 GRADE 60 HAVING MINIMUM CHARACTERISTIC YIELD STRENGTH Fy=60,000 Psi.
6. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS AND BAR BENDING SCHEDULES, 21 DAYS IN ADVANCE FOR APPROVAL, TO THE ENGINEER BEFORE PROCEEDING WITH THE WORK.
7. FOR LEAN CONCRETE USING THE MINIMUM COMPRESSIVE CYLINDER STRENGTH SHALL BE 1200 PSI AT 28 DAYS.
8. ALL FOUNDATIONS SHALL BE PLACED ON COMPETENT BEARING STRATA. IF ACCEPTABLE BEARING STRATA IS NOT FOUND AT INDICATED DEPTHS OF FOUNDATION, THE ENGINEER-IN-CHARGE SHALL BE NOTIFIED IN WRITING FOR INSTRUCTIONS.
9. WHERE CHAMBER ARE LOCATED IN ROAD EMBANKMENTS, THE EMBANKMENTS SHALL FIRST BE CONSTRUCTED IN ACCORDANCE WITH THE SPECIFICATION.THE COMPACTED EMBANKMENTS SHALL THEN BE EXCAVATED IN TRENCHES IN ACCORDANCE WITH THE SPECIFICATION FOR THE CHAMBERS.
10. BACKFILLING AND COMPACTION SHALL BE CARRIED OUT IN LAYERS NOT EXCEEDING 300mm AND THE DIFFERENCES IN LEVELS OF BACKFILL ON EITHER SIDE OF THE CHAMBERS SHALL AT NO TIME EXCEED 300mm.
11. NO CONCRETING SHALL BE CARRIED WITHOUT THE WRITTEN PERMISSION OF THE ENGINEER-IN-CHARGE.
12. THE MINIMUM CONCRETE COVER TO REINFORCEMENT SHALL BE AS UNDER UNLESS SPECIFIED OTHERWISE.
    - TOP SLAB
      - TOP.....25m
      - BOTTOM.....50mm
    - BASE SLAB
      - TOP,BOTTOM & SIDE.....50mm
    - WALLS
      - EARTH SIDE.....50mm
      - OTHER SIDE..... 50mm
13. ALL THE EXPOSED SURFACES SHOULD BE ABSOLUTE FAIR FINISH & NO TOLERANCE IN SHAPE, JOINT, EDGES, LINE & LEVEL SHALL BE ACCEPTED.
14. ALL CONCRETE SURFACES IN CONTACT WITH EARTH SHALL BE TREATED WITH TWO COATS OF HOT BITUMEN EMULSION OF GRADE 60/70.
15. RCC CHAMBER SHALL BE PROVIDED AT EVERY 30M(Max.)

SCHEDULE OF RCC CHAMBER

DIMENSIONAL DETAILS						REINFORCEMENT DETAILS							
SIZE OF CHAMBER		HEIGHT	TOP THICK.	BASE THICK.	WALL THICK.	S1		S2		S3		S4	
W	L	H *	T1	T2	Tw	DIA	SPACING	DIA	SPACING	DIA	SPACING	DIA	SPACING
1900	1900	≤1500	200	200	200	T16	150	T12	200	T16	150	T12	200
2000	2000	2000	250	250	250	T16	150	T12	200	T12	150	T12	200
2100	2100	2500	300	300	300	T16	150	T12	200	T12	150	T12	200
2200	2200	3000	350	350	350	T16	150	T12	150	T16	150	T12	150
2300	2300	3500	400	400	400	T20	150	T12	150	T20	150	T12	150
2400	2400	4000	450	450	450	T20	150	T12	150	T20	150	T12	150
2500	2500	4500	500	500	500	T20	150	T12	150	T20	150	T12	150
2600	2600	5000	550	550	550	T20	150	T12	150	T20	150	T12	150
2700	2700	5500	600	600	600	T25	150	T16	200	T25	150	T16	200
2800	2800	6000	650	650	650	T25	150	T16	200	T25	150	T16	200
*	FOR DRAIN LENGTH & INVERT LEVEL / BED LEVEL REFER HIGHWAY PLAN & PROFILE DWGS.												



TYP.PIPE DRAIN
SCALE : 1:50

LEGENDS

1. C.J = CONSTRUCTION JOINT.
2. C.C = CEMENT CONCRETE.
3. F.R.L = FINISHED ROAD LEVEL.
4. N.G.L = NATURAL GROUND LEVEL.
5. B.L = BED LEVEL.

