

**INVITATION FOR BIDS  
(IFB)**

**PACKAGE-3:  
EFAP/KPID/CW-03:  
REHABILITATION OF CANALS  
AND DRAINS, DISTRICT DI KHAN  
– PAHARPUR IRRIGATION  
DIVISION**



**PROJECT MANAGEMENT OFFICE**  
**PEHUR HIGH LEVEL EXTENSION PROJECT SWABI**  
**GOHATI IRRIGATION COMPLEX SWABI**

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**INVITATION FOR BIDS**  
**TO ALL THE PREQUALIFIED BIDDERS FOR CATEGORY-III**

<b>Date:</b>	<b>19 October 2023</b>	
<b>Loan No. and Title:</b>	<b>Loan 4279-PAK(COL): Emergency Flood Assistance Project (Khyber Pakhtunkhwa Irrigation Department Component)</b>	
<b>Contract No.</b>	<b>Packages / Contract Title</b>	<b>Qualification Category</b>
<b>EFAP/KPID-CW-03</b>	<b>Package-3: Rehabilitation of Canals and Drains, District DI Khan – Paharpur Irrigation Division</b>	<b>Category-III</b>
<b>Deadline for Submission of Bids</b>	<b>02 November 2023 (1100 Hours PST)</b>	

1. The **Islamic Republic of Pakistan** has received financing from the **Asian Development Bank (ADB)** toward the cost of **Repair, Rehabilitation and Reconstruction of Irrigation Structure, Drainage System and Flood Protection Works Spreads in Province of Khyber Pakhtunkhwa**. Part of this financing will be used for payments under the Contract named above. Bidding is open to prequalified Bidders from eligible source countries of ADB.
2. The **Irrigation Department, Government of Khyber Pakhtunkhwa** (“the Employer”) invites sealed bids from prequalified eligible Bidders for the construction and completion of works mentioned in the table above under “**Packages / Contract Title**” (“the Works”).
3. Open competitive bidding will be conducted in accordance with ADB’s Single-Stage: One Envelope following Prequalification procedure and is open to all prequalified Bidders from eligible countries as described in the Bidding Document.
4. Only eligible prequalified Bidders with the following key qualifications defined in the Bidding Document may participate in this bidding.

A pre-bid meeting shall take place on **25 October 2023** at **11:00 hours (Pakistan Standard Time)** at the address mentioned below.

5. To obtain further information and inspect the bidding documents, Bidders should contact:  
**Project Director**  
**Project Management Office**  
**Pehur High Level Canal Extension Project /Emergency Flood Assistance Project**  
**Irrigation Department Khyber Pakhtunkhwa,**  
**Gohati, Swabi.**
6. To purchase the bidding documents in English, eligible bidders should
  - write to address above requesting the Bidding Documents for each package mentioned in the table above under “**Packages / Contract Title**”.
  - pay a nonrefundable fee of PKR 15,000/- or USD equivalent by Pay Order or Demand Bank Draft in favor of Project Director. The eligible bidders also have the option to download the bidding documents at no cost from Irrigation website i.e., **www.irrigation.gkp.pk**. Eligible bidders opting to download the bidding document from Irrigation Department website shall inform PMO in writing at the address given





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below failing which PMO shall not be responsible if the applicants do not receive clarifications and amendments, if any. In case of any discrepancy between the downloaded document and hard copy, the latter shall prevail.

7. Deliver your bid
- to the address given above vide Para-5
  - on or before the deadline **02 November 2023 (1100 Hours 'Pakistan Standard Time')**
  - together with a Bid-Securing Declaration as described in the Bidding Document.

Bids will be opened promptly after the deadline for bid submission in the presence of Bidders' representatives who choose to attend.

8. When comparing Bids, Domestic Preference will not be applied as stipulated in the Bidding Document.

  
**Project Director**  
**Project Management Office (PMO)**  
**Emergency Flood Assistance Project (EFAP)**  
**Irrigation Department, Khyber Pakhtunkhwa**  
**Gohati Swabi**  
**Phone No.: +92-938-530103**  
**Fax: No. +92-938-530104**

**BIDDING DOCUMENT**

**PACKAGE-3:  
EFAP/KPID/CW-03:  
REHABILITATION OF CANALS  
AND DRAINS, DISTRICT DI  
KHAN – PAHARPUR  
IRRIGATION DIVISION**

**ISLAMIC REPUBLIC OF PAKISTAN  
KHYBER PAKHTUNKHWA  
IRRIGATION DEPARTMENT (KPID)**



**ASIAN DEVELOPMENT BANK**

**Loan 4279-PAK(COL):  
Emergency Flood Assistance Project  
(Khyber Pakhtunkhwa Irrigation Department Component)  
(EFAP/KPID/CW-03)**

**BIDDING DOCUMENT  
Procurement of Works**

- Single-Stage: One-Envelope Bidding Procedure -  
- Following Prequalification -

**Package-3: EFAP/KPID-CW-03  
Rehabilitation of Canals and Drains, District  
DI Khan – Paharpur Irrigation Division**

**Project Management Office (PMO),  
Pehur High Level Canal Extension Project /  
Emergency Flood Assistance Project  
Gohati, Swabi**

**Tel: +92-(938)-530103**

**Fax: +92-(938)-530104**

**Email: pmophlce@gmail.com / efapirrigation@gmail.com**

# **PROCUREMENT OF WORKS**

## **BIDDING DOCUMENT**

**for**

**Procurement**

**of**

**Repair, Rehabilitation and Reconstruction of Irrigation Structure, Drainage System and Flood Protection Work Spreads in Province of Khyber Pakhtunkhwa**

**EFAP/KPID/CW-03: Rehabilitation of Canals and Drains, District DI Khan – Paharpur Irrigation Division**

**Issued on:** 19 October 2023  
**Invitation for Bids No.:** EFAP/KPID/CW-03  
**OCB No.:** EFAP/KPID/CW-03  
**Employer:** Project Director  
Project Management Office  
Pehur High Level Canal Extension  
Project / Emergency Flood  
Assistance Project  
Irrigation Department, Govt. of  
Khyber Pakhtunkhwa  
**Country:** Pakistan

# Preface

This Bidding Document for the Procurement of Works has been prepared by **Irrigation Department, Government of Khyber Pakhtunkhwa** and is based on the Standard Bidding Document for the Procurement of Works-Small Contracts (*SBD Works-Small*) issued by the Asian Development Bank dated **December 2021**.

ADB's *SBD Works-Small* has the structure and the provisions of the Master Procurement Document entitled "Bidding Documents for the Procurement of Works-Small Contracts", prepared by multilateral development banks and other public international financial institutions except where ADB-specific considerations have required a change.

# Table of Contents - Summary Description

## PART I BIDDING PROCEDURES

<b>Section 1 - Instructions to Bidders (ITB)</b> -----	<b>1-1</b>
This section specifies the procedures Bidders should follow when preparing and submitting their Bids. Information is also provided on the submission, opening, evaluation of bids, and on the award of contract.	
<b>Section 2 - Bid Data Sheet (BDS)</b> -----	<b>2-1</b>
This section consists of provisions that are specific to each procurement and supplements the information or requirements included in Section 1 (Instructions to Bidders).	
<b>Section 3 - Evaluation and Qualification Criteria (EQC)</b> -----	<b>3-1</b>
This section contains the criteria to determine the lowest evaluated bid and the qualifications of the Bidder to perform the contract.	
<b>Section 4 - Bidding Forms (BDF)</b> -----	<b>4-1</b>
This section contains the forms to be completed by the Bidder and submitted as part of its Bid.	
<b>Section 5 - Eligible Countries (ELC)</b> -----	<b>5-1</b>
This section contains the list of eligible countries.	

## PART II REQUIREMENTS

<b>Section 6 - Employer's Requirements (ERQ)</b> -----	<b>6-1</b>
This section contains the Specifications, Drawings, Supplementary Information that describe the Works to be procured, Personnel Requirements, and Equipment Requirements.	

## PART III CONDITIONS OF CONTRACT AND CONTRACT FORMS

<b>Section 7 - General Conditions of Contract (GCC)</b> -----	<b>7-1</b>
This section contains the general clauses that govern the Contract. These General Conditions shall be the Conditions of Contract for Construction, Multilateral Development Bank Harmonized Edition, published by the Fédération Internationale des Ingénieurs-Conseil (FIDIC MDB Edition, June 2010). These Conditions are subject to the variations and additions set out in Section 8 (Particular Conditions of Contract).	
<b>Section 8 - Particular Conditions of Contract (PCC)</b> -----	<b>8-1</b>
This section contains provisions that are specific to each contract and that modify or supplement the General Conditions of Contract. Whenever there is a conflict, the provisions herein shall prevail over those in the General Conditions of Contract.	
<b>Section 9 - Contract Forms (COF)</b> -----	<b>9-1</b>
This section contains forms that, once completed, will form part of the Contract. The forms for Performance Security and Advance Payment Security, when required, shall only be completed by the successful Bidder after contract award.	

# Section 1: Instructions to Bidders

This Section specifies the procedures to be followed by Bidders in the preparation and submission of their Bids. Information is also provided on the submission, opening, evaluation of bids, and award of contract.

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## A. General

1. **Scope of Bid**
  - 1.1 In connection with the Invitation for Bids (IFB) indicated in the Bid Data Sheet (BDS), the Employer, as indicated in the BDS, issues this Bidding Document for the procurement of Works as specified in Section 6 (Employer's Requirements). The name, identification, and number of contracts of the open competitive bidding (OCB) are provided in the BDS.
  - 1.2 Throughout this Bidding Document,
    - (a) the term "in writing" means communicated in written form and delivered against receipt;
    - (b) except where the context requires otherwise, words indicating the singular also include the plural and words indicating the plural also include the singular; and
    - (c) "day" means calendar day.
2. **Source of Funds**
  - 2.1 The Borrower or Recipient (hereinafter called "Borrower") indicated in the BDS has applied for or received financing (hereinafter called "funds") from the Asian Development Bank (hereinafter called "ADB") toward the cost of the project named in the BDS. The Borrower intends to apply a portion of the funds to eligible payments under the contract(s) for which this Bidding Document is issued.
  - 2.2 Payments by the ADB will be made only at the request of the Borrower and upon approval by ADB in accordance with the terms and conditions of the Financing Agreement between the Borrower and ADB (hereinafter called "Financing Agreement"), and will be subject in all respects to the terms and conditions of that Financing Agreement. No party other than the Borrower shall derive any rights from the Financing Agreement or have any claim to the funds.
3. **Fraud and Corruption**
  - 3.1 ADB requires Borrowers (including beneficiaries of ADB-financed activity) and their personnel, as well as firms and individuals participating in an ADB-financed activity, including but not limited to, Bidders, Suppliers, and Contractors agents, subcontractors, subconsultants, service providers, subsuppliers, manufacturers (including their respective officers, directors, employees and personnel) under ADB-financed contracts to observe the highest standard of ethics during the procurement and execution of such contracts in accordance with ADB's Anticorruption Policy (1998, as amended from time to time. In pursuance of this policy, ADB
    - (a) defines, for the purposes of this provision, the terms set forth below as follows:
      - (i) "corrupt practice" means the offering, giving, receiving, or soliciting, directly or indirectly, anything of value to influence improperly the actions of another party;
      - (ii) "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;

- (iii) “coercive practice” means impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party;
  - (iv) “collusive practice” means an arrangement between two or more parties designed to achieve an improper purpose, including influencing improperly the actions of another party;
  - (v) “abuse” means theft, waste, or improper use of assets related to ADB-related activity, either committed intentionally or through reckless disregard;
  - (vi) “conflict of interest” means any situation in which a party has interests that could improperly influence that party’s performance of official duties or responsibilities, contractual obligations, or compliance with applicable laws and regulations; and
  - (vii) “integrity violation” is any act, as defined under ADB’s Integrity Principles and Guidelines (2015, as amended from time to time), which violates ADB’s Anticorruption Policy, including (i) to (vi) above and the following: obstructive practice, violations of ADB sanctions, retaliation against whistleblowers or witnesses, and other violations of ADB’s Anticorruption Policy, including failure to adhere to the highest ethical standard.
- (b) will reject a proposal for award if it determines that the Bidder recommended for award or any of its officers, directors, employees, personnel, subconsultants, subcontractors, service providers, suppliers or manufacturers has, directly or through an agent, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices or other integrity violations in competing for the Contract;
  - (c) will cancel the portion of the financing allocated to a contract if it determines at any time that representatives of the Borrower or of a beneficiary of ADB financing engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices or other integrity violations during the procurement or the execution of that contract, without the Borrower having taken timely and appropriate action satisfactory to ADB to remedy the situation, including by failing to inform ADB in a timely manner at the time they knew of the integrity violations;
  - (d) will impose remedial actions on a firm or an individual, at any time, in accordance with ADB’s Anticorruption Policy and Integrity Principles and Guidelines, including declaring ineligible, either indefinitely or for a stated period of time, to participate<sup>1</sup> in ADB-financed, -administered, or -supported activities or to benefit from an ADB-financed, -administered, or -supported contract, financially or otherwise, if it at any time determines that the firm or individual has, directly or through an agent, engaged in corrupt, fraudulent, collusive, coercive or obstructive practices or other integrity violations; and
  - (e) will have the right to require that a provision be included in bidding documents and in contracts financed, administered, or supported by

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<sup>1</sup> Whether as a Contractor, Subcontractor, Consultant, Manufacturer or Supplier, or Service Provider; or in any other capacity (different names are used depending on the particular Bidding Document).

ADB, requiring Bidders, suppliers and contractors, consultants, manufacturers, service providers and other third parties engaged or involved in ADB-related activities, and their respective officers, directors, employees and personnel, to permit ADB or its representative to inspect the site and their assets, accounts and records and other documents relating to the bid submission and contract performance and to have them audited by auditors appointed by ADB.

- 3.2 All Bidders, consultants, contractors, suppliers, manufacturers, service providers, and other third parties engaged or involved in ADB-related activities and their respective officers, directors, employees and personnel, are obliged to cooperate fully in any investigation when requested by ADB to do so. As determined on a case by case basis by ADB, such cooperation includes, but is not limited to, the following:
- (a) being available to be interviewed and replying fully and truthfully to all questions asked;
  - (b) providing ADB with any items requested that are within the party's control including, but not limited to, documents and other physical objects;
  - (c) upon written request by ADB, authorizing other related entities to release directly to ADB such information that is specifically and materially related, directly or indirectly, to the said entities or issues which are the subject of the investigation;
  - (d) cooperating with all reasonable requests to search or physically inspect their person and/or work areas, including files, electronic databases, and personal property used on ADB activities, or that utilizes ADB's Information and Communications Technology (ICT) resources or systems (including mobile phones, personal electronic devices, and electronic storage devices such as external disk drives);
  - (e) cooperating in any testing requested by ADB, including but not limited to, fingerprint identification, handwriting analysis, and physical examination and analysis; and
  - (f) preserving and protecting confidentiality of all information discussed with, and as required by, ADB.
- 3.3 All Bidders, consultants, contractors and suppliers shall require their officers, directors, employees, personnel, agents to ensure that, in its contract with its sub-consultants, Subcontractors, and other third parties engaged or involved in ADB-related activities, such sub-consultants, Subcontractors, and other third parties similarly are obliged to cooperate fully in any investigation when requested by ADB to do so.
- 3.4 The Employer hereby puts the Bidder on notice that the Bidder or any Joint Venture partner of the Bidder (if any) may not be able to receive any payments under the Contract if the Bidder or any of its Joint Venture partners, as appropriate, is, or is owned (in whole or in part) by a person or entity subject to applicable sanctions.
- 3.5 Furthermore, Bidders shall be aware of the provision stated in Subclauses 1.15 and 15.6 of the Conditions of Contract.

**4. Eligible Bidders**

- 4.1 A Bidder may be a natural person, private entity, or government-owned enterprise subject to ITB 4.5 - or any combination of them with a formal intent to enter into an agreement or under an existing agreement in the form of a Joint Venture. In the case of a Joint Venture,
- (a) all partners shall be jointly and severally liable; and
  - (b) the Joint Venture shall nominate a Representative who shall have the authority to conduct all business for and on behalf of any and all the parties of the Joint Venture during the bidding process and, in the event the Joint Venture is awarded the Contract, during contract execution.
- 4.2 A Bidder, and all parties constituting the Bidder, shall have the nationality of an eligible country, in accordance with Section 5 (Eligible Countries). A Bidder shall be deemed to have the nationality of a country if the Bidder is a citizen or is constituted, incorporated, or registered, and operates in conformity with the provisions of the laws of that country. This criterion shall also apply to the determination of the nationality of proposed Subcontractors or Suppliers for any part of the Contract including related services.
- 4.3 A Bidder shall not have a conflict of interest. All Bidders found to have a conflict of interest shall be disqualified. A Bidder may be considered to be in a conflict of interest with one or more parties in the bidding process if any of, including but not limited to, the following apply:
- (a) they have controlling shareholders in common; or
  - (b) they receive or have received any direct or indirect subsidy from any of them; or
  - (c) they have the same legal representative for purposes of this bid; or
  - (d) they have a relationship with each other, directly or through common third parties, that puts them in a position to have access to material information about or improperly influence the bid of another Bidder, or influence the decisions of the Employer regarding this bidding process; or
  - (e) a Bidder participates in more than one bid in this bidding process, either individually or as a partner in a Joint Venture, except for alternative offers permitted under ITB 13 of the Bidding Document. This will result in the disqualification of all Bids in which it is involved. However, subject to any finding of a conflict of interest in terms of ITB 4.3(a)-(d) above, this does not limit the participation of a Bidder as a Subcontractor in another Bid or of a firm as a Subcontractor in more than one Bid; or
  - (f) a Bidder, Joint Venture partner, associates, parent company, or any affiliated entity, participated as a Consultant in the preparation of the design or technical specifications of the works that are the subject of the Bid; or
  - (g) a Bidder was affiliated with a firm or entity that has been hired (or is proposed to be hired) by the Employer or Borrower as Engineer for the Contract; or
  - (h) a Bidder would be providing goods, works, or nonconsulting services resulting from or directly related to consulting services for the preparation or implementation of the project specified in the BDS

ITB 2.1 that it provided or were provided by any affiliate that directly or indirectly controls, is controlled by, or is under common control with that firm; or

- (i) A Bidder that has a financial or familial relationship with staff of the Employer including project implementing/executing agency, or of a recipient of a part of the loan who: (i) are directly or indirectly involved in the preparation of the bidding documents or specifications of the contract, and/or the bid evaluation process of such contract; or (ii) would be involved in the implementation or supervision of such contract unless the conflict stemming from such relationship has been resolved in a manner acceptable to ADB throughout the procurement process and execution of the contract.

- 4.4 A firm will not be eligible to participate in any procurement activities under an ADB-financed, -administered, or -supported project while under temporary suspension or debarment by ADB pursuant to its Anticorruption Policy (see ITB 3), whether such debarment was directly imposed by ADB, or enforced by ADB pursuant to the Agreement for Mutual Enforcement of Debarment Decisions. A bid from a temporarily suspended or debarred firm will be rejected and such bid may be in breach of debarment conditions, thereby subject to further ADB's investigation.
- 4.5 Government-owned enterprises in the Employer's country shall be eligible only if they can establish that they (i) are legally and financially autonomous, (ii) operate under commercial law, and (iii) are not a dependent agency of the Employer.
- 4.6 A Bidder shall not be under suspension from bidding by the Employer as the result of the execution of a Bid-Securing Declaration.
- 4.7 Bidders shall provide such evidence of their continued eligibility satisfactory to the Employer, as the Employer shall reasonably request.
- 4.8 Bidders shall be excluded if, by an act of compliance with a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations, the Borrower's country prohibits any import of goods from, or payments to, a particular country, person or entity in respect of goods or services originating in that country. Where the Borrower's country prohibits payments to a particular person or entity or for particular goods or services by such an act of compliance, that firm shall be excluded.
- 4.9 Since a prequalification exercise was conducted prior to the issuance of this Bidding Document, only prequalified Bidders may submit bids for the contract(s) described in BDS.

**5. Eligible Materials, Equipment, and Services**

- 5.1 The materials, equipment, and services to be supplied under the Contract shall have their origin in eligible source countries as defined in ITB 4.2, and all expenditures under the Contract will be limited to such materials, equipment, and services. At the Employer's request, Bidders may be required to provide evidence of the origin of materials, equipment, and services.

- 5.2 For purposes of ITB 5.1 above, “origin” means the place where the materials and equipment are mined, grown, produced, or manufactured, and from which the services are provided. Materials and equipment are produced when, through manufacturing, processing, or substantial or major assembling of components, a commercially recognized product results that differs substantially in its basic characteristics or in purpose or utility from its components.

## B. Contents of Bidding Document

6. **Sections of Bidding Document**
- 6.1 The Bidding Document consists of Parts I, II, and III, which include all the sections indicated below, and should be read in conjunction with any addenda issued in accordance with ITB 8.
- PART I Bidding Procedures**
- Section 1 - Instructions to Bidders (ITB)
  - Section 2 - Bid Data Sheet (BDS)
  - Section 3 - Evaluation and Qualification Criteria (EQC)
  - Section 4 - Bidding Forms (BDF)
  - Section 5 - Eligible Countries (ELC)
- PART II Requirements**
- Section 6 - Employer’s Requirements (ERQ)
- PART III Conditions of Contract and Contract Forms**
- Section 7 - General Conditions of Contract (GCC)
  - Section 8 - Particular Conditions of Contract (PCC)
  - Section 9 - Contract Forms (COF)
- 6.2 The IFB issued by the Employer is not part of the Bidding Document.
- 6.3 The Employer is not responsible for the completeness of the Bidding Document and its addenda, if they were not obtained directly from the source stated by the Employer in the IFB.
- 6.4 The Bidder is expected to examine all instructions, forms, terms, and specifications in the Bidding Document. Failure to furnish all information or documentation required by the Bidding Document may result in the rejection of the bid.
7. **Clarification of Bidding Document, Site Visit, Pre-Bid Meeting**
- 7.1 A prospective Bidder requiring any clarification on the Bidding Document shall contact the Employer in writing at the Employer’s address indicated in the BDS or raise his inquiries during the pre-bid meeting if provided for in accordance with ITB 7.4. The Employer will respond in writing to any request for clarification, provided that such request is received no later than 21 days prior to the deadline for submission of bids. The Employer shall forward copies of its response to all Bidders who have acquired the Bidding Document in accordance with ITB 6.3, including a description of the inquiry but without identifying its source. Should the Employer deem it necessary to amend the Bidding Document as a result of a request for clarification, it shall do so following the procedure under ITB 8 and ITB 22.2.
- 7.2 The Bidder is advised to visit and examine the Site of Works and its surroundings and obtain for itself on its own responsibility all information that may be necessary for preparing the Bid and entering into a contract

for construction of the Works. The costs of visiting the Site shall be at the Bidder's own expense.

- 7.3 The Bidder and any of its personnel or agents will be granted permission by the Employer to enter its premises and lands for the purpose of such visit, but only upon the express condition that the Bidder, its personnel, and agents will release and indemnify the Employer and its 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 the inspection.
- 7.4 The Bidder's designated representative is invited to attend a pre-bid meeting, if provided for in the BDS. The purpose of the meeting will be to clarify issues and to answer questions on any matter that may be raised at that stage.
- 7.5 The Bidder is requested to submit any questions in writing, to reach the Employer not later than 1 week before the meeting.
- 7.6 Minutes of the pre-bid meeting, including the text of the questions raised, without identifying the source, and the responses given, together with any responses prepared after the meeting, will be transmitted promptly to all Bidders who have acquired the Bidding Document in accordance with ITB 6.3. Any modification to the Bidding Document that may become necessary as a result of the pre-bid meeting shall be made by the Employer exclusively through the issue of an addendum pursuant to ITB 8 and not through the minutes of the pre-bid meeting.
- 7.7 Nonattendance at the pre-bid meeting will not be a cause for disqualification of a Bidder.

#### **8. Amendment of Bidding Document**

- 8.1 At any time prior to the deadline for submission of Bids, the Employer may amend the Bidding Document by issuing addenda.
- 8.2 Any addendum issued shall be part of the Bidding Document and shall be communicated in writing to all who have obtained the Bidding Document from the Employer in accordance with ITB 6.3.
- 8.3 To give prospective Bidders reasonable time in which to take an addendum into account in preparing their Bids, the Employer may, at its discretion, extend the deadline for the submission of Bids, pursuant to ITB 22.2.

### **C. Preparation of Bids**

#### **9. Cost of Bidding**

- 9.1 The Bidder shall bear all costs associated with the preparation and submission of its Bid, and the Employer shall in no case be responsible or liable for those costs, regardless of the conduct or outcome of the bidding process.

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

- 10.1 The Bid, as well as all correspondence and documents relating to the bid exchanged by the Bidder and the Employer, shall be written in the language specified in the BDS. Supporting documents and printed literature that are part of the Bid may be in another language provided they are accompanied by an accurate translation of the relevant



passages in the language specified in the BDS, in which case, for purposes of interpretation of the Bid, such translation shall govern.

**11. Documents  
Comprising the  
Bid**

11.1 The Bid shall comprise the following:

- (a) Letter of Bid;
- (b) completed schedules as required, including priced Bill of Quantities, in accordance with ITB 12 and ITB 14;
- (c) Bid Security or Bid-Securing Declaration, in accordance with ITB 19;
- (d) alternative Bids, if permissible, in accordance with ITB 13;
- (e) written confirmation authorizing the signatory of the Bid to commit the Bidder, in accordance with ITB 20.2;
- (f) documentary evidence in accordance with ITB 17, establishing the Bidder's qualifications to perform the contract if its Bid is accepted;
- (g) Technical Proposal in accordance with ITB 16; and
- (h) any other document required in the BDS.

11.2 In addition to the requirements under ITB 11.1, Bids submitted by a Joint Venture shall include a copy of the Joint Venture Agreement entered into by all partners. Alternatively, a Letter of Intent to execute a Joint Venture Agreement in the event of a successful Bid shall be signed by all partners and submitted with the Bid, together with a copy of the proposed agreement.

**12. Letter of Bid and  
Schedules**

12.1 The Letter of Bid and Schedules, including the Bill of Quantities, shall be prepared using the relevant forms furnished in Section 4 (Bidding Forms). The forms must be completed without any alterations to the text, and no substitutes shall be accepted. All blank spaces shall be filled in with the information requested and as required in the BDS.

**13. Alternative Bids**

13.1 Unless otherwise indicated in the BDS, alternative Bids shall not be considered.

13.2 When alternative times for completion are explicitly invited, a statement to that effect will be included in the BDS, as will the method of evaluating different times for completion.

13.3 Except as provided under ITB 13.4 below, Bidders wishing to offer technical alternatives to the requirements of the Bidding Document must first price the Employer's design as described in the Bidding Document and shall further provide all information necessary for a complete evaluation of the alternative by the Employer, including drawings, design calculations, technical specifications, breakdown of prices, and proposed construction methodology and other relevant details. Only the technical alternatives, if any, of the lowest evaluated Bidder conforming to the basic technical requirements shall be considered by the Employer.

13.4 When specified in the BDS, Bidders are permitted to submit alternative technical solutions for specified parts of the Works. Such parts will be identified in the BDS and described in Section 6 (Employer's Requirements). The method for their evaluation will be stipulated in Section 3 (Evaluation and Qualification Criteria).



**14. Bid Prices and Discounts**

- 14.1 The prices and discounts quoted by the Bidder in the Letter of Bid and in the Bill of Quantities shall conform to the requirements specified below.
- 14.2 The Bidder 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 the Bidder will not be paid for by the Employer when executed, and shall be deemed covered by the rates for other items and prices in the Bill of Quantities. Unit rates and prices for all items of the Works described in the Bill of Quantities shall be expressed in positive values. If unit rates and prices are expressed in negative values, the bid will be rejected.
- 14.3 The price to be quoted in the Letter of Bid, in accordance with ITB 12.1, shall be the total price of the Bid, excluding any discounts offered. Absence of the total bid price in the Letter of Bid may result in the rejection of the Bid.
- 14.4 The Bidder shall quote any discounts and the methodology for their application in the Letter of Bid, in accordance with ITB 12.1.
- 14.5 The prices shall be either fixed or adjustable as specified in the BDS.
- (a) In the case of Fixed Price, prices quoted by the Bidder shall be fixed during the Bidder's performance of the contract and not subject to variation on any account. A Bid submitted with an adjustable price will be treated as nonresponsive and rejected.
- (b) In the case of Adjustable Price, prices quoted by the Bidder shall be subject to adjustment during performance of the contract to reflect changes in the cost elements such as labor, material, transport, and contractor's equipment in accordance with the provisions of the Conditions of Contract. A Bid submitted with a fixed price will be treated as nonresponsive and be rejected. The Bidder shall furnish the indexes and weightings for the price adjustment formulas in the Tables of Adjustment Data included in Section 4 (Bidding Forms) and the Employer may require the Bidder to justify its proposed indexes and weightings. Any bid that omits indexes and weightings shall be subject to clarification with the Bidder.
- 14.6 If so indicated in ITB 1.1, bids are being invited for individual contracts or for any combination of contracts (packages). Bidders wishing to offer any price reduction for the award of more than one Contract shall specify in their bid the price reductions applicable to each package, or alternatively, to individual Contracts within the package. Price reductions or discounts shall be submitted in accordance with ITB 14.4, provided the Bids for all contracts are submitted and opened at the same time.
- 14.7 All duties, taxes, and other levies payable by the Contractor under the Contract, or for any other cause, as of the date 28 days prior to the deadline for submission of bids, shall be included in the rates and prices and the total Bid Price submitted by the Bidder.

**15. Currencies of Bid and Payment**

- 15.1 The unit rates and the prices shall be quoted by the Bidder entirely in the currency specified in the BDS.
- 15.2 Bidders shall indicate the portion of the bid price that corresponds to expenditures incurred in the currency of the Employer's country in the Schedule of Payment Currencies included in Section 4 (Bidding Forms).
- 15.3 Bidders expecting to incur expenditures in other currencies for inputs to the Works supplied from outside the Employer's country and wishing to be paid accordingly may indicate the other currencies in the Schedule of Payment Currencies included in Section 4 (Bidding Forms).
- 15.4 The rates of exchange to be used by the Bidder for currency conversion during bid preparation shall be the selling rates for similar transactions prevailing on the date 28 days prior to the deadline for submission of bids published by the source specified in the BDS. If exchange rates are not so published for certain currencies, the Bidder shall state the rates used and the source. Bidders should note that for the purpose of payments, the exchange rates confirmed by the source specified in the BDS as the selling rates prevailing 28 days prior to the deadline for submission of Bids shall apply for the duration of the Contract so that no currency exchange risk is borne by the Bidder.
- 15.5 Foreign currency requirements indicated by the Bidders in the Schedule of Payment Currencies shall include but not limited to the specific requirements for
- (a) expatriate staff and labor employed directly on the Works;
  - (b) social, insurance, medical and other charges relating to such expatriate staff and labor, and foreign travel expenses;
  - (c) imported materials, both temporary and permanent, including fuels, oil and lubricants required for the Works;
  - (d) depreciation and usage of imported Plant and Contractor's Equipment, including spare parts, required for the Works;
  - (e) foreign insurance and freight charges for imported materials, Plant and Contractor's Equipment, including spare parts; and
  - (f) overhead expenses, fees, profit, and financial charges arising outside the Employer's country in connection with the Works.
- 15.6 Bidders may be required by the Employer to clarify their foreign currency requirements, and to substantiate that the amounts included in the unit rates and prices and shown in the Schedule of Payment Currencies are reasonable and responsive to ITB 15.3 above, in which case a detailed breakdown of its foreign currency requirements shall be provided by the Bidder.
- 15.7 Bidders should note that during the progress of the Works, the foreign currency requirements of the outstanding balance of the Contract Price may be adjusted by agreement between the Employer and the Contractor in order to reflect any changes in foreign currency requirements for the Contract, in accordance with Subclause 14.15 of the Conditions of Contract. Any such adjustment shall be effected by

comparing the percentages quoted in the bid with the amounts already used in the Works and the Contractor's future needs for imported items.

**16. Documents  
Comprising the  
Technical  
Proposal**

16.1 The Bidder shall furnish a Technical Proposal including a statement of work methods, equipment, personnel, schedule, environmental, health and safety (EHS) management plan commensurate with the proposed scope of works, EHS Code of Conduct, and any other information as stipulated in Section 4 (Bidding Forms), in sufficient detail to demonstrate the adequacy of the Bidders' proposal to meet the work requirements and the completion time.

**17. Documents  
Establishing the  
Qualifications of  
the Bidder**

17.1 To establish its qualifications to perform the Contract in accordance with Section 3 (Evaluation and Qualification Criteria) the Bidder shall provide the information requested in the corresponding information sheets included in Section 4 (Bidding Forms).

17.2 Domestic Bidders, individually or in Joint Ventures, applying for eligibility for domestic preference shall supply all information required to satisfy the criteria for eligibility as described in ITB 33.

**18. Period of Validity  
of Bids**

18.1 Bids shall remain valid for the bid validity period specified in the BDS. The bid validity period starts from the date fixed for the bid submission deadline date prescribed by the Employer in accordance with ITB 22.1. A bid valid for a shorter period shall be rejected by the Employer as nonresponsive.

18.2 In exceptional circumstances, prior to the expiration of the bid validity period, the Employer may request Bidders to extend the period of validity of their Bids. The request and the responses shall be made in writing. If a bid security is requested in accordance with ITB 19, it shall also be extended 28 days beyond the deadline of the extended validity period. A Bidder may refuse the request without forfeiting its bid security. A Bidder granting the request shall not be required or permitted to modify its Bid.

**19. Bid Security/Bid-  
Securing  
Declaration**

19.1 Unless otherwise specified in the BDS, the Bidder shall furnish as part of its Bid, in original form, either a Bid-Securing Declaration or a bid security as specified in the BDS. In the case of a bid security, the amount and currency shall be as specified in the BDS.

19.2 If a Bid-Securing Declaration is required pursuant to ITB 19.1, it shall use the form included in Section 4 (Bidding Forms). The Employer will declare a Bidder ineligible to be awarded a Contract for a specified period of time, as indicated in the BDS, if the Bid-Securing Declaration is executed.

19.3 If a bid security is specified pursuant to ITB 19.1, the bid security shall be, at the Bidder's option, in any of the following forms:

- (a) an unconditional bank guarantee (hard copy of the bank guarantee or in the form of SWIFT message MT760), or
- (b) an irrevocable letter of credit, or
- (c) a cashier's or certified check.

all from a reputable source from an eligible country as described in Section 5 (Eligible Countries). In the case of a bank guarantee, the bid

security shall be submitted either using the Bid Security Form included in Section 4 (Bidding Forms) or another form acceptable to the Employer. The form must include the complete name of the Bidder. The bid security shall be valid for 28 days beyond the original validity period of the bid, or beyond any period of extension if requested under ITB 18.2.

- 19.4 Unless otherwise specified in the BDS, any Bid not accompanied by a substantially compliant bid security or Bid-Securing Declaration, if one is required in accordance with ITB 19.1, shall be rejected by the Employer as nonresponsive.
- 19.5 If a bid security is specified pursuant to ITB 19.1, the bid security of unsuccessful Bidders shall be returned promptly upon the successful Bidder's furnishing of the performance security pursuant to ITB 44.
- 19.6 If a bid security is specified pursuant to ITB 19.1, the bid security of the successful Bidder shall be returned promptly once the successful Bidder has signed the Contract and furnished the required performance security.
- 19.7 The bid security may be forfeited or the Bid-Securing Declaration executed, if
  - (a) notwithstanding ITB 24.3, a Bidder withdraws its bid during the period of bid validity specified by the Bidder on the Letter of Bid, except as provided in ITB 18.2; or
  - (b) the successful Bidder fails to
    - (i) sign the Contract in accordance with ITB 43;
    - (ii) furnish a performance security in accordance with ITB 44;
    - (iii) accept the arithmetical correction of its Bid in accordance with ITB 31; or
    - (iv) furnish a domestic preference security if so required.
- 19.8 If the bid security is required as per ITB 19.1, the bid security of a Joint Venture shall be in the name of the Joint Venture that submits the Bid. If the Joint Venture has not been legally constituted at the time of bidding, the bid security shall be in the name of any or all of the Joint Venture partners. If the Bid-Securing Declaration is required as per ITB 19.1, the Bid-Securing Declaration of a Joint Venture shall be in the name of the Joint Venture that submits the Bid. If the Joint Venture has not been legally constituted at the time of bidding, the Bid-Securing Declaration shall be in the names of all future partners as named in the letter of intent mentioned in ITB 4.1.
- 20.1 The Bidder shall prepare one original set of the documents comprising the Bid as described in ITB 11 and clearly mark it "ORIGINAL." Alternative Bids, if permitted in accordance with ITB 13, shall be clearly marked "ALTERNATIVE." In addition, the Bidder shall submit copies of the Bid, in the number specified in the BDS and clearly mark them "COPY." In the event of any discrepancy between the original and the copies, the original shall prevail.
- 20.2 The original and all copies of the Bid shall be typed or written in indelible ink and shall be signed by a person duly authorized to sign on behalf of the Bidder. This authorization shall consist of a written confirmation as

## **20. Format and Signing of Bid**

specified in the BDS and shall be attached to the bid. The name and position held by each person signing the authorization must be typed or printed below the signature. If a Bidder submits a deficient authorization, the Bid shall not be rejected in the first instance. The Employer shall request the Bidder to submit an acceptable authorization within the number of days as specified in the BDS. Failure to provide an acceptable authorization within the period as stated in the Employer's request shall cause the rejection of the Bid. If either the Letter of Bid or Bid-Securing Declaration (if applicable) is not signed, the Bid shall be rejected.

- 20.3 Any amendments such as interlineations, erasures, or overwriting shall be valid only if they are signed or initialed by the person signing the Bid.

## D. Submission and Opening of Bids

### 21. Sealing and Marking of Bids

- 21.1 Bidders shall submit their Bids as specified in the BDS. Procedures for submission, sealing, and marking are as follows:

- (a) Bidders submitting Bids by mail or by hand shall enclose the original and all copies of the Bid, including alternative Bids, if permitted in accordance with ITB 13, in separate sealed envelopes, duly marking the envelopes as "ORIGINAL," "ALTERNATIVE," and "COPY." These envelopes containing the original and the copies shall then be enclosed in one single envelope. The rest of the procedure shall be in accordance with ITB 21.2 and ITB 21.3.
- (b) Bidders submitting Bids electronically shall follow the electronic bid submission procedures specified in the BDS.

- 21.2 The inner and outer envelopes shall

- (a) bear the name and address of the Bidder;
- (b) be addressed to the Employer in accordance with BDS 22.1;
- (c) bear the specific identification of this bidding process indicated in the BDS 1.1; and
- (d) bear a warning not to open before the time and date for bid opening.

- 21.3 If all envelopes are not sealed and marked as required, the Employer will assume no responsibility for the misplacement or premature opening of the Bid.

### 22. Deadline for Submission of Bids

- 22.1 Bids must be received by the Employer at the address and no later than the date and time indicated in the BDS.

- 22.2 The Employer may, at its discretion, extend the deadline for the submission of Bids by amending the Bidding Document in accordance with ITB 8, in which case all rights and obligations of the Employer and Bidders previously subject to the deadline shall thereafter be subject to the deadline as extended.

### 23. Late Bids

- 23.1 The Employer shall not consider any Bid that arrives after the deadline for submission of bids, in accordance with ITB 22. Any bid received by

the Employer after the deadline for submission of Bids shall be declared late, rejected, and returned unopened to the Bidder.

**24. Withdrawal, Substitution, and Modification of Bids**

24.1 A Bidder may withdraw, substitute, or modify its Bid after it has been submitted by sending a written notice, duly signed by an authorized representative, and shall include a copy of the authorization in accordance with ITB 20.2 (except for withdrawal notices, which do not require copies). The corresponding substitution or modification of the Bid must accompany the respective written notice. All notices must be

(a) prepared and submitted in accordance with ITB 20 and ITB 21 (except for withdrawal notices, which do not require copies), and in addition, the respective envelopes shall be clearly marked "WITHDRAWAL," "SUBSTITUTION," "MODIFICATION"; and

(b) received by the Employer no later than the deadline prescribed for submission of Bids, in accordance with ITB 22.

24.2 Bids requested to be withdrawn in accordance with ITB 24.1 shall be returned unopened to the Bidders.

24.3 No Bid may be withdrawn, substituted, or modified in the interval between the deadline for submission of Bids and the expiration of the period of bid validity specified by the Bidder on the Letter of Bid or any extension thereof.

**25. Bid Opening**

25.1 The Employer shall open the Bids in public at the address, on the date and time specified in the BDS in the presence of Bidders' designated representatives and anyone who chooses to attend. Any specific electronic bid opening procedures required if electronic bidding is permitted in accordance with ITB 21.1, shall be as specified in the BDS.

25.2 First, envelopes marked "WITHDRAWAL" shall be opened and read out and the envelope with the corresponding Bid shall not be opened, but returned to the Bidder. No bid withdrawal shall be permitted unless the corresponding withdrawal notice contains a valid authorization to request the withdrawal and is read out at bid opening. Next, envelopes marked "SUBSTITUTION" shall be opened and read out and exchanged with the corresponding Bid being substituted. The substituted Bid shall not be opened, but returned to the Bidder. No bid substitution shall be permitted unless the corresponding substitution notice contains a valid authorization to request the substitution and is read out at bid opening. Envelopes marked "MODIFICATION" shall be opened and read out with the corresponding Bid. No bid modification shall be permitted unless the corresponding modification notice contains a valid authorization to request the modification and is read out at bid opening. Only envelopes that are opened and read out at bid opening shall be considered further.

25.3 All other envelopes shall be opened one at a time, reading out the name of the Bidder and whether there is a modification; the Bid Price(s), including any discounts and alternative offers; the presence of a bid security or Bid-Securing Declaration, if required; and any other details as the Employer may consider appropriate. Only discounts and alternative offers read out at bid opening shall be considered for evaluation. Unless otherwise specified in the BDS, all pages of the Letter of Bid and Bill of Quantities are to be initialed by at least three representatives of the

Employer attending bid opening. No Bid shall be rejected at bid opening except for late Bids, in accordance with ITB 23.1.

25.4 The Employer shall prepare a record of the bid opening that shall include, as a minimum, the name of the Bidder and whether there is a withdrawal, substitution, or modification; the Bid Price, per contract if applicable, including any discounts and alternative offers; and the presence or absence of a bid security or Bid-Securing Declaration, if one was required. The Bidders' representatives who are present shall be requested to sign the record. The omission of a Bidder's signature on the record shall not invalidate the contents and effect of the record. A copy of the record shall be distributed to all Bidders who submitted Bids on time, and posted online when electronic bidding is permitted.

## **E. Evaluation and Comparison of Bids**

- 26. Confidentiality**
- 26.1 Information relating to the examination, evaluation, comparison, and qualification of Bids and recommendation of contract award, shall not be disclosed to Bidders or any other persons not officially concerned with such process until the publication of Contract award.
- 26.2 Any attempt by a Bidder to influence the Employer in the evaluation of the Bids or Contract award decisions may result in the rejection of its Bid.
- 26.3 Notwithstanding ITB 26.2, from the time of bid opening to the time of Contract award, if any Bidder wishes to contact the Employer on any matter related to the bidding process, it may do so in writing.
- 27. Clarification of Bids**
- 27.1 To assist in the examination, evaluation, and comparison of the bids, and qualification of the Bidders, the Employer may, at its discretion, ask any Bidder for a clarification of its Bid. Any clarification submitted by a Bidder that is not in response to a request by the Employer shall not be considered. The Employer's request for clarification and the response shall be in writing. No change in the prices or substance of the Bid shall be sought, offered, or permitted, except to confirm the correction of arithmetic errors discovered by the Employer in the evaluation of the Bids, in accordance with ITB 31.
- 27.2 If a Bidder does not provide clarifications of its Bid by the date and time set in the Employer's request for clarification, its Bid may be rejected.
- 28. Deviations, Reservations, and Omissions**
- 28.1 During the evaluation of Bids, the following definitions apply:
- (a) "Deviation" is a departure from the requirements specified in the Bidding Document;
  - (b) "Reservation" is the setting of limiting conditions or withholding from complete acceptance of the requirements specified in the Bidding Document; and
  - (c) "Omission" is the failure to submit part or all of the information or documentation required in the Bidding Document.



- 29. Determination of Responsiveness**
- 29.1 The Employer's determination of a Bid's responsiveness is to be based on the contents of the Bid itself, as defined in ITB11.
- 29.2 A substantially responsive Bid is one that meets the requirements of the Bidding Document without material deviation, reservation, or omission. A material deviation, reservation, or omission is one that,
- (a) if accepted, would
    - (i) affect in any substantial way the scope, quality, or performance of the Works specified in the Contract; or
    - (ii) limit in any substantial way, inconsistent with the Bidding Document, the Employer's rights or the Bidder's obligations under the proposed Contract; or
  - (b) if rectified, would unfairly affect the competitive position of other Bidders presenting substantially responsive Bids.
- 29.3 The Employer shall examine the technical aspects of the Bid submitted in accordance with ITB 16, Technical Proposal, in particular, to confirm that all requirements of Section 6 (Employer's Requirements) have been met without any material deviation, reservation, or omission.
- 29.4 If a Bid is not substantially responsive to the requirements of the Bidding Document, it shall be rejected by the Employer and may not subsequently be made responsive by correction of the material deviation, reservation, or omission.
- 30. Nonmaterial Nonconformities**
- 30.1 Provided that a Bid is substantially responsive, the Employer may waive any nonconformities in the Bid that do not constitute a material deviation, reservation, or omission.
- 30.2 Provided that a Bid is substantially responsive, the Employer may request that the Bidder submit the necessary information or documentation, within a reasonable period of time, to rectify nonmaterial nonconformities in the Bid related to documentation requirements. Requesting information or documentation on such nonconformities shall not be related to any aspect of the price of the Bid. Failure of the Bidder to comply with the request may result in the rejection of its Bid.
- 30.3 Provided that a Bid is substantially responsive, the Employer shall rectify quantifiable nonmaterial nonconformities related to the Bid Price. To this effect, the Bid Price shall be adjusted, for comparison purposes only, to reflect the price of a missing or nonconforming item or component. The adjustment shall be made using the method indicated in Section 3 (Evaluation and Qualification Criteria).
- 31. Correction of Arithmetical Errors**
- 31.1 Provided that the Bid is substantially responsive, the Employer shall correct arithmetical errors on the following basis:
- (a) If there is a discrepancy between the unit price and the total price that is obtained by multiplying the unit price and quantity, the unit price shall prevail and the total price shall be corrected, unless in the opinion of the Employer there is an obvious misplacement of the



decimal point in the unit price, in which case the total price as quoted shall govern and the unit price shall be corrected.

- (b) If there is an error in a total corresponding to the addition or subtraction of subtotals, the subtotals shall prevail and the total shall be corrected.
- (c) If there is a discrepancy between the bid price in the Summary of Bill of Quantities and the bid amount in item (c) of the Letter of Bid, the bid price in the Summary of Bill of Quantities will prevail and the bid amount in item (c) of the Letter of Bid will be corrected.
- (d) If there is a discrepancy between words and figures, the amount in words shall prevail, unless the amount expressed in words is related to an arithmetic error, in which case the amount in figures shall prevail subject to (a), (b) and (c) above.

31.2 If the Bidder that submitted the lowest evaluated Bid does not accept the correction of errors, its Bid shall be disqualified and its bid security may be forfeited, or its bid securing declaration executed.

**32. Conversion to Single Currency**

32.1 For evaluation and comparison purposes, the currency(ies) of the Bid shall be converted into a single currency as specified in the BDS.

**33. Domestic Preference**

33.1 Unless otherwise specified in the BDS, domestic preference shall not apply.

**34. Subcontractors**

34.1 Unless otherwise stated in the BDS, the Employer does not intend for the contractor to execute any specific elements of the Works through nominated subcontractors.

**35. Evaluation and Comparison of Bids**

35.1 The Employer shall use the criteria and methodologies listed in this Clause. No other evaluation criteria or methodologies shall be permitted.

35.2 To evaluate a Bid, the Employer shall consider the following:

- (a) the bid price, excluding Provisional Sums and the provision, if any, for contingencies in the Summary Bill of Quantities, but including Daywork items, where priced competitively;
- (b) price adjustment for correction of arithmetic errors in accordance with ITB 31.1;
- (c) price adjustment due to discounts offered in accordance with ITB 14.4;
- (d) converting the amount resulting from applying (a) to (c) above, if relevant, to a single currency in accordance with ITB 32;
- (e) adjustment for nonmaterial nonconformities in accordance with ITB 30.3;
- (f) assessment whether the bid is abnormally low in accordance with ITB 36; and
- (g) application of all the evaluation factors indicated in Section 3 (Evaluation and Qualification Criteria).

- 35.3 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.
- 35.4 If this Bidding Document allows Bidders to quote separate prices for different contracts, and the award to a single Bidder of multiple contracts, the methodology to determine the lowest evaluated price of the contract combinations, including any discounts offered in the Letter of Bid, is specified in Section 3 (Evaluation and Qualification Criteria).
- 35.5 The Employer shall compare all substantially responsive Bids to determine the lowest evaluated Bid price, in accordance with ITB 35.2.

### **36. Abnormally Low Bids**

- 36.1 An abnormally low bid is one where the bid price, in combination with other elements of the bid, appears to be so low that it raises concerns as to the capability of the Bidder to perform the contract for the offered bid price.
- 36.2 When the offered bid price appears to be abnormally low, the Employer shall undertake a three-step review process as follows:
- (a) identify abnormally low costs and unit rates by comparing them with the Engineer's estimates, other substantially responsive bids, or recently awarded similar contracts;
  - (b) clarify and analyze the bidder's resource inputs and pricing, including overheads, contingencies and profit margins; and
  - (c) decide whether to accept or reject the bid.
- 36.3 With regard to ITB 36.2 (b) above, the Employer will seek a written explanation from the bidder of the reasons for the offered bid price, including a detailed analysis of costs and unit prices, by reference to the scope, proposed methodology, schedule, and allocation of risks and responsibilities. This may also include information regarding the economy of the manufacturing process; the services to be provided, or the construction method to be used; the technical solutions to be adopted; and any exceptionally favorable conditions available to the bidder for the works, equipment or services proposed.
- 36.4 After examining the explanation given and the detailed price analyses presented by the bidder, the Employer may:
- (a) accept the bid, if the evidence provided satisfactorily accounts for the low bid price and costs, in which case the bid is not considered abnormally low;
  - (b) accept the bid, but require that the amount of the performance security be increased at the expense of the bidder to a level sufficient to protect the Employer against financial loss. The amount of the performance security shall generally be not more than 20% of the contract price; or
  - (c) reject the bid if the evidence provided does not satisfactorily account for the low bid price, and make a similar determination for the next ranked bid, if required.

- 37. Unbalanced or Front-Loaded Bids**
- 37.1 If the Bid, which results in the lowest evaluated Bid Price, is seriously unbalanced or front-loaded in the opinion of the Employer, the Employer may require the Bidder to produce detailed price analyses for any or all items of the Bill of Quantities, to demonstrate the internal consistency of those prices with the construction methods and schedule proposed, as well as the pricing and sources of materials, equipment and labor.
- 37.2 After the evaluation of the information and detailed price analyses presented by the Bidder, the Employer may as appropriate:
- (a) accept the Bid; or
  - (b) accept the Bid, but require that the total amount of the Performance Security be increased at the expense of the Bidder to a level sufficient to protect the Employer against financial loss in the event of default of the successful Bidder under the Contract subject to ITB 44.2; or
  - (c) reject the Bid and make a similar determination for the next ranked bid.
- 38. Qualification of the Bidder**
- 38.1 The Employer shall determine to its satisfaction whether the Bidder that is selected as having submitted the lowest evaluated and substantially responsive Bid meets the qualifying criteria specified in Section 3 (Evaluation and Qualification Criteria).
- 38.2 The determination shall be based upon an examination of the documentary evidence of the Bidder's qualifications submitted by the Bidder, pursuant to ITB 17.1. Unless permitted in the BDS, the determination shall not take into consideration the qualifications of other firms such as the Bidder's subsidiaries, parent entities or affiliates.
- 38.3 An affirmative determination shall be a prerequisite for award of the Contract to the Bidder. The Employer reserves the right to reject the bid of any Bidder found to be in circumstances described in GCC 15.2(e). A negative determination shall result in disqualification of the Bid, in which event the Employer shall proceed to the next lowest evaluated bid to make a similar determination of that Bidder's qualifications to perform satisfactorily.
- 39. Employer's Right to Accept Any Bid, and to Reject Any or All Bids**
- 39.1 The Employer reserves the right to accept or reject any Bid, and to annul the bidding process and reject all Bids at any time prior to contract award, without thereby incurring any liability to Bidders. In case of annulment, all Bids submitted and specifically bid securities, shall be promptly returned to the Bidders.
- 40. Notice of Intention for Award of Contract**
- 40.1 If Standstill provisions apply as specified in the BDS, the standstill period shall be defined in the BDS to specify the duration subsequent to notification of intention for award of contract (before making the actual contract award) within which any unsuccessful bidder can challenge the proposed award.

## **F. Award of Contract**

- 41. Award Criteria**
- 41.1 The Employer shall award the Contract to the Bidder whose offer has been determined in line with ITB 35 to ITB 37 above to be the lowest evaluated Bid and is substantially responsive to the Bidding Document,

provided further that the Bidder is determined to be qualified to perform the Contract satisfactorily.

#### **42. Notification of Award**

- 42.1 Prior to the expiration of the period of bid validity and upon expiry of the standstill period specified in ITB 40.1; or upon satisfactory resolution of a complaint filed within standstill period, if applicable, the Employer shall transmit the Notification of Award through issuance of Letter of Acceptance using the form included in Section 9 (Contract Forms) to the successful Bidder, in writing, that its Bid has been accepted. At the same time, the Employer shall also notify all other Bidders of the results of the bidding.
- 42.2 Unless standstill period applies, upon notification of award through issuance of Letter of Acceptance, unsuccessful Bidders may request in writing to the Employer for a debriefing seeking explanations on the grounds on which their Bids were not selected. The Employer shall promptly respond in writing and/or in a debriefing meeting to any unsuccessful Bidder who, after publication of contract award, requests a debriefing.
- 42.3 Until a formal contract is prepared and executed, the notification of award through issuance of Letter of Acceptance shall constitute a binding Contract.
- 42.4 Within 2 weeks of the award of contract or expiry of the standstill period, where such period applies; or, if a complaint has been filed within the standstill period, upon receipt of ADB's confirmation of satisfactory resolution of the complaint, the borrower shall publish in an English language newspaper or widely known and freely accessible website the results identifying the bid and lot or package numbers, as applicable and the following information:
- (a) name of each Bidder who submitted a Bid;
  - (b) bid prices as read out at bid opening;
  - (c) name and evaluated prices of each Bid that was evaluated;
  - (d) name of bidders whose bids were rejected and the reasons for their rejection; and
  - (e) name of the winning Bidder, and the price it offered, as well as the duration and summary scope of the contract awarded.

#### **43. Signing of Contract**

- 43.1 Promptly after notification, the Employer shall send the successful Bidder the Contract Agreement.
- 43.2 Within 28 days of receipt of the Contract Agreement, the successful Bidder shall sign, date, and return it to the Employer.

#### **44. Performance Security**

- 44.1 Within 28 days of the receipt of notification of award through issuance of Letter of Acceptance from the Employer, the successful Bidder shall furnish the performance security in accordance with the Conditions of Contract, subject to ITB 36 and ITB 37, using for that purpose the Performance Security Form included in Section 9 (Contract Forms), or another form acceptable to the Employer. If the bank issuing performance security is located outside the Employer's country, it shall

be counter-guaranteed or encashable by a bank in the Employer's country.

44.2 Failure of the successful Bidder to submit the abovementioned performance security or to sign the Contract Agreement shall constitute sufficient grounds for the annulment of the award and forfeiture of the bid security or execution of the Bid-Securing Declaration. In that event, the Employer may award the Contract to the next lowest evaluated Bidder whose offer is substantially responsive and is determined by the Employer to be qualified to perform the Contract satisfactorily.

44.3 The above provision shall also apply to the furnishing of a domestic preference security if so required.

**45. Bidding-Related  
Complaints**

45.1 The procedures for dealing with Bidding-Related Complaints arising out of this bidding process are specified in the BDS.

## Section 2: Bid Data Sheet

This Section consists of provisions that are specific to each procurement and supplement the information or requirements included in Section 1 (Instructions to Bidders).

### A. General

ITB 1.1	The number of the Invitation for Bids (IFB) is: <b>EFAP/KPID/CW-03</b>
ITB 1.1	The Employer is: <b>Irrigation Department, Government of Khyber Pakhtunkhwa</b>
ITB 1.1	The name of the open competitive bidding (OCB) is: <b>Package-3: EFAP/KPID/CW-03: Rehabilitation of Canals and Drains, District DI Khan – Paharpur Irrigation Division</b>  The identification number of the OCB is: <b>EFAP/KPID/CW-03</b>  The number and identification of lots comprising this OCB is: <b>None</b>
ITB 2.1	The Borrower is: <b>Islamic Republic of Pakistan</b>
ITB 2.1	The name of the Project is: <b>Emergency Flood Assistance Project (EFAP)</b>
ITB 4.1(b)	Representative: <b>The Joint Venture shall nominate a Representative from the Lead Partner.</b>

### B. Contents of Bidding Documents

ITB 7.1	For <u>clarification purposes</u> only, the Employer's address is:	
	Attention:	<b>Project Director Project Management Office Pehur High Level Canal Extension Project/ Emergency Flood Assistance Project Khyber Pakhtunkhwa, Irrigation Department</b>
	Street address:	<b>Gohati, Swabi</b>
	Floor/ Room number:	<b>Office of the Project Director</b>
	City:	<b>Swabi, Khyber Pakhtunkhwa</b>
	ZIP code:	<b>23430</b>
	Country:	<b>Islamic Republic of Pakistan</b>
	Telephone:	<b>+92-(938)-530103</b>
	E-mail address:	<b>pmophce@gmail.com / efapirrigation@gmail.com</b>
	ITB 7.4	A Pre-Bid meeting will be take place.
Date:		<b>25 October 2023</b>
Time:		<b>1100 Hours (PST)</b>
Place:		<b>Project Management Office Pehur High Level Canal Extension Project/ Emergency Flood Assistance Project Khyber Pakhtunkhwa, Irrigation Department</b>
City:		<b>Gohati, Swabi</b>

	Country:	<b>Islamic Republic of Pakistan</b>
	Telephone:	<b>+92-(938)-530103</b>
<p>A site visit conducted by the Employer <b>will not</b> be organized. Bidders are encouraged to conduct site visit on their own and contact the Employer and the Engineer before scheduling / making the site visit.</p>		

### C. Preparation of Bids

<b>ITB 10.1</b>	<p>The language of the Bid is: <b>English.</b></p> <p>The translation of the documents shall be duly notarized</p>
<b>ITB 11.1 (h)</b>	<p>The Bidder shall submit with its Bid the following additional documents:</p> <p>Documents indicating the Historical Financial Performance i.e., audited financial statements for the Financial Year 2019-20, 2020-21 &amp; 2021-22 of the bidders which close their accounts on June 30<sup>th</sup> every year OR Calendar Year 2020, 2021 &amp; 2022 of the bidders which close their accounts on 31<sup>st</sup> December every year or for latest three years, as applicable.</p> <p>Supporting documents indicating availability of Financial Resources shown by the bidder to meet with the Cash Flow Requirements (refer 2.1 of Section 3) i.e., <i>latest year's audited financial statements, the line of credit should be (i) project specific; (ii) address to the Client; (iii) shall be issued within last 03 month; (iv) it should be confirmed by the concerned bank(s); (v) it should be unconditional; and (vi) it must be for the complete duration of the Project.</i></p> <p>Bidders are required to submit all documents to support their bid in English language. If the documentary evidence is in a language other than the English language, then the bidder shall submit accurate translation of the relevant passages in the English language duly attested by the notary public of the Bidder's Country or similar legal instrument of notarization as applicable under the laws of the Bidder's home country, (specifying the authority for such attestation as per law of the country).</p> <p>If a Bidder omits to submit any of the above documents or the documents submitted are deficient, the Bid shall not be rejected in the first instance and a clarification will be sought from the Bidder under ITB 27.</p>
<b>ITB 11.2</b>	<p>In addition to the requirement under ITB 4.1, the Joint Venture Agreement or a Letter of Intent to execute a Joint Venture Agreement in the event of the successful Bid, shall include the following:</p> <ul style="list-style-type: none"> <li>(a) The lead partner shall be clearly identified and nominated.</li> <li>(b) The financial share of each partner shall be clearly stated.</li> <li>(c) Corresponding to the financial share of each Partner, the roles and responsibilities of each partner shall also be specified; and</li> <li>(d) Any other requirements as per the applicable law.</li> </ul>
<b>ITB 12.1</b>	<p>The units and rates in figures entered into the Bill of Quantities and Daywork Schedule should be typewritten, if written by hand, must be in print form. Bill of Quantities and Daywork Schedule not presented accordingly may be considered nonresponsive.</p>

<b>ITB 13.1</b>	Alternative Bids <b>shall not</b> be permitted.
<b>ITB 13.2</b>	Alternative times for completion <b>shall not</b> be permitted.
<b>ITB 13.4</b>	Alternative technical solutions shall be permitted for the following parts of the Works: <b>Not Applicable</b>
<b>ITB 14.5</b>	The prices quoted by the Bidder <b>Adjustable</b> .
<b>ITB 15.1</b>	The unit rates and the prices shall be quoted by the Bidder entirely in <b>“Pakistan Rupees”</b> .
<b>ITB 15.4</b>	The rates of exchange shall be the selling rates 28 days prior to the deadline for submission of bids published by <b>State Bank of Pakistan</b> .
<b>ITB 18.1</b>	The bid validity period shall be <b>Sixty (60) days</b> .
<b>ITB 19.1</b>	The Bidder shall furnish a <b>Bid-Securing Declaration</b>
<b>ITB 19.2</b>	The ineligibility period is: <b>Five (05) Years</b>
<b>ITB 19.4</b>	Subject to the succeeding sentences, any bid not accompanied by Bid-Securing Declaration shall be rejected by the Employer as nonresponsive. If a Bidder submits a Bid-Securing Declaration that (i) deviates in form, content , and/or period of validity or (ii) does not provide sufficient identification of the Bidder (including, without limitation, failure to indicate the name of the Joint Venture or, where the Joint Venture has not yet been constituted, the names of all future Joint Venture Partners), the Employer shall request the Bidder to submit a compliant Bid-Securing Declaration within fourteen (14) days of receiving such a request. Failure to provide a compliant Bid-Securing Declaration within the prescribed period of receiving such a request shall cause the rejection of the Bid
<b>ITB 20.1</b>	<p>In addition to the original Bid, the number of copies is: <b>Three (03)</b></p> <p>To facilitate evaluation, bidders are encouraged to submit the scanned soft copies, in PDF format, of their Bids in shape of a USB Drive.</p> <p>The soft copy (USB) of the Bids shall be enclosed in the envelope containing the hard copy of the Bidder’s Original Bid.</p> <p>If there is any discrepancy between the data/information in the soft copy (USB) of the Bidder’s Bids and the hard copy of the Bidder’s Bids and between the Price indicated in the hard copy of the Bidder’s Original Price Bid, and in the soft copy (USB) of the Bidder’s Price Bid, the data and information indicated in the hard copy of the Original Bid shall prevail. All of the rates and amounts must be written by the bidder in words that are written in figures.</p> <p>In addition to above, soft copy of Priced Bid in “Excel format”, in the same USB containing the “PDF format”, shall also be provided in the envelope containing the hard copy of the Bidder’s Original Price Bid, to facilitate review and evaluation process.</p> <p><b>Note:</b> Submission of the USB is only for reference and shall not constitute electronic bid submission as stipulated in ITB 21.1(b) and is provision in the Data Sheet.</p>



<b>ITB 20.2</b>	<p>The written confirmation of authorization to sign on behalf of the Bidder shall consist of a board resolution or its equivalent, or power of attorney, which should either be:</p> <p>a) <i>notarized, or</i></p> <p>b) <i>attested to by an appropriate forum (authority) in the Bidder's home country, specifying the representative's authority to sign the bid on behalf of the bidder.</i></p> <p><i>If the bidder is an intended or existing joint venture, such authorization should be signed by all parties and specify the representative's authority to sign the bid on behalf of the intended or existing joint venture.</i></p> <p><i>If the joint venture has not yet been formed, also include written evidence from all proposed partners of joint venture of their intent to enter into a joint venture in the event of a contract award.</i></p>
<b>ITB 20.2</b>	The Bidder shall submit an acceptable authorization within fourteen (14) days.

### D. Submission and Opening of Bids

<b>ITB 21.1</b>	Bidders shall submit their Bids by mail or by hand.																				
<b>ITB 21.1 (b)</b>	Electronic bidding submission procedures shall be: <b>Not Applicable</b> .																				
<b>ITB 22.1</b>	<p>For <b>bid submission purposes</b> only, the Employer's address is:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;">Attention:</td> <td><b>Project Director Project Management Office Pehur High Level Canal Extension Project/ Emergency Flood Assistance Project Khyber Pakhtunkhwa, Irrigation Department</b></td> </tr> <tr> <td>Street address:</td> <td><b>Gohati, Swabi</b></td> </tr> <tr> <td>Floor/ Room number:</td> <td><b>Office of the Project Director</b></td> </tr> <tr> <td>City:</td> <td><b>Swabi, Khyber Pakhtunkhwa</b></td> </tr> <tr> <td>ZIP code:</td> <td><b>23430</b></td> </tr> <tr> <td>Country:</td> <td><b>Islamic Republic of Pakistan</b></td> </tr> <tr> <td>Telephone:</td> <td><b>+92-(938)-530103</b></td> </tr> <tr> <td>E-mail address:</td> <td><b>pmophlce@gmail.com / efapirrigation@gmail.com</b></td> </tr> </table> <p><b>The deadline for bid submission is:</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;">Date:</td> <td><b>02 November 2023</b></td> </tr> <tr> <td>Time:</td> <td><b>1100 Hours</b></td> </tr> </table>	Attention:	<b>Project Director Project Management Office Pehur High Level Canal Extension Project/ Emergency Flood Assistance Project Khyber Pakhtunkhwa, Irrigation Department</b>	Street address:	<b>Gohati, Swabi</b>	Floor/ Room number:	<b>Office of the Project Director</b>	City:	<b>Swabi, Khyber Pakhtunkhwa</b>	ZIP code:	<b>23430</b>	Country:	<b>Islamic Republic of Pakistan</b>	Telephone:	<b>+92-(938)-530103</b>	E-mail address:	<b>pmophlce@gmail.com / efapirrigation@gmail.com</b>	Date:	<b>02 November 2023</b>	Time:	<b>1100 Hours</b>
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Date:	<b>02 November 2023</b>																				
Time:	<b>1100 Hours</b>																				
<b>ITB 25.1</b>	<p>The bid opening shall take place at:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;">Street address:</td> <td><b>Office of the Project Director Project Management Office Pehur High Level Canal Extension Project/ Emergency Flood Assistance Project Khyber Pakhtunkhwa, Irrigation Department</b></td> </tr> <tr> <td>Floor / Room number:</td> <td><b>Office of the Project Director</b></td> </tr> <tr> <td>City:</td> <td><b>Gohati, Swabi, Khyber Pakhtunkhwa</b></td> </tr> <tr> <td>ZIP code:</td> <td><b>23430</b></td> </tr> <tr> <td>Country:</td> <td><b>Islamic Republic of Pakistan</b></td> </tr> <tr> <td>Date:</td> <td><b>02 November 2023</b></td> </tr> </table>	Street address:	<b>Office of the Project Director Project Management Office Pehur High Level Canal Extension Project/ Emergency Flood Assistance Project Khyber Pakhtunkhwa, Irrigation Department</b>	Floor / Room number:	<b>Office of the Project Director</b>	City:	<b>Gohati, Swabi, Khyber Pakhtunkhwa</b>	ZIP code:	<b>23430</b>	Country:	<b>Islamic Republic of Pakistan</b>	Date:	<b>02 November 2023</b>								
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ZIP code:	<b>23430</b>																				
Country:	<b>Islamic Republic of Pakistan</b>																				
Date:	<b>02 November 2023</b>																				

	Time: <b>1130 Hours</b>
<b>ITB 25.1</b>	Electronic bid opening procedure shall be as follows: <b>Not Applicable</b>
<b>ITB 25.3</b>	The Letter of Bid and Bill of Quantities shall be initialled by <b>at least three (03)</b> representatives of the Employer attending the Bid opening.

### E. Evaluation and Comparison of Bids

<b>ITB 32.1</b>	The currency that shall be used for bid evaluation and comparison purposes to convert all bid prices expressed in various currencies into a single currency is: <b>Pak Rupees (PKR)</b> The source of the selling exchange rate shall be: <b>State Bank of Pakistan</b> The date for the selling exchange rate shall be: <b>28 days prior to the deadline for submission of bids.</b>
<b>ITB 33.1</b>	Domestic preference <b>shall not</b> apply.
<b>ITB 34.1</b>	The Employer <b>does not intend</b> for the contractor to execute any specific elements of the Works through nominated Subcontractors.
<b>ITB 38.2</b>	Qualifications of other firms such as the <b>Bidder's subsidiaries, parent entities, affiliates, subcontractors</b> (other than Specialist Subcontractors permitted in ITB 38.2) <b>shall not</b> be permitted.
<b>ITB 40.1</b>	Standstill provisions shall not apply.

### F. Award of Contracts

<b>ITB 45.1</b>	The procedures for Bidding-Related Complaints are referenced in the Procurement Regulations for ADB Borrowers (Appendix 7). The Bidder should submit its complaint following these procedures, in writing, to:  Title or position: <b>Secretary</b> Client: <b>Irrigation Department, Government of Khyber Pakhtunkhwa</b> Address: <b>Civil Secretariat, Peshawar</b> Project: <b>Emergency Flood Assistance Project (EFAP)</b>
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# Section 3: Evaluation and Qualification Criteria

## - Following Prequalification -

This Section contains all the criteria that the Employer shall use to evaluate bids and qualify Bidders. In accordance with ITB 35 to ITB 38, no other methods, criteria and factors shall be used. The Bidder shall provide all the information requested in the forms included in Section 4 (Bidding Forms).

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# 1. Evaluation

In addition to the criteria listed in ITB 35.2 (a)–(f), other relevant factors are as follows:

## 1.1 Adequacy of Technical Proposal

Evaluation of the Bidder's Technical Proposal will include an assessment of the Bidder's technical capacity to successfully implement the contract considering its proposed site organization, method statement, mobilization, and construction schedule (to be described by the Bidder in sufficient detail to demonstrate the adequacy of its work methods, scheduling, and material sourcing) including the extent to which they are presented in a consistent manner and comply with requirements stipulated in Section 6 (Employer's Requirements) without material deviation, reservation, or omission.

Noncompliance with equipment and personnel requirements described in Section 6 (Employer's Requirements) shall not normally be a ground for bid rejection, and such noncompliance will be subject to clarification during bid evaluation and rectification prior to contract award.

## 1.2 Completion Time

An alternative Completion Time, if permitted under ITB 13.2, will be evaluated as follows:

**Not Applicable**

## 1.3 Technical Alternatives

Technical alternatives, if permitted under ITB 13.4, will be evaluated as follows:

**Not Applicable**

## 1.4 Quantifiable Nonconformities and Omissions

Subject to ITB 14.2 and ITB 35.2, the evaluated cost of quantifiable nonconformities including omissions, is determined as follows:

Pursuant to ITB 30.3, the cost of all quantifiable nonmaterial nonconformities shall be evaluated, including omissions in Daywork where competitively priced but excluding omission of prices in the Bill of Quantities. The Employer will make its own assessment of the cost of any nonmaterial nonconformities and omissions for the purpose of ensuring fair comparison of Bids.

## 1.5 Domestic Preference

If domestic preference is provided for under ITB 33.1, the following procedure shall apply:

**Not Applicable**

## 1.6 Other Criteria

The Other Criteria is described as under:

### 1.6.1 Environmental, Health and Safety Management Plan (EHSMP)

Any bid not accompanied by the EHSMP may be rejected by the Employer as nonresponsive. If a Bidder submits a EHSMP that is not commensurate with the risks and impacts of the proposed works and activities in the bidding document, the Employer shall issue a request for clarification to request for further information from the Bidder. The Bidder must submit the requested information within **five (05)** days of receiving such a request. Failure to provide a satisfactory response to the request for further information within the prescribed period of receiving such a request may cause the rejection of the Bid.

### 1.6.2 Sustainable Procurement

**Not Applicable.**

### 1.6.3 Life Cycle costs (for Financial Evaluation)

Life cycle costing **shall not** apply.

## 1.8 Multiple Contracts

Works are grouped in multiple contracts and pursuant to ITB 35.4, the Employer shall evaluate and compare Bids on the basis of a contract, or a combination of contracts, or as a total of contracts in order to arrive at the least-cost combination for the Employer by taking into account discounts offered by Bidders in case of award of multiple contracts.

If a Bidder as defined in ITB 4.1 submits several successful (lowest evaluated substantially responsive) bids, the evaluation will also include an assessment of the Bidder's capacity to meet the following aggregated requirements as presented in the bid:

- Average annual construction turnover,
- Financial resources,
- Equipment to be allocated, and
- Personnel to be fielded.

## 2. Qualification

### 2.1 Financial Resources

If the bid evaluation process and the decision for the award of the Contract takes more than 1 year from the date of bid submission, Bidders may be asked to resubmit their current contract commitments and latest information on financial resources supported by latest audited accounts or audited financial statements, or if not required by the law of the Bidder's country, other financial statements acceptable to the Employer, and the Bidders' financial capacity, will be reassessed on this basis.

Criteria Requirement	Compliance Requirements			Documents Submission Requirements	
	Single Entity	Joint Venture			
		All Partners Combined	Each Partner	One Partner	
<b>For Single Entities</b> The Bidder must demonstrate that its financial resources defined in FIN-3, less its financial obligations for its current contract commitments defined in FIN-4, meet or exceed the total requirement for the Subject Contract is <b>PKR 253 million or US\$ equivalent</b>	Must meet requirement	Not applicable	Not applicable	Not applicable	Form FIN – 3 and Form FIN – 4
<b>For Joint Ventures</b> (1) One partner must demonstrate that its financial resources defined in FIN-3, less its financial obligations for its own current contract commitments defined in FIN-4, meet or exceed its required share of <b>40%</b> from the total requirement for the Subject Contract.  AND	Not applicable	Not applicable	Not applicable	Must meet requirement	Form FIN – 3 and Form FIN – 4
(2) Each partner must demonstrate that its financial resources defined in FIN - 3, less its financial obligations for its own current contract commitments defined in FIN-4, meet or exceed its required share of <b>25%</b> from the total requirement for the Subject Contract.  AND	Not applicable	Not applicable	Must meet requirement	Not applicable	Form FIN – 3 and Form FIN – 4
(3) The Joint Venture must demonstrate that the combined financial resources of all partners defined in FIN - 3, less all the partners' total financial obligations for the current contract commitments defined in FIN-4, meet or exceed the total requirement for the Subject Contract of <b>PKR 253 million or US\$ equivalent</b>	Not applicable	Must meet requirement	Not applicable	Not applicable	Form FIN – 3 and Form FIN – 4

## 2.2 Updating of Information

The Bidder shall continue to meet the criteria used at the time of prequalification. Updating and reassessment of the following information which was previously considered during prequalification will be required:

- (a) Eligibility
- (b) Historical Contract Nonperformance
- (c) Financial Requirements
  - (i) Historical Financial Performance
  - (ii) Average Annual Construction Turnover

The Bidder shall provide updated details for the above by using the relevant forms included in Section 4 (Bidding Forms).

# Section 4: Bidding Forms

## - Following Prequalification -

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## Letter of Bid

**Note-**

The Bidder must accomplish the Letter of Bid on its letterhead clearly showing the Bidder's complete name and address.

Date: .....

OCB No.: .....

Invitation for Bid No.: .....

To:

**Project Director  
Project Management Office (PMO),  
Pehur High Level Canal Extension Project /  
Emergency Flood Assistance Project  
Gohati, Swabi**

We, the undersigned, declare that:

- (a) We have examined and have no reservations to the Bidding Documents, including Addenda issued in accordance with Instructions to Bidders (ITB) 8.
- (b) We acknowledge that we have read and understand ADB's Anticorruption Policy (1998) and Integrity Principles and Guidelines (2015), both as amended from time to time.
- (c) We offer to execute in conformity with the Bidding Documents the following Works:

**Package-3: EFAP/KPID/CW-03: Rehabilitation of Canals and Drains, District DI Khan – Paharpur Irrigation Division**

- (d) The total price of our Bid, excluding any discounts offered in item (d) below is:

*[amount of foreign currency in words], [amount in figures], and [amount of local currency in words], [amount in figures]*

*The total bid price from the Summary of Bill of Quantities should be entered by the Bidder inside this box. Absence of the total bid price in the Letter of Bid may result in the rejection of the bid.*

- (e) The discounts offered and the methodology for their application are: *[insert discounts and methodology for their application if any]*
- (f) Our bid shall be valid for a period of *[insert bid validity period as specified in ITB 18.1 of the BDS]* days starts from the date fixed for the bid submission deadline in accordance with ITB 22.1, and it shall remain binding upon us and may be accepted at any time before the expiration of that period.
- (g) If our bid is accepted, we commit to obtain a performance security in accordance with the Bidding Documents.
- (h) Our firm, including any Subcontractors or Suppliers for any part of the Contract, have nationalities from eligible countries in accordance with ITB 4.2.

- (i) We, our directors, key officers, key personnel, including any Subcontractors, consultants, subconsultants, manufacturers, service providers or Suppliers for any part of the contract, do not have any conflict of interest in accordance with ITB 4.3.

If there is any conflict of interest, please state details:

- (i) Parties involved in the conflict of interest: \_\_\_\_\_  
 (ii) Details about the conflict of interest: \_\_\_\_\_

- (j) We are not participating, as a Bidder, either individually or as partner in a Joint Venture, in more than one Bid in this bidding process in accordance with ITB 4.3(e), other than alternative offers submitted in accordance with ITB 13.
- (k) Our firm, Joint Venture partners, our respective direct and indirect shareholders, directors, key officers, key personnel, associates, parent company, affiliates or subsidiaries, including any Subcontractors, consultants, subconsultants, manufacturers, service providers or Suppliers for any part of the contract, are not subject to, or not controlled by any entity or individual that is subject to a temporary suspension or a debarment imposed by the Asian Development Bank or a debarment imposed by the Asian Development Bank in accordance with the Agreement for Mutual Enforcement of Debarment Decisions between the Asian Development Bank and other development banks.<sup>1</sup>
- (l) Our firm, Joint Venture partners, our respective direct and indirect shareholders, directors, key officers, key personnel, associates, parent company, affiliates or subsidiaries, including any Subcontractors, consultants, subconsultants, manufacturers, service providers or Suppliers for any part of the contract, are not under ongoing investigation and/or sanctions proceedings by the Asian Development Bank or any multilateral development bank.

If under ongoing investigation and/or sanction proceedings by the Asian Development Bank or any multilateral development bank, please state details:

- (i) Name of the multilateral development bank: \_\_\_\_\_  
 (ii) Reason for the ongoing investigation/allegations: \_\_\_\_\_

- (m) Our firm, Joint Venture partners, our respective direct and indirect shareholders, directors, key officers, key personnel, associates, parent company, affiliates or subsidiaries, including any Subcontractors, consultants, subconsultants, manufacturers, service providers or Suppliers for any part of the Contract, are not temporarily suspended, debarred, declared ineligible, or subject to any national and/or international sanctions by any country, any international organization, any multilateral development bank and other donor agency.

If so temporarily suspended, debarred, declared ineligible, or subject to any national and/or international sanctions by any country, any international organization, any multilateral development bank and other donor agency, please state details (as applicable to each Joint Venture partner, their respective direct or indirect shareholders, directors, key officers, key personnel, associate, parent company, affiliate, subsidiaries, Subcontractors, consultants, subconsultants, manufacturers, service providers and/or Suppliers):

- (i) Name of Institution: \_\_\_\_\_  
 (ii) Period of the temporary suspension, debarment, ineligibility, or national or international sanction [*start and end date*]: \_\_\_\_\_  
 (iii) Reason for the temporary suspension, debarment, ineligibility, or national or international sanction: \_\_\_\_\_

<sup>1</sup> These institutions include African Development Bank, European Bank for Reconstruction and Development (EBRD), Inter-American Development Bank (IADB), and the World Bank Group. According to paragraph 9 of the Agreement, other international financial institutions may join upon the consent of all Participating Institutions and signature of a Letter of Adherence by the international financial institution substantially in the form provided (Annex B to the Agreement). Upon adherence, such international financial institution shall become a Participating Institution for purposes of the Agreement. Bidders are advised to check [www.adb.org/integrity](http://www.adb.org/integrity) for updates.

(n) Our firm, Joint Venture partners, associates, parent company, affiliates or subsidiaries, including any Subcontractors, consultants, subconsultants, manufacturers, service providers, Suppliers, key officers, directors and key personnel have never been charged or convicted with any criminal offense (including felonies but excluding misdemeanors) or infractions and/or violations of ordinance; nor charged or found liable in any civil or administrative proceedings in the last 10 years; or undergoing investigation for such, or subject to any criminal, civil or administrative orders, monitorship or enforcement actions.

If so charged, convicted found liable, under ongoing investigation, or subject to orders, monitorship or enforcement actions, please state details:

- (i) Nature of the offense, violation, proceedings, investigation, and/or monitorship or enforcement actions: \_\_\_\_\_
- (ii) Court, area of jurisdiction and/or the enforcement agency: \_\_\_\_\_
- (iii) Resolution [*i.e. dismissed, settled, or convicted; duration of penalty*]: \_\_\_\_\_
- (iv) Other relevant details [*please specify*]: \_\_\_\_\_

(o) Our firm, Joint Venture partners, our respective direct and indirect shareholders, directors, key officers, key personnel, associates, affiliates or subsidiaries, including any Subcontractors, consultants, subconsultants, manufacturers, service providers or Suppliers, can make and receive electronic fund transfer payments through the international banking system or otherwise discharge the Employer’s obligation upon initiation of wire transfer.

If unable to make or receive funds through the international banking system or otherwise discharge the Employer’s obligation upon initiation of wire transfer, please state the details:

- (i) Nature of the restriction: \_\_\_\_\_
- (ii) Jurisdiction of the restriction: \_\_\_\_\_
- (iii) Other relevant details: \_\_\_\_\_

(p) Our firm, Joint Venture partners, associates, parent company, affiliates or subsidiaries, including any Subcontractors, consultants, subconsultants, manufacturers, service providers or Suppliers, key officers, directors and key personnel are not from a country which is prohibited to export goods or services to, or receive any payments from the Employer’s country and/or are not prohibited to receive payments for particular goods or services by the Employer’s country by an act of compliance with a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations.

(q) We understand that it is our obligation to notify the Employer of any changes in connection with the matters described in paragraphs (i), (k), (l), (m), (n), (o), (p) and (t) of this Letter of Bid.

(r) [We are not a government-owned enterprise] / [We are a government-owned enterprise but meet the requirements of ITB 4.5].<sup>2</sup>

(s) We have not been suspended nor declared ineligible by the Employer based on execution of a Bid-Securing Declaration in accordance with ITB 4.6.

(t) We have paid, or intend to pay, either directly or indirectly, the following commissions, gratuities, or fees with respect to the bidding process or execution of the Contract:<sup>3</sup>

Name of Recipient	Address	Reason	Amount
.....	.....	.....	.....
.....	.....	.....	.....

<sup>2</sup> Use one of the two options as appropriate.  
<sup>3</sup> If none has been paid or is to be paid, indicate “None”.

- (u) We understand that this bid, together with your written acceptance thereof included in your notification of award through the issuance of Letter of Acceptance, shall constitute a binding contract between us, until a formal contract is prepared and executed.
- (v) We understand that you are not bound to accept the lowest evaluated bid or any other bid that you may receive.
- (w) At any time following submission of our Bid, we shall permit, and shall cause our Joint Venture partners, directors, key officers, key personnel, associates, parent company, affiliates or subsidiaries, including any Subcontractors, consultants, subconsultants, manufacturers, service providers or Suppliers for any part of the contract to permit ADB or its representative to inspect our site, assets, accounts and records and other documents relating to the bid submission and to have them audited by auditors appointed by ADB. We understand that failure of this obligation may constitute obstructive practice that may result in debarment and/or contract termination.
- (x) Regardless of whether the contract will be awarded to us, we shall preserve all accounts, records and other documents related to bid submission for at least 3 years from the date of submission of the bid or the period prescribed in applicable law, whichever is longer.
- (y) If we are awarded the contract, we shall preserve all accounts, records and other documents related to the procurement and execution of the contract for at least 5 years after completing the works contemplated in the relevant contracts or the period prescribed in applicable law, whichever is longer.
- (z) If our Bid is accepted, we commit to mobilizing key equipment and personnel in accordance with the requirements set forth in Section 6 (Employer’s Requirements) and our technical proposal, or as otherwise agreed with the Employer.
- (aa) We certify on behalf of the Bidder, that the information provided in the bid has been fully reviewed, given in good faith, and to the best of our knowledge is true and complete. We understand that it is our obligation to inform the Employer of any changes to the information as and when it becomes known to us. We understand that any misrepresentation that knowingly or recklessly misleads, or attempts to mislead may lead to the automatic rejection of the Bid or cancellation of the contract, if awarded; and may result in remedial actions, in accordance with ADB’s Anticorruption Policy (1998, as amended to date) and Integrity Principles and Guidelines (2015, as amended from time to time).

Name .....

In the capacity of .....

Signed .....

Duly authorized to sign the Bid for and on behalf of .....

Date .....