REV.	DESCRIPTION	DATE	APPROVED
T0	TENDER ISSUE	20-01-2023	WASIF

CLIENT:-
SINDH INDUSTRIAL TRADING ESTATES LIMITED

PROJECT:-
REHABILITATION / CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

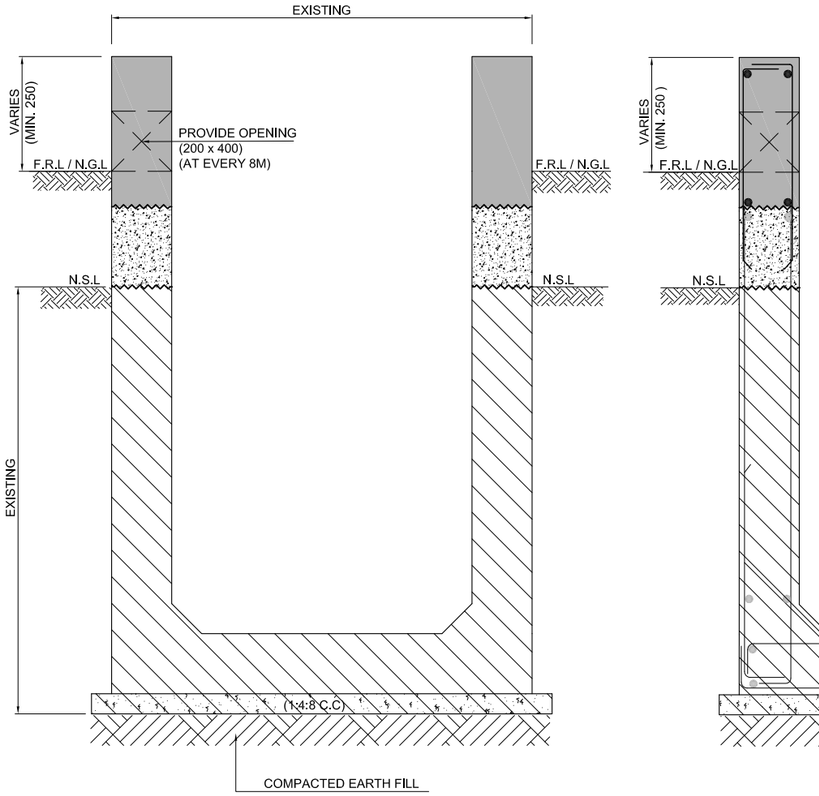
CONSULTANT:-
ATIF NAZAR (PVT.) LTD.
PROJECT MANAGERS, PLANNERS, ARCHITECTS & CONSULTING ENGINEERS
D-11/A, BLOCK NO-17, GULSHAN-E-IQBAL, KARACHI. P.H. 34820497 - 34982561

DRAWN BY	FAHAD	PROJECT NO:	DATE:-
DESIGN BY	SALMAN	RSK	20-01-2023
CHECKED BY	KAMRAN ALAM	SCALE:	SHEET:
APPROVED BY	WASIF	N.T.S	01/01 (A3)

SHEET TITLE:-
TYP. PLAN,SECTIONS & DETAILS OF R.C.C. CHAMBER

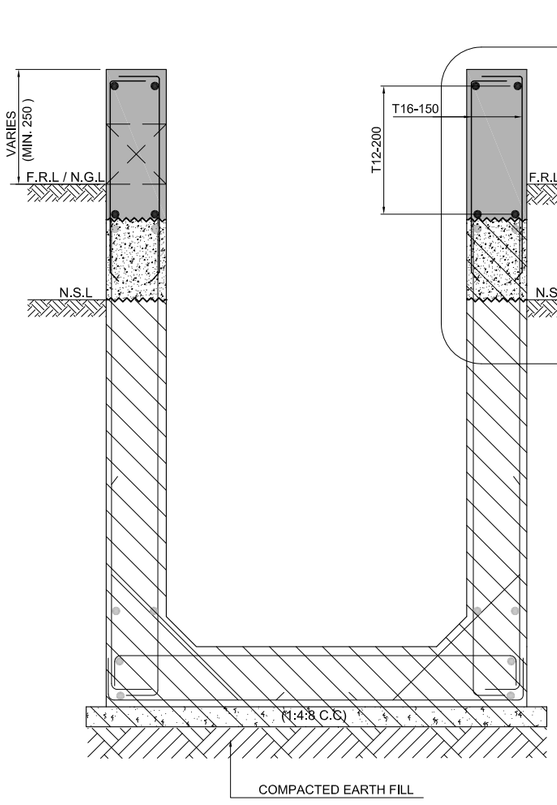
Drawing No. 2210-STR-DR-002
REVISION T0

Drawing file path & name: D:\0-Fahad Ahmed\0-DRAWS\CAD\2210-STR-DR-002.dwg
User and Plot Date: hamza - Tue, 07 Feb 2023 - 8:04pm



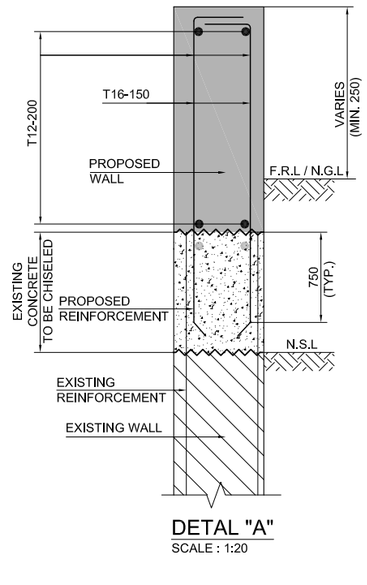
TYP.SECTION AT OPEN DRAIN

(DIMENSIONAL DETAIL)
SCALE : 1:30



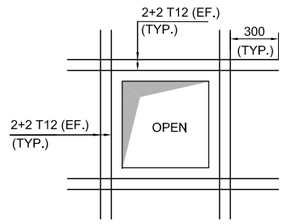
TYP.SECTION AT OPEN DRAIN

(REINFORCEMENT DETAIL)
SCALE : 1:30



DETAL "A"

SCALE : 1:20



TYP.OPENING DETAIL

SCALE : 1:20

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETERS ELSE OTHERWISE NOTED.
2. THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH ROAD PLAN, PROFILE SECTION & STORM WATER DRAINAGE DRAWINGS.
3. SULPHATE RESISTANCE CEMENT (SRC) TO BE USED IN ALL CONCRETE WORKS.
4. MINIMUM CLEAR COVER TO REINFORCEMENT SHALL BE 50mm.
5. ALL WORKS SHALL BE CARRIED OUT IN DRY CONDITIONS.
6. MATERIAL PROPERTIES:-
   A- COMPRESSIVE CYLINDER STRENGTH OF THE CONCRETE SHALL BE 3000 PSI @ 28 DAYS.
   B- ALL REINFORCING BAR SHALL BE HOT ROLLED HIGH TENSILE DEFORMED BAR HAVING MINIMUM CHARACTERISTIC YIELD STRENGTH Fy=60,000 Psi.
7. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS AND BAR BENDING SCHEDULES, 21 DAYS IN ADVANCE FOR APPROVAL, TO THE ENGINEER BEFORE PROCEEDING WITH THE WORK.
8. THE CONTRACTOR SHALL COORDINATE WITH ALL ROAD AND VARIOUS SERVICES DRAWINGS FOR SIZE AND LOCATION OF ALL STRUCTURAL MEMBERS, OPENING & ETC.
9. EACH PORTION OF CONCRETE TO BE REMOVED SHALL BE CLEARLY IDENTIFIED, OUTLINED CATALOGUED.THE ENGINEER SHALL APPROVE THE EXTENTS AND LOCATIONS OF THE CONCRETE TO BE REMOVED PRIOR TO COMMENCEMENT OF WORKS BY THE CONTRACTOR.
10. UTMOST CARE SHALL ALSO BE EXERCISED TO PREVENT ANY DAMAGE TO THE EXISTING REINFORCEMENT WITHIN PORTIONS OF THE CONCRETE TO BE REMOVED. ANY DAMAGE CAUSED TO THE EXISTING REINFORCEMENT SHALL BE RECORDED AND REPORTED TO THE ENGINEER IMMEDIATELY.
11. THE CONTRACTOR SHALL USE SMALL CHISELS AND LIGHT HAMMER BLOWS TO REMOVE DEFECTIVE CONCRETE UP TO LIMITS DEFINED AND/OR UP TO A MINIMUM OF 25mm BEHIND THE SURFACE REINFORCEMENT.
12. UTMOST CARE SHALL ALSO BE EXERCISED TO PREVENT ANY DAMAGE TO THE EXISTING REINFORCEMENT WITHIN PORTIONS OF THE CONCRETE TO BE REMOVED. ANY DAMAGE CAUSED TO THE EXISTING REINFORCEMENT SHALL BE RECORDED AND REPORTED TO THE ENGINEER IMMEDIATELY.
13. THE CONCRETE HAVING BEEN REMOVED TO THE EXTENTS DESIRED/INSTRUCTED BY THE ENGINEER, THE EXPOSED REINFORCEMENT SHALL NOW BE CLEANED OF ALL DEBRIS, RUST ETC STILL ADHERING TO THE SURFACE OF THE BARS AS SPECIFIED IN THE DRAWINGS.
14. THE REINFORCEMENT HAVING BEEN CLEANED, THE EDGES OF SOUND CONCRETE DEFINING THE EXTENTS OF REMOVED PORTIONS SHALL BE CLEANED WITH WIRE BRUSHES AND WATER/AIR JETS. THE OBJECTIVE SHALL BE TO DISLODGE AND REMOVE ANY LOOSE MATERIAL FROM THESE EDGES.
15. PRIOR TO POURING FRESH CONCRETE, THE SURROUNDING EDGES OF EXISTING CONCRETE SHALL BE COATED WITH AN APPROVED EPOXY MIX AS PER THE SUPPLIER'S RECOMMENDATIONS. IN CASE THE EXISTING REINFORCEMENT WAS DISCOVERED TO BE CORRODED, IT SHALL BE COATED WITH AN APPROVED EPOXY PROTECTION.
16. THE OUTER/EXPOSED SURFACE OF THE NEW CONCRETE SHALL BE WORKED TO A SMOOTH AND UNIFORM FINISH IN LINE WITH THE ORIGINAL PROFILES TO COMPLETE THE JOB.
17. THE EXTENT OF DAMAGED SHOULD BE REPORTED TO THE ENGINEER -IN- CHARGE AND REHABILITATION OR DEMOLITION OF EXISTING DRAIN SHOULD BE DONE AS PER HIS INSTRUCTION.