## Schedules

### Schedule of Payment Currencies

**Package-3: EFAP/KPID/CW-03: Rehabilitation of Canals and Drains, District DI Khan – Paharpur Irrigation Division**

	A	B	C	D
Name of Payment Currency	Amount of Currency	Rate of Exchange to Local Currency	Local Currency Equivalent $C = A \times B$	Percentage of Net Bid Price (NBP) $\frac{100 \times C}{NBP}$
Local Currency		1.00		
Foreign Currency #1				
Foreign Currency #2				
Foreign Currency #3				
Net Bid Price				100.00
Provisional Sums Expressed in Local Currency		1.00		
BID PRICE				

**- Note -**

*The rates of exchange shall be the selling rates 28 days prior to the deadline for submission of bids published by the source specified in BDS 15.*

## Tables of Adjustment Data

**Table A - Local Currency Payment**

**Package-3: EFAP/KPID/CW-03: Rehabilitation of Canals and Drains, District DI Khan – Paharpur Irrigation Division**

S/No	Description	Unit	*Base Rate	Weightages	Source of Index (District: DI Khan)
(i)	Fixed Portion	-		<b>0.15</b>	-
(ii)	High Speed Diesel	Litres		<b>To be proposed by the bidder (Acceptable range 0.32 to 0.35)</b>	Monthly Statistical Bulletin, Pakistan Bureau of Statistics / Pakistan State Oil
(iii)	Labour	Per Day		<b>To be proposed by the bidder (Acceptable range 0.18 to 0.20)</b>	Monthly Statistical Bulletin, Pakistan Bureau of Statistics GOP
(iv)	All types of Steel	Per Ton		<b>To be proposed by the bidder (Acceptable range 0.13 to 0.15)</b>	Monthly Statistical Bulletin, Pakistan Bureau of Statistics GOP
(v)	Cement	Per Bag		<b>To be proposed by the bidder (Acceptable range 0.14 to 0.15)</b>	Monthly Statistical Bulletin, Pakistan Bureau of Statistics GOP
		<b>Total</b>		<b>1.000 [Sum of (ii), (iii), (iv) and (v) shall not exceed 0.85]</b>	

Note:

1. Base prices of Specified Material shall be as of actually prevailing market on the base date notified by the Engineer with the approval of the Employer after the award of works. The Base Date means the date 28 days prior to the deadline for the bid submission.
2. The basic material prices are meant to be ex-factory prices and inclusive all kinds of taxes and duties that can be levied at source.
3. Adjustment of increase/ decrease shall only be admissible for the materials listed above.
4. All amounts shall be in Pakistani Rupees.
5. Value of work done for escalation purpose shall be value of permanent works (excluding bill for General items and Provisional sums)
6. The proposed weightages of bidders exceeding the upper limit shall not be permitted.
7. All amounts in Pak Rupees Only.

**Table B - Foreign Currency Payment**

**Name of Currency:** .....

*[Insert name of currency. If the bidder wishes to quote in more than one foreign currency, this table should be repeated for each foreign currency such as #1, #2 and #3..]*

To be entered by the Bidder				
Index Code	Index Description	Source of Index	Base Value and Date	Bidder's Proposed Weighting
L: Labor	Nonadjustable	—	—	a: <u>0.15</u>
E: Equipment				b: _____
M!: Material 1				c: _____
M2: Material 2				d: _____
...etc...				e: _____
				<b>1.00</b>

To be entered by the Bidder. (Employer may prescribed the range. of weighing)

**- Notes -**

- As per GCC 1.1.3.1, "Base Date" means the date 28 days prior to the latest date for submission of the bid.
- For a given currency, the "Source of Index" should be issued or published within the country to which the currency relates.
- Tables of Adjustment Data shall only be included if prices are to be quoted as adjustable prices in accordance with ITB 14.5.

## Bid Security Bank Guarantee

[Bank's name, and address of issuing branch or office]<sup>4</sup>

**Beneficiary:** [Name and address of the Employer]

**Date:** .....

**Bid Security No.:** .....

We have been informed that [name of the Bidder] (hereinafter called "the Bidder") has submitted to you its bid dated [please specify] (hereinafter called "the Bid") for the execution of [name of contract] under Invitation for Bids No. [please specify] ("the IFB").

Furthermore, we understand that, according to your conditions, bids must be supported by a bid guarantee.

At the request of the Bidder, we [name of bank] hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of [amount in words] [amount in figures] upon receipt by us of your first demand in writing accompanied by a written statement stating that the Bidder is in breach of its obligation(s) under the bid conditions, because the Bidder

- (a) has withdrawn its Bid during the period of bid validity specified by the Bidder in the Letter of Bid; or
- (b) does not accept the correction of errors in accordance with the Instructions to Bidders (hereinafter "the ITB"); or
- (c) having been notified of the acceptance of its Bid by the Employer during the period of bid validity, (i) fails or refuses to execute the Contract Agreement, or (ii) fails or refuses to furnish the performance security, in accordance with the ITB, or (iii) fails or refuses to furnish a domestic reference security, if required.

This guarantee will expire (a) if the Bidder is the successful Bidder, upon our receipt of copies of the Contract Agreement signed by the Bidder and the Performance Security issued to you upon the instruction of the Bidder; or (b) if the Bidder is not the successful Bidder, upon the earlier of (i) our receipt of a copy of your notification to the Bidder of the name of the successful Bidder, or (ii) 28 days after the expiration of the Bidder's bid.

Consequently, any demand for payment under this guarantee must be received by us at the office indicated above on or before that date.

This guarantee is subject to the Uniform Rules for Demand Guarantees (URDG) 2010 Revision, ICC Publication No. 758.<sup>5</sup>

[Authorized signature(s) and bank's seal (where appropriate)]

<sup>4</sup> All italicized text is for use in preparing this form and shall be deleted from the final document.

<sup>5</sup> Or the employer may use "Uniform Rules for Demand Guarantees (URDG), ICC Publication No. 458 as appropriate.



## Bid-Securing Declaration

Date: *[insert date (as day, month and year)]*

Bid No.: *[insert number of bidding process]*

Alternative No.: *[insert identification No if this is a bid for an alternative]*

To: *[insert complete name of the Employer]*

We, the undersigned, declare that:

We understand that, according to your conditions, Bids must be supported by a Bid-Securing Declaration.

We accept that we will automatically be suspended from being eligible for bidding in any contract with the Borrower for the period of time of *[insert number of years as indicated in ITB 19.2 of the BDS]* starting on the date that we receive a notification from the Employer, if we are in breach of our obligation(s) under the bid conditions, because we

- (a) have withdrawn our Bid during the period of bid validity specified in the Letter of Bid; or
- (b) do not accept the correction of errors in accordance with the Instructions to Bidders (hereinafter “the ITB”); or
- (c) having been notified of the acceptance of our Bid by the Employer during the period of bid validity, (i) fail or refuse to execute the Contract, if required; or (ii) fail or refuse to furnish the Performance Security, in accordance with the ITB; or (iii) fail or refuse to furnish a domestic preference security, if required.

We understand this Bid-Securing Declaration shall expire if we are not the successful Bidder, upon the earlier of (i) our receipt of your notification to us of the name of the successful Bidder; or (ii) 28 days after the expiration of our Bid.

Signed: *[insert signature of person whose name and capacity are shown]*

In the capacity of *[insert legal capacity of person signing the Bid-Securing Declaration]*

Name: *[insert complete name of person signing the Bid-Securing Declaration]*

Duly authorized to sign the bid for and on behalf of *[insert complete name of the Bidder]*

Dated on \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_ *[insert date of signing]*

Corporate Seal *[where appropriate]*

## AFFILIATE COMPANY GUARANTEE

Name of Contract/Contract No.: \_\_\_\_\_

Name and Address of Employer: \_\_\_\_\_

\_\_\_\_\_

[together with successors and assigns].

We have been informed that [name of Contractor] (hereinafter called the "Contractor") is submitting an offer for the above-referenced Contract in response to your invitation, and that the conditions of your invitation require its offer to be supported by an affiliate company guarantee.

In consideration of you, the Employer, awarding the Contract to the Contractor, we [name of affiliated company] irrevocably and unconditionally guarantee to you, as a primary obligation, that (i) throughout the duration of the Contract, we will make available to the Contractor our financial, technical capacity, expertise and resources required for the Contractor's satisfactory performance of the Contract; and (ii) we are fully committed, along with the Contractor, to ensuring a satisfactory performance of the Contract.

If the Contractor fails to so perform its obligations and liabilities and comply with the Contract, we will indemnify the Employer against and from all damages, losses and expenses (including legal fees and expenses) which arise from any such failure for which the Contractor is liable to the Employer under the Contract.

This guarantee shall come into full force and effect when the Contract comes into full force and effect. If the Contract does not come into full force and effect within a year of the date of this guarantee, or if you demonstrate that you do not intend to enter into the Contract with the Contractor, this guarantee shall be void and ineffective. This guarantee shall continue in full force and effect until all the Contractor's obligations and liabilities under the Contract have been discharged, when this guarantee shall expire and shall be returned to us, and our liability thereunder shall be discharged absolutely.

This guarantee shall apply and be supplemental to the Contract as amended or varied by the Employer and the Contractor from time to time. We hereby authorize them to agree on any such amendment or variation, the due performance of which and compliance with which by the Contractor are likewise guaranteed hereunder. Our obligations and liabilities under this guarantee shall not be discharged by any allowance of time or other indulgence whatsoever by the Employer to the Contractor, or by any variation or suspension of the works to be executed under the Contract, or by any amendments to the Contract or to the constitution of the Contractor or the Employer, or by any other matters, whether with or without our knowledge or consent.

This guarantee shall be governed by the law of the same country (or other jurisdiction) that governs the Contract and any dispute under this guarantee shall be finally settled under the [Rules or Arbitration provided in the Contract]. We confirm that the benefit of this guarantee may be assigned subject only to the provisions for assignment of the Contract.

Signed by:..... Signed by: .....

[signature]

[signature]

[name]

[name]

[position in parent/subsidiary company]

[position in parent/subsidiary company]

Date:.....

**-- Note --**

If permitted in accordance with ITB 38.2 of the BDS, the Bidder shall provide the Affiliate Company Guarantee Form filled out and signed by each subsidiary, parent entity or affiliate that the Bidder submits for consideration of the Employer in determining its qualifications.

## Bill of Quantities

### B. 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 as per specifications & drawings and measured by the Contractor and verified by the Engineer and valued at the rates and prices entered in the priced Bill of Quantities, where applicable, and otherwise at such rates and prices as the Engineer may fix as per the Contract.
3. The rates and prices entered in the priced Bill of Quantities shall, except as otherwise provided under the Contract include all costs of Contractor's plant, labour, supervision, materials, execution, insurance, profit, taxes and duties, as applicable in the Borrower's Country (modified from time to time) together with all general risks, liabilities and obligations set out or implied in the Contract. Furthermore, all duties, taxes and other levies payable by the Contractor under the Contract, or for any other cause, as on the date 28 days prior to deadline for submission of Bids, shall be included in the rates and prices and the total Bid Price submitted by the Bidder.
4. A rate or price shall be entered against each item in the priced Bill of Quantities, whether quantities are stated or not. The cost of items against which the Contractor will have failed to enter a rate or price shall be deemed to be covered by other rates and prices entered in the Bill of Quantities. The units and rates in figures entered into the Bill of Quantities should be typewritten or if written by hand, must be in print form. Bill of Quantities not presented accordingly may be considered nonresponsive.
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 such as Employer's requirement in Section 6 of the Bidding Documents including Engineer's Laboratory along with equipment and its running expense, survey equipment and their maintenance for entire project life, Environment Management Plan (EMP), Resettlement Plan etc.
6. General directions and descriptions of works and materials are not necessarily repeated not summarized in the Bill of Quantities. Reference to the relevant sections of the Contract documentation 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 and the Employer in accordance with Conditions of Contract.
8. Note: The bid price is inclusive of all Environmental, Health and Safety management and compliance cost.

### B. Work Items

1. Bill of Quantities (BOQs) are attached.
2. Bidders shall Price the Bill of Quantities in Pakistani Rupees Only.

## Financial Situation

### Form FIN – 3: Availability of Financial Resources

Bidders must demonstrate sufficient financial resources, usually comprising of Working Capital supplemented by credit line statements or overdraft facilities and others to meet the Bidder's financial requirements for

- (a) its current contract commitments, and
- (b) the subject contract.

In case of a Joint Venture, each Joint Venture Partner must fill out this form separately and provide the Joint Venture Partner's name:

Joint Venture Partner: \_\_\_\_\_

Financial Resources		
No.	Source of financing	Amount (PKR or \$ equivalent)
1	Working Capital (to be taken from FIN - 1)	
2	Credit Line <sup>a</sup>	
3	Other Financial Resources	
	Total Available Financial Resources	

<sup>a</sup> To be substantiated by a letter from the bank issuing the line of credit (i) project specific; (ii) address to the Client; (iii) shall be issued within last 03 month; (iv) it should be confirmed by the concerned bank(s); (v) it should be unconditional; and (vi) it must be for the complete duration of the Project).

**Form FIN – 4: Financial Requirement for Current Contract Commitments**

Bidders (or each Joint Venture partner) should provide information on their current commitments on all contracts that have been awarded, or for which a letter of intent or acceptance has been received, or for contracts approaching completion, but for which an unqualified, full completion certificate has yet to be issued.

In case of a Joint Venture, each Joint Venture Partner must fill out this form separately and provide the Joint Venture Partner's name:

Joint Venture Partner: \_\_\_\_\_

**Current Contract Commitments**

No.	Name of Contract	Employer's Contact (Address, Tel, Fax)	Contract Completion Date	Outstanding Contract Value (X) <sup>a</sup>	Remaining Contract Period in months (Y) <sup>b</sup>	Monthly Financial Resources Requirement (X / Y)
1						
2						
3						
4						
Total Monthly Financial Requirements for Current Contract Commitments						PKR or \$ equivalentt .....

<sup>a</sup> Remaining outstanding contract values to be calculated from 28 days prior to the bid submission deadline (PKR or \$ equivalent based on the foreign exchange rate as of the same date).

<sup>b</sup> Remaining contract period to be calculated from 28 days prior to bid submission deadline.

**Form FIN - 5: Self-Assessment Tool for Bidder’s Compliance to Financial Resources (Criterion 2.1 of Section 3)**

This form requires the same information submitted in Forms FIN - 3 and FIN - 4. All conditions of “Available Financial Resources Net of CCC  $\geq$  Requirement for the Subject Contract” must be satisfied to qualify.

**Form FIN - 5A: For Single Entities**

For Single Entities: (A)	Total Available Financial Resources from FIN – 3 (B)	Total Monthly Financial Requirement for Current Contract Commitments (CCC) from FIN – 4 (C)	Available Financial Resources Net of CCC $D = (B - C)$	Requirement for the Subject Contract (E)	Results: Yes or No [D must be greater than or equal to E] (F)
_____ (Name of Bidder)				....._	

**Form FIN - 5B: For Joint Ventures**

For Joint Ventures: (A)	Total Available Financial Resources from FIN – 3 (B)	Total Monthly Financial Requirement for Current Contract Commitments (CCC) from FIN – 4 (C)	Available Financial Resources Net of CCC $D = (B - C)$	Requirement for the Subject Contract (E)	Results: Yes or No [D must be greater than or equal to E] (F)
One Partner:					
_____ (Name of Partner)				.....	
Each Partner:					
_____ (Name of Partner 1)				.....	
_____ (Name of Partner 2)				.....	
_____ (Name of Partner 3)				.....	
All partners combined	$\Sigma D =$ Sum of available financial resources net of current contract commitments for all partners		$\Sigma D =$ _____	.....	

**- Note -**

Form FIN – 5 is made available for use by the bidder as a self-assessment tool, and by the Employer as an evaluation work sheet, to determine compliance with the financial resources requirement as stated in 2.1. Failure to submit Form FIN - 5 by the Bidder shall not lead to bid rejection.

# Technical Proposal

**Joint Venture Agreement (in case of JV) in accordance with ITB 11.2**

**Personnel**

**Equipment**

**Site Organization**

**Method Statement**

**Mobilization Schedule**

**Construction Schedule**

**Environmental, Health and Safety Management Plan (EHSMP)**

**Environmental, Health and Safety Code of Conduct**

**Other Documents in accordance with ITB 11.1(h) of Section 2-Bid Data Sheet,**

## Personnel

### Form PER – 1: Proposed Personnel

Bidder should provide the details of the proposed personnel and their experience record in the relevant Information Forms below for each candidate:

1.	Title of position
	Name
2.	Title of position
	Name
3.	Title of position
	Name
4.	Title of position
	Name
5.	Title of position
	Name
6.	Title of position
	Name
etc.	Title of position
	Name

**-- Note --**

*All titles of positions will be as listed in Section 6 (Employer's Requirements).*



**Form PER – 2: Resumé of Proposed Personnel**

The Bidder shall provide all the information requested below. Use one form for each position.

<b>Position</b>		
<b>Personnel information</b>	<b>Full Legal Name</b>	<b>Date of birth</b>
	<b>Known as</b>	<b>Place of Birth</b>
	<b>Nationality</b>	<b>Citizenship</b>
	<b>Type of Government ID</b>	<b>ID number</b>
	<b>Attach a copy of ID to this form</b>	
	<b>Professional qualifications</b>	
<b>Present employment</b>	<b>Name of employer</b>	
	<b>Address of employer</b>	
	<b>Telephone</b>	<b>Contact (manager / personnel officer)</b>
	<b>Fax</b>	<b>E-mail</b>
	<b>Job title</b>	<b>Years with present employer</b>

Summarize professional experience in reverse chronological order. Indicate particular technical and managerial experience relevant to the project.

<b>From</b>	<b>To</b>	<b>Company/Project/Position/Relevant Technical and Management Experience</b>

## Equipment

### Form EQU: Equipment

The Bidder shall provide adequate information and details to demonstrate clearly that it has the capability to meet the equipment requirements indicated in Section 6 (Employer's Requirements), using the Forms below. A separate Form shall be prepared for each item of equipment listed, or for alternative equipment proposed by the Bidder.

<b>Item of Equipment</b>	
<b>Equipment Information</b>	<b>Name of manufacturer</b>
	<b>Capacity</b>
	<b>Model and power rating</b>
	<b>Year of manufacture</b>
<b>Current Status</b>	<b>Current location</b>
	<b>Details of current commitments</b>
<b>Source</b>	<b>Indicate source of the equipment</b> <input type="checkbox"/> Owned <input type="checkbox"/> Rented <input type="checkbox"/> Leased <input type="checkbox"/> Specially manufactured

Omit the following information for equipment owned by the Bidder.

<b>Owner</b>	<b>Name of owner</b>
	<b>Address of owner</b>
	<b>Telephone</b>
	<b>Contact name and title</b>
	<b>Fax</b>
	<b>Telex</b>
<b>Agreements</b>	<b>Details of rental / lease / manufacture agreements specific to the project</b>

## Joint Venture Agreement in accordance with ITB 11.2:

The Joint Venture Agreement or a Letter of Intent to execute a Joint Venture Agreement in the event of the successful Bid, shall include the following:

- (a) All partners shall be jointly and severally liable;
- (b) The lead partner shall be clearly identified and nominated;
- (c) The financial share of each partner shall be clearly stated;
- (d) Corresponding to the financial share of each partner, the roles and responsibilities of each partner shall also be specified in conformance with requirement of Works stated in the Method Statement; and
- (e) Any other requirements as per the applicable law.

In case a letter of intent to execute the Joint Venture Agreement is submitted by the Bidder at the time of submission of the Bid, the Bidder shall be bound to submit a duly executed Joint Venture Agreement to the Employer immediately after the issuance of Letter of Acceptance but not later than 28 days after the issuance of the same. Such Joint Venture Agreement, thus submitted by the successful Bidder must contain the information postulated above. Failure to comply with this condition may lead to the rejection of Bid and forfeiture of Bid Security and/or Bid Securing Declaration, as the case may be.

## Site Organization

**[Note:** *Evaluation of the Bidder's Site Organization will include an assessment of the Bidder's capacity to mobilize key personnel for the Contract consistent with its proposal regarding work methods, scheduling, and material sourcing in sufficient detail and fully in accordance with the requirements stipulated in Section 6 (Employer's Requirements).]*

## Method Statement

The bidder **shall** provide detailed Method Statement of executing the project. The bidder shall also indicate the machinery to be used and key personnel showing their responsibilities.

In case of a JV, the Method Statement **shall** include clear delineation of activities / roles to be performed by each JV partner consistent with the indicated JV share in the JV Agreement.

## Mobilization Schedule

The Mobilization Schedule should reflect the no-objection request and approval step for Site-Specific Environmental, Health and Safety Management Plan as per Contract Conditions.

Bidder shall provide mobilization Schedule conforming with the requirement of condition of contract Clause 14.2.

## Construction Schedule

**[Note:** *Evaluation of the Bidder's Construction Schedule will include an assessment of the Bidder's technical capacity to mobilize equipment for the Contract consistent with its proposal regarding work methods, scheduling, and material sourcing in sufficient detail and fully in accordance with the requirements stipulated in Section 6 (Work's Requirements).]*

*Bidders must provide their Construction Schedule on primavera / MS project or equivalent by allocating the equipment and other resources, critical activities must be identified.]*

### **Environmental, Health and Safety Management Plan (EHSMP)<sup>6</sup>**

The Bidder shall submit an outline Environmental, Health and Safety Management Plan (EHSMP) commensurate with the risks and impacts of the proposed works and activities. These strategies and plans shall describe in detail the actions, materials, equipment, management processes etc. that will be implemented by the Contractor, and its subcontractors.

In developing these strategies and plans, the Bidder shall have regard to the EHS provisions of the contract and EHS risks including those as may be more fully described in Section 6 (Employers' Requirements).

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<sup>6</sup> For projects categorized as Category C for environment for which no EMP has been prepared, this subsection should be omitted.

## Environmental, Health and Safety Code of Conduct

### Environmental, Health and Safety Code of Conduct for Contractor's Personnel Form

#### **Note to Bidder**

*The minimum content of the EHS Code of Conduct form as set out by the Employer shall not be substantially modified. However, the Bidder may add requirements as appropriate, including to take into account Contract-specific issues/risks.*

*The Bidder shall initial and submit the EHS Code of Conduct form as part of its bid.*

### ENVIRONMENTAL, HEALTH AND SAFETY CODE OF CONDUCT FOR CONTRACTOR'S PERSONNEL

We are the Contractor, [enter name of Contractor]. We have signed a contract with [enter name of Employer] for [enter description of the Works]. These Works will be carried out at [enter the Site and other locations where the Works will be carried out]. Our contract requires us to implement measures to address environmental, health and safety risks related to the Works.

This EHS Code of Conduct is part of our measures to deal with environmental, health and safety risks related to the Works. It applies to all our staff, labourers and other employees at the Works Site or other places where the Works are being carried out. It also applies to the personnel of each subcontractor and any other personnel assisting us in the execution of the Works. All such persons are referred to as "**Contractor's Personnel**" and are subject to this EHS Code of Conduct.

This EHS Code of Conduct identifies the behavior that we require from all Contractor's Personnel.

Our workplace is an environment where unsafe, offensive, abusive or violent behavior will not be tolerated and where all persons should feel comfortable raising issues or concerns without fear of retaliation.

### REQUIRED CONDUCT

Contractor's Personnel shall:

1. carry out his/her duties competently and diligently;
2. comply with this EHS Code of Conduct and all applicable laws, regulations and other requirements, including requirements to protect the health, safety and well-being of other Contractor's Personnel and any other person;
3. maintain a safe working environment including by:
  - (a) ensuring that workplaces, machinery, equipment and processes under each person's control are safe and without risk to health;
  - (b) wearing required personal protective equipment;
  - (c) using appropriate measures relating to chemical, physical and biological substances and agents; and
  - (d) following applicable emergency operating procedures.
4. report work situations that he/she believes are not safe or healthy and remove himself/herself from a work situation which he/she reasonably believes presents an imminent and serious danger to his/her life or health;
5. treat other people with respect, and not discriminate against specific groups such as women, people with disabilities, migrant workers or children;

6. report violations of this EHS Code of Conduct; and
7. not retaliate against any person who reports violations of this EHS Code of Conduct, whether to us or the Employer, or who makes use of the grievance mechanism for Contractor's Personnel or the project's Grievance Redress Mechanism.

### **RAISING CONCERNS**

If any person observes behavior that he/she believes may represent a violation of this EHS Code of Conduct, or that otherwise concerns him/her, he/she should raise the issue promptly. This can be done by call [ ] to reach the Contractor's hotline (*if any*) and leave a message.

The person's identity will be kept confidential, unless reporting of allegations is mandated by the country law. Anonymous complaints or allegations may also be submitted and will be given all due and appropriate consideration. We take seriously all reports of possible misconduct and will investigate and take appropriate action. We will provide warm referrals to service providers that may help support the person who experienced the alleged incident, as appropriate.

### **CONSEQUENCES OF VIOLATING THE ENVIRONMENTAL, HEALTH AND SAFETY CODE OF CONDUCT**

Any violation of this EHS Code of Conduct by Contractor's Personnel may result in serious consequences, up to and including termination and possible referral to legal authorities.

FOR CONTRACTOR'S PERSONNEL:

I have received a copy of this EHS Code of Conduct written in a language that I comprehend. I understand that if I have any questions about this EHS Code of Conduct, I can contact [*enter name of Contractor's contact person(s) with relevant experience*] requesting an explanation.

Name of Contractor's Personnel: [*insert name*]

Signature: \_\_\_\_\_

Date: (*day month year*): \_\_\_\_\_

Countersignature of authorized representative of the Contractor:

Signature: \_\_\_\_\_

Date: (*day month year*): \_\_\_\_\_

## Updating of Bidder's Qualification

The Bidder shall update the information given during the corresponding prequalification exercise to demonstrate that he continues to meet the criteria used at the time of prequalification regarding

- (a) Eligibility
- (b) Historical Contract Nonperformance
- (c) Financial Situation
  - (i) Historical Financial Performance
  - (ii) Average Annual Construction Turnover

For this purpose, the Bidder shall use the relevant forms included in this Section.

**Form ELI - 1: Bidder's Information Sheet**

<b>Bidder's Information</b>		
	<b>Information of the Bidder</b>	<b>If the Bidder is a subsidiary or branch, information of any parent company/companies</b>
<b>Names</b>	<b>Full legal name(s)</b>	
	<b>Full trading name(s) (if any)</b>	
<b>Addresses</b>	<b>Registered address(es)</b>	
	<b>Trading address(es)</b>	
	<b>Postal address(es) (if different from trading address)</b>	
<b>Type of organization</b>		
<b>Country of constitution/incorporation/registration</b>		
<b>Year of constitution/incorporation/registration</b>		
<b>Corporate or registration number</b>		
<b>In case of a Joint Venture, legal name of each partner</b>		
<b>Bidder's authorized representative</b> (name, address, telephone number(s), fax number(s), e-mail address)		
<p><b>Attached are copies of the following documents:</b></p> <ol style="list-style-type: none"> <li>1) In case of a single entity, articles of incorporation or constitution and company incorporation/registration of the legal entity named above, in accordance with ITB 4.1 and ITB 4.2.</li> <li>2) Authorization to represent the firm or Joint Venture named above, in accordance with ITB 20.2.</li> <li>3) In case of a Joint Venture, a letter of intent to form a Joint Venture or Joint Venture agreement, in accordance with ITB 4.1.</li> <li>4) In case of a government-owned enterprise, any additional documents not covered under 1 above required to comply with ITB 4.5.</li> </ol>		



**Form ELI - 2: Joint Venture Information Sheet**

Each partner of the Joint Venture and Specialist Subcontractor must fill out this form separately.

Joint Venture / Specialist Subcontractor Information			
<b>Bidder's legal name</b>			
		<b>Information of Joint Venture Partner or Specialist Subcontractor</b>	<b>If any Joint Venture Partner or Specialist Subcontractor is a subsidiary or branch, information of any parent company/companies</b>
<b>Names</b>	<b>Full Legal name(s)</b>		
	<b>Full trading name(s) (if any)</b>		
<b>Addresses</b>	<b>Registered address(es)</b>		
	<b>Trading address (es)</b>		
	<b>Postal address (es) (if different from trading address)</b>		
<b>Type of organization</b>			
<b>Country of constitution/incorporation/ registration</b>			
<b>Year of constitution/incorporation/ registration</b>			
<b>Corporate or registration number</b>			
<b>Joint Venture Partner's or Specialist Subcontractor's authorized representative information</b> <small>(name, address, telephone number(s), fax number(s), e-mail address)</small>			
<p><b>Attached are copies of the following documents:</b></p> <ol style="list-style-type: none"> <li>1) Articles of incorporation or constitution and company incorporation/registration of the legal entity named above, in accordance with ITB 4.1 and ITB 4.2.</li> <li>2) Authorization to represent the firm named above, in accordance with ITB 20.2.</li> <li>3) In the case of a government-owned enterprise, documents establishing legal and financial autonomy and compliance with commercial law, in accordance with ITB 4.5.</li> </ol>			

### Form CON - 1: Historical Contract Nonperformance

Each Bidder must fill out this form in accordance with Criterion 2.2(b) of Section 3 (Evaluation and Qualification Criteria) to describe any history of nonperforming contracts and pending litigation or arbitration formally commenced against it.

In case of a Joint Venture, each Joint Venture Partner must fill out this form separately and provide the Joint Venture Partner's name:

Joint Venture Partner: \_\_\_\_\_

Table 1: History of Nonperforming Contracts			
<b>Choose one of the following:</b> <input type="checkbox"/> No nonperforming contracts. <input type="checkbox"/> Below is a description of nonperforming contracts involving the Bidder (or each Joint Venture partner if Bidder is a Joint Venture).			
Year	Description	Amount of Nonperformed Portion of Contract (\$ equivalent)	Total Contract Amount (\$ equivalent)
[insert year]	Contract Identification: [indicate complete contract name/ number, and any other identification] Name of Employer: [insert full name] Address of Employer: [insert street/city/country] Reason(s) for nonperformance: [indicate main reason(s)]	[insert amount]	[insert amount]
Table 2: Pending Litigation and Arbitration			
<b>Choose one of the following:</b> <input type="checkbox"/> No pending litigation, arbitration or any other material events impacting the net worth and/or liquidity of the bidder. <input type="checkbox"/> Below is a description of all pending litigation, arbitration involving the Bidder or any other material events impacting the net worth and/or liquidity of the bidder (or each Joint Venture partner if Bidder is a Joint Venture).			
Year	Matter in Dispute	Value of Pending Claim in \$ Equivalent	Value of Pending Claim as a Percentage of Net Worth
[insert year]	Contract Identification, as applicable: [indicate complete contract name/ number, and any other identification] Name of Employer, parties involved in the material events impacting the net worth and/or liquidity of the bidder: [insert full name] Address of Employer, parties involved in the material events impacting the net worth and/or liquidity of the bidder: [insert street/city/country] Matter of Dispute: [indicate full description of dispute] Party who initiated the dispute: [indicate "Employer" or "Contractor"] Status: [indicate status of dispute]	[insert amount]	[insert amount]

**Note -**

Table 2 of this form shall only be included if Criterion 2.2(b) of Section 3 (Evaluation and Qualification Criteria) is applicable.

**Form CON – 2: EHS Performance Declaration**

Each Bidder must fill out this form in accordance with Criterion 2.2.4 of Section 3 (Evaluation and Qualification Criteria).

In case of a Joint Venture, each Joint Venture Partner must fill out this form separately and provide the Joint Venture Partner’s name:

Joint Venture Partner: \_\_\_\_\_

In case of a Specialist Subcontractors, each Specialist Subcontractor must fill out this form and provide the Specialist Subcontractor’s name:

Specialist Subcontractor: \_\_\_\_\_

<b>Environmental and Health and Safety Performance Declaration</b> <b>in accordance with Section 3 (Evaluation and Qualification Criteria)</b>			
<input type="checkbox"/> <b>No suspension or termination of contract:</b> An employer has not suspended or terminated a contract and/or called the performance security for a contract for reasons related to Environmental or Health and Safety performance since the date specified in Section 3 (Evaluation and Qualification Criteria), Criterion 2.5.			
<input type="checkbox"/> <b>Declaration of suspension or termination of contract:</b> The following contract(s) has/have been suspended or terminated and/or Performance Security called by an employer(s) for reasons related to Environmental or Health and Safety performance since the date specified in Section 3 (Evaluation and Qualification Criteria), Criterion 2.5. Details are described below:			
<input type="checkbox"/> <b>Declaration of request for replacement of Key Environment, Health and Safety Personnel:</b> The following contract(s) has/have experienced a request by the Employer to replace Environmental, Health and Safety Personnel for reasons related to Environmental or Health and Safety performance since the date specified in Section 3 (Evaluation and Qualification Criteria), Criterion 2.5. Details are described below:			
<input type="checkbox"/> <b>Declaration of past fatality resulted from EHS issues on site:</b> The following contract(s) has/have experienced a fatality resulted from EHS issues on site since the date specified in Section 3 (Evaluation and Qualification Criteria), Criterion 2.5. Details are described below:			
Year	Suspended or terminated portion of contract	Contract Identification	Total Contract Amount (current value, currency, exchange rate and US\$ equivalent)
[insert year]	[insert amount and percentage]	Contract Identification: [indicate complete contract name/ number, and any other identification] Name of Employer: [insert full name] Address of Employer: [insert street/city/country] Reason(s) for suspension or termination: [indicate main reason(s) e.g. discharge over environmental limit, workers did not have required health and safety permits to undertake high risk work, work carried out was not adhered to approved construction methodology and quality control plan]	[insert amount]
[insert year]	[insert amount and percentage]	Contract Identification: [indicate complete contract name/ number, and any other identification] Name of Employer: [insert full name]	[insert amount]

		Address of Employer: <i>[insert street/city/country]</i> Reason(s) for suspension or termination: <i>[indicate main reason(s)]</i>	
...	...	<i>[list all applicable contracts]</i>	...
<b>Performance Security called by an employer(s) for reasons related to EHS performance</b>			
Year	Contract Identification		Total Contract Amount (current value, currency, exchange rate and US\$ equivalent)
<i>[insert year]</i>	Contract Identification: <i>[indicate complete contract name/ number, and any other identification]</i> Name of Employer: <i>[insert full name]</i> Address of Employer: <i>[insert street/city/country]</i> Reason(s) for suspension or termination: <i>[indicate main reason(s) e.g. discharge over environmental limit, workers did not have required health and safety permits to undertake high risk work, work carried out was not adhered to approved construction methodology and quality control plan]</i>		<i>[insert amount]</i>
<b>Key EHS personnel replacement requested by the Employer for reasons related to EHS performance</b>			
Year	Contract Identification and Reasons		Personnel replacement    action and results
<i>[insert year]</i>	Contract Identification: <i>[indicate complete contract name/ number, and any other identification]</i> Name of Employer: <i>[insert full name]</i> Address of Employer: <i>[insert street/city/country]</i> Reason(s) for requesting for replacement: <i>[indicate main reason(s)]</i>		<i>[insert description]</i>
<b>Fatality due to EHS issues on Site</b>			
Year	Contract Identification		Follow-on    actions taken    by    the contractor
<i>[insert year]</i>	Contract Identification: <i>[indicate complete contract name/ number, and any other identification]</i> Name of Employer: <i>[insert full name]</i> Address of Employer: <i>[insert street/city/country]</i> Description of fatality event: Causation:		<i>[insert description]</i>

**Form FIN - 1: Historical Financial Performance**

Each Bidder must fill out this form.

In case of a Joint Venture, each Joint Venture Partner must fill out this form separately and provide the Joint Venture Partner's name:

Joint Venture Partner: \_\_\_\_\_

Financial Data for Previous _____ Years [PKR or \$ Equivalent]		
Year 1:	Year 2:	Year __:

**Information from Balance Sheet**

Total Assets (TA)			
Total Liabilities (TL)			
Net Worth = TA – TL			
Current Assets (CA)			
Current Liabilities (CL)			
Working Capital = CA - CL			

<b>Most Recent Working Capital</b>		To be obtained for most recent year and carried forward to FIN - 3 Line 1; in case of Joint Ventures, to the corresponding Joint Venture Partner's FIN - 3.
------------------------------------	--	---

**Information from Income Statement**

Total Revenues			
Profits Before Taxes			
Profits After Taxes			

- Attached are copies of financial statements (balance sheets including all related notes and income statements) for the last \_\_\_\_\_ years, as indicated above, complying with the following conditions:
- 1) Unless otherwise required by Section 3 of the Bidding Document, all such documents reflect the standalone financial situation of the legal entity or entities comprising the Bidder and not the Bidder's parent companies, subsidiaries, or affiliates.
  - 2) Historical financial statements must be audited by a certified accountant.
  - 3) Historical financial statements must be complete, including all notes to the financial statements.
  - 4) Historical financial statements must correspond to accounting periods already completed and audited (no statements for partial periods shall be requested or accepted).

**Form FIN - 2: Average Annual Construction Turnover**

Each Bidder must fill out this form.

The information supplied should be the Annual Turnover of the Bidder or each partner of a Joint Venture for the total certified payments received from the clients for contracts in progress or completed, converted to US dollars at the rate of exchange at the end of the period reported.

In case of a Joint Venture, each Joint Venture Partner must fill out this form separately and provide the Joint Venture Partner's name:

Joint Venture Partner: \_\_\_\_\_

<b>Annual Turnover Data for the Last _____ Years (Construction only)</b>			
<b>Year</b>	<b>Amount Currency</b>	<b>Exchange Rate</b>	<b>PKR or \$ Equivalent</b>
<b>Average Annual Construction Turnover</b>			

## Section 5: Eligible Countries

This section contains the list of eligible countries.

1. Afghanistan
2. Armenia
3. Australia
4. Austria
5. Azerbaijan
6. Bangladesh
7. Belgium
8. Bhutan
9. Brunei Darussalam
10. Cambodia
11. Canada
12. China, People's Republic of
13. Cook Islands
14. Denmark
15. Fiji
16. Finland
17. France
18. Georgia
19. Germany
20. Hong Kong, China
21. India
22. Indonesia
23. Ireland
24. Italy
25. Japan
26. Kazakhstan
27. Kiribati
28. Korea, Republic of
29. Kyrgyz Republic
30. Lao People's Democratic Republic
31. Luxembourg
32. Malaysia
33. Maldives
34. Marshall Islands
35. Micronesia, Federated States of
36. Mongolia
37. Myanmar
38. Nauru
39. Nepal
40. The Netherlands
41. New Zealand
42. Norway
43. Pakistan
44. Palau
45. Papua New Guinea
46. Philippines
47. Portugal
48. Samoa
49. Singapore
50. Solomon Islands
51. Spain
52. Sri Lanka
53. Sweden
54. Switzerland
55. Tajikistan
56. Taipei, China
57. Thailand
58. Timor-Leste
59. Tonga
60. Turkey
61. Turkmenistan
62. Tuvalu
63. United Kingdom
64. United States
65. Uzbekistan
66. Vanuatu
67. Viet Nam
68. Niue

# Section 6: Employer's Requirements

This Section contains the Specifications, Drawings, Supplementary Information that describe the Works to be procured, Personnel Requirements, and Equipment Requirements.

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## Specifications

(a) Specifications

2<sup>nd</sup> Biannual Market Rate System (MRS) 2022,  
Finance Department, Government of the Khyber  
Pakhtunkhwa, District DI Khan

## Part A: Specifications

2nd Biannual Market Rate  
System (MRS) 2022, Finance Department,  
Government of the Khyber Pakhtunkhwa,  
District DI Khan

# Environmental, Health and Safety Management Requirement

**EMP Attached**

## Drawings Volume- II

Attached

## Supplementary Information Regarding Works to Be Procured

Asian Development Bank (ADB) in collaboration with the Federal and Provincial Governments is funding the Rehabilitation and construction program of Emergency Flood Assistance Project.

The Khyber Pakhtunkhwa Irrigation output is strengthened, of Repair, Rehabilitation and Reconstruction of Irrigation Structure, Drainage System and Flood Protection Works Spreads in Province of Khyber Pakhtunkhwa

The package interventions lie in the District DI Khan of Khyber Pakhtunkhwa Province.

Standard Operation Procedures (SOPs) issued by Government of Pakistan from time to time, local regulations and guidance specific to COVID-19 prevention and controls, and worksite safety measures requirements that are deemed applicable to the contract, as well as the applicable international good practices on Health and Safety for the contract.

### Site Specific Health and Safety Management Plan (SSHSMP)

**Standard Operating Procedures (SOPs):** *All Standard Operating Procedures (SOPs) issued by the Government of Pakistan from time to time on COVID-19 prevention and controls, as well as workplace safety requirements, with international good practice guidelines [World Health Organization, Considerations for public health and social measures in the workplace in the context of COVID-19. Geneva. Available here: <https://www.who.int/publications-detail/considerations-for-public-health-and-social-measures-in-the-workplace-in-the-context-of-covid-19>] and SOPs (<http://covid.gov.pk/>) will be applicable.*

## Personnel Requirements

Using Form PER - 1 and PER - 2 in Section 4 (Bidding Forms), the Bidder must demonstrate that it has personnel who meet the following requirements:

No.	Position	Minimum Qualification	Total Work Experience (years)	Experience in Similar Work (years)
1	Project Manager	BE (Civil Engineering) or equivalent Professional qualification.	15	10
2	Deputy Project Engineer/Planning Engineer	BE (Civil Engineering) or equivalent Professional qualification	10	05
3	Site Engineers (05 Numbers)	BE (Civil Engineering) or equivalent Professional qualification.	06	04
4	Qualified / Experienced Surveyor	Diploma with surveying qualification or equivalent Professional qualification	07	05
5	Qualified Environment Specialist	M.Sc. (Environment.) or equivalent Professional qualification	07	05

*Note- All Engineers whether foreign or local must be registered with Pakistan Engineering Council (PEC). Copy of Registration Certificate shall be required to be submitted to employer prior to starting any activity at site.*

Using Form EXP-6 (PER-2) in Section 4 (Bidding Forms), the Bidder must demonstrate that it has EHS personnel who meet the following requirements:

### Key Personnel as determined by the EMP and other safeguard management plans

Item No.	Position/ Specialization	Relevant academic qualifications	Minimum years of relevant work experience	Minimum time on-site (%FTE)
1	Qualified Health and Safety Expert	M.Sc. (Public Health Engineering) or equivalent Professional qualification	05	
2	Gender Specialist	Master's degree in relevant field	05	

## Equipment Requirements

Using Form EQU in Section 4 (Bidding Forms), the Bidder must demonstrate that it has the key equipment listed below:

No.	Equipment Type and Characteristics	Minimum Number Required
1	Excavators	04
2	Bulldozers	02
3	Rollers/ Vibratory Rollers (all combination)	03
4	Loaders/ Shovel	01
5	Dump Trucks	08
6	Concrete Batching Plant	02
7	Concrete Pumps	04
8	Transit Mixers (All types)	06
9	Water Bowsers	02
10	Complete Set of Shuttering & scaffolding (Steel) 100 Sq.m	01
11	Air Compressors	06

*Note: The bidder shall furnish on judicial stamp paper an undertaking after the signing of the contract stating that it shall bring the equipment mentioned here-in-above or more to successfully execute and complete the project within the completion period.*

**Bill of Quantities (BOQ)**

**[Attached with the Bidding Document.](#)**



**BILL OF QUANTITIES  
(BOQS)**

**PACKAGE-3:  
EFAP/KPID/CW-03:  
REHABILITATION OF CANALS  
AND DRAINS, DISTRICT DI KHAN  
– PAHARPUR IRRIGATION  
DIVISION**

**GOVERNMENT OF KHYBER PAKHTUNKHWA**

**LOAN 4279-PAK(COL): EMERGENCY FLOOD ASSISTANCE PROJECT (KHYBER  
PAKHTUNKHWA IRRIGATION DEPARTMENT COMPONENT)**

**EFAP-KPID- CW-03: Rehabilitation of Canals and Drains, Paharpur Irrigation Division**

**SUMMARY OF BILLS**

Bill. No	Description	Amount (PKR)
		in Figures
<b>A</b>	<b>WORKS - DRAINS</b>	
1	Earthwork	
2	Vertical Brick Protection Works	
3	Rehabilitation Of Hydraulic Structures	
4	Reconstruction of Culverts	
5	Provision Of Stone Pitching	
<b>SUB-TOTAL (A)</b>		
<b>B</b>	<b>WORKS - CANALS</b>	
6	Earthwork	
7	PCC Lining	
8	Concrete Side Protection	
9	Vertical Brick Protection Works	
10	Rehabilitation Of Road	
11	Monitoring Facilities	
12	Rehabilitation Of Hydraulic Structures	
13	Provision Of Stone Pitching	
<b>SUB-TOTAL (B)</b>		
<b>C</b>	<b>PROVISIONAL SUM</b>	
<b>1</b>	<b>ENVIRONMENTAL AND SOCIAL COST (Million)</b>	<b>2,330,000</b>
<b>SUB-TOTAL (C)</b>		
<b>TOTAL AMOUNT RS. (A+B+C)</b>		
<b>IN MILLION</b>		

**GOVERNMENT OF KHYBER PAKHTUNKHWA**

**LOAN 4279-PAK(COL): EMERGENCY FLOOD ASSISTANCE PROJECT (KHYBER PAKHTUNKHWA IRRIGATION DEPARTMENT COMPONENT)**

**EFAP-KPID- CW-03: Rehabilitation of Canals and Drains, Paharpur Irrigation Division**

**Bill No.1: Earthwork**

<b>Item No.</b>	<b>Item# as per MRS</b>	<b>Description</b>	<b>Unit</b>	<b>Quantity</b>	<b>Unit Rate (PKR) in Figures</b>	<b>Unit Rate (PKR) in Words</b>	<b>Amount (PKR) in Figures</b>
1	03 54	Uprooting sarkanda growth and disposal within 50m	1000 Sft	15,499.84			
2a	03-72-b	Earthwork by mechanical means in drains and irrigation channels in DRY & WET soil dressed to designed section, grades profile/with excavated material, disposed off within 50 feet (15.2 m) lead and dressed as directed	1000 Cft	8,756.94			
2b	03-72-d	Earthwork by mechanical means in drains and irrigation channels in SLUSH soil dressed to designed section, grades profile/with excavated material, disposed off within 50 feet (15.2 m) lead and dressed as directed	1000 Cft	21,107.63			
2c	03-72-c	Earthwork by mechanical means in drains and irrigation channels in WET & SLUSH soil dressed to designed section, grades profile/with excavated material, disposed off within 50 feet (15.2 m) lead and dressed as directed	1000 Cft	5,632.01			
2d	03-72-g	Earthwork by mechanical means in drains and irrigation channels in UNDER WATER soil dressed to designed section, grades profile/with excavated material, disposed off within 50 feet (15.2 m) lead and dressed as directed	1000 Cft	20,823.54			
3	03-06-b	Embankment formation in ordinary soil & compaction by mechanical means at optimum moistures content to 90% max. modified AASHTO dry density (borrow area).	1000 Cft	167.62			
4	03-04-a	Bed clearance and dressing slopes of drains including removing of weeds and roots etc. Excavated material undressed within 15m	1000 Cft	684.86			
<b>Total</b>							

**GOVERNMENT OF KHYBER PAKHTUNKHWA**

**LOAN 4279-PAK(COL): EMERGENCY FLOOD ASSISTANCE PROJECT (KHYBER PAKHTUNKHWA IRRIGATION DEPARTMENT COMPONENT)**

**EFAP-KPID- CW-03: Rehabilitation of Canals and Drains, Paharpur Irrigation Division**

**Bill No.2: Vertical Brick Protection Works**

<b>Item No.</b>	<b>Item# as per MRS</b>	<b>Description</b>	<b>Unit</b>	<b>Quantity</b>	<b>Unit Rate (PKR) in Figures</b>	<b>Unit Rate (PKR) in Words</b>	<b>Amount (PKR) in Figures</b>
1	03-12-a	Earth excavation in irrigation channels/drains & disposal upto 25m. & dressing : in Ordinary Soil	1000 Cft	11.21			
2	06-48-j	Lean concrete for use as thin layer under neath footings with cylinder compressive strength of 1423 psi on 28 days	100 Cft	32.25			
3	07-04-a-02	1st class brick work in foundation and plinth in Cement, sand mortar 1:3	100 Cft	225.56			
4	11-08-b	Cement plaster 1:3, upto 20' height 1/2" thick	100 Sft	96.13			
5	06-05-f	Plain Cement Concrete including placing, compacting, finishing & curing (Ratio 1:2:4)	100 Cft	3.52			
6	03-67-c	Structural backfill using Common Material available at site.	1000 Cft	8.97			
<b>Total</b>							

**GOVERNMENT OF KHYBER PAKHTUNKHWA**

**LOAN 4279-PAK(COL): EMERGENCY FLOOD ASSISTANCE PROJECT (KHYBER PAKHTUNKHWA IRRIGATION DEPARTMENT COMPONENT)**

**EFAP-KPID- CW-03: Rehabilitation of Canals and Drains, Paharpur Irrigation Division**

**Bill No.3: Rehabilitation of Hydraulic Structures**

<b>Item No.</b>	<b>Item# as per MRS</b>	<b>Description</b>	<b>Unit</b>	<b>Quantity</b>	<b>Unit Rate (PKR) in Figures</b>	<b>Unit Rate (PKR) in Words</b>	<b>Amount (PKR) in Figures</b>
3(b)	06-07-b-03	RCC in raft foundation slab, base slab of column & ret. wall etc	100 Cft	0.83			
4	06-08-b	Supply & fabricate M.S. reinforcement for cement concrete (Hot rolled deformed bars Grade 60)	100 kg	3.71			
5	19-15-a	Supply & dump at site, without boat, including handling within 100m : Stone	100 Cft	0.00			
11	03-12-a	Earth excavation in irrigation channels/drains & disposal upto 25m. & dressing : in Ordinary Soil	1000 Cft	0.32			
13	07-04-a-02	1st class brick work in foundation and plinth in Cement, sand mortar 1:3	100 Cft	2.67			
14	11-08-b	Cement plaster 1:3, upto 20' height 1/2" thick	100 Sft	14.82			
15	06-05-f	Plain Cement Concrete including placing, compacting, finishing & curing (Ratio 1:2:4)	100 Cft	0.22			
16	03-67-c	Structural backfill using Common Material available at site.	1000 Cft	0.22			
<b>Total</b>							

**GOVERNMENT OF KHYBER PAKHTUNKHWA**

**LOAN 4279-PAK(COL): EMERGENCY FLOOD ASSISTANCE PROJECT (KHYBER PAKHTUNKHWA IRRIGATION DEPARTMENT COMPONENT)**

**EFAP-KPID- CW-03: Rehabilitation of Canals and Drains, Paharpur Irrigation Division**

**Bill No.4: Reconstruction of Culverts**

<b>Item No.</b>	<b>Item# as per MRS</b>	<b>Description</b>	<b>Unit</b>	<b>Quantity</b>	<b>Unit Rate (PKR) in Figures</b>	<b>Unit Rate (PKR) in Words</b>	<b>Amount (PKR) in Figures</b>
1	03-25-b	Excavation in foundation of building, bridges etc complete : in ordinary soil	1000 Cft	6.15			
2	06-05-i	Plain Cement Concrete including placing, compacting, finishing & curing (Ratio 1:4:8)	100 Cft	1.98			
3(a)	06-07-a-03	RCC in roof slab, beam, column & other structural members, insitu or precast. (1:2:4)	100 Cft	17.06			
3(b)	06-07-b-03	RCC in raft foundation slab, base slab of column & ret. wall etc	100 Cft	8.26			
4	06-08-b	Supply & fabricate M.S. reinforcement for cement concrete (Hot rolled deformed bars Grade 60)	100 kg	113.90			
5	19-15-a	Supply & dump at site, without boat, including handling within 100m : Stone	100 Cft	74.25			
6	16-65	Providing and Laying PVC pipe (b) 4" dia in foot path of bridge for utilities.	10 Rft	0.67			
7	16-09-a	Bitumenous Prime Coat	100 sft	3.06			
8	16-14-b	Asphaltic Wearing Course (Asphalt Batch Plant Hot Mixed) i/c Transportation and Finishing complete	100 Cft	9.17			
9	13-08-b	Bitumen coating to plastered / cement concrete surface : 14 Ibs. per 100 sft.	100 sft	8.15			
10	03-29-a	Compaction of earth with power road roller 95%to 100% max. mod. AASHTO dry density	1000 Cft	6.15			
<b>Total</b>							

**GOVERNMENT OF KHYBER PAKHTUNKHWA**

**LOAN 4279-PAK(COL): EMERGENCY FLOOD ASSISTANCE PROJECT (KHYBER PAKHTUNKHWA IRRIGATION DEPARTMENT COMPONENT)**

**EFAP-KPID- CW-03: Rehabilitation of Drains, Paharpur Irrigation Division**

**Bill No. 5: Provision of Stone Pitching**

<b>Item No.</b>	<b>Item# as per MRS</b>	<b>Description</b>	<b>Unit</b>	<b>Quantity</b>	<b>Unit Rate (PKR) in Figures</b>	<b>Unit Rate (PKR) in Words</b>	<b>Amount (PKR) in Figures</b>
1	03-12-a	Earth excavation in irrigation channels/drains & disposal upto 25m. & dressing : in Ordinary Soil	1000 Cft	311.05			
2	19-25	Providing and Laying stone pithcing/filling, dry hand packed in pitching & aprons	100 Cft	2,585.16			
3	19-28-a	Providing and laying stone pitching, for top layer only:- on slope	100 Cft	5,195.00			
4	19-28-b	Providing and laying stone pitching, for top layer only:- on level	100 Cft	985.50			
5	19-29-a	Providing and Laying stone or spawl filling : On slope	100 Cft	3,391.78			
6	19-29-b	Providing and Laying stone or spawl filling : On level	100 Cft	657.00			
7	06-48-j	Lean concrete for use as thin layer under neath footings with cylinder compressive strength of 1423 psi on 28 days	100 Cft	61.20			
8	06-44-b	PCC 1:3:6 in mass concrete less formwork using 40% boulders	100 Cft	786.56			
9	06-05-f	Plain Cement Concrete including placing, compacting, finishing & curing (Ratio 1:2:4)	100 Cft	638.49			
10	03-67-c	Structural backfill using Common Material available at site.	1000 Cft	3.92			
<b>Total</b>							

**Emergency Flood Assistance Project (EFAP)-KP**

**EFAP-KPID- CW-03: Rehabilitation of Canals and Drains, Paharpur Irrigation Division**

**Bill No. 6: Earthwork**

<b>Item No.</b>	<b>Item# as per MRS</b>	<b>Description</b>	<b>Unit</b>	<b>Quantity</b>	<b>Unit Rate (PKR) in Figures</b>	<b>Unit Rate (PKR) in Words</b>	<b>Amount (PKR) in Figures</b>
1	03-06-a	Embankment formation in ordinary soil & compaction by mechanical means at optimum moistures content to 95% to 100% max. modified. AASHTO dry density (borrow area).	1000 Cft	165.53			
2	03-12-a	Earth excavation in irrigation channels/drains & disposal upto 25m. & dressing : in Ordinary Soil	1000 Cft	37.59			
<b>Total</b>							



**Emergency Flood Assistance Project (EFAP)-KP**  
**EFAP-KPID- CW-03: Rehabilitation of Canals and Drains, Paharpur Irrigation Division**

**Bill No. 7: PCC Lining**

<b>Item No.</b>	<b>Item# as per MRS</b>	<b>Description</b>	<b>Unit</b>	<b>Quantity</b>	<b>Unit Rate (PKR) in Figures</b>	<b>Unit Rate (PKR) in Words</b>	<b>Amount (PKR) in Figures</b>
1	03-12-a	Earth excavation in irrigation channels/drains & disposal upto 25m. & dressing : in Ordinary Soil	1000 Cft	179.00			
2	03-06-a	Embankment formation in ordinary soil & compaction by mechanical means at optimum moisture content to 95% to 100% max. modified. AASHTO dry density (borrow area).	1000 Cft	563.51			
3	17-01-a	Formation, dressing and preparing sub-grade in Bed	100 Sft	1,433.71			
4	17-01-b	Formation, dressing and preparing sub-grade on slope	100 Sft	2,120.52			
5	17-04-a	1" thick plaster of cement, sand mortar 1:6 in Bed	100 Sft	1,447.63			
6	17-04-b	1" thick plaster of cement, sand mortar 1:6 on slope	100 Sft	2,147.72			
7	17-10-a-01	4" thick PCC lining, using washed screened & graded/crushed stone aggregate : in bed : Ratio 1:2:4	100 Cft	537.34			
8	17-10-b-01	4" thick PCC lining, using washed screened & graded/crushed stone aggregate : On slope : Ratio 1:2:4	100 Cft	715.19			
9	06-05-f	Plain Cement Concrete including placing, compacting, finishing & curing (Ratio 1:2:4)	100 Cft	61.47			
10	13-08-b	Bitumen coating to plastered / cement concrete surface : 14 lbs. per 100 sft.	100 Sft	201.24			
11	06-23	Fill expansion joints with bitumen, sand & saw dust in Ratio 1:2:2	Rft	38,041.75			
12	06-48-j	Lean concrete for use as thin layer under neath footings with cylinder compressive strength of 1423 psi on 28 days	100 Cft	1.58			
13	06-44-b	PCC 1:3:6 in mass concrete less formwork using 40% boulders	100 Cft	18.43			
<b>Total</b>							

**Emergency Flood Assistance Project (EFAP)-KP**

**EFAP-KPID- CW-03: Rehabilitation of Canals and Drains, Paharpur Irrigation Division**

**Bill No. 8: Concrete Side Protection**

<b>Item No.</b>	<b>Item# as per MRS</b>	<b>Description</b>	<b>Unit</b>	<b>Quantity</b>	<b>Unit Rate (PKR) in Figures</b>	<b>Unit Rate (PKR) in Words</b>	<b>Amount (PKR) in Figures</b>
1	03-12-a	Earth excavation in irrigation channels/drains & disposal upto 25m. & dressing : in Ordinary Soil	1000 Cft	142.10			
2	03-06-a	Embankment formation in ordinary soil & compaction by mechanical means at optimum moistures content to 95% to 100% max. modified. AASHTO dry density (borrow area).	1000 Cft	728.19			
3	17-01-a	Formation, dressing and preparing sub-grade in Bed	100 Sft	437.68			
4	17-01-b	Formation, dressing and preparing sub-grade on slope	100 Sft	1,315.33			
5	17-04-a	1" thick plaster of cement, sand mortar 1:6 in Bed	100 Sft	446.63			
6	17-04-b	1" thick plaster of cement, sand mortar 1:6 on slope	100 Sft	1,201.38			
7	17-10-a-01	4" thick PCC lining, using washed screened & graded/curshed stone aggregate : in bed : Ratio 1:2:4	100 Cft	118.98			
8	17-10-b-01	4" thick PCC lining, using washed screened & graded/curshed stone aggregate : On slope : Ratio 1:2:4	100 Cft	357.71			
9	06-48-j	Lean concrete for use as thin layer under neath footings with cylinder compressive strength of 1423 psi on 28 days	100 Cft	103.07			

**Emergency Flood Assistance Project (EFAP)-KP**

**EFAP-KPID- CW-03: Rehabilitation of Canals and Drains, Paharpur Irrigation Division**

**Bill No. 8: Concrete Side Protection**

<b>Item No.</b>	<b>Item# as per MRS</b>	<b>Description</b>	<b>Unit</b>	<b>Quantity</b>	<b>Unit Rate (PKR) in Figures</b>	<b>Unit Rate (PKR) in Words</b>	<b>Amount (PKR) in Figures</b>
10	07-07-a-02	1st class brick work other than building upto 10 ft. height : Cement, sand mortar 1:3	100 Cft	596.87			
11	11-08-b	Cement plaster 1:3, upto 20' height 1/2" thick	100 Sft	417.20			
12	06-05-f	Plain Cement Concrete including placing, compacting, finishing & curing (Ratio 1:2:4)	100 Cft	387.26			
13	13-08-b	Bitumen coating to plastered / cement concrete surface : 14 lbs. per 100 sft.	100 Sft	243.90			
14	06-23	Fill expansion joints with bitumen, sand & saw dust in Ratio 1:2:2	Rft	12,498.61			
15	06-44-b	PCC 1:3:6 in mass concrete less formwork using 40% boulders	100 Cft	65.67			
<b>Total</b>							

**Emergency Flood Assistance Project (EFAP)-KP**

**EFAP-KPID- CW-03: Rehabilitation of Canals and Drains, Paharpur Irrigation Division**

**Bill No. 9: Vertical Brick Protection Works**

<b>Item No.</b>	<b>Item# as per MRS</b>	<b>Description</b>	<b>Unit</b>	<b>Quantity</b>	<b>Unit Rate (PKR) in Figures</b>	<b>Unit Rate (PKR) in Words</b>	<b>Amount (PKR) in Figures</b>
1	03-12-a	Earth excavation in irrigation channels/drains & disposal upto 25m. & dressing : in Ordinary Soil	1000 Cft	89.18			
2	03-06-a	Embankment formation in ordinary soil & compaction by mechanical means at optimum moistures content to 95% to 100% max. modified. AASHTO dry density (borrow area).	1000 Cft	184.98			
3	06-48-j	Lean concrete for use as thin layer under neath footings with cylinder compressive strength of 1423 psi on 28 days	100 Cft	76.64			
4	07-07-a-02	1st class brick work other than building upto 10 ft. height : Cement, sand mortar 1:3	100 Cft	496.29			
5	11-08-b	Cement plaster 1:3, upto 20' height 1/2" thick	100 Sft	217.91			
6	06-05-f	Plain Cement Concrete including placing, compacting, finishing & curing (Ratio 1:2:4)	100 Cft	9.34			
7	03-67-c	Structural backfill using Common Material available at site.	1000 Cft	28.97			
<b>Total</b>							

**Emergency Flood Assistance Project (EFAP)-KP**

**EFAP-KPID- CW-03: Rehabilitation of Canals and Drains, Paharpur Irrigation Division**

**Bill No. 10: Rehabilitation of Road**

<b>Item No.</b>	<b>Item# as per MRS</b>	<b>Description</b>	<b>Unit</b>	<b>Quantity</b>	<b>Unit Rate (PKR) in Figures</b>	<b>Unit Rate (PKR) in Words</b>	<b>Amount (PKR) in Figures</b>
1	03-12-a	Earth excavation in irrigation channels/drains & disposal upto 25m. & dressing : in Ordinary Soil	1000 Cft	1,100.311			
2	03-06-b	Embankment formation in ordinary soil & compaction by mechanical means at optimum moistures content to 90% max. modified AASHTO dry density (borrow area).	1000 Cft	81.325			
3	03-71-c-i	Subgrade Preparation on Existing Road ; Mod. AASHTO 95%	1000 Sft	444.231			
4	16-04-b	Granular Sub Base Using Crushed Stone Aggregate	100 Cft	1,999.768			
5	16-05-a	Aggregate Base Course	100 Cft	1,651.200			
6	16-09-a	Bitumenous Prime Coat	100 Sft	2,468.400			
7	16-14-b	Asphaltic Wearing Course (Asphalt Batch Plant Hot Mixed) i/c Transportation and Finishing complete	100 Cft	411.400			
<b>Total</b>							

**Emergency Flood Assistance Project (EFAP)-KP**

**EFAP-KPID- CW-03: Rehabilitation of Canals and Drains, Paharpur Irrigation Division**

**Bill No. 11 : Monitoring Facilities**

<b>Item No.</b>	<b>Item# as per MRS</b>	<b>Description</b>	<b>Unit</b>	<b>Quantity</b>	<b>Unit Rate (PKR) in Figures</b>	<b>Unit Rate (PKR) in Words</b>	<b>Amount (PKR) in Figures</b>
1	03-06-a	Embankment formation in ordinary soil & compaction by mechanical means at optimum moistures content to 95% to 100% max. modified. AASHTO dry density (borrow area).	1000 Cft	435.16			
2	19-14	Providing and Laying shingle on top of bund, including handling of materials within 100 m.	100 Cft	1,539.00			
<b>Total</b>							

**Emergency Flood Assistance Project (EFAP)-KP**  
**EFAP-KPID- CW-03: Rehabilitation of Canals and Drains, Paharpur Irrigation Division**

**Bill No.12: Rehabilitation of Hydraulic Structures**

<b>Item No.</b>	<b>Item# as per MRS</b>	<b>Description</b>	<b>Unit</b>	<b>Quantity</b>	<b>Unit Rate (PKR) in Figures</b>	<b>Unit Rate (PKR) in Words</b>	<b>Amount (PKR) in Figures</b>
1	4-20-b-ii	Demolition of existing damaged Bridge and placing of useful materials	100 Cft	21.45			
2	05-23	Cement Sand Mortar 1 : 4 (one Cement: 4 Sand)	100 Cft	1.93			
3	06-07-d-03	Reinforced cement concrete work as in dams, spillways, weirs, barrages, cross drainage works and other hydraulic structures using crushed stone aggregate (screening & washing) and coarse sand i/c costof all labour and material and finishing the exposed surface, cast in situ/precast excluding the cost of steel reinforcement and labour for bending binding also excludig cost of additives which have to be paid separately. (1:2:4)	100 Cft	22.86			
4	06-08-b	Supply & fabricate M.S. reinforcement for cement concrete (Hot rolled deformed bars Grade 60)	100 Kg	62.23			
<b>Total</b>							

**Emergency Flood Assistance Project (EFAP)-KP****EFAP-KPID- CW-03: Rehabilitation of Canals and Drains, Paharpur Irrigation Division****Bill No. 13: Provision of Stone Pitching**

<b>Item No.</b>	<b>Item# as per MRS</b>	<b>Description</b>	<b>Unit</b>	<b>Quantity</b>	<b>Unit Rate (PKR) in Figures</b>	<b>Unit Rate (PKR) in Words</b>	<b>Amount (PKR) in Figures</b>
1	03-12-a	Earth excavation in irrigation channels/drains & disposal upto 25m. & dressing : in Ordinary Soil	1000 Cft	70.67			
2	19-25	Providing and Laying stone pithcing/filling, dry hand packed in pitching & aprons	100 Cft	789.41			
3	19-28-a	Providing and laying stone pitching, for top layer only:- on slope	100 Cft	212.44			
4	19-28-b	Providing and laying stone pitching, for top layer only:- on level	100 Cft	87.00			
5	19-29-a	Providing and Laying stone or spawl filling : On slope	100 Cft	141.68			
6	19-29-b	Providing and Laying stone or spawl filling : On level	100 Cft	58.00			
7	06-48-j	Lean concrete for use as thin layer under neath footings with cylinder compressive strength of 1423 psi on 28 days	100 Cft	1.98			
8	06-44-b	PCC 1:3:6 in mass concrete less formwork using 40% boulders	100 Cft	29.21			
9	06-05-f	Plain Cement Concrete including placing, compacting, finishing & curing (Ratio 1:2:4)	100 Cft	34.29			
10	03-67-c	Structural backfill using Common Material available at site.	1000 Cft	0.27			
<b>Total</b>							



**EMP**

**PACKAGE-3:  
EFAP/KPID/CW-03:  
REHABILITATION OF CANALS  
AND DRAINS, DISTRICT DI KHAN  
– PAHARPUR IRRIGATION  
DIVISION**



**EMERGENCY FLOOD ASSISTANCE PROJECT  
(EFAP) KHYBER PAKHTUNKHWA**

**Project Categorization Brief**

**Sub-Project: Package 3 – Repair and Rehabilitation  
of Canals/Distributaries and Drains, Paharpur  
Irrigation Division**

September 2023

Prepared for the  
Asian Development Bank (ADB)

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## List of Acronyms

ADB	Asian Development Bank
EFAP	Emergency Flood Assistance Project
ESMF	Environmental and Social Management Framework
GBV	Gender Based Violence
GoP	Government of Pakistan
IP	Indigenous Peoples
IR	Involuntary Resettlement
JFPR	Japan Fund for Prosperous and Resilient Asia and the Pacific
JHA	Job Hazard Analysis
PDMA	Provincial Disaster Management Authority
PDNA	Post-Disaster Needs Assessment
PPE's	Personal Protective Equipment
SEA	Sexual Exploitation and Abuse
SH	Sexual Harassment
TBT	Tool Box Talks

## 1 PROJECT OVERVIEW

#

1. Pakistan is a flood prone country and one of the ten countries most affected by climate change in the world.<sup>1</sup> Flooding in Pakistan is primarily caused by heavy concentrated rainfall in the river catchments during the monsoon season which typically occurs from July through September. The floods are further supplemented by snowmelt/lake outbursts in upper snow covered reaches of the catchments. In the recent history, Pakistan witnessed unprecedented flooding in Khyber Pakhtunkhwa in 2010 and 2022. The occurrence of these flood events in upper most snow covered reaches of northern areas have proved that the climate change has severely impacted our region; 2022 flood was as a result of prolonged intense monsoon subsequent to unprecedented heat wave during April-Jun 2022 followed by intense rains experienced across the country and exposed our ill-planning towards adopting the climate resilient designs for irrigation as well as road infrastructure. The occurrence of these two rain-induced catastrophes within a span of just 13 years resulted in loss of life and major damages to irrigation and drainage infrastructure.
2. A post-disaster needs assessment (PDNA)<sup>2</sup> - an effort led by the Government of Pakistan (GoP) and supported by a core team comprising Asian Development Bank (ADB), the European Union, United Nations (UN) agencies, and the Japan International Cooperation Agency with facilitation from the United Nations Development Programme and the World Bank was concluded on 28 October 2022, which provides the bases for the development of a disaster recovery framework and arrangements for effective, efficient and coordinated post-flood recovery and reconstruction plan. ADB with the assistance from the financiers Japan Fund for Prosperous and Resilient Asia and the Pacific (JFPR) has proposed emergency assistance to GoP through the Emergency Flood Assistance Project (EFAP). GoP and ADB agreed on financing of the total EFAP at \$531 million of which Irrigation Department of Khyber Pakhtunkhwa component is about \$62 million.
3. Total one hundred and forty-three (143) locations of south and north regions of Khyber Pakhtunkhwa have been identified to be taken up under the project on priority basis including seventy- nine (79) irrigation and drainage structures, sixty – four (64) flood management infrastructures, and strengthening/re-sectioning of various protection embankments. For the ease of design and implementations, the project has been divided into the Packages and sub projects (schemes). To cover the South and North regions of Khyber Pakhtunkhwa, the project has been divided into 16 packages. Out of these 16 packages, 9 packages are allocated for the south region and 7 packages are allocated for the north region. South region primarily consists of canals and drains, including major canal systems like Chashma Right Bank Canal (CRBC) and Paharpur. On the other hand, the focus in the north region is mainly on flood protection works (FPWs). The map showing the work package detail is given as **Figure 1.1**.

#####

<sup>1</sup> D. Eckstein, V. Kunzel, and L. Schafer. 2021. Global Climate Risk Index 2021: Who Suffers Most from Extreme Weather Events? Weather-Related Loss Events in 2019 and 2000–2019

<sup>2</sup> Government of Pakistan, Ministry of Planning, Development & Special Initiatives. 2022. Pakistan Floods 2022: Post-Disaster Needs Assessment. Islamabad.

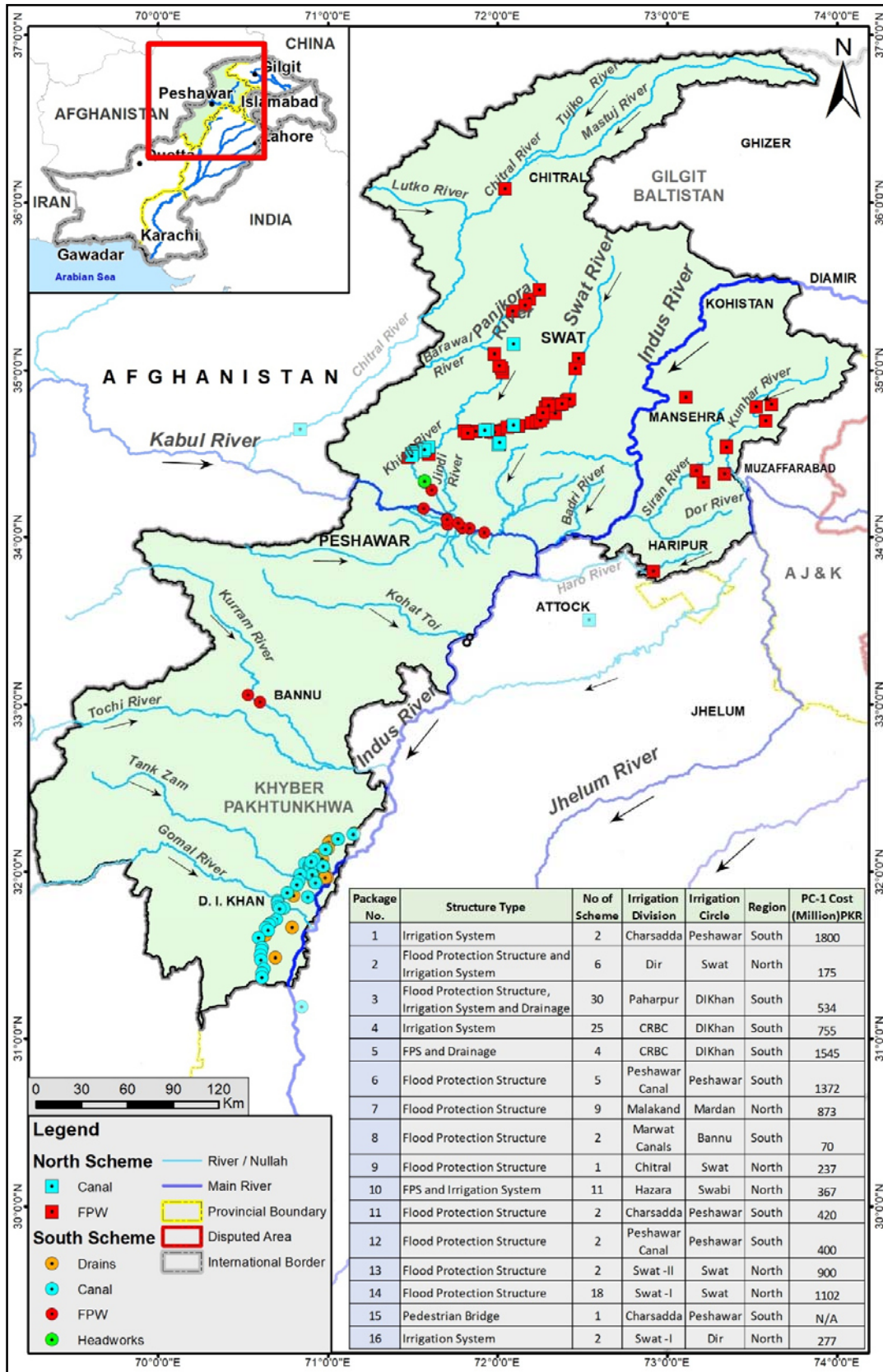
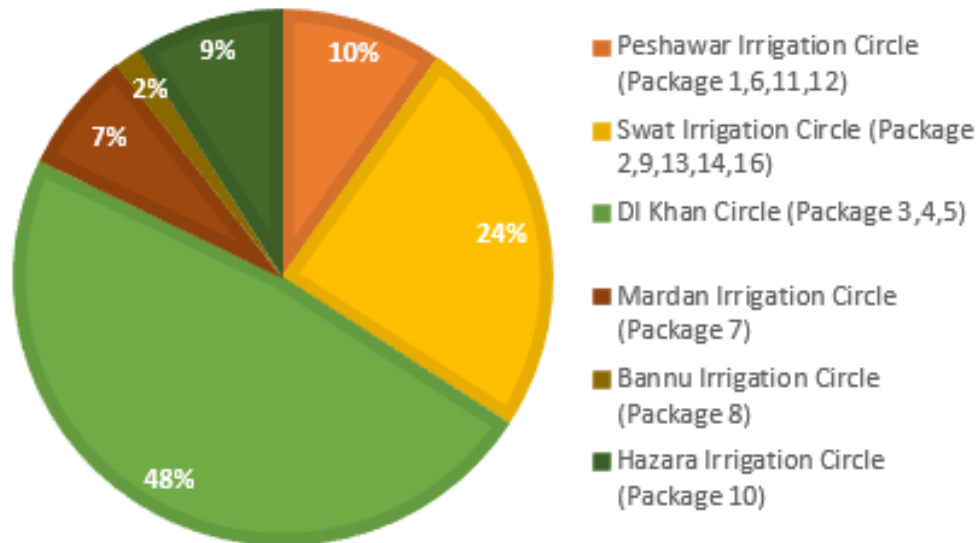


Figure 1.1: Map showing Locations under Different Packages

4. All the packages are categorized under different circles, and each package consists of a varying number of schemes. The area- wise package distribution is given in the pie chart below (**Figure 1.2**). The priority of the work packages is identified with the consent of client.



**Figure 1.2: Pi-Chart Showing Percentage Weightage for Area Packages**

5. This document is the project categorization document from an environmental and social safeguards perspective for the proposed Package-3: Repair and Rehabilitation of Canals and Drains, Paharpur Irrigation Division.

### 1.1 Sub-Projects Location

6. The current Package-3 falls in DI Khan Irrigation Circle (South Region) as shown in **Figure 1.3** and it involves the following rehabilitation works of Canals and Drains of Paharpur Irrigation Division:

#### A. Rehabilitation of Drains

- Rehabilitation of damaged / washed away Drains Section of Katgarh Branch Drain No. 3
- Rehabilitation of damaged / washed away Drains Section of Katgarh Branch Drain No. 4
- Rehabilitation of damaged / washed away Drains Section of Largi Drain No. 2
- Rehabilitation of damaged / washed away Drains Section of Largi Drain No. 1
- Rehabilitation of damaged / washed away Drains Section of Seed Farm Branch Drain
- Rehabilitation of damaged / washed away Drains Section of Bund Kurai Branch Drain
- Rehabilitation of damaged / washed away Drains Section of Bund Kurai Main Drain
- Rehabilitation of damaged / washed away Drains Section of Main Drain.

- Rehabilitation of damaged / washed away Drains Section of Girsal Drain
- Rehabilitation of damaged / washed away Drains Section of Girsal Pond Drain
- Rehabilitation of damaged / washed away Drains Section of Jabbarwala Drain
- Rehabilitation of damaged / washed away Drains Section of Ketch Drain
- Rehabilitation of damaged / washed away Drains Section of Bilot Creek Drain

**B. Rehabilitation of Canals (Distributaries)**

#

- Rehabilitation of damaged/washed away Canal Section of Disty # 2
- Rehabilitation of damaged/washed away Canal Section of Disty # 3
- Rehabilitation of damaged/washed away Canal Section of Girsal Minor
- Rehabilitation of damaged/washed away Canal Section of Girsal Feeder
- Rehabilitation of damaged/washed away Canal Section of Shah Kot Minor
- Rehabilitation of damaged/washed away Canal Section of Shah Kot Feeder
- Rehabilitation of damaged/washed away Canal Section of Band Kurai Minor
- Rehabilitation of damaged/washed away Canal Section of Band Kurai Branch
- Rehabilitation of damaged/washed away Canal Section of Ketch Minor
- Rehabilitation of damaged/washed away Canal Section of Paharpur disty
- Rehabilitation of damaged/washed away Canal Section of Old Paharpur canal (RD. 118500-122300)
- Rehabilitation of damaged/washed away Canal Section of Old Paharpur canal (RD. 130000-160000)
- Rehabilitation of damaged/washed away Canal Section of Civil Minor
- Rehabilitation of damaged/washed away Canal Section of Rakh disty
- Rehabilitation of damaged/washed away Canal Section of Kat Garh Minor
- Rehabilitation of damaged/washed away Canal Section of Bigwani Minor
- Rehabilitation of damaged/washed away Canal Section of Takarwah disty

The details of each subproject as mentioned above are shown in **Table 1.1**



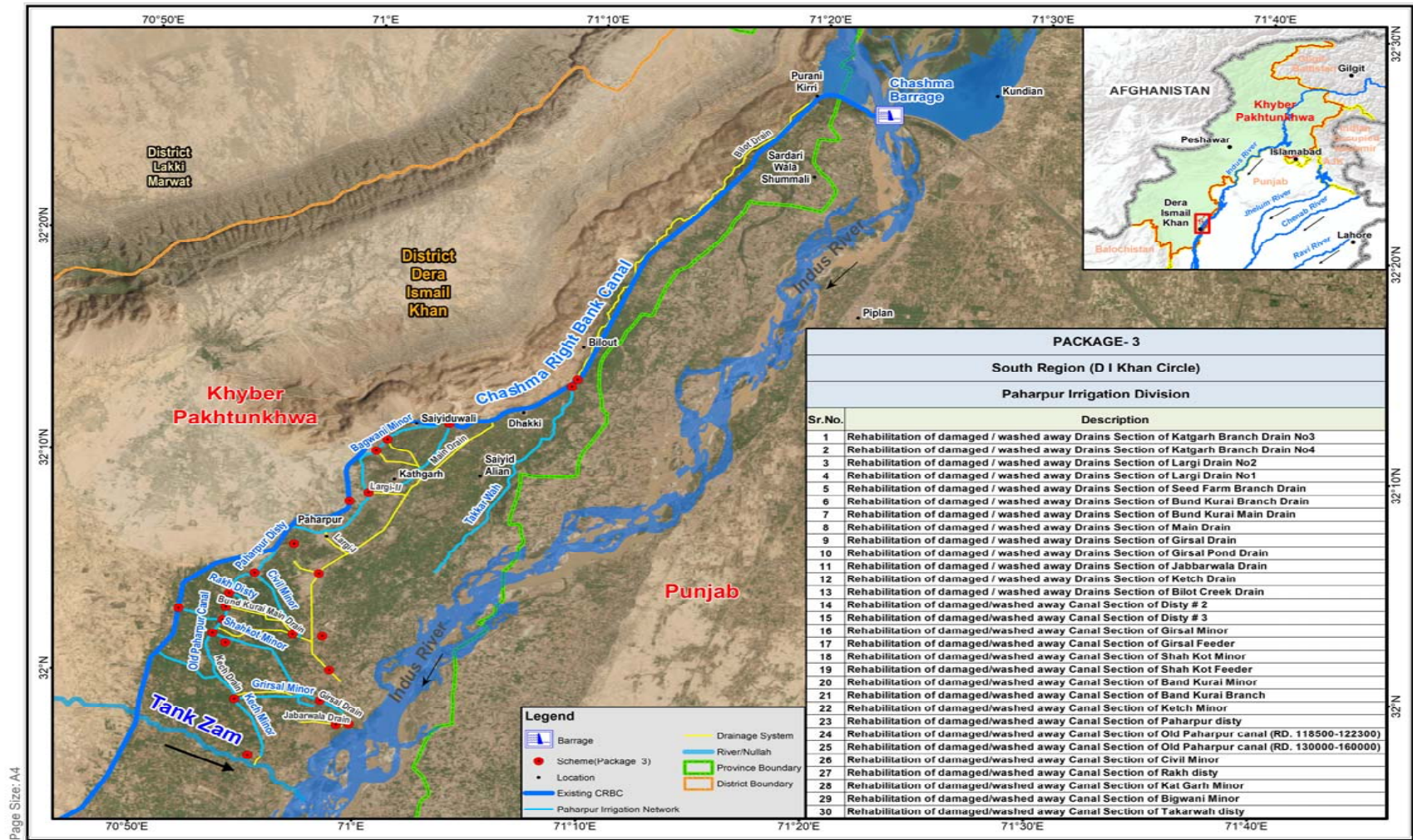


Figure 1.3: Location Map of Proposed Project#



## 1.2 Objectives of the subprojects

7. The core objective of these sub-projects is to rehabilitate the canals and drains affected by Floods within Paharpur Irrigation Division DI Khan. This rehabilitation work aims to reactivate the canals and distributaries, enabling the local inhabitants to access water for agricultural activities on their lands. The rehabilitation works on drains aims to protect the nearby communities from the floods.

## 1.3 Details of the sub-projects scope

### Rehabilitation/ Repair of Drains

8. The flood event of 2022 revealed critical weaknesses within the drainage network of the Paharpur division. These vulnerabilities became evident as the drains were unable to cope with the overwhelming volume of floodwater, leading to breaches at various points along the network. The root causes of this issue can be attributed to both the inadequacy of the drainage system's capacity to handle such floods and the long-term neglect of regular annual operation and maintenance. Several critical issues contributed to the drainage network's diminished capacity are:
  - The drains have become heavily silted over time, reducing their water-carrying capacity and overall efficiency.
  - The presence of sarkanda and other vegetation within the drains further obstructed water flow, leading to overtopping during flooding events.
  - Bank erosion and damage in various sections of the drains
  - Soil removal from the banks and access roads of drains
  - Unauthorized cuts into the drain for draining excess water from fields poses significant challenges, including potential instability and flooding problems within the drainage network.
  - Confluence points within the drainage network were found to be improperly treated, impacting water flow and drainage efficiency.
  - Unauthorized paths created within the drains for crossing purposes pose a safety risk and disrupt the flow.
  - Encroachments were observed within the right-of-way of the drains (Largi drain), which need to be addressed to maintain clear channels.
  - Drains were being used as disposal points for solid waste, leading to environmental and sanitation concerns. (Largi drain)
9. Based on the findings from the condition survey of the project area, the proposed rehabilitation and protection works have been categorized into specific areas to address the identified damages effectively and include:
  - Case – 1: Desilting and cleaning of drains
  - Case – 2: Bank restoration of drains by earth compaction
  - Case – 3 Construction of damaged portion of retaining walls
  - Restoration and provision of new stone pitching

The damaged drains have been rehabilitated according to the original designs as per approved L- section

- **Case 1: Desilting and Cleaning**

#

This case likely involves removal of accumulated silt and debris from the drains. Presence of accumulated silt, debris, heavy vegetation, and sarkanda in almost all the drains within the project area has been witnessed during the field reconnaissance visit as shown in **Figure 1.4**. The situation impedes the water flows and causing overflowing of the banks in heavy rain events. Therefore, it is essentially required to desilt and clean the drains and restore the original capacity of the drains.



**Figure 1.4: Heavy Silt, Vegetation and Sarkanda in Drains**

- **Case 2: Bank Restoration**

Bank restoration has been proposed through earthen compaction to stabilize eroded or damaged banks. Earth compaction helps in preventing further erosion, reinforcing the structural integrity of the drains, and reduces the risk of breaches as shown in **Figure 1.5**.