LEGENDS:

F.R.L	=	FINISH ROAD LEVEL
N.G.L	=	NATURAL GROUND LEVEL
PROPOSED	=	
EXISTING	=	
EXISTING CONCRETE TO BE CHISELED	=	

REV.	DESCRIPTION	DATE	APPROVED
T0	TENDER ISSUE	20-01-2023	WASIF

CLIENT:-
SINDH INDUSTRIAL TRADING ESTATES LIMITED

PROJECT:-
REHABILITATION / CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

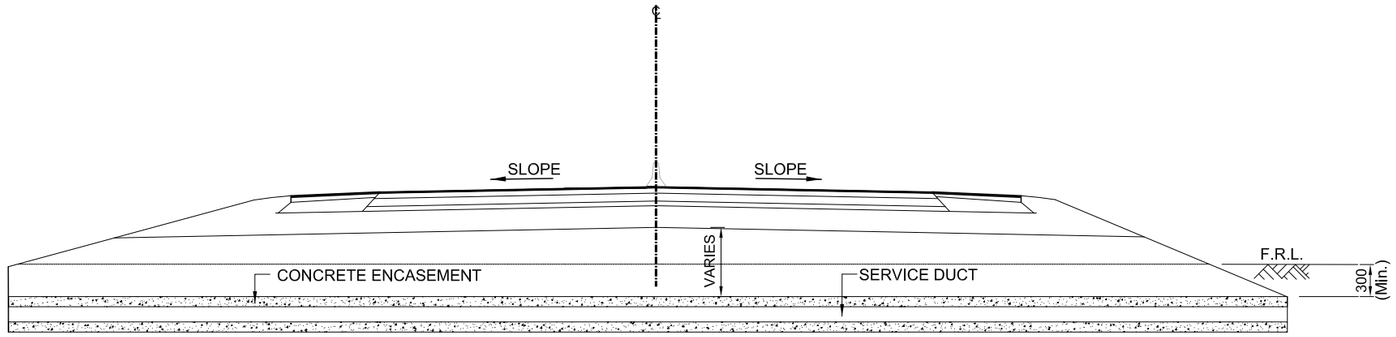
DRAWN BY	FAHAD	PROJECT NO:	DATE:
DESIGN BY	SALMAN	RSK	20-01-2023
CHECKED BY	KAMRAN ALAM	SCALE:	SHEET:
APPROVED BY	WASIF	N.T.S	01/01 (A3)

CONSULTANT:-
ATIF NAZAR (PVT.) LTD.
PROJECT MANAGERS, PLANNERS, ARCHITECTS & CONSULTING ENGINEERS
D-11/A, BLOCK NO-17, GULSHAN-E-IQBAL, KARACHI. P.H. 34820497 - 34982561

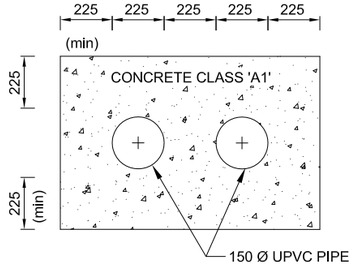
SHEET TITLE:-
TYP. DETAILS OF REHABILITATION OF EXISTING DRAIN

Drawing No.	REVISION
2210-STR-DR-003	T0

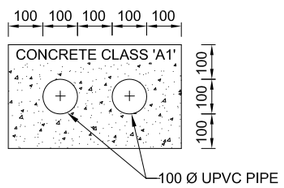
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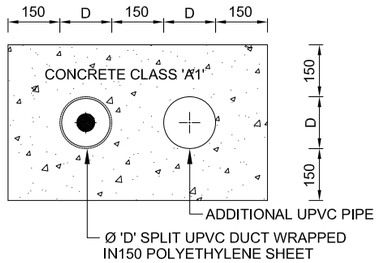
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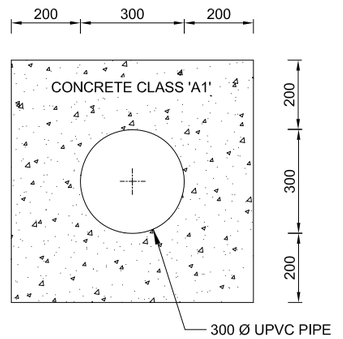
(FUTURE DUCTS FOR ELECTRICAL CABLES)



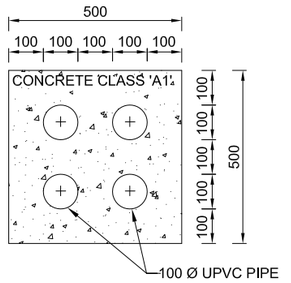
(FUTURE DUCTS FOR TELEPHONE CABLES TWO WAY)



DUCT FOR PROTECTION OF EXISTING SERVICES



(FUTURE DUCTS FOR WATER LINES)



(FUTURE DUCTS FOR TELEPHONE CABLES 4 WAY)

NOTES

1. ALL DIMENSIONS ARE IN MILLIMETERS, UNLESS NOTED OTHERWISE.
2. CONCRETE SHALL HAVE A MINIMUM 28 DAYS CYLINDER STRENGTH OF 3000 PSI.
3. SERVICE DUCTS WILL BE PROVIDED AFTER ONE KILOMETER INTERVAL OR REQUIREMENT, SPACING & POSITION OF SERVICE DUCTS SHALL BE COORDINATED BY THE CONTRACTOR WITH THE CONCERNED AUTHORITY DURING CONSTRUCTION WITH APPROVAL OF THE ENGINEER'S REPRESENTATIVE.
4. DIAMETER (D) OF SPLIT DUCT FOR PROTECTION OF EXISTING SERVICES AND THAT OF ADDITIONAL DUCT SHALL BE AS DIRECTED BY THE ENGINEER'S REPRESENTATIVE.
5. FLEXIBLE JOINTS SHALL BE PROVIDED AT MAXIMUM OF 5000 IN CONCRETE SURROUNDS.

REV.	DESCRIPTION	DATE	APPROVED
T0	TENDER ISSUE	20-1-2023	WASIF

CLIENT:-
SINDH INDUSTRIAL TRADING ESTATES LIMITED

PROJECT:-
REHABILITATION / CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

DRAWN BY	HAMZA	PROJECT NO: RSK	DATE: 20-1-2023
DESIGN BY	SALMAN		
CHECKED BY	KAMRAN ALAM	SCALE: N.T.S	SHEET: 01/01 (A3)
APPROVED BY	WASIF		

CONSULTANT:-

ATIF NAZAR (PVT.) LTD.
PROJECT MANAGERS, PLANNERS, ARCHITECTS & CONSULTING ENGINEERS
D-11/A, BLOCK NO-17, GULSHAN-E-IQBAL, KARACHI. P.H. 34820497 - 34982561

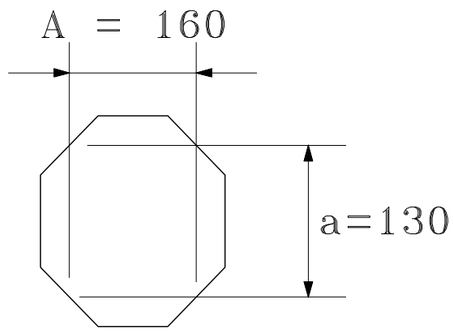
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TYP.DETAILS OF SERVICE DUCTS