**Figure 1.5: Bank Restoration**

- **Case 3: Brick Retaining Wall Side Protection**

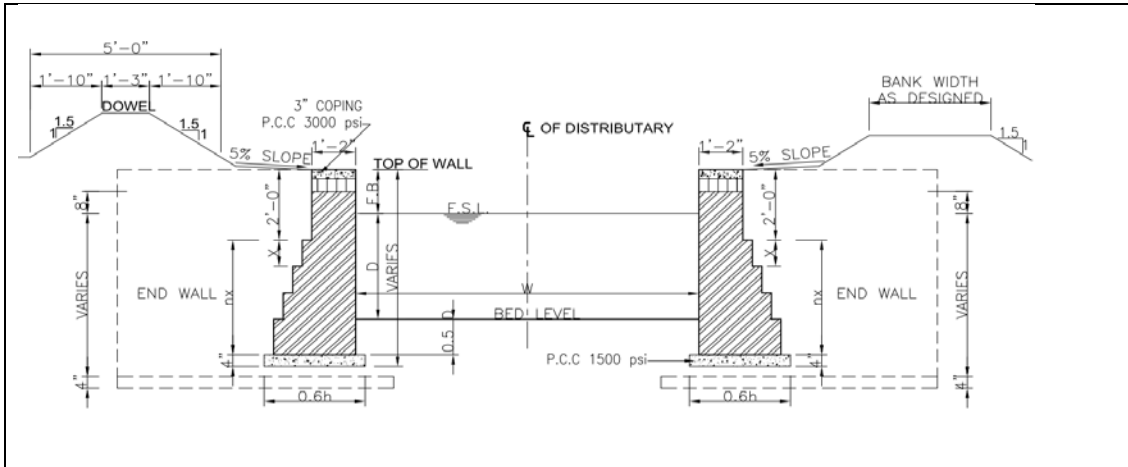
The retaining walls along the drains has been proposed in situations where existing walls are present at one side of drain only or washed away / damaged due to floods (Figure 1.6). This involves in constructing /rebuilding or repairing the damaged portions of the retaining walls to ensure they effectively support the banks and prevent erosion.

Retaining walls are relatively rigid walls used for supporting soil laterally so that it can be retained at different levels on the two sides. Retaining walls are structures designed to



restrain soil to a slope that it would not naturally keep to (typically a steep, near-vertical or vertical slope). They are used to bound soils between two different elevations often in areas of terrain possessing undesirable slopes or in areas where the landscape needs to be shaped severely and engineered for more specific purposes like hillside farming or roadway overpasses.





**Figure 1.6: Brick Retaining Wall Side Protection**

- **Stone Side Protection**

Stone pitching has been recommended especially downstream of hydraulic structures where erosive action is excessive. Proposed stone Pitching has 12 inches layer of revetments stone placed on a 6 inches spawl.

Pitching provides protection for canal/drain beds and side slopes adjoining the structures protection where the velocities are above 5 feet /sec or where the energy dissipation is involved or where the capacity and magnitude of the structure warrants the additional cost of stone pitching.







**Proposed Stone Pitching on US and DS of Hydraulic Structure**







**Proposed Stone Pitching at Confluence of Two (02) Drains**

#

**Repair/Rehabilitation of Canals/Distributaries**

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10. This proposed project focused on rehabilitation / restoration of distributaries / minors along with hydraulic structures of irrigation network. Following damages to the proposed project are observed:

- Complete/partial washed away section of distributary lining due to entry of flood water;
- Eroded and Weak distributary banks eroded due to erosion;
- Lining damaged in reaches due to overflowing water;

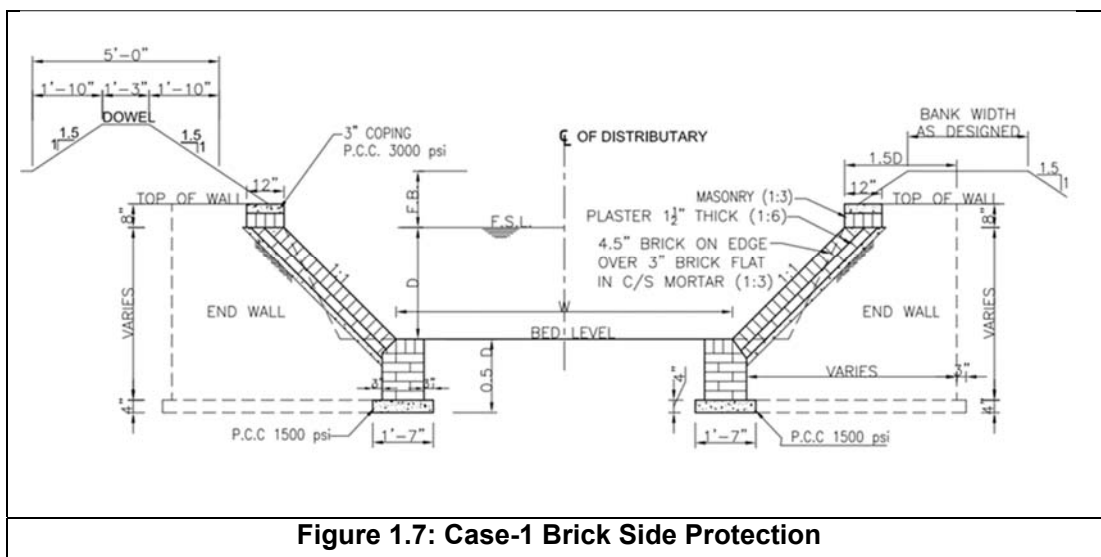
- Siltation and vegetation are quite common in distributaries and minors which causes overtopping in channels; and
- Hydraulic structures like bridges, culverts and fall structures have partial damages while, at some locations, complete demolition of structures.

11. Three (03) types of side protections have been proposed for the restoration of distributaries / minor prism.

- Case 1: Brick Side Wall Protection
- Case 2: Concrete Side Wall Protection
- Case 3: Brick Retaining Wall Protection

• **Case 1: Brick Side Wall Protection**

12. Brick side protection has been proposed to restore the prism of distributaries and minors that are damaged due to flood. The side protection has been proposed in those distributaries / minors that have already brick lining or unlined reaches where embayment in sections was also observed as shown in **Figure 1.7**.



**Figure 1.7: Case-1 Brick Side Protection**

• **Case 2: Concrete Side Protection**

13. Concrete side protection has been proposed for highly scoured reaches of the distributaries and minors where existing reaches have already concrete lining on both sides (**Figure 1.8**). The purpose of providing concrete side protection is to protect the distributaries/minor from erosion during the flood. Total length of concrete side protection provided is 149050 ft. Concrete side protection has further been divided in three (03) cases.

- Case 2-A: Concrete Side Protection
- Case 2-B: Concrete Side Protection with Side Wall (L/R)



- Case 2-C: Concrete Side Protection with Side Wall (L&R)

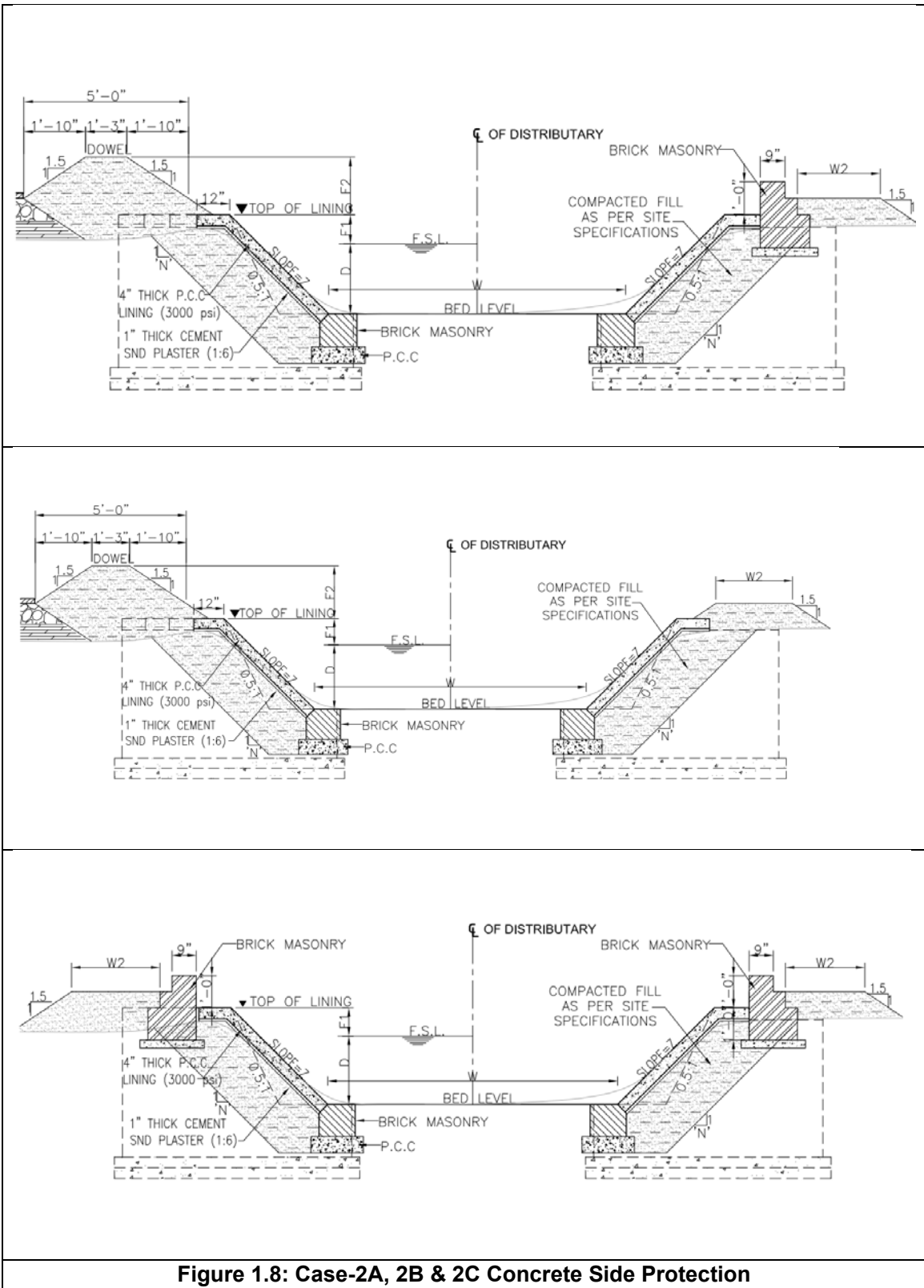
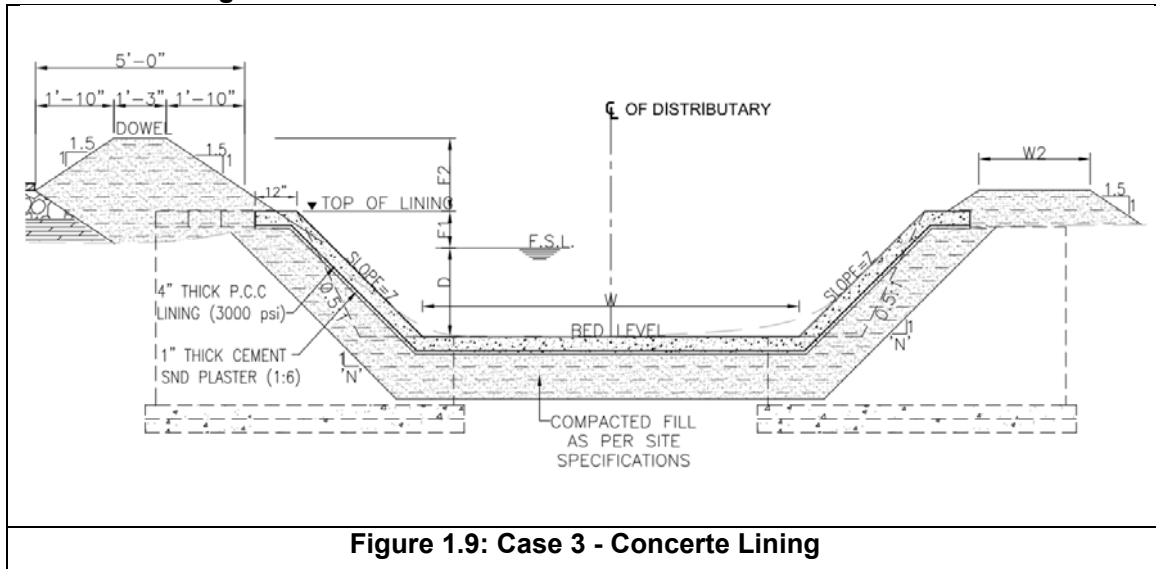


Figure 1.8: Case-2A, 2B & 2C Concrete Side Protection

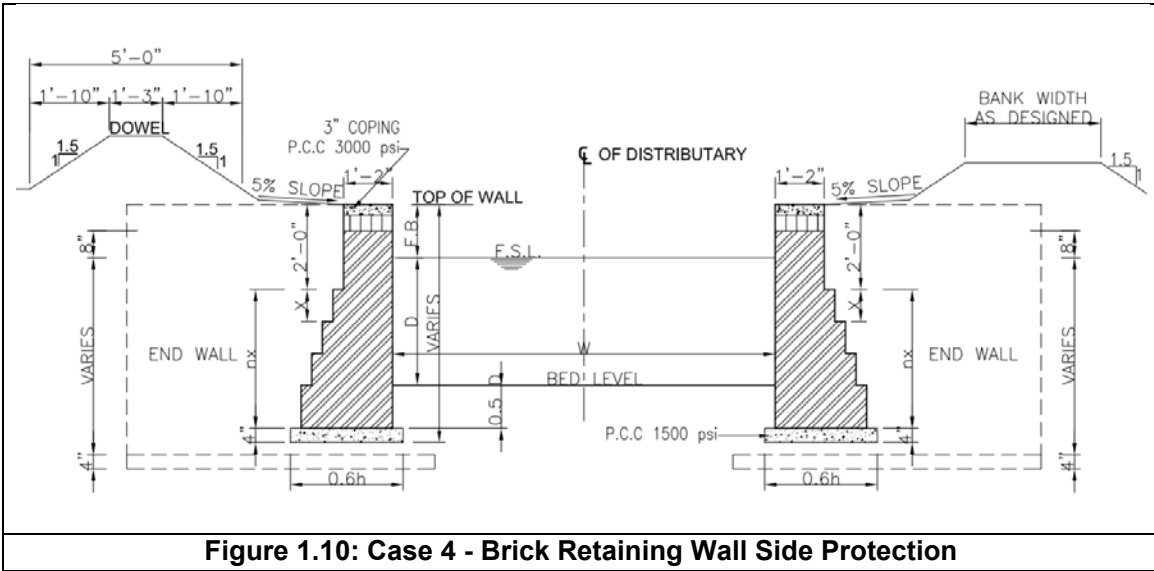
• Case 3: Concrete Lining

14. Existing distributaries and minors are concrete lined and have damages due to floods . Therefore, it has proposed to restore the prism of channel by providing concrete lining in damaged portions. The lining is provided with 4.0 inches thick concrete (1:2:4) over 1 inch thick 1:6 cement sand mortar placed on the moistened, compacted grade, as shown in **Figure 1.9**



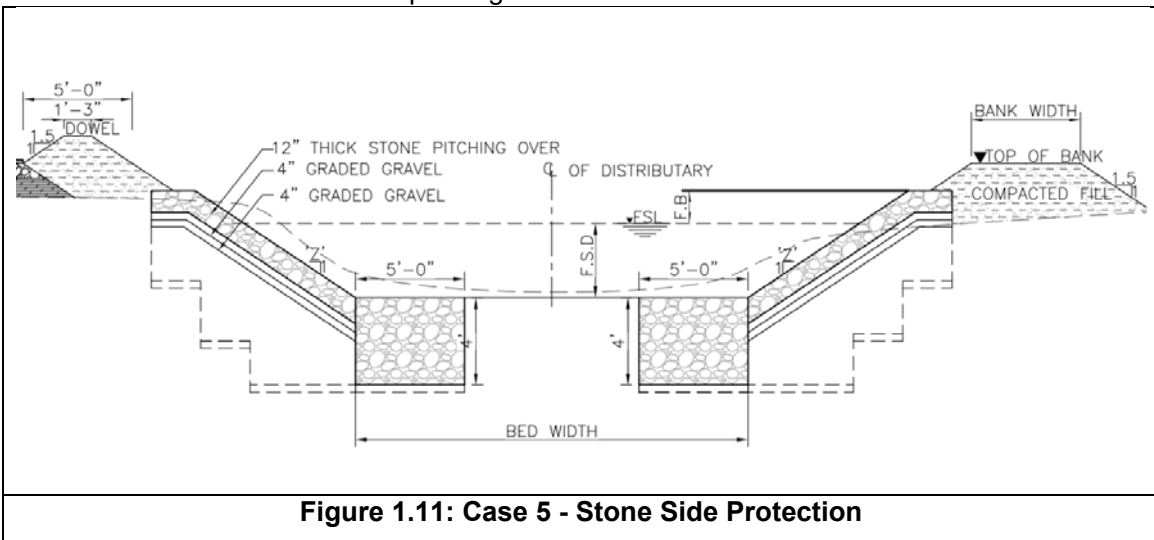
- **Case 4: Brick Retaining Wall Side Protection**

15. The retaining walls provided in distributaries are washed away / damaged due to floods. At these locations, side walls have been designed and proposed to be re-constructed as shown in **Figure 1.10**. Retaining walls are relatively rigid walls used for supporting soil laterally so that it can be retained at different levels on the two sides. Retaining walls are structures designed to restrain soil to a slope that it would not naturally keep to (typically a steep, near-vertical or vertical slope). They are used to bound soils between two different elevations often in areas of terrain possessing undesirable slopes or in areas where the landscape needs to be shaped severely and engineered for more specific purposes like hillside farming or roadway overpasses.



- **Case 5: Stone Side Protection**

- Stone pitching has been recommended especially downstream of falls & bridges where erosive action is excessive (**Figure 1.11**). Stone Pitching used mostly are 12 inches to layer of revetments stone placed on a 4 inches layer of graded filter ( $\frac{1}{2}$  – 2” over another 4 inches layer graded filter ( $\frac{1}{8}$  –  $\frac{1}{2}$ ”). The revetment stone consist of a quarried rock ranging in weight from 20 to 50 Kg with the voids filled by rock sprawl ranging in size from 2 inches to 4 inches.
- Pitching consists as protection for distributary beds and side slopes adjoining the structures protection where the velocities are above 5 feet /sec or where the energy dissipation is involved or where the capacity and magnitude of the structure warrants the additional cost of stone pitching.



- The rehabilitation works of distributaries/canals and drains will serve the following purposes:

#

- Providing a steady and controlled flow of water to the agricultural lands;
- Allowing farmers to efficiently distribute the water into their lands leading into increased agricultural yield and livelihood for farmers; and
- Managing water levels during periods of heavy rainfall, reducing the risk of inundation and damage to surrounding areas; and
- Cleaning and Desilting the drains to increase its flood carrying capacity.

19. Major Construction work/activities involve:

- Transportation of construction material;
- Restoration of distributary prism by brick/stone side protection;
- Restoration of lining of distributary;
- Construction of retaining walls;
- Restoration and provision of new stone pitching;
- Distributary bank restoration/raising; and
- Rehabilitation of patrol roads and culverts etc.

20. All works will be confined within existing Right of Way (ROW) of Irrigation department.

Few environmental and social impacts are anticipated which will be temporary, short-term and localized limited to the construction phase and will primarily relate to noise, and air (dust) emissions, solid waste generation and disposal of wastewater, occupational and community health and safety. The cross section details of the proposed construction works are shown in **Figure 2.1-2.7**.

**Table 1.1: Details of Sub-projects**

Sr. No.	Name of Work	Village	Estimated Cost	Location (Coordinates)		RDs	Type of Rehabilitation Work	Case Wise Proposed Rehabilitation Works	Length of Rehab Works (ft.)
				Easting	Northing				
<b>CANALS</b>									
1.	Rehabilitation of damaged / washed away Drains Section of Katgarh Branch Drain No3	Kathgarh	24	71°00'53"	32°10'49"	1+000 2+460 4+108 10+500 12+556 15+115	Section Cleaning	-	17,575
2.	Rehabilitation of damaged / washed away Drains Section of Katgarh Branch Drain No4	Kathgarh	23.5	71°00'34"	32°10'10"	3+900 6+700 9+000 10+100	Section Cleaning	-	10,100
						5+800	Section Restoration		
3.	Rehabilitation of damaged / washed away Drains Section of Lارج Drain No2	Paharpur	14	71°00'06"	32°08'24"	6+850 9+308	Section Cleaning	-	9,208
						7+070	Section Restoration		
4.	Rehabilitation of damaged / washed away Drains Section of Lارج	Paharpur	19	70°58'15"	32°06'34"	1+500 4+000 5+700 8+509	Section Cleaning	Case - 3: Brick Retaining Wall Side Protection	7,909

Sr. No.	Name of Work	Village	Estimated Cost	Location (Coordinates)		RDs	Type of Rehabilitation Work	Case Wise Proposed Rehabilitation Works	Length of Rehab Works (ft.)
				Easting	Northing				
	Drain No1								
						5+800	Right Bank Protection		
						2+750 4+150	Left Bank Protection		
						0+000	Box Culvert Required		
5.	Rehabilitation of damaged / washed away Drains Section of Seed Farm Branch Drain	Rakh & Beeli	4	70°58'5.17"	32°04'39"	6+860	Section Cleaning	-	6,860
6.	Rehabilitation of damaged / washed away Drains Section of Bund Kurai Branch Drain	Bandkurai	39	70°55'56"	32°02'01"	6+000 12+000 19+019	Section Cleaning	-	19,350
						19+019	Section Desilting		
						19+019- 18+689	Section Restoration		
7.	Rehabilitation of damaged / washed away Drains Section of Bund Kurai Main Drain	Bandkurai	50	70°53'59"	32°03'00"	23+500	Section Cleaning	-	25,300
						4+700 10+440 23+500	Section Restoration		

Sr. No.	Name of Work	Village	Estimated Cost	Location (Coordinates)		RDs	Type of Rehabilitation Work	Case Wise Proposed Rehabilitation Works	Length of Rehab Works (ft.)
				Easting	Northing				
						2+750 4+450	Left Bank Protection		
						3+300	Right Bank protection		
8.	Rehabilitation of damaged / washed away Drains Section of Main Drain.	Awan , Lang Kher Shah & Bandkurai	45	71°02'47"	32°09'19"	0+100 – 17+447	Section Cleaning	-	31,900
						8+500 42+900 49+500 55+200 61+000 64+500 69+000 78+187 84+000 93+000	Section Restoration		
						14+000 14+050	Left Bank Protection		
						26+650	Section Restoration		
						28+300	Box Culvert		
9.	Rehabilitation of damaged / washed away Drains Section of Girsal Drain	Dahotr & Sardarywala	14.5	70°54'32"	31°59'03"	26+662	Section Cleaning	-	26,662
10.	Rehabilitation of damaged / washed away Drains Section of Girsal Pond Drain	Dahotr & Kiri Niazi Wala	4.5	70°59'18"	31°58'27"	1+925	Section Cleaning	-	900

Sr. No.	Name of Work	Village	Estimated Cost	Location (Coordinates)		RDs	Type of Rehabilitation Work	Case Wise Proposed Rehabilitation Works	Length of Rehab Works (ft.)
				Easting	Northing				
11.	Rehabilitation of damaged / washed away Drains Section of Jabbarwala Drain	Jabarwala & Mosakher	14	70°58'14"	31°57'56"	10+590 26+000	Section Cleaning	-	21,900
						5+000 11+650	Bank Protection		
12.	Rehabilitation of damaged / washed away Drains Section of Ketch Drain	Muqem Shah, Girsal & Ketch	4	70°55'29"	31°57'45"	11+998 14+350 15+744 21+694 22+993 31+050 44+710 47+990 49+899 55+446	Section Cleaning	-	58,990
						70°54'37"	32°04'26"		
13.	Rehabilitation of damaged / washed away Drains Section of Bilot Creek Drain	Bilot Shehr	9	71°11'36"	32°18'29"	24+000 44+000 64+000 80+000 103+000	Section Cleaning	Case - 3: Brick Retaining Wall Side Protection	103,105
						14+000	Retaining Wall		
<b>DISTRIBUTARIES</b>									
14.	Rehabilitation of damaged/washed away Canal Section of Disty # 2	Band Kurai	15	70°52'59"	32°02'31"	4+554- 6+254	Concrete Lining	Case - 2 : Concrete Lining	3,400
15.	Rehabilitation of damaged/washed away Canal Section	Kech	34	70°53'39"	31°59'51"	0+040 4+575	Brick side protection	Case - 3: Brick Retaining Wall Side Protection	10,330



Sr. No.	Name of Work	Village	Estimated Cost	Location (Coordinates)		RDs	Type of Rehabilitation Work	Case Wise Proposed Rehabilitation Works	Length of Rehab Works (ft.)
				Easting	Northing				
	of Disty # 3					8+550	Road Rehabilitation	Case - 2 : Concrete Lining	
						11+750	Concrete PCC Lining		
16.	Rehabilitation of damaged/washed away Canal Section of Girsal Feeder	Girsal	5.5	70°53'59"	31°59'39"	4+400	Brick side protection	Case - 3 : Brick Retaining Wall Side Protection	450
						5+675 6+550	Brick side protection and Road Rehabilitation		
17.	Rehabilitation of damaged/washed away Canal Section of Girsal Minor	Girsal	14	70°57'25"	31°59'00"	2+220 4+920 7+915 8+325 12+375 17+500	Road Restoration	Case - 2 : Concrete Lining	7710
						16+225	Concrete PCC Lining		
18.	Rehabilitation of damaged/washed away Canal Section of Shah Kot Minor	Shah Kot	32.5	70°57'02"	31°59'46"	2+675 4+335 4+590 5+065 6+500 8+250 13+250	Road Rehabilitation	Case - 1B-1C-1D: Concrete Side Protection with Side Wall (L&R)	8,110
						3+175 5+140 6+125 6+925 9+475	Concrete Side Protection		

Sr. No.	Name of Work	Village	Estimated Cost	Location (Coordinates)		RDs	Type of Rehabilitation Work	Case Wise Proposed Rehabilitation Works	Length of Rehab Works (ft.)
				Easting	Northing				
						14+650 18+435 21+025 22+935 23+170 24+015 24+315 26+015 27+135	Road Rehabilitation + Concrete Side Protection With Side Wall		
						18+600 18+950 20+000	Raising Wall		
19.	Rehabilitation of damaged/washed away Canal Section of Shah Kot Feeder	Shah Kot	10	70°57'24"	31°59'11"	0+050 0+100 2+750 3+250	Brick side protection	Case - 3 : Brick Retaining Wall Side Protection	700
20.	Rehabilitation of damaged/washed away Canal Section of Band Kurai Minor	Band Kurai	18.5	70°53'53"	32°02'26"	4+700 11+550 13+550	Concrete Lining	Case - 1A : Concrete Side Protection Case - 2: Concrete Lining	6,450
						6+550	Concrete Side Protection With side walls		
						10+275	Bank Restoration		
21.	Rehabilitation of damaged/washed away Canal Section of Band Kurai Branch	Band Kurai	9	70°53'53"	32°02'26"	0+200 1+650 2+595	Concrete Side Protection With side walls	Case - 1A : Concrete Side Protection Case - 1C: Concrete Side Protection Case - 2: Concrete Lining	1,450
						0+800	Concrete Lining		
22.	Rehabilitation of	Ketch	6			0+550	Concrete Side	Case - 1A :	2,640

Sr. No.	Name of Work	Village	Estimated Cost	Location (Coordinates)		RDs	Type of Rehabilitation Work	Case Wise Proposed Rehabilitation Works	Length of Rehab Works (ft.)
				Easting	Northing				
	damaged/washed away Canal Section of Ketch Minor			70°53'45"	31°59'53"	2+620 4+000 5+700 9+100 11+050 14+500	Protection With side walls  Concrete Lining  Bank Restoration	Concrete Side Protection Case - 2: Concrete Lining	
23.	Rehabilitation of damaged/washed away Canal Section of Paharpur disty	Paharpur	22.5	70°57'01"	32°06'42"	12+950 13+700 25+950 28+000 28+975 37+750 39+400 39+560 39+560 43+700 39+400 40+100 43+765	Concrete Side Protection With Both side walls  Road Rehabilitation	Case - 1A : Concrete Side Protection Case - 1C: Concrete Side Protection Case - 2: Concrete Lining	2,400
24.	Rehabilitation of damaged/washed away Canal Section of Old Paharpur canal (RD. 118500-122300)	Band Kurai	17.5	70°53'51"	32°02'26"	120+070 119+075 120+320	Brick Retaining Wall  Road Restoration	Case - 2 : Brick Retaining Wall Side Protection	1,270
25.	Rehabilitation of damaged/washed away Canal Section of Old Paharpur	Band Kurai	17.5	70°53'27"	32°01'51"	130+000 132+200 136+590 138+650	Rehabilitation of Head Regulator  Road Rehabilitation	-	3,700

Sr. No.	Name of Work	Village	Estimated Cost	Location (Coordinates)		RDs	Type of Rehabilitation Work	Case Wise Proposed Rehabilitation Works	Length of Rehab Works (ft.)
				Easting	Northing				
	canal (RD. 130000-160000)					138+850 139+050 141+750 148+650			
26.	Rehabilitation of damaged/washed away Canal Section of Civil Minor	Dabotar	33	70°56'55"	32°02'22"	3+025	Concrete Lining	Case -1C: Concrete Side Protection with Side Wall Case - 2:Concrete Lining	3,510
						5+950 8+520 14+250	Concrete Side Protection		
						6+425 7+195 10+240 12+340 15+595 17+750 18+350 19+565 19+755	Road Rehabilitation		
27.	Rehabilitation of damaged/washed away Canal Section of Rakh disty	Rakh	9.5	70°55'41"	32°02'59"	3+090 4+025 5+055 5+875 5+945 6+165 6+850 9+035	Concrete Lining and Bank restoration	Case - 2: Concrete Lining	330
28.	Rehabilitation of damaged/washed away Canal Section of Kat Garh Minor	Kat Garh	9.5	71°01'38"	32°08'48"	5+885 6+500 8+450 10+500	Concrete Side Protection	Case -2C : Concrete Side Protection Case - 3:Concrete Lining	700
29.						16+150 18+600	Concrete Lining		
30.	Rehabilitation of	Bigwani	6.5	71°01'46"	32°11'18"	3+825	Road	-	270

Sr. No.	Name of Work	Village	Estimated Cost	Location (Coordinates)		RDs	Type of Rehabilitation Work	Case Wise Proposed Rehabilitation Works	Length of Rehab Works (ft.)
				Easting	Northing				
	damaged/washed away Canal Section of Bigwani Minor					4+325 5+025 12+910	Restoration		
31.	Rehabilitation of damaged/washed away Canal Section of Takarwah disty	Takarwah	9	71 °06'08"	32 °08'30"	8+450 8+650 8+850 11+840 13+730 14+515 15+125 21+683 23+200 23+800 25+955 29+375  11+300	Concrete Side Protection             Brick Retaining Wall	Case - 2B : Concrete Side Protection Case - 2C: Concrete Side Protection with Side Wall (L&R) Case - 4: Brick Retaining Wall Side Protection 4,645	

## 2 Anticipated Environmental and Social Impacts

21. The proposed sub-projects have been visited and assessed for anticipated environmental and social impacts during construction phase. In operation phase, the distributaries will provide water to the nearby communities for agriculture purposes and the drains will act as a flood carrier channels and save the nearby communities from the floods.

### 2.1 Positive Socio-Economic and Environmental Impacts of Sub-projects

#

22. Following are the anticipated positive socio-economic and environmental impacts:

- Improves the agricultural productivity by ensuring a consistent and controlled water supply to agricultural lands;
- Enhances food security for the local communities;
- Creates employment opportunities in agriculture and related sectors, boosting incomes for farmers and supporting rural livelihoods; and
- Manages excessive water during heavy rainfall or flooding, mitigating the risk of flood damage to crops, infrastructure, and communities.

### 2.2 Anticipated Adverse Environmental and Social Impacts

#

23. From an environmental and social perspective, the sub-projects are likely to have small and limited-scale potential adverse impacts. The anticipated environmental and social impacts and mitigation measures related to the proposed sub-projects are summarized in **Table 2.1**

**Table 2.1: Anticipated Adverse Environmental and Social Impacts**

Sr. No	Environmental and Social Impacts	Mitigation Measures
1.	<b>Climate Risks</b> The construction activities of sub-project can be affected due to the climate risks during the severe vulnerable conditions such as heat waves, heavy rains and floods.	<ul style="list-style-type: none"> <li>- Reduce the working hours of workers during extreme hot environment and heat waves.</li> <li>- Construction work will be started and planned considering the weather forecast and special attention will be required for monsoon season.</li> </ul>
2.	<b>Deterioration of surface water quality</b> Construction activities and the wastewater including oil/chemical spills from the construction camps can contain harmful substances which may deteriorate the water quality of the disties.	<ul style="list-style-type: none"> <li>- Campsites will be located at least 500m away from the distributary and settlement.</li> <li>- No waste stream will be allowed to enter distributary and drain without treatment where it can affect downstream water quality and human health.</li> <li>- Adequate sanitary facilities and drainage in the worker's camps will help to avoid this possibility.</li> <li>- Construction materials will be properly covered and stored to prevent runoff of construction material and waste into the distributary and drain. The Erosion Control Blankets and Mats can be used to control the sediment runoff.</li> </ul>
3.	<b>Noise Pollution and Vibration Impact</b> Noise and vibration is envisaged due to	<ul style="list-style-type: none"> <li>- Construction Contractor will ensure that; (i) machinery is adequately silenced and (ii) machinery operations close to urban areas will</li> </ul>

Sr. No	Environmental and Social Impacts	Mitigation Measures
	general construction activities and machinery movement.	be restricted to day time only.
4.	<p><b>Deterioration of Air Quality</b> Dust will be generated due to the general construction activities and movement of construction vehicles in the proposed sub-project site.</p>	<ul style="list-style-type: none"> <li>- Dust control measures such as water spraying or dust suppressants will be used to reduce airborne dust particles.</li> <li>- Temporary windbreaks and barriers such as temporary fences will be installed around the construction site to reduce the spread of dust to nearby residential areas and river body.</li> <li>- Properly tuned vehicles and regular maintenance and inspection of vehicles must be ensured.</li> </ul>
5.	<p><b>Occupational Health and Safety Impacts</b> Construction labor and construction staff hired during the construction period will be subject to occupational health and safety risks. Following risks are anticipated due to proposed project:</p> <ul style="list-style-type: none"> <li>▪ Slip and trip</li> <li>▪ Fall from height</li> <li>▪ Struck-By and Caught-Between</li> <li>▪ Vector borne diseases</li> <li>• Eye and head injuries</li> <li>• Noise and dust pollution</li> <li>• Health issues with the workers/staff</li> </ul>	<ul style="list-style-type: none"> <li>- Construction contractor will ensure that Tool Box Talks (Tots) are conducted regularly.</li> <li>- All the staff and Labor shall be provided with working personal protective equipment (PPE's).</li> <li>- IFC-EHS guidelines (General Guidelines, Elevated and Overhead Work guidelines, Fall Protection guidelines, Fire, Control of chemical hazards guidelines) will be followed for Occupational Health and Safety.</li> <li>- Occupational Health and Safety Plan will be prepared and implemented by Contractor(s).</li> <li>- Contractor(s) will ensure that Job Hazard Analysis (JHA) is performed prior to commencing jobs.</li> </ul>
6.	<p><b>Community Health and Safety</b></p> <ul style="list-style-type: none"> <li>• Increase risk of illicit behavior and crimes</li> <li>• Increased risk of communicable diseases</li> <li>• Conflicts between locals and workers related to religious, cultural or ethnic differences</li> <li>• Child abuse, drug/substance abuse and Sexual Harassment (SH) and Sexual Exploitation and Abuse (SEA)</li> </ul>	<ul style="list-style-type: none"> <li>- Failure/ Collapse of banks during operation stage due to emergency situation such as flood/earthquake.</li> <li>- A regular inspection and maintenance program will be ensured to identify and address any potential vulnerabilities or issues that could affect the wall during a flood.</li> <li>- Flood warning systems must be ensured which will provide timely information about rising water levels or impending flood events. Work during construction as well as travelling during operation will be halted during such emergencies.</li> <li>- Comprehensive emergency response plans in compliance with Provincial Disaster Management Authority (PDMA) specific to the flood events will be developed and updated regularly.</li> <li>- Communicable disease associated with the influx of temporary construction labor which will be reduced by implementing Worker Code of Conduct, ensure minimum to no interaction of workers with local community, health awareness initiatives; immunization program and providing health service.</li> <li>- Trainings will be given to construction workers, alongside the implementation of strict measures and punishments in case of any child abuse,</li> </ul>

Sr. No	Environmental and Social Impacts	Mitigation Measures
		drug/substance abuse and SEA/SH.
7.	<p><b>Soil Erosion and Contamination</b> Construction activities and the use of construction machinery at the site will leads to soil erosion</p>	<ul style="list-style-type: none"> <li>- Best management practices will be adopted during construction which includes limiting earthmoving and minimizing soil disturbance.</li> <li>- Cordon off the designated area along the distributary as livestock exclusion zones to prevent direct access to the water.</li> <li>- Washing yards will be paved to avoid seepage of runoff from the yard.</li> <li>- Septic tanks of adequate capacities will be constructed for receiving and treating wastewater from all temporary worksite toilets and other facilities. The wastewater will not be discharged untreated onto the adjacent lands.</li> <li>- Erosion control measures will be adopted to prevent soil erosion and sediment runoff.</li> <li>- Dense vegetation along the banks of the distributaries and drains will act as a natural barrier and reduce the risk of soil erosion in future.</li> </ul>
8.	<p><b>Scouring of Canals/distributaries</b> During construction, the slopes of the disty may be unstable due to loose soil or lack of proper compaction, making them susceptible to erosion and scouring.</p>	<ul style="list-style-type: none"> <li>- The contractor will identify the weak slope areas along the distributaries and drains and avoid the movement of vehicle as well as machinery along such areas.</li> </ul>
9.	<p><b>Clogging of Canals/distributaries/drains</b> Construction activities will lead to increase erosion and sediment runoff into the disty. The increase in accumulation of sediments in a disty will reduce the carrying capacity of disty and ultimately leads to clogging of disty.</p>	<ul style="list-style-type: none"> <li>- Construction materials will be properly covered and stored to prevent runoff of construction material and waste into the distributaries and drains. The stabilization of exposed soil areas will be ensured during the construction activities by using slope stabilization methods.</li> </ul>
10.	<p><b>Impacts on Flora, Fauna and Aquatic life</b> There is no direct impact on flora and fauna. However, construction activities, stockpiling of material and the wastewater discharge including oil/chemical spills from the camps can contain harmful substances which may cause impact on aquatic life.</p>	<ul style="list-style-type: none"> <li>- Cutting of trees and shooting, hunting, trapping or poaching of animals and birds will totally be banned within the study area, so as to minimize indirect impact of flora and fauna.</li> <li>- Storage of (construction) material confined to work sites.</li> <li>- Direct discharge of wastewater into water body will be avoided.</li> <li>- Construction materials will be properly covered and stored to prevent runoff of concrete additives and construction waste into the water body.</li> <li>- Good housekeeping will further reduce the likelihood and severity of this impact.</li> <li>- Restoring temporarily disturbed areas / land take to pre-construction conditions</li> </ul>
11.	<p><b>Social and Cultural Conflicts</b> Use of local resources and products by the construction workers and</p>	<ul style="list-style-type: none"> <li>- Local labor especially from nearby communities will be given preference for the construction works.</li> </ul>



Sr. No	Environmental and Social Impacts	Mitigation Measures
	differences in cultural values may cause discomfort to local residents.	<ul style="list-style-type: none"> <li>- Avoid use of local resources (especially community water supply sources) to reduce the social conflicts. Contractor will ensure the availability of drinking water (preferably potable water) at site.</li> <li>- Strict implementation of Worker Code of Conduct will be ensured to eliminate such social and cultural issues.</li> </ul>
12.	<p><b>Child Labor and Gender Based Violence (GBV)</b></p> <p>The impact of child labor and gender based violence may arise during the construction stage of the sub-project.</p>	<ul style="list-style-type: none"> <li>- Child labor will be prohibited.</li> <li>- It will be ensured that contractor will have its employment policy in accordance with relevant act and labor policies of Khyber Pakhtunkhwa and Pakistan.</li> <li>- Provision related to GBV, SEA/SH will be incorporated worker's code of conduct.</li> <li>- Trainings will be given to construction workers, alongside the implementation of strict measures and punishments in case of any sexual assaults, or GBV.</li> </ul>

### 2.3 Recommendation

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24. The Khyber Pakhtunkhwa Environmental Assessment Rules, 2021 provides screening categories of the projects for which environmental assessment need to be conducted. As the proposed project does not involve the construction of new canal/channel, hence no environmental assessment is required as per the aforementioned regulations.
  
25. However, based on the review of the “Environmental and Social Management Framework” (ESMF) prepared for EFAP and “ADB SPS 2009”, the proposed project has been classified as “**Category C**” based on the limited scope of work activities limiting in the existing ROW with no change in overall land use of the project area. The severity of expected E&S impacts is low. Some of the minimal impacts like occupational health and safety concerns, air and noise disturbance, social and cultural issues, child labor, GBV, SEA/SH are anticipated but will be mitigated via engineering as well as administrative controls and measures as stated above. The Rapid Environmental Assessment (REA) Checklist is annexed with the report.

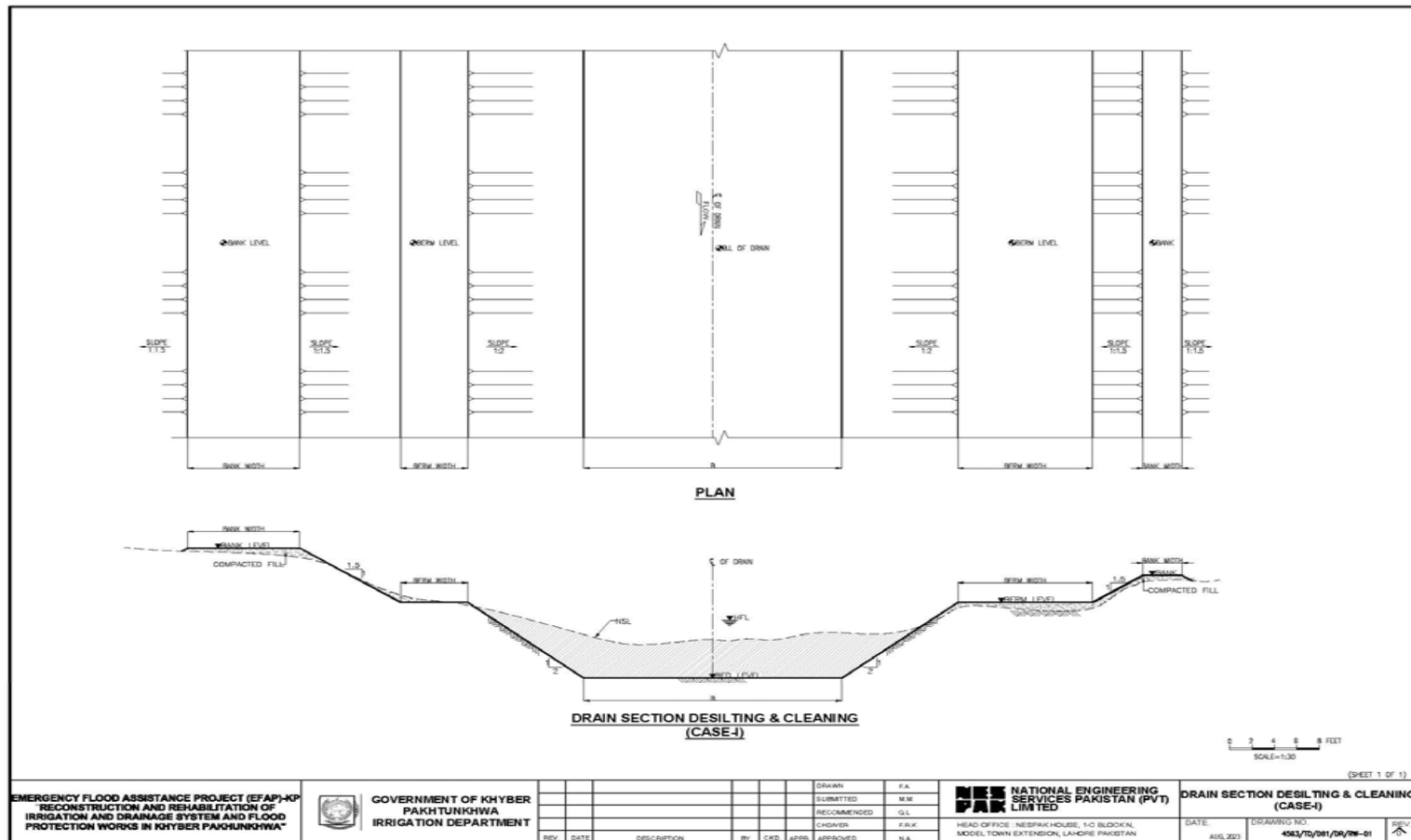
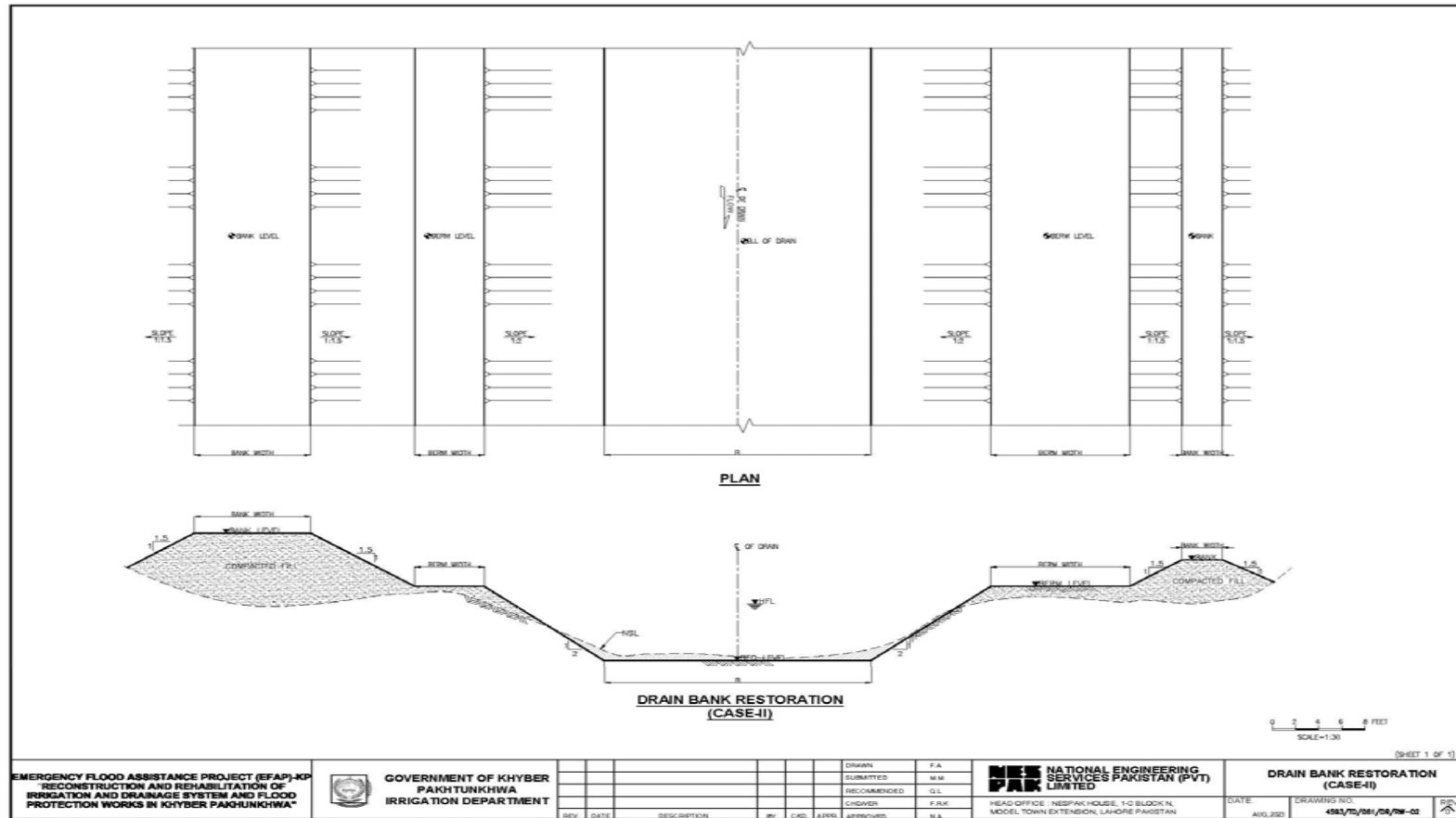


Figure 2.1: Typical Cross Section for Section Cleaning and Desilting of Drains



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Figure 2.2: Typical Cross Section for Drain Bank Restoration

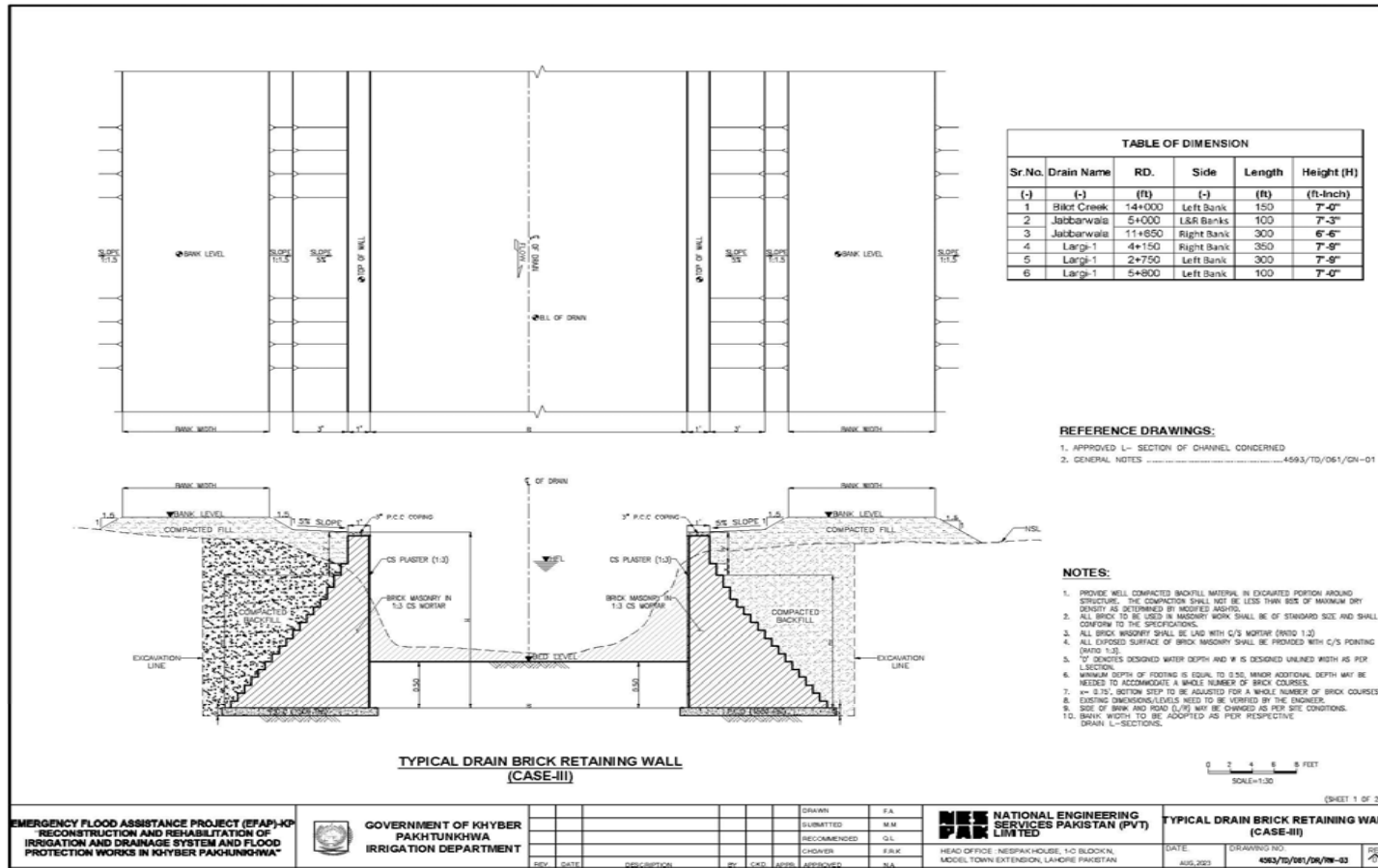


Figure 2.3: Typical Cross Section for Drain Bank Retaining Wall

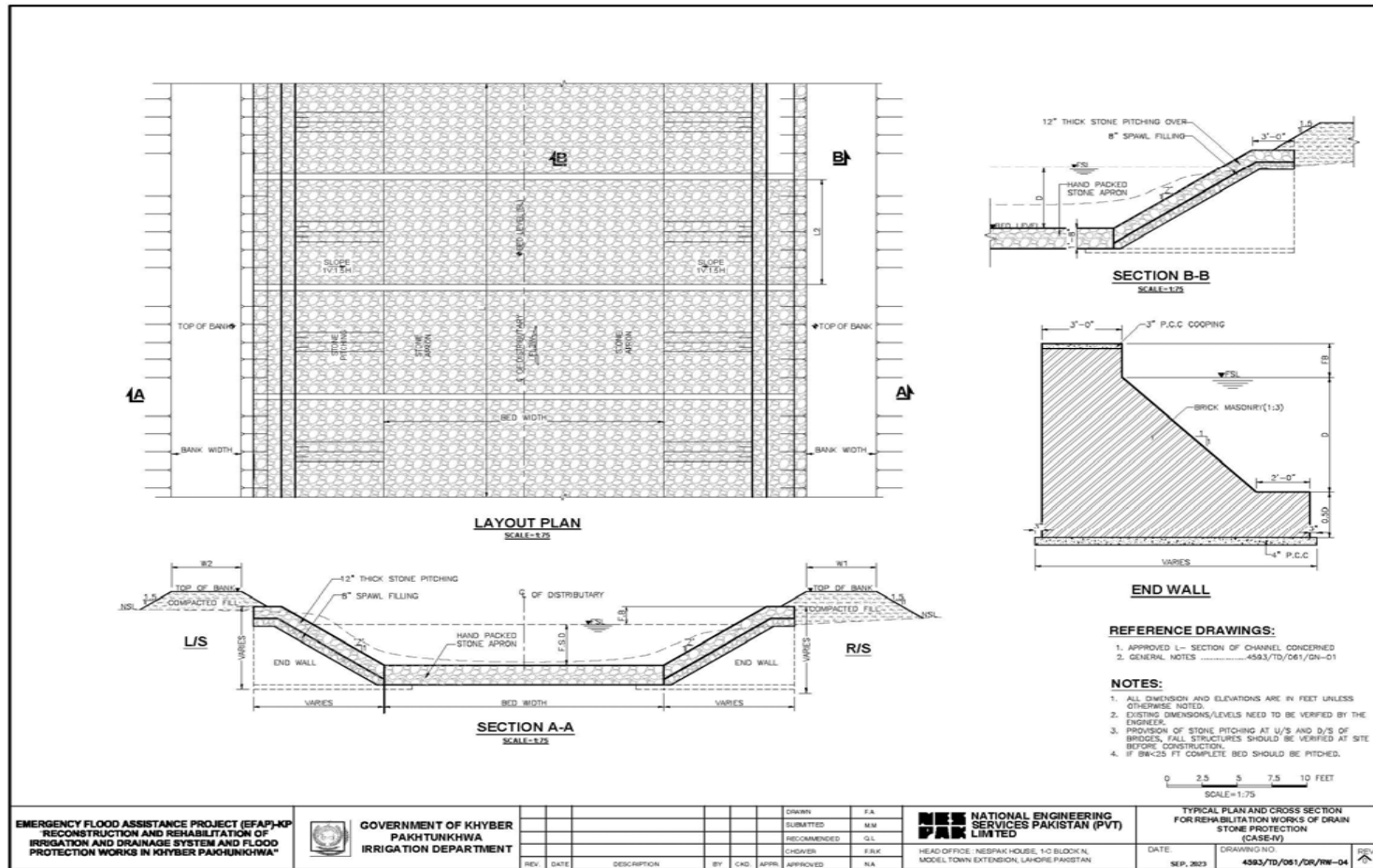


Figure 2.4: Typical Cross Section for Rehabilitation of Drains Stone Protection

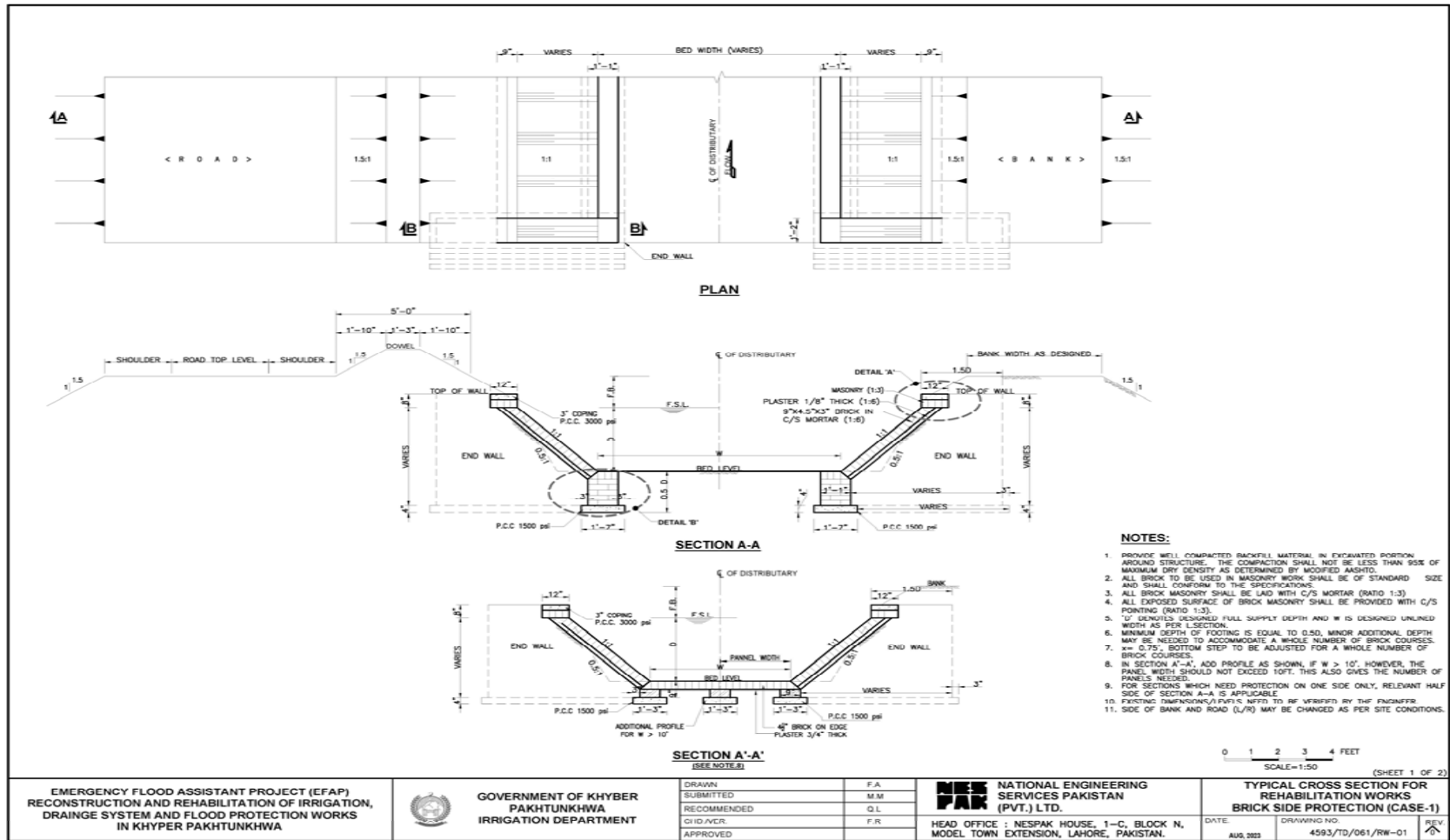


Figure 2.5: Typical Cross section for Rehabilitation works Brick Side Protection Wall

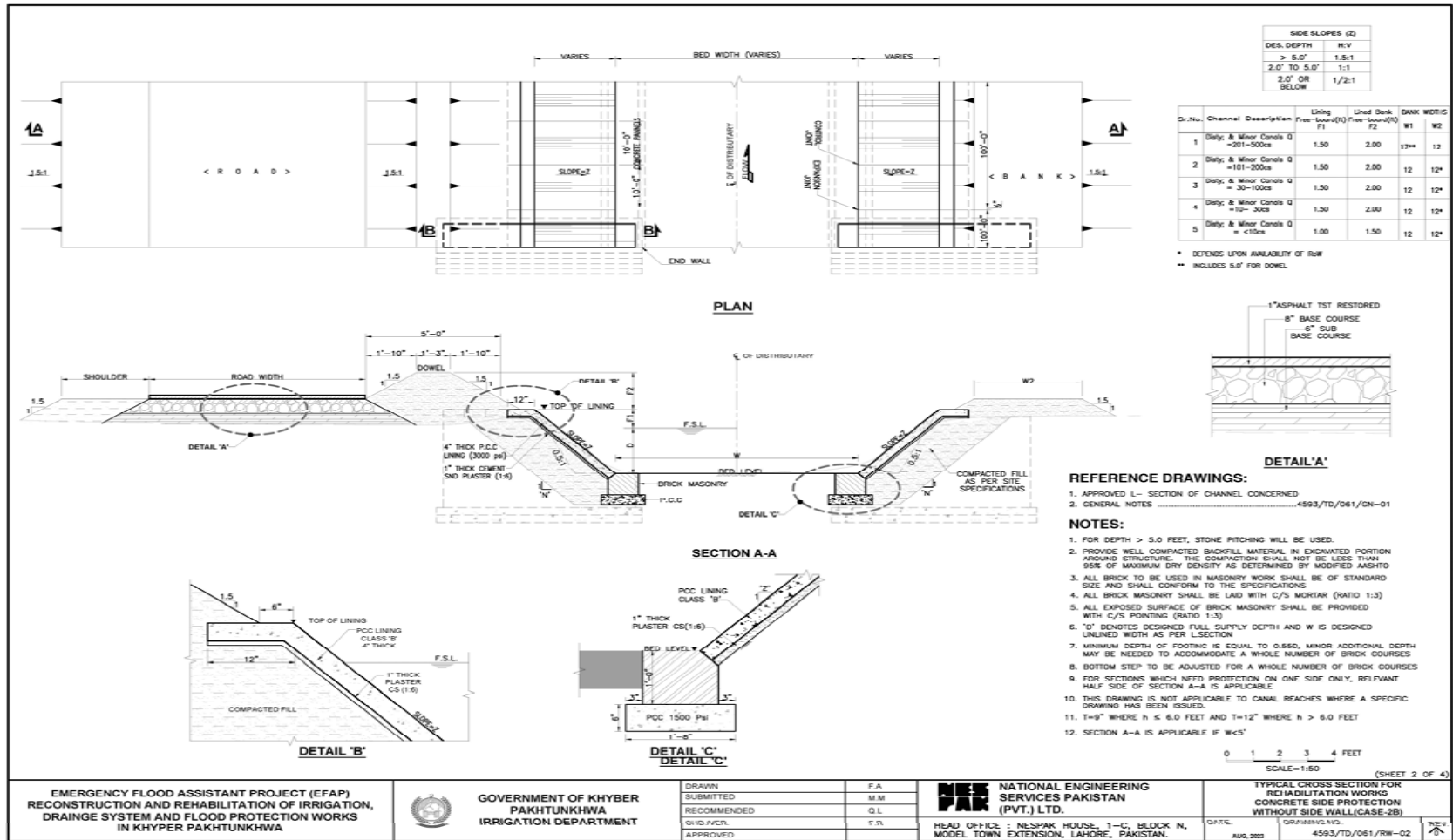


Figure 2.6: Typical Cross section for Rehabilitation work concrete side protection

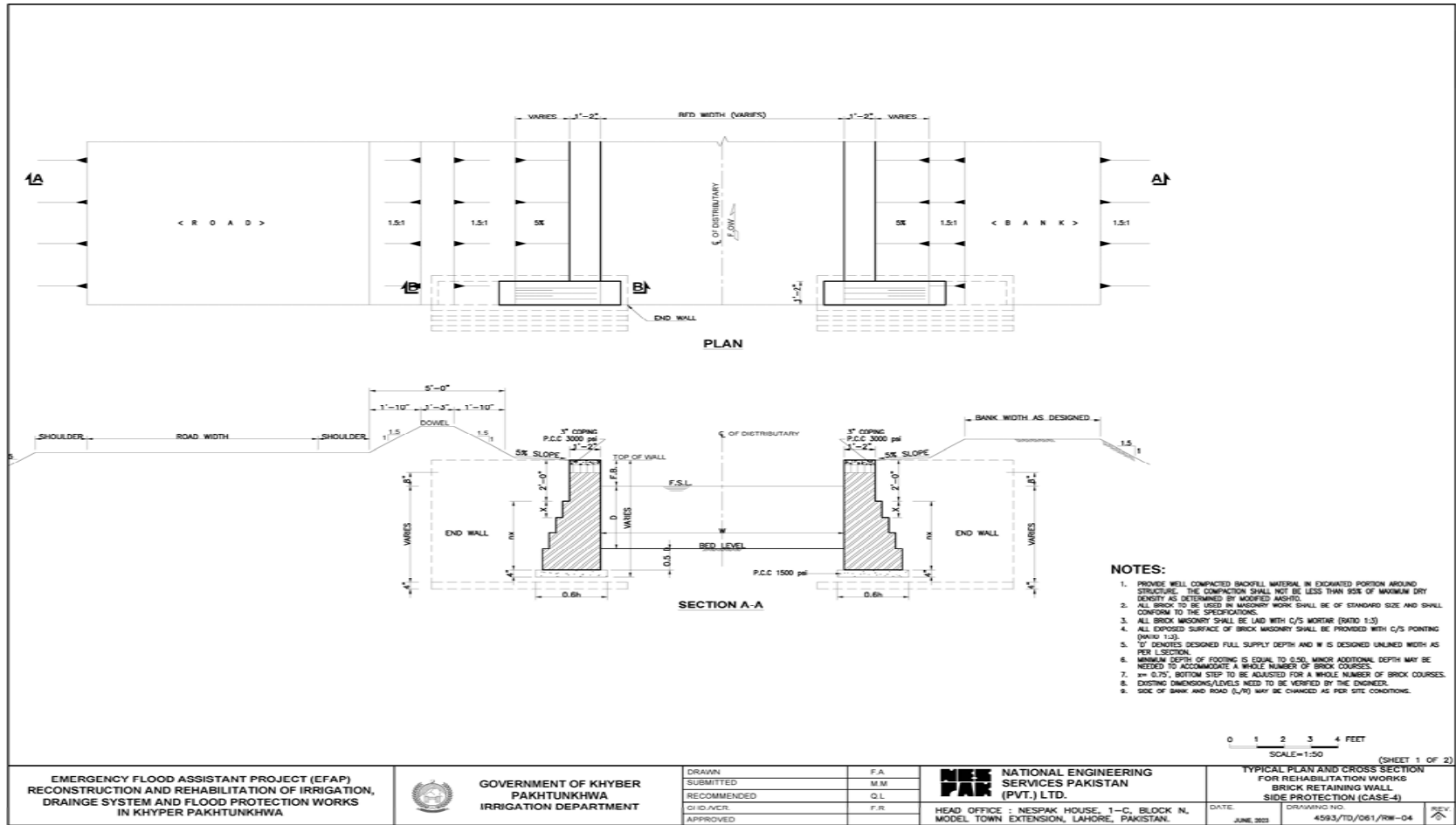


Figure 2.7: Typical Cross section for Rehabilitation work Brick Retaining Wall



## **ANNEXURES**

**ANNEXURE: RAPID ENVIRONMENTAL ASSESSMENT (REA) CHECKLIST****Instructions:**

- (i) The project team completes this checklist to support the environmental classification of a project. It is to be attached to the environmental categorization form and submitted to the Safeguard Division (SDSS), for endorsement by the Director, SDSS and for approval by the Chief Compliance Officer.
- (ii) This checklist focuses on environmental issues and concerns. To ensure that social dimensions are adequately considered, refer also to ADB's: (a) checklists on involuntary resettlement and Indigenous peoples; (b) poverty reduction handbook; (c) staff guide to consultation and participation; and (d) gender checklists.
- (iii) Answer the questions assuming the "without mitigation" case. The purpose is to identify potential impacts. Use the "remarks" section to discuss any anticipated mitigation measures.

**Country/ Project Title**

**Pakistan, Khyber Pakhtunkhwa, Emergency Flood Assistance Project (EFAP)**

Package 3: Repair/Rehabilitation of Drains, Paharpur Irrigation Division DI Khan *(For detail of work Refer Section 1)*

**Sector Division**

Irrigation Sector, Central and West Asia Department (CWRD), Pakistan

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**Project Brief**

Package 3 involves Repair/Rehabilitation of Drains and Canal/Distributaries, Paharpur Irrigation Division DI Khan. This package includes thirty schemes/subprojects among which thirteen (13) are related to the rehabilitation of drains. The overview of the proposed package is provided in Table 1.1. This Package falls in DI Khan Irrigation Circle (south region). The construction work for Rehabilitation/Repair of Drains involves removal of Sakranda growth, Desilting, transportation of construction material, brick side protection and bank rising. All works are confined within existing Right of Way (ROW) of Irrigation department and there is no protected and notified cultural site within or near the vicinity of the project area. Few environmental and social impacts are anticipated which are temporary, short-term and localized limited to the construction phase and are primarily related to soil erosion, noise, and air (dust) emissions, solid waste generation and disposal of wastewater, occupational and community health and safety.

Screening Questions	Yes	No	Remarks
<b>A. Project Siting</b> Is the project area adjacent to or within any of the following environmentally sensitive areas?			
• Cultural heritage site		√	No cultural heritage site is noted or reported within the project area.
• Protected Area		√	No notified protected area falls adjacent to or within the project area.
• Wetland		√	There is no notified wetland near the project area.
• Mangrove		√	There are no mangrove trees or forests located near to or in the vicinity of the project area.
• Estuarine		√	There is no estuarine environment or an estuary located along the project area
• Buffer zone of protected area		√	There is no notified buffer zone of the protected area falls inside or near vicinity of project area.
• Special area for protecting biodiversity		√	There is no notified special area for protecting biodiversity near the project area
<b>B. Potential Environmental Impacts</b> Will the project cause.....			
• Loss of precious ecological values (e.g. result of encroachment into forests/swamplands or historical /cultural buildings/areas, disruption of hydrology of natural waterways, regional flooding, and drainage hazards)?		√	No precious ecological values are situated within or near the vicinity of the project area. Hence no such impact is envisaged.
• Conflicts in water supply rights and related social conflicts;	√		There might be pressure on the drinking water source due to the construction workers/staff.  This impact will be mitigated by: <ul style="list-style-type: none"> <li>• Avoid use of community water supply sources to reduce the social conflicts;</li> <li>• Contractor will ensure the availability of drinking water (preferably bottled water) at site.</li> </ul>
• Impediments to movements of people and animals?	√		The rehabilitation of banks and cleaning of may cause temporary hindrance to the pedestrian and animals crossing.  Construction activities will be properly planned and working on one section of a drain at a time will be prioritized to allow other sections to remain accessible for crossing.  Construction activities will be scheduled

Screening Questions	Yes	No	Remarks
			during times when pedestrian and animal activity is relatively lower to minimize disturbance.
<ul style="list-style-type: none"> <li>Potential ecological problems due to increased soil erosion and siltation, leading to decreased stream capacity?</li> </ul>		√	No such impact is encountered as no precious vegetation is observed within the vicinity of the project area.
<ul style="list-style-type: none"> <li>Insufficient drainage leading to salinity intrusion?</li> </ul>		√	No such impact is envisaged as no movement of saltwater from coastal or marine environments into drain is observed.
<ul style="list-style-type: none"> <li>Over pumping of ground water, leading to salinization and ground subsidence?</li> </ul>		√	Over pumping of groundwater is not required for the construction activities, hence no impact related to salinization and ground subsidence is envisaged.
<ul style="list-style-type: none"> <li>Impairment of downstream water quality and therefore, impairment of downstream beneficial uses of water?</li> </ul>	√		<p>This impact will be temporary and minor level in nature during the construction activities.</p> <p>Following risks are anticipated due to proposed project:</p> <ul style="list-style-type: none"> <li>Construction activities will lead to increase erosion and sediment runoff into the drains.</li> <li>The increase in accumulation of sediments in a drains may reduce the carrying capacity of drains and increase its maintenance cost;</li> </ul> <p>These impacts will be mitigated by avoiding direct discharge of wastewater into water body. Construction materials will be properly covered and stored to prevent runoff of concrete additives and construction waste into the drains. Good housekeeping will further reduce the likelihood and severity of this impact.</p>
<ul style="list-style-type: none"> <li>Dislocation or involuntary resettlement of people?</li> </ul>		√	The construction activities are conducted within the RoW already owned by Irrigation department, hence no dislocation or involuntary resettlement of people are encountered.
<ul style="list-style-type: none"> <li>Disproportionate impacts on the poor, women and children, Indigenous Peoples or other vulnerable groups?</li> </ul>		√	The proposed project doesn't cause any disproportionate impacts on the poor, women and children and other

Screening Questions	Yes	No	Remarks
			vulnerable groups. All of the construction activities are confined within the government land.
<ul style="list-style-type: none"> <li>Potential social conflicts arising from land tenure and land use issues?</li> </ul>		√	No land tenure and land use issue are arisen as the project area land is the property of Irrigation department.
<ul style="list-style-type: none"> <li>Soil erosion before compaction and lining of canals?</li> </ul>	√		Not applicable.
<ul style="list-style-type: none"> <li>Noise from construction equipment?</li> </ul>	√		<p>Noise will be produced due to the operation of construction machinery and equipment.</p> <p>There are a variety of ways by which construction equipment and worksite noise can be controlled. The following is a list of ways to control noise level at the worksite of the proposed Project:</p> <ul style="list-style-type: none"> <li>Quieter Equipment</li> <li>Modifying Existing Old Equipment</li> <li>Barrier Protection</li> <li>Work Activity Scheduling</li> <li>Maintenance of machinery</li> </ul>
<ul style="list-style-type: none"> <li>Dust during construction?</li> </ul>	√		<p>Dust will be produced due to the construction activities. Minor impact of fugitive emission due to construction machinery is also anticipated.</p> <p>Temporary windbreaks and barriers such as temporary fences will be installed around the construction site to reduce the spread of dust to nearby residential areas including drains. Dust control measures such as water spraying or dust suppressants will be used to reduce airborne dust particles. Properly tuned vehicles will be used during the construction phase. Regular maintenance and inspection of vehicles must be ensured.</p>
<ul style="list-style-type: none"> <li>Waterlogging and soil salinization due to inadequate drainage and farm management?</li> </ul>		√	If the construction activities such as cleaning and Desilting are not carried out without proper disposal of the removed silt or sediment, it can lead to blockages downstream causing

Screening Questions	Yes	No	Remarks
			<p>localized waterlogging and soil salinization.</p> <p>These impacts will be mitigated by ensuring proper disposal of sediments and silt removed during Desilting to prevent downstream blockages.</p>
<ul style="list-style-type: none"> <li>Leaching of soil nutrients and changes in soil characteristics due to excessive application of irrigation water?</li> </ul>		√	No such impact is envisaged.
<ul style="list-style-type: none"> <li>Reduction of downstream water supply during peak seasons?</li> </ul>		√	No such impact is envisaged. As the construction activities may cause temporary impact on drains flow, but it may not be strong enough to reduce the downstream water supply significantly.
<ul style="list-style-type: none"> <li>Soil pollution, polluted farm runoff and groundwater, and public health risks due to excessive application of fertilizers and pesticides?</li> </ul>		√	Not applicable as no application of fertilizers and pesticides are involved.
<ul style="list-style-type: none"> <li>Soil erosion (furrow, surface)?</li> </ul>	√		<ul style="list-style-type: none"> <li>Earthworks for the construction of the bank will disturb the soil which will make the soil more susceptible to erosion.</li> <li>Construction activities and the use of construction machinery at the site will leads to soil erosion.</li> </ul> <p>Best management practices will be adopted during construction such as limiting soil disturbance, minimizing grading, and using erosion control measures during construction phase. Erosion control measures will be adopted to prevent soil erosion and sediment runoff. Dense vegetation along the banks of the drains will act as a natural barrier and reduce the risk of soil erosion in future.</p>
<ul style="list-style-type: none"> <li>Scouring of canals?</li> </ul>		v	Not applicable
<ul style="list-style-type: none"> <li>Clogging of canals by sediments?</li> </ul>		√	Not applicable
<ul style="list-style-type: none"> <li>Clogging of canals by weeds?</li> </ul>		√	Not applicable
<ul style="list-style-type: none"> <li>Seawater intrusion into downstream freshwater systems?</li> </ul>		√	Not applicable
<ul style="list-style-type: none"> <li>Introduction of increase in incidence of waterborne or water related diseases?</li> </ul>	√		The following impacts of the waterborne and water related disease will be temporary and minor level in nature during restoration work:

Screening Questions	Yes	No	Remarks
			<ul style="list-style-type: none"> <li>Health issues/disease (cholera, typhoid, diarrhea, dysentery, etc.) due to unsafe drinking water to worker/staff;</li> <li>Occurrence of water born and vector born disease (malaria, dengue, etc.) due to standing water near workplace.</li> </ul> <p>Reducing the impacts of vector borne diseases on long-term health effect of workers will be accomplished through implementation of diverse interventions aimed at eliminating the factors that lead to disease, which includes: Prevention of larval and adult propagation of vectors through sanitary improvements and elimination of breeding habitat at site by eliminating any unusable impounding of water.</p>
<ul style="list-style-type: none"> <li>Dangers to a safe and healthy working environment due to physical, chemical and biological hazards during project construction and operation?</li> </ul>	√		<p>Following risks are anticipated due to proposed project:</p> <ul style="list-style-type: none"> <li>Slip and trip</li> <li>Fall from height</li> <li>Struck-By and Caught-Between</li> <li>Vector borne diseases</li> <li>Eye and head injuries</li> <li>Noise and dust pollution</li> <li>Health Issues</li> </ul> <p>IFC-EHS guidelines (General Guidelines, Elevated and Overhead Work guidelines, Fall Protection guidelines, Control of chemical hazards guidelines) will be followed for Occupational Health and Safety.</p>
<ul style="list-style-type: none"> <li>Large population influx during project construction and operation that causes increased burden on social infrastructure and services (such as water supply and sanitation systems)</li> </ul>		√	Local labor will be hired to minimize the impact on social infrastructure and services.
<ul style="list-style-type: none"> <li>Social conflicts if workers from other regions or countries are hired?</li> </ul>	√		Use of labor from areas other than local area might cause social conflicts which will be mitigated by using local skill (if available) and unskilled labor.
<ul style="list-style-type: none"> <li>Risks to community health and safety due to the transport, storage, and use and/or disposal of materials such as explosives, fuel, and other chemicals during construction and operation?</li> </ul>	√		<ul style="list-style-type: none"> <li>Dust and noise generation from construction equipment and activities. This impact will be controlled by using fully tuned equipment and water sprinkling.</li> </ul>

Screening Questions	Yes	No	Remarks
			<p>Timely public notification on planned construction works, site barricading will reduce the community health and safety impacts.</p> <ul style="list-style-type: none"> <li>• The transport, storage and disposal of construction waste leads to air pollution and can create breeding ground for mosquitoes and other pests, increasing the risk of vector-borne diseases such as malaria and dengue.</li> </ul> <p>This impact will be mitigated by:</p> <ul style="list-style-type: none"> <li>○ Covering construction waste during transport to prevent dust emissions and air pollution.</li> <li>○ Safe disposal of construction waste in designated areas away from drains and residential areas need to be ensured.</li> <li>○ Prevention of larval and adult propagation of vectors through sanitary improvements and avoiding the breeding habitat by eliminating any unusable impounding of water.</li> </ul>
<ul style="list-style-type: none"> <li>• Community safety risks due to both accidental and natural hazards, especially where the structural elements or components of the project (e.g. irrigation dams) are accessible to members of the affected community or where the failure could result in injury to the community throughout project construction, operation and decommissioning?</li> </ul>	√		<ul style="list-style-type: none"> <li>• Communicable disease associated with the influx of temporary construction labor which will be reduced by implementing Worker Code of Conduct, ensure minimum to no interaction of workers with local community, health awareness initiatives; immunization program and providing health service;</li> <li>• Failure/ Collapse of bank during operation stage due to emergency situation such as flood/earthquake. this impact will be mitigated by:</li> <li>• A regular inspection and maintenance program will be ensured to identify and address any potential vulnerabilities or issues that could affect the disty during a flood;</li> <li>• Flood warning systems must be ensured which will provide timely information about rising water levels or impending flood events. Work during construction as well as travelling during operation will be halted during such</li> </ul>



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**IRRIGATION**

Screening Questions	Yes	No	Remarks
			<p>emergencies; and</p> <ul style="list-style-type: none"><li>• Comprehensive emergency response plans in compliance with PDMA specific to the flood events will be developed and updated regularly;</li><li>• Communicable disease associated with the influx of temporary construction labor which will be reduced by implementing Worker Code of Conduct, ensure minimum to no interaction of workers with local community, health awareness initiatives; immunization program and providing health service.</li><li>• Trainings will be given to construction workers, alongside the implementation of strict measures and punishments in case of any child abuse, drug/substance abuse and SEA/SH.</li></ul>

Climate Change and Disaster Risk Questions	Yes	No	REMARKS
<p>The following questions are not for environmental categorization. They are included in this checklist to help identify potential climate and disaster risks.</p> <ul style="list-style-type: none"> <li>• Is the Project area subject to hazards such as earthquakes, floods, landslides, tropical cyclone winds, storm surges, tsunami or volcanic eruptions and climate changes?</li> </ul>	√		<p>The project area is prone to flash floods as it has already been affected by recent flood of 2022. Emergency response plan developed by PDMA specific to the flood events will be considered to mitigate the impact of these floods during construction activities. Reduce the work hours of workers during extreme hot environment and heat waves. Construction work will be started and planned considering the weather forecast and special attention will be required for monsoon season.</p>
<ul style="list-style-type: none"> <li>▪ Could changes in temperature, precipitation, or extreme events patterns over the Project lifespan affect technical or financial sustainability (e.g., increased erosion or landslides could increase maintenance costs, permafrost melting or increased soil moisture content could affect sub-grade).</li> </ul>	√		<p>Yes, the increased precipitation rates or extreme events may affect the sustainability in terms of increased soil moisture and erosion subject to increased maintenance and associated cost. The design considerations with respect to recent extreme floods and climate change aspect will reduce the severity of this impact to negligible level.</p>
<ul style="list-style-type: none"> <li>▪ Are there any demographic or socio-economic aspects of the Project area that are already vulnerable (e.g., high incidence of marginalized populations, rural-urban migrants, illegal settlements, ethnic minorities, women or children)?</li> </ul>		√	<p>No such vulnerable demographic or socio-economic aspects are present in the vicinity or near the project area.</p>
<ul style="list-style-type: none"> <li>▪ Could the Project potentially increase the climate or disaster vulnerability of the surrounding area (e.g., by encouraging settlement in areas that will be more affected by floods in the future, or encouraging settlement in earthquake zones)?</li> </ul>		√	<p>No, the proposed project doesn't increase the climate or disaster vulnerability of the surrounding area as it involves the restoration of irrigation channels.</p>

Note: Hazards are potentially damaging physical events.

**Assigned Proposed Category:** As per the ADB SPS 2009 and criteria defined in ESMF of EFAP project, the subproject lies in Category C.

**Justification:**

Package 3 involves Repair/Rehabilitation of Drains and Canals/Distributaries, Paharpur Irrigation Division DI Khan. This package includes thirty schemes/subprojects. The construction work for Rehabilitation/Repair of Drains involves removal of Sakranda growth, Desilting, transportation of construction material, brick side protection and bank rising. The severity of

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## IRRIGATION

expected E&S impacts is low. Some of the minimal impacts like occupational health and safety concerns, air and noise disturbance, child labor, GBV, SEA/SH are anticipated but will be mitigated via engineering as well as administrative controls and measures as stated above. . An ESMP will be prepared for the proposed package, which will be implemented during the construction of the proposed sub-projects for the environmental and social compliance in accordance with Local regulations and ADB SPS 2009.

**Signatures:**

**ANNEXURE: RAPID ENVIRONMENTAL ASSESSMENT (REA) CHECKLIST****Instructions:**

- (i) The project team completes this checklist to support the environmental classification of a project. It is to be attached to the environmental categorization form and submitted to the Safeguard Division (SDSS), for endorsement by the Director, SDSS and for approval by the Chief Compliance Officer.
- (ii) This checklist focuses on environmental issues and concerns. To ensure that social dimensions are adequately considered, refer also to ADB's: (a) checklists on involuntary resettlement and Indigenous peoples; (b) poverty reduction handbook; (c) staff guide to consultation and participation; and (d) gender checklists.
- (iii) Answer the questions assuming the "without mitigation" case. The purpose is to identify potential impacts. Use the "remarks" section to discuss any anticipated mitigation measures.