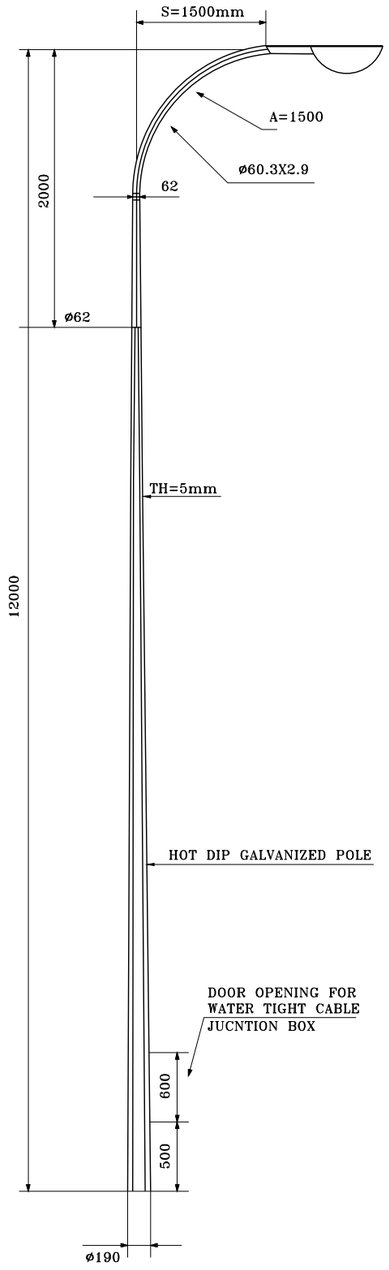
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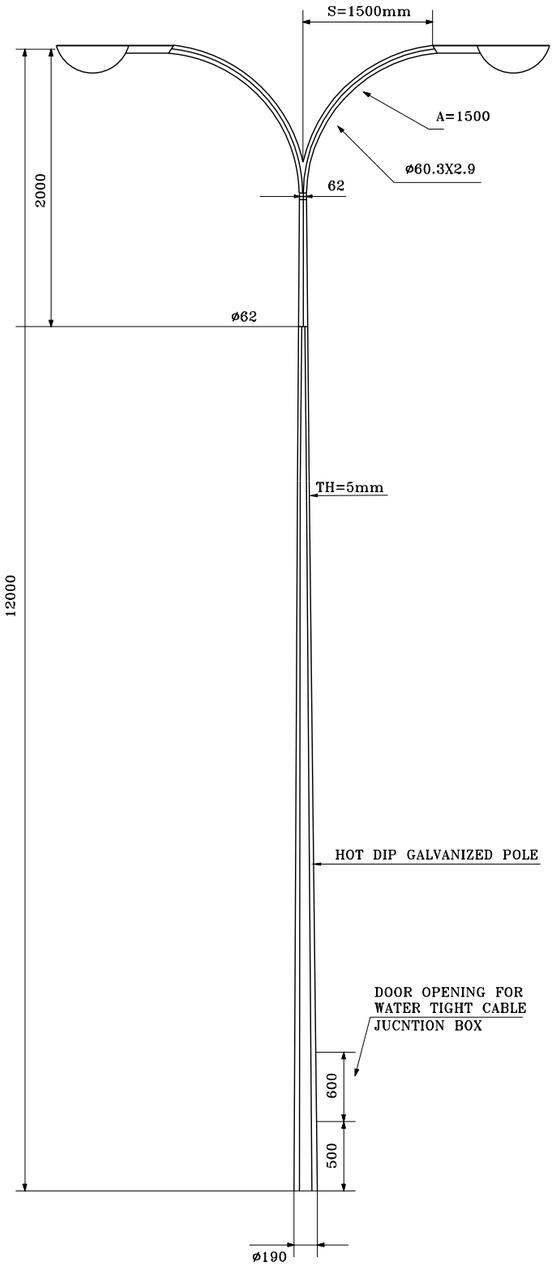
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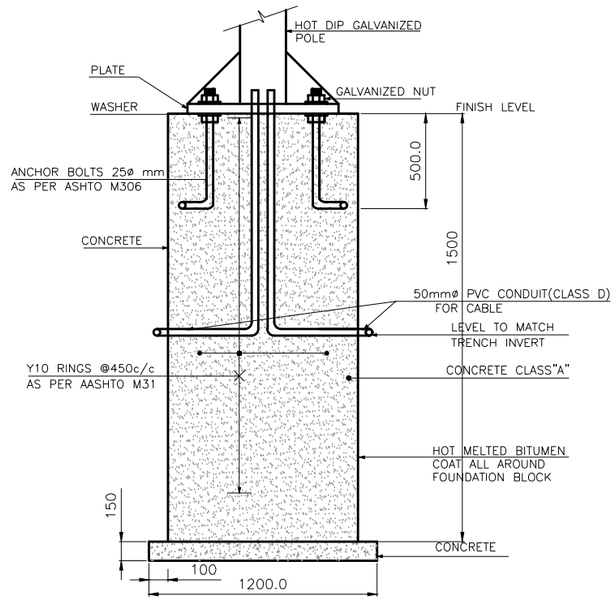
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ELECTRICAL DRAWINGS

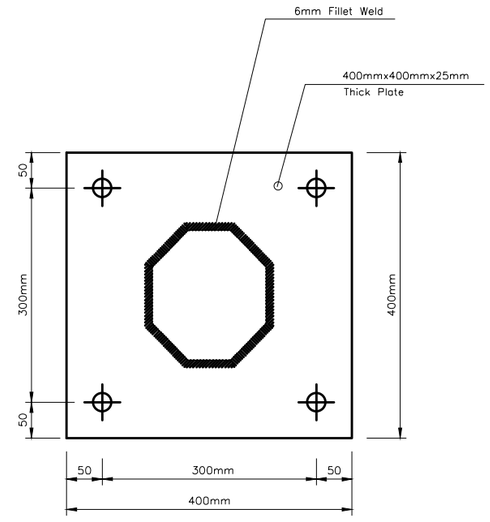








FOUNDATION DEATIL OF LIGHTING POLE



BASE PLATE

NOTES:

1- ALL DIMENSIONS ARE IN MM

2-ALL STRUCTURAL STEEL SHALL CONFORM TO ASTM 436

3-ALL FOUNDATION CONCRETE IN SR CEMENT

4-THICKNESS OF POLE=5mm

NOTES:-

1. ALL DIMENSIONS ARE IN METERS/MILIMETERS UNLESS OTHERWISE STATED.

REV.	DESCRIPTION	DATE	APPROVED
T0	TENDER ISSUE	20-01-2023	WASIF

CLIENT:- SINDH INDUSTRIAL TRADING ESTATES LIMITED

PROJECT:- REHABILITATION / CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

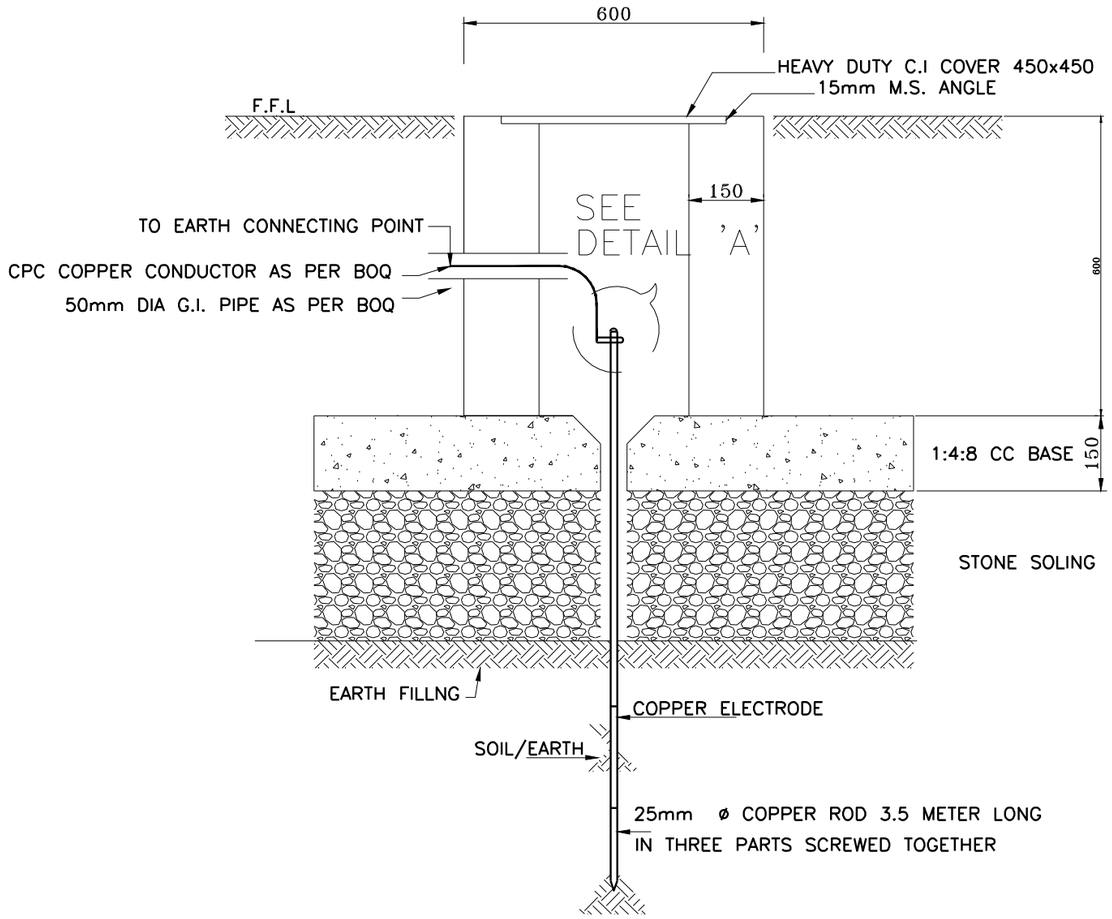
CONSULTANT:- ATIF NAZAR (PVT.) LTD.
PROJECT MANAGERS, PLANNERS, ARCHITECTS & CONSULTING ENGINEERS
D-11/A, BLOCK NO-17, GULSHAN-E-IQBAL, KARACHI. P.H. 34820497 - 34982561