**Country/ Project Title****Pakistan, Khyber Pakhtunkhwa, Emergency Flood Assistance Project (EFAP)**Package 3: Repair/Rehabilitation of Canals/Distributaries, Paharpur Irrigation Division DI Khan (*For detail of work Refer Section 1*)**Sector Division**

Irrigation Sector, Central and West Asia Department (CWRD), Pakistan

#

**Project Brief**

Package 3 involves Repair/Rehabilitation of Drains and Canal/Distributaries, Paharpur Irrigation Division DI Khan. This package includes thirty schemes/subprojects among which seventeen (17) are related to the rehabilitation of canals/distributaries. The overview of the proposed package is provided in Table 1.1. This Package falls in DI Khan Irrigation Circle (south region). The construction work involves the Transportation of construction material, Restoration of distributary prism by brick side protection, Restoration of distributary lining, Construction of retaining walls, distributary bank restoration and Rehabilitation of patrol banks and culverts. All works are confined within existing Right of Way (ROW) of Irrigation department and there is no protected and notified cultural site within or near the vicinity of the project area. Few environmental and social impacts are anticipated which are temporary, short-term and localized limited to the construction phase and are primarily related to soil erosion, noise, and air (dust) emissions, solid waste generation and disposal of wastewater, occupational and community health and safety.

Screening Questions	Yes	No	Remarks
<b>C. Project Siting</b> Is the project area adjacent to or within any of the following environmentally sensitive areas?			
<ul style="list-style-type: none"> <li>Cultural heritage site</li> </ul>		√	No cultural heritage site is noted or reported within the project area.
<ul style="list-style-type: none"> <li>Protected Area</li> </ul>		√	No notified protected area falls adjacent to or within the project area.
<ul style="list-style-type: none"> <li>Wetland</li> </ul>		√	There is no notified wetland near the project area.
<ul style="list-style-type: none"> <li>Mangrove</li> </ul>		√	There are no mangrove trees or forests located near to or in the vicinity of the project area.
<ul style="list-style-type: none"> <li>Estuarine</li> </ul>		√	There is no estuarine environment or an estuary located along the project area
<ul style="list-style-type: none"> <li>Buffer zone of protected area</li> </ul>		√	There is no notified buffer zone of the protected area falls inside or near vicinity of project area.
<ul style="list-style-type: none"> <li>Special area for protecting biodiversity</li> </ul>		√	There is no notified special area for protecting biodiversity near the project area
<b>D. Potential Environmental Impacts</b> Will the project cause.....			
<ul style="list-style-type: none"> <li>Loss of precious ecological values (e.g. result of encroachment into forests/swamplands or historical /cultural buildings/areas, disruption of hydrology of natural waterways, regional flooding, and drainage hazards)?</li> </ul>		√	No precious ecological values are situated within or near the vicinity of the project area. Hence no such impact is envisaged.
<ul style="list-style-type: none"> <li>Conflicts in water supply rights and related social conflicts;</li> </ul>	√		<p>There might be pressure on the drinking water source due to the construction workers/staff.</p> <p>This impact will be mitigated by:</p> <ul style="list-style-type: none"> <li>Avoid use of community water supply sources to reduce the social conflicts;</li> <li>Contractor will ensure the availability of drinking water (preferably potable water) at site.</li> </ul>
<ul style="list-style-type: none"> <li>Impediments to movements of people and animals?</li> </ul>	√		<p>The rehabilitation of patrol roads and banks may cause temporary hindrance to the pedestrian and animals crossing.</p> <p>Temporary alternative routes will be identified and established for the pedestrians and animals to cross the distributaries.</p> <p>Construction activities will be properly planned and working on one section of</p>

Screening Questions	Yes	No	Remarks
			<p>a distributary at a time will be prioritized to allow other sections to remain accessible for crossing.</p> <p>Construction activities will be scheduled during times when pedestrian and animal activity is relatively lower to minimize disturbance.</p>
<ul style="list-style-type: none"> <li>Potential ecological problems due to increased soil erosion and siltation, leading to decreased stream capacity?</li> </ul>		√	No such impact is encountered as no precious vegetation is observed within the vicinity of the project area.
<ul style="list-style-type: none"> <li>Insufficient drainage leading to salinity intrusion?</li> </ul>		√	Not applicable as there is no anticipated impact on the drainage
<ul style="list-style-type: none"> <li>Over pumping of ground water, leading to salinization and ground subsidence?</li> </ul>		√	Over pumping of groundwater is not required for the construction activities, hence no impact related to salinization and ground subsidence is envisaged.
<ul style="list-style-type: none"> <li>Impairment of downstream water quality and therefore, impairment of downstream beneficial uses of water?</li> </ul>	√		<p>This impact will be temporary and minor level in nature during the construction activities.</p> <p>Following risks are anticipated due to proposed project:</p> <ul style="list-style-type: none"> <li>Construction activities will lead to increase erosion and sediment runoff into the distributary.</li> <li>The increase in accumulation of sediments in a distributary may reduce the carrying capacity of distributary and increase its maintenance cost;</li> <li>Increase sediment runoff will increase the turbidity of water, making it unfit for potable purposes;</li> </ul> <p>These impacts will be mitigated by avoiding direct discharge of wastewater into water body. Construction materials will be properly covered and stored to prevent runoff of concrete additives and construction waste into the distributaries. Good housekeeping will further reduce the likelihood and severity of this impact.</p>
<ul style="list-style-type: none"> <li>Dislocation or involuntary resettlement of people?</li> </ul>		√	The construction activities are conducted within the RoW already owned by Irrigation department, hence no dislocation or involuntary

Screening Questions	Yes	No	Remarks
			resettlement of people are encountered.
<ul style="list-style-type: none"> <li>Disproportionate impacts on the poor, women and children, Indigenous Peoples or other vulnerable groups?</li> </ul>		√	The proposed project doesn't cause any disproportionate impacts on the poor, women and children and other vulnerable groups. All of the construction activities are confined within the government land.
<ul style="list-style-type: none"> <li>Potential social conflicts arising from land tenure and land use issues?</li> </ul>		√	No land tenure and land use issue are arisen as the project area land is the property of Irrigation department.
<ul style="list-style-type: none"> <li>Soil erosion before compaction and lining of canals?</li> </ul>	√		<p>During construction activities, soil disturbance can expose loose soil that is susceptible to erosion.</p> <p>This impact can be mitigated by adopting best management practices during construction which includes limiting earthmoving and minimizing soil disturbance.</p>
<ul style="list-style-type: none"> <li>Noise from construction equipment?</li> </ul>	√		<p>Noise will be produced due to the operation of construction machinery and equipment.</p> <p>There are a variety of ways by which construction equipment and worksite noise can be controlled. The following is a list of ways to control noise level at the worksite of the proposed Project:</p> <ul style="list-style-type: none"> <li>Quieter Equipment</li> <li>Modifying Existing Old Equipment</li> <li>Barrier Protection</li> <li>Work Activity Scheduling</li> <li>Maintenance of machinery</li> </ul>
<ul style="list-style-type: none"> <li>Dust during construction?</li> </ul>	√		<p>Dust will be produced due to the construction activities. Minor impact of fugitive emission due to construction machinery is also anticipated.</p> <p>Temporary windbreaks and barriers such as temporary fences will be installed around the construction site to reduce the spread of dust to nearby residential areas including distributary. Dust control measures such as water spraying or dust suppressants will be used to reduce airborne dust particles. Properly tuned vehicles will be used during the construction phase. Regular</p>

Screening Questions	Yes	No	Remarks
			maintenance and inspection of vehicles will be ensured.
<ul style="list-style-type: none"> <li>Waterlogging and soil salinization due to inadequate drainage and farm management?</li> </ul>		√	Not applicable as the proposed project involves rehabilitation works of distributaries which doesn't cause any impact on waterlogging and soil salinization.
<ul style="list-style-type: none"> <li>Leaching of soil nutrients and changes in soil characteristics due to excessive application of irrigation water?</li> </ul>		√	No such impact is envisaged.
<ul style="list-style-type: none"> <li>Reduction of downstream water supply during peak seasons?</li> </ul>		√	No such impact is envisaged. As the construction activities may cause temporary impact on distributaries flow, but it may not be strong enough to reduce the downstream water supply significantly.
<ul style="list-style-type: none"> <li>Soil pollution, polluted farm runoff and groundwater, and public health risks due to excessive application of fertilizers and pesticides?</li> </ul>		√	Not applicable as no application of fertilizers and pesticides are involved.
<ul style="list-style-type: none"> <li>Soil erosion (furrow, surface)?</li> </ul>	√		<ul style="list-style-type: none"> <li>Earthworks for the construction of the bank will disturb the soil which will make the soil more susceptible to erosion.</li> <li>Construction activities and the use of construction machinery at the site will leads to soil erosion.</li> <li>The distributary is continuously accessed by the livestock for drinking and bathing. Their repeated entry from the distributary edges are leading to bank destabilization, which causes the edges to collapse and erosion of the soil.</li> </ul> <p>Best management practices will be adopted during construction such as limiting soil disturbance, minimizing grading, and using erosion control measures during construction phase. Cordon off the designated area along the distributary as livestock exclusion zones to prevent direct access to the water. Erosion control measures will be adopted to prevent soil erosion and sediment runoff. Dense vegetation along the banks of the distributary will act as a natural barrier and reduce the risk of soil erosion in future.</p>
<ul style="list-style-type: none"> <li>Scouring of canals?</li> </ul>	√		During construction, the slopes of the distributary may be unstable due to loose soil or lack of proper compaction,



Screening Questions	Yes	No	Remarks
			<p>making them susceptible to erosion and scouring.</p> <p>To mitigate this impact, the contractor is identifying the weak slope areas along the distributary and avoiding the movement of vehicle as well as machinery along such areas.</p>
<ul style="list-style-type: none"> <li>• Clogging of canals by sediments?</li> </ul>	√		<p>Construction activities will lead to increase erosion and sediment runoff into the distributary. The increase in accumulation of sediments in a distributary will reduce the carrying capacity of distributary and ultimately leads to clogging of distributary.</p> <p>Construction materials will be properly covered and stored to prevent runoff of construction material and waste into the distributary. The stabilization of exposed soil areas will be ensured during the construction activities by using slope stabilization methods</p>
<ul style="list-style-type: none"> <li>• Clogging of canals by weeds?</li> </ul>		√	<p>This impact is not envisaged as the construction activities will be carried out to remove the weeds from the distributaries, which ultimately prevents clogging of canals and distributaries.</p>
<ul style="list-style-type: none"> <li>• Seawater intrusion into downstream freshwater systems?</li> </ul>		√	<p>No such impact is encountered as no marine, sea is present near the vicinity of the proposed project, hence no sea water intrusion into the distributaries and canals are observed.</p>
<ul style="list-style-type: none"> <li>• Introduction of increase in incidence of waterborne or water related diseases?</li> </ul>	√		<p>The following impacts of the waterborne and water related disease will be temporary and minor level in nature during restoration work of:</p> <ul style="list-style-type: none"> <li>• Health issues/disease (cholera, typhoid, diarrhea, dysentery, etc.) due to unsafe drinking water to worker/staff;</li> <li>• Occurrence of water born and vector born disease (malaria, dengue, etc.) due to standing water near workplace.</li> </ul> <p>Reducing the impacts of vector borne diseases on long-term health effect of workers will be accomplished through implementation of diverse interventions</p>

Screening Questions	Yes	No	Remarks
			aimed at eliminating the factors that lead to disease, which includes: Prevention of larval and adult propagation of vectors through sanitary improvements and elimination of breeding habitat at site by eliminating any unusable impounding of water.
<ul style="list-style-type: none"> <li>Dangers to a safe and healthy working environment due to physical, chemical and biological hazards during project construction and operation?</li> </ul>	√		<p>Following risks are anticipated due to proposed project:</p> <ul style="list-style-type: none"> <li>Slip and trip</li> <li>Fall from height</li> <li>Struck-By and Caught-Between</li> <li>Vector borne diseases</li> <li>Eye and head injuries</li> <li>Noise and dust pollution</li> <li>Health Issues</li> </ul> <p>IFC-EHS guidelines (General Guidelines, Elevated and Overhead Work guidelines, Fall Protection guidelines, Control of chemical hazards guidelines) will be followed for Occupational Health and Safety.</p>
<ul style="list-style-type: none"> <li>Large population influx during project construction and operation that causes increased burden on social infrastructure and services (such as water supply and sanitation systems)</li> </ul>		√	Local labor will be hired to minimize the impact on social infrastructure and services.
<ul style="list-style-type: none"> <li>Social conflicts if workers from other regions or countries are hired?</li> </ul>	√		Use of labor from areas other than local area might cause social conflicts which will be mitigated by using local skill (if available) and unskilled labor.
<ul style="list-style-type: none"> <li>Risks to community health and safety due to the transport, storage, and use and/or disposal of materials such as explosives, fuel, and other chemicals during construction and operation?</li> </ul>	√		<ul style="list-style-type: none"> <li>Dust and noise generation from construction equipment and activities. This impact will be controlled by using fully tuned equipment and water sprinkling. Timely public notification on planned construction works, site barricading will reduce the community health and safety impacts.</li> <li>The transport, storage and disposal of construction waste leads to air pollution and can create breeding ground for mosquitoes and other pests, increasing the risk of vector-borne diseases such as malaria and dengue.</li> </ul>

Screening Questions	Yes	No	Remarks
			<p>This impact will be mitigated by:</p> <ul style="list-style-type: none"> <li>○ Covering construction waste during transport to prevent dust emissions and air pollution.</li> <li>○ Safe disposal of construction waste in designated areas away from disty and residential areas need to be ensured.</li> <li>○ Prevention of larval and adult propagation of vectors through sanitary improvements and avoiding the breeding habitat by eliminating any unusable impounding of water.</li> </ul>
<ul style="list-style-type: none"> <li>• Community safety risks due to both accidental and natural hazards, especially where the structural elements or components of the project (e.g. irrigation dams) are accessible to members of the affected community or where the failure could result in injury to the community throughout project construction, operation and decommissioning?</li> </ul>	√		<ul style="list-style-type: none"> <li>• Communicable disease associated with the influx of temporary construction labor which will be reduced by implementing Worker Code of Conduct, ensure minimum to no interaction of workers with local community, health awareness initiatives; immunization program and providing health service;</li> <li>• Failure/ Collapse of bank during operation stage due to emergency situation such as flood/earthquake. this impact will be mitigated by:</li> <li>• A regular inspection and maintenance program will be ensured to identify and address any potential vulnerabilities or issues that could affect the disty during a flood;</li> <li>• Flood warning systems must be ensured which will provide timely information about rising water levels or impending flood events. Work during construction as well as travelling during operation will be halted during such emergencies; and</li> <li>• Comprehensive emergency response plans in compliance with PDMA specific to the flood events will be developed and updated regularly;</li> <li>• Communicable disease associated with the influx of temporary construction labor which will be reduced by implementing Worker Code of Conduct, ensure minimum to no interaction of workers with local</li> </ul>

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**IRRIGATION**

Screening Questions	Yes	No	Remarks
			community, health awareness initiatives; immunization program and providing health service. <ul style="list-style-type: none"><li>• Trainings will be given to construction workers, alongside the implementation of strict measures and punishments in case of any child abuse, drug/substance abuse and SEA/SH.</li></ul>

Climate Change and Disaster Risk Questions	Yes	No	REMARKS
<p>The following questions are not for environmental categorization. They are included in this checklist to help identify potential climate and disaster risks.</p> <ul style="list-style-type: none"> <li>• Is the Project area subject to hazards such as earthquakes, floods, landslides, tropical cyclone winds, storm surges, tsunami or volcanic eruptions and climate changes?</li> </ul>	√		<p>The project area is prone to flash floods as it has already been affected by recent flood of 2022. Emergency response plan developed by PDMA specific to the flood events will be considered to mitigate the impact of these floods during construction activities. Reduce the work hours of workers during extreme hot environment and heat waves. Construction work will be started and planned considering the weather forecast and special attention will be required for monsoon season.</p>
<ul style="list-style-type: none"> <li>▪ Could changes in temperature, precipitation, or extreme events patterns over the Project lifespan affect technical or financial sustainability (e.g., increased erosion or landslides could increase maintenance costs, permafrost melting or increased soil moisture content could affect sub-grade).</li> </ul>	√		<p>Yes, the increased precipitation rates or extreme events may affect the sustainability in terms of increased soil moisture and erosion subject to increased maintenance and associated cost. The design considerations with respect to recent extreme floods and climate change aspect will reduce the severity of this impact to negligible level.</p>
<ul style="list-style-type: none"> <li>▪ Are there any demographic or socio-economic aspects of the Project area that are already vulnerable (e.g., high incidence of marginalized populations, rural-urban migrants, illegal settlements, ethnic minorities, women or children)?</li> </ul>		√	<p>No such vulnerable demographic or socio-economic aspects are present in the vicinity or near the project area.</p>
<ul style="list-style-type: none"> <li>▪ Could the Project potentially increase the climate or disaster vulnerability of the surrounding area (e.g., by encouraging settlement in areas that will be more affected by floods in the future, or encouraging settlement in earthquake zones)?</li> </ul>		√	<p>No, the proposed project doesn't increase the climate or disaster vulnerability of the surrounding area as it involves the restoration of irrigation channels.</p>

Note: Hazards are potentially damaging physical events.

**Assigned Proposed Category:** As per the ADB SPS 2009 and criteria defined in ESMF of EFAP project, the subproject lies in Category C.

**Justification:**

Package 3 involves Repair/Rehabilitation of Drains and Canals/Distributaries, Paharpur Irrigation Division DI Khan. This package includes thirty schemes/subprojects. The construction work involves the Transportation of construction material, Restoration of distributary prism by brick side protection, Restoration of distributary lining, Construction of retaining walls,

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## IRRIGATION

distributary bank restoration and Rehabilitation of patrol banks and culverts. The severity of expected E&S impacts is low. Some of the minimal impacts like occupational health and safety concerns, air and noise disturbance, child labor, GBV, SEA/SH are anticipated but will be mitigated via engineering as well as administrative controls and measures as stated above. . An ESMP will be prepared for the proposed package, which will be implemented during the construction of the proposed sub-projects for the environmental and social compliance in accordance with Local regulations and ADB SPS 2009.

**Signatures:**

## INVOLUNTARY RESETTLEMENT IMPACT CATEGORIZATION

Date: 22-09-2023

<b>A. Instructions</b>			
(i) The project team completes and submits the form to the Office of Safeguards (OSPT) for approval by OSPT Director. (ii) The classification of a project is a continuing process. If there is a change in the project components and/or site that may result in category change, the Sector Division submits a new form and requests for recategorization, and approval by OSPT Director. The old form is attached for reference. (iii) In addition, the project team may propose in the comments section that the project is highly complex and sensitive (HCS), for approval by OSPT Director. HCS projects are a subset of category A projects that ADB deems to be highly risky or contentious or involve serious and multidimensional and generally interrelated potential social and/or environmental impacts.			
<b>B. Project Data</b>			
Country/Project No./Project Title	: Pakistan, Khyber Pakhtunkhwa, Emergency Flood Assistance Project (EFAP)		
Department/ Division	: <u>Rehabilitation/Repair of Drains Paharpur Irrigation Division, District DI Khan</u>		
Processing Stage	: _____		
Modality	: _____		
<input type="checkbox"/> Project Loan <input type="checkbox"/> Program Loan <input type="checkbox"/> Sector Loan <input type="checkbox"/> MFF <input type="checkbox"/> Results-based lending <sup>1</sup>	<input type="checkbox"/> Financial Intermediary <input checked="" type="checkbox"/> Emergency Assistance <input type="checkbox"/> Other financing modalities	<input type="checkbox"/> General Corporate Finance <input type="checkbox"/> Grant	
<b>C. Involuntary Resettlement Category</b>			
<input checked="" type="checkbox"/> New <input type="checkbox"/> Recategorization — Previous Category [    ]			
<input type="checkbox"/> Category A	<input type="checkbox"/> Category B	<input checked="" type="checkbox"/> Category C	<input type="checkbox"/> Category FI
<b>D. Comments</b>			
Project Team Comments:		OSFG Comments:	
<b>E. Approval</b>			
Proposed by:		Reviewed by:	
Project Team Leader, (CWRD, Pakistan) Date:		Social Development Specialist (Safeguards), OSFG Date:	
Social Development Specialist, (CWRD, Pakistan) Date:			
Endorsed by:		Approved by:	<input type="checkbox"/> Highly Complex and Sensitive Project
Director, (CWRD, Pakistan) Date:		Bruce Dunn, Director, OSFG Date:	

<sup>1</sup>For Results-Based Lending (RBL) modality, please refer to the [Staff Instruction on Business Processes for RBL for Programs](#) issued on 17 March 2021. The [supplemental checklist](#) needs to be submitted to OSPT for confirmation of eligible activities under the RBL program by OSPT Director.

## Involuntary Resettlement Impact Categorization Checklist

Probable Involuntary Resettlement Effects	Yes	No	Not Known	Remarks
<b>Involuntary Acquisition of Land</b>				
1. Will there be land acquisition?		✓		No land acquisition and resettlement is involved as the rehabilitation/repair of drains will be carried out within the existing ROW owned by Irrigation department.
2. Is the site for land acquisition known?		✓		Not Applicable as no land acquisition is involved in the respective rehabilitation work.
3. Is the ownership status and current usage of land to be acquired known?		✓		Same as above
4. Will easement be utilized within an existing Right of Way (ROW)?		✓		No easement will be disturbed
5. Will there be loss of shelter and residential land due to land acquisition?		✓		No loss of shelter is involved.
6. Will there be loss of agricultural and other productive assets due to land acquisition?		✓		No loss of agricultural and other productive assets as no land acquisition is involved.
7. Will there be losses of crops, trees, and fixed assets due to land acquisition?		✓		No loss of crops, trees, and fixed assets as no land acquisition is involved..
8. Will there be loss of businesses or enterprises due to land acquisition?		✓		No loss of businesses or enterprises as no land acquisition is involved.
9. Will there be loss of income sources and means of livelihoods due to land acquisition?		✓		No loss of income sources and means of livelihoods as no land acquisition is involved
<b>Involuntary restrictions on land use or on access to legally designated parks and protected areas</b>				
10. Will people lose access to natural resources, communal facilities, and services?		✓		There will be no impact on such resources and services as the rehabilitation work will be carried out in the existing ROW.
11. If land use is changed, will it have an adverse impact on social and economic activities?		✓		No change is occurred in existing land use.
12. Will access to land and resources owned communally or by the state be restricted?		✓		There will be no restriction on such resources as the rehabilitation works will be carried out within existing ROW owned by Irrigation Department. Therefore, no impact is envisaged on the current land use.
<b>Information on Displaced Persons:</b>				
Any estimate of the likely number of persons that will be displaced by the Project? If yes, approximately how many? _____ N/A _____				[✓] No [ ] Yes
Are any of them poor, female-heads of households, or vulnerable to poverty risks?				[✓] No [ ] Yes
Are any displaced persons from indigenous or ethnic minority groups?				[✓] No [ ] Yes

Note: The project team may attach additional information on the project, as necessary.



## INDIGENOUS PEOPLES IMPACT CATEGORIZATION

Date: 22-09-2023

<b>A. Instructions</b>			
<p>(i) The project team completes and submits the form to the Office of Safeguards (OSPT) for approval by OSPT Director.</p> <p>(ii) The classification of a project is a continuing process. If there is a change in the project components and/or site that may result in category change, the Sector Division submits a new form and requests for recategorization, and approval by OSPT Director . The old form is attached for reference.</p> <p>(iii) The project team indicates if the project requires broad community support (BCS) of Indigenous Peoples communities. BCS is required when project activities involve: (a) commercial development of the cultural resources and knowledge of indigenous peoples; (b) physical displacement from traditional or customary lands; and (c) commercial development of natural resources within customary lands under use that would impact the livelihoods or the cultural, ceremonial, or spiritual use that define the identity and community of indigenous peoples.</p> <p>(iv) In addition, the project team may propose in the comments section that the project is highly complex and sensitive (HCS), for approval by OSPT Director. HCS projects are a subset of category A projects that ADB deems to be highly risky or contentious or involve serious and multidimensional and generally interrelated potential social and/or environmental impacts.</p>			
<b>B. Project Data</b>			
Country/Project No./Project Title : Pakistan, Khyber Pakhtunkhwa, Emergency Flood Assistance Project (EFAP)			
Rehabilitation/Repair of Drains Paharpur Irrigation Division, District DI Khan			
Department/ Division : Central and West Asia Department (CWRD), Pakistan			
Processing Stage :			
Modality :			
<input type="checkbox"/> Project Loan	<input type="checkbox"/> Program Loan	<input type="checkbox"/> Financial Intermediary	<input type="checkbox"/> General Corporate Finance
<input type="checkbox"/> Sector Loan	<input type="checkbox"/> MFF	<input checked="" type="checkbox"/> Emergency Assistance	<input type="checkbox"/> Grant
<input type="checkbox"/> Results-based lending <sup>2</sup>	<input type="checkbox"/> Other financing modalities		
<b>C. Indigenous Peoples Category</b>			
<input checked="" type="checkbox"/> New <input type="checkbox"/> Recategorization — Previous Category [    ]			
<input type="checkbox"/> Category A	<input type="checkbox"/> Category B	<input checked="" type="checkbox"/> Category C	<input checked="" type="checkbox"/> Category FI
<b>D. Project requires the broad community support of affected Indigenous Peoples communities.</b>			
[    ] Yes		[    ] No	
<b>E. Comments</b>			
Project Team Comments:		OSFG Comments:	
<b>F. Approval</b>			
<b>Proposed by:</b>		<b>Reviewed by:</b>	
Project Team Leader, (CWRD, Pakistan) Date:		Social Development Specialist (Safeguards), OSFG Date:	
Social Development Specialist, (CWRD, Pakistan) Date:			
<b>Endorsed by:</b>		<b>Approved by:</b>	
Director, (CWRD, Pakistan) Date:		Bruce Dunn, Director, OSFG Date:	
		<input type="checkbox"/> Highly Complex and Sensitive Project	

<sup>2</sup> For Results-Based Lending (RBL) modality, please refer to the [Staff Instruction on Business Processes for RBL for Programs](#) issued on 17 March 2021. The [supplemental checklist](#) needs to be submitted to OSPT for confirmation of eligible activities under the RBL program by OSPT Director.

### Indigenous Peoples Impact Screening Checklist

KEY CONCERNS (Please provide elaborations on the Remarks column)	YES	NO	NOT KNOWN	Remarks
<b>A. Indigenous Peoples Identification</b>				
1. Are there socio-cultural groups present in or use the project area who may be considered as "tribes" (hill tribes, schedules tribes, tribal peoples), "minorities" (ethnic or national minorities), or "indigenous communities" in the project area?		✓		As per the definition of ADB SPS 2009 about "indigenous communities" there are no indigenous people in the sub-project area.
2. Are there national or local laws or policies as well as anthropological researches/studies that consider these groups present in or using the project area as belonging to "ethnic minorities", scheduled tribes, tribal peoples, national minorities, or cultural communities?		✓		No IPs exist in the sub-project area
3. Do such groups self-identify as being part of a distinct social and cultural group?		✓		Not Applicable
4. Do such groups maintain collective attachments to distinct habitats or ancestral territories and/or to the natural resources in these habitats and territories?		✓		Not Applicable
5. Do such groups maintain cultural, economic, social, and political institutions distinct from the dominant society and culture?		✓		Not Applicable
6. Do such groups speak a distinct language or dialect?		✓		Not Applicable
7. Has such groups been historically, socially, and economically marginalized, disempowered, excluded, and/or discriminated against?		✓		Not Applicable
8. Are such groups represented as "Indigenous Peoples" or as "ethnic minorities" or "scheduled tribes" or "tribal populations" in any formal decision-making bodies at the national or local levels?		✓		Not Applicable
<b>B. Identification of Potential Impacts</b>				
9. Will the project directly or indirectly benefit or target Indigenous Peoples?		✓		Not Applicable as no IPs exists
10. Will the project directly or indirectly affect Indigenous Peoples' traditional socio-cultural and belief practices? (e.g. child-rearing, health, education, arts, and governance)		✓		Not Applicable
11. Will the project affect the livelihood systems of Indigenous Peoples? (e.g., food production system, natural resource management, crafts and trade, employment status)		✓		Not Applicable
12. Will the project be in an area (land or territory) occupied, owned, or used by Indigenous Peoples, and/or claimed as ancestral domain?		✓		Not Applicable
<b>C. Identification of Special Requirements</b> <i>Will the project activities include:</i>				

<b>KEY CONCERNS</b> (Please provide elaborations on the Remarks column)	<b>YES</b>	<b>NO</b>	<b>NOT KNOWN</b>	<b>Remarks</b>
13. Commercial development of the cultural resources and knowledge of Indigenous Peoples?		✓		Not Applicable
14. Physical displacement from traditional or customary lands?		✓		Not Applicable
15. Commercial development of natural resources (such as minerals, hydrocarbons, forests, water, hunting or fishing grounds) within customary lands under use that would impact the livelihoods or the cultural, ceremonial, spiritual uses that define the identity and community of Indigenous Peoples?		✓		Not Applicable
16. Establishing legal recognition of rights to lands and territories that are traditionally owned or customarily used, occupied, or claimed by Indigenous Peoples?		✓		Not Applicable
17. Acquisition of lands that are traditionally owned or customarily used, occupied, or claimed by Indigenous Peoples?		✓		Not Applicable

**D. Anticipated project impacts on Indigenous Peoples**

<b>Project component/ activity/ output</b>	<b>Anticipated positive effect</b>	<b>Anticipated negative effect</b>
1. Removal of Sakranda growth	N/A	N/A
2. Desilting	N/A	N/A
3. Transportation of construction material	N/A	N/A
4. Side protection	N/A	N/A
5. Bank rising	N/A	N/A
6. Stone Pitching	N/A	N/A

Note: The project team may attach additional information on the project, as necessary.

## INVOLUNTARY RESETTLEMENT IMPACT CATEGORIZATION

Date: 22-09-2023

<b>A. Instructions</b>			
(i) The project team completes and submits the form to the Office of Safeguards (OSPT) for approval by OSPT Director. (ii) The classification of a project is a continuing process. If there is a change in the project components and/or site that may result in category change, the Sector Division submits a new form and requests for recategorization, and approval by OSPT Director. The old form is attached for reference. (iii) In addition, the project team may propose in the comments section that the project is highly complex and sensitive (HCS), for approval by OSPT Director. HCS projects are a subset of category A projects that ADB deems to be highly risky or contentious or involve serious and multidimensional and generally interrelated potential social and/or environmental impacts.			
<b>B. Project Data</b>			
Country/Project No./Project Title	: Pakistan, Khyber Pakhtunkhwa, Emergency Flood Assistance Project (EFAP)		
	Rehabilitation/Repair of Canals/Distributaries Paharpur Irrigation Division, District DI Khan		
Department/ Division	: Central and West Asia Department (CWRD), Pakistan		
Processing Stage	:		
Modality	:		
<input type="checkbox"/> Project Loan	<input type="checkbox"/> Program Loan	<input type="checkbox"/> Financial Intermediary	<input type="checkbox"/> General Corporate Finance
<input type="checkbox"/> Sector Loan	<input type="checkbox"/> MFF	<input checked="" type="checkbox"/> Emergency Assistance	<input type="checkbox"/> Grant
<input type="checkbox"/> Results-based lending <sup>3</sup>	<input type="checkbox"/> Other financing modalities		
<b>C. Involuntary Resettlement Category</b>			
<input checked="" type="checkbox"/> New <input type="checkbox"/> Recategorization — Previous Category <input type="checkbox"/>			
<input type="checkbox"/> Category A	<input type="checkbox"/> Category B	<input checked="" type="checkbox"/> Category C	<input type="checkbox"/> Category FI
<b>D. Comments</b>			
Project Team Comments:		OSFG Comments:	
<b>E. Approval</b>			
Proposed by:		Reviewed by:	
Project Team Leader, (CWRD, Pakistan)		Social Development Specialist (Safeguards), OSFG	
Date:		Date:	
Social Development Specialist, (CWRD, Pakistan)			
Date:			
Endorsed by:		Approved by:	<input type="checkbox"/> Highly Complex and Sensitive Project
Director, (CWRD, Pakistan)		Bruce Dunn, Director, OSFG	
Date:		Date:	

<sup>3</sup>For Results-Based Lending (RBL) modality, please refer to the [Staff Instruction on Business Processes for RBL for Programs](#) issued on 17 March 2021. The [supplemental checklist](#) needs to be submitted to OSPT for confirmation of eligible activities under the RBL program by OSPT Director.



## Involuntary Resettlement Impact Categorization Checklist

Probable Involuntary Resettlement Effects	Yes	No	Not Known	Remarks
<b>Involuntary Acquisition of Land</b>				
1. Will there be land acquisition?		✓		No land acquisition and resettlement is involved as the rehabilitation/repair of distributaries will be carried out within the existing ROW owned by Irrigation department.
2. Is the site for land acquisition known?		✓		Not Applicable as no land acquisition is involved in the respective rehabilitation work.
3. Is the ownership status and current usage of land to be acquired known?		✓		Same as above
4. Will easement be utilized within an existing Right of Way (ROW)?		✓		No easement will be disturbed
5. Will there be loss of shelter and residential land due to land acquisition?		✓		No loss of shelter is involved.
6. Will there be loss of agricultural and other productive assets due to land acquisition?		✓		No loss of agricultural and other productive assets as no land acquisition is involved.
7. Will there be losses of crops, trees, and fixed assets due to land acquisition?		✓		No loss of crops, trees, and fixed assets as no land acquisition is involved.
8. Will there be loss of businesses or enterprises due to land acquisition?		✓		No loss of businesses or enterprises as no land acquisition is involved.
9. Will there be loss of income sources and means of livelihoods due to land acquisition?		✓		No loss of income sources and means of livelihoods as no land acquisition is involved
<b>Involuntary restrictions on land use or on access to legally designated parks and protected areas</b>				
10. Will people lose access to natural resources, communal facilities, and services?		✓		There will be no impact on such resources and services as the rehabilitation work will be carried out within the existing ROW.
11. If land use is changed, will it have an adverse impact on social and economic activities?		✓		No change is occurred in existing land use.
12. Will access to land and resources owned communally or by the state be restricted?		✓		There will be no restriction on such resources as the rehabilitation works will be carried out within existing ROW owned by Irrigation Department. Therefore, no impact is envisaged on the current land use.
<b>Information on Displaced Persons:</b>				
Any estimate of the likely number of persons that will be displaced by the Project? If yes, approximately how many? _____ N/A				[✓] No [ ] Yes
Are any of them poor, female-heads of households, or vulnerable to poverty risks?				[✓] No [ ] Yes
Are any displaced persons from indigenous or ethnic minority groups?				[✓] No [ ] Yes

Note: The project team may attach additional information on the project, as necessary.

## INDIGENOUS PEOPLES IMPACT CATEGORIZATION

Date: 22-09-2023

<b>A. Instructions</b>			
<p>(i) The project team completes and submits the form to the Office of Safeguards (OSPT) for approval by OSPT Director.</p> <p>(ii) The classification of a project is a continuing process. If there is a change in the project components and/or site that may result in category change, the Sector Division submits a new form and requests for recategorization, and approval by OSPT Director. The old form is attached for reference.</p> <p>(iii) The project team indicates if the project requires broad community support (BCS) of Indigenous Peoples communities. BCS is required when project activities involve: (a) commercial development of the cultural resources and knowledge of indigenous peoples; (b) physical displacement from traditional or customary lands; and (c) commercial development of natural resources within customary lands under use that would impact the livelihoods or the cultural, ceremonial, or spiritual use that define the identity and community of indigenous peoples.</p> <p>(iv) In addition, the project team may propose in the comments section that the project is highly complex and sensitive (HCS), for approval by OSPT Director. HCS projects are a subset of category A projects that ADB deems to be highly risky or contentious or involve serious and multidimensional and generally interrelated potential social and/or environmental impacts.</p>			
<b>B. Project Data</b>			
Country/Project No./Project Title : Pakistan, Khyber Pakhtunkhwa, Emergency Flood Assistance Project (EFAP)			
Rehabilitation/Repair of Canals/Distributaries Paharpur Irrigation Division, District DI Khan			
Department/ Division : Central and West Asia Department (CWRD), Pakistan			
Processing Stage :			
Modality :			
<input type="checkbox"/> Project Loan	<input type="checkbox"/> Program Loan	<input type="checkbox"/> Financial Intermediary	<input type="checkbox"/> General Corporate Finance
<input type="checkbox"/> Sector Loan	<input type="checkbox"/> MFF	<input checked="" type="checkbox"/> Emergency Assistance	<input type="checkbox"/> Grant
<input type="checkbox"/> Results-based lending <sup>4</sup>	<input type="checkbox"/> Other financing modalities		
<b>C. Indigenous Peoples Category</b>			
<input checked="" type="checkbox"/> New <input type="checkbox"/> Recategorization — Previous Category [    ]			
<input type="checkbox"/> Category A	<input type="checkbox"/> Category B	<input checked="" type="checkbox"/> Category C	<input checked="" type="checkbox"/> Category FI
<b>D. Project requires the broad community support of affected Indigenous Peoples communities.</b>			
[    ] Yes		[    ] No	
<b>E. Comments</b>			
Project Team Comments:		OSFG Comments:	
<b>F. Approval</b>			
<b>Proposed by:</b>		<b>Reviewed by:</b>	
Project Team Leader, (CWRD, Pakistan) Date:		Social Development Specialist (Safeguards), OSFG Date:	
Social Development Specialist, (CWRD, Pakistan) Date:			
<b>Endorsed by:</b>		<b>Approved by:</b>	
Director, (CWRD, Pakistan) Date:		Bruce Dunn, Director, OSFG Date:	
		<input type="checkbox"/> Highly Complex and Sensitive Project	

<sup>4</sup> For Results-Based Lending (RBL) modality, please refer to the [Staff Instruction on Business Processes for RBL for Programs](#) issued on 17 March 2021. The [supplemental checklist](#) needs to be submitted to OSPT for confirmation of eligible activities under the RBL program by OSPT Director.

### Indigenous Peoples Impact Screening Checklist

<b>KEY CONCERNS</b> (Please provide elaborations on the Remarks column)	YES	NO	NOT KNOWN	Remarks
<b>B. Indigenous Peoples Identification</b>				
1. Are there socio-cultural groups present in or use the project area who may be considered as "tribes" (hill tribes, schedules tribes, tribal peoples), "minorities" (ethnic or national minorities), or "indigenous communities" in the project area?		✓		As per the definition of ADB SPS 2009 about "indigenous communities" there are no indigenous people in the sub-project area.
2. Are there national or local laws or policies as well as anthropological researches/studies that consider these groups present in or using the project area as belonging to "ethnic minorities", scheduled tribes, tribal peoples, national minorities, or cultural communities?		✓		No IPs exist in the sub-project area
3. Do such groups self-identify as being part of a distinct social and cultural group?		✓		Not Applicable
4. Do such groups maintain collective attachments to distinct habitats or ancestral territories and/or to the natural resources in these habitats and territories?		✓		Not Applicable
5. Do such groups maintain cultural, economic, social, and political institutions distinct from the dominant society and culture?		✓		Not Applicable
6. Do such groups speak a distinct language or dialect?		✓		Not Applicable
7. Has such groups been historically, socially, and economically marginalized, disempowered, excluded, and/or discriminated against?		✓		Not Applicable
8. Are such groups represented as "Indigenous Peoples" or as "ethnic minorities" or "scheduled tribes" or "tribal populations" in any formal decision-making bodies at the national or local levels?		✓		Not Applicable
<b>B. Identification of Potential Impacts</b>				
9. Will the project directly or indirectly benefit or target Indigenous Peoples?		✓		Not Applicable as no IPs exists
10. Will the project directly or indirectly affect Indigenous Peoples' traditional socio-cultural and belief practices? (e.g. child-rearing, health, education, arts, and governance)		✓		Not Applicable
11. Will the project affect the livelihood systems of Indigenous Peoples? (e.g., food production system, natural resource management, crafts and trade, employment status)		✓		Not Applicable
12. Will the project be in an area (land or territory) occupied, owned, or used by Indigenous Peoples, and/or claimed as ancestral domain?		✓		Not Applicable
<b>C. Identification of Special Requirements</b> <i>Will the project activities include:</i>				



<b>KEY CONCERNS</b> (Please provide elaborations on the Remarks column)	<b>YES</b>	<b>NO</b>	<b>NOT KNOWN</b>	<b>Remarks</b>
13. Commercial development of the cultural resources and knowledge of Indigenous Peoples?		✓		Not Applicable
14. Physical displacement from traditional or customary lands?		✓		Not Applicable
15. Commercial development of natural resources (such as minerals, hydrocarbons, forests, water, hunting or fishing grounds) within customary lands under use that would impact the livelihoods or the cultural, ceremonial, spiritual uses that define the identity and community of Indigenous Peoples?		✓		Not Applicable
16. Establishing legal recognition of rights to lands and territories that are traditionally owned or customarily used, occupied, or claimed by Indigenous Peoples?		✓		Not Applicable
17. Acquisition of lands that are traditionally owned or customarily used, occupied, or claimed by Indigenous Peoples?		✓		Not Applicable

**D. Anticipated project impacts on Indigenous Peoples**

<b>Project component/ activity/ output</b>	<b>Anticipated positive effect</b>	<b>Anticipated negative effect</b>
1. Transportation of construction material	N/A	N/A
2. Restoration of distributary prism by brick side protection	N/A	N/A
3. Restoration of distributary lining	N/A	N/A
4. Construction of retaining walls	N/A	N/A
5. Distributary bank restoration	N/A	N/A
6. Rehabilitation of patrol banks and culverts	N/A	N/A

Note: The project team may attach additional information on the project, as necessary.

PHOTOLOG



Rehabilitation of Katgarh Branch Drain No. 03



Rehabilitation of Katgarh Branch Drain No. 04



Rehabilitation of damaged / washed away Drains Section of Largi Drain No2





**IRRIGATION**

Rehabilitation of damaged / washed away Drains Section of Lارجي Drain No1



Rehabilitation of damaged / washed away Drains Section of Seed Farm Branch Drain



Rehabilitation of damaged / washed away Drains Section of Bund Kurai Branch Drain



Rehabilitation of damaged / washed away Drains Section of Bund Kurai Main Drain



Rehabilitation of damaged / washed away Drains Section of Main Drain



**IRRIGATION**



Rehabilitation of damaged / washed away Drains Section of Girsal Drain



Rehabilitation of damaged / washed away Drains Section of Girsal Pond Drain



Rehabilitation of damaged / washed away Drains Section of Jabbarwala Drain



Rehabilitation of damaged / washed away Drains Section of Ketch Drain



IRRIGATION



Rehabilitation of damaged / washed away Drains Section of Bilot Creek Drain



Rehabilitation of damaged/washed away Canal Section of Civil Minor



Rehabilitation of damaged/washed away Canal Section of Shah Kot Minor



Rehabilitation of damaged/washed away Canal Section of Shah Kot Feeder

# IRRIGATION



Rehabilitation of damaged/washed away Canal Section of Paharpur disty



Rehabilitation of damaged/washed away Canal Section of Old Paharpur canal (RD. 130000-160000)



Rehabilitation of damaged/washed away Canal Section of Old Paharpur canal (RD. 118+500-122+300)



Rehabilitation of damaged/washed away Canal Section of Ketch Minor



#

IRRIGATION



Rehabilitation of damaged/washed away Canal Section of Kat Garh Minor



Rehabilitation of damaged/washed away Canal Section of Girsal Feeder

#

# **TENDER DRAWINGS**

## **PACKAGE-3: EFAP/KPID/CW-03: REHABILITATION OF CANALS AND DRAINS, DISTRICT DI KHAN – PAHARPUR IRRIGATION DIVISION**





GOVERNMENT OF KHYBER PAKHTUNKHWA  
IRRIGATION DEPARTMENT

# EMERGENCY FLOOD ASSISTANCE PROJECT (EFAP) – KP “RECONSTRUCTION AND REHABILITATION OF IRRIGATION AND DRAINAGE SYSTEM AND FLOOD PROTECTIONWORKS IN KHYBER PAKHTUNKHWA”

ADB LOAN NO. 4279 PAK (COL)

## FINAL DRAWINGS (EFAP/KPID-CW-03)

REHABILITATION OF CANALS AND DRAINS  
IN PAHARPUR IRRIGATION DIVISION,  
DERA ISMAIL KHAN

OCTOBER 2023



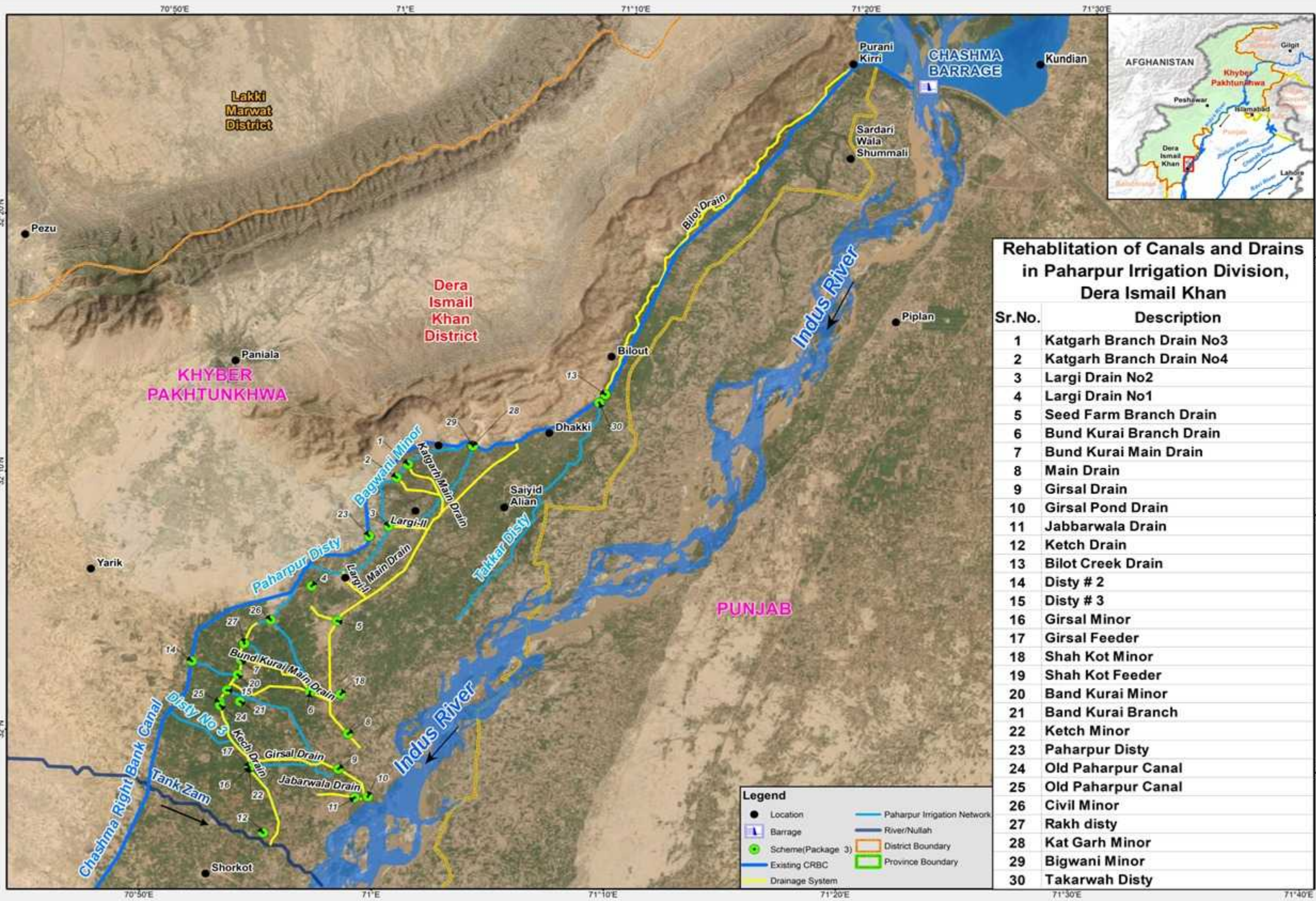
1C, BLOCK N, MODEL TOWN EXT,  
LAHORE 54700, PAKISTAN

+92-42-99090513 FAX: +92-42-99231940

WA@NESPAK.COM.PK







### Rehabilitation of Canals and Drains in Paharpur Irrigation Division, Dera Ismail Khan

Sr.No.	Description
1	Katgarh Branch Drain No3
2	Katgarh Branch Drain No4
3	Largi Drain No2
4	Largi Drain No1
5	Seed Farm Branch Drain
6	Bund Kurai Branch Drain
7	Bund Kurai Main Drain
8	Main Drain
9	Girsal Drain
10	Girsal Pond Drain
11	Jabbarwala Drain
12	Ketch Drain
13	Bilot Creek Drain
14	Disty # 2
15	Disty # 3
16	Girsal Minor
17	Girsal Feeder
18	Shah Kot Minor
19	Shah Kot Feeder
20	Band Kurai Minor
21	Band Kurai Branch
22	Ketch Minor
23	Paharpur Disty
24	Old Paharpur Canal
25	Old Paharpur Canal
26	Civil Minor
27	Rakh disty
28	Kat Garh Minor
29	Bigwani Minor
30	Takarwah Disty

**Legend**

- Location
- ▭ Barrage
- Scheme(Package 3)
- Existing CRBC
- Drainage System
- Paharpur Irrigation Network
- River/Nullah
- ▭ District Boundary
- ▭ Province Boundary



**REHABILITATION WORKS OF DRAINS IN  
PAHARPUR IRRIGATION DIVISION DERA  
ISMAIL KHAN**

**LOCATION MAPS & TABLE OF DETAILS OF DRAINS**

## LOT-1 DRAINS IN PAHARPUR IRRIGATION DIVISION DERA ISMAIL KHAN

### LIST OF LOCATION MAPS AND TODS FOR PROPOSED REHABILITATION WORKS OF DRAIN

SR. NO.	DRAWING TITLE	DRAWING NO.
1	LOCATION MAP OF KATGARH BRANCH DRAIN NO.3	4593/TD/061/LM-01
2	TABLE OF DIMENSIONS OF KATGARH BRANCH DRAIN NO.3	4593/TD/061/TOD-01
3	LOCATION MAP OF KATGARH BRANCH DRAIN NO.4	4593/TD/061/LM-02
4	TABLE OF DIMENSIONS OF KATGARH BRANCH DRAIN NO.4	4593/TD/061/TOD-02
5	LOCATION MAP OF LARGAI DRAIN NO.2	4593/TD/061/LM-03
6	TABLE OF DIMENSIONS OF LARGAI DRAIN NO.2	4593/TD/061/TOD-03
7	LOCATION MAP OF LARGAI DRAIN NO.1	4593/TD/061/LM-04
8	TABLE OF DIMENSIONS OF LARGAI DRAIN NO.1	4593/TD/061/TOD-04
9	LOCATION MAP OF SEED FARM BRANCH DRAIN	4593/TD/061/LM-05
10	TABLE OF DIMENSIONS OF SEED FARM BRANCH DRAIN	4593/TD/061/TOD-05
11	LOCATION MAP OF BUND KURAI BRANCH DRAIN	4593/TD/061/LM-06
12	TABLE OF DIMENSIONS OF BUND KURAI BRANCH DRAIN	4593/TD/061/TOD-06
13	LOCATION MAP OF BUND KURAI MAIN DRAIN	4593/TD/061/LM-07
14	TABLE OF DIMENSIONS OF BUND KURAI MAIN DRAIN	4593/TD/061/TOD-07
15	LOCATION MAP OF MAIN DRAIN	4593/TD/061/LM-08
16	TABLE OF DIMENSIONS OF MAIN DRAIN	4593/TD/061/TOD-08
17	LOCATION MAP OF GIRSAL DRAIN	4593/TD/061/LM-09
18	TABLE OF DIMENSIONS OF GIRSAL DRAIN	4593/TD/061/TOD-09
19	LOCATION MAP OF GIRSAL POND DRAIN	4593/TD/061/LM-10
20	TABLE OF DIMENSIONS OF GIRSAL POND DRAIN	4593/TD/061/TOD-10
21	LOCATION MAP OF JABBARWALA DRAIN	4593/TD/061/LM-11
22	TABLE OF DIMENSIONS OF JABBARWALA DRAIN	4593/TD/061/TOD-11
23	LOCATION MAP OF KETCH DRAIN	4593/TD/061/LM-12
24	TABLE OF DIMENSIONS OF KETCH DRAIN	4593/TD/061/TOD-12
25	LOCATION MAP OF BILOT CREEK DRAIN	4593/TD/061/LM-13
26	TABLE OF DIMENSIONS OF BILOT CREEK DRAIN	4593/TD/061/TOD-13

EMERGENCY FLOOD ASSISTANCE PROJECT (EFAP)-KP  
"RECONSTRUCTION AND REHABILITATION OF  
IRRIGATION AND DRAINAGE SYSTEM AND FLOOD  
PROTECTION WORKS IN KHYBER PAKHUNKHWA"



GOVERNMENT OF KHYBER  
PAKHTUNKHWA  
IRRIGATION DEPARTMENT

REV.	DATE	DESCRIPTION	BY	CHKD.	APPR.	DRAWN	FA
						DRAWN	FA
						SUBMITTED	M.M
						RECOMMENDED	Q.L
						CHKD/VER	F.R.K
						APPROVED	NA

**NESPAK**  
NATIONAL ENGINEERING  
SERVICES PAKISTAN (PVT)  
LIMITED

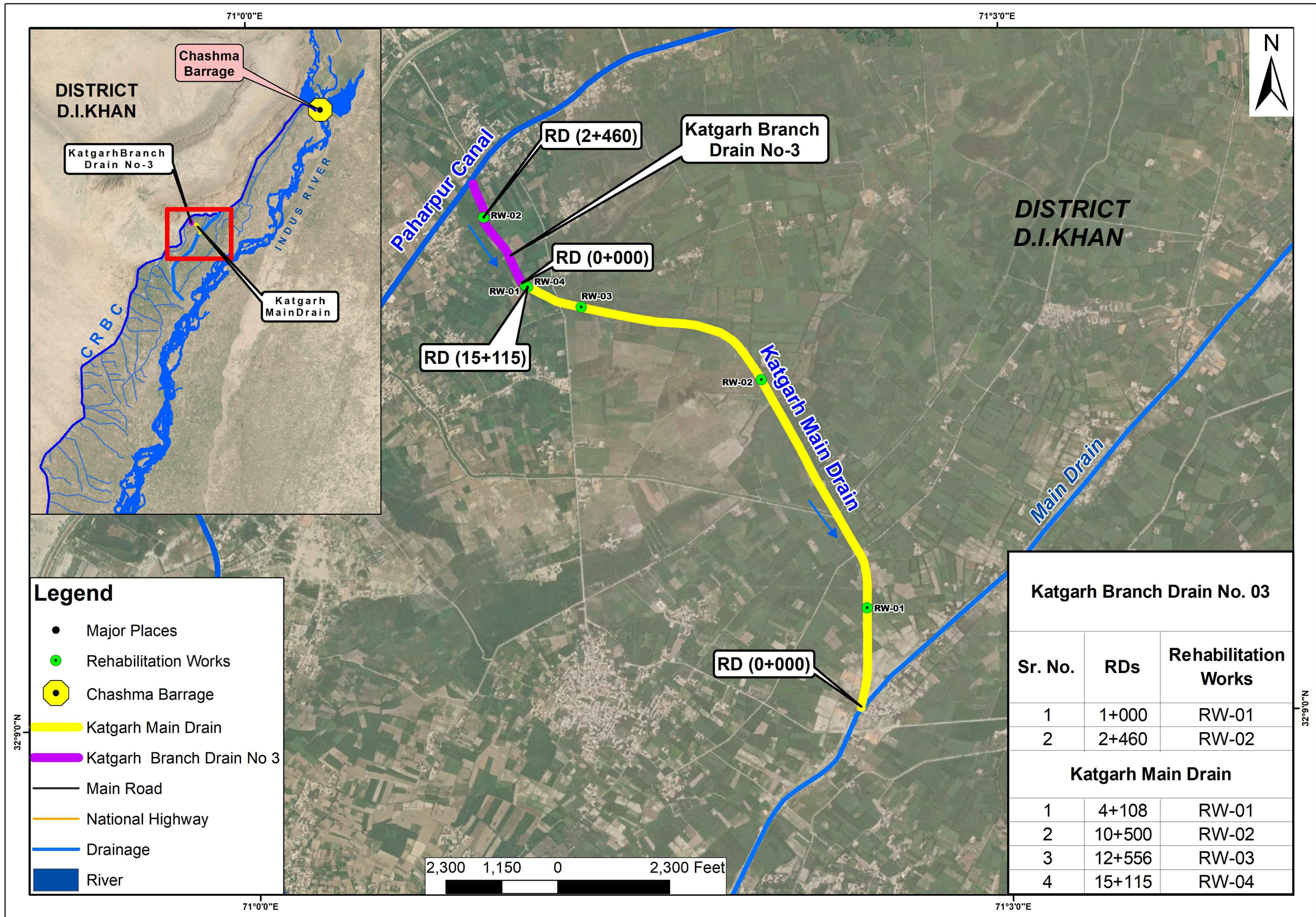
HEAD OFFICE : NESPAK HOUSE, 1-C BLOCK N,  
MODEL TOWN EXTENSION, LAHORE PAKISTAN

LIST OF LOCATION MAPS AND TODS OF  
DRAINS

DATE: AUG 2023  
DWG. NO. 4593/TD/061/GN-01

REV: 0





**Legend**

- Major Places
- Rehabilitation Works
- Chashma Barrage
- Katgarh Main Drain
- Katgarh Branch Drain No 3
- Main Road
- National Highway
- Drainage
- River

Katgarh Branch Drain No. 03		
Sr. No.	RDs	Rehabilitation Works
1	1+000	RW-01
2	2+460	RW-02
Katgarh Main Drain		
1	4+108	RW-01
2	10+500	RW-02
3	12+556	RW-03
4	15+115	RW-04

NOTE:—  
RDs. ARE IN FEET

EMERGENCY FLOOD ASSISTANCE PROJECT (EFAP)-KP  
"RECONSTRUCTION AND REHABILITATION OF  
IRRIGATION AND DRAINAGE SYSTEM AND FLOOD  
PROTECTION WORKS IN KHYBER PAKHTUNKHWA"



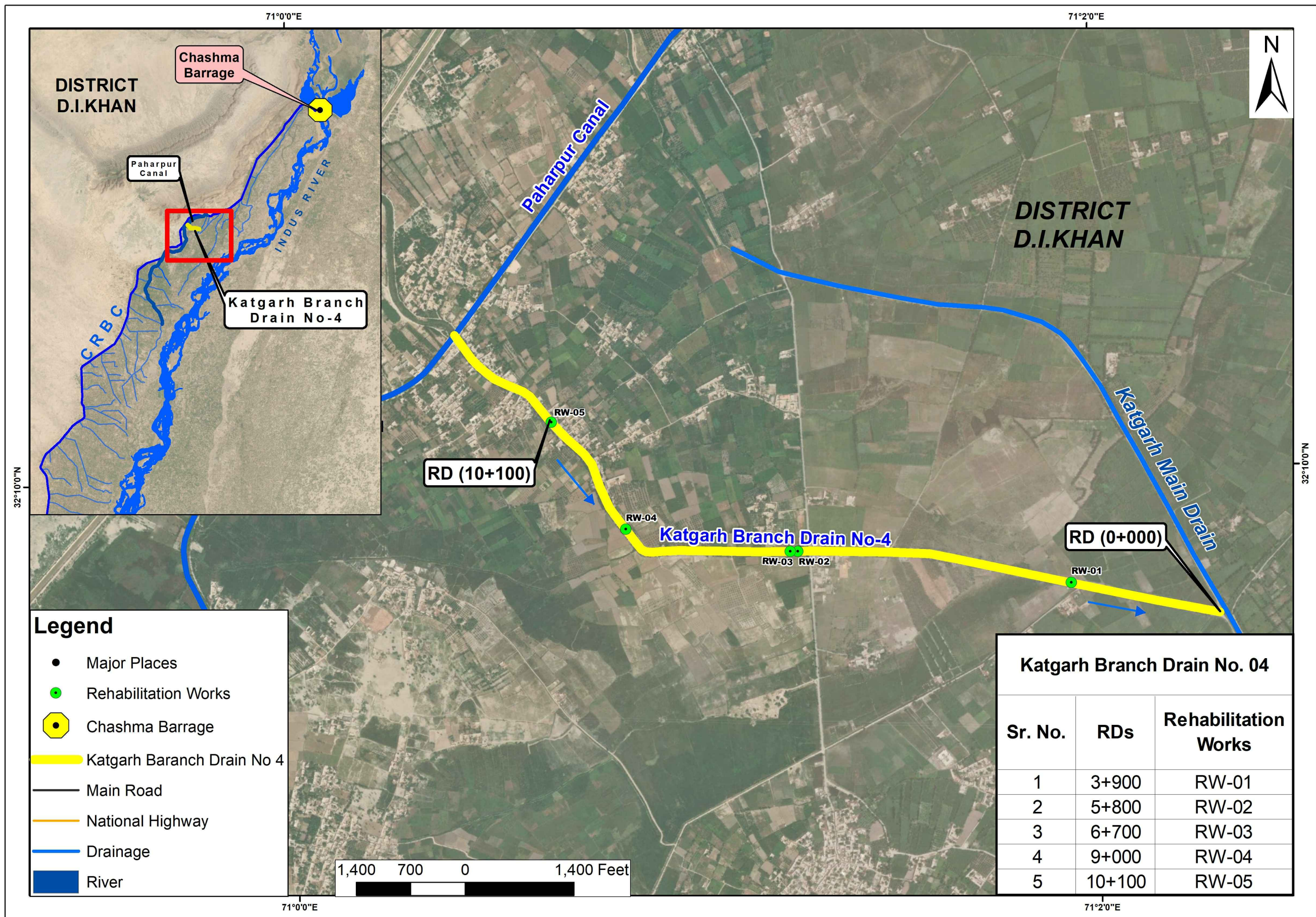
GOVERNMENT OF KHYBER  
PAKHTUNKHWA  
IRRIGATION DEPARTMENT

REV.	DATE	DESCRIPTION	BY	CKD.	APPR.	APPROVED	N.A
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**NESPAK** NATIONAL ENGINEERING  
SERVICES PAKISTAN (PVT)  
LIMITED  
HEAD OFFICE : NESPAK HOUSE, 1-C BLOCK N,  
MODEL TOWN EXTENSION, LAHORE PAKISTAN

LOCATION MAP  
FOR REHABILITATION OF DAMAGED / WASHED AWAY  
DRAINS SECTION OF KATGARH BRANCH DRAIN NO-3  
DATE: OCT, 2023  
DRAWING NO. 4593/TD/061/LM-01  
REV. 1



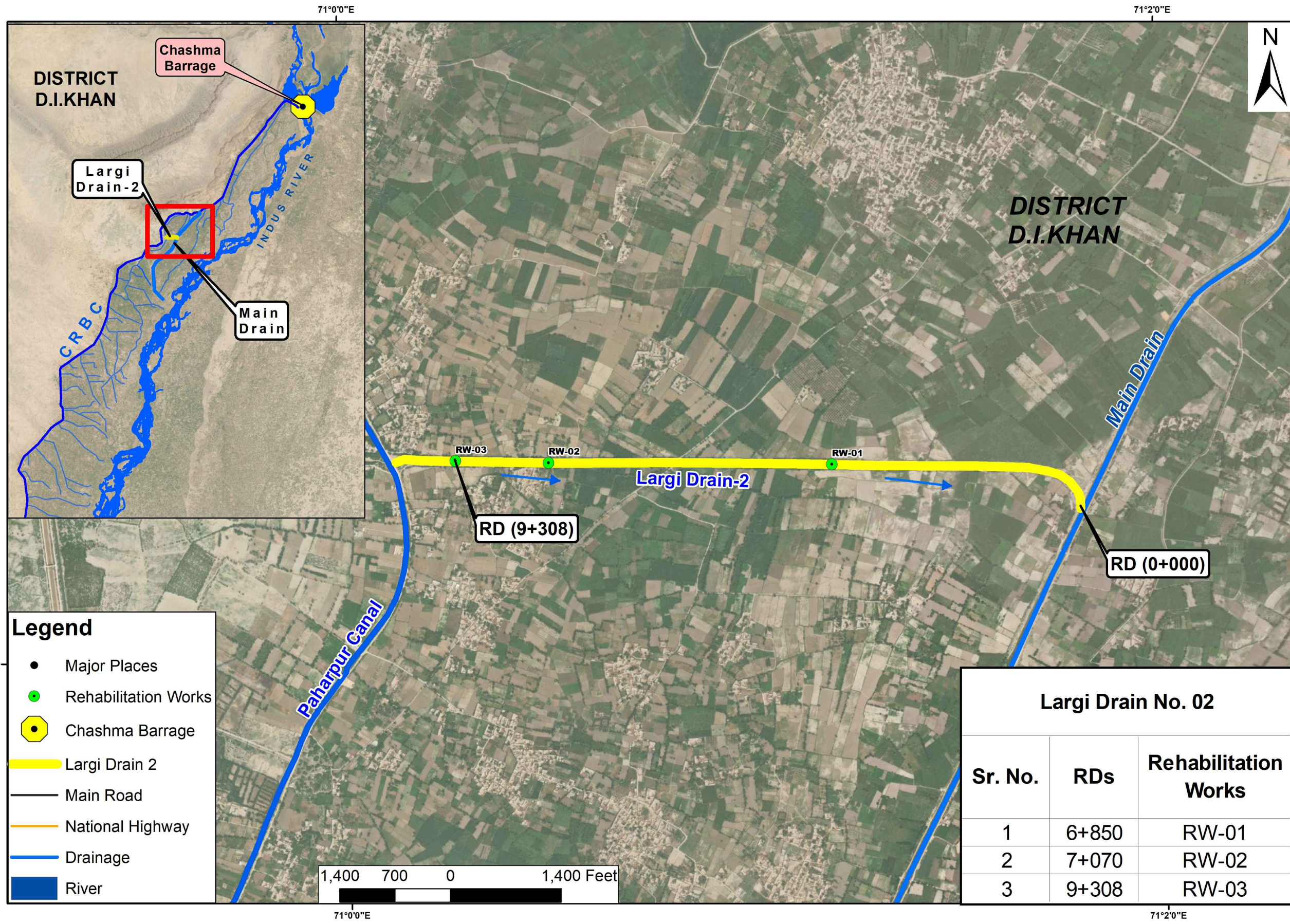


- Legend**
- Major Places
  - Rehabilitation Works
  - Chashma Barrage
  - Katgarh Baranch Drain No 4
  - Main Road
  - National Highway
  - Drainage
  - River

Katgarh Branch Drain No. 04		
Sr. No.	RDs	Rehabilitation Works
1	3+900	RW-01
2	5+800	RW-02
3	6+700	RW-03
4	9+000	RW-04
5	10+100	RW-05

NOTE:—  
RDs. ARE IN FEET



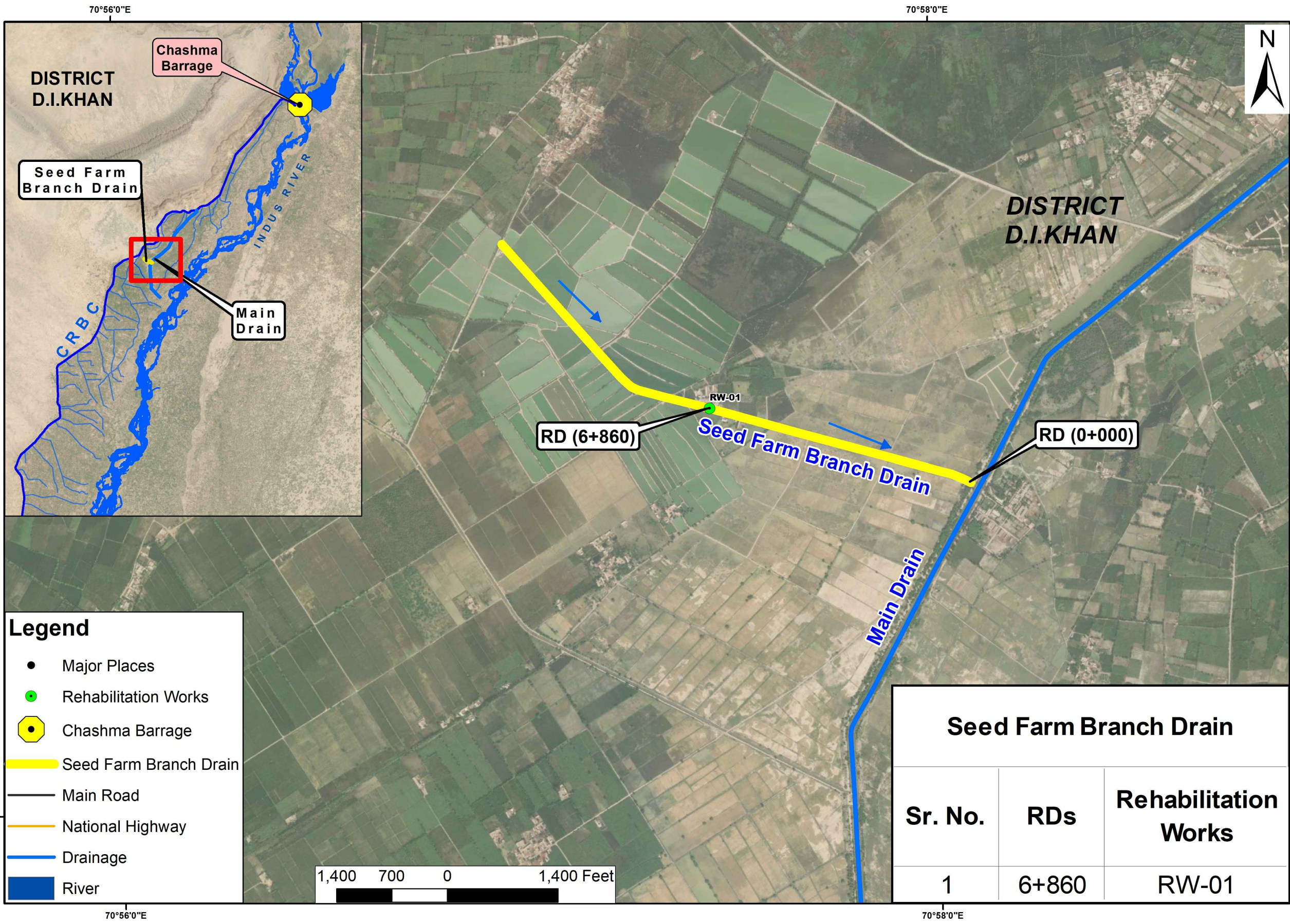


NOTE:-  
RDs. ARE IN FEET









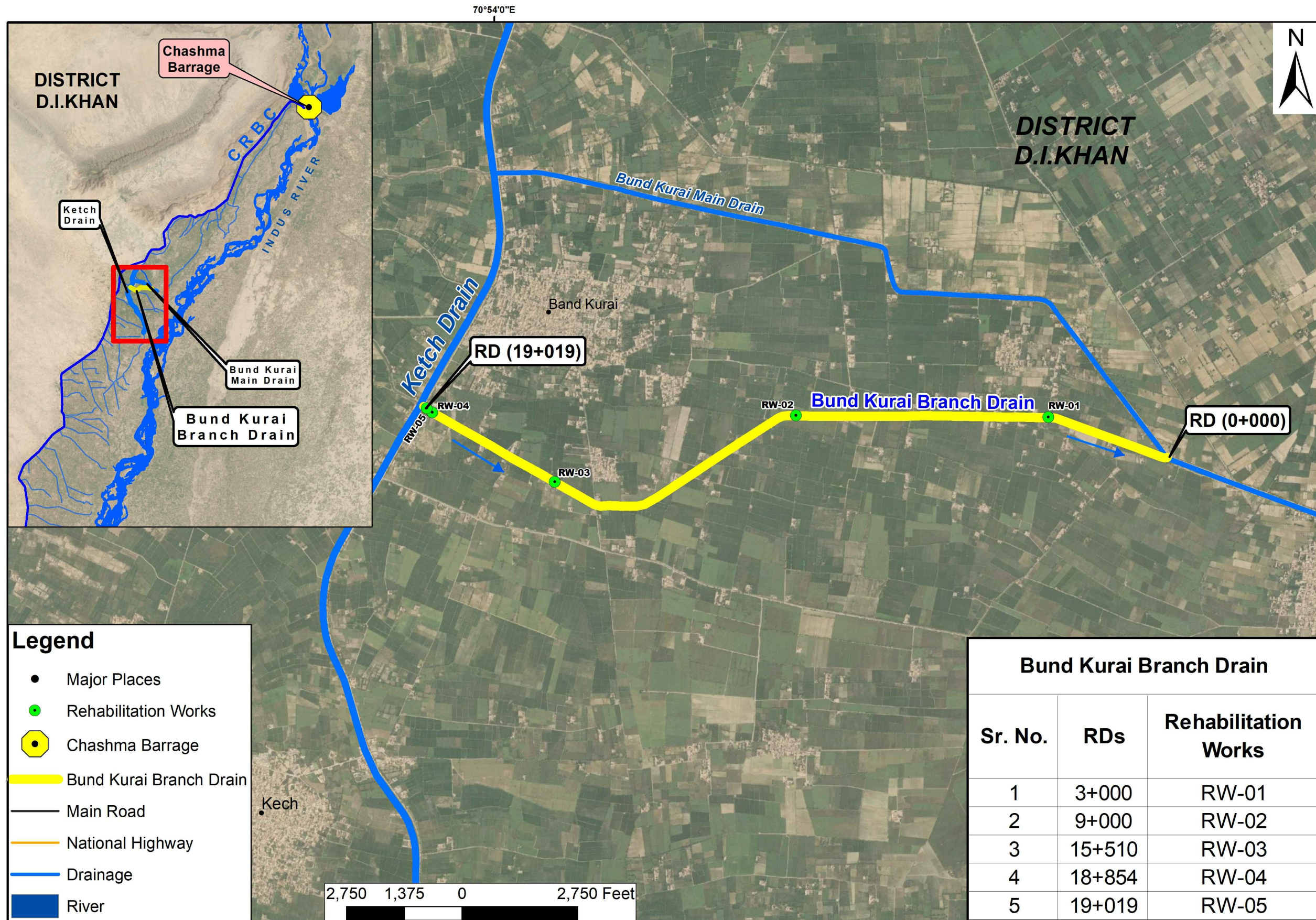
**Legend**

- Major Places
- Rehabilitation Works
- Chashma Barrage
- Seed Farm Branch Drain
- Main Road
- National Highway
- Drainage
- River

Seed Farm Branch Drain		
Sr. No.	RDs	Rehabilitation Works
1	6+860	RW-01

NOTE:-  
RDs. ARE IN FEET





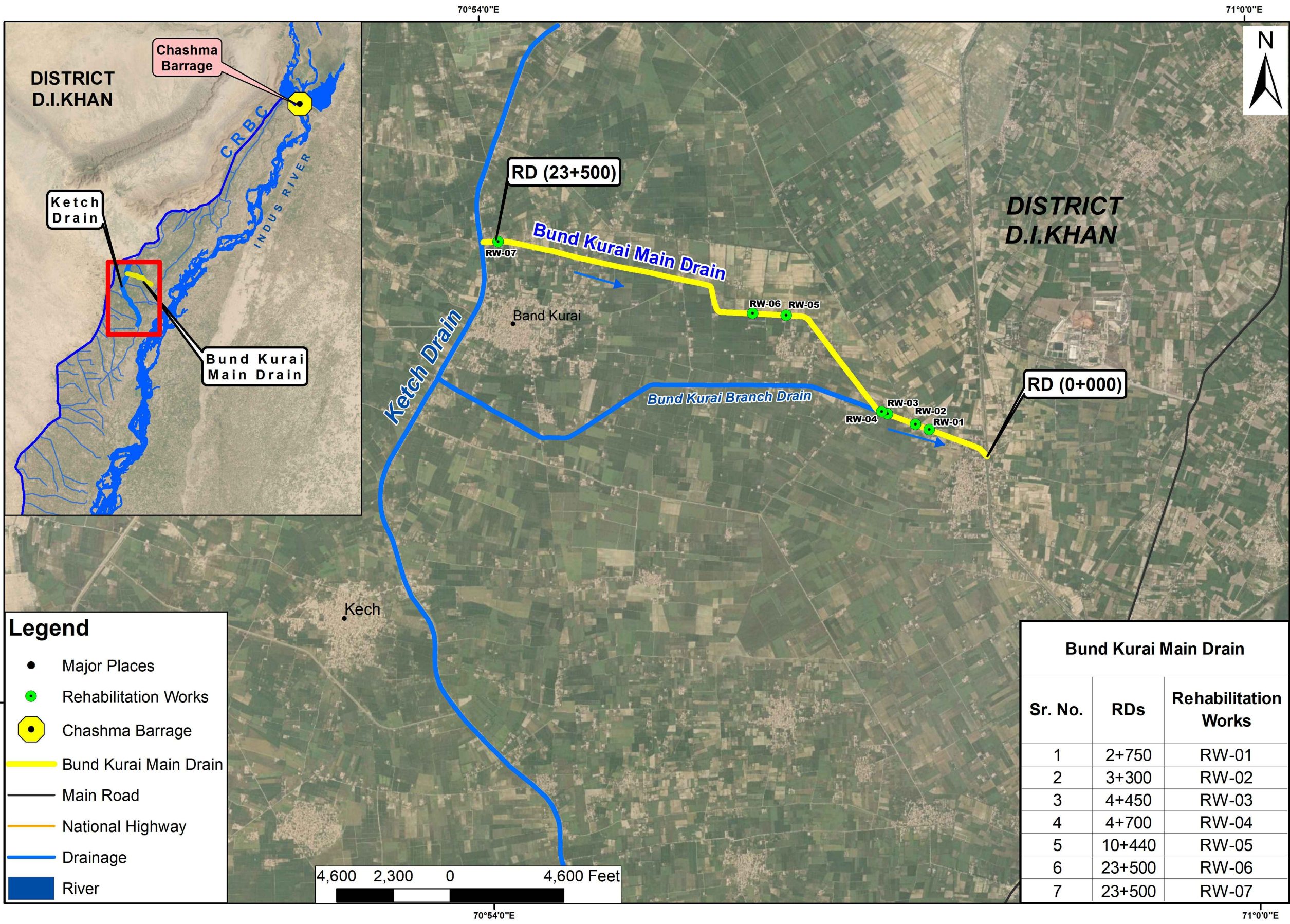
**Legend**

- Major Places
- Rehabilitation Works
- Chashma Barrage
- Bund Kurai Branch Drain
- Main Road
- National Highway
- Drainage
- River

Bund Kurai Branch Drain		
Sr. No.	RDs	Rehabilitation Works
1	3+000	RW-01
2	9+000	RW-02
3	15+510	RW-03
4	18+854	RW-04
5	19+019	RW-05

NOTE:—  
RDs. ARE IN FEET





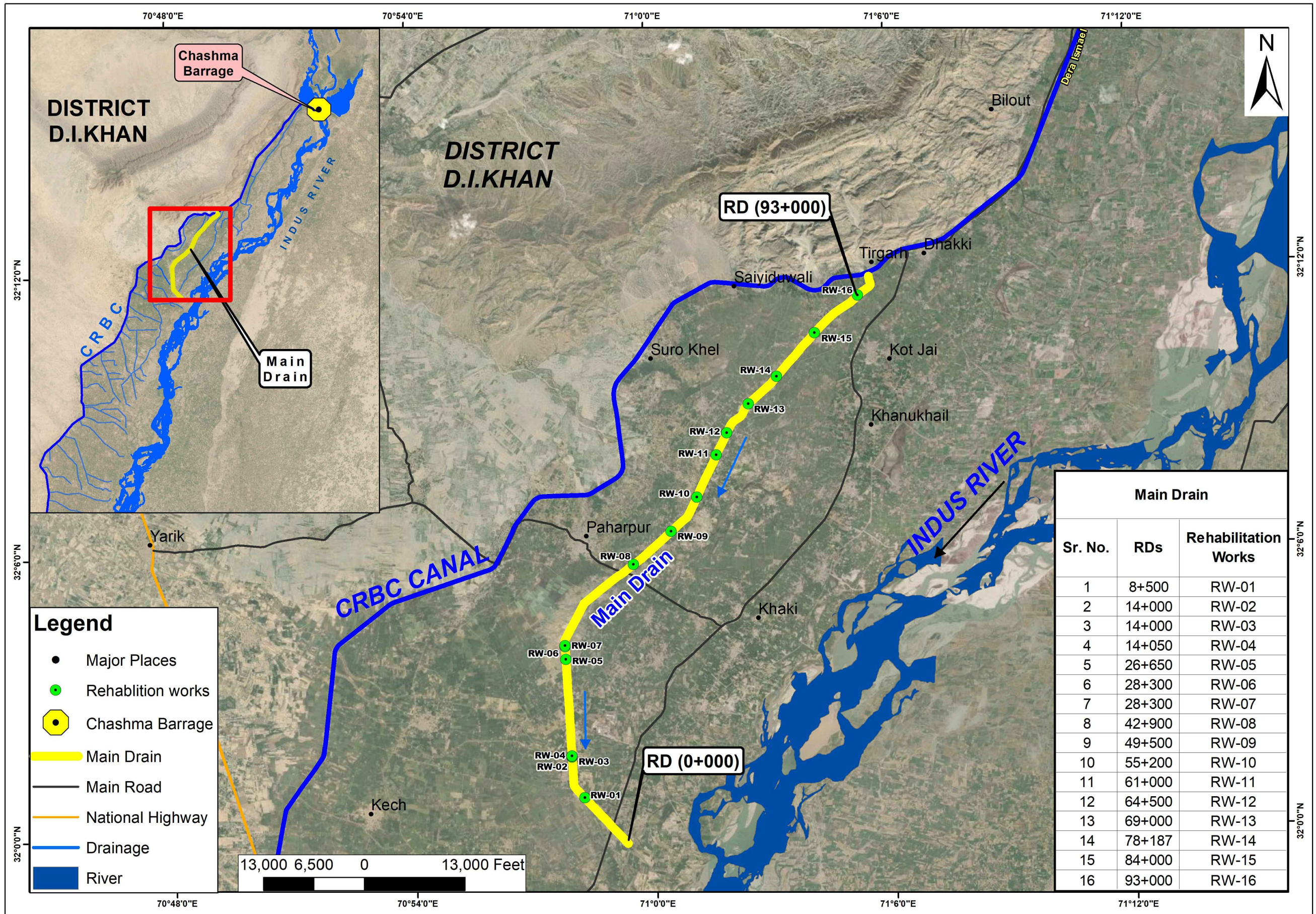
**Legend**

- Major Places
- Rehabilitation Works
- Chashma Barrage
- Bund Kurai Main Drain
- Main Road
- National Highway
- Drainage
- River

Bund Kurai Main Drain		
Sr. No.	RDs	Rehabilitation Works
1	2+750	RW-01
2	3+300	RW-02
3	4+450	RW-03
4	4+700	RW-04
5	10+440	RW-05
6	23+500	RW-06
7	23+500	RW-07

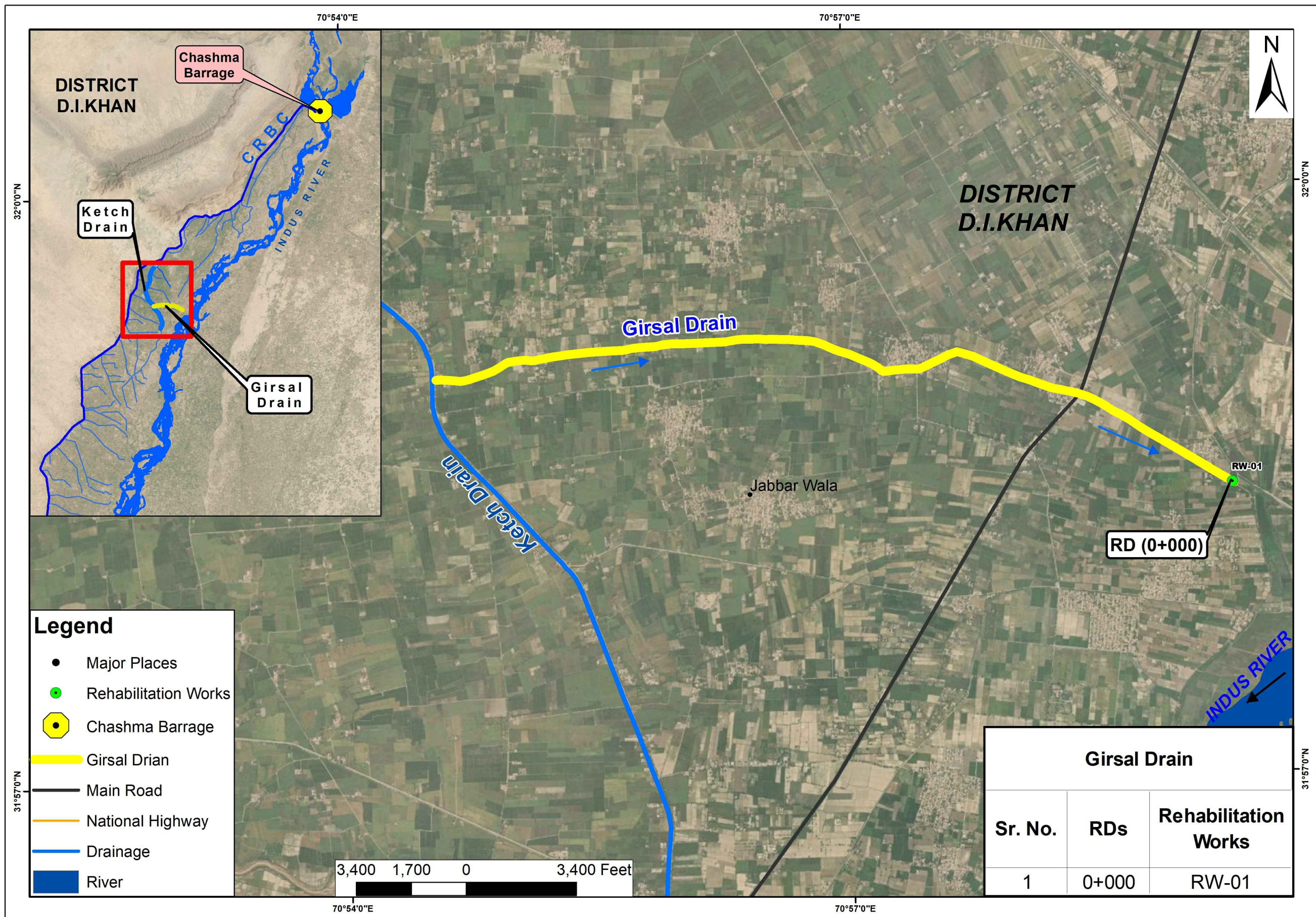
NOTE:—  
RDs. ARE IN FEET





NOTE:--  
RDs. ARE IN FEET



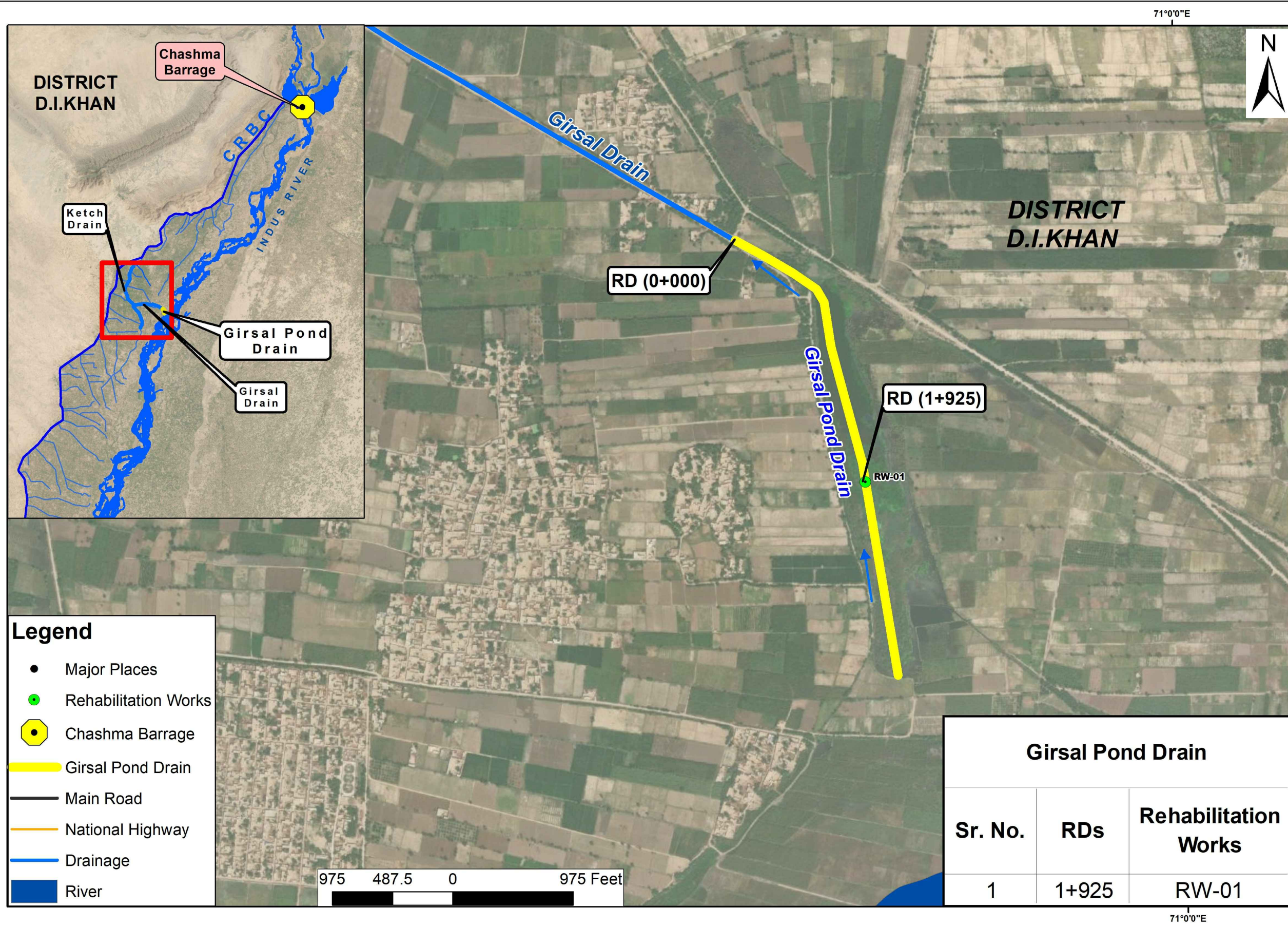


- Legend**
- Major Places
  - Rehabilitation Works
  - Chashma Barrage
  - ▬ Girsal Drian
  - ▬ Main Road
  - ▬ National Highway
  - ▬ Drainage
  - ▬ River

Girsal Drain		
Sr. No.	RDs	Rehabilitation Works
1	0+000	RW-01

NOTE:-  
RDs. ARE IN FEET





Girsal Pond Drain		
Sr. No.	RDs	Rehabilitation Works
1	1+925	RW-01

NOTE:-  
RDs. ARE IN FEET

EMERGENCY FLOOD ASSISTANCE PROJECT (EFAP)-KP  
"RECONSTRUCTION AND REHABILITATION OF  
IRRIGATION AND DRAINAGE SYSTEM AND FLOOD  
PROTECTION WORKS IN KHYBER PAKHTUNKHWA"



GOVERNMENT OF KHYBER  
PAKHTUNKHWA  
IRRIGATION DEPARTMENT

REV.	DATE	DESCRIPTION	BY	CKD.	APPR.	APPROVED	N.A
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**NESPAK** NATIONAL ENGINEERING  
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HEAD OFFICE : NESPAK HOUSE, 1-C BLOCK N,  
MODEL TOWN EXTENSION, LAHORE PAKISTAN

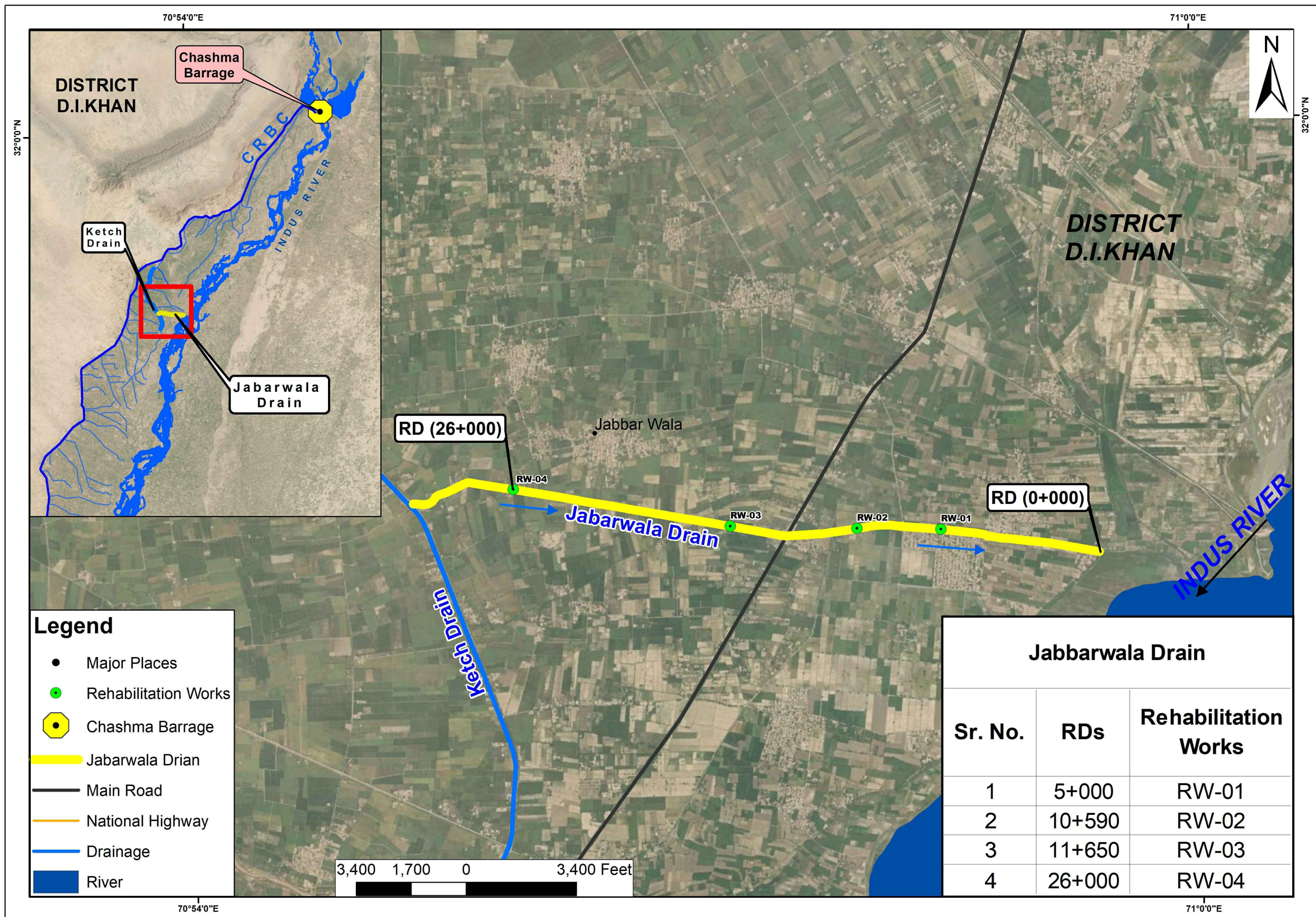
LOCATION MAP  
FOR REHABILITATION OF DAMAGED / WASHED AWAY  
DRAINS SECTION OF GIRSAL POND DRAIN

DATE:  
OCT, 2023

DRAWING NO.  
4593/TD/061/LM-10

REV.  
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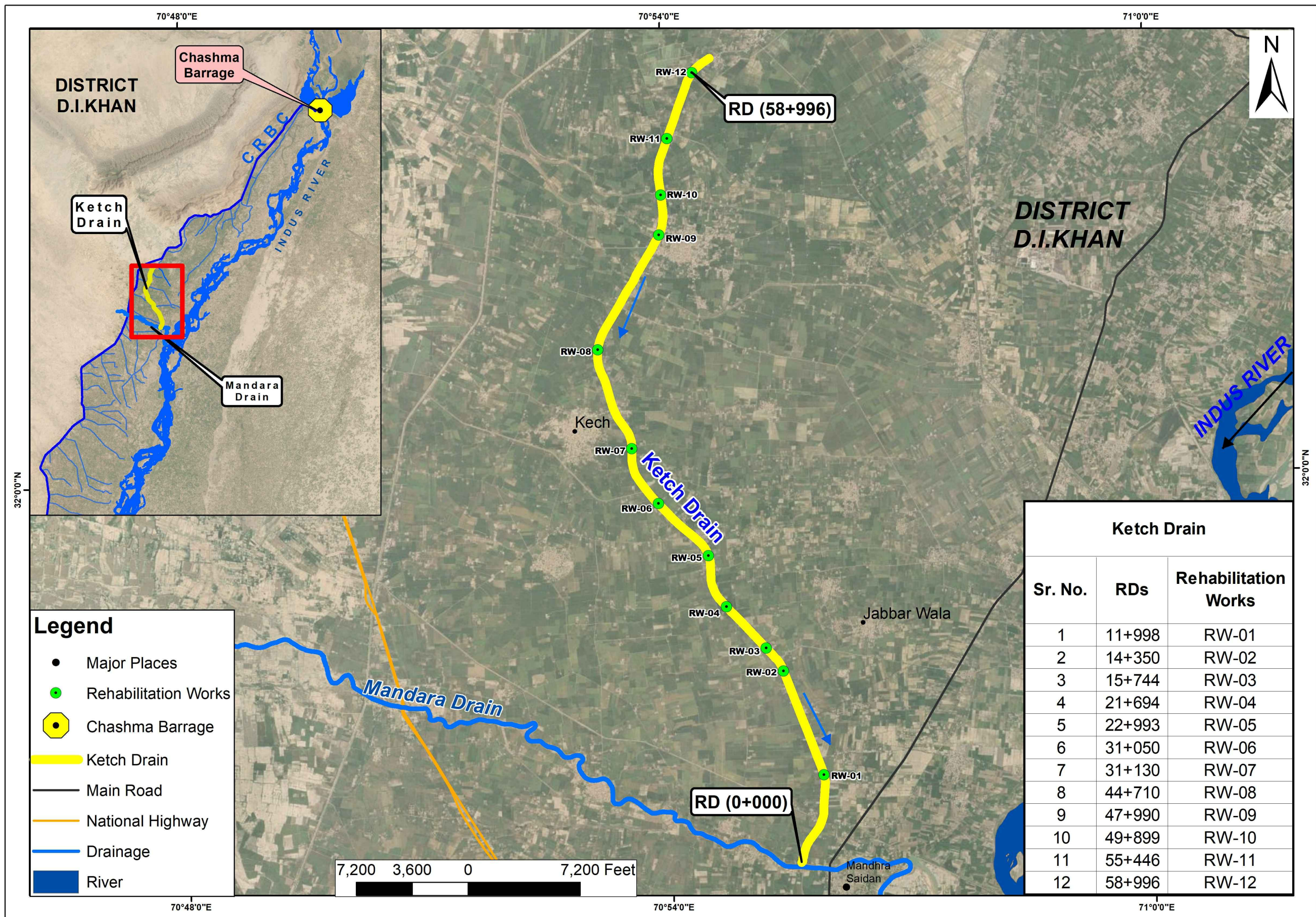




Jabbarwala Drain		
Sr. No.	RDs	Rehabilitation Works
1	5+000	RW-01
2	10+590	RW-02
3	11+650	RW-03
4	26+000	RW-04

NOTE:-  
RDs. ARE IN FEET





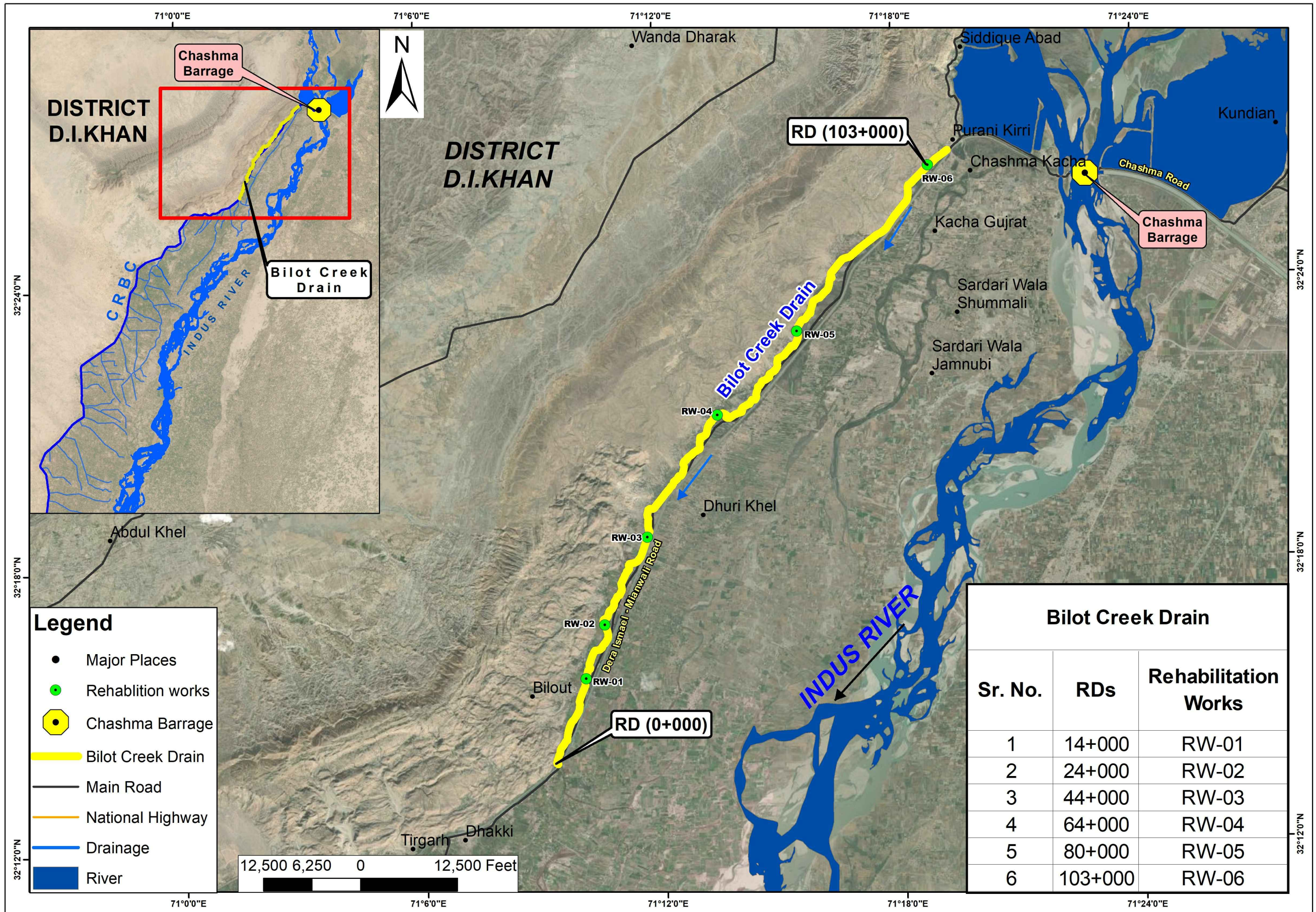
Ketch Drain		
Sr. No.	RDs	Rehabilitation Works
1	11+998	RW-01
2	14+350	RW-02
3	15+744	RW-03
4	21+694	RW-04
5	22+993	RW-05
6	31+050	RW-06
7	31+130	RW-07
8	44+710	RW-08
9	47+990	RW-09
10	49+899	RW-10
11	55+446	RW-11
12	58+996	RW-12

- Legend**
- Major Places
  - Rehabilitation Works
  - Chashma Barrage
  - Ketch Drain
  - Main Road
  - National Highway
  - Drainage
  - River



NOTE:—  
RDs. ARE IN FEET





NOTE:—  
RDs. ARE IN FEET



**Table of Details of Proposed Restoration/Rehabilitation Works of Katgarh Branch Drain No. 03**

Sr. No.	Start RD	ID	Coordinates		Type of Rehab. Works	Length of Rehab.Work	Side	Design Parameters of Drain ( L-Profile )							Reference Drawing	
			Easting	Northing				L	Design Discahrge Q	Type of Channel	Bed Width	Flow Depth	Bed Slope	Bed Level		Bank Level
1	1+000	RW-1	2270065	11680475	Section Cleaning	1000	BS	74	Earthen	12	2.03	0.0012	591.08	598.11	4593/TD/061/DR/RW-01	
2	2+460	RW-2	2268591	11680794	Section Cleaning	1460	BS	74		12	2.12	0.001	587.60	594.72		
<b>Katgarh Main Drain</b>																
1	4+108	RW-1	2271210	11680206	Section Cleaning	4108	BS	286	Earthen	45	3	0.0004	582.50	590.50	4593/TD/061/DR/RW-01	
2	10+500	RW-2	2267382	11684269	Section Cleaning	6392	BS	286		45	3	0.0004	584.59	592.59		
3	12+556	RW-3	2264982	11684870	Section Cleaning	2056	BS	74		12	2.87	0.00033	585.84	592.71		
4	15+115	RW-4	2263498	11685569	Section Cleaning	2559	BS	74		12	2.44	0.0006	587.38	594.82		

\* RDs are taken from the Start of the proposed rehabilitation works  
 \* Section Cleaning = Clearing and Grubing / Uprooting Sirkanda  
 \* Section Restoration = Bank Raising and Section Cleaning  
 BS = Both Side  
 RS = Right Side  
 LS = Left Side

**NOTES:**

- ALL RDs/Coordinates should be confirmed by site engineer before construction.
- Drain Section shall be Restored As Per Approved L-Section.

EMERGENCY FLOOD ASSISTANCE PROJECT (EFAP)-KP  
 "RECONSTRUCTION AND REHABILITATION OF IRRIGATION AND DRAINAGE SYSTEM AND FLOOD PROTECTION WORKS IN KHYBER PAKHTUNKHWA"



GOVERNMENT OF KHYBER  
 PAKHTUNKHWA  
 IRRIGATION DEPARTMENT

REV.	DATE	DESCRIPTION	BY	CHKD.	APPR.	APPROVED	N.A

HEAD OFFICE : NESPAK HOUSE, 1-C BLOCK N,  
 MODEL TOWN EXTENSION, LAHORE PAKISTAN

DATE:	DRAWING NO.	REV.
SEP, 2023	4593/TD/061/TOD-01	1

**NESPAK NATIONAL ENGINEERING SERVICES PAKISTAN (PVT) LIMITED**

**TABLE OF DETAILS FOR REHABILITATION OF DAMAGED / WASHED AWAY DRAINS SECTION OF KATGARH BRANCH DRAIN NO-3**

**Table of Details of Proposed Restoration/Rehabilitation Works of Katgarh Branch Drain No. 04**

Sr. No.	Start RD	ID	Coordinates (Start)		Type of Rehab. Works	Length of Rehab. Work	Side	Design Parameters of Drain ( L-Section )								Reference Drawing	
			Easting	Northing				Design Discahrge	Type of Channel	Bed Width	Flow Depth	Bed Slope	Existing Bed Level	Design Bed Level	Existing Bank Level		Proposed Bank Level
(-)	(ft)	(-)	(ft)	(ft)	(-)	(ft)	(-)	(ft <sup>3</sup> /s)	(-)	(ft)	(ft)	(ft/ft)	(ft)	(ft)	(ft)	(ft)	(-)
1	3+900	RW-1	2267159	11681044	Section Cleaning	3900	BS	285	Earthen	48	3.35	0.0006	585.89	583.25	590.47	591.60	4593/TD/061/DR/RW/01
2	5+800	RW-2	2265365	11681064	Section Restoration	600	BS	285		48	3.35	0.0009	583.53	583.35	588.11	591.70	4593/TD/061/DR/RW/02
3	6+700	RW-3	2264436	11681074	Section Cleaning	2200	BS	115		23	2.55	0.00015	585.68	583.71	591.94	591.26	4593/TD/061/DR/RW/01
4	9+000	RW-4	2262848	11682348		2300	BS	115		23	2.55	0.00015	589.28	586.79	592.29	594.34	
5	10+100	RW-5	2262164	11683074		1100	BS	115		23	2.55	0.00015	590.44	586.96	591.95	594.51	

\* RDs are taken from the Start of the proposed rehabilitation works  
 \* Section Cleaning = Clearing and Grubing / Uprooting Sirkanda  
 \* Section Restoration = Bank Raising and Section Cleaning  
 BS = Both Side  
 RS = Right Side  
 LS = Left Side

**NOTES:**

1. ALL RDs/Coordinates should be confirmed by site engineer before construction.
2. Drain Section shall be Restored As Per Approved L-Section.

EMERGENCY FLOOD ASSISTANCE PROJECT (EFAP)-KP  
 "RECONSTRUCTION AND REHABILITATION OF IRRIGATION AND DRAINAGE SYSTEM AND FLOOD PROTECTION WORKS IN KHYBER PAKHTUNKHWA"



GOVERNMENT OF KHYBER  
 PAKHTUNKHWA  
 IRRIGATION DEPARTMENT

REV.	DATE	DESCRIPTION	BY	CHKD.	APPR.	APPROVED	N.A

DRAWN	K.A
SUBMITTED	M.M
RECOMMENDED	Q.L
CHD/VER	F.R.K

**NES NATIONAL ENGINEERING SERVICES PAKISTAN (PVT) LIMITED**

HEAD OFFICE : NESPAK HOUSE, 1-C BLOCK N,  
 MODEL TOWN EXTENSION, LAHORE PAKISTAN

TABLE OF DETAILS  
 FOR REHABILITATION OF DAMAGED / WASHED AWAY  
 DRAINS SECTION OF KATGARH BRANCH DRAIN NO-4

DATE:	DRAWING NO.	REV.
SEP, 2023	4593/TD/061/TOD-02	1

**Table of Details of Proposed Restoration/Rehabilitation Works of Largi Drain No. 02**

Sr. No.	Start RD	ID	Coordinates		Type of Rehab. Works	Length of Rehab. Work	Side	Design Parameters of Drain								Reference Drawing	
								Design Discharge	Type of Channel	Bed Width	Flow Depth	Bed Slope	Existing Bed Level	Design Bed Level	Existing Bank Level		Proposed Bank Level
			Easting	Northing													
(-)	(ft)	(-)	(ft)	(ft)	(-)	(ft)	(-)	(ft <sup>3</sup> /s)	(-)	(ft)	(ft)	(ft/ft)	(ft)	(ft)	(ft)	(ft)	(-)
1	6+850	RW-1	2262057	11672311	Section Cleaning	6850	BS	378	Earthen	25	4.16	0.00065	588.40	585.22	591.69	594.38	4593/TD/061/DR/RW-01
2	7+070	RW-2	2261884	11672304	Section Restoration	120	BS	378		25	4.16	0.00065	588.54	585.38	591.83	594.54	4593/TD/061/DR/RW-02
3	9+308	RW-3	2259978	11672307	Section Cleaning	2238	BS	378		25	4.16	0.00065	589.99	586.82	593.28	595.98	4593/TD/061/DR/RW-01

\* RDs are taken from the Start of the proposed rehabilitation works  
 \* Section Cleaning = Clearing and Grubing / Uprooting Sirkanda  
 \* Section Restoration = Bank Raising and Section Cleaning  
 BS = Both Side  
 RS = Right Side  
 LS = Left Side

**NOTES:**  
 1. ALL RDs/Coordinates should be confirmed by site engineer before construction.  
 2. Drain Section shall be Restored As Per Approved L-Section.

EMERGENCY FLOOD ASSISTANCE PROJECT (EFAP)-KP "RECONSTRUCTION AND REHABILITATION OF IRRIGATION AND DRAINAGE SYSTEM AND FLOOD PROTECTION WORKS IN KHYBER PAKHTUNKHWA"		GOVERNMENT OF KHYBER PAKHTUNKHWA IRRIGATION DEPARTMENT	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr> <td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr> <td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr> <td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> </table>																																																	NATIONAL ENGINEERING SERVICES PAKISTAN (PVT) LIMITED	HEAD OFFICE : NESPAK HOUSE, 1-C BLOCK N, MODEL TOWN EXTENSION, LAHORE PAKISTAN	DATE: SEP, 2023	DRAWING NO. 4593/TD/061/TOD-03	REV. 



**Table of Details of Proposed Restoration/Rehabilitation Works of Largi Drain No. 01**

Sr. No.	Start RD	ID	Coordinates		Type of Rehab. Works	Length of Rehab. Work L	Side	Design Parameters of Drain (L-Section)							Reference Drawing		
			Easting	Northing				Design Discharge Q	Type of Channel	Bed Width	Flow Depth	Bed Slope	Existing Bed Level	Design Bed Level		Existing Bank Level	Proposed Bank Level
(-)	(ft)	(-)	(ft)	(ft)	(-)	(ft)	(-)	(ft)	(ft)	(ft/ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(-)
1	0+000	RW-1	2255951	11655151	Box Culvert	-	-	94	Earthen	14.00	3.15	0.00045	576.10	576.34	583.41	584.25	4593/TD/061/DR/DC-01
2	1+500	RW-2	2254854	11656158	Section Cleaning	1500	BS	94		14.00	3.15	0.00045	576.76	577.02	584.09	584.91	
4	2+750	RW-4	2253839	11656884	Bank protection	300	LS	94		14.00	3.15	0.00045	577.31	575.50	583.32	585.46	4593/TD/061/DR/RW-03
3	4+000	RW-3	2252820	11657605	Section Cleaning	1400	BS	94		14.00	3.15	0.00045	578.00	579.80	584.21	586.15	4593/TD/061/DR/RW-01
5	4+150	RW-5	2252723	11657705	Bank protection	350	LS	94		14.00	3.15	0.00045	578.36	579.51	584.78	586.51	4593/TD/061/DR/RW-03
6	5+700	RW-6	2251545	11658788	Section Cleaning	1550	BS	94		6.00	2.56	0.0023	581.90	583.86	588.25	589.46	4593/TD/061/DR/RW-01
7	5+800	RW-7	2251526	11658812	Bank protection	100	RS	94		6.00	2.56	0.0023	582.13	583.86	588.25	589.69	4593/TD/061/DR/RW-03 (B)
8	8+509	RW-8	2250593	11661028	Section Cleaning	2709	BS	94		6.00	2.56	0.0023	588.07	590.07	594.46	595.63	4593/TD/061/DR/RW-01

\* RDs are taken from the Start of the proposed rehabilitation works

\* Section Cleaning = Clearing and Grubbing / Uprooting Sirkanda

\* Section Restoration = Bank Raising and Section Cleaning

\* Bank Protection = Side Retaining Wall / Stone Pitching

BS = Both Side

RS = Right Side

LS = Left Side

**NOTES:**

- ALL RDs/Coordinates should be confirmed by site engineer before construction.
- Drain Section shall be Restored As Per Approved L-Section.

EMERGENCY FLOOD ASSISTANCE PROJECT (EFAP)-KP  
"RECONSTRUCTION AND REHABILITATION OF  
IRRIGATION AND DRAINAGE SYSTEM AND FLOOD  
PROTECTION WORKS IN KHYBER PAKHTUNKHWA"



GOVERNMENT OF KHYBER  
PAKHTUNKHWA  
IRRIGATION DEPARTMENT

REV.	DATE	DESCRIPTION	BY	CKD.	APPR.	APPROVED	N.A

DRAWN	K.A
SUBMITTED	M.M
RECOMMENDED	Q.L
CHD/VER	F.R.K
	N.A



HEAD OFFICE : NESPAK HOUSE, 1-C BLOCK N,  
MODEL TOWN EXTENSION, LAHORE PAKISTAN

**TABLE OF DETAILS  
FOR REHABILITATION OF DAMAGED / WASHED AWAY  
DRAINS SECTION OF LARGI DRAIN NO-1**

DATE: SEP, 2023	DRAWING NO. 4593/TD/061/TOD-04	REV. 1
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**Table of Details of Proposed Restoration/Rehabilitation Works of Seed Farm Branch Drain**

Sr. No.	Start RD	ID	Coordinates		Type of Rehab. Works	Length of Rehab. Work	Side	Design Parameters of Drain (L-Section)							Reference Drawing
			Easting	Northing				Design Discharge	Type of Channel	Bed Width	Flow Depth	Bed Slope	Bed Level	Bank Level	
(-)	(ft)	(-)	(-)	(-)	(-)	(ft)	(-)	(ft)	(ft)	(ft/ft)	(ft)	(ft)	(-)		
1	6+860	RW-1	2264982	11684870	Section Cleaning	6860	BS	30	Earthen	20.00	1.75	0.00023	575.67	582.42	4593/TD/061/DR/RW-01

\* RDs are taken from the Start of the proposed rehabilitation works  
 \* Section Cleaning = Clearing and Grubing / Uprooting Sirkanda  
 \* Section Restoration = Bank Raising and Section Cleaning  
 \* Bank Protection = Side Retaining Wall / Stone Pitching  
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**NOTES:**

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- Drain Section shall be Restored As Per Approved L-Section.

EMERGENCY FLOOD ASSISTANCE PROJECT (EFAP)-KP  
 "RECONSTRUCTION AND REHABILITATION OF IRRIGATION AND DRAINAGE SYSTEM AND FLOOD PROTECTION WORKS IN KHYBER PAKHTUNKHWA"



GOVERNMENT OF KHYBER PAKHTUNKHWA  
 IRRIGATION DEPARTMENT

REV.	DATE	DESCRIPTION	BY	CKD.	APPR.	APPROVED	N.A
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DRAWN	K.A
SUBMITTED	M.M
RECOMMENDED	Q.L
CHD/VER	F.R.K
	N.A

**NESPAK NATIONAL ENGINEERING SERVICES PAKISTAN (PVT) LIMITED**

HEAD OFFICE : NESPAK HOUSE, 1-C BLOCK N, MODEL TOWN EXTENSION, LAHORE PAKISTAN

**TABLE OF DETAILS FOR REHABILITATION OF DAMAGED / WASHED AWAY DRAINS SECTION OF SEED FARM BRANCH DRAIN**

DATE: SEP, 2023	DRAWING NO. 4593/TD/061/TOD-05	REV. 1
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**Table of Details of Proposed Restoration/Rehabilitation Works of Main Drain**

Sr. No.	Start RD	ID	Coordinates (Start)		Design Discharge	Type of Rehab. Works	Length of Rehab. Work	Side	Type of Channel	Design Parameters of Drain (L-Profile)					Reference Drawing
			Easting	Northing						Q (cusec)	L	Bed Width	Flow Depth	Bed Slope	
			(ft)	(ft)	(ft <sup>3</sup> /s)		(ft)								
1	8+500	RW-1	2250649	11626183	1927	Section Cleaning	800	BS	Earthen	80	8.31	0.00017	568.19	581.5044	4593/TD/061/DR/RW-01
2	14+000	RW-2	2249275	11631250	1927	Left bank protection	200	LS	Earthen	80	8.31	0.00018	569.18	582.4884	4593/TD/061/DR/RW-03
3	14+000	RW-3	2249275	11631250	1007	Section Cleaning	0	BS	Earthen	65	6.87	0.00017	569.18	581.0484	4593/TD/061/DR/RW-01
4	14+050	RW-4	2249263	11631274	1007	Left bank protection	50	LS	Earthen	65	6.87	0.00017	569.18	581.0484	4593/TD/061/DR/RW-03
5	26+650	RW-5	2248478	11643724	1007	Section Restoration	250	RS & LS	Earthen	65	6.87	0.00017	570.95	582.8196	4593/TD/061/DR/RW-02
6	28+300	RW-6	2248389	11645528	1007	Section Restoration	300	RS & LS	Earthen	65	6.87	0.00017	571.18	583.0492	
7	28+300	RW-7	2248389	11645528	1007	Box Culvert required	-	-	-	-	-	-	-	-	4593/TD/061/DR/DC-01
8	42+900	RW-8	2257570	11656280	913	Section Cleaning	800	BS	Earthen	60	6.21	0.00019	573.28	584.49	4593/TD/061/DR/RW-01
9	49+500	RW-9	2262431	11660630	913		1000	BS	Earthen	60	6.21	0.00019	574.52	585.73	
10	55+200	RW-10	2265549	11665031	913		1200	BS	Earthen	50	5.69	0.00036	575.61	586.30	
11	61+000	RW-11	2268066	11670476	913		800	BS	Earthen	50	5.69	0.00036	577.41	588.10	
12	64+500	RW-12	2269587	11673643	537		1500	BS	Earthen	36	4.71	0.00044	578.69	588.40	
13	69+000	RW-13	2272373	11677050	537		1000	BS	Earthen	36	4.71	0.00044	580.56	590.27	
14	78+187	RW-14	2278620	11683645	420		9187	BS	Earthen	32	4.5	0.00039	584.07	593.57	
15	84+000	RW-15	2282597	11687973	300		5813	BS	Earthen	30	4.25	0.00028	585.71	594.96	
16	93+000	RW-16	2287464	11693704	300		9000	BS	Earthen	30	4	0.00036	588.79	597.79	

\* RDs are taken from the Start of the proposed rehabilitation works  
 \* Section Cleaning = Clearing and Grubbing / Uprooting Sirkanda  
 \* Section Restoration = Bank Raising and Section Cleaning  
 \* Bank Protection = Side Retaining Wall / Stone Pitching  
 BS = Both Side  
 RS = Right Side  
 LS = Left Side

**NOTES:**

1. ALL RDs/Coordinates should be confirmed by site engineer before construction.
2. Drain Section shall be Restored As Per Approved L-Section.

EMERGENCY FLOOD ASSISTANCE PROJECT (EFAP)-KP  
 "RECONSTRUCTION AND REHABILITATION OF  
 IRRIGATION AND DRAINAGE SYSTEM AND FLOOD  
 PROTECTION WORKS IN KHYBER PAKHTUNKHWA"



GOVERNMENT OF KHYBER  
 PAKHTUNKHWA  
 IRRIGATION DEPARTMENT

REV.	DATE	DESCRIPTION	BY	CHKD.	APPR.	APPROVED	N.A

DRAWN K.A  
 SUBMITTED M.M  
 RECOMMENDED Q.L  
 CHD/VER F.R.K  
 HEAD OFFICE : NESPAK HOUSE, 1-C BLOCK N,  
 MODEL TOWN EXTENSION, LAHORE PAKISTAN

TABLE OF DETAILS  
 FOR REHABILITATION OF DAMAGED / WASHED AWAY  
 DRAINS SECTION OF MAIN DRAIN

DATE: SEP, 2023 DRAWING NO. 4593/TD/061/TOD-08 REV. 1



**Table of Details of Proposed Restoration/Rehabilitation Works of Girsal Drain**

Sr. No.	Start RD	End RD	Mid RD	ID	Coordinates (Start)		Type of Rehab. Works	Length of Rehab. Work L	Side	Design Parameters of Drain								Reference Drawing	
					Easting	Northing				Design Discahrge	Type of Channel	Bed Width	Flow Depth	Bed Slope	Existing Bed Level	Design Bed Level	Existing Bank Level		Proposed Bank Level
					(ft)	(ft)				(-)	(-)	(ft)	(ft)	(ft/ft)	(ft)	(ft)	(ft)		(ft)
1	0+000	26+662	13+331	RW-1	2232125	11615104	Section Cleaning	26662	BS	9	Earthen	10	2.83	0.0005	572.79	571.02	575.18	578.85	4593/TD/061/DR/RW-01

\* RDs are taken from the Start of the proposed rehabilitation works

\* Section Cleaning = Clearing and Grubbing / Uprooting Sirkanda

\* Section Restoration = Bank Raising and Section Cleaning

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2. Drain Section shall be Restored As Per Approved L-Section.

EMERGENCY FLOOD ASSISTANCE PROJECT (EFAP)-KP  
"RECONSTRUCTION AND REHABILITATION OF IRRIGATION AND DRAINAGE SYSTEM AND FLOOD PROTECTION WORKS IN KHYBER PAKHTUNKHWA"



GOVERNMENT OF KHYBER  
PAKHTUNKHWA  
IRRIGATION DEPARTMENT

REV.	DATE	DESCRIPTION	BY	CHKD.	APPR.	APPROVED	N.A
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DRAWN	K.A
SUBMITTED	M.M
RECOMMENDED	Q.L
CHD/VER	F.R.K

**NESPAK NATIONAL ENGINEERING SERVICES PAKISTAN (PVT) LIMITED**

HEAD OFFICE : NESPAK HOUSE, 1-C BLOCK N,  
MODEL TOWN EXTENSION, LAHORE PAKISTAN

**TABLE OF DETAILS  
FOR REHABILITATION OF DAMAGED / WASHED AWAY  
DRAINS SECTION OF GIRSAL DRAIN**

DATE: SEP, 2023	DRAWING NO. 4593/TD/061/TOD-09	REV. 1
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**Table of Details of Proposed Restoration/Rehabilitation Works of Girsal Pond Drain**

Sr. No.	Start RD	ID	Coordinates (Start)		Type of Rehab. Works	Length of Rehab. Work L	Side	Design Parameters of Drain								Reference Drawing	
			Easting	Northing				Design Discharge Q	Type of Channel	Bed Width	Flow Depth	Bed Slope	Existing Bed Level	Design Bed Level	Existing Bank Level		Proposed Bank Level
(-)	(ft)	(-)	(ft)	(ft)	(-)	(ft)	(-)	(ft <sup>3</sup> /s)	(-)	(ft)	(ft)	(ft/ft)	(ft)	(ft)	(ft)	(ft)	(-)
1	1+925	RW-1	2257825	11610363	Section Cleaning	900	BS	39.9	Earthen	48	1.83	0.001	570.62	565.34	571.89	572.17	4593/TD/061/DR/RW-01

\* RDs are taken from the Start of the proposed rehabilitation works  
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2. Drain Section shall be Restored As Per Approved L-Section.

EMERGENCY FLOOD ASSISTANCE PROJECT (EFAP)-KP  
 "RECONSTRUCTION AND REHABILITATION OF IRRIGATION AND DRAINAGE SYSTEM AND FLOOD PROTECTION WORKS IN KHYBER PAKHTUNKHWA"



GOVERNMENT OF KHYBER  
 PAKHTUNKHWA  
 IRRIGATION DEPARTMENT

REV.	DATE	DESCRIPTION	BY	CKD.	APPR.	APPROVED	N.A

**NES NATIONAL ENGINEERING SERVICES PAKISTAN (PVT) LIMITED**

HEAD OFFICE : NESPAK HOUSE, 1-C BLOCK N,  
 MODEL TOWN EXTENSION, LAHORE PAKISTAN

**TABLE OF DETAILS  
 FOR REHABILITATION OF DAMAGED / WASHED AWAY  
 DRAINS SECTION OF GIRSAL POND DRAIN**

DATE: SEP, 2023	DRAWING NO. 4593/TD/061/TOD-10	REV. ↻
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**Table of Details of Proposed Restoration/Rehabilitation Works of Jabbarwala Drain**

Sr. No.	Start RD	ID	Coordinates (Start)		Type of Rehab. Works	Length of Rehab. Work	Side	Design Parameters of Drain								Reference Drawing	
			Easting	Northing				Design Discharge	Type of Channel	Bed Width	Flow Depth	Bed Slope	Existing Bed Level	Design Bed Level	Existing Bank Level		Proposed Bank Level
(-)	(ft)	(-)	(ft)	(ft)	(-)	(ft)	(-)	(ft <sup>3</sup> /s)	(-)	(ft)	(ft)	(ft/ft)	(ft)	(ft)	(ft)	(ft)	(-)
1	5+000	RW-1	2252512	11608621	Bank protection	100	RS	40	Earthen	6	2.75	0.0004	572.58	570.60	576.60	578.35	4593/TD/061/DR/RW-03
2	10+590	RW-2	2247852	2246862	Section Cleaning	6090	BS	40		6	2.75	0.0004	575.10	572.66	579.30	580.41	4593/TD/061/DR/RW-01
3	11+650	RW-3	2246862	11608435	Bank Protection	300	LS	30		6	2.23	0.0005	575.63	573.64	579.83	580.87	4593/TD/061/DR/RW-03
4	26+000	RW-4	2240471	11606696	Section Cleaning	15410	BS	30		6	2.23	0.0005	582.80	580.82	587.00	588.05	4593/TD/061/DR/RW-01

\* RDs are taken from the Start of the proposed rehabilitation works  
 \* Section Cleaning = Clearing and Grubbing / Uprooting Sirkanda  
 \* Section Restoration = Bank Raising and Section Cleaning  
 \* Bank Protection = Side Retaining Wall / Stone Pitching  
 BS = Both Side  
 RS = Right Side  
 LS = Left Side

**NOTES:**

1. ALL RDs/Coordinates should be confirmed by site engineer before construction.
2. Drain Section shall be Restored As Per Approved L-Section.

**Table of Details of Proposed Restoration/Rehabilitation Works of Ketch Drain**

Sr. No.	Start RD*	ID	Coordinates (Start)		Type of Rehab. Works	Length of Rehab. Work	Side	Design Parameters of Drain (L-Section)							Reference Drawing	
			Easting	Northing				L	Design Discharge	Type of Channel	Bed Width	Flow Depth	Bed Slope	Bed Level		Bank Level
(-)	(ft)	(-)	(ft)	(ft)	(-)	(ft)	(-)	(ft <sup>3</sup> /s)	(-)	(ft)	(ft)	(ft/ft)	(ft)	(ft)	(-)	
1	11+998	RW-1	2237171	11607304	Section Cleaning	11998	BS	99.94	Earthen	10	4	0.00032	584.63	593.63	4593/TD/061/DR/RW-01	
2	14+350	RW-2	2236160	11609321		2352	BS	99.94		10	4	0.00034	585.48	594.48		
3	15+744	RW-3	2235139	11610400		1394	BS	99.94		10	4	0.00053	586.20	595.20		
4	21+694	RW-4	2232020	11615101		5950	BS	99.94		10	4	0.0001	586.00	595.00		
5	22+993	RW-5	2231659	11616310		1299	BS	99.94		10	4	0.0003	587.97	596.97		
6	31+050	RW-6	2227019	11621683		8057	BS	99.94		10	4	0.00014	588.96	597.96		
7	31+130	RW-7	2227067	11621772	Section Restoration	80	BS	99.94		10	4	0.00014	588.99	597.99	4593/TD/061/DR/RW-02	
8	44+710	RW-8	2227919	11635005	Section Cleaning	13580	BS	99.94		10	4	0.00014	590.86	599.86	4593/TD/061/DR/RW-01	
9	47+990	RW-9	2228927	11638047		3280	BS	99.94		10	4	0.00165	592.76	601.76		
10	49+899	RW-10	2228686	11639985		1909	BS	99.94		10	4	0.0008	591.25	600.25		
11	55+446	RW-11	2230132	11645301		5547	BS	99.94		10	4	0.00017	592.17	601.17		
12	58+996	RW-12	2232038	11647884	Section Restoration	3550	BS	99.94		10	4	0.00017	592.79	601.79	4593/TD/061/DR/RW-02	

\* RDs are taken from the Start of the proposed rehabilitation works

\* Section Cleaning = Clearing and Grubbing / Uprooting Sirkanda

\* Section Restoration = Bank Raising and Section Cleaning

\* Bank Protection = Side Retaining Wall / Stone Pitching

BS = Both Side

RS = Right Side

LS = Left Side

**NOTES:**

1. ALL RDs/Coordinates should be confirmed by site engineer before construction.
2. Drain Section shall be Restored As Per Approved L-Section.

EMERGENCY FLOOD ASSISTANCE PROJECT (EFAP)-KP  
"RECONSTRUCTION AND REHABILITATION OF IRRIGATION AND DRAINAGE SYSTEM AND FLOOD PROTECTION WORKS IN KHYBER PAKHTUNKHWA"



GOVERNMENT OF KHYBER  
PAKHTUNKHWA  
IRRIGATION DEPARTMENT

REV.	DATE	DESCRIPTION	BY	CHKD.	APPR.	APPROVED	N.A

**NES NATIONAL ENGINEERING SERVICES PAKISTAN (PVT) LIMITED**

HEAD OFFICE : NESPAK HOUSE, 1-C BLOCK N,  
MODEL TOWN EXTENSION, LAHORE PAKISTAN

**TABLE OF DETAILS  
FOR REHABILITATION OF DAMAGED / WASHED AWAY  
DRAINS SECTION OF KETCH DRAIN**

DATE: SEP, 2023	DRAWING NO. 4593/TD/061/TOD-12	REV. 1
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**Table of Details of Proposed Restoration/Rehabilitation Works of Bilot Creek**

Sr. No.	Start RD	ID	Coordinates (Start)		Type of Rehab. Works	Length of Rehab. Work	Side	Design Parameters of Drain								Reference Drawing		
			Easting	Northing				L	Q	Type of Channel	Bed Width	Flow Depth	Bed Slope	Existing Bed Level	Design Bed Level		Existing Bank Level	Proposed Bank Level
(-)	(ft)	(-)	(ft)	(ft)	(-)	(ft)	(-)	(ft <sup>3</sup> /s)	(-)	(ft)	(ft)	(ft/ft)	(ft)	(ft)	(ft)	(ft)	(-)	
1	2	5	6	7	10	11	12	9	13	14	15	17	19	20	21	22	23	
1	14+000	RW-1	2310686	11718799	Bank Protection	150	LS	68	Earthen	8.00	4.00	0.00018	603.73	601.46	607.32	608.46	4593/TD/061/DR/RW-03 (B)	
2	24+000	RW-2	2313945	11727048	Section Restoration	24000	BS	68		8.00	4.00	1.00018	605.69	603.51	609.96	610.51	4593/TD/061/DR/RW-02	
3	44+000	RW-3	2307462	11708630		20000	BS	60		7.00	3.90	0.00018	609.29	610.47	613.56	617.37		
4	64+000	RW-4	2308676	11711734		20000	BS	50		6.50	3.70	0.00018	619.09	623.35	622.04	630.05		
5	80+000	RW-5	2323789	11745849		16000	BS	43		6.00	3.70	0.00018	621.87	618.89	623.54	625.59		
6	103+000	RW-6	2355991	11784624		23000	BS	43		6.00	3.50	0.00018	625.87	619.86	627.75	628.36		

\* RDs are taken from the Start of the proposed rehabilitation works  
 \* Section Cleaning = Clearing and Grubbing / Uprooting Sirkanda  
 \* Section Restoration = Bank Raising and Section Cleaning  
 \* Bank Protection = Side Retaining Wall / Stone Pitching  
 BS = Both Side  
 RS = Right Side  
 LS = Left Side

**NOTES:**

1. ALL RDs/Coordinates should be confirmed by site engineer before construction.
2. Drain Section shall be Restored As Per Approved L-Section.

EMERGENCY FLOOD ASSISTANCE PROJECT (EFAP)-KP  
 "RECONSTRUCTION AND REHABILITATION OF IRRIGATION AND DRAINAGE SYSTEM AND FLOOD PROTECTION WORKS IN KHYBER PAKHTUNKHWA"



GOVERNMENT OF KHYBER  
 PAKHTUNKHWA  
 IRRIGATION DEPARTMENT

REV.	DATE	DESCRIPTION	BY	CKD.	APPR.	APPROVED	N.A

**NES NATIONAL ENGINEERING SERVICES PAKISTAN (PVT) LIMITED**

HEAD OFFICE : NESPAK HOUSE, 1-C BLOCK N,  
 MODEL TOWN EXTENSION, LAHORE PAKISTAN

**TABLE OF DETAILS  
 FOR REHABILITATION OF DAMAGED / WASHED AWAY  
 DRAINS SECTION OF BILOT CREEK DRAIN**

DATE:	DRAWING NO.	REV.
SEP, 2023	4593/TD/061/TOD-13	1



**REHABILITATION WORKS OF CANALS IN  
PAHARPUR IRRIGATION DIVISION DERA  
ISMAIL KHAN**

**LOCATION MAPS & TABLE OF DETAILS OF  
DISTRIBUTARIES AND MINORS**

## LOT-1 CANALS IN PAHARPUR IRRIGATION DIVISION DERA ISMAIL KHAN

### LIST OF LOCATION MAPS AND TODs FOR PROPOSED REHABILITATION WORKS OF DISTRIBUTARIES AND MINOR

SR. NO.	DRAWING TITLE	DRAWING NO.
1	LOCATION MAP OF DISTY NO.2	4593/TD/061/LM-14
2	TABLE OF DIMENSIONS OF DISTY NO.2	4593/TD/061/TOD-14
3	LOCATION MAP OF DISTY NO.3	4593/TD/061/LM-15
4	TABLE OF DIMENSIONS OF DISTY NO.3	4593/TD/061/TOD-15
5	LOCATION MAP OF GIRSAL MINOR	4593/TD/061/LM-16
6	TABLE OF DIMENSIONS OF GIRSAL MINOR	4593/TD/061/TOD-16
7	LOCATION MAP OF GIRSAL FEEDER	4593/TD/061/LM-17
8	TABLE OF DIMENSIONS OF GIRSAL FEEDER	4593/TD/061/TOD-17
9	LOCATION MAP OF SHAH KOT MINOR	4593/TD/061/LM-18
10	TABLE OF DIMENSIONS OF SHAH KOT MINOR	4593/TD/061/TOD-18
11	LOCATION MAP OF SHAH KOT FEEDER	4593/TD/061/LM-19
12	TABLE OF DIMENSIONS OF SHAH KOT FEEDER	4593/TD/061/TOD-19
13	LOCATION MAP OF BUND KURAI MINOR	4593/TD/061/LM-20
14	TABLE OF DIMENSIONS OF BUND KURAI MINOR	4593/TD/061/TOD-20
15	LOCATION MAP OF BUND KURAI BRANCH	4593/TD/061/LM-21
16	TABLE OF DIMENSIONS OF BUND KURAI BRANCH	4593/TD/061/TOD-21
17	LOCATION MAP OF KETCH MINOR	4593/TD/061/LM-22
18	TABLE OF DIMENSIONS OF KETCH MINOR	4593/TD/061/TOD-22
19	LOCATION MAP OF PAHARPUR DISTY	4593/TD/061/LM-23
20	TABLE OF DIMENSIONS OF PAHARPUR DISTY	4593/TD/061/TOD-23
21	LOCATION MAP OF PAHARPUR CANAL (RD 118500-122300)	4593/TD/061/LM-24
22	TABLE OF DIMENSIONS OF PAHARPUR CANAL (RD 118500-122300)	4593/TD/061/TOD-24
23	LOCATION MAP OF PAHARPUR CANAL (RD 130000-160000)	4593/TD/061/LM-25
24	TABLE OF DIMENSIONS OF PAHARPUR CANAL (RD 30000-160000)	4593/TD/061/TOD-25
25	LOCATION MAP OF CIVIL MINOR	4593/TD/061/LM-26
26	TABLE OF DIMENSIONS OF CIVIL MINOR	4593/TD/061/TOD-26
27	LOCATION MAP OF RAKH DISTY	4593/TD/061/LM-27
28	TABLE OF DIMENSIONS OF RAKH DISTY	4593/TD/061/TOD-27
29	LOCATION MAP OF KATHGARH MINOR	4593/TD/061/LM-28
30	TABLE OF DIMENSIONS OF KATHGARH MINOR	4593/TD/061/TOD-28
31	LOCATION MAP OF BIGWANI MINOR	4593/TD/061/LM-29
32	TABLE OF DIMENSIONS OF BIGWANI MINOR	4593/TD/061/TOD-29
33	LOCATION MAP OF TAKWRAH MINOR	4593/TD/061/LM-30
34	TABLE OF DIMENSIONS OF TAKWRAH MINOR	4593/TD/061/TOD-30

EMERGENCY FLOOD ASSISTANCE PROJECT (EFAP)-KP  
"RECONSTRUCTION AND REHABILITATION OF  
IRRIGATION AND DRAINAGE SYSTEM AND FLOOD  
PROTECTION WORKS IN KHYBER PAKHUNKHWA"



**GOVERNMENT OF KHYBER  
PAKHTUNKHWA  
IRRIGATION DEPARTMENT**

REV.	DATE	DESCRIPTION	BY	CHKD.	APPR.	DRAWN	FA
						SUBMITTED	M.M
						RECOMMENDED	Q.L
						CHKD/VER	F.R.K
						APPROVED	N.A

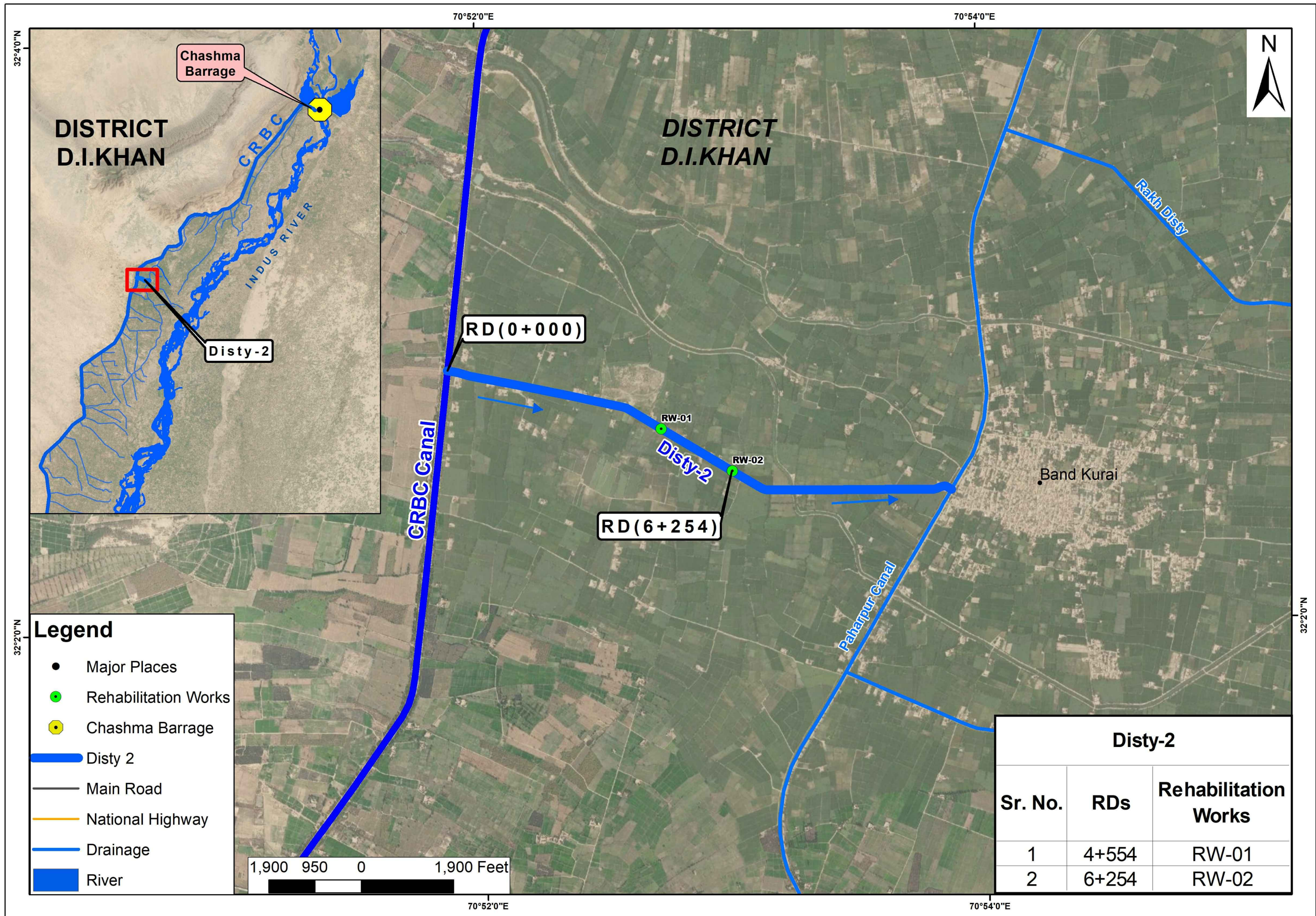
**NATIONAL ENGINEERING  
SERVICES PAKISTAN (PVT)  
LIMITED**

HEAD OFFICE : NESPAK HOUSE, 1-C BLOCK N,  
MODEL TOWN EXTENSION, LAHORE PAKISTAN

**LIST OF LOCATION MAPS AND TODs OF  
DISTIES AND MINORS**

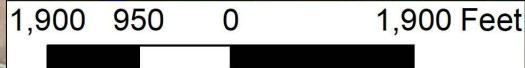
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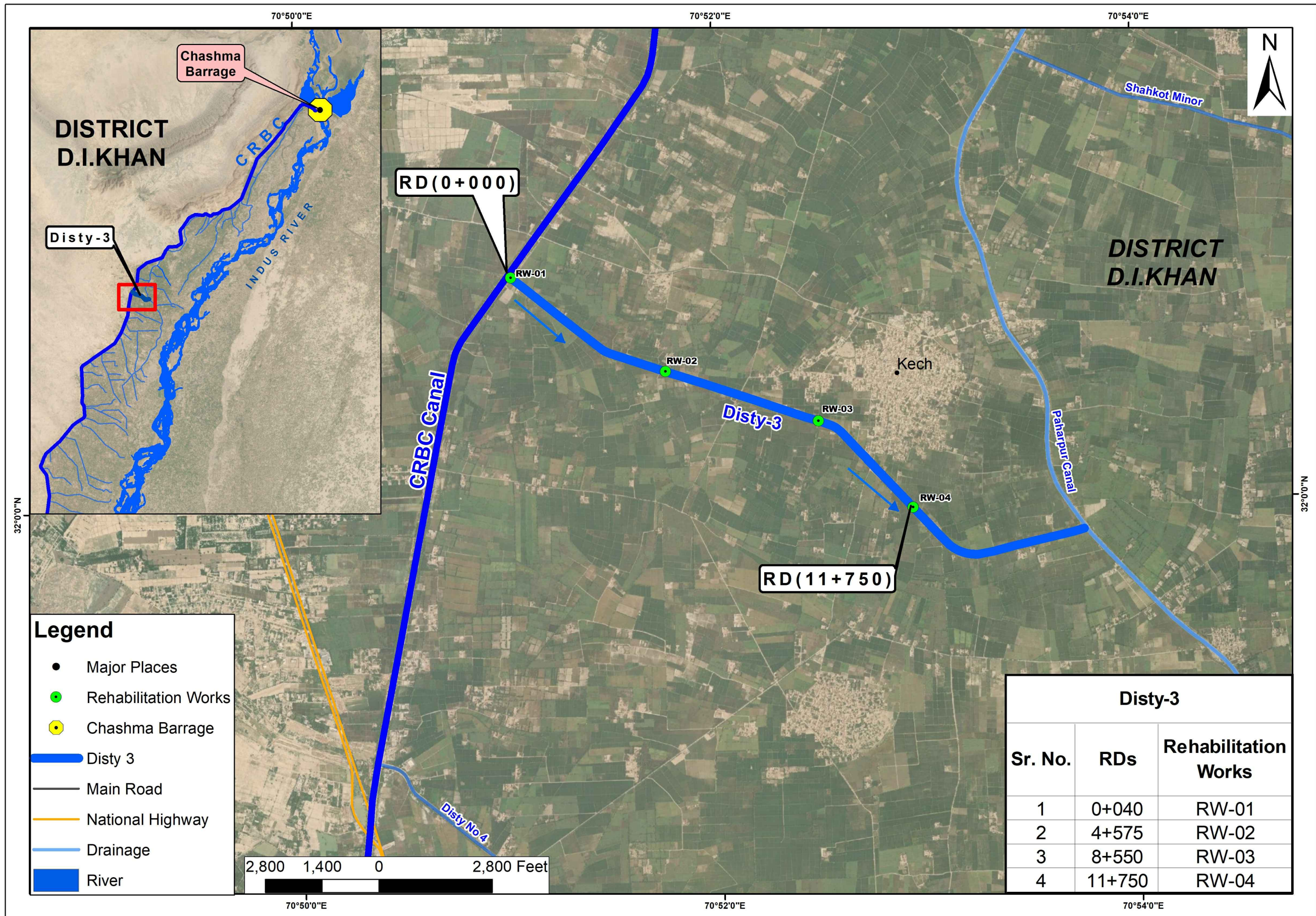
- Major Places
- Rehabilitation Works
- Chashma Barrage
- ▬ Disty 2
- ▬ Main Road
- ▬ National Highway
- ▬ Drainage
- ▬ River



Disty-2		
Sr. No.	RDs	Rehabilitation Works
1	4+554	RW-01
2	6+254	RW-02

NOTE:-  
RDs. ARE IN FEET





NOTE:-  
RDs. ARE IN FEET

EMERGENCY FLOOD ASSISTANCE PROJECT (EFAP)-KP  
"RECONSTRUCTION AND REHABILITATION OF  
IRRIGATION AND DRAINAGE SYSTEM AND FLOOD  
PROTECTION WORKS IN KHYBER PAKHTUNKHWA"



GOVERNMENT OF KHYBER  
PAKHTUNKHWA  
IRRIGATION DEPARTMENT

REV.	DATE	DESCRIPTION	BY	GKD.	APPR.	APPROVED	N.A.
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**NESPAC** NATIONAL ENGINEERING  
SERVICES PAKISTAN (PVT)  
LIMITED

HEAD OFFICE : NESPAK HOUSE, 1-C BLOCK N,  
MODEL TOWN EXTENSION, LAHORE PAKISTAN

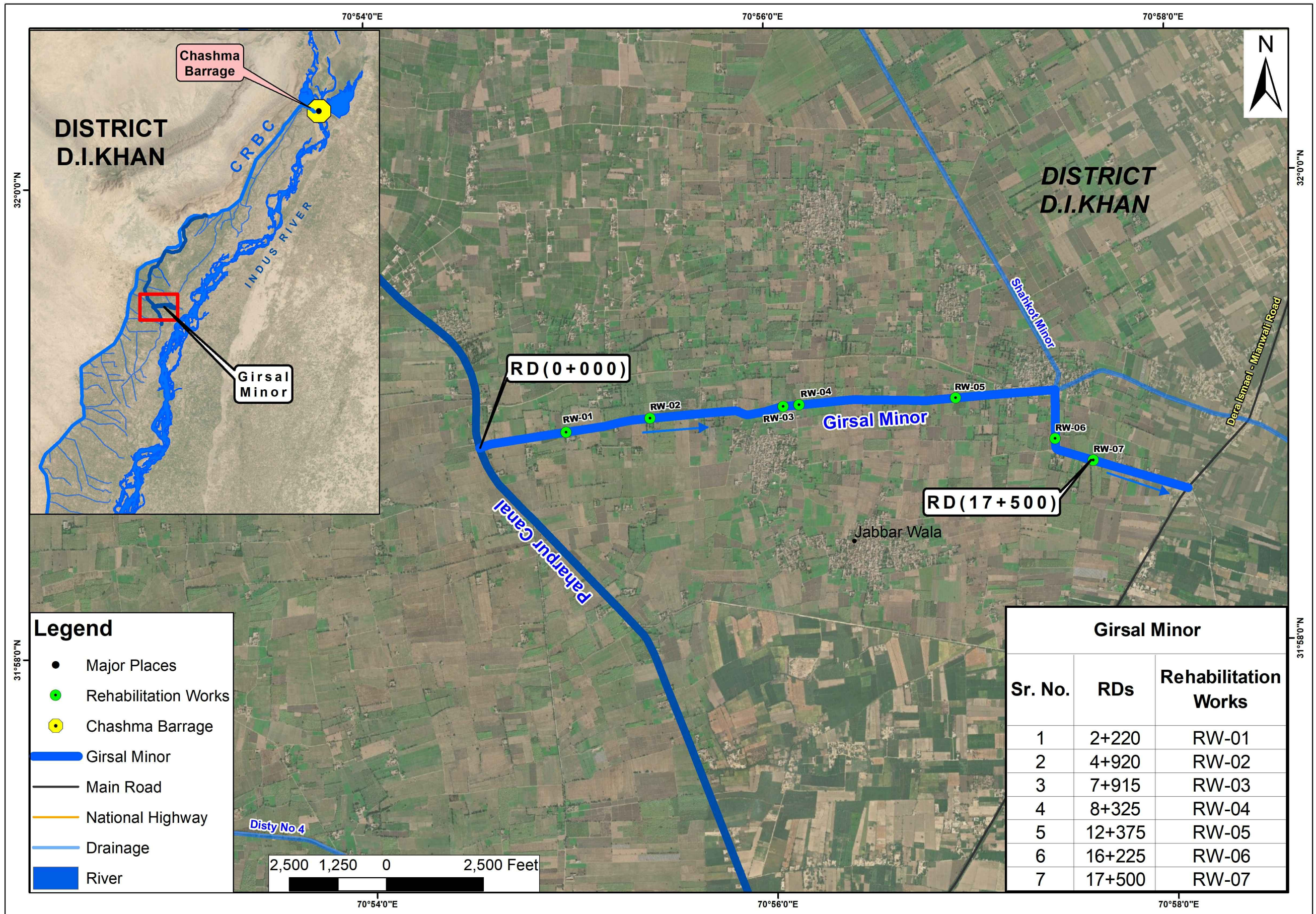
LOCATION MAP  
FOR REHABILITATION OF DAMAGED / WASHED AWAY  
CANAL SECTION OF DISTY-3

DATE:  
SEP, 2023

DRAWING NO.  
4593/TD/061/LM-15

REV.  
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Girsal Minor		
Sr. No.	RDs	Rehabilitation Works
1	2+220	RW-01
2	4+920	RW-02
3	7+915	RW-03
4	8+325	RW-04
5	12+375	RW-05
6	16+225	RW-06
7	17+500	RW-07

NOTE:--  
RDs. ARE IN FEET

EMERGENCY FLOOD ASSISTANCE PROJECT (EFAP)-KP  
"RECONSTRUCTION AND REHABILITATION OF  
IRRIGATION AND DRAINAGE SYSTEM AND FLOOD  
PROTECTION WORKS IN KHYBER PAKHTUNKHWA"



GOVERNMENT OF KHYBER  
PAKHTUNKHWA  
IRRIGATION DEPARTMENT

REV.	DATE	DESCRIPTION	BY	CKD.	APPR.	APPROVED	N.A

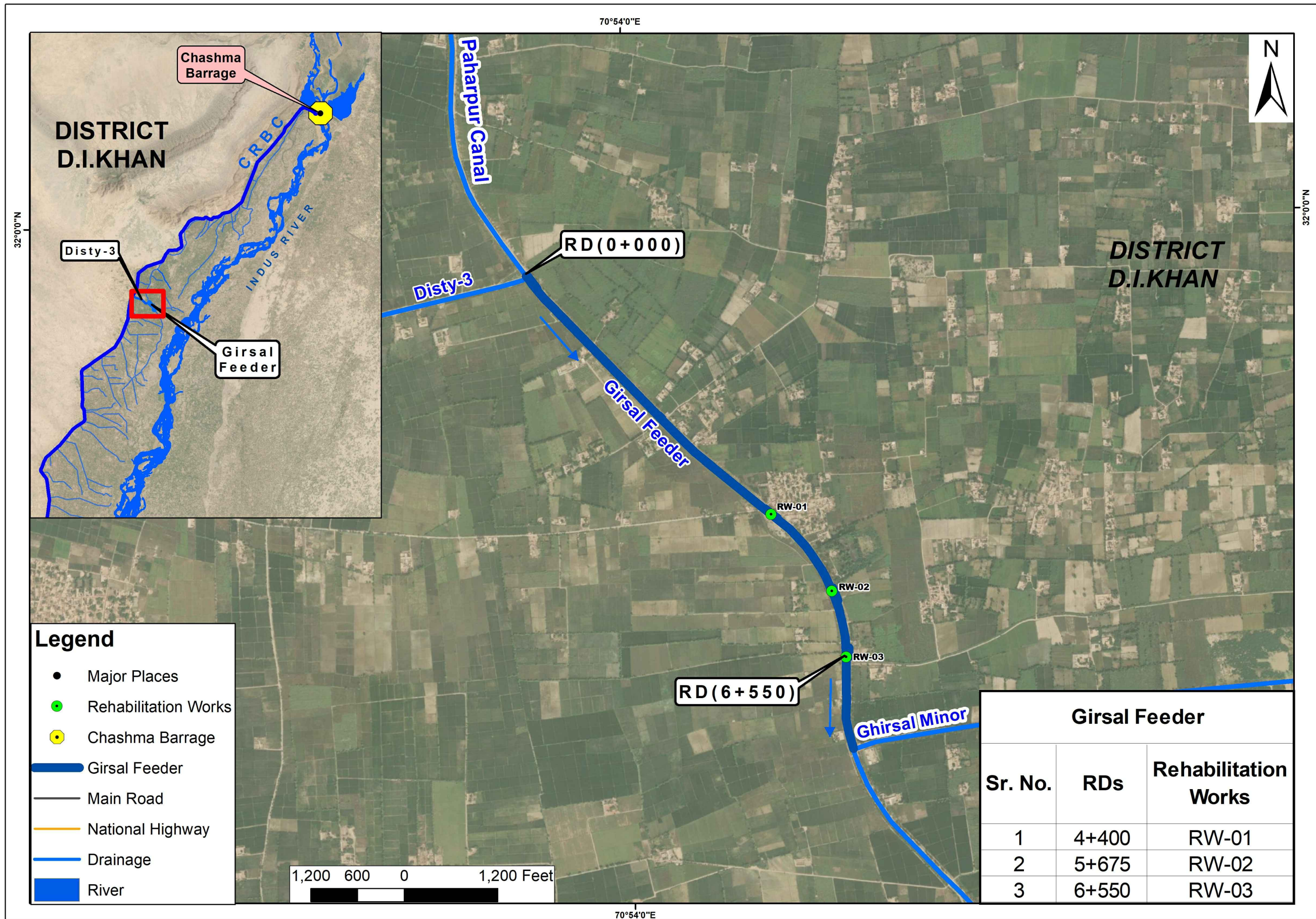
**NESPAK** NATIONAL ENGINEERING  
SERVICES PAKISTAN (PVT)  
LIMITED

HEAD OFFICE : NESPAK HOUSE, 1-C BLOCK N,  
MODEL TOWN EXTENSION, LAHORE PAKISTAN

LOCATION MAP  
FOR REHABILITATION OF DAMAGED / WASHED AWAY  
DRAINS SECTION OF GIRSAL MINOR

DATE: SEP, 2023  
DRAWING NO. 4593/TD/061/LM-16  
REV.





NOTE:-  
RDs. ARE IN FEET

EMERGENCY FLOOD ASSISTANCE PROJECT (EFAP)-KP  
"RECONSTRUCTION AND REHABILITATION OF  
IRRIGATION AND DRAINAGE SYSTEM AND FLOOD  
PROTECTION WORKS IN KHYBER PAKHTUNKHWA"



GOVERNMENT OF KHYBER  
PAKHTUNKHWA  
IRRIGATION DEPARTMENT

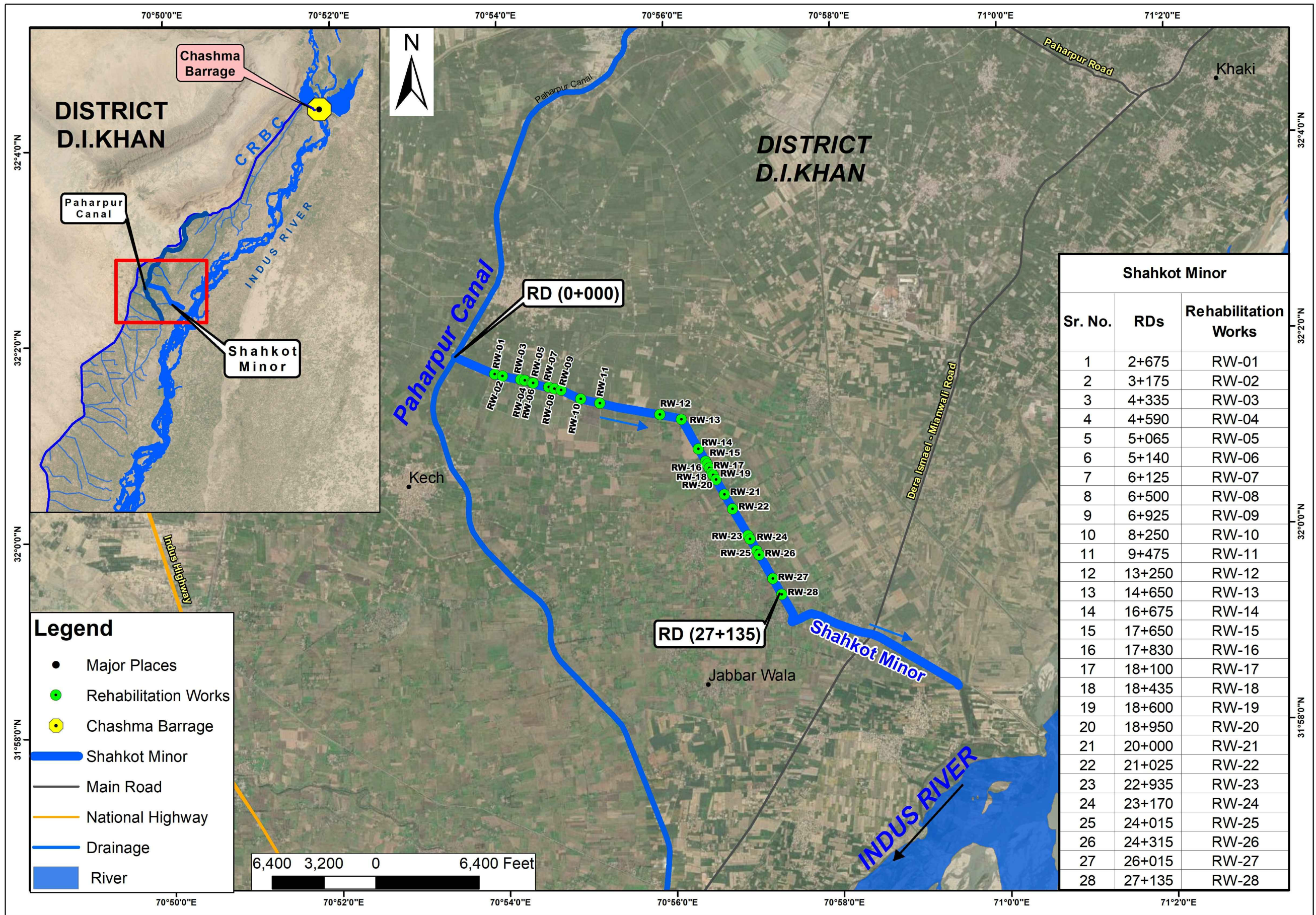
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**NEE NATIONAL ENGINEERING SERVICES PAKISTAN (PVT) LIMITED**  
HEAD OFFICE : NESPAK HOUSE, 1-C BLOCK N,  
MODEL TOWN EXTENSION, LAHORE PAKISTAN

LOCATION MAP  
FOR REHABILITATION OF DAMAGED / WASHED AWAY  
DRAINS SECTION OF GIRSAL FEEDER

DATE: SEP, 2023  
DRAWING NO. 4593/TD/061/LM-17  
REV. ⬆

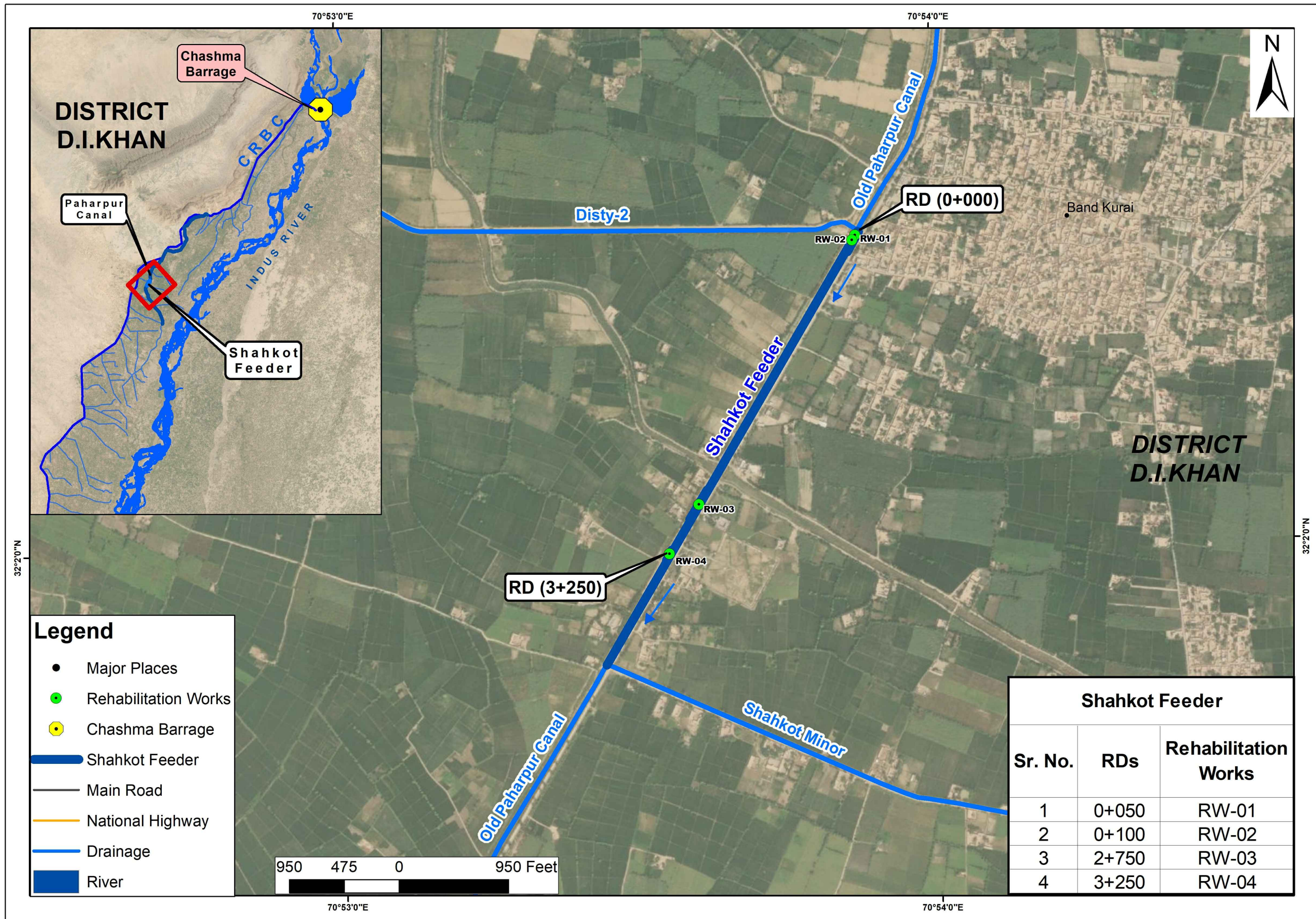




Shahkot Minor		
Sr. No.	RDs	Rehabilitation Works
1	2+675	RW-01
2	3+175	RW-02
3	4+335	RW-03
4	4+590	RW-04
5	5+065	RW-05
6	5+140	RW-06
7	6+125	RW-07
8	6+500	RW-08
9	6+925	RW-09
10	8+250	RW-10
11	9+475	RW-11
12	13+250	RW-12
13	14+650	RW-13
14	16+675	RW-14
15	17+650	RW-15
16	17+830	RW-16
17	18+100	RW-17
18	18+435	RW-18
19	18+600	RW-19
20	18+950	RW-20
21	20+000	RW-21
22	21+025	RW-22
23	22+935	RW-23
24	23+170	RW-24
25	24+015	RW-25
26	24+315	RW-26
27	26+015	RW-27
28	27+135	RW-28

NOTE:-  
RDs. ARE IN FEET





Shahkot Feeder		
Sr. No.	RDs	Rehabilitation Works
1	0+050	RW-01
2	0+100	RW-02
3	2+750	RW-03
4	3+250	RW-04

NOTE:-  
RDs. ARE IN FEET

EMERGENCY FLOOD ASSISTANCE PROJECT (EFAP)-KP  
"RECONSTRUCTION AND REHABILITATION OF  
IRRIGATION AND DRAINAGE SYSTEM AND FLOOD  
PROTECTION WORKS IN KHYBER PAKHTUNKHWA"



GOVERNMENT OF KHYBER  
PAKHTUNKHWA  
IRRIGATION DEPARTMENT

								DRAWN	K.A
								SUBMITTED	M.M
								RECOMMENDED	Q.L
								CHD/VER	F.R.K
REV.	DATE	DESCRIPTION	BY	GKD.	APPR.	APPROVED			N.A

**NEE** NATIONAL ENGINEERING  
**PAK** SERVICES PAKISTAN (PVT)  
LIMITED

HEAD OFFICE : NESPAK HOUSE, 1-C BLOCK N,  
MODEL TOWN EXTENSION, LAHORE PAKISTAN

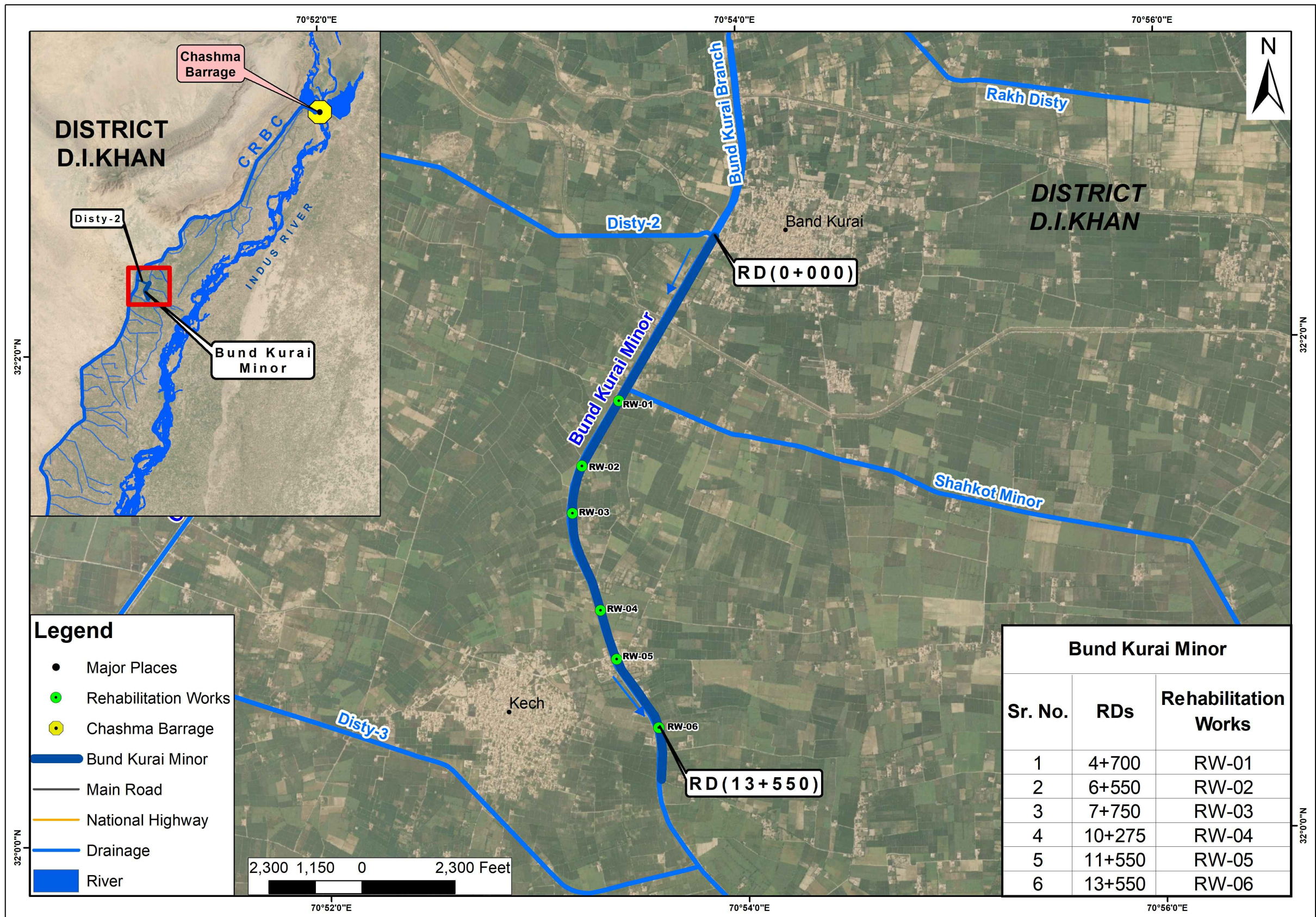
LOCATION MAP  
FOR REHABILITATION OF DAMAGED / WASHED AWAY  
CANAL SECTION OF SHAHKOT FEEDER