		PROJECT NO:	DATE:-
DRAWN BY	ARSHAD	RSK	20-01-2023
DESIGN BY	SAMEED		
CHECKED BY	WAZI IQBAL	SCALE: N.T.S	SHEET: 01/02 (A3)
APPROVED BY	WASIF		

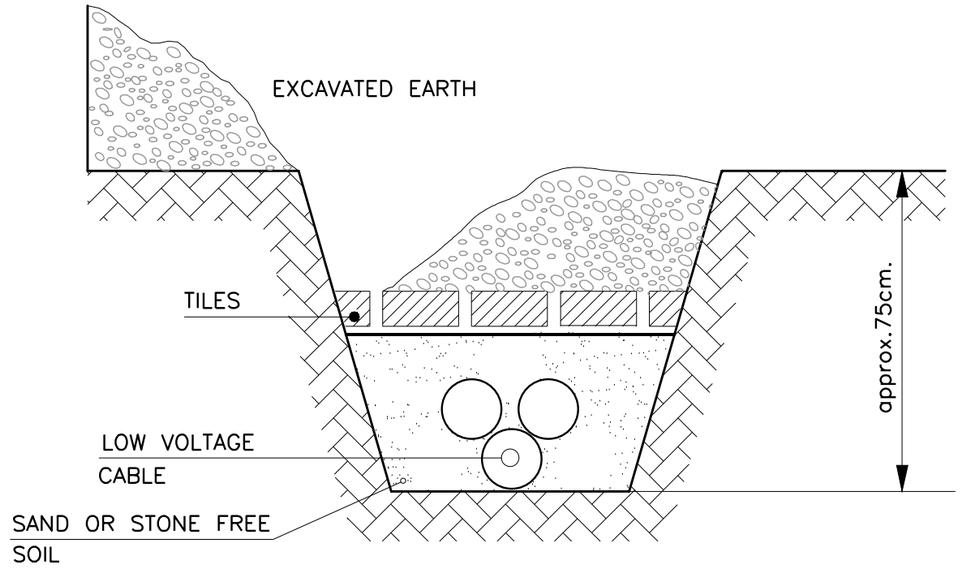
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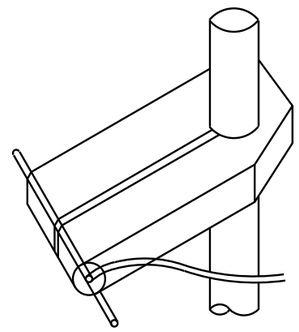
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User and Plot Date: Arshad - Tue, 07 Feb 2023 - 4:57pm



EARTHING DETAIL





DETIAL–A

NOTES:–

1. ALL DIMENSIONS ARE IN METERS/MILIMETERS UNLESS OTHERWISE STATED.

REV.	DESCRIPTION	DATE	APPROVED
T0	TENDER ISSUE	20-01-2023	WASIF

CLIENT:- SINDH INDUSTRIAL TRADING ESTATES LIMITED

PROJECT:- REHABILITATION / CONSTRUCTION OF ROADS IN SITE INDUSTRIAL ESTATE, KARACHI

CONSULTANT:- ATIF NAZAR (PVT.) LTD.
PROJECT MANAGERS, PLANNERS, ARCHITECTS & CONSULTING ENGINEERS
D-11/A, BLOCK NO-17, GULSHAN-E-IQBAL, KARACHI. P.H. 34820497 - 34982561

DRAWN BY	ARSHAD	PROJECT NO:	DATE:-
DESIGN BY	SAMEED	RSK	20-01-2023
CHECKED BY	WAZI IQBAL	SCALE:	SHEET:
APPROVED BY	WASIF	N.T.S	02/02 (A3)

SHEET TITLE:- MISCELLANEOUS DETAIL

Drawing No. 2210-01-01-02-03-E201 | REVISION T0

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