DATE:  
SEP, 2023

DRAWING NO.  
4593/TD/061/LM-19

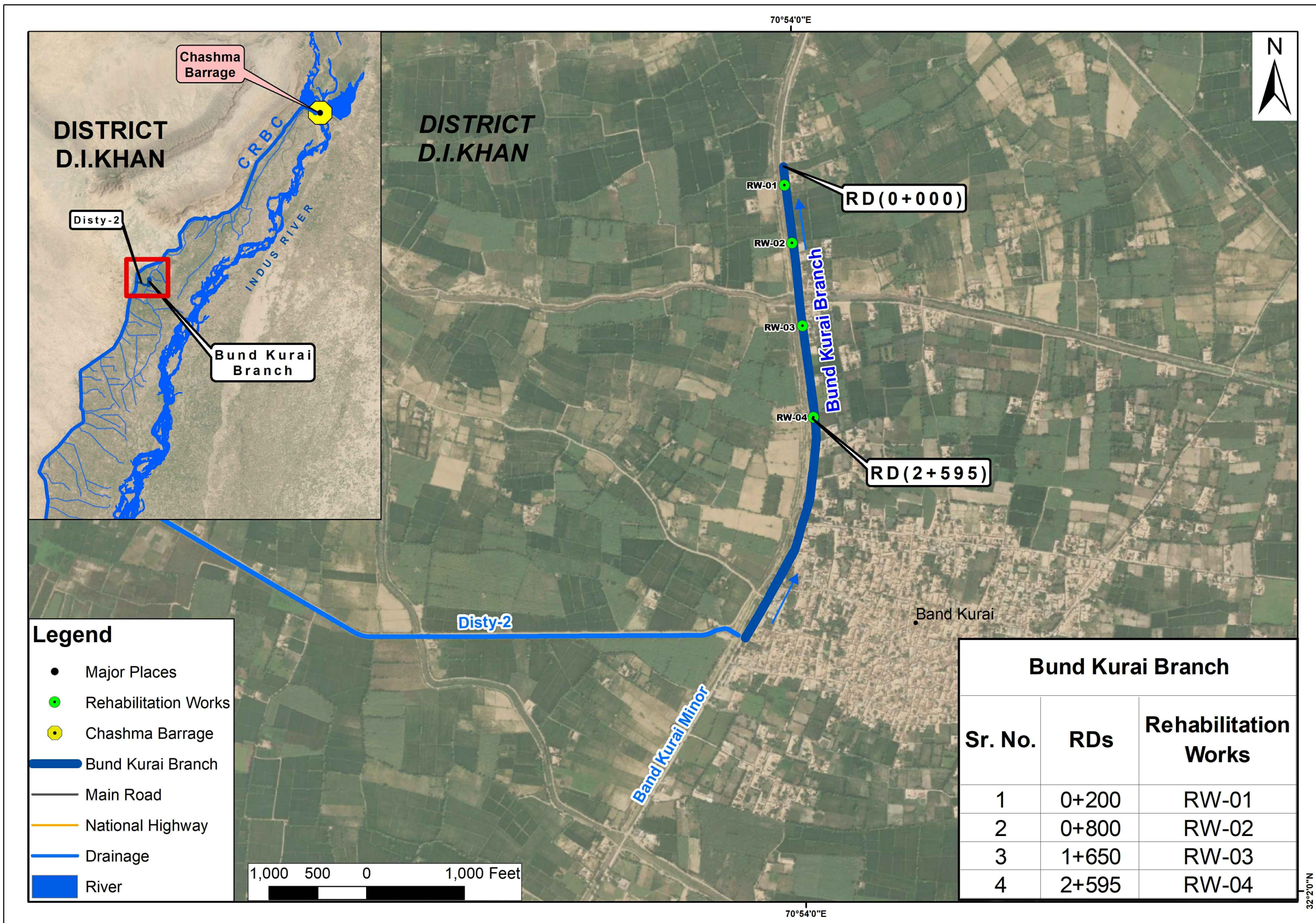
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NOTE:--  
RDs. ARE IN FEET





Bund Kurai Branch		
Sr. No.	RDs	Rehabilitation Works
1	0+200	RW-01
2	0+800	RW-02
3	1+650	RW-03
4	2+595	RW-04

NOTE:-  
RDs. ARE IN FEET

EMERGENCY FLOOD ASSISTANCE PROJECT (EFAP)-KP  
"RECONSTRUCTION AND REHABILITATION OF  
IRRIGATION AND DRAINAGE SYSTEM AND FLOOD  
PROTECTION WORKS IN KHYBER PAKHUNKHWA"

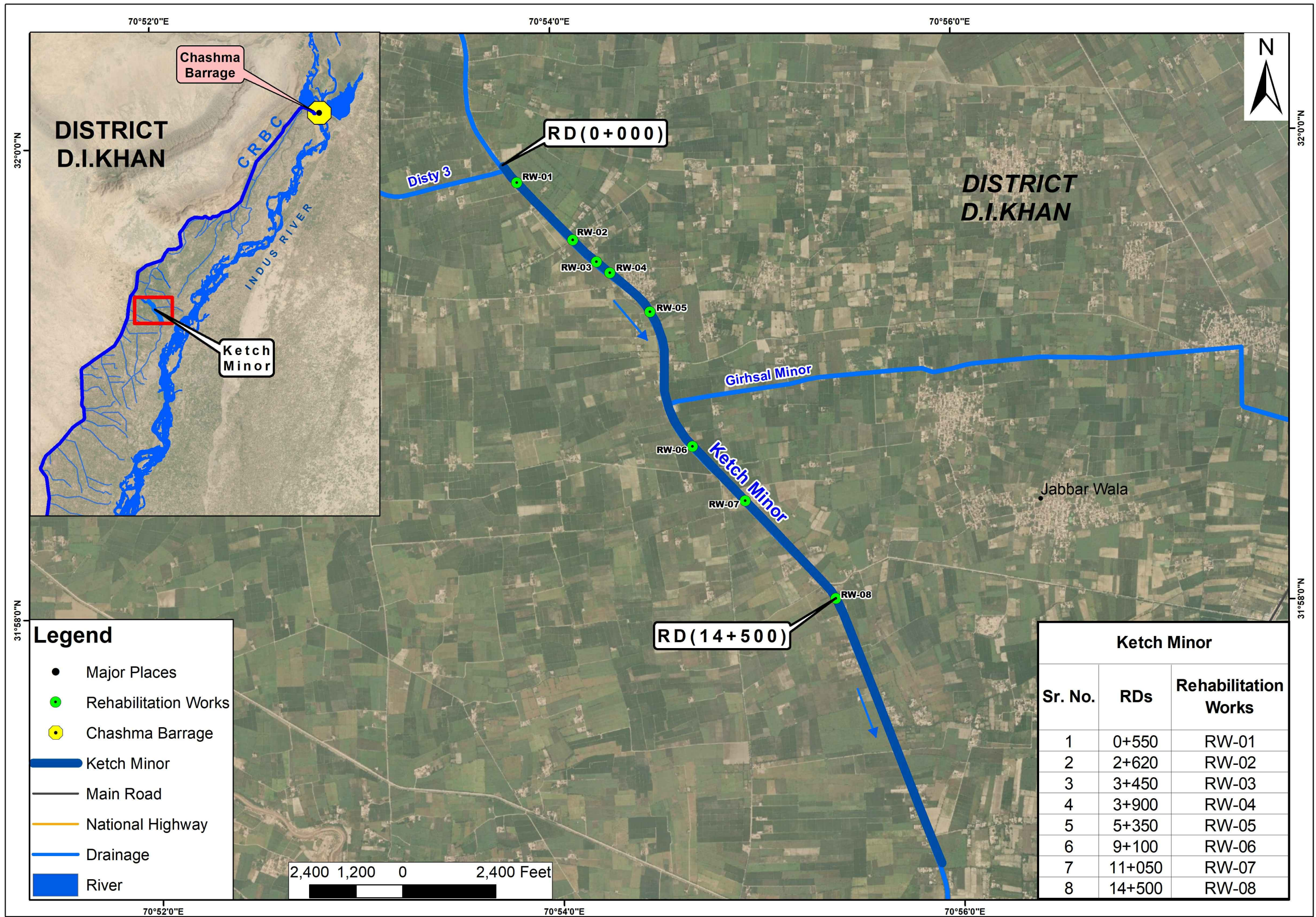
GOVERNMENT OF KHYBER  
PAKHTUNKHWA  
IRRIGATION DEPARTMENT

REV.	DATE	DESCRIPTION	BY	CKD.	APPR.	APPROVED	NA
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**NES** NATIONAL ENGINEERING  
**PAC** SERVICES PAKISTAN (PVT)  
LIMITED  
HEAD OFFICE : NESPAK HOUSE, 1-C BLOCK N,  
MODEL TOWN EXTENSION, LAHORE PAKISTAN

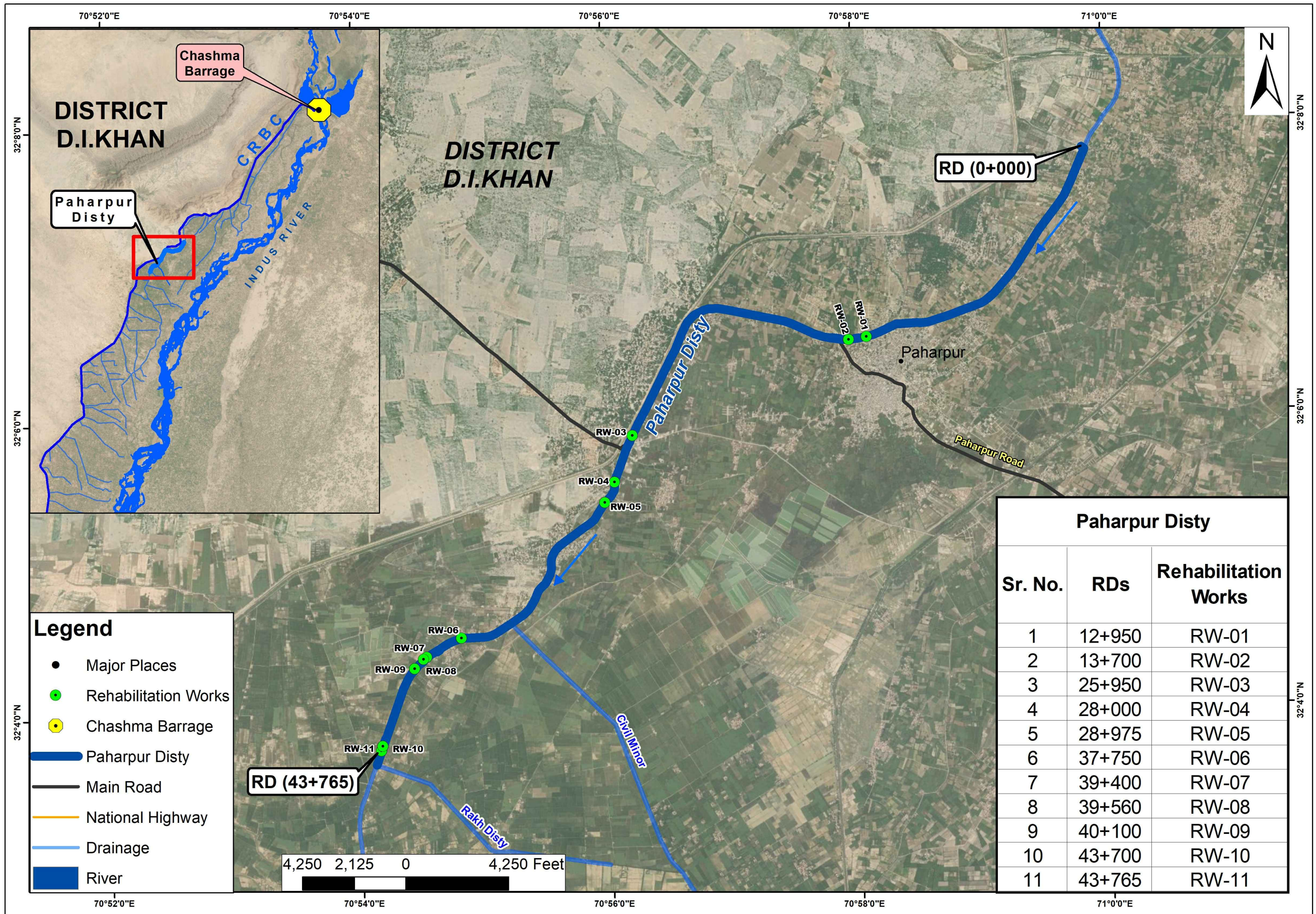
LOCATION MAP  
FOR REHABILITATION OF DAMAGED / WASHED AWAY  
CANAL SECTION OF BUND KURAI BRANCH  
DATE: SEP, 2023  
DRAWING NO. 4593/TD/061/LM-21  
REV.





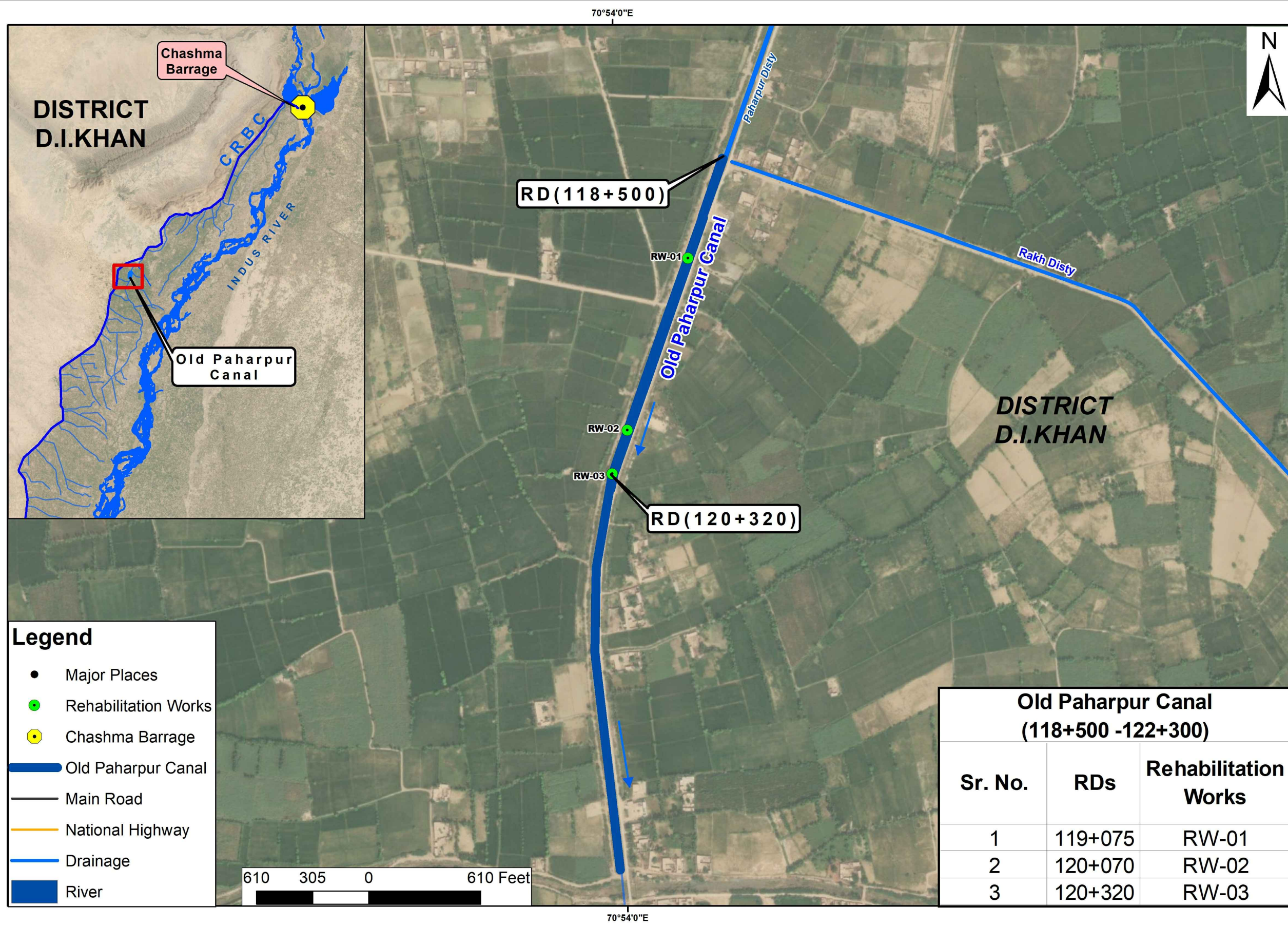
NOTE:-  
RDs. ARE IN FEET





NOTE:-  
RDs. ARE IN FEET

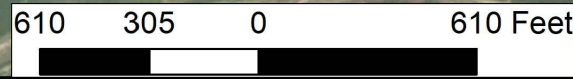




Old Paharpur Canal (118+500 -122+300)		
Sr. No.	RDs	Rehabilitation Works
1	119+075	RW-01
2	120+070	RW-02
3	120+320	RW-03

**Legend**

- Major Places
- Rehabilitation Works
- Chashma Barrage
- Old Paharpur Canal
- Main Road
- National Highway
- Drainage
- River



NOTE:-  
RDs. ARE IN FEET

EMERGENCY FLOOD ASSISTANCE PROJECT (EFAP)-KP  
"RECONSTRUCTION AND REHABILITATION OF  
IRRIGATION AND DRAINAGE SYSTEM AND FLOOD  
PROTECTION WORKS IN KHYBER PAKHTUNKHWA"

GOVERNMENT OF KHYBER  
PAKHTUNKHWA  
IRRIGATION DEPARTMENT

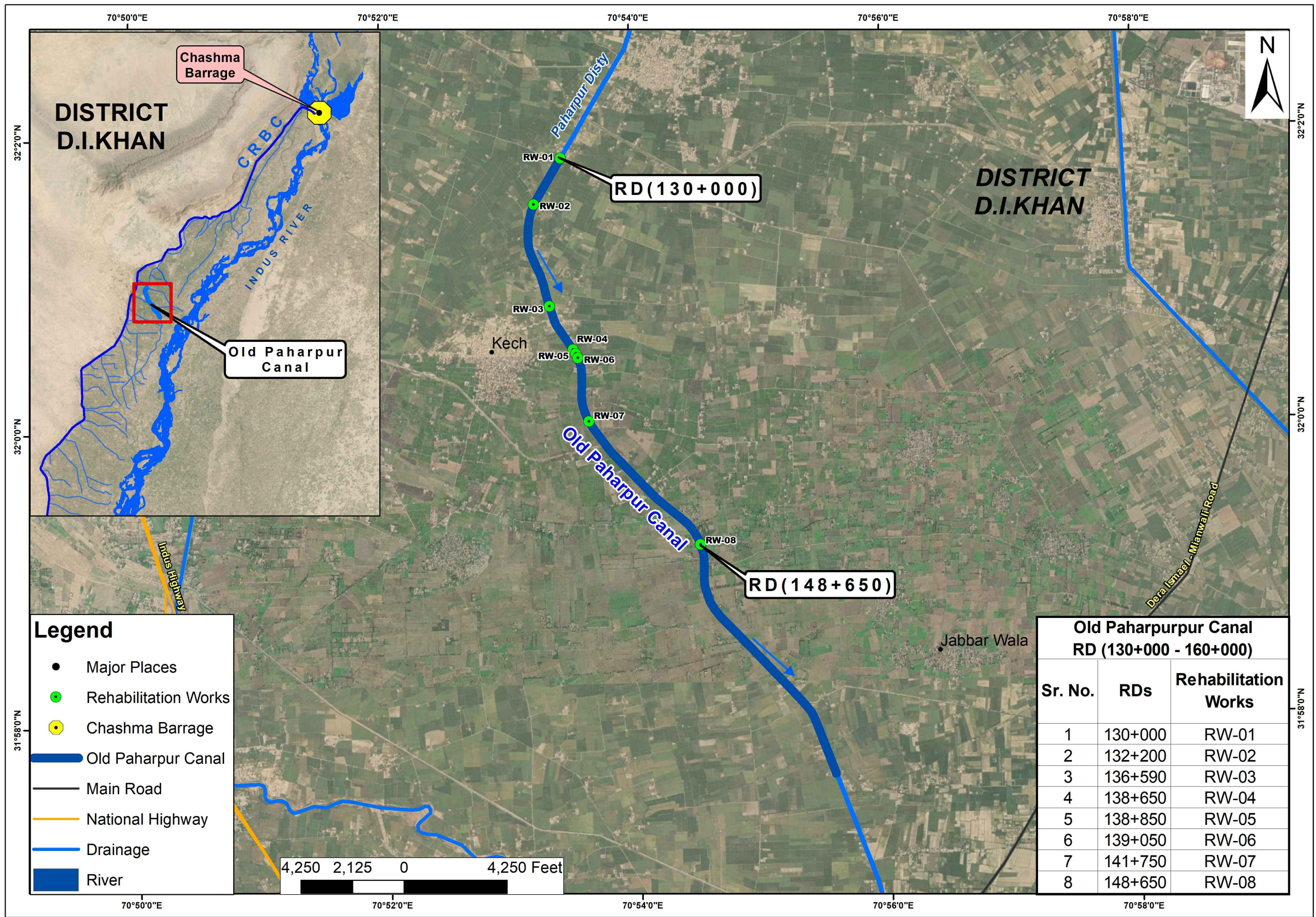
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**NESPAK NATIONAL ENGINEERING SERVICES PAKISTAN (PVT) LIMITED**  
HEAD OFFICE : NESPAK HOUSE, 1-C BLOCK N,  
MODEL TOWN EXTENSION, LAHORE PAKISTAN

LOCATION MAP  
FOR REHABILITATION OF DAMAGED / WASHED AWAY  
CANAL SECTION OF OLD PAHARPUR CANAL  
RD (118+500-122+300) RD (110+000-124+000) IN REACHES

DATE: SEP, 2023  
DRAWING NO. 4593/TD/061/LM-24  
REV.

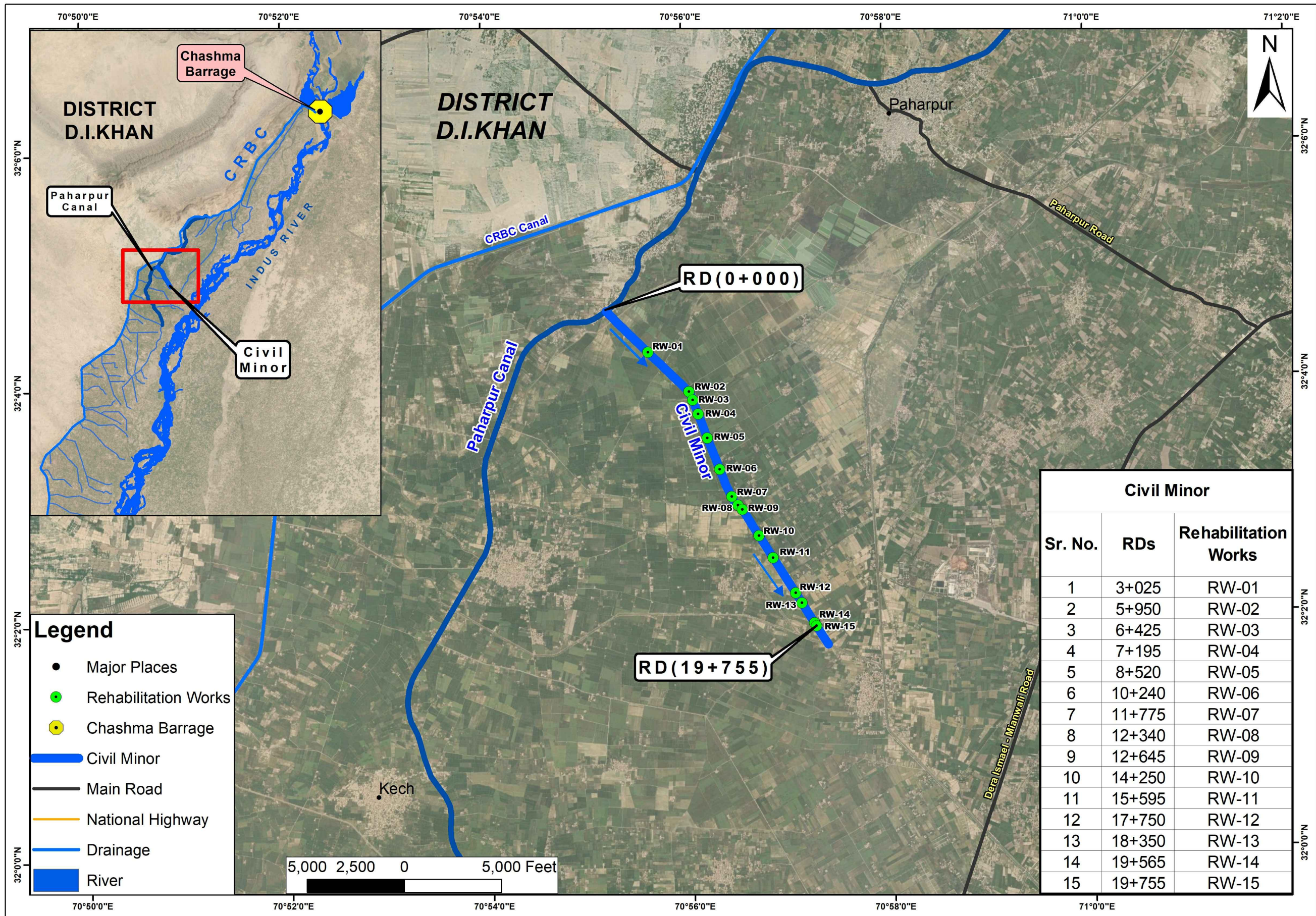




Old Paharpur Canal RD (130+000 - 160+000)		
Sr. No.	RDs	Rehabilitation Works
1	130+000	RW-01
2	132+200	RW-02
3	136+590	RW-03
4	138+650	RW-04
5	138+850	RW-05
6	139+050	RW-06
7	141+750	RW-07
8	148+650	RW-08

NOTE:-  
RDs. ARE IN FEET

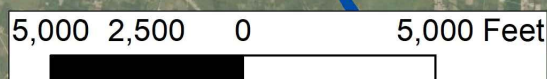




Civil Minor		
Sr. No.	RDs	Rehabilitation Works
1	3+025	RW-01
2	5+950	RW-02
3	6+425	RW-03
4	7+195	RW-04
5	8+520	RW-05
6	10+240	RW-06
7	11+775	RW-07
8	12+340	RW-08
9	12+645	RW-09
10	14+250	RW-10
11	15+595	RW-11
12	17+750	RW-12
13	18+350	RW-13
14	19+565	RW-14
15	19+755	RW-15

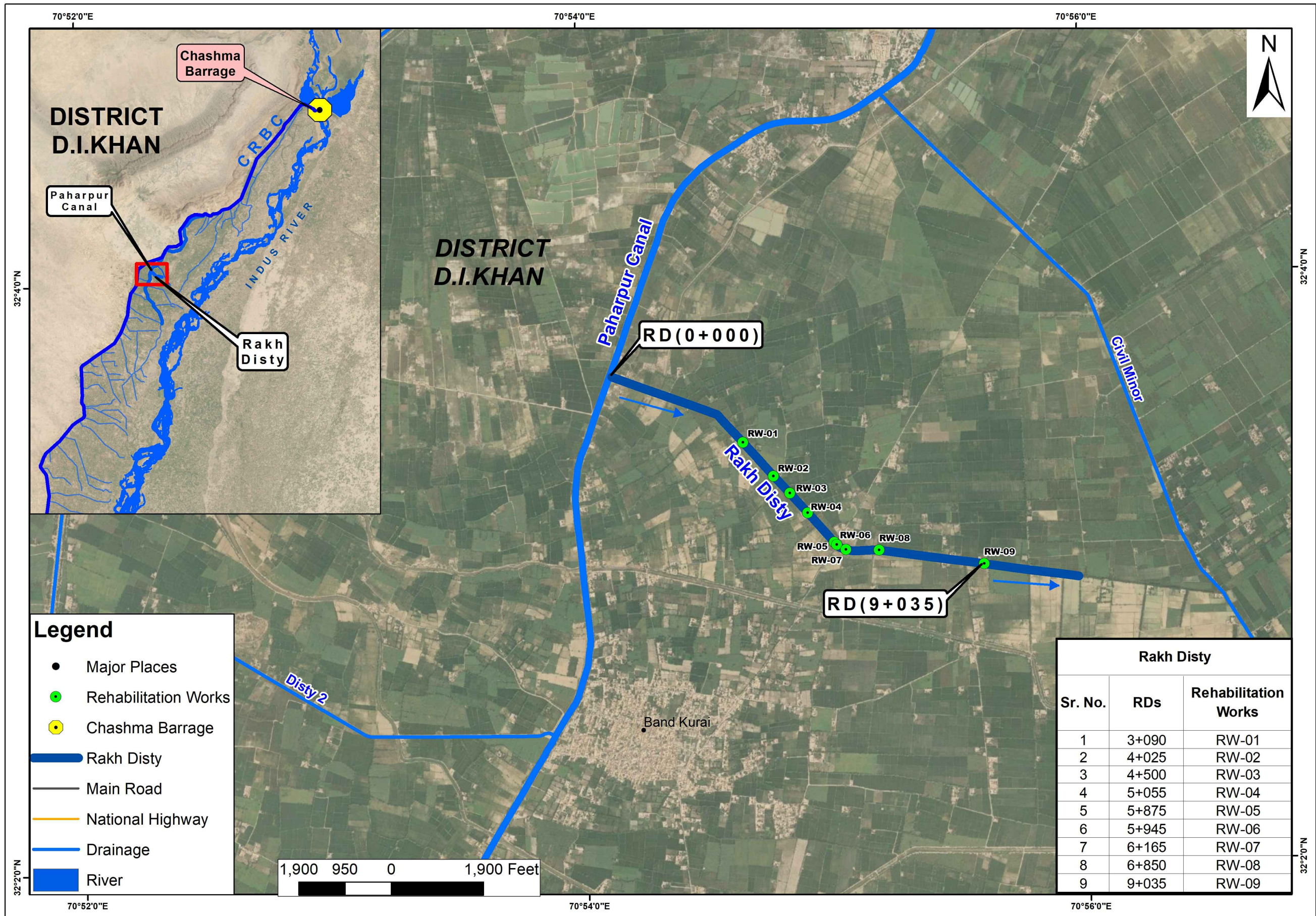
**Legend**

- Major Places
- Rehabilitation Works
- Chashma Barrage
- ▬ Civil Minor
- ▬ Main Road
- ▬ National Highway
- ▬ Drainage
- ▬ River



NOTE:-  
RDs. ARE IN FEET





**Legend**

- Major Places
- Rehabilitation Works
- Chashma Barrage
- ▬ Rakh Disty
- ▬ Main Road
- ▬ National Highway
- ▬ Drainage
- ▬ River

Rakh Disty		
Sr. No.	RDs	Rehabilitation Works
1	3+090	RW-01
2	4+025	RW-02
3	4+500	RW-03
4	5+055	RW-04
5	5+875	RW-05
6	5+945	RW-06
7	6+165	RW-07
8	6+850	RW-08
9	9+035	RW-09

NOTE:-  
RDs. ARE IN FEET

EMERGENCY FLOOD ASSISTANCE PROJECT (EFAP)-KP  
"RECONSTRUCTION AND REHABILITATION OF  
IRRIGATION AND DRAINAGE SYSTEM AND FLOOD  
PROTECTION WORKS IN KHYBER PAKHTUNKHWA"



GOVERNMENT OF KHYBER  
PAKHTUNKHWA  
IRRIGATION DEPARTMENT

REV.	DATE	DESCRIPTION	BY	CKD.	APPR.	APPROVED	N.A

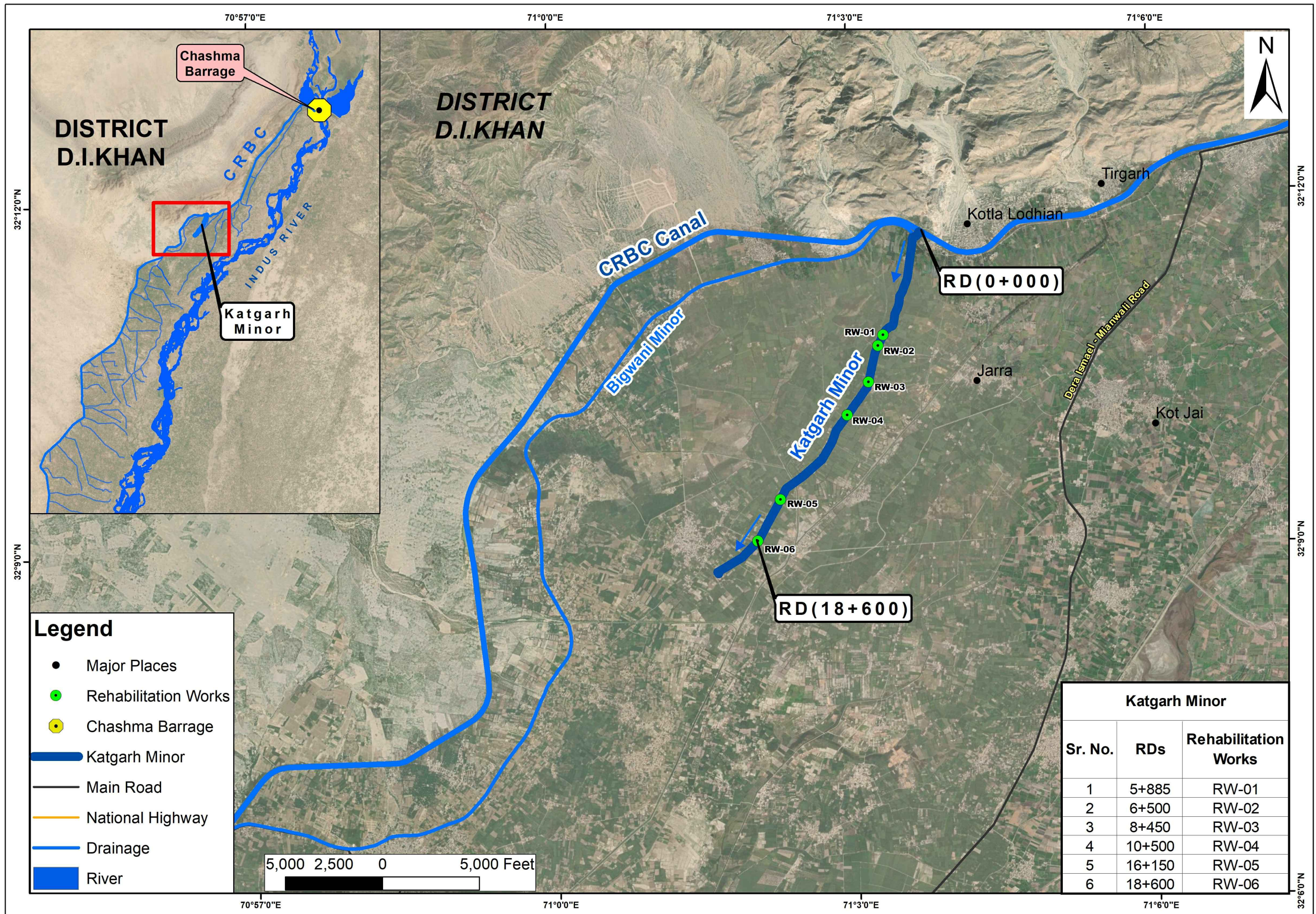
**NESPAC** NATIONAL ENGINEERING  
SERVICES PAKISTAN (PVT)  
LIMITED

HEAD OFFICE : NESPAK HOUSE, 1-C BLOCK N,  
MODEL TOWN EXTENSION, LAHORE PAKISTAN

LOCATION MAP  
FOR REHABILITATION OF DAMAGED / WASHED AWAY  
CANAL SECTION OF RAKH DISTY

DATE: SEP, 2023  
DRAWING NO. 4593/TD/061/LM-27  
REV. 1





NOTE:-  
RDs. ARE IN FEET

EMERGENCY FLOOD ASSISTANCE PROJECT (EFAP)-KP  
"RECONSTRUCTION AND REHABILITATION OF  
IRRIGATION AND DRAINAGE SYSTEM AND FLOOD  
PROTECTION WORKS IN KHYBER PAKHTUNKHWA"



GOVERNMENT OF KHYBER  
PAKHTUNKHWA  
IRRIGATION DEPARTMENT

REV.	DATE	DESCRIPTION	BY	GKD.	APPR.	APPROVED	N.A.
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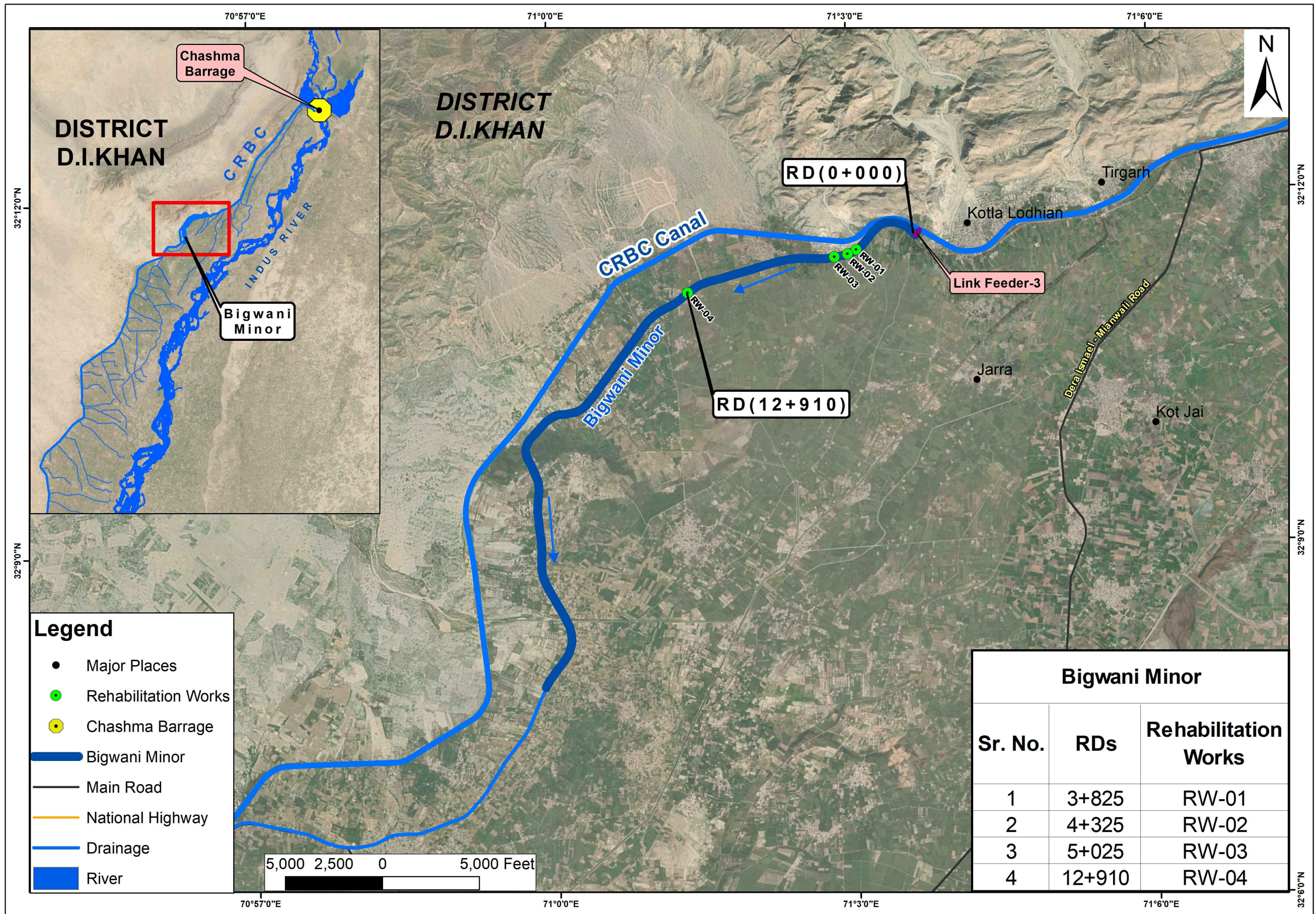
**NEE NATIONAL ENGINEERING SERVICES PAKISTAN (PVT) LIMITED**

HEAD OFFICE : NESPAK HOUSE, 1-C BLOCK N,  
MODEL TOWN EXTENSION, LAHORE PAKISTAN

LOCATION MAP  
FOR REHABILITATION OF DAMAGED / WASHED AWAY  
CANAL SECTION OF KAT GARH MINOR

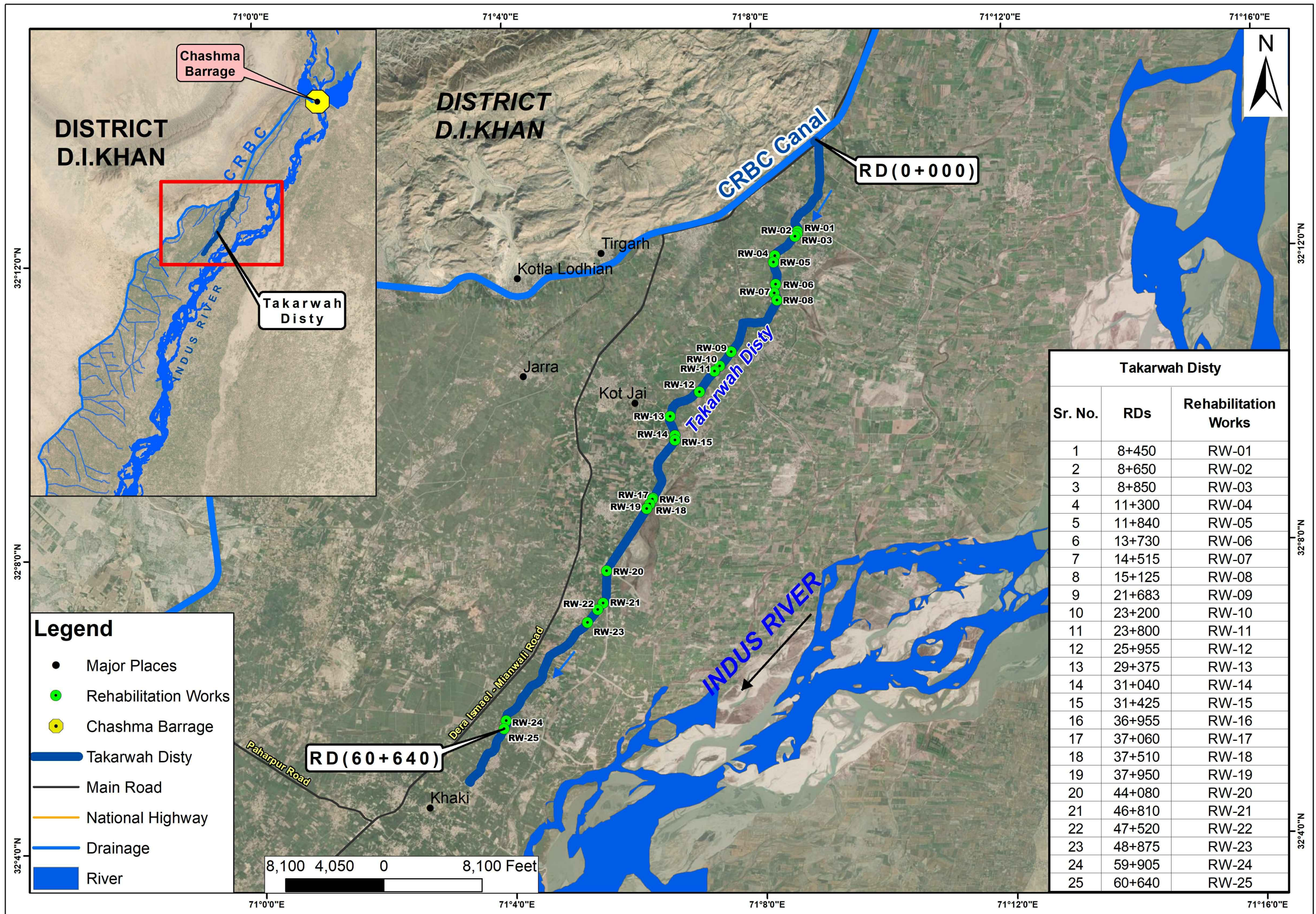
DATE: SEP, 2023  
DRAWING NO. 4593/TD/061/LM-28  
REV. ⬆





NOTE:-  
RDs. ARE IN FEET





NOTE:-  
RDs. ARE IN FEET

EMERGENCY FLOOD ASSISTANCE PROJECT (EFAP)-KP  
"RECONSTRUCTION AND REHABILITATION OF  
IRRIGATION AND DRAINAGE SYSTEM AND FLOOD  
PROTECTION WORKS IN KHYBER PAKHTUNKHWA"



GOVERNMENT OF KHYBER  
PAKHTUNKHWA  
IRRIGATION DEPARTMENT

REV.	DATE	DESCRIPTION	BY	GKD.	APPR.	APPROVED	N.A.

**NES NATIONAL ENGINEERING SERVICES PAKISTAN (PVT) LIMITED**

HEAD OFFICE : NESPAK HOUSE, 1-C BLOCK N,  
MODEL TOWN EXTENSION, LAHORE PAKISTAN

LOCATION MAP  
FOR REHABILITATION OF DAMAGED / WASHED AWAY  
CANAL SECTION OF TAKARWAH DISTY

DATE: SEP, 2023  
DRAWING NO. 4593/TD/061/LM-30  
REV.



### List of Proposed Restoration/Rehabilitation Works of Distributary-02

Sr. No.	RD*	ID	Coordinates				Type of Rehab. Works	Length of Rehab. Work L	Side	Type of Channel	Proposed Bed Width	Design Bed Level	Existing Bed Level	Top of Lining	Existing Bank Level	Proposed Bank Level	Reference Drawing No.
			Start Coordinates		End Coordinates												
			Easting (ft)	Northing (ft)	Easting (ft)	Northing (ft)											
(-)	(ft)	(-)	(ft)	(ft)	(ft)	(ft)	(-)	(ft)	(-)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(-)	
1	4+554	RW1	2221458	11637328	2223451	11636201	CL	2508	RS	Unlined Channel	6.30	600.81	602.82	604.81	609.46	609.46	4593/TD/061/RW-03
2	6+254	RW2	2223451	11636201	2224235	11635735		892	BS		5.10	600.32	599.64	604.32	605.05	605.32	

\*RDs are taken from the mid of the proposed rehabilitation works

- SP = Side Protection
- RR = Road Restoration
- BR = Bank Restoration
- CL = Concrete Lining
- WR = Wall Raising
- DC = Desilting Channel

**NOTES:**

1. ALL RDs/Coordinates should be confirmed by site engineer before construction.

EMERGENCY FLOOD ASSISTANCE PROJECT (EFAP)-KP  
"RECONSTRUCTION AND REHABILITATION OF  
IRRIGATION AND DRAINAGE SYSTEM AND FLOOD  
PROTECTION WORKS IN KHYBER PAKHTUNKHWA"



GOVERNMENT OF KHYBER  
PAKHTUNKHWA  
IRRIGATION DEPARTMENT

REV.	DATE	DESCRIPTION	BY	CKD.	APPR.	APPROVED	N.A.

**NESPAK NATIONAL ENGINEERING SERVICES PAKISTAN (PVT) LIMITED**

HEAD OFFICE : NESPAK HOUSE, 1-C BLOCK N,  
MODEL TOWN EXTENSION, LAHORE PAKISTAN

TABLE OF DETAILS  
FOR REHABILITATION OF DAMAGED / WASHED AWAY  
CANAL SECTION OF DISTY-2

DATE: SEP, 2023	DRAWING NO. 4593/TD/061/TOD-14	REV. 1
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**LIST OF PROPOSED REHABILITATION WORKS OF DISTRIBUTARY-3**

Sr. No.	RD*	ID	Coordinates				Proposed Design Data									
			Start Coordinates		End Coordinates		Type of Rehab. Works	Length of Rehab.Work L	Side	Type of Channel	Designed Bed Level	Existing Bed Level	Top of Lining	Existing Bank Level	Proposed Bank Level	Reference Drawing No.
			Easting	Northing	Easting	Northing										
(-)	(ft)	(-)	(ft)	(ft)	(ft)	(ft)	(ft)	(-)	(-)	(ft)	(ft)	(ft)	(ft)	(ft)	(-)	
1	0+040	RW-01	2213746	11626198	2213878	11626103	RW	80	L	Brick R/W Side Protection	607.42	607.57	612.42	614.23	614.42	4593/TD/061/RW-03
2	4+575	RW-02	2217442	11623911	2217629	11623848	RW	50	R		599.44	598.17	604.36	605.29	606.36	
3	8+550	RW-05	2217534	11623879	2224314	11619897	RR	8100	L	Road Rehabilitation	595.69	595.25	600.57	601.66	602.57	Shingle Road
4	11+750	RW-06	2223002	11621271	2224456	11619756	CL	2100	L & R	Concrete Lining	593.39	591.88	597.92	597.55	599.92	4593/TD/061/RW-02

\*RDs are taken from the mid of the proposed rehabilitat  
 SP = Side Protection  
 RR =Road Restorartion  
 BR = Bank Restoration

**NOTES:**

- ALL RDs/Coordinates should be confirmed by site engineer before construction.

EMERGENCY FLOOD ASSISTANCE PROJECT (EFAP)-KP  
 "RECONSTRUCTION AND REHABILITATION OF  
 IRRIGATION AND DRAINAGE SYSTEM AND FLOOD  
 PROTECTION WORKS IN KHYBER PAKHTUNKHWA"



GOVERNMENT OF KHYBER  
 PAKHTUNKHWA  
 IRRIGATION DEPARTMENT

REV.	DATE	DESCRIPTION	BY	CKD.	APPR.	APPROVED	N.A

**NESPAK NATIONAL ENGINEERING SERVICES PAKISTAN (PVT) LIMITED**  
 HEAD OFFICE : NESPAK HOUSE, 1-C BLOCK N,  
 MODEL TOWN EXTENSION, LAHORE PAKISTAN

TABLE OF DETAILS FOR REHABILITATION OF DAMAGED / WASHED AWAY CANAL SECTION OF DISTY-3	
DATE: SEP, 2023	DRAWING NO. 4593/TD/061/TOD-15
REV.	REV.

**LIST OF PROPOSED REHABILITATION WORKS OF GIRSAL MINOR**

Sr. No.	RD*	ID	Coordinates				Proposed Design Data										Reference Drawing No.
			Start Coordinates		End Coordinates		Type of Rehab. Works	Length of Rehab.Work L	Side	Type of Channel	Designed Bed Level	Exisitng Bed Level	Top of Lining	Existing Bank Level	Proposed Bank Level		
			Easting	Northing	Easting	Northing											
(-)	(ft)	(-)	(ft)	(ft)	(ft)	(-)	(ft)	(-)	(-)	(ft)	(ft)	(ft)	(ft)	(ft)	(-)		
1	2+220	RW-01	2234413	11614366	2234452	11614372	RR	40	L	Road Restoration	585.15	585.20	588.86	588.79	590.86	Asphalt Road	
2	4+920	RW-02	2237078	11614766	2237118	11614770	RR	40	L	Road Restoration	584.56	583.89	588.27	589.07	590.27		
3	7+915	RW-03	2240025	11615032	2240055	11615035	RR	30	L	Road Restoration	583.20	583.58	586.80	587.33	588.80		
4	8+325	RW-04	2240423	11615072	2240473	11615077	RR	50	L	Road Restoration	583.14	583.17	586.74	587.79	588.74		
5	12+375	RW-05	2244463	11615254	2244512	11615259	RR	50	L	Road Restoration	582.26	582.07	585.76	586.03	587.76		
6	16+225	RW-06	2247046	11615430	2248041	11613652	CL	2500		Concrete PCC Lining	579.26	580.15	582.66	584.99	584.66	4593/TD/061/RW-02	
7	17+500	RW-07	2247046	11615430	2250443	11612964	RR	5000	L	Road Restoration	578.97	579.42	582.37	585.08	584.37	Asphalt Road	

\*RDs are taken from the mid of the proposed rehabilit

SP = Side Protection

RR = Road Restorartion

BR = Bank Restoration

**NOTES:**

1. ALL RDs/Coordinates should be confirmed by site engineer before construction.

**EMERGENCY FLOOD ASSISTANCE PROJECT (EFAP)-KP  
"RECONSTRUCTION AND REHABILITATION OF  
IRRIGATION AND DRAINAGE SYSTEM AND FLOOD  
PROTECTION WORKS IN KHYBER PAKHUNKHWA"**



**GOVERNMENT OF KHYBER  
PAKHTUNKHWA  
IRRIGATION DEPARTMENT**

REV.	DATE	DESCRIPTION	BY	CKD.	APPR.	APPROVED	N.A

DRAWN	K.A
SUBMITTED	M.M
RECOMMENDED	Q.L
CHD/VER	F.R.K
	N.A

**NES NATIONAL ENGINEERING  
SERVICES PAKISTAN (PVT)  
LIMITED**

HEAD OFFICE : NESPAK HOUSE, 1-C BLOCK N,  
MODEL TOWN EXTENSION, LAHORE PAKISTAN

**TABLE OF DETAILS  
FOR REHABILITATION OF DAMAGED / WASHED AWAY  
CANAL SECTION OF GIRSAL MINOR**

DATE.	DRAWING NO.	REV.
SEP, 2023	4593/TD/061/TOD-16	1

**LIST OF PROPOSED REHABILITATION WORKS OF GIRSAL FEEDER**

Sr. No.	RD*	ID	Coordinates				Proposed Design Data									Refernce Drawing No.
			Start Coordinates		End Coordinates		Type of Rehab. Works	Length of Rehab.Work L	Side	Type of Rehabilitation	Exisitng Bed Level	Top of Lining / Wall	Existing Bank Level	Proposed Bank Level		
			Easting	Northing	Easting	Northing										
(-)	(ft)	(-)	(ft)	(ft)	(ft)	(-)	(ft)	(-)	(-)	(ft)	(ft)	(ft)	(ft)	(-)		
1	4+400	RW-01	2231068	11617051	2231221	11616923	SP	200	L&R	Brick R/W Side Protection	586.51	590.01	591.93	592.01	4593/TD/061/RW-03	
2	5+675	RW-02	2231915	11616073	2231958	11615937	SP+RR	150	L	Brick R/W Side Protection+Road Rehabilitation	589.97	593.47	594.85	595.47		
3	6+550	RW-03	2232104	11615203	2232103	11615103	SP+RR	100	L		587.34	590.84	593.88	593.88		

\*RDs are taken from the mid of the proposed rehabilitati  
 SP = Side Protection  
 RR = Road Restorartion  
 BR = Bank Restoration

**NOTES:**

1. ALL RDs/Coordinates should be confirmed by site engineer before construction.
2. The Client did not provide the Consultants with the required L-sections of the canal, despite a request made in letter No. 4593/064/NKA/01/18 dated 23-8-23. As a result of the unavailability of the L-section, the Consultants were unable to retrieve the last design level data. However, the Consultants have deducted 1-2ft from the existing bed level to arrive at probable last design bed level, following instructions from the Client during a meeting held at NESPAK House on September 14, 2023.

EMERGENCY FLOOD ASSISTANCE PROJECT (EFAP)-KP  
 "RECONSTRUCTION AND REHABILITATION OF  
 IRRIGATION AND DRAINAGE SYSTEM AND FLOOD  
 PROTECTION WORKS IN KHYBER PAKHUNKHWA"



GOVERNMENT OF KHYBER  
 PAKHTUNKHWA  
 IRRIGATION DEPARTMENT

REV.	DATE	DESCRIPTION	BY	CKD.	APPR.	APPROVED	N.A

**NESPAK NATIONAL ENGINEERING SERVICES PAKISTAN (PVT) LIMITED**

HEAD OFFICE : NESPAK HOUSE, 1-C BLOCK N,  
 MODEL TOWN EXTENSION, LAHORE PAKISTAN

TABLE OF DETAILS  
 FOR REHABILITATION OF DAMAGED / WASHED AWAY  
 CANAL SECTION OF GIRSAL FEEDER

DATE: SEP, 2023 DRAWING NO. 4593/TD/061/TOD-17 REV. 1



**LIST OF PROPOSED REHABILITATION WORKS OF SHAHKOT MINOR**

Sr. No.	RD*	ID	Coordinates				Proposed Design Data										Reference Drawing No.
			Start Coordinates		End Coordinates		Type of Rehab. Works	Length of Rehab. Work L	Side	Type of Rehabilitation	Designed Bed Level	Existing Bed Level	Top of Lining	Existing Bank Level	Proposed Bank Level		
			Easting	Northing	Easting	Northing											
(-)	(ft)	(-)	(ft)	(ft)	(ft)	(-)	(ft)	(-)	(-)	(ft)	(ft)	(ft)	(ft)	(ft)	(-)		
1	2+675	RW-01	2228619	11630779	2228665	11630760	RR	50	R	Road Rehabilitation	587.31	587.31	590.81	592.70	592.81	Road Rehabilitation	
2	3+175	RW-02	2229100	11630654	2229149	11630646	SP	50	R	Concrete Side Protection	587.48	587.48	590.98	592.23	592.98	4593/TD/061/RW-01-B	
3	4+335	RW-03	2230249	11630436	2230279	11630430	RR	30	R	Road Rehabilitation	586.95	586.95	590.45	592.20	592.45	Road Rehabilitation	
4	4+590	RW-04	2230495	11630390	2230543	11630377	RR	40	R		587.13	587.13	590.63	592.35	592.63		
5	5+065	RW-05	2230952	11630243	2230980	11630234	RR	30	R		586.97	586.97	590.47	591.62	592.47		
6	5+140	RW-06	2230999	11630227	2231075	11630203	SP	80	L&R	Concrete Side Protection	586.81	586.81	590.31	591.95	592.31	4593/TD/061/RW-01-C	
7	6+125	RW-07	2231964	11629971	2232013	11629960	SP	50	L&R		587.48	587.48	590.98	591.51	592.98		
8	6+500	RW-08	2231866	11629991	2232838	11629761	RR	1000	R	Road Rehabilitation	586.71	586.71	590.21	591.33	592.21	Road Rehabilitation	
9	6+925	RW-09	2232696	11629807	2232838	11629761	SP	150	L&R	Concrete Side Protection	586.63	586.63	590.13	590.76	592.13	4593/TD/061/RW-01-C	
10	8+250	RW-10	2233288	11629544	2234706	11629083	RR	1500	R	Road Rehabilitation	585.29	585.29	588.79	590.33	590.79	Road Rehabilitation	
11	9+475	RW-11	2235097	11628997	2235243	11628964	SP	150	L&R	Concrete Side Protection	585.40	585.40	588.90	589.84	590.90	4593/TD/061/RW-01-C	
12	13+250	RW-12	2237646	11628489	2240108	11628056	RR	2500	R	Road Rehabilitation	584.89	584.89	588.39	587.21	590.39	Road Rehabilitation	
13	14+650	RW-13	2240196	11628014	2240247	11627928	RR&SP	100	R	Road Rehabilitation+Concrete Side Protection With Side Wall	584.90	584.90	588.40	589.20	590.40	4593/TD/061/RW-01-D	
14	16+675	RW-14	2241187	11626276	2241261	11626146	SP	150	R	Raising Wall	-	-	-	-	-	4593/TD/061/RW-01-D (DETAIL D)	
15	17+650	RW-15	2241682	11625407	2241731	11625320	SP	100	R		-	-	-	-	-		
16	17+830	RW-16	2241761	11625268	2241832	11625147	SP	140	R		-	-	-	-	-		
17	18+100	RW-17	2241883	11625061	2241984	11624889	SP	200	R		-	-	-	-	-		
18	18+435	RW-18	2242085	11624716	2242121	11624656	RR&SP	70	L&R	Road Rehabilitation+Concrete Side Protection With Side Wall	583.37	583.37	586.87	588.67	588.87	4593/TD/061/RW-01-D	
19	18+600	RW-19	2242162	11624587	2242212	11624501	SP	100	R	Raising Wall	-	-	-	-	-	4593/TD/061/RW-01-D (DETAIL D)	
20	18+950	RW-20	2242288	11624372	2242441	11624113	SP	300	R		-	-	-	-	-		
21	20+000	RW-21	2242632	11623762	2243130	11622895	SP	1000	R		583.16	583.16	586.66	587.21	588.66		
22	21+025	RW-22	2243377	11622460	2243401	11622416	RR&SP	50	L&R	Road Rehabilitation+Concrete Side Protection With Side Wall	583.20	583.20	586.70	586.89	588.70	4593/TD/061/RW-01-D	
23	22+935	RW-23	2244330	11620817	2244365	11620756	RR&SP	70	L&R		582.69	582.69	586.19	585.07	588.19		
24	23+170	RW-24	2244455	11620600	2244475	11620565	RR&SP	40	L&R		582.71	582.71	586.21	585.69	588.21		
25	24+015	RW-25	2244878	11619863	2244893	11619837	RR&SP	30	L&R		582.29	582.29	585.79	585.66	587.79		
26	24+315	RW-26	2245028	11619603	2245043	11619577	RR&SP	30	L&R		582.26	582.26	585.76	586.57	587.76		
27	26+015	RW-27	2245875	11618129	2245890	11618103	RR&SP	30	L&R		582.31	582.31	585.81	585.99	587.81		
28	27+135	RW-28	2246417	11617172	2246452	11617111	RR&SP	70	L&R	582.28	582.28	585.78	585.18	587.78			

\*RDs are taken from the mid of the proposed rehabilitation works  
 SP = Side Protection  
 RR = Road Restoration  
 BR = Bank Restoration

**NOTES:**

1. ALL RDs/Coordinates should be confirmed by site engineer before construction.

**EMERGENCY FLOOD ASSISTANCE PROJECT (EFAP)-KP  
 "RECONSTRUCTION AND REHABILITATION OF  
 IRRIGATION AND DRAINAGE SYSTEM AND FLOOD  
 PROTECTION WORKS IN KHYBER PAKHTUNKHWA"**



**GOVERNMENT OF KHYBER  
 PAKHTUNKHWA  
 IRRIGATION DEPARTMENT**

REV.	DATE	DESCRIPTION	BY	CKD.	APPR.	APPROVED	

DRAWN	K.A	<b>NESPAK NATIONAL ENGINEERING SERVICES PAKISTAN (PVT) LIMITED</b>
SUBMITTED	M.M	
RECOMMENDED	Q.L	
CHD/VER	F.R.K	
	N.A	HEAD OFFICE : NESPAK HOUSE, 1-C BLOCK N, MODEL TOWN EXTENSION, LAHORE PAKISTAN

<b>TABLE OF DETAILS FOR REHABILITATION OF DAMAGED / WASHED AWAY CANAL SECTION OF SHAH KOT MINOR</b>	
DATE: SEP, 2023	DRAWING NO. 4593/TD/061/TOD-18

### LIST OF PROPOSED REHABILITATION WORKS OF SHAHKOT FEEDER

Sr. No.	RD*	ID	Coordinates				Proposed Design Data									Refernce Drawing No.
			Start Coordinates		End Coordinates		Type of Rehab. Works	Length of Rehab.Work L	Side	Type of Rehabilitation	Exisitng Bed Level	Top of Lining	Existing Bank Level	Proposed Bank Level		
			Easting	Northing	Easting	Northing										
(-)	(ft)	(-)	(ft)	(ft)	(ft)	(-)	(ft)	(-)	(-)	(ft)	(ft)	(ft)	(ft)	(-)		
1	0+050	RW-01	2228336	11635605	2228287	11635518	SP	100	L	Brick R/W Side Protection	588.24	591.74	597.99	597.99	4593/TD/061/RW-03	
2	0+100	RW-02	2228336	11635605	2228238	11635431	SP	200	R		588.18	591.68	596.46	596.46		
3	2+750	RW-03	2227034	11633355	2226885	11633094	SP	300	L		588.42	591.92	598.09	598.09		
4	3+250	RW-04	2226736	11632834	2226687	11632747	SP	100	L&R		587.67	591.17	598.20	598.20		

\*RDs are taken from the mid of the proposed rehabilitation  
 SP = Side Protection  
 RR = Road Restorartion  
 BR = Bank Restoration

**NOTES:**

1. ALL RDs/Coordinates should be confirmed by site engineer before construction.
2. The Client did not provide the Consultants with the required L-sections of the canal, despite a request made in letter No. 4593/064/NKA/01/18 dated 23-8-23. As a result of the unavailability of the L-section, the Consultants were unable to retrieve the last design level data. However, the Consultants have deducted 1-2ft from the existing bed level to arrive at probable last design level, following instructions from the Client during a meeting held at NESPAK House on September 14, 2023.

EMERGENCY FLOOD ASSISTANCE PROJECT (EFAP)-KP  
**"RECONSTRUCTION AND REHABILITATION OF IRRIGATION AND DRAINAGE SYSTEM AND FLOOD PROTECTION WORKS IN KHYBER PAKHTUNKHWA"**



**GOVERNMENT OF KHYBER  
 PAKHTUNKHWA  
 IRRIGATION DEPARTMENT**

REV.	DATE	DESCRIPTION	BY	CKD.	APPR.	APPROVED

<b>NATIONAL ENGINEERING SERVICES PAKISTAN (PVT) LIMITED</b>	<b>TABLE OF DETAILS                  FOR REHABILITATION OF DAMAGED / WASHED AWAY                  CANAL SECTION OF SHAHKOT FEEDER</b>
HEAD OFFICE : NESPAK HOUSE, 1-C BLOCK N, MODEL TOWN EXTENSION, LAHORE PAKISTAN	DATE: <b>SEP, 2023</b> DRAWING NO. <b>4593/TD/061/TOD-19</b>

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## LIST OF PROPOSED REHABILITATION WORKS OF BUND KURAI MINOR

Sr. No.	RD*	ID	Coordinates				Proposed Design Data									Reference Drawing No.
			Start Coordinates		End Coordinates		Type of Rehab. Works	Length of Rehab. Work L	Side	Type of Channel	Existing Bed Level	Top of Lining	Existing Bank Level	Proposed Bank Level		
			Easting (ft)	Northing (ft)	Easting (ft)	Northing (ft)										
(-)	(ft)	(-)	(ft)	(ft)	(ft)	(-)	(ft)	(-)	(-)	(ft)	(ft)	(ft)	(ft)	(-)		
1	4+700	RW-01	2226404	11632127	2225697	11630901	CL	1400	L&R	Concrete Lining	591.34	596.34	597.44	597.44	4593/TD/061/RW-02	
2	6+550	RW-02	2225151	11629947	2225108	11629857	SP&BR	100	R	Concrete Side Protection With side walls	591.24	596.24	595.65	598.24	4593/TD/061/RW-01-A	
3	7+750	RW-03	2224983	11629477	2224978	11627992	CL	1500	L&R	Concrete Lining	592.24	597.24	595.67	599.24	4593/TD/061/RW-02	
4	10+275	RW-04	2225585	11626367	2225599	11626319	BR	50	L&R	Bank Restoration	590.80	595.80	596.09	596.09		
5	11+550	RW-05	2225700	11626003	2226289	11624640	CL	1500	L&R	Concrete Lining	590.70	595.70	594.87	597.70	4593/TD/061/RW-02	
6	13+550	RW-06	2226387	11624526	2227098	11622617	CL	1900	L&R	Concrete Lining	589.77	594.77	594.50	596.77		

\*RDs are taken from the mid of the proposed rehabilitation works  
 SP = Side Protection  
 RR = Road Restoration  
 BR = Bank Restoration

**NOTES:**

- ALL RDs/Coordinates should be confirmed by site engineer before construction.
- The Client did not provide the Consultants with the required L-sections of the canal, despite a request made in letter No. 4593/064/NKA/01/18 dated 23-8-23. As a result of the unavailability of the L-section, the Consultants were unable to retrieve the last design level data. However, the Consultants have deducted 1-2ft from the existing bed level to arrive at probable last design bed level, following instructions from the Client during a meeting held at NESPAK House on September 14, 2023.

EMERGENCY FLOOD ASSISTANCE PROJECT (EFAP)-KP  
 "RECONSTRUCTION AND REHABILITATION OF IRRIGATION AND DRAINAGE SYSTEM AND FLOOD PROTECTION WORKS IN KHYBER PAKHTUNKHWA"



GOVERNMENT OF KHYBER  
 PAKHTUNKHWA  
 IRRIGATION DEPARTMENT

REV.	DATE	DESCRIPTION	BY	CHKD.	APPR.	APPROVED	N.A

DRAWN	K.A
SUBMITTED	M.M
RECOMMENDED	Q.L
CHD/VER	F.R.K
	N.A



HEAD OFFICE : NESPAK HOUSE, 1-C BLOCK N,  
 MODEL TOWN EXTENSION, LAHORE PAKISTAN

**TABLE OF DETAILS**  
 FOR REHABILITATION OF DAMAGED / WASHED AWAY  
 CANAL SECTION OF BUND KURAI MINOR

DATE	DRAWING NO.	REV.
SEP, 2023	4593/TD/061/TOD-20	1



### LIST OF PROPOSED REHABILITATION WORKS OF BUND KURAI BRANCH

Sr. No.	RD*	ID	Coordinates				Proposed Design Data								
			Start Coordinates		End Coordinates		Type of Rehab. Works	Length of Rehab. Work L	Side	Type of Channel	Existing Bed Level	Top of Lining	Existing Bank Level	Proposed Bank Level	Reference Drawing No.
			Easting (ft)	Northing (ft)	Easting (ft)	Northing (ft)									
(-)	(ft)	(-)	(ft)	(ft)	(ft)	(-)	(ft)	(-)	(-)	(ft)	(ft)	(ft)	(ft)	(-)	
1	0+200	RW-01	2228821	11640409	2228841	11640009	SP&BR	400	R	Concrete Side Protection With side walls	594.70	599.32	598.03	601.32	4593/TD/061/RW-01-A
2	0+800	RW-02	2228866	11639909	2228932	11639318	CL	600	L&R	Concrete Lining	593.60	598.22	597.33	600.22	4593/TD/061/RW-02-C
3	1+650	RW-03	2228983	11638922	2229035	11638626	SP&BR	300	L&R	Concrete Side Protection With Both side walls	593.11	597.73	596.75	599.73	4593/TD/061/RW-01-C
4	2+595	RW-04	2229090	11637034	2229030	11636867	SP&BR	150	L&R	Concrete Side Protection With Both side walls	593.87	598.49	596.77	600.49	

\*RDs are taken from the mid of the proposed rehabilitation works  
 SP = Side Protection  
 RR = Road Restoration  
 BR = Bank Restoration

**NOTES:**

1. ALL RDs/Coordinates should be confirmed by site engineer before construction.
2. The Client did not provide the Consultants with the required L-sections of the canal, despite a request made in letter No. 4593/064/NKA/01/18 dated 23-8-23. As a result of the unavailability of the L-section, the Consultants were unable to retrieve the last design level data. However, the Consultants have deducted 1-2ft from the existing bed level to arrive at probable last design bed level, following instructions from the Client during a meeting held at NESPAK House on September 14, 2023.

<p><b>EMERGENCY FLOOD ASSISTANCE PROJECT (EFAP)-KP</b>  <b>"RECONSTRUCTION AND REHABILITATION OF IRRIGATION AND DRAINAGE SYSTEM AND FLOOD PROTECTION WORKS IN KHYBER PAKHTUNKHWA"</b></p>	 <b>GOVERNMENT OF KHYBER PAKHTUNKHWA IRRIGATION DEPARTMENT</b>	<table border="0"> <tr> <td>REV.</td> <td>DATE</td> <td>DESCRIPTION</td> <td>BY</td> <td>CHKD.</td> <td>APPR.</td> <td>APPROVED</td> </tr> </table>	REV.	DATE	DESCRIPTION	BY	CHKD.	APPR.	APPROVED	<table border="0"> <tr> <td>DRAWN</td> <td>K.A</td> </tr> <tr> <td>SUBMITTED</td> <td>M.M</td> </tr> <tr> <td>RECOMMENDED</td> <td>Q.L</td> </tr> <tr> <td>CHD/VER</td> <td>F.R.K</td> </tr> <tr> <td></td> <td>N.A</td> </tr> </table>	DRAWN	K.A	SUBMITTED	M.M	RECOMMENDED	Q.L	CHD/VER	F.R.K		N.A	 <b>NATIONAL ENGINEERING SERVICES PAKISTAN (PVT) LIMITED</b> HEAD OFFICE : NESPAK HOUSE, 1-C BLOCK N, MODEL TOWN EXTENSION, LAHORE PAKISTAN	<p><b>TABLE OF DETAILS</b>                  FOR REHABILITATION OF DAMAGED / WASHED AWAY CANAL SECTION OF BUND KURAI BRANCH</p>	DATE: SEP, 2023	DRAWING NO. 4593/TD/061/TOD-21	REV. 
REV.	DATE	DESCRIPTION	BY	CHKD.	APPR.	APPROVED																			
DRAWN	K.A																								
SUBMITTED	M.M																								
RECOMMENDED	Q.L																								
CHD/VER	F.R.K																								
	N.A																								

**LIST OF PROPOSED REHABILITATION WORKS OF KETCH MINOR**

Sr. No.	RD*	ID	Coordinates				Proposed Design Data								
			Start Coordinates		End Coordinates		Type of Rehab. Works	Length of Rehab.Work L	Side	Type of Channel	Exisitng Bed Level	Top of Lining	Existing Bank Level	Proposed Bank Level	Refernce Drawing No.
			Easting (ft)	Northing (ft)	Easting (ft)	Northing (ft)									
(-)	(ft)	(-)	(ft)	(ft)	(ft)	(-)	(ft)	(-)	(-)	(ft)	(ft)	(ft)	(ft)	(-)	
1	0+550	RW-01	2228045	11620084	2228104	11620003	SP&BR	100	L&R	Concrete Side Protection With Both side walls	589.23	594.33	594.32	596.33	4593/TD/061/RW-01-C
2	2+620	RW-02	2229483	11618555	2229513	11618529	SP&BR	40	LS	Concrete Side Protection With side walls	590.01	595.11	595.54	595.54	4593/TD/061/RW-01-A
3	3+450	RW-03	2229832	11618198	2230342	11617720	CL	700	L&R	Concrete Lining	590.16	595.26	594.15	597.26	4593/TD/061/RW-02
4	3+900	RW-04	2230342	11617720	2230498	11617595	SP&BR	200	LS	Concrete Side Protection With side walls	589.71	594.81	593.60	596.81	4593/TD/061/RW-01-A
5	5+350	RW-05	2231270	11616959	2231743	11616449	SP&BR	700	L&R	Concrete Side Protection With Both side walls	589.26	594.36	593.66	596.36	4593/TD/061/RW-01-C
6	9+100	RW-06	2232511	11613410	2232871	11612932	CL	400	L&R	Concrete Lining	588.11	593.21	593.21	595.21	4593/TD/061/RW-02
7	11+050	RW-07	2233846	11611928	2234884	11610846	CL	300	L&R	Concrete Lining	587.54	592.64	591.69	594.64	
8	14+500	RW-08	2236217	11609389	2236881	11608389	BR	200	L&R	Bank Restoration	587.01	592.11	591.99	594.11	

\*RDs are taken from the mid of the proposed rehabilitation works  
 SP = Side Protection  
 RR =Road Restoration  
 BR = Bank Restoration

**NOTES:**

1. ALL RDs/Coordinates should be confirmed by site engineer before construction.
2. The Client did not provide the Consultants with the required L-sections of the canal, despite a request made in letter No. 4593/064/NKA/01/18 dated 23-8-23. As a result of the unavailability of the L-section, the Consultants were unable to retrieve the last design level data. However, the Consultants have deducted 1-2ft from the existing bed level to arrive at probable last design bed level, following instructions from the Client during a meeting held at NESPAK House on September 14, 2023.

EMERGENCY FLOOD ASSISTANCE PROJECT (EFAP)-KP  
 "RECONSTRUCTION AND REHABILITATION OF  
 IRRIGATION AND DRAINAGE SYSTEM AND FLOOD  
 PROTECTION WORKS IN KHYBER PAKHTUNKHWA"



**GOVERNMENT OF KHYBER  
 PAKHTUNKHWA  
 IRRIGATION DEPARTMENT**

REV.	DATE	DESCRIPTION	BY	CHKD.	APPR.	APPROVED	N.A

DRAWN	K.A
SUBMITTED	M.M
RECOMMENDED	Q.L
CHD/VER	F.R.K
	N.A



HEAD OFFICE : NESPAK HOUSE, 1-C BLOCK N,  
 MODEL TOWN EXTENSION, LAHORE PAKISTAN

**TABLE OF DETAILS  
 FOR REHABILITATION OF DAMAGED / WASHED AWAY  
 CANAL SECTION OF KETCH MINOR**

DATE.	DRAWING NO.	REV.
SEP, 2023	4593/TD/061/TOD-22	

**LIST OF PROPOSED REHABILITATION WORKS OF PAHARPUR DISTRIBUTARY**

Sr. No.	RD*	ID	Coordinates				Proposed Design Data									
			Start Coordinates		End Coordinates		Type of Rehab. Works	Length of Rehab. Work	Side	Type of Channel	Designed Bed Level	Existing Bed Level	Top of Lining	Existing Bank Level	Proposed Bank Level	Reference Drawing No.
			Easting	Northing	Easting	Northing										
(-)	(ft)	(-)	(ft)	(ft)	(ft)	(ft)	(-)	(ft)	(-)	(-)	(ft)	(ft)	(ft)	(ft)	(ft)	(-)
1	12+950	RW-01	2249639	11660711	2249426	11660680	SP&BR	200	L&R	Concrete Side Protection With Both side walls	593.39	593.33	599.39	598.22	601.39	4593/TD/061/RW-01-C
2	13+700	RW-02	2248864	11660585	2248268	11660649	SP&BR	600	L&R	Concrete Side Protection With Both side walls	592.35	592.01	598.35	599.11	599.11	
3	25+950	RW-03	2239882	11656336	2239843	11656245	SP&BR	300	L&R	Concrete Side Protection With Both side walls	591.31	591.92	597.31	596.24	599.31	
4	28+000	RW-04	2239271	11654476	2239212	11654285	SP&BR	200	L	Concrete Side Protection With side walls	591.11	590.85	597.11	595.94	599.11	4593/TD/061/RW-01-A
5	28+975	RW-05	2238662	11653547	2238589	11653416	SP&BR	400	L&R	Concrete Side Protection With Both side walls	591.05	591.42	597.05	597.74	597.74	4593/TD/061/RW-01-C
6	37+750	RW-06	2232627	11648155	2232447	11648068	SP&BR	200	L&R	Concrete Side Protection With Both side walls	590.01	589.34	596.01	597.34	597.34	
7	39+400	RW-08	2231777	11647631	2231605	11647528	RR	200	L	Road Rehabilitation	589.88	589.34	595.88	598.31	598.31	
8	39+560	RW-09	2231379	11647397	2231283	11647282	SP&BR	200	L&R	Concrete Side Protection With Both side walls	589.80	588.43	595.80	596.33	596.33	4593/TD/061/RW-01-C
9	40+100	RW-10	2230729	11646585	2230649	11647392	RR	200	L	Road Rehabilitation	589.75	589.34	595.75	597.34	597.34	
10	43+765	RW-12	2229556	11643366	2229509	11643141	RR	230	L	Road Rehabilitation	589.62	588.96	595.62	597.32	597.32	
11	43+700	RW-13	2229483	11643141	2229439	11642946	SP&BR	200	L	Concrete Side Protection With side walls	589.50	590.37	595.50	597.23	597.23	4593/TD/061/RW-01-A

\*RDs are taken from the mid of the proposed rehabilitation works




SP = Side Protection

RR =Road Restoration

BR = Bank Restoration

**NOTES:**

1. ALL RDs/Coordinates should be confirmed by site engineer before construction.

EMERGENCY FLOOD ASSISTANCE PROJECT (EFAP)-KP "RECONSTRUCTION AND REHABILITATION OF IRRIGATION AND DRAINAGE SYSTEM AND FLOOD PROTECTION WORKS IN KHYBER PAKHTUNKHWA"		<b>GOVERNMENT OF KHYBER PAKHTUNKHWA IRRIGATION DEPARTMENT</b>	DRAWN						K.A		<b>NATIONAL ENGINEERING SERVICES PAKISTAN (PVT) LIMITED</b>	<b>TABLE OF DETAILS FOR REHABILITATION OF DAMAGED / WASHED AWAY CANAL SECTION OF PAHARPUR DISTY</b>			
			SUBMITTED						M.M			DATE:	DRAWING NO.	REV.	
			RECOMMENDED						Q.L			HEAD OFFICE : NESPAK HOUSE, 1-C BLOCK N, MODEL TOWN EXTENSION, LAHORE PAKISTAN	SEP, 2023	4593/TD/061/TOD-23	
			REV.	DATE	DESCRIPTION	BY	CKD.	APPR.	APPROVED						



**LIST OF PROPOSED REHABILITATION WORKS OF OLD PAHARPUR CANAL RD (118+500 - 122+300)**

Sr. No.	RD*	ID	Coordinates				Proposed Design Data									
			Start Coordinates		End Coordinates		Type of Rehab. Works	Length of Rehab. Work L	Side	Type of Channel	Designed Bed Level	Existing Bed Level	Top of Lining	Existing Bank Level	Proposed Bank Level	Reference Drawing No.
			Easting	Northing	Easting	Northing										
(-)	(ft)	(-)	(ft)	(ft)	(ft)	(-)	(ft)	(-)	(-)	(ft)	(ft)	(ft)	(ft)	(ft)	(-)	
1	120+070	RW-01	2229333	11642712	2228819	11641228	SP&BR	660	L&R	Brick Retaining Wall	589.37	592.17	595.12	597.45	597.45	4593/TD/061/RW-03
2	119+075	RW-02	2229343	11642712	2229012	11641801	RR	450	L	Road Restoration	589.42	592.65	592.92	597.85	597.85	Asphalt Road
3	120+320	RW-03	2228860	11641380	2228815	11641225	RR	160	L	Road Restoration	589.24	591.94	592.74	597.69	597.69	

\*RDs are taken from the mid of the proposed rehabilitation works

SP = Side Protection  
 RR = Road Restoration  
 BR = Bank Restoration

**NOTES:**

1. ALL RDs/Coordinates should be confirmed by site engineer before construction.

EMERGENCY FLOOD ASSISTANCE PROJECT (EFAP)-KP  
 "RECONSTRUCTION AND REHABILITATION OF  
 IRRIGATION AND DRAINAGE SYSTEM AND FLOOD  
 PROTECTION WORKS IN KHYBER PAKHTUNKHWA"



GOVERNMENT OF KHYBER  
 PAKHTUNKHWA  
 IRRIGATION DEPARTMENT

REV.	DATE	DESCRIPTION	BY	CHKD.	APPR.	APPROVED	N.A

**NES NATIONAL ENGINEERING SERVICES PAKISTAN (PVT) LIMITED**

HEAD OFFICE : NESPAK HOUSE, 1-C BLOCK N,  
 MODEL TOWN EXTENSION, LAHORE PAKISTAN

TABLE OF DETAILS  
 FOR REHABILITATION OF DAMAGED / WASHED AWAY  
 CANAL SECTION OF OLD PAHARPUR CANAL  
 RD (118+500-122+300)

DATE: SEP, 2023  
 DRAWING NO. 4593/TD/061/TOD-24  
 REV.

**TABLE OF DETAILS OF PROPOSED REHABILITATION WORKS OF OLD PAHARPUR CANAL RD (130+000 - 160+000)**

Sr. No.	RD*	ID	Coordinates				Proposed Design Data									
			Start Coordinates		End Coordinates		Type of Rehab. Works	Length of Rehab. Work L	Side	Type	Designed Bed Level	Existing Bed Level	Top of Lining	Existing Bank Level	Proposed Bank Level	Reference Drawing No.
			Easting	Northing	Easting	Northing										
(-)	(ft)	(-)	(ft)	(ft)	(ft)	(-)	(ft)	(-)	(-)	(ft)	(ft)	(ft)	(ft)	(ft)	(-)	
1	130+000	RW-01	2226147	11631804	2226120	11631761	RR	50	L	Road Construction	586.47	588.33	589.47	596.61	596.61	4593/TD/061/RW-01 (Detail A)
2	132+200	RW-02	2225087	11629941	2225068	11629894	RR	50	L		587.75	588.66	590.75	596.97	596.97	
3	136+590	RW-03	2225696	11625789	2225743	11625646	RR	150	L		587.62	588.30	590.62	594.47	594.47	
4	138+650	RW-04	2226689	11623946	2226719	11623906	RR	50	L		587.16	588.81	590.16	595.40	595.40	
5	138+850	RW-05	2226794	11623805	2226851	11623722	RR	100	L		587.14	590.60	590.14	595.27	595.27	
6	139+050	RW-06	2226896	11623628	2226935	11623536	RR	100	L		587.08	590.90	590.08	595.20	595.20	
7	141+750	RW-07	2227050	11622445	2228271	11619705	RR	3100	L		588.54	589.27	591.54	595.02	595.02	
8	148+650	RW-08	2231957	11615938	2231987	11615843	RR	100	L		585.62	589.24	588.62	594.67	594.67	

\*RDs are taken from the mid of the proposed rehabilitation works  
 SP = Side Protection  
 RR = Road Restoration  
 BR = Bank Restoration  
 CL = Concrete Lining

**NOTES:**

- ALL RDs/Coordinates should be confirmed by site engineer before construction.



REV.	DATE	DESCRIPTION	BY	CHKD.	APPR.	APPROVED	N.A

## TABLE OF DETAILS OF PROPOSED REHABILITATION WORKS OF CIVIL MINOR

Sr. No.	RD*	ID	Coordinates				Proposed Design Data								
			Start Coordinates		End Coordinates		Type of Rehab. Works	Length of Rehab. Work	Side	Type	Existing Bed Level	Top of Lining / Wall	Existing Bank Level	Proposed Bank Level	Reference Drawing No.
			Easting	Northing	Easting	Northing									
(-)	(ft)	(-)	(ft)	(ft)	(ft)	(-)	(ft)	(-)	(-)	(ft)	(ft)	(ft)	(ft)	(-)	
1	3+025	RW-01	2237239	11646677	2237127	11646782	CL	200	L & R	Concret Lining	583.82	588.07	587.32	590.07	4593/TD/061/RW-02
2	5+950	RW-02	2239238	11644763	2239330	11644643	RR	200	L	Concrete Side Protection	-	-	586.71	-	4593/TD/061/RW-01 (c)
3	6+425	RW-03	2239424	11644410	2239461	11644319	RR	200	L	Road Construction	-	-	586.74	-	4593/TD/061/RW-01 (Detail A)
4	7+195	RW-04	2239746	11643576	2239768	11643523	RR	150	L		-	-	586.37	-	
5	8+520	RW-05	2240214	11642376	2240256	11642263	SP & RR	200	L & R	Concrete Side Protection	582.86	587.11	586.18	589.11	4593/TD/061/RW-01 (c)
6	10+240	RW-06	2240620	11641357	2241118	11640094	RR	1500	L	Road Construction	582.22	586.47	585.84	588.47	4593/TD/061/RW-01 (Detail A)
7	11+775	RW-07	2241423	11639476	2241572	11639180	SP & RR	400	L & R	Concrete Side Protection	581.25	585.50	586.60	587.50	4593/TD/061/RW-01 (c)
8	12+340	RW-08	2241726	11638968	2241851	11638838	SP & RR	200	L & R	Road Construction	581.53	585.78	586.16	587.78	
9	12+645	RW-09	2241949	11638734	2242103	11638563	RR	250	L	Road Construction	581.19	585.44	585.72	587.44	4593/TD/061/RW-01 (Detail A)
10	14+250	RW-10	2242849	11637385	2242939	11637245	SP & RR	160	L & R	Concrete Side Protection	581.22	585.47	585.49	587.47	4593/TD/061/RW-01 (c)
11	15+595	RW-11	2243612	11636192	2243640	11636150	RR	100	L	Road Construction	581.04	585.29	584.71	587.29	4593/TD/061/RW-01 (Detail A)
12	17+750	RW-12	2244692	11634503	2244824	11634292	RR	300	L		581.06	585.31	584.28	587.31	
13	18+350	RW-13	2245060	11633915	2245151	11633772	RR	200	L		-	-	584.92	-	
14	19+565	RW-14	2245736	11632853	2245785	11632778	RR	100	L		-	-	583.89	-	
15	19+755	RW-15	2245846	11632681	2245888	11632619	RR	150	L		-	-	584.18	-	

\*RDs are taken from the mid of the proposed rehabilitation works

SP = Side Protection  
 RR = Road Restorartion  
 BR = Bank Restoration  
 CL = Concrete Lining

**NOTES:**

- ALL RDs/Coordinates should be confirmed by site engineer before construction.
- The Client did not provide the Consultants with the required L-sections of the canal, despite a request made in letter No. 4593/064/NKA/01/18 dated 23-8-23. As a result of the unavailability of the L-section, the Consultants were unable to retrieve the last design level data. However, the Consultants have deducted 1-2ft from the existing bed level to arrive at probable last design bed level, following instructions from the Client during a meeting held at NESPAK House on September 14, 2023.

EMERGENCY FLOOD ASSISTANCE PROJECT (EFAP)-KP  
 "RECONSTRUCTION AND REHABILITATION OF  
 IRRIGATION AND DRAINAGE SYSTEM AND FLOOD  
 PROTECTION WORKS IN KHYBER PAKHTUNKHWA"



GOVERNMENT OF KHYBER  
 PAKHTUNKHWA  
 IRRIGATION DEPARTMENT

				DRAWN	K.A	
				SUBMITTED	M.M	
				RECOMMENDED	Q.L	
				CHD/VER	F.R.K	
REV.	DATE	DESCRIPTION	BY	CKD.	APPR.	APPROVED
						N.A

**NESPAK** NATIONAL ENGINEERING  
 SERVICES PAKISTAN (PVT)  
 LIMITED

HEAD OFFICE : NESPAK HOUSE, 1-C BLOCK N,  
 MODEL TOWN EXTENSION, LAHORE PAKISTAN

TABLE OF DETAILS  
 FOR REHABILITATION OF DAMAGED / WASHED AWAY  
 CANAL SECTION OF CIVIL MINOR

DATE: SEP, 2023  
 DRAWING NO. 4593/TD/061/TOD-26  
 REV. 1



**TABLE OF DETAILS OF PROPOSED REHABILITATION WORKS OF RAKH DISTRIBUTARY**

Sr. No.	RD*	ID	Coordinates				Proposed Design Data									
			Start Coordinates		End Coordinates		Type of Rehab. Works	Length of Rehab. Works L	Side	Type of Channel	Designed Bed Level	Existing Bed Level	Top of Lining	Existing Bank Level	Proposed Bank Level	Reference Drawing No.
			Easting	Northing	Easting	Northing										
(-)	(ft)	(-)	(ft)	(ft)	(ft)	(ft)	(-)	(ft)	(-)	(-)	(ft)	(ft)	(ft)	(ft)	(ft)	(-)
1	3+090	RW-01	2232191	11641667	2232210	11641648	CL & BR	30	L & R	Concrete Lining	588.94	589.37	592.06	591.69	594.06	4593/TD/061/RW-02
2	4+025	RW-02	2232832	11640970	2232846	11640956	CL & BR	30	L & R		588.55	589.21	591.67	590.50	593.67	
3	4+500	RW-03	2229493	11643005	2237196	11639168	Shingle	9000	R	Shingle Road	-	-	-	-	-	Shingle Road
4	5+055	RW-04	2233535	11640212	2233515	11640234	CL & BR	30	L & R	Concrete Lining	588.26	589.09	591.38	592.18	593.38	4593/TD/061/RW-02
5	5+875	RW-05	2234077	11639613	2234096	11639591	CL & BR	30	L & R		588.01	589.18	591.13	592.34	593.13	
6	5+945	RW-06	2234115	11639573	2234129	11639559	CL & BR	30	L & R		587.98	589.50	591.10	591.79	593.10	
7	6+165	RW-07	2234311	11639461	2234338	11639451	CL & BR	30	L & R		587.92	588.66	591.04	592.30	593.04	
8	6+850	RW-08	2234958	11639454	2235060	11639440	CL & BR	100	L & R		585.55	586.96	589.13	589.82	591.13	
9	9+035	RW-09	2237152	11639171	2237196	11639168	CL & BR	50	L & R	584.89	585.00	588.47	588.59	590.47		

\*RDs are taken from the mid of the proposed rehabilitation works

SP = Side Protection

RR = Road Restoration

BR = Bank Restoration

CL = Concrete Lining

**NOTES:**

1. ALL RDs/Coordinates should be confirmed by site engineer before construction.



REV.	DATE	DESCRIPTION	BY	CHKD.	APPR.	APPROVED	N.A

**TABLE OF DETAILS OF PROPOSED REHABILITATION WORKS OF KATH GARH MINOR**

Sr. No.	RD*	ID	Proposed Design Data								Reference Drawing No.
			Type of Rehab. Works	Length of Rehab. Work	Side	Type of Channel	Existing Bed Level	Top of Lining / Wall	Existing Bank Level	Proposed Bank Level	
				L							
(-)	(ft)	(-)	(-)	(ft)	(-)	(-)	(ft)	(ft)	(ft)	(ft)	(-)
1	5+885	RW-01	SP & BR	150	R	Concrete Side Protection	593.32	596.44	597.58	598.44	4593/TD/061/RW-01 (C)
2	6+500	RW-02	SP & BR	50	R		593.25	596.37	597.81	598.37	
3	8+450	RW-04	SP & BR	200	L & R		593.27	596.39	596.38	598.39	
4	10+500	RW-05	SP & BR	100	R		591.82	594.94	596.36	596.94	
5	16+150	RW-06	CL	100	L & R	Concrete Lined	589.54	592.66	594.89	594.89	4593/TD/061/RW-02
6	18+600	RW-07	CL	100	L & R		589.38	592.50	593.12	594.50	

\*RDs are taken from the mid of the proposed rehabilitation works

- SP = Side Protection
- RR = Road Restoration
- BR = Bank Restoration
- CL = Concrete Lining

**NOTES:**

1. ALL RDs/Coordinates should be confirmed by site engineer before construction.
2. The Client did not provide the Consultants with the required L-sections of the canal, despite a request made in letter No. 4593/064/NKA/01/18 dated 23-8-23. As a result of the unavailability of the L-section, the Consultants were unable to retrieve the last design level data. However, the Consultants have deducted 1-2ft from the existing bed level to arrive at probable last design bed level, following instructions from the Client during a meeting held at NESPAK House on September 14, 2023.



						DRAWN	K.A
						SUBMITTED	M.M
						RECOMMENDED	Q.L
						CHKD/VER	F.R.K
REV.	DATE	DESCRIPTION	BY	CKD.	APPR.	APPROVED	N.A

**TABLE OF DETAILS OF PROPOSED REHABILITATION WORKS OF BIGWANI MINOR**

Sr. No.	RD*	ID	Coordinates				Proposed Design Data										Refernce Drawing No.
			Start Coordinates		End Coordinates		Type of Rehab. Works	Length of Rehab. Work L	Side	Type	Designed Bed Level	Existing Bed Level	Top of Lining / Wall	Existing Bank Level	Proposed Bank Level		
			Easting	Northing	Easting	Northing											
(-)	(ft)	(-)	(ft)	(ft)	(ft)	(-)	(ft)	(-)	(-)	(ft)	(ft)	(ft)	(ft)	(ft)	(-)		
1	3+825	RW-01	2275087	11691683	2275055	11691644	RR	80	L	Road Construction	597.20	597.54	602.96	603.50	604.96	4593/TD/061/RW-01 (Detail A)	
2	4+325	RW-02	2274646	11691358	2274602	11691334	RR	70	L		597.16	597.48	602.92	603.25	604.92		
3	5+025	RW-03	2273984	11691143	2273935	11691132	RR	50	L		597.00	597.25	602.76	602.95	604.76		
4	12+910	RW-04	2266321	11689375	2266423	11689439	RR	150	L		596.03	596.54	600.01	601.21	602.01		

\*RDs are taken from the mid of the proposed rehabilitation works  
 SP = Side Protection  
 RR =Road Restorartion  
 BR = Bank Restoration  
 CL = Concrete Lining

**NOTES:**

1. ALL RDs/Coordinates should be confirmed by site engineer before construction.



REV.	DATE	DESCRIPTION	BY	CKD.	APPR.	APPROVED	N.A

DRAWN	K.A
SUBMITTED	M.M
RECOMMENDED	Q.L
CHD/VER	F.R.K
	N.A



**TABLE OF DETAILS OF PROPOSED REHABILITATION WORKS OF TAKARWAH DISTRIBUTARY**

Sr. No.	RD*	ID	Coordinates				Proposed Design Data											
			Start Coordinates		End Coordinates		Type of Rehab. Works	Length of Rehab. Works L	Side	Type of Channel	Designed Bed Level	Existing Bed Level	Top of Lining / Wall	Existing Bank Level	Proposed Bank Level	Reference Drawing No.		
			Easting	Northing	Easting	Northing											(-)	(-)
1	8+450	RW-01	2303670	11696720	2303681	11696820	SP & BR	100	R	Concrete Side Protection	600.28	600.47	604.76	605.89	606.76	4593/TD/061/RW-01 (c)		
2	8+650	RW-02	2303654	11696621	2303635	11696525	SP & BR	100	L & R		600.22	599.98	604.70	606.62	606.70			
3	8+850	RW-03	2303518	11696368	2303590	11696435	SP & BR	100	R		600.15	598.80	604.63	601.00	606.63			
4	11+300	RW-04	2301845	11694832	2301775	11694645	SP & BR	200	L & R	Brick Retaining Wall	599.61	599.88	604.09	601.94	606.09	4593/TD/061/RW-03		
5	11+840	RW-05	2301705	11694364	2301693	11694065	SP & BR	300	R	Concrete Side Protection	599.55	599.36	604.03	603.80	606.03	4593/TD/061/RW-01 (c)		
6	13+730	RW-06	2301892	11692492	2301844	11692297	SP & RR	200	L & R		599.13	599.68	603.61	603.70	605.61			
7	14+515	RW-07	2301740	11691688	2301790	11691604	SP & BR	100	L & R		598.84	599.13	603.32	604.81	605.32			
8	15+125	RW-08	2301931	11691339	2301921	11690837	SP & BR	520	L & R		598.51	598.89	602.88	599.70	604.88			
9	21+683	RW-09	2298284	11686918	2298126	11686705	SP & BR	265	R		597.96	596.36	602.33	597.73	604.33			
10	23+200	RW-10	2297325	11685718	2297176	11685556	SP & BR	220	R		596.77	594.92	601.14	597.00	603.14			
11	23+800	RW-11	2296853	11685217	2296818	11685181	SP & BR	50	R		596.43	-	600.80	-	-			
12	25+955	RW-12	2295646	11683540	2295487	11683469	SP & BR	180	L & R		596.00	598.05	600.37	596.40	602.37			
13	29+375	RW-13	2293189	11681582	2293113	11681344	SP & BR	250	L & R		596.25	593.53	600.62	595.00	602.62			
14	31+040	RW-14	2293554	11679940	2293567	11679861	SP & BR	80	R		Brick Retaining Wall	594.88	595.56	599.25	599.80		601.25	4593/TD/061/RW-03
15	31+425	RW-15	2293535	11679451	2293573	11679600	SP & BR	150	R		594.66	594.59	599.03	598.30	601.03			
16	36+955	RW-16	2291759	11674754	2291729	11674702	SP & BR	60	L & R	Concrete Side Protection	593.40	593.13	597.74	592.80	599.74	4593/TD/061/RW-01 (c)		
17	37+060	RW-17	2291710	11674667	2291669	11674598	SP & BR	80	L & R		594.84	594.20	599.18	597.17	601.18			
18	37+510	RW-18	2291475	11674268	2291449	11674225	SP & BR	50	R		592.85	593.37	597.19	592.53	599.19			
19	37+950	RW-19	2291314	11674005	2291154	11673750	SP & BR	300	L & R		592.42	593.30	596.76	593.70	598.76			
20	44+080	RW-20	2287952	11668864	2287916	11668632	SP & BR	240	L & R	591.58	591.43	595.92	593.23	597.92				
21	46+810	RW-21	2287707	11666175	2287551	11665981	SP & BR	250	R	Brick Retaining Wall	589.98	590.75	594.32	593.75	596.32	4593/TD/061/RW-03		
22	47+520	RW-22	2287193	11665540	2287130	11665466	SP & BR	280	L	Concrete Side Protection	589.98	590.21	593.98	588.71	595.98	4593/TD/061/RW-01 (c)		
23	48+875	RW-23	2286406	11664569	2286251	11664373	SP & RR	250	R		589.61	590.13	593.61	589.77	595.61			
24	59+905	RW-24	2279598	11656408	2279631	11656313	SP & RR	100	L & R		588.04	587.34	592.04	593.62	594.04			
25	60+640	RW-25	2279535	11655883	2279443	11655683	SP & BR	220	L & R	Brick Retaining Wall	588.27	586.47	592.27	593.16	594.27	4593/TD/061/RW-03		

\*RDs are taken from the mid of the proposed rehabilitation works

SP = Side Protection  
 RR =Road Restoration  
 BR = Bank Restoration  
 CL = Concrete Lining

**NOTES:**

1. ALL RDs/Coordinates should be confirmed by site engineer before construction.





REV.	DATE	DESCRIPTION	BY	CHKD.	APPR.	APPROVED	N.A
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**TYPICAL DRAWINGS FOR PROPOSED  
REHABILITATION WORKS OF DRAINS**

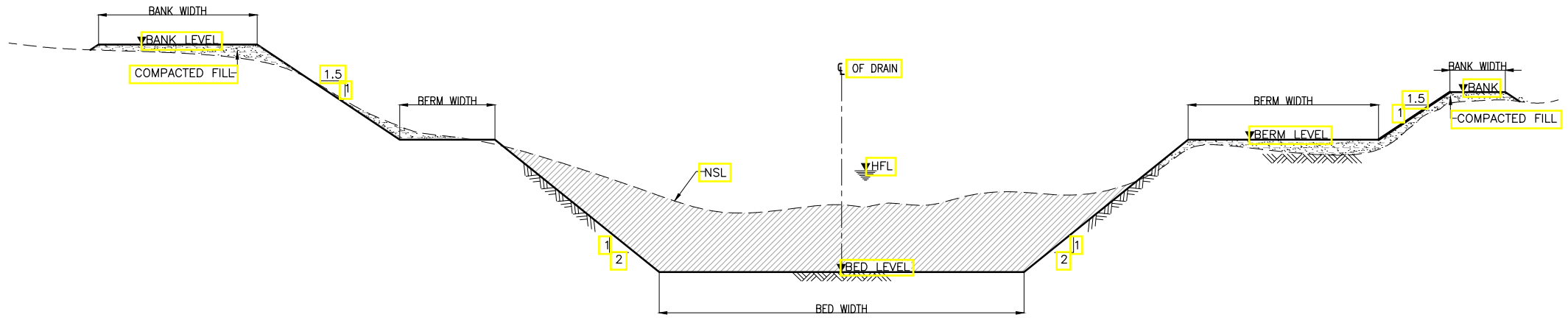
<b>REHABILITATION OF DRAINS IN PAHARPUR IRRIGATION DIVISION, DERA ISMAIL KHAN</b>		
<b>LIST OF TYPICAL DRAWINGS FOR PROPOSED REHABILITATION WORKS OF DRAINS</b>		
<b>SR. NO.</b>	<b>DRAWING TITLE</b>	<b>DRAWING NO.</b>
1	GENERAL NOTES (SHEET 1 OF 2)	4593-TD-061-GN-01
2	GENERAL NOTES (SHEET 2 OF 2)	4593-TD-061-GN-01
3	DRAIN SECTION DESILTING AND CLEANING (CASE-1)	4593-TD-061-DR-RW-01
4	DRAIN BANK RESTORATION (CASE-2)	4593-TD-061-DR-RW-02
5	TYPICAL BRICK RETAINING WALL (CASE-3A)	4593-TD-061-DR-RW-03 A
6	TYPICAL PLUM CONCRETE RETAINING WALL (CASE-3B)	4593-TD-061-DR-RW-03 B
7	TYPICAL STONE PROTECTION COMPLETE (CASE-4A)	4593-TD-061-DR-RW-04A
8	TYPICAL STONE PROTECTION PARTIAL (CASE-4B)	4593-TD-061-DR-RW-0BA
<b>LIST OF TYPICAL DRAWINGS FOR PROPOSED HYDRAULIC STRUCTURES OF DRAINS</b>		
9	DRAINAGE CULVERT LARGI-1 AT RD 0+000 (PLAN)	4593/TD/061/DR/DC-01
10	DRAINAGE CULVERT LARGI-1 AT RD 0+000 (SECTION AND DETAILS)	4593/TD/061/DR/DC-02
11	DRAINAGE CULVERT LARGI-1 AT RD 0+000 (TABLE OF DIMENSIONS)	4593/TD/061/DR/DC-03
12	DRAINAGE CULVERT MAIN DRAIN AT RD 28+300 (PLAN)	4593/TD/061/DR/DC-01
13	DRAINAGE CULVERT LARGI-1 AT RD 0+000 (SECTION AND DETAILS)	4593/TD/061/DR/DC-02
14	DRAINAGE CULVERT LARGI-1 AT RD 0+000 (TABLE OF DIMENSIONS)	4593/TD/061/DR/DC-03

EMERGENCY FLOOD ASSISTANCE PROJECT (EFAP)-KP "RECONSTRUCTION AND REHABILITATION OF IRRIGATION AND DRAINAGE SYSTEM AND FLOOD PROTECTION WORKS IN KHYBER PAKHTUNKHWA"	 <b>GOVERNMENT OF KHYBER          PAKHTUNKHWA          IRRIGATION DEPARTMENT</b>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 5%;">DRAWN</td> <td style="width: 5%;">F.A</td> </tr> <tr> <td>SUBMITTED</td> <td>M.M</td> </tr> <tr> <td>RECOMMENDED</td> <td>Q.L</td> </tr> <tr> <td>CHD/VER</td> <td>F.R.K</td> </tr> <tr> <td>APPROVED</td> <td>N.A</td> </tr> </table>	DRAWN	F.A	SUBMITTED	M.M	RECOMMENDED	Q.L	CHD/VER	F.R.K	APPROVED	N.A	 <b>NATIONAL ENGINEERING          SERVICES PAKISTAN (PVT)          LIMITED</b>	<b>LIST OF DRAWINGS</b>	DATE AUG 2023	DWG. NO. 	RI
DRAWN	F.A																
SUBMITTED	M.M																
RECOMMENDED	Q.L																
CHD/VER	F.R.K																
APPROVED	N.A																
		HEAD OFFICE : NESPAK HOUSE, 1-C BLOCK N, MODEL TOWN EXTENSION, LAHORE PAKISTAN															

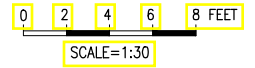




**PLAN**



**DRAIN SECTION DESILTING & CLEANING (CASE-I)**



(SHEET 1 OF 1)

EMERGENCY FLOOD ASSISTANCE PROJECT (EFAP)-KP  
"RECONSTRUCTION AND REHABILITATION OF  
IRRIGATION AND DRAINAGE SYSTEM AND FLOOD  
PROTECTION WORKS IN KHYBER PAKHTUNKHWA"



GOVERNMENT OF KHYBER  
PAKHTUNKHWA  
IRRIGATION DEPARTMENT

REV.	DATE	DESCRIPTION	BY	CKD.	APPR.	APPROVED

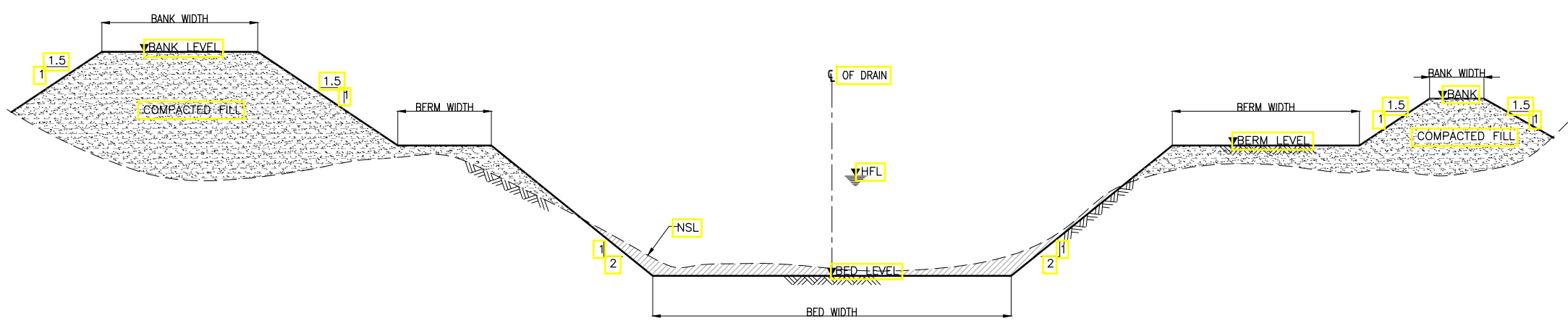
DRAWN	F.A
SUBMITTED	M.M
RECOMMENDED	Q.L
CHD/VER	F.R.K
APPROVED	N.A

**NESPAK NATIONAL ENGINEERING SERVICES PAKISTAN (PVT) LIMITED**  
HEAD OFFICE : NESPAK HOUSE, 1-C BLOCK N,  
MODEL TOWN EXTENSION, LAHORE PAKISTAN

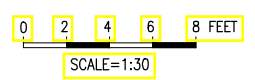
<b>DESILTING &amp; CLEANING OF DRAIN (CASE-I)</b>	
DATE.	DRAWING NO.
AUG, 2023	4593/TD/061/DR/RW-01
REV.	



**PLAN**



**DRAIN BANK RESTORATION (CASE-II)**



(SHEET 1 OF 1)

EMERGENCY FLOOD ASSISTANCE PROJECT (EFAP)-KP  
"RECONSTRUCTION AND REHABILITATION OF  
IRRIGATION AND DRAINAGE SYSTEM AND FLOOD  
PROTECTION WORKS IN KHYBER PAKHTUNKHWA"



GOVERNMENT OF KHYBER  
PAKHTUNKHWA  
IRRIGATION DEPARTMENT

REV.	DATE	DESCRIPTION	BY	CKD.	APPR.	APPROVED

DRAWN	F.A
SUBMITTED	M.M
RECOMMENDED	Q.L
CHD/VER	F.R.K
APPROVED	N.A

**NESPAK** NATIONAL ENGINEERING  
SERVICES PAKISTAN (PVT)  
LIMITED  
HEAD OFFICE : NESPAK HOUSE, 1-C BLOCK N,  
MODEL TOWN EXTENSION, LAHORE PAKISTAN

DRAIN BANK RESTORATION (CASE-II)	
DATE.	DRAWING NO.
AUG, 2023	4593/TD/061/DR/RW-02
REV.	

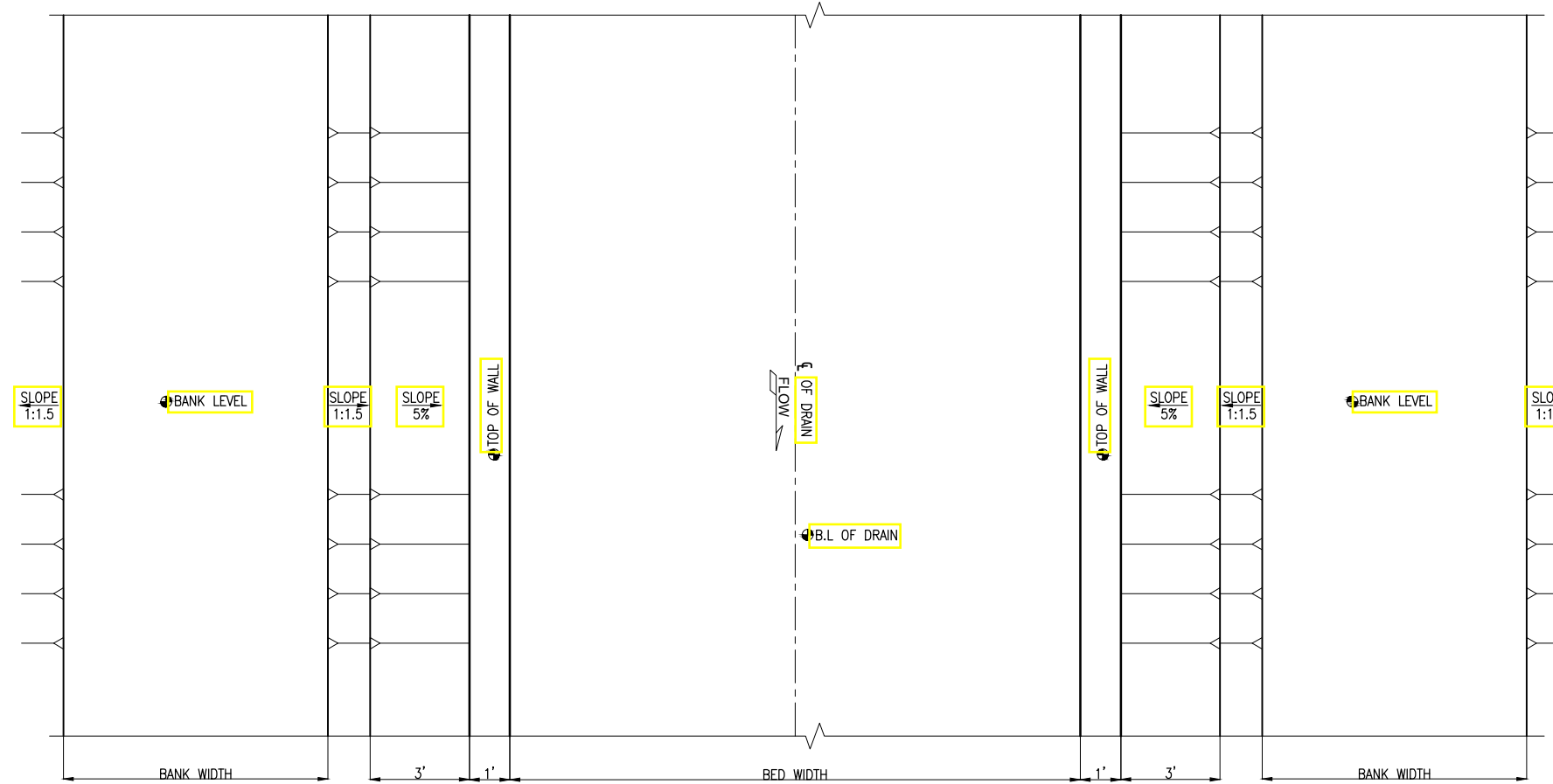
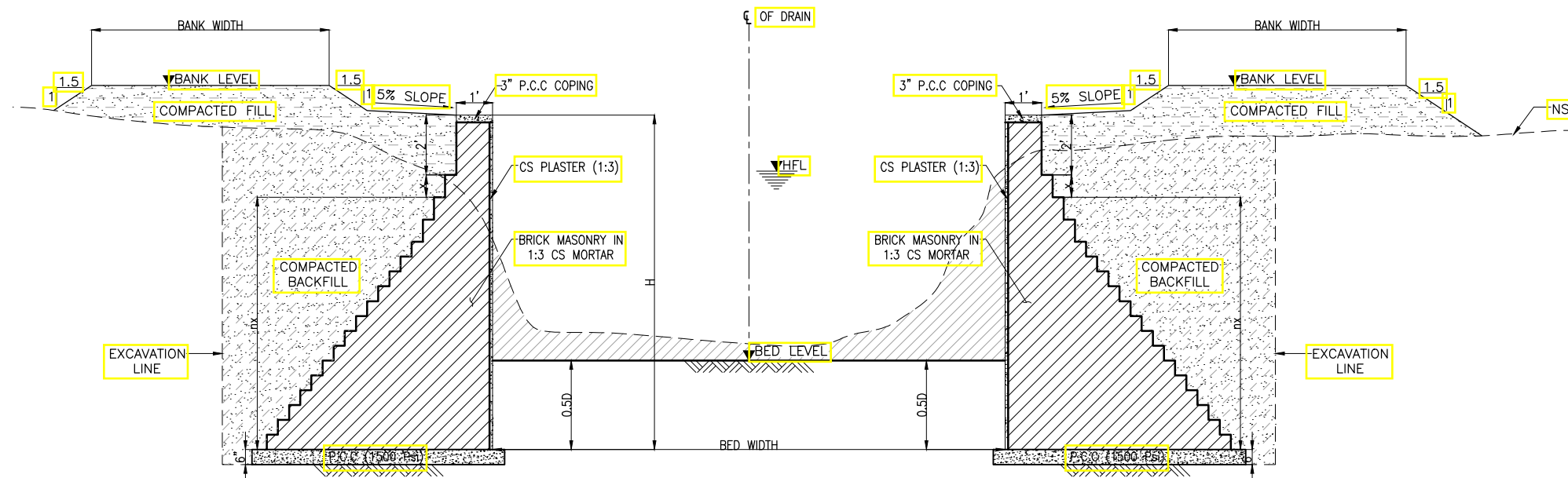


TABLE OF DIMENSION					
Sr.No.	Drain Name	RD.	Side	Length	Height (H)
(-)	(-)	(ft)	(-)	(ft)	(ft-Inch)
1	Jabbarwala	5+000	L&R Banks	100	7'-3"
2	Jabbarwala	11+650	Right Bank	300	6'-6"
3	Largi-1	2+750	Left Bank	300	7'-9"
4	Largi-1	4+150	Right Bank	350	7'-9"

**REFERENCE DRAWINGS:**

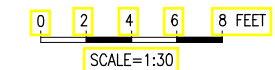
- APPROVED L- SECTION OF CHANNEL CONCERNED
- GENERAL NOTES .....4593/TD/061/GN-01



**NOTES:**

- PROVIDE WELL COMPACTED BACKFILL MATERIAL IN EXCAVATED PORTION AROUND STRUCTURE. THE COMPACTION SHALL NOT BE LESS THAN 95% OF MAXIMUM DRY DENSITY AS DETERMINED BY MODIFIED AASHTO.
- ALL BRICK TO BE USED IN MASONRY WORK SHALL BE OF STANDARD SIZE AND SHALL CONFORM TO THE SPECIFICATIONS.
- ALL BRICK MASONRY SHALL BE LAID WITH C/S MORTAR (RATIO 1:3)
- ALL EXPOSED SURFACE OF BRICK MASONRY SHALL BE PROVIDED WITH C/S POINTING (RATIO 1:3).
- 'D' DENOTES DESIGNED WATER DEPTH AND W IS DESIGNED UNLINED WIDTH AS PER L-SECTION.
- MINIMUM DEPTH OF FOOTING IS EQUAL TO 0.5D, MINOR ADDITIONAL DEPTH MAY BE NEEDED TO ACCOMMODATE A WHOLE NUMBER OF BRICK COURSES.
- x= 0.75', BOTTOM STEP TO BE ADJUSTED FOR A WHOLE NUMBER OF BRICK COURSES.
- EXISTING DIMENSIONS/LEVELS NEED TO BE VERIFIED BY THE ENGINEER.
- SIDE OF BANK AND ROAD (L/R) MAY BE CHANGED AS PER SITE CONDITIONS.
- BANK WIDTH TO BE ADOPTED AS PER RESPECTIVE DRAIN L-SECTIONS.

**TYPICAL DRAIN BRICK RETAINING WALL (CASE-III)**



(SHEET 1 OF 2)

EMERGENCY FLOOD ASSISTANCE PROJECT (EFAP)-KP  
"RECONSTRUCTION AND REHABILITATION OF  
IRRIGATION AND DRAINAGE SYSTEM AND FLOOD  
PROTECTION WORKS IN KHYBER PAKHTUNKHWA"



GOVERNMENT OF KHYBER  
PAKHTUNKHWA  
IRRIGATION DEPARTMENT

REV.	DATE	DESCRIPTION	BY	CKD.	APPR.	APPROVED

DRAWN	F.A
SUBMITTED	M.M
RECOMMENDED	Q.L
CHD/VER	F.R.K
APPROVED	N.A

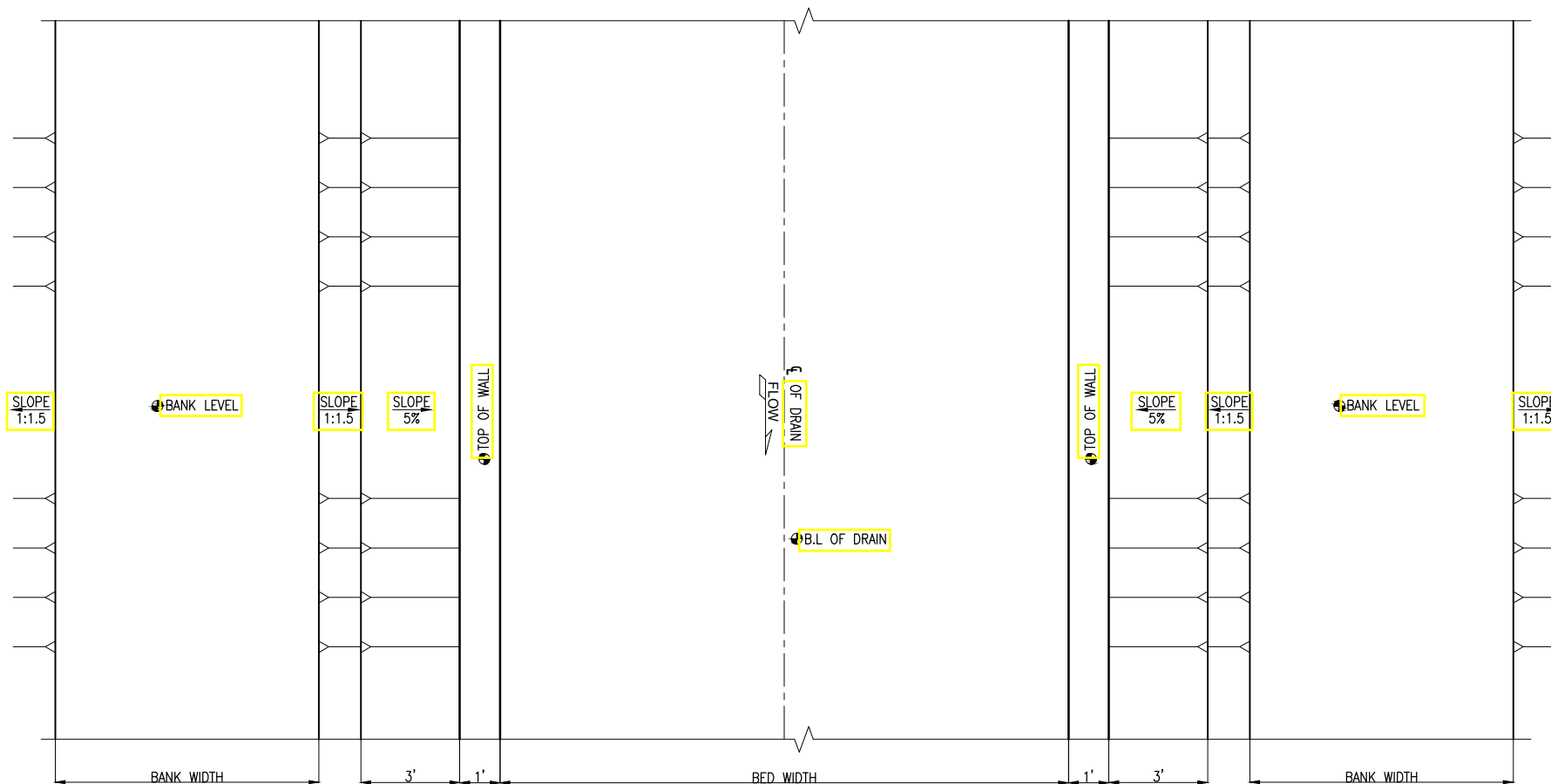
**NATIONAL ENGINEERING SERVICES PAKISTAN (PVT) LIMITED**

HEAD OFFICE : NESPAK HOUSE, 1-C BLOCK N,  
MODEL TOWN EXTENSION, LAHORE PAKISTAN

**TYPICAL DRAIN BRICK RETAINING WALL (CASE-III)**

DATE.	DRAWING NO.	REV.
AUG, 2023	4593/TD/061/DR/RW-03	0

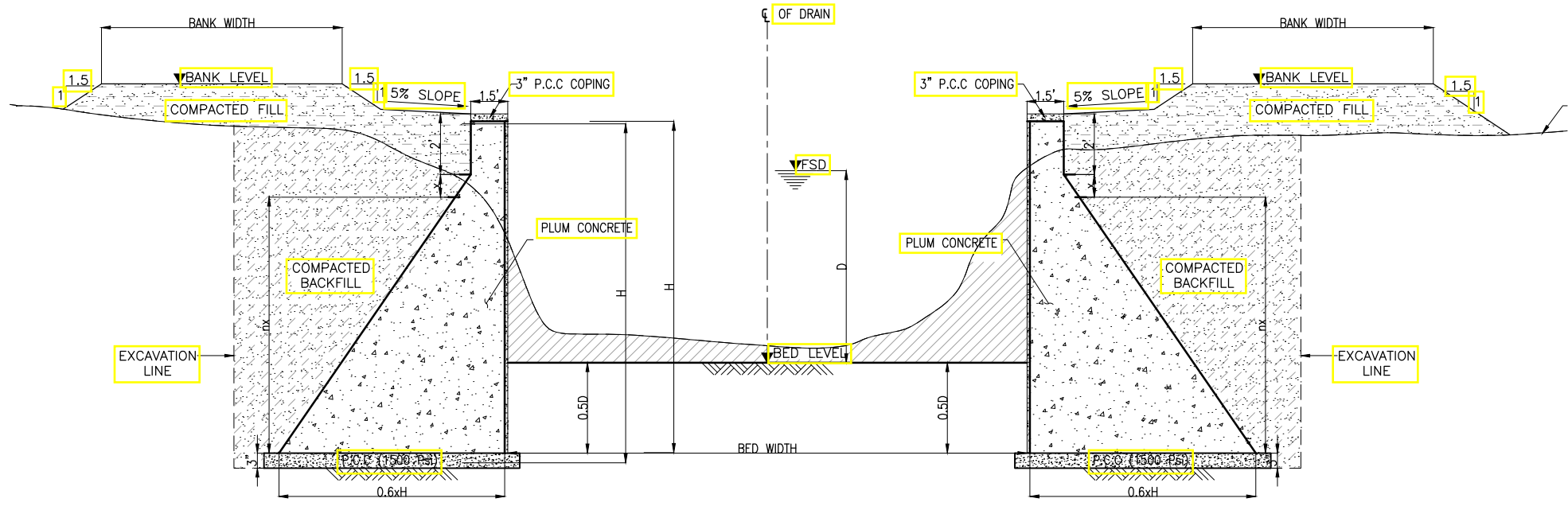




RETAINING WALL					
TABLE OF DIMENSION					
Sr.No.	Drain Name	RD.	Side	Length	Height (H)
(-)	(-)	(ft)	(-)	(ft)	(ft-Inch)
1	Bilot Creek	14+000	Left Bank	150	7'-0"
2	Largi-1	5+800	Left Bank	100	7'-0"

**REFERENCE DRAWINGS:**

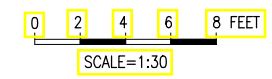
- APPROVED L- SECTION OF CHANNEL CONCERNED
- GENERAL NOTES .....4593/TD/061/GN-01



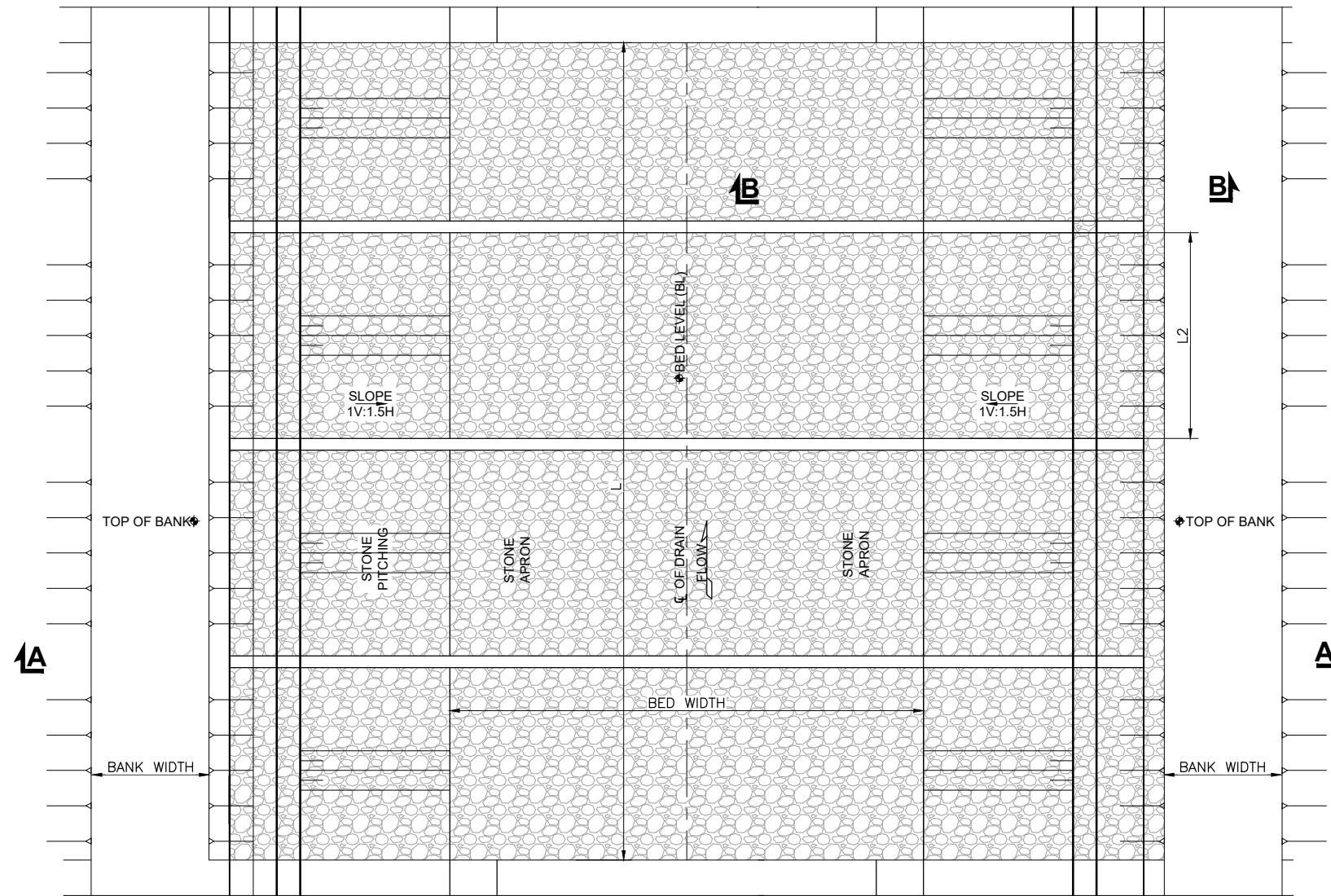
**NOTES:**

- PROVIDE WELL COMPACTED BACKFILL MATERIAL IN EXCAVATED PORTION AROUND STRUCTURE. THE COMPACTION SHALL NOT BE LESS THAN 95% OF MAXIMUM DRY DENSITY AS DETERMINED BY MODIFIED AASHTO.
- ALL BRICK TO BE USED IN MASONRY WORK SHALL BE OF STANDARD SIZE AND SHALL CONFORM TO THE SPECIFICATIONS.
- ALL BRICK MASONRY SHALL BE LAID WITH C/S MORTAR (RATIO 1:3)
- ALL EXPOSED SURFACE OF BRICK MASONRY SHALL BE PROVIDED WITH C/S POINTING (RATIO 1:3).
- 'D' DENOTES DESIGNED WATER DEPTH AND W IS DESIGNED UNLINED WIDTH AS PER L-SECTION.
- MINIMUM DEPTH OF FOOTING IS EQUAL TO 0.5D, MINOR ADDITIONAL DEPTH MAY BE NEEDED TO ACCOMMODATE A WHOLE NUMBER OF BRICK COURSES.
- x= 0.75', BOTTOM STEP TO BE ADJUSTED FOR A WHOLE NUMBER OF BRICK COURSES.
- EXISTING DIMENSIONS/LEVELS NEED TO BE VERIFIED BY THE ENGINEER.
- SIDE OF BANK AND ROAD (L/R) MAY BE CHANGED AS PER SITE CONDITIONS.
- BANK WIDTH TO BE ADOPTED AS PER RESPECTIVE DRAIN L-SECTIONS.

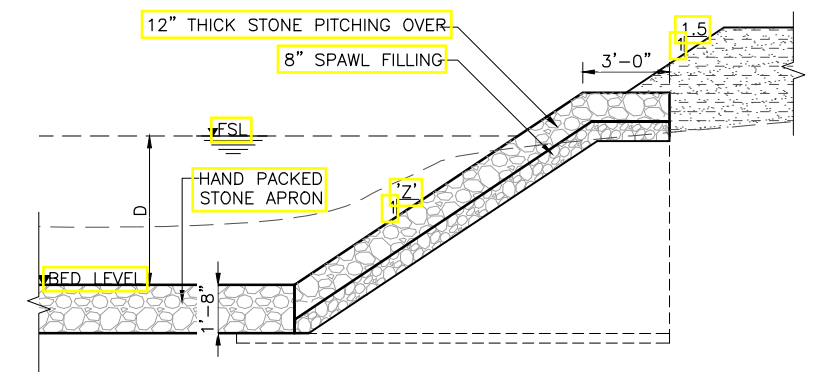
**TYPICAL DRAIN PLUM CONCRETE RETAINING WALL (CASE-III B)**



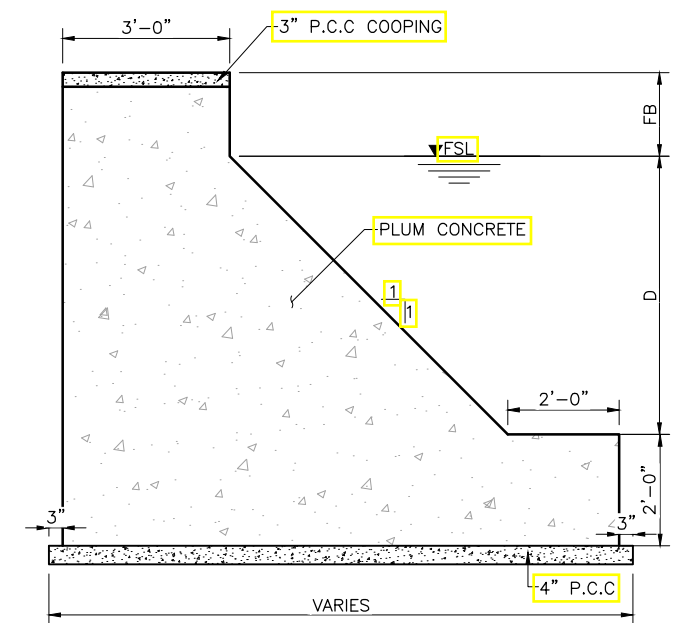
(SHEET 3 OF 3)



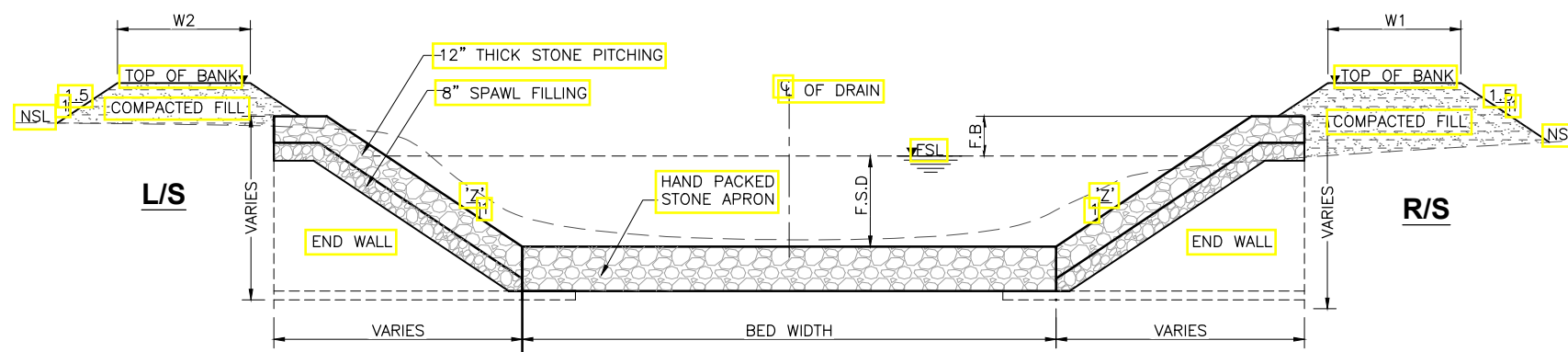
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**SECTION B-B**  
SCALE=1:75



**END WALL**



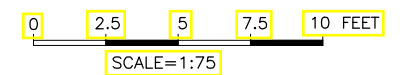
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**REFERENCE DRAWINGS:**

1. APPROVED L- SECTION OF CHANNEL CONCERNED
2. GENERAL NOTES .....4593/TD/061/GN-01

**NOTES:**

1. ALL DIMENSION AND ELEVATIONS ARE IN FEET UNLESS OTHERWISE NOTED.
2. EXISTING DIMENSIONS/LEVELS NEED TO BE VERIFIED BY THE ENGINEER.
3. PROVISION OF STONE PITCHING AT U/S AND D/S OF BRIDGES, FALL STRUCTURES SHOULD BE VERIFIED AT SITE BEFORE CONSTRUCTION.
4. IF BW<25 FT COMPLETE BED SHOULD BE PITCHED.



EMERGENCY FLOOD ASSISTANCE PROJECT (EFAP)-KP  
"RECONSTRUCTION AND REHABILITATION OF  
IRRIGATION AND DRAINAGE SYSTEM AND FLOOD  
PROTECTION WORKS IN KHYBER PAKHUNKHWA"



GOVERNMENT OF KHYBER  
PAKHTUNKHWA  
IRRIGATION DEPARTMENT

REV.	DATE	DESCRIPTION	BY	CKD.	APPR.	APPROVED

DRAWN	F.A
SUBMITTED	M.M
RECOMMENDED	Q.L
CHD/VER	F.R.K
APPROVED	N.A



NATIONAL ENGINEERING  
SERVICES PAKISTAN (PVT)  
LIMITED

HEAD OFFICE : NESPAK HOUSE, 1-C BLOCK N,  
MODEL TOWN EXTENSION, LAHORE PAKISTAN

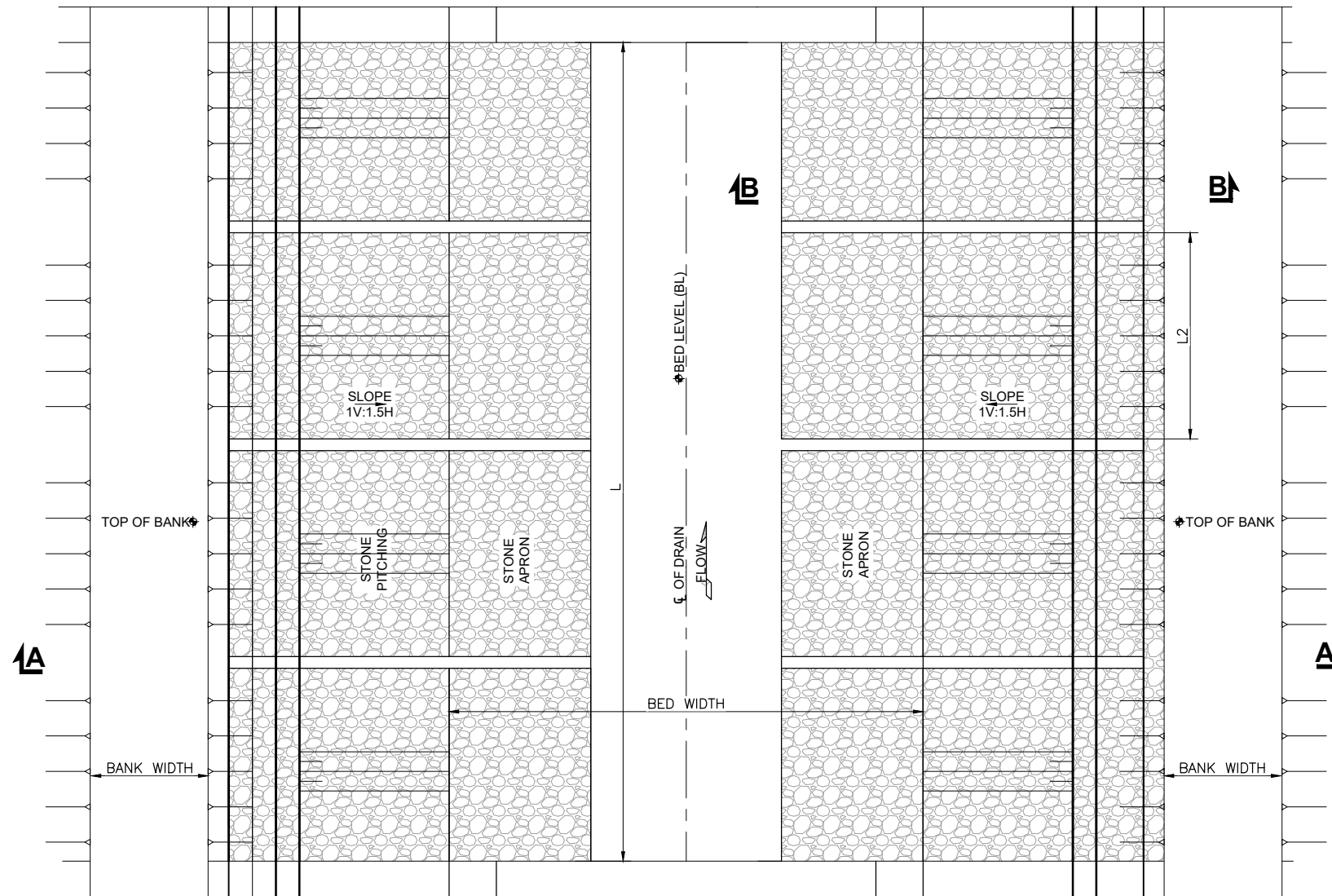
DATE:  
SEP, 2023

DRAWING NO.  
4593/TD/061/DR/RW-04A

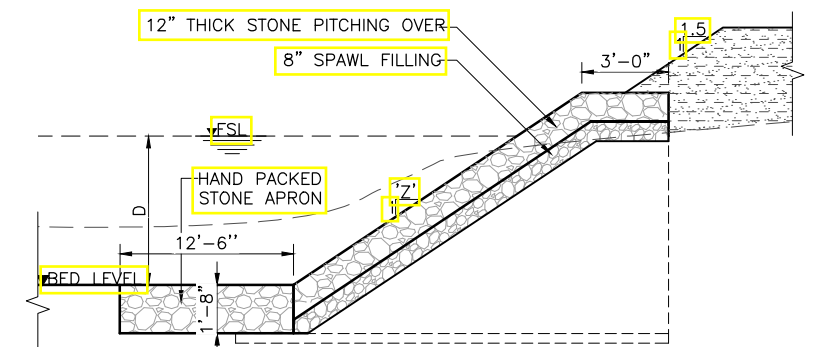
REV.  
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TYPICAL PLAN AND CROSS SECTION  
FOR REHABILITATION WORKS OF DRAIN  
STONE PROTECTION  
(CASE-4A)

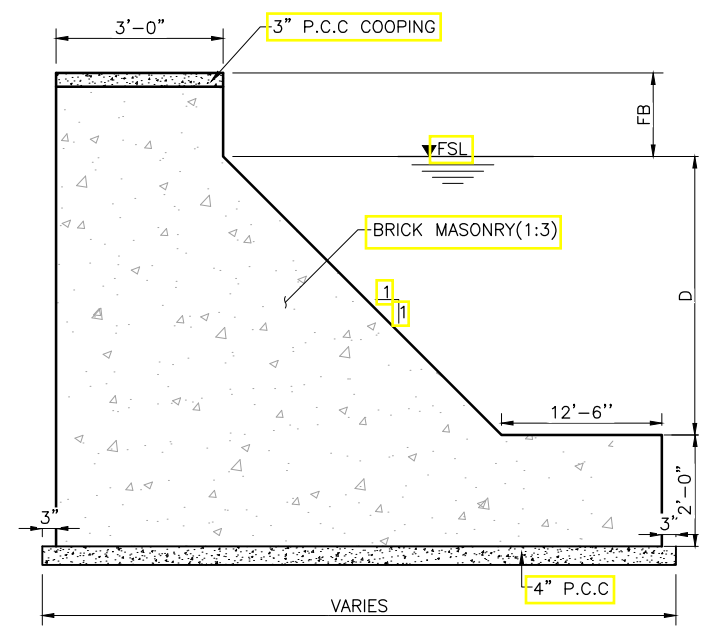




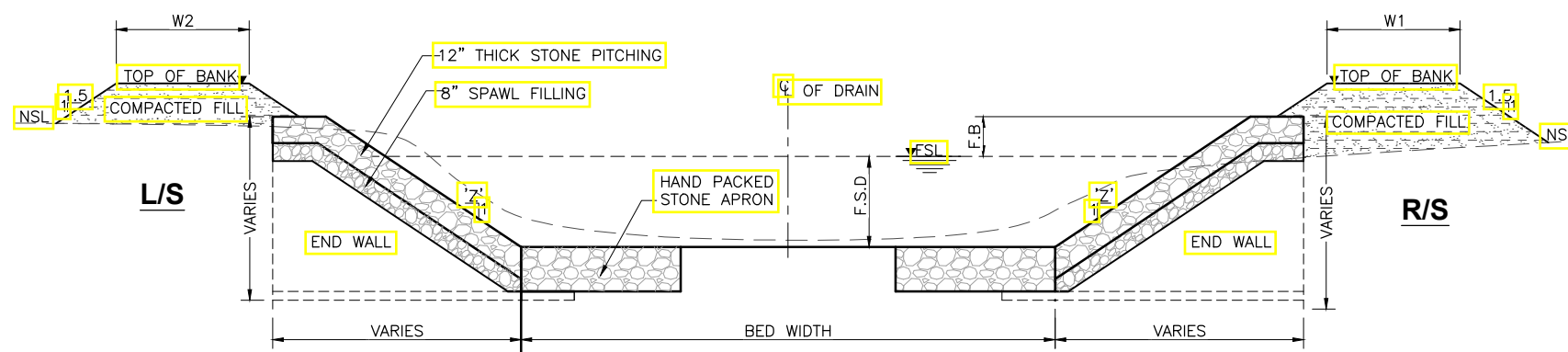
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**SECTION B-B**  
SCALE=1:75



**END WALL**



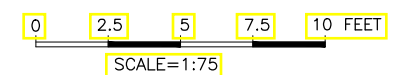
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**REFERENCE DRAWINGS:**

1. APPROVED L- SECTION OF CHANNEL CONCERNED
2. GENERAL NOTES .....4593/TD/061/GN-01

**NOTES:**

1. ALL DIMENSION AND ELEVATIONS ARE IN FEET UNLESS OTHERWISE NOTED.
2. EXISTING DIMENSIONS/LEVELS NEED TO BE VERIFIED BY THE ENGINEER.
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4. IF BW<25 FT COMPLETE BED SHOULD BE PITCHED.



EMERGENCY FLOOD ASSISTANCE PROJECT (EFAP)-KP  
"RECONSTRUCTION AND REHABILITATION OF  
IRRIGATION AND DRAINAGE SYSTEM AND FLOOD  
PROTECTION WORKS IN KHYBER PAKHUNKHWA"



GOVERNMENT OF KHYBER  
PAKHTUNKHWA  
IRRIGATION DEPARTMENT

REV.	DATE	DESCRIPTION	BY	CKD.	APPR.	APPROVED

DRAWN	F.A
SUBMITTED	M.M
RECOMMENDED	Q.L
CHD/VER	F.R.K
	N.A

**NESPAK** NATIONAL ENGINEERING  
SERVICES PAKISTAN (PVT)  
LIMITED

HEAD OFFICE : NESPAK HOUSE, 1-C BLOCK N,  
MODEL TOWN EXTENSION, LAHORE PAKISTAN

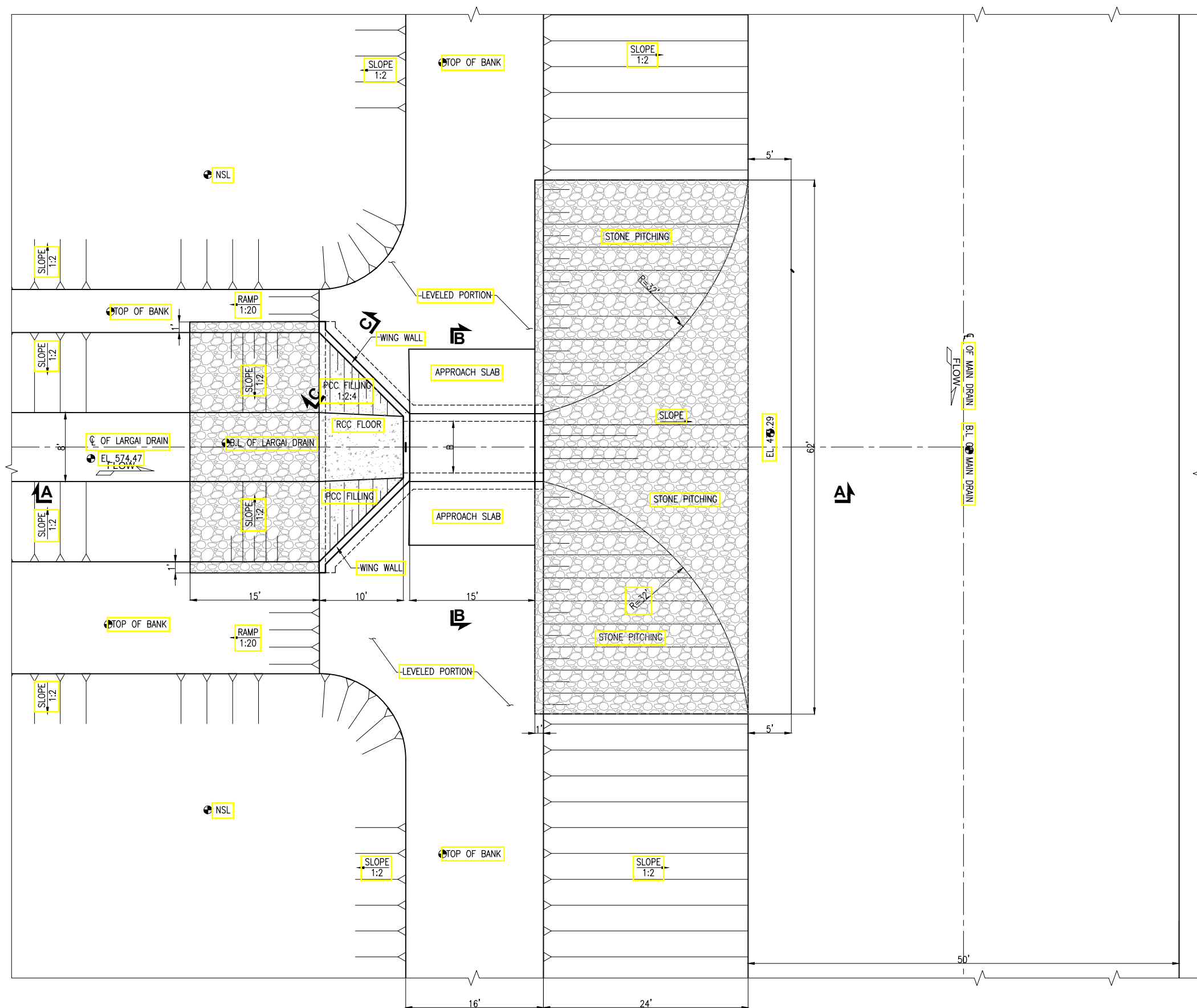
DATE:  
SEP, 2023

DRAWING NO.  
4593/TD/061/DR/RW-04B

REV.  
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TYPICAL PLAN AND CROSS SECTION  
FOR REHABILITATION WORKS OF DRAIN  
STONE PROTECTION  
(CASE-4B)

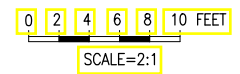




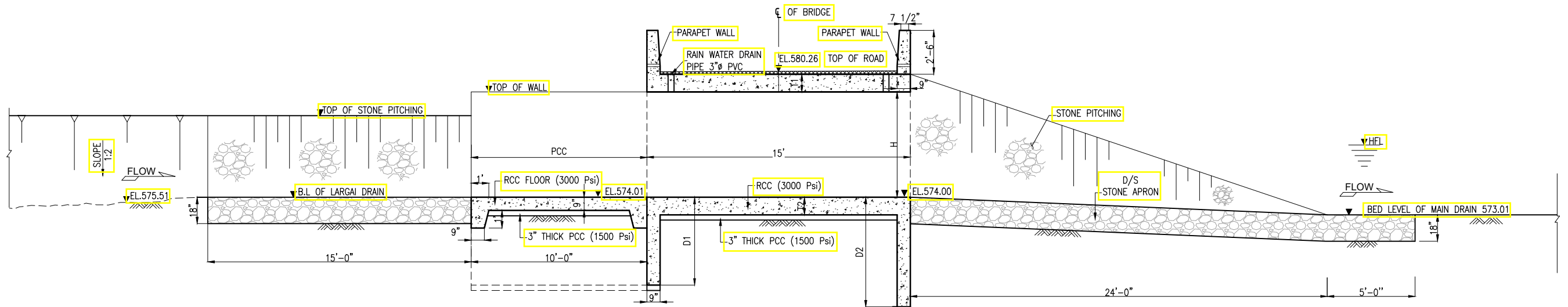
**LAYOUT PLAN**

**NOTES:**

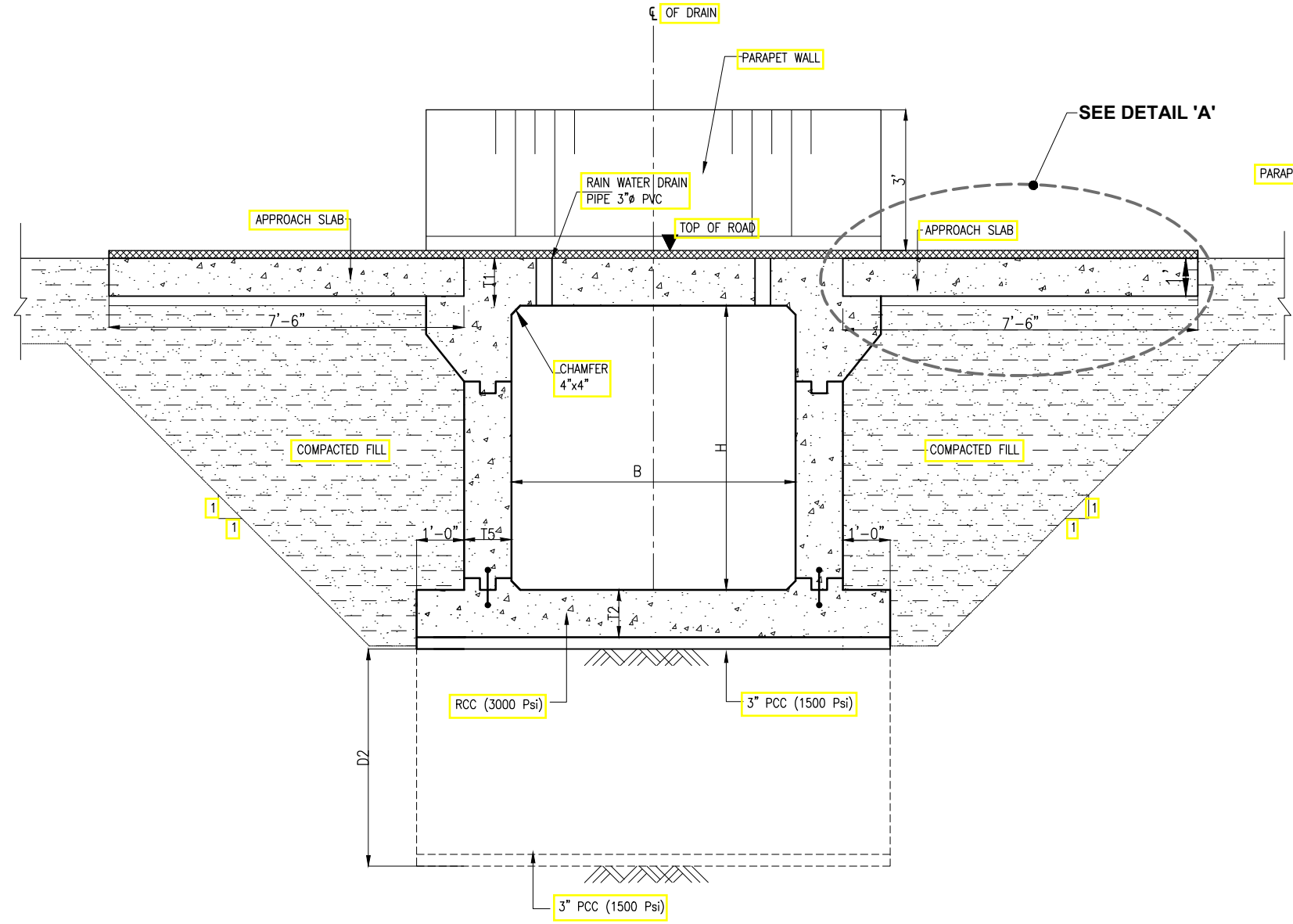
1. ALL DIMENSIONS IN FEET & INCHES UNLESS OTHERWISE INDICATED.
2. ALL EXPOSED CORNERS OF STRUCTURAL CONCRETE SHALL BE CHAMFERED 4" x 4" INCH UNLESS OTHERWISE SHOWN.
3. ALL STRUCTURAL CONCRETE SHALL HAVE MIN. COMPRESSIVE CYLINDER STRENGTH OF 3000 PSI AND ORDINARY PORTLAND CEMENT SHALL BE USED.
4. WEARING COURSE THICKNESS VARIES FROM 3 INCHES AT CENTER TO 2 INCHES AT PARAPET.
5. WEARING COURSE SHALL BE OF P.C.C(1:2:4) OR AS DIRECTED BY ENGINEER WITH MAXIMUM AGGREGATE SIZE OF 0.5 INCHES.
6. ALL CONSTRUCTION JOINT SURFACES SHALL BE ROUGHENED TO REMOVE LAITANCE, EXPOSE THE AGGREGATE SURFACE AND BE THOROUGHLY CLEANED AND WETTED BEFORE THE NEW CONCRETE IS PLACED.
7. ALL REINFORCED CONCRETE SURFACES IN CONTACT WITH EARTH SHALL BE PROVIDED WITH HOT BITUMEN COATING AS DIRECTED BY THE ENGINEER.
8. PROVIDE WELL COMPACTED BACKFILL MATERIAL IN EXCAVATED PORTION AROUND STRUCTURE. THE COMPACTION SHALL NOT BE LESS THAN 95% OF MAX. DRY DENSITY AS DETERMINED BY MODIFIED AASHTO, DESIGNATION; T180-93.
9. APPROACH AT U/S & D/S OF CULVERT SHALL BE MADE AS PER SITE CONDITIONS OR AS DIRECTED BY THE ENGINEER.
10. DESIGN OF ROAD CULVERT IS BASED ON SOIL BEARING CAPACITY OF 1 TSF, AFTER GEO-TECHNICAL INVESTIGATION IF BEARING CAPACITY VALUE CHANGES, DESIGN WILL BE REVISED.



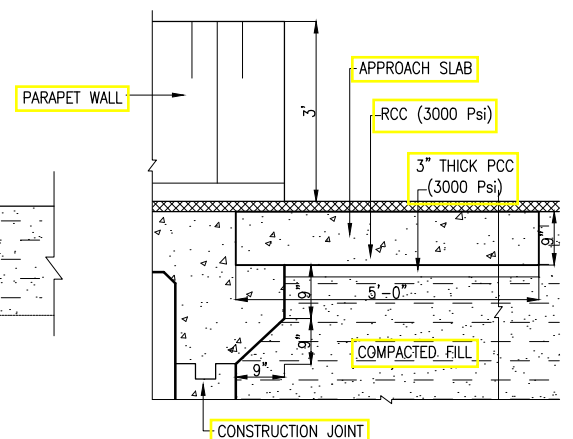
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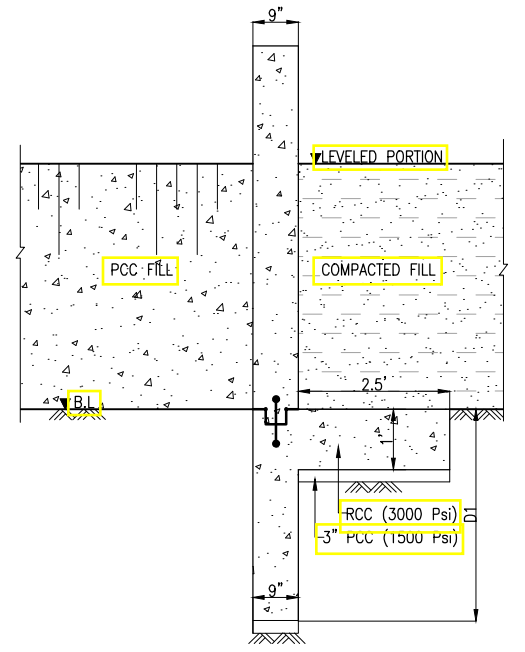
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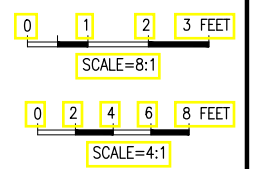
**SECTION B-B**  
(SCALE 4:1)



**DETAIL 'A'**  
APPROACH SLAB  
(SCALE 8:1)



**SECTION C-C**  
(SCALE 8:1)



EMERGENCY FLOOD ASSISTANCE PROJECT (EFAP)-KP "RECONSTRUCTION AND REHABILITATION OF IRRIGATION AND DRAINAGE SYSTEM AND FLOOD PROTECTION WORKS IN KHYBER PAKHTUNKHWA"		<b>GOVERNMENT OF KHYBER          PAKHTUNKHWA          IRRIGATION DEPARTMENT</b>	REV.	DATE	DESCRIPTION	BY	CKD.	APPR.	APPROVED	DRAWN	F.A / A.M	<b>NATIONAL ENGINEERING          SERVICES PAKISTAN (PVT)          LIMITED</b>	<b>DRAINAGE CULVERT MAIN DRAIN          AT RD 28+300          SECTIONS AND DETAILS</b>	DATE:	DRAWING NO.	REV.
										HEAD OFFICE : NESPAK HOUSE, 1-C BLOCK N, MODEL TOWN EXTENSION, LAHORE PAKISTAN		DATE: AUG, 2023	DRAWING NO. 4593/TD/061/DR/DC-02	REV. 1		

**TABLE OF DIMENSIONS AND ELEVATIONS OF DRAINAGE CULVERT**

Sr No.	Drain Name	Drain / Nullah RD.	Dispose off in Main Drain RD.	Existing Hydraulic Data					Proposed Culvert Structural Data												
				Design Discharge	Bed Width	Existing Bed Level	Flow Depth	Free Board	Design U/S Floor Level	Top Level of Road	No. of Barrel	Width of Barrel (B)	No. of Peir	Barrel Height (H)	U/S Scour Depth (D1)	D/S Scour Depth (D2)	T1	T2	T3	T4	T5
(-)	(-)	(ft)	(ft)	(ft <sup>3</sup> /sec)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(-)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	
1	Village Drain (Seed Farms)	0+000	28+300	45.00	6.00	574.41	3.00	2.00	574.01	580.26	1	6.00	-	5.00	2.50	6.00	1.00	1.00	0.75	0.75	-

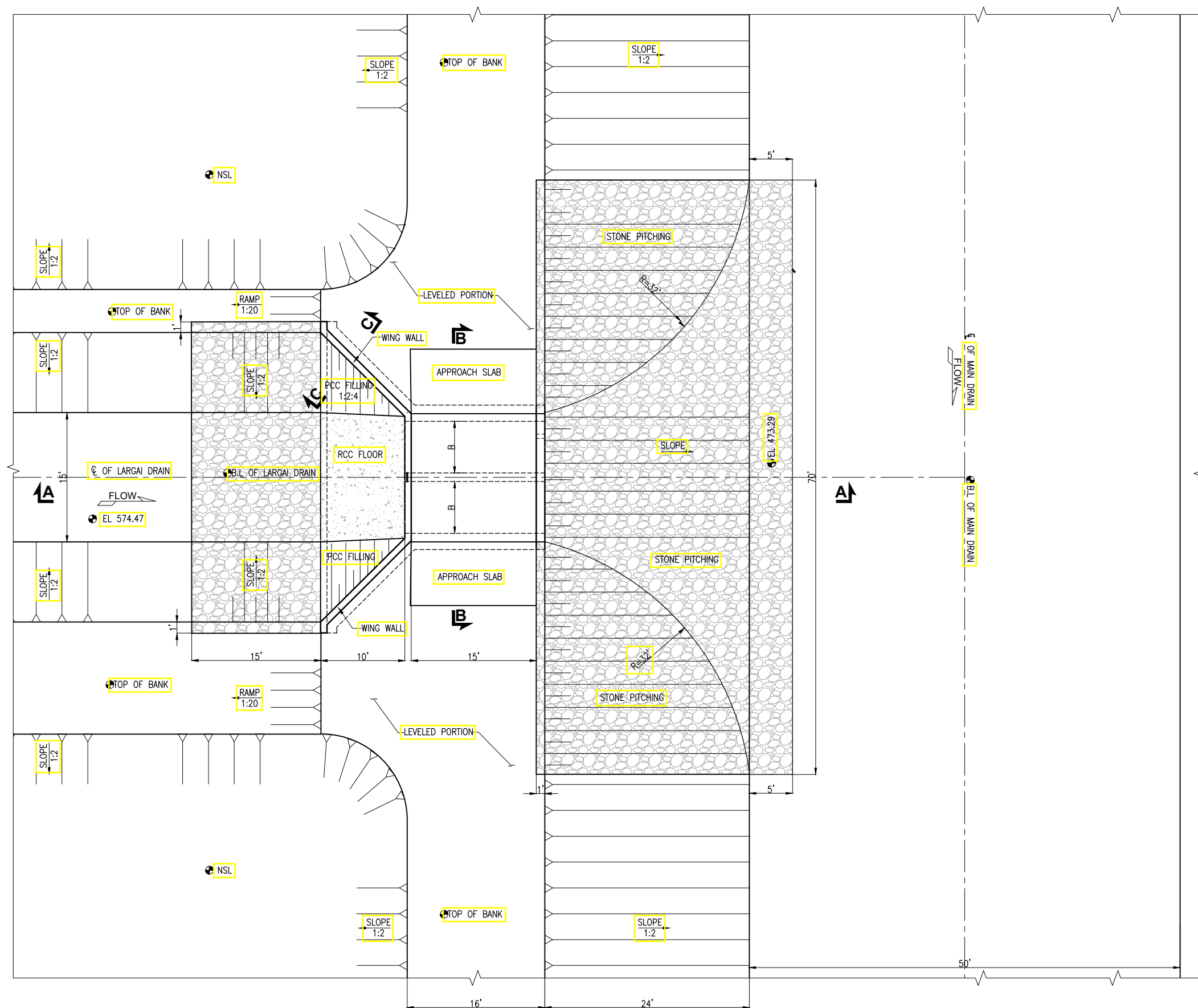
**DIMENSIONS**

- T1 SLAB THICKNESS
- T2 FLOOR THICKNESS
- T3 PARAPET WALL THICKNESS
- T4 WALL THICKNESS
- T5 PIER THICKNESS



REV.	DATE	DESCRIPTION	BY	CKD.	APPR.	APPROVED

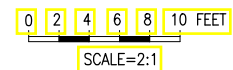




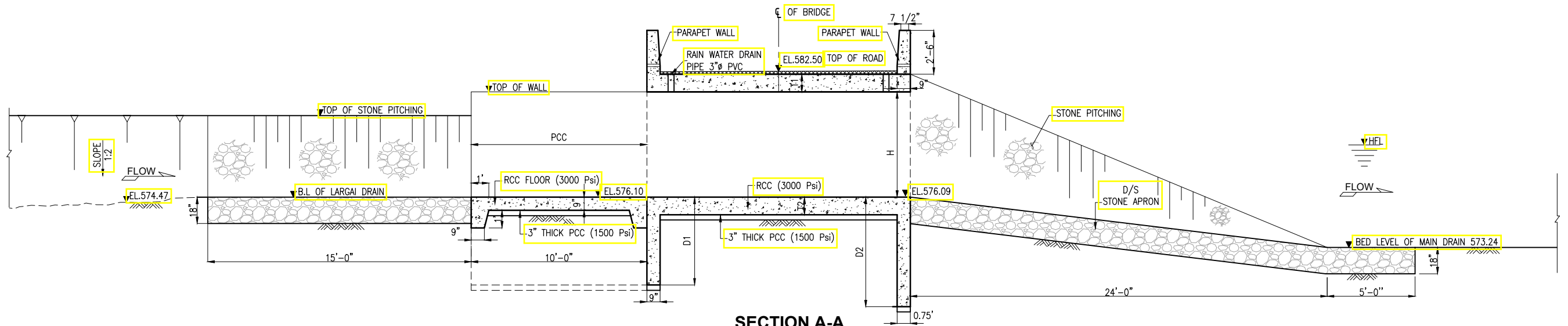
**LAYOUT PLAN**

**NOTES:**

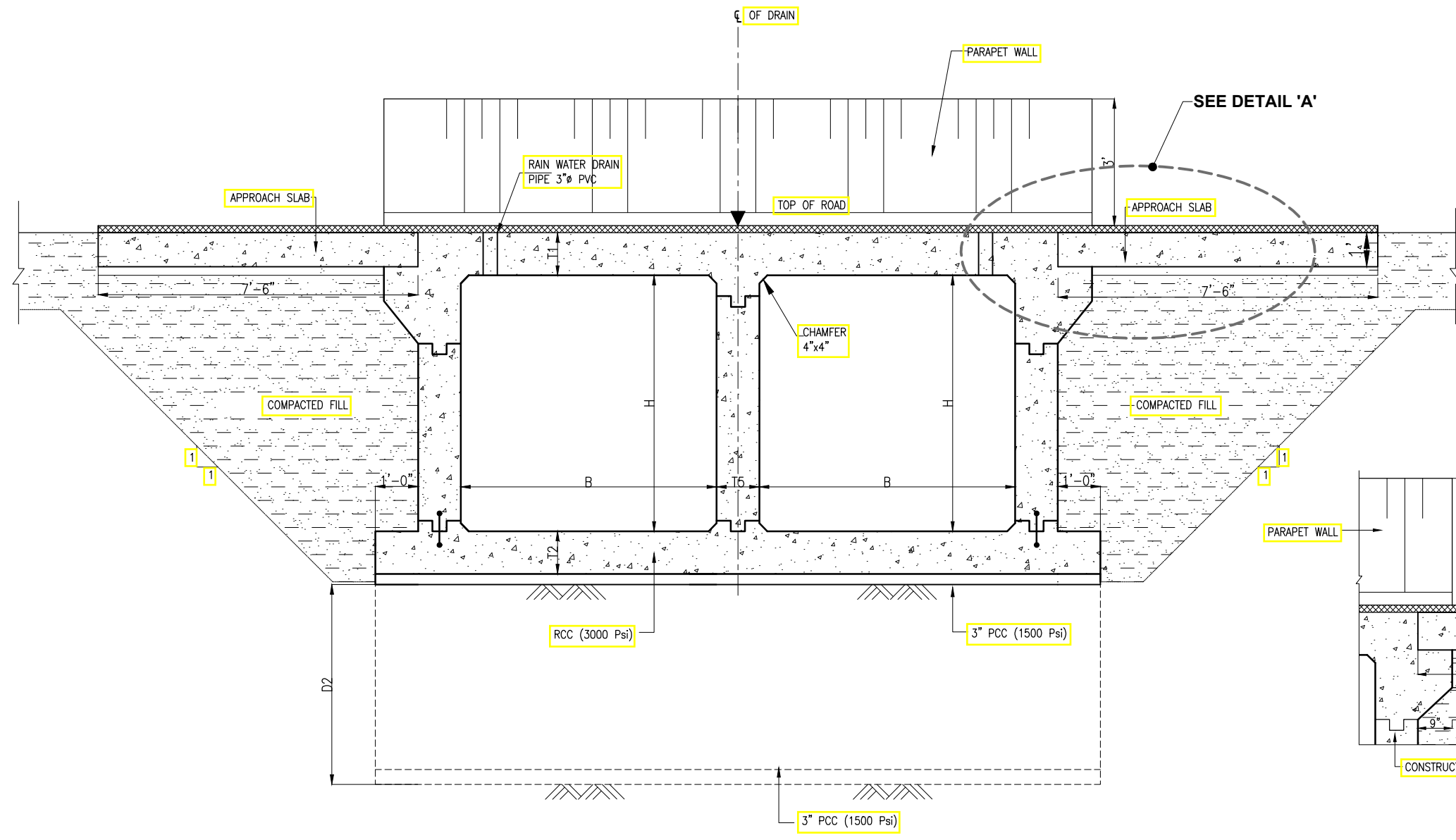
1. ALL DIMENSIONS IN FEET & INCHES UNLESS OTHERWISE INDICATED.
2. ALL EXPOSED CORNERS OF STRUCTURAL CONCRETE SHALL BE CHAMFERED 4" x 4" INCH UNLESS OTHERWISE SHOWN.
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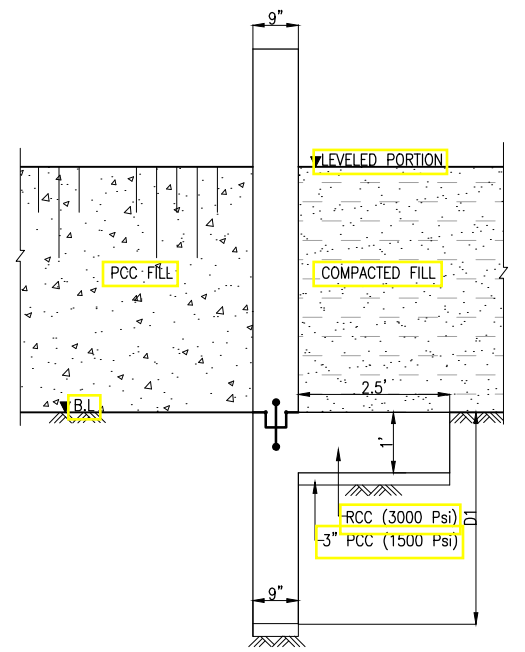
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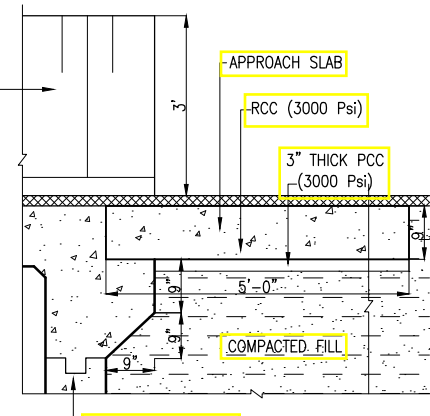
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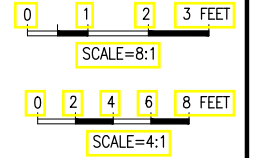
**SECTION B-B**  
(SCALE 4:1)



**SECTION C-C**  
(SCALE 8:1)



**DETAIL A'**  
APPROACH SLAB  
(SCALE 8:1)



<b>EMERGENCY FLOOD ASSISTANCE PROJECT (EFAP)-KP</b> <b>"RECONSTRUCTION AND REHABILITATION OF</b> <b>IRRIGATION AND DRAINAGE SYSTEM AND FLOOD</b> <b>PROTECTION WORKS IN KHYBER PAKHTUNKHWA"</b>		<b>GOVERNMENT OF KHYBER</b> <b>PAKHTUNKHWA</b> <b>IRRIGATION DEPARTMENT</b>	REV.	DATE	DESCRIPTION	BY	CKD.	APPR.	DRAWN	F.A	<b>NATIONAL ENGINEERING</b> <b>SERVICES PAKISTAN (PVT)</b> <b>LIMITED</b>	<b>DRAINAGE CULVERT LARGI-1</b> <b>AT RD 0+000</b> <b>SECTIONS AND DETAILS</b>	DATE:	DRAWING NO.	REV.
									HEAD OFFICE : NESPAC HOUSE, 1-C BLOCK N, MODEL TOWN EXTENSION, LAHORE PAKISTAN		DATE: AUG, 2023		DRAWING NO. 4593/TD/061/DR/DC-02		

**TABLE OF DIMENSIONS AND ELEVATIONS OF DRAINAGE CULVERT**

Sr No.	Drain Name	Drain / Nullah RD.	Dispose off in Main Drain RD.	Existing Hydraulic Data					Proposed Culvert Structural Data												
				Design Discharge	Bed Width	Existing Bed Level	Flow Depth	Free Board	Design U/S Floor Level	Top Level of Road	No. of Barrel	Width of Barrel (B)	No. of Peir	Barrel Height (H)	U/S Scour Depth (D1)	D/S Scour Depth (D2)	T1	T2	T3	T4	T5
(-)	(-)	(ft)	(ft)	(ft <sup>3</sup> /sec)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(-)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)
1	Largi-I	0+000	38+000	95.00	14.00	575.85	3.15	2.00	576.10	582.50	2	6.00	1.00	5.15	3.00	6.00	1.00	1.00	0.75	0.75	0.75

**DIMENSIONS**

- T1 SLAB THICKNESS
- T2 FLOOR THICKNESS
- T3 PARAPET WALL THICKNESS
- T4 WALL THICKNESS
- T5 PIER THICKNESS



REV.	DATE	DESCRIPTION	BY	CKD.	APPR.	APPROVED



**TYPICAL DRAWINGS FOR  
PROPOSED REHABILITATION WORKS OF  
DISTRIBUTARIES & MINORS**

## REHABILITATIONS OF CANALS IN PAHARPUR IRRIGATION DIVISION, DERA ISMAIL KHAN

### LIST OF TYPICAL DRAWINGS FOR PROPOSED REHABILITATION WORKS OF DISTRIBUTRY AND MINORS

SR. NO.	DRAWING TITLE	DRAWING NO.
1	GENERAL NOTES (SHEET 1 OF 2)	4593-TD-061-GN-01
2	GENERAL NOTES (SHEET 2 OF 2)	4593-TD-061-GN-01
3	TYPICAL CROSS SECTION FOR REHABILITATION WORKS CONCRETE SIDE PROTECTION WITH SIDE WALL(CASE-1A) (SHEET 1 OF 4)	4593-TD-061-RW-01
4	TYPICAL CROSS SECTION FOR REHABILITATION WORKS CONCRETE SIDE PROTECTION WITHOUT SIDE WALL(CASE-1B) (SHEET 2 OF 4)	4593-TD-061-RW-01
5	TYPICAL CROSS SECTION FOR REHABILITATION WORKS CONCRETE SIDE PROTECTION WITH BOTH SIDE WALL(CASE-1C) (SHEET 3 OF 4)	4593-TD-061-RW-01
6	TYPICAL CROSS SECTION FOR REHABILITATION WORKS CONCRETE SIDE PROTECTION WITH SIDE WALL DETAILS	4593-TD-061-RW-01
7	TYPICAL CROSS SECTION FOR REHABILITATION WORKS COMPLETE CONCRETE REHABILITATION (CASE-2)	4593-TD-061-RW-02
8	TYPICAL PLAN AND CROSS SECTION FOR REHABILITATION WORKS BRICK RETAINING WALL SIDE PROTECTION (CASE-3) (SHEET 1 OF 1)	4593-TD-061-RW-03
9	TYPICAL PLAN AND CROSS SECTION FOR REHABILITATION WORKS STONE PROTECTION SIDE PROTECTION (CASE-4)	4593-TD-061-RW-04

### LIST OF TYPICAL DRAWINGS FOR PROPOSED REHABILITATION WORKS OF HYDRAULIC STRUCTURES

12	TYPICAL PLAN FOR REHABILITATION WORKS OF BRIDGE (SHEET 1 OF 2)	4593/TD/061/RHS-01
13	TYPICAL CROSS SECTIONS FOR REHABILITATION WORKS OF BRIDGE (SHEET 2 OF 2)	4593/TD/061/RHS-01
14	TYPICAL PLAN FOR REHABILITATION WORKS OF FOOT BRIDGE (SHEET 1 OF 2)	4593/TD/061/RHS-02
15	TYPICAL CROSS SECTIONS FOR REHABILITATION WORKS OF FOOT BRIDGE (SHEET 2 OF 2)	4593/TD/061/RHS-02
16	TYPICAL PLAN AND CROSS SECTIONS FOR REHABILITATION WORKS BRIDGE CUM GLACIS FALL STRUCTURE (SHEET 1 OF 2)	4593/TD/061/RHS-03
17	TYPICAL CROSS SECTIONS FOR REHABILITATION WORKS BRIDGE CUM GLACIS FALL STRUCTURE (SHEET 2 OF 2)	4593/TD/061/RHS-03
18	TYPICAL PLAN AND CROSS SECTION FOR REHABILITATION WORKS BRICK RETAINING WALL DETAILS	4593/TD/061/RHS-04

EMERGENCY FLOOD ASSISTANCE PROJECT (EFAP)-KP  
"RECONSTRUCTION AND REHABILITATION OF  
IRRIGATION AND DRAINAGE SYSTEM AND FLOOD  
PROTECTION WORKS IN KHYBER PAKHTUNKHWA"



GOVERNMENT OF KHYBER  
PAKHTUNKHWA  
IRRIGATION DEPARTMENT

REV.	DATE	DESCRIPTION	BY	CKD.	APPR.	APPROVED	N.A

DRAWN	F.A
SUBMITTED	M.M
RECOMMENDED	Q.L
CHD/VER	F.R.K
APPROVED	N.A

**NES**  
**PAR** NATIONAL ENGINEERING  
SERVICES PAKISTAN (PVT)  
LIMITED

HEAD OFFICE : NESPAK HOUSE, 1-C BLOCK N,  
MODEL TOWN EXTENSION, LAHORE PAKISTAN

DATE  
AUG 2023

DWG. NO.

REV.  
0

LIST OF DRAWINGS

# GENERAL NOTES

## 1. GENERAL

- 1.1 Coordinates, wherever mentioned, refer to "Universal Traverse Mercator (UTM)" System Zone 43 Northern Mercator as per hemisphere WGS 1984.
- 1.2 All dimensions and elevations etc. shown on the drawings are in FP System unless otherwise indicated.
- 1.3 The Grid, Co-ordinates of points and contours are in feet.
- 1.4 Canal chainages are shown as Reduced Distances (RD) in 1000 feet measured along center line of canal.
- 1.5 Locations of variable Layout features such as sand dunes, nullahs, depressions and houses etc., are subject to change.
- 1.6 To record the existing ground levels for measurement of excavation and fill in embankments, the area shall jointly be surveyed by the Contractor and the Engineer before starting the works, and same shall be used for quantity estimation & certification.
- 1.7 The Contractor shall prepare and submit plan for excavation of foundation and drawings for concrete structures to the Engineer for approval prior to pouring of concrete.
- 1.8 All areas disturbed due to the construction activities shall properly be restored to its original form or as directed by the Engineer.
- 1.9 Location of structures are approximate and subject to adjustment and shall be finalized as per site conditions and as per directions of the site Engineer.
- 1.10 Any variation between drawings and site conditions shall be brought into the notice of the Engineer for clarification before execution of the work
- 1.11 Drawings shall be read in conjunction with all other relevant drawings.
- 1.12 Two coats of approved quality of bitumen shall be applied on the earth face of the structures for waterproofing as per contract specifications or as directed by the Engineer.

## 2. BRIDGES

- 2.1 Construction shall conform to the latest versions of AASHTO, LRFD Loadings and NHA Code Requirements.
- 2.2 Deck Slab shall be installed in their correct position.
- 2.3 Design loads are those defined in the "Code of Practice for Highway Bridges West Pakistan Highway Deptt: 1967-Class AA Tracked Military Loading Class A and Class B loadings including NLC loading
- 2.4 The RCC deck shall be constructed prior to back filling at abutments.

## 3. EARTH WORK

- 3.1 Excavation shall be carried out to the lines and grades shown on the drawings or as directed by the Engineer.
- 3.2 Fill, backfill and selected fill material where required, shall be placed and compacted to the requirements as per Technical provisions.
- 3.3 Backfill for the bridge abutment walls shall consist of coarse grained soil without admixture of fine particles, non-expansive and non cohesive, clean sand and gravel, having  $\phi \geq 33^\circ$ .
- 3.4 Backfill material for retaining walls, wing walls and other earth retaining structures shall consist of silty-sandy soils (SM soils) containing fines (Passing 200 sieve) up to 16% and compacted to 95% standard proctor dry density (ASTM D698).
- 3.5 All backfill material for bridge abutment walls shall be compacted to 95% of maximum modified proctor dry density. (ASTM D1557).
- 3.6 The structures to be constructed on fill, shall be placed on engineered fill as per specifications or as directed by the Engineer.
- 3.7 On the basis of limited geotechnical investigations as conveyed in supplementary bidding document, all the structures at Main Canal, Tributaries/Minors and Flood Carrier channels shall comply to the following instructions;
  - i Shallow foundation above NSL must be placed over selected fill material, as specified, against the bearing capacity of 1.25 MTon/sq. ft. Selected fill material must be ensured to have the minimum depth of 5ft below foundation.
  - ii Shallow foundation below NSL has been designed against the bearing capacity of 1.25 MTon/sq. ft and subjected to further verification on the basis of geotechnical investigations duly approved by the competent authority prior to construction.
- 3.8 Development of any excessive pressure behind the abutment & retaining walls due to over compaction shall be avoided.
- 3.9 Any loose soil encountered during excavation of canal or structure foundation shall be replaced with approved fill material.
- 3.10 The Contractor shall keep the excavated area dry during the construction activity and atleast 12 hours after its excavation or as directed by the Engineer.

## 4. CONCRETE

- 4.1 Concrete design and construction shall conform to the latest version of ACI 350-21 (code requirements for Environmental Engineering Concrete Structures) and ACI 318-19 (Building code requirements).
- 4.2 Unless otherwise noted on the drawings the minimum compressive concrete cylinder strength at 28 days shall be as follows:
  - i RC Class B 3000 psi Structural concrete and precast concrete.
  - ii PC Class C 3000 psi Mass concrete and concrete lining.
  - iii PC Class D 1500 psi Blinding concrete.

- 4.3 Sulphate resisting cement conforming to ASTM-C150 or specified equivalent shall be used for canal lining. For other related structures Sulphate resisting cement shall be used where specified on the basis of recommendations of water and soil test results.
- 4.4 Concrete finishes and tolerances shall be as per technical specifications.
- 4.5 All exposed concrete edges shall be chamfered  $\frac{3}{4}" \times \frac{3}{4}"$  unless otherwise shown on the drawings.
- 4.6 The design of formwork and false work as well as its construction shall be the responsibility of the Contractor. Design of formwork and false work shall conform to latest version of ACI 347 and ACI SP4-05.
- 4.7 All reinforced concrete shall be fair-faced to be casted in properly designed steel formwork and plates.
- 4.8  $2 \frac{1}{2}" \times 2 \frac{1}{2}"$  precast concrete spacer blocks having minimum concrete cylinder compressive strength of 4000 psi and spaced not more than 3' c/c shall be used for provision of cover to main reinforcement. Thickness of these blocks shall be equal to the recommended cover.

## 5. REINFORCEMENT

- 5.1 All reinforcing steel indicated on drawings, except for stirrups, shall be deformed bars conforming to ASTM A-615 Grade 60 with minimum yield strength of 60,000 psi, while for stirrups use deformed bars conforming to ASTM A-615 Grade 40 with minimum yield strength of 40,000 psi.
- 5.2 Minimum concrete cover to reinforcement, unless otherwise noted, shall be:
 

Bottom reinforcement of slabs.	= 1"
Faces in contact with earth.	= 3"
Piles.	= 3"
Top surface of glacis and stilling basin floors.	= 2½"
Beams, diaphragms & deck slabs (top reinforcement).	= 1½"
Hand railing, Spirals.	= 1"
- 5.3 Concrete reinforcement strength of all precast RC pipes dia 6" & 9" shall conform to the requirements of BS 5911: 1981 (part-1)
- 5.4 Concrete and reinforcement strength of all precast RC pipes used, shall conform to the requirements of ASTM designation C-76 for class- III, wall- A pipe.
- 5.5 Wherever required, the lap and development lengths will be according to the following table. All lap splices shall be staggered.

### LAP/DEVELOPMENT LENGTHS (60,000 Psi Tension)

BAR SIZE	(#)	3	4	5	6	7	8	9	10	11
LAP LENGTHS	(in.)	24	32	40	48	70	80	90	100	110
DEVELOPMENT LENGTHS	(in.)	18	25	31	37	54	62	69	77	85

### LAP/DEVELOPMENT LENGTHS (4,000 Psi Compression)

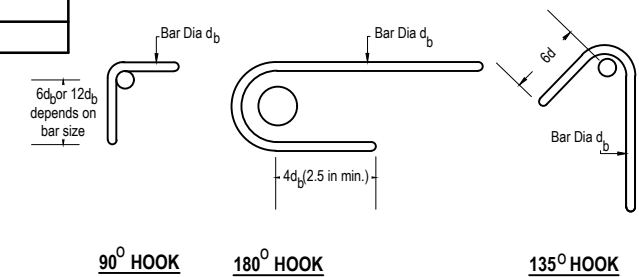
BAR SIZE	(#)	3	4	5	6	7	8	9	10	11
LAP LENGTHS	(in.)	11	15	19	23	26	30	34	38	41
DEVELOPMENT LENGTHS	(in.)	8	10	12	15	17	19	21	24	26

- 5.6 The Contractor shall prepare all bar bending schedules as per construction drawings etc. and submit to the Engineer well before execution for approval.
- 5.7 All reinforcing steel shall be accurately placed in the formwork and held firmly before placing concrete by means of 16 gauge black annealed wires and adequately designed spacers.
- 5.8 Bars in columns shall be joggled for laps with starter bars.
- 5.9 Except as otherwise shown on the drawing, whenever reinforcing bars of different sizes are to be lapped in compression, splice length shall be the larger of the development length of the longer bar or splice length of smaller bar.
- 5.10 The bend details shall be as shown in the table and figures below.

### MINIMUM DIAMETER OF BEND.

BAR SIZE	MINIMUM DIAMETER OF BEND
#3 through #8	6 d <sub>b</sub>
#9, #10 and #11	8 d <sub>b</sub>

### STANDARD HOOKS



(SHEET 1 OF 2)

**EMERGENCY FLOOD ASSISTANCE PROJECT (EFAP)-KP  
"RECONSTRUCTION AND REHABILITATION OF  
IRRIGATION AND DRAINAGE SYSTEM AND FLOOD  
PROTECTION WORKS IN KHYBER PAKHTUNKHWA"**



**GOVERNMENT OF KHYBER  
PAKHTUNKHWA  
IRRIGATION DEPARTMENT**

REV.	DATE	DESCRIPTION	BY	CKD.	APPR.	APPROVED	NA

**NESPAC NATIONAL ENGINEERING  
SERVICES PAKISTAN (PVT)  
LIMITED**

HEAD OFFICE : NESPAK HOUSE, 1-C BLOCK N,  
MODEL TOWN EXTENSION, LAHORE PAKISTAN

GENERAL NOTES (DISTRIBUTARY)		DATE	DWG. NO.	REV.
		AUG 2023	4593/TD/061/GN-01	0



# GENERAL NOTES

## 6. STRUCTURAL STEEL

- 6.1 All structural steel shall conform to requirements of ASTM Designation A36 .
- 6.2 Welding will be continuous fillet weld unless otherwise shown on the drawings using electrodes of approved quality.
- 6.3 All structural steel shall be galvanized or painted as directed by the Engineer.

## 7. BRICK MASONRY

- 7.1 All bricks for brick masonry structures shall have minimum compressive strength of 2000 psi.
- 7.2 Brick masonry shall be laid in 1:3 cement/sand mortar unless otherwise noted.
- 7.3 Plastering/Pointing shall be done on all exposed faces of brick masonry in 1:3 cement/sand mortar.
- 7.4 Absorption capacity of bricks varies with chemical composition of clay component. A good quality bricks should not absorb water more than 10 to 15 % by weight in 12 hours.

## 8. EXPANSION JOINTS

- 8.1 Preformed/premoulded expansion joint filler (non extruding and resilient type) conforming to AASHTO M213 specification shall be used at locations shown on the drawings .
- 8.2 Concrete joint-sealer, hot poured, Elastic type conforming to the AASHTO:M173. shall be used.

## 9. CONTRACTION , DUMMY & CONSTRUCTION JOINTS

- 9.1 Unless otherwise shown on the drawings, contraction, dummy & construction joints shall be provided as per specifications with the approval of The Engineer and shall be planned before execution of work.
- 9.1 All construction joint surfaces shall be roughened to remove latinate,expose the aggregate surface and be thoroughly cleaned and wetted before the new concrete is placed.

## 10. MISCELLANEOUS

- 10.1 Two coats of approved quality of Bitumen shall be applied on the earth face of the structures for waterproofing as per contract specifications unless otherwise shown on the drawings.
- 10.2 All water stops shall be 9" PVC water stops with three bulbs or as indicated on drawings.
- 10.3 The design of the foundations of the structures is based on recommendations of soil test report.
- 10.4 All materials, workmanship and tests shall conform to AASHTO specifications except where specifically notified on the drawings.
- 10.5 Construction of all components of the bridge shall conform to the relevant clauses of AASHTO standard specifications, unless otherwise specified.
- 10.6 All elevations shown on drawings are finished surface .
- 10.7 Placement of concrete shall extend to the full width of deck slab. Construction joint will be permitted at the centre line of diaphragm. Concrete for deck may be placed monolithically at contractors options.
- 10.8 Concrete in the deck slab shall be placed in full width. No construction joints will be permitted. Concrete for the barriers and guardrail shall be placed not sooner than 10 days after placing the concrete in the deck slab or as directed by the Engineer.
- 10.9 Asphalt layer / wearing surface of 3" shall be used on all Bridge deck slabs / Approach slabs. No surfacing is required over Foot Bridges / Water Pipe Crossings.
- 10.10 Rain water outlet / pipe of 4" dia shall conform to relevant Technical Specification.

## 11. MECHANICAL WORKS

- 11.1 Gate and Hoisting arrangements shown on the Mechanical drawings are indicative and fabrication shall commence after approval of Contractor's design submitted to the Engineer.
- 11.2 Suitable dogging bars shall be provided for the gates.
- 11.3 Fabrication and installation shall be in accordance with the current AISC - specifications for the design, fabrication and erection of structural steel for building.
- 11.4 All welding shall be in accordance with the AWS Code D-1.1 welding in building construction. Minimum fillet weld shall be ¼".
- 11.5 All edges in contact with rubber seal shall be rounded.
- 11.6 C.G of gate shall be determined in shop after fabrication.
- 11.7 Welding pads shall be spaced at max. 1.5' C/C.
- 11.8 Upstream stop log guides shall be opposite to each other.
- 11.9 All materials/paintings and their thickness shall be according to the specifications and drawings and subject to prior approval.
- 11.10 Material test certificates shall be submitted for approval before start of fabrication.
- 11.11 Dimensions/sizes provided on the drawing are the minimum requiremnets. The Contractor shall design and submit the shop drawings/calculations or approval before start of manufacturing. No manufacturing shall be done without approval by Engineer.
- 11.12 The gate equipment shall not be transported to the site before shop inspection by the Engineer or representative.
- 11.13 All installation works shall be carried out according to approved schedule and in the presence of the Engineer or representative.
- 11.14 Complete BOQ shall be provided on the each shop drawing including item Nos.,description,dimensions and quantities.

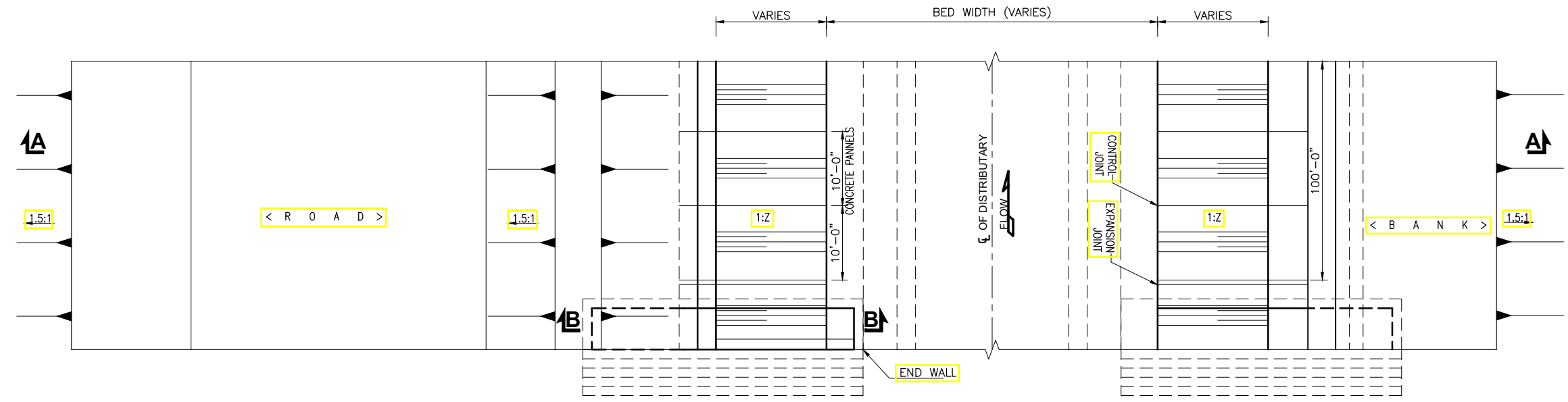
(SHEET 2 OF 2)

<b>EMERGENCY FLOOD ASSISTANCE PROJECT (EFAP)-KP "RECONSTRUCTION AND REHABILITATION OF IRRIGATION AND DRAINAGE SYSTEM AND FLOOD PROTECTION WORKS IN KHYBER PAKHUNKHWA"</b>	 <b>GOVERNMENT OF KHYBER PAKHTUNKHWA IRRIGATION DEPARTMENT</b>		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>DRAWN</td><td>F.A</td></tr> <tr><td>SUBMITTED</td><td>M.M</td></tr> <tr><td>RECOMMENDED</td><td>Q.L</td></tr> <tr><td>CHD/VER</td><td>F.R.K</td></tr> <tr><td>REV.</td><td>N.A</td></tr> </table>	DRAWN	F.A	SUBMITTED	M.M	RECOMMENDED	Q.L	CHD/VER	F.R.K	REV.	N.A		 <b>NATIONAL ENGINEERING SERVICES PAKISTAN (PVT) LIMITED</b>	<b>GENERAL NOTES (DISTRIBUTARY)</b>		HEAD OFFICE : NESPAK HOUSE, 1-C BLOCK N, MODEL TOWN EXTENSION, LAHORE PAKISTAN	DATE AUG 2023	DWG. NO. 4593/TD/061/GN-01	REV. 0
DRAWN	F.A																				
SUBMITTED	M.M																				
RECOMMENDED	Q.L																				
CHD/VER	F.R.K																				
REV.	N.A																				

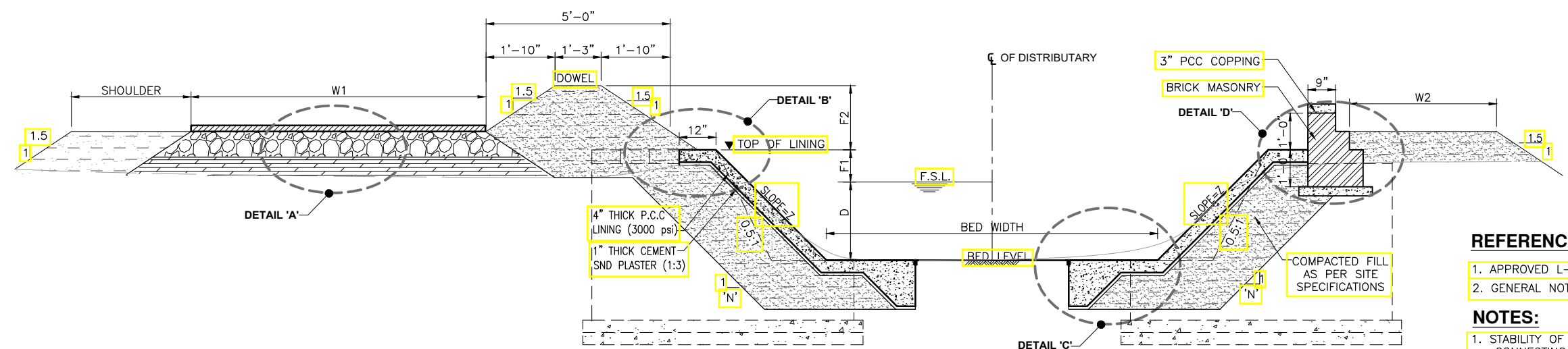
SIDE SLOPES (Z)	
DES. DEPTH	H:V
> 5.0'	1.5:1
2.0' TO 5.0'	1:1
2.0' OR BELOW	1/2:1

Sr.No.	Channel Description	Lining Free-board(ft) F1	Lined Bank Free-board(ft) F2
1	Disty; & Minor Canals Q = 201-500cs	1.50	2.00
2	Disty; & Minor Canals Q = 101-200cs	1.50	2.00
3	Disty; & Minor Canals Q = 30-100cs	1.50	2.00
4	Disty; & Minor Canals Q = 10-30cs	1.50	2.00
5	Disty; & Minor Canals Q = <10cs	1.00	1.50

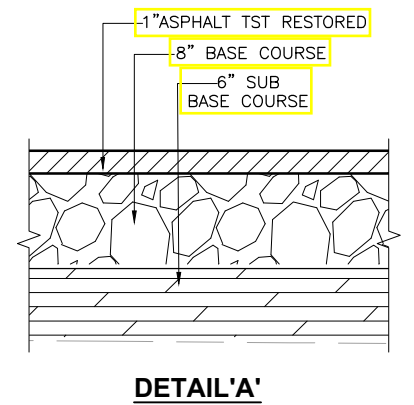
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 \*\* INCLUDES 5.0' FOR DOWEL



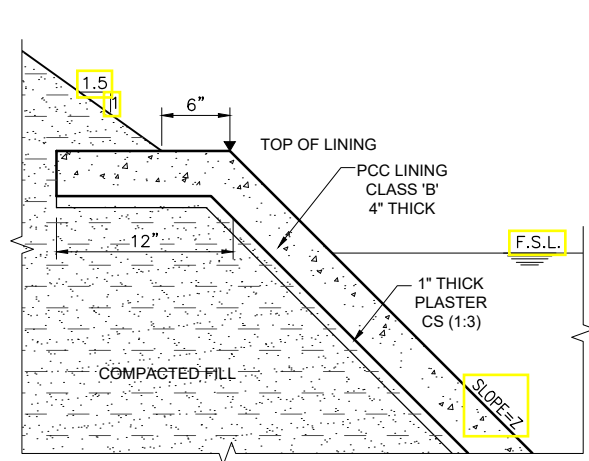
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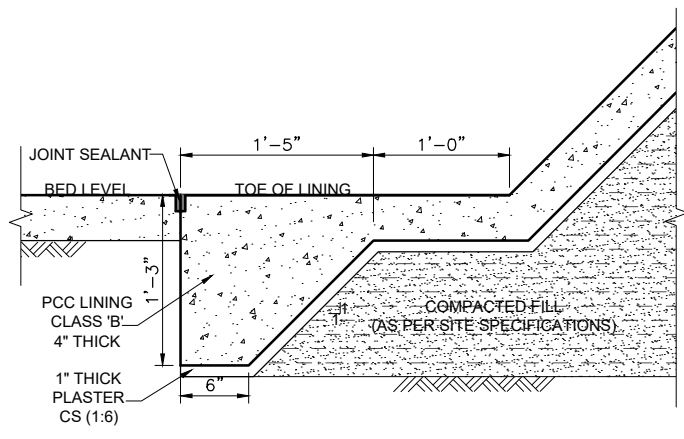
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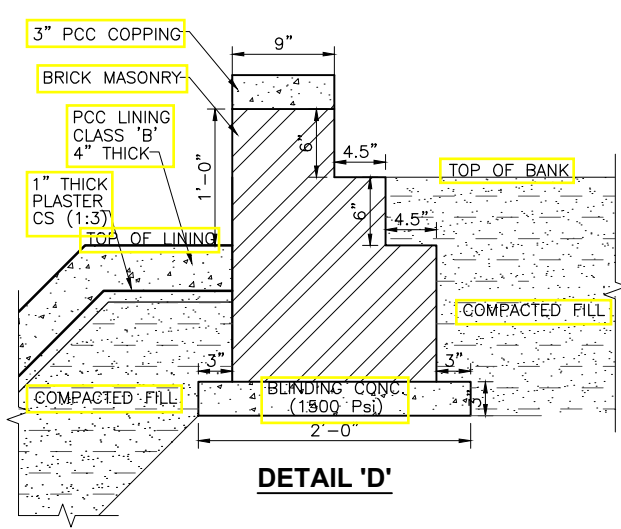
DETAIL 'A'



DETAIL 'B'



DETAIL 'C'



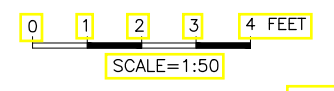
DETAIL 'D'

REFERENCE DRAWINGS:

- 1. APPROVED L- SECTION OF CHANNEL CONCERNED
- 2. GENERAL NOTES .....4593/TD/061/GN-01

NOTES:

- 1. STABILITY OF EXISTING PANEL SHOULD BE CHECKED AT SITE BEFORE CONNECTING IT WITH NEW LINING WORK.
- 2. PROVIDE WELL COMPACTED BACKFILL MATERIAL IN EXCAVATED PORTION AROUND STRUCTURE. THE COMPACTION SHALL NOT BE LESS THAN 95% OF MAXIMUM DRY DENSITY AS DETERMINED BY MODIFIED AASHTO
- 3. ALL BRICK TO BE USED IN MASONRY WORK SHALL BE OF STANDARD SIZE AND SHALL CONFORM TO THE SPECIFICATIONS
- 4. ALL BRICK MASONRY SHALL BE LAID WITH C/S MORTAR (RATIO 1:3)
- 5. ALL EXPOSED SURFACE OF BRICK MASONRY SHALL BE PROVIDED WITH C/S POINTING (RATIO 1:3)
- 6. 'D' DENOTES DESIGNED FULL SUPPLY DEPTH AND W IS DESIGNED UNLINED WIDTH AS PER L-SECTION
- 7. FOR SECTIONS WHICH NEED PROTECTION ON ONE SIDE ONLY, RELEVANT HALF SIDE OF SECTION A-A IS APPLICABLE
- 8. THIS DRAWING IS NOT APPLICABLE TO CANAL REACHES WHERE A SPECIFIC DRAWING HAS BEEN ISSUED.
- 9. BANK WIDTH/DOWEL TO BE ADOPTED AS PER RESPECTIVE DISTY/MINOR L-SECTIONS.



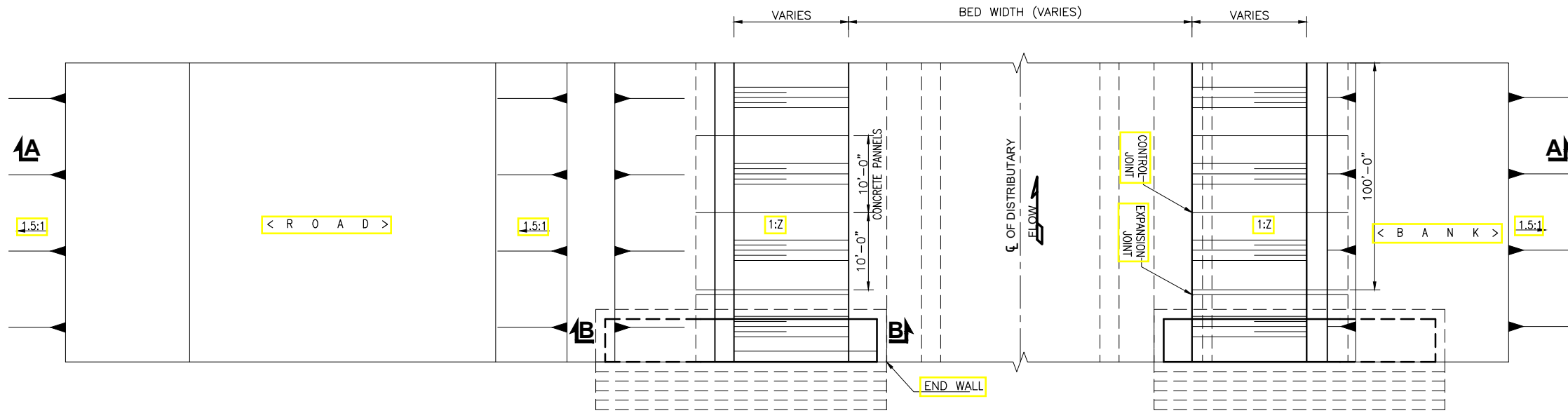
EMERGENCY FLOOD ASSISTANCE PROJECT (EFAP)-KP  
 "RECONSTRUCTION AND REHABILITATION OF IRRIGATION AND DRAINAGE SYSTEM AND FLOOD PROTECTION WORKS IN KHYBER PAKHUNKHWA"

GOVERNMENT OF KHYBER  
 PAKHTUNKHWA  
 IRRIGATION DEPARTMENT

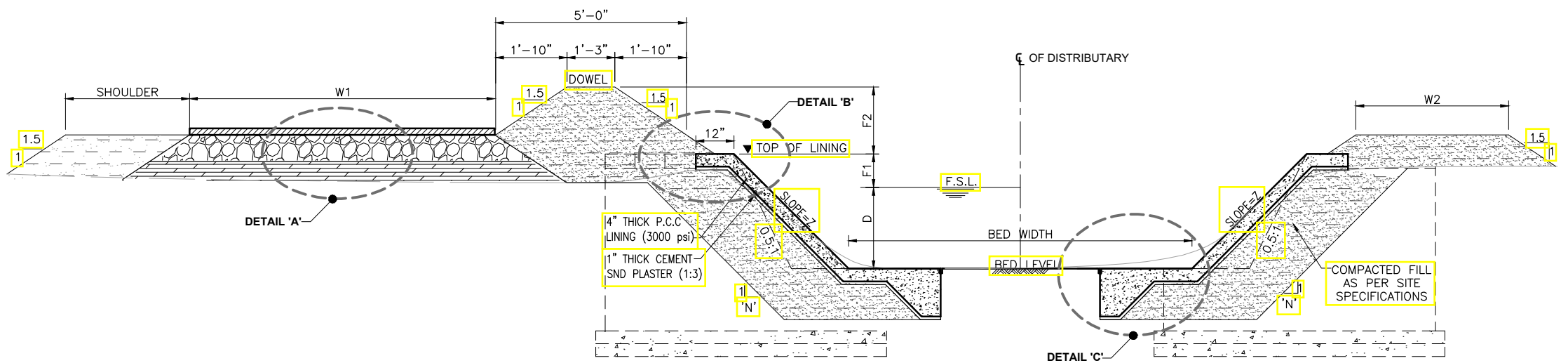
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NATIONAL ENGINEERING SERVICES PAKISTAN (PVT) LIMITED  
 HEAD OFFICE : NESPAK HOUSE, 1-C BLOCK N, MODEL TOWN EXTENSION, LAHORE PAKISTAN

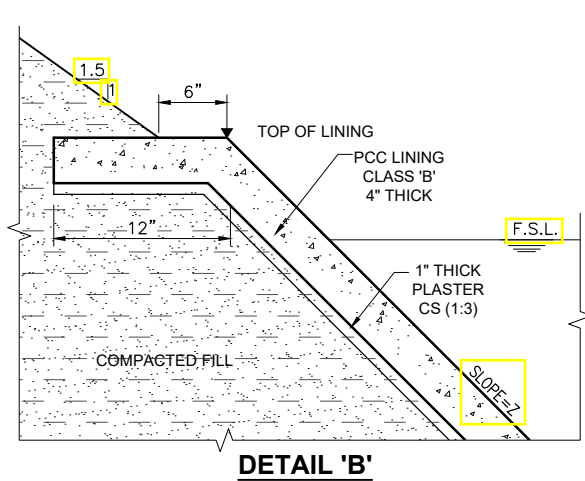
TYPICAL CROSS SECTION FOR REHABILITATION WORKS CONCRETE SIDE PROTECTION WITH SIDE WALL(CASE-1A)  
 DATE: AUG, 2023  
 DRAWING NO. 4593/TD/061/RW-01



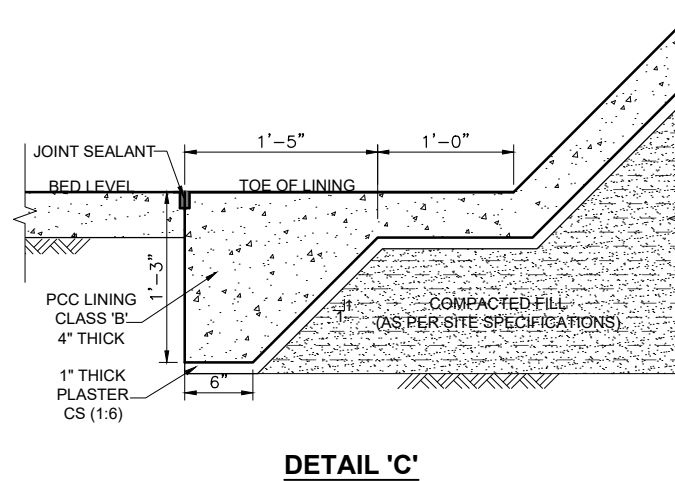
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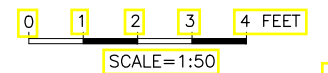
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**DETAIL 'B'**



**DETAIL 'C'**



(SHEET 2 OF 4)

EMERGENCY FLOOD ASSISTANCE PROJECT (EFAP)-KP  
"RECONSTRUCTION AND REHABILITATION OF  
IRRIGATION AND DRAINAGE SYSTEM AND FLOOD  
PROTECTION WORKS IN KHYBER PAKHTUNKHWA"



**GOVERNMENT OF KHYBER  
PAKHTUNKHWA  
IRRIGATION DEPARTMENT**

REV.	DATE	DESCRIPTION	BY	CKD.	APPR.	APPROVED	N.A.

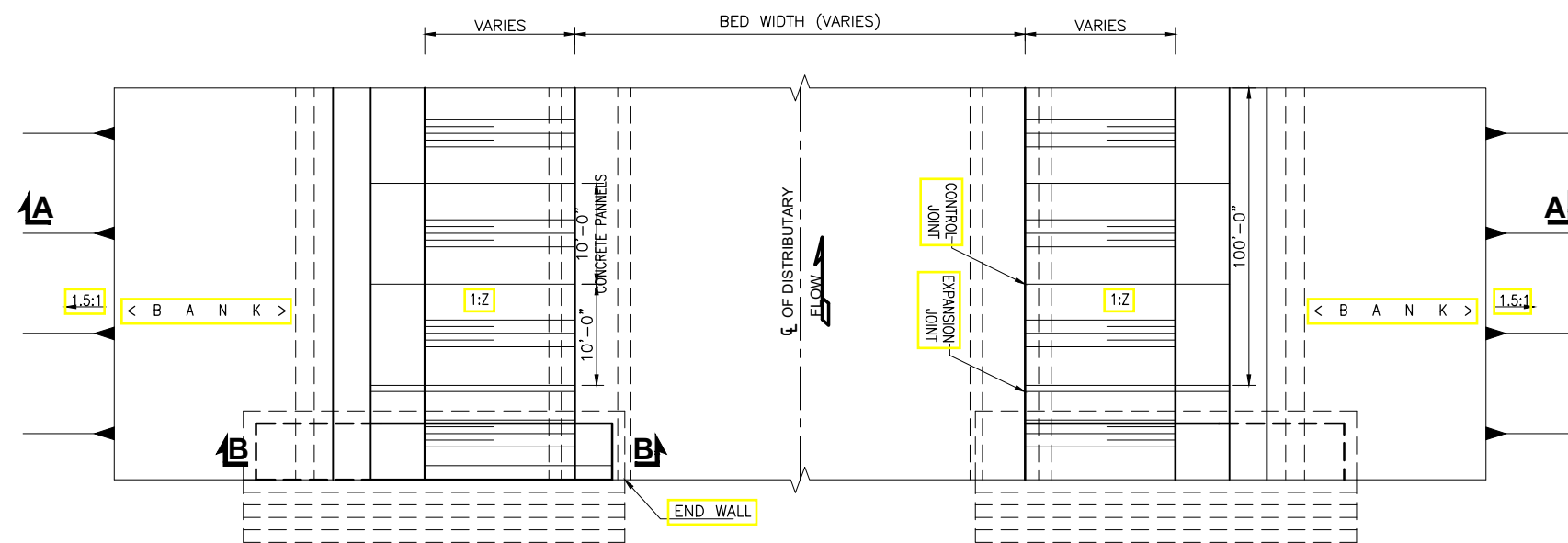
**NEE NATIONAL ENGINEERING  
SERVICES PAKISTAN (PVT)  
LIMITED**

HEAD OFFICE : NESPAK HOUSE, 1-C BLOCK N,  
MODEL TOWN EXTENSION, LAHORE PAKISTAN

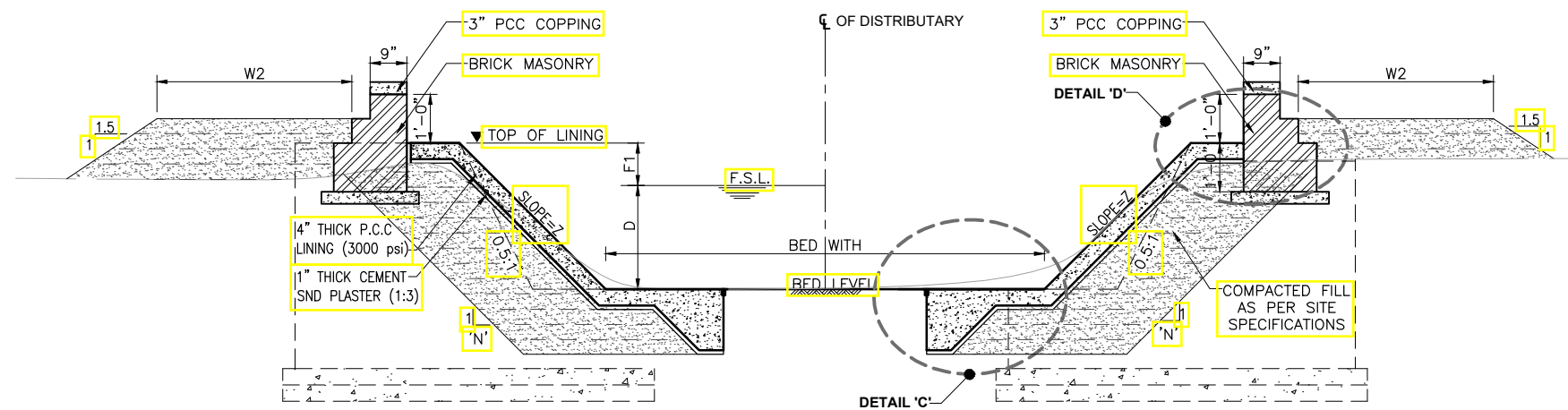
DATE.	DRAWING NO.	REV.
AUG, 2023	4593/TD/061/RW-01	1

**TYPICAL CROSS SECTION FOR  
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CONCRETE SIDE PROTECTION  
WITHOUT SIDE WALL (CASE-1B)**

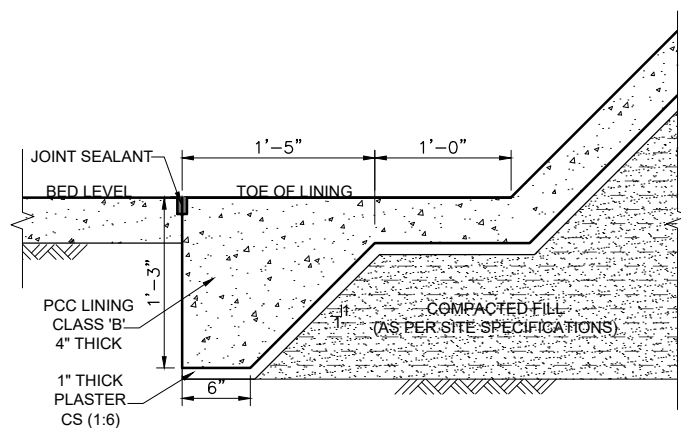




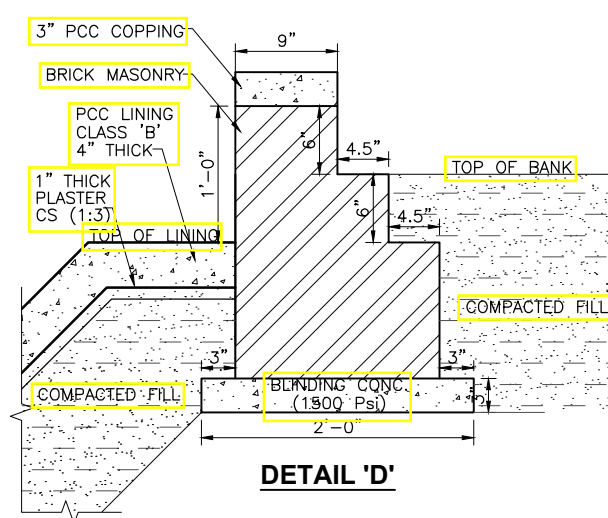
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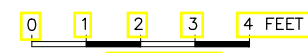
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**DETAIL 'C'**



**DETAIL 'D'**



SCALE=1:50

(SHEET 3 OF 4)

EMERGENCY FLOOD ASSISTANCE PROJECT (EFAP)-KP  
"RECONSTRUCTION AND REHABILITATION OF  
IRRIGATION AND DRAINAGE SYSTEM AND FLOOD  
PROTECTION WORKS IN KHYBER PAKHTUNKHWA"



GOVERNMENT OF KHYBER  
PAKHTUNKHWA  
IRRIGATION DEPARTMENT

REV.	DATE	DESCRIPTION	BY	CKD.	APPR.	APPROVED	N.A.

DRAWN F.A.  
SUBMITTED M.M.  
RECOMMENDED Q.L.  
CHD/VER F.R.K.  
APPROVED N.A.



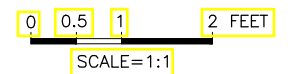
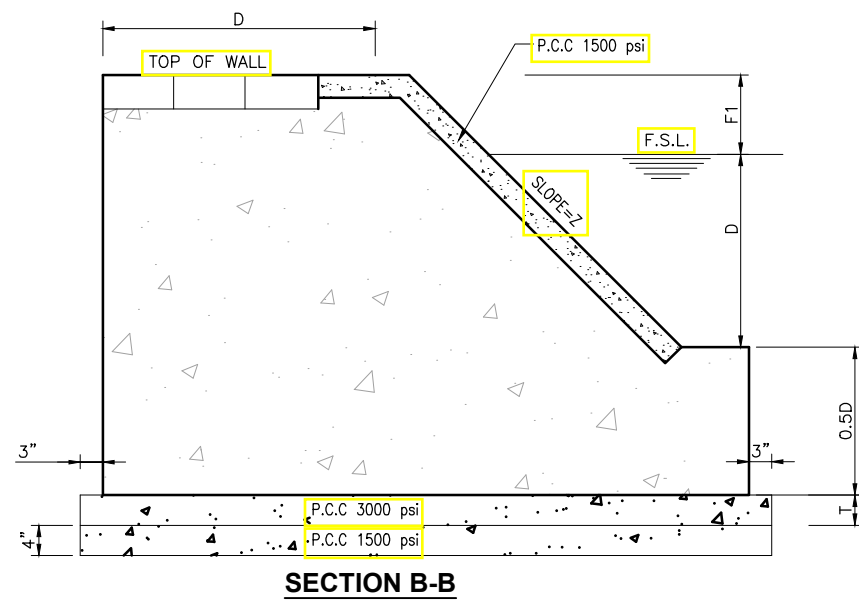
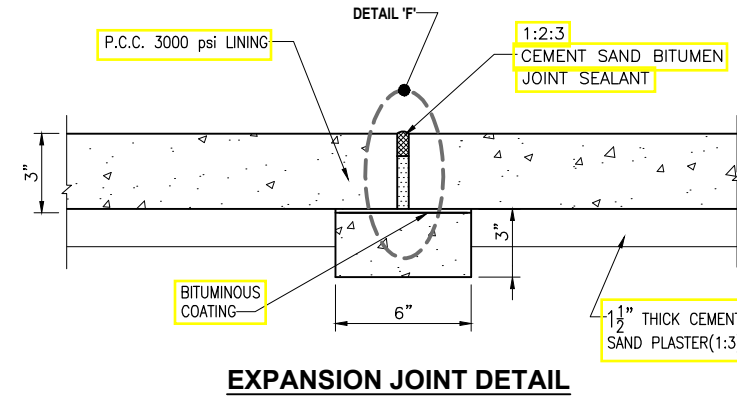
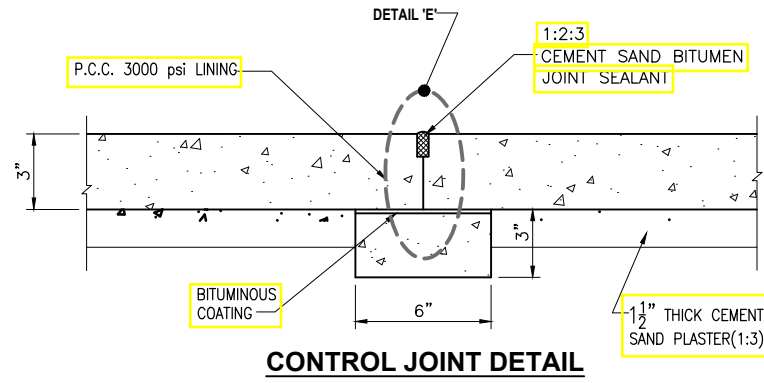
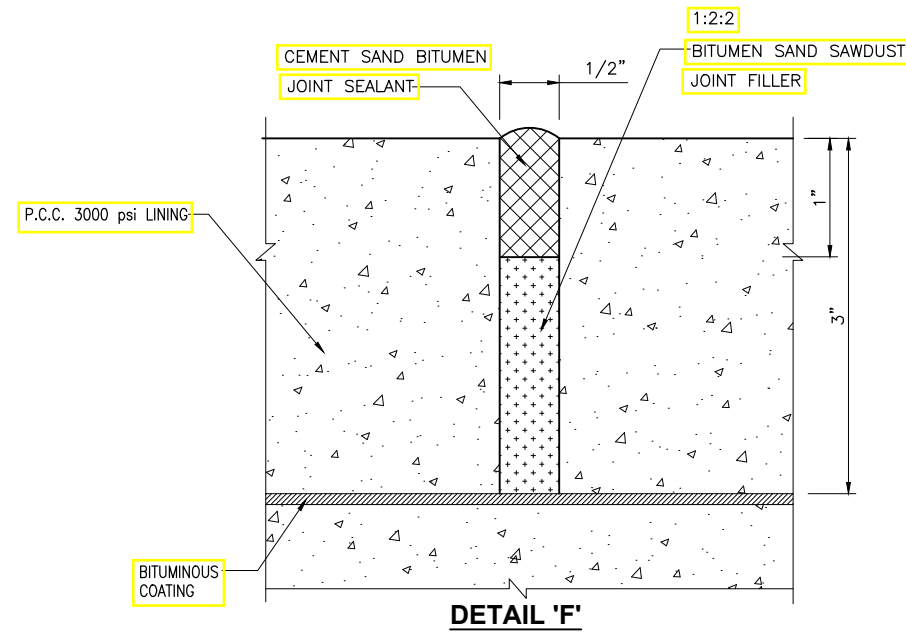
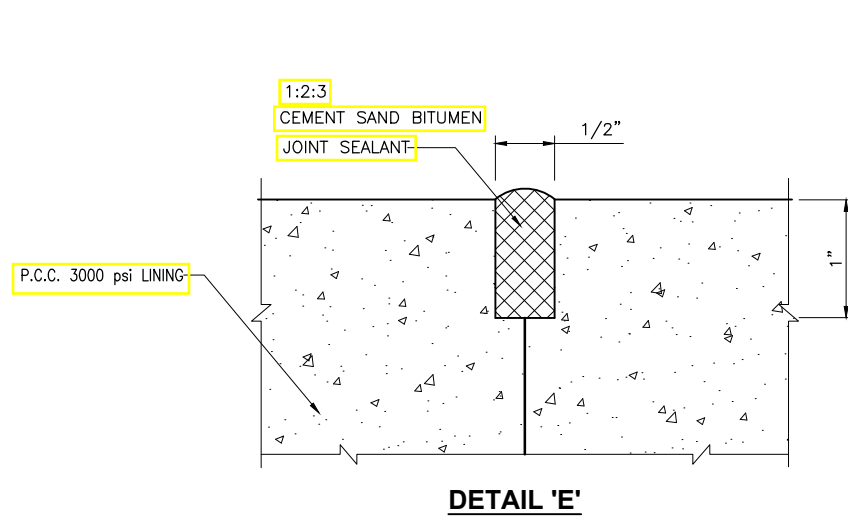
HEAD OFFICE : NESPAK HOUSE, 1-C BLOCK N,  
MODEL TOWN EXTENSION, LAHORE PAKISTAN

TYPICAL CROSS SECTION FOR  
REHABILITATION WORKS  
CONCRETE SIDE PROTECTION  
WITH BOTH SIDE WALL(CASE-1C)

DATE:  
AUG, 2023

DRAWING NO.  
4593/TD/061/RW-01

REV.



(SHEET 4 OF 4)

EMERGENCY FLOOD ASSISTANCE PROJECT (EFAP)-KP  
"RECONSTRUCTION AND REHABILITATION OF  
IRRIGATION AND DRAINAGE SYSTEM AND FLOOD  
PROTECTION WORKS IN KHYBER PAKHTUNKHWA"



GOVERNMENT OF KHYBER  
PAKHTUNKHWA  
IRRIGATION DEPARTMENT

REV.	DATE	DESCRIPTION	BY	CKD.	APPR.	APPROVED	N.A.

DRAWN	F.A
SUBMITTED	M.M
RECOMMENDED	Q.L
CHD/VER	F.R.K
APPROVED	N.A

**NEE NATIONAL ENGINEERING SERVICES PAKISTAN (PVT) LIMITED**

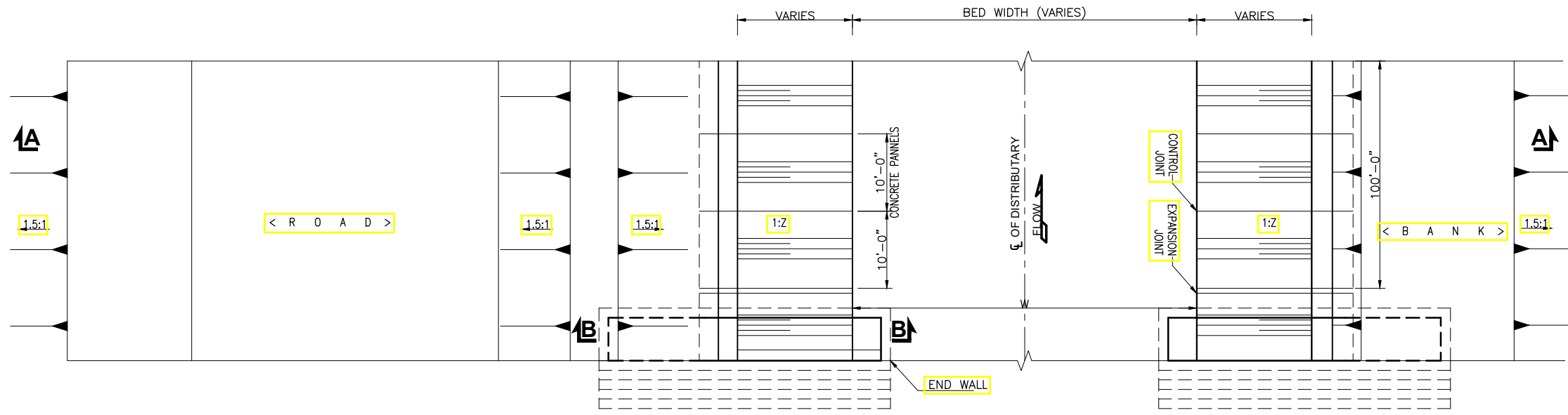
HEAD OFFICE : NESPAK HOUSE, 1-C BLOCK N,  
MODEL TOWN EXTENSION, LAHORE PAKISTAN

TYPICAL CROSS SECTION FOR  
REHABILITATION WORKS  
CONCRETE SIDE PROTECTION  
WITH SIDE WALL DETAILS

DATE:  
AUG, 2023

DRAWING NO.  
4593/TD/061/RW-01

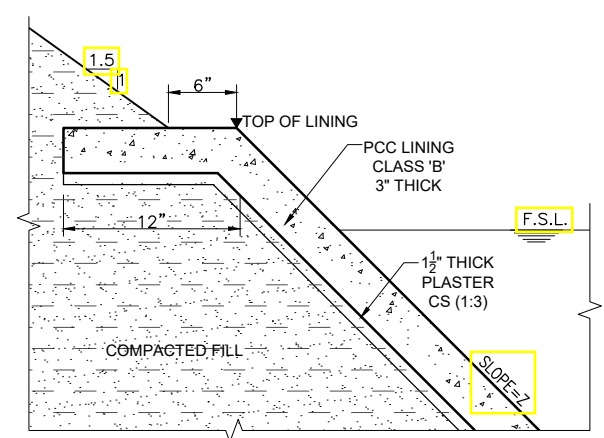
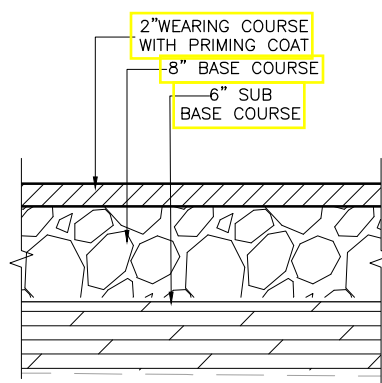
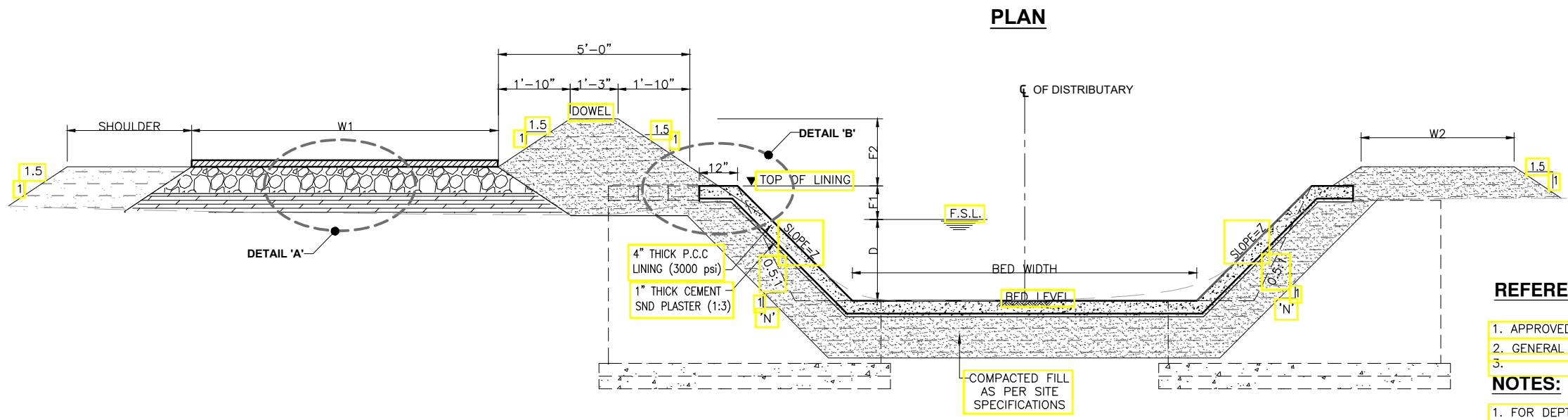
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1



SIDE SLOPES (Z)	
DES. DEPTH	H:V
> 5.0'	1.5:1
2.0' TO 5.0'	1:1
2.0' OR BELOW	1/2:1

Sr.No.	Channel Description	Lining Free-board(ft) F1	Lined Bank Free-board(ft) F2
1	Disty; & Minor Canals Q = 201-500cs	1.50	2.00
2	Disty; & Minor Canals Q = 101-200cs	1.50	2.00
3	Disty; & Minor Canals Q = 30-100cs	1.50	2.00
4	Disty; & Minor Canals Q = 10-30cs	1.50	2.00
5	Disty; & Minor Canals Q = <10cs	1.00	1.50

\* DEPENDS UPON AVAILABILITY OF ROW  
 \*\* INCLUDES 5.0' FOR DOWEL

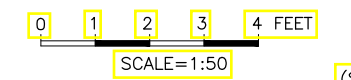


**REFERENCE DRAWINGS:**

- APPROVED L- SECTION OF CHANNEL CONCERNED
- GENERAL NOTES .....4593/TD/061/GN-01
- .....4593/TD/061/RW-01

**NOTES:**

- FOR DEPTH > 5.0 FEET, STONE PITCHING WILL BE USED.
- PROVIDE WELL COMPACTED BACKFILL MATERIAL IN EXCAVATED PORTION AROUND STRUCTURE. THE COMPACTATION SHALL NOT BE LESS THAN 95% OF MAXIMUM DRY DENSITY AS DETERMINED BY MODIFIED AASHTO
- ALL BRICK TO BE USED IN MASONRY WORK SHALL BE OF STANDARD SIZE AND SHALL CONFORM TO THE SPECIFICATIONS
- ALL BRICK MASONRY SHALL BE LAID WITH C/S MORTAR (RATIO 1:3)
- ALL EXPOSED SURFACE OF BRICK MASONRY SHALL BE PROVIDED WITH C/S POINTING (RATIO 1:3)
- 'D' DENOTES DESIGNED FULL SUPPLY DEPTH AND W IS DESIGNED 'UNLINED' WIDTH AS PER L-SECTION
- FOR SECTIONS WHICH NEED PROTECTION ON ONE SIDE ONLY, RELEVANT HALF SIDE OF SECTION A-A IS APPLICABLE
- THIS DRAWING IS NOT APPLICABLE TO CANAL REACHES WHERE A SPECIFIC DRAWING HAS BEEN ISSUED.
- BANK WIDTH/DOWEL TO BE ADOPTED AS PER RESPECTIVE DISTY/MINOR L-SECTIONS.



(SHEET 1 OF ...)

EMERGENCY FLOOD ASSISTANCE PROJECT (EFAP)-KP  
 "RECONSTRUCTION AND REHABILITATION OF IRRIGATION AND DRAINAGE SYSTEM AND FLOOD PROTECTION WORKS IN KHYBER PAKHUNKHWA"



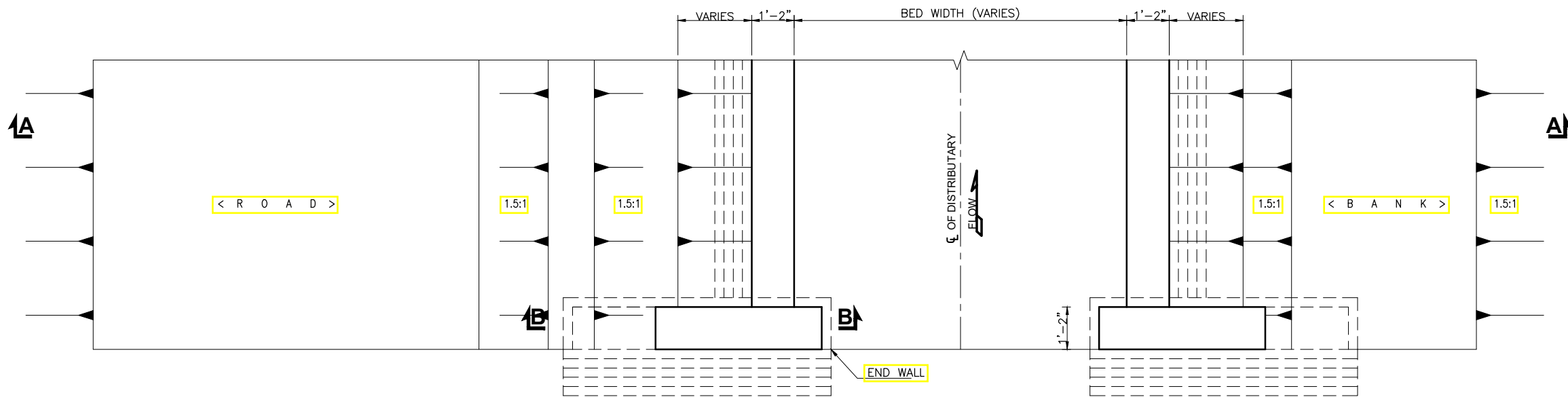
GOVERNMENT OF KHYBER  
 PAKHTUNKHWA  
 IRRIGATION DEPARTMENT

REV.	DATE	DESCRIPTION	BY	CKD.	APPR.	APPROVED	N.A

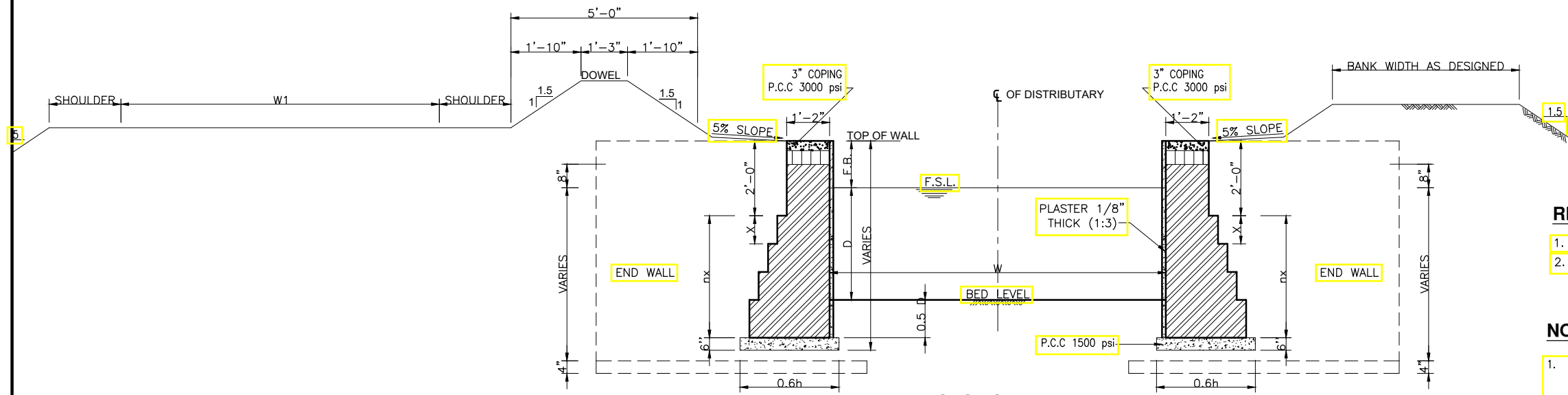
DRAWN F.A  
 SUBMITTED M.M  
 RECOMMENDED Q.L  
 CHD/VER F.R.K  
 NATIONAL ENGINEERING SERVICES PAKISTAN (PVT) LIMITED  
 HEAD OFFICE : NESPAK HOUSE, 1-C BLOCK N, MODEL TOWN EXTENSION, LAHORE PAKISTAN

TYPICAL CROSS SECTION FOR REHABILITATION WORKS COMPLETE CONCRETE REHABILITATION (CASE-2)  
 DATE: AUG, 2023  
 DRAWING NO. 4593/TD/061/RW-02





**PLAN**



**SECTION A-A**

**REFERENCE DRAWINGS:**

1. APPROVED L- SECTION OF CHANNEL CONCERNED
2. GENERAL NOTES .....4593/TD/061/GN-01

**NOTES:**

1. PROVIDE WELL COMPACTED BACKFILL MATERIAL IN EXCAVATED PORTION AROUND STRUCTURE. THE COMPACTION SHALL NOT BE LESS THAN 95% OF MAXIMUM DRY DENSITY AS DETERMINED BY MODIFIED AASHTO.
2. ALL BRICK TO BE USED IN MASONRY WORK SHALL BE OF STANDARD SIZE AND SHALL CONFORM TO THE SPECIFICATIONS.
3. ALL BRICK MASONRY SHALL BE LAID WITH C/S MORTAR (RATIO 1:3)
4. ALL EXPOSED SURFACE OF BRICK MASONRY SHALL BE PROVIDED WITH C/S POINTING (RATIO 1:3).
5. 'D' DENOTES DESIGNED FULL SUPPLY DEPTH AND W IS DESIGNED UNLINED WIDTH AS PER L-SECTION.
6. MINIMUM DEPTH OF FOOTING IS EQUAL TO 0.5D, MINOR ADDITIONAL DEPTH MAY BE NEEDED TO ACCOMMODATE A WHOLE NUMBER OF BRICK COURSES.
7. x= 0.75', BOTTOM STEP TO BE ADJUSTED FOR A WHOLE NUMBER OF BRICK COURSES.
8. EXISTING DIMENSIONS/LEVELS NEED TO BE VERIFIED BY THE ENGINEER.
9. SIDE OF BANK AND ROAD (L/R) MAY BE CHANGED AS PER SITE CONDITIONS.
10. BANK WIDTH/DOWEL TO BE ADOPTED AS PER RESPECTIVE DISTY/MINOR L-SECTIONS.

0 1 2 3 4 FEET

SCALE=1:50

(SHEET 1 OF 2)

EMERGENCY FLOOD ASSISTANCE PROJECT (EFAP)-KP  
"RECONSTRUCTION AND REHABILITATION OF  
IRRIGATION AND DRAINAGE SYSTEM AND FLOOD  
PROTECTION WORKS IN KHYBER PAKHTUNKHWA"



GOVERNMENT OF KHYBER  
PAKHTUNKHWA  
IRRIGATION DEPARTMENT

REV.	DATE	DESCRIPTION	BY	CKD.	APPR.	APPROVED	N.A.

**NESPAK NATIONAL ENGINEERING SERVICES PAKISTAN (PVT) LIMITED**

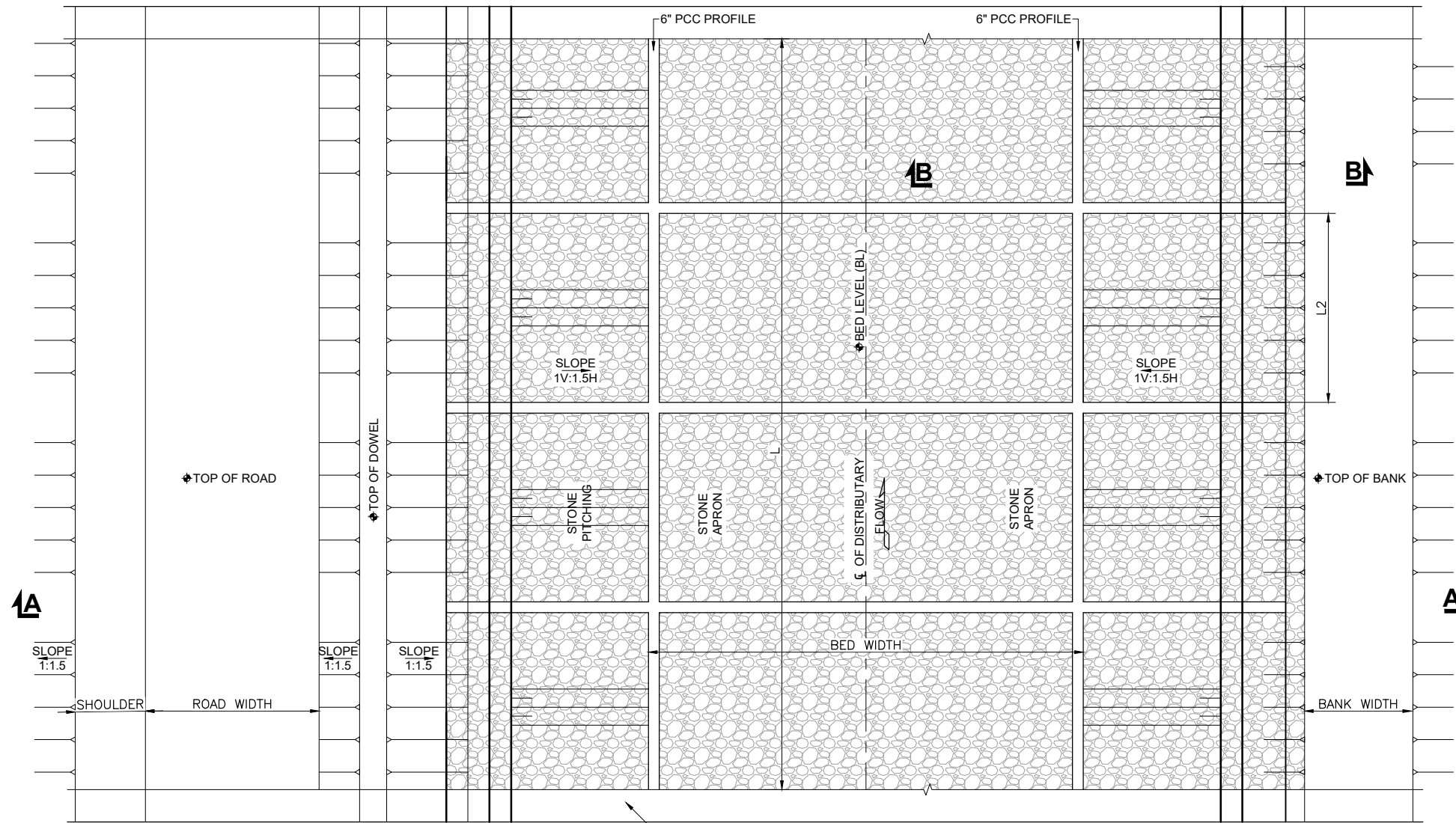
HEAD OFFICE : NESPAK HOUSE, 1-C BLOCK N,  
MODEL TOWN EXTENSION, LAHORE PAKISTAN

TYPICAL PLAN AND CROSS SECTION  
FOR REHABILITATION WORKS  
BRICK RETAINING WALL  
SIDE PROTECTION (CASE-3)

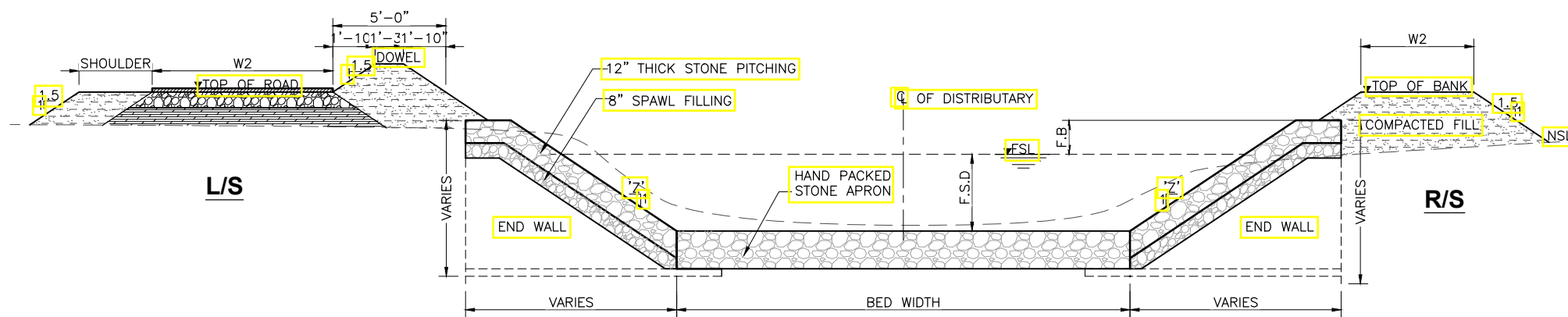
DATE: AUG 2023

DRAWING NO. 4593/TD/061/RW-03

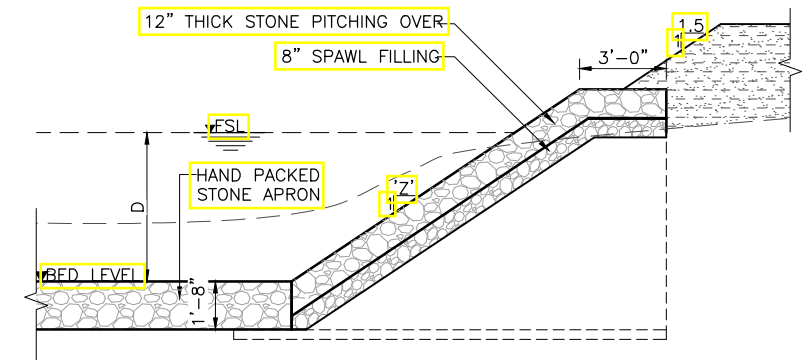
REV.



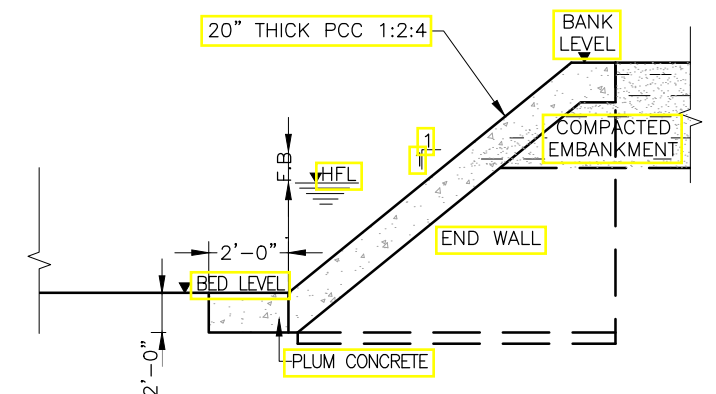
**LAYOUT PLAN**  
SCALE=1:75



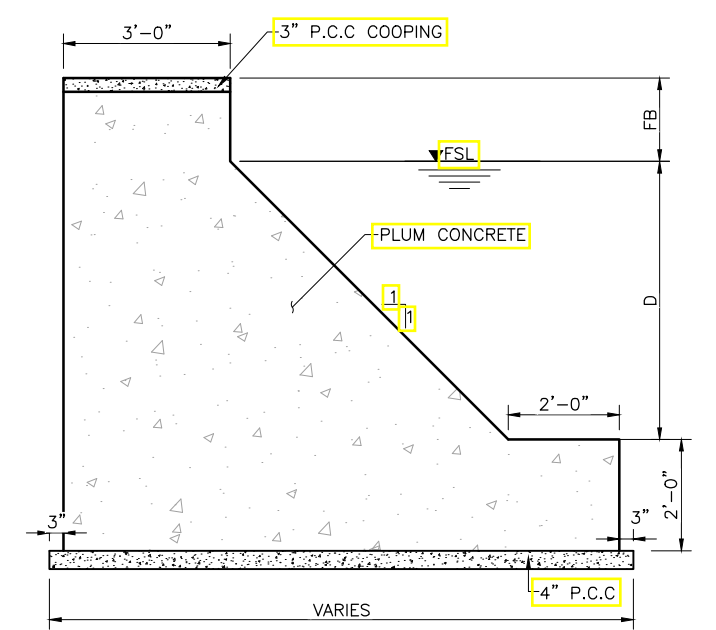
**SECTION A-A**  
SCALE=1:75



**SECTION B-B**  
SCALE=1:75



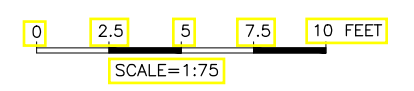
**SECTION B-B**  
SCALE=1:75



**END WALL**

- REFERENCE DRAWINGS:**
1. APPROVED L- SECTION OF CHANNEL CONCERNED
  2. GENERAL NOTES .....4593/TD/061/GN-01

- NOTES:**
1. ALL DIMENSION AND ELEVATIONS ARE IN FEET UNLESS OTHERWISE NOTED.
  2. EXISTING DIMENSIONS/LEVELS NEED TO BE VERIFIED BY THE ENGINEER.
  3. PROVISION OF STONE PITCHING AT U/S AND D/S OF BRIDGES, FALL STRUCTURES SHOULD BE VERIFIED AT SITE BEFORE CONSTRUCTION.



EMERGENCY FLOOD ASSISTANCE PROJECT (EFAP)-KP  
"RECONSTRUCTION AND REHABILITATION OF  
IRRIGATION AND DRAINAGE SYSTEM AND FLOOD  
PROTECTION WORKS IN KHYBER PAKHUNKHWA"



GOVERNMENT OF KHYBER  
PAKHTUNKHWA  
IRRIGATION DEPARTMENT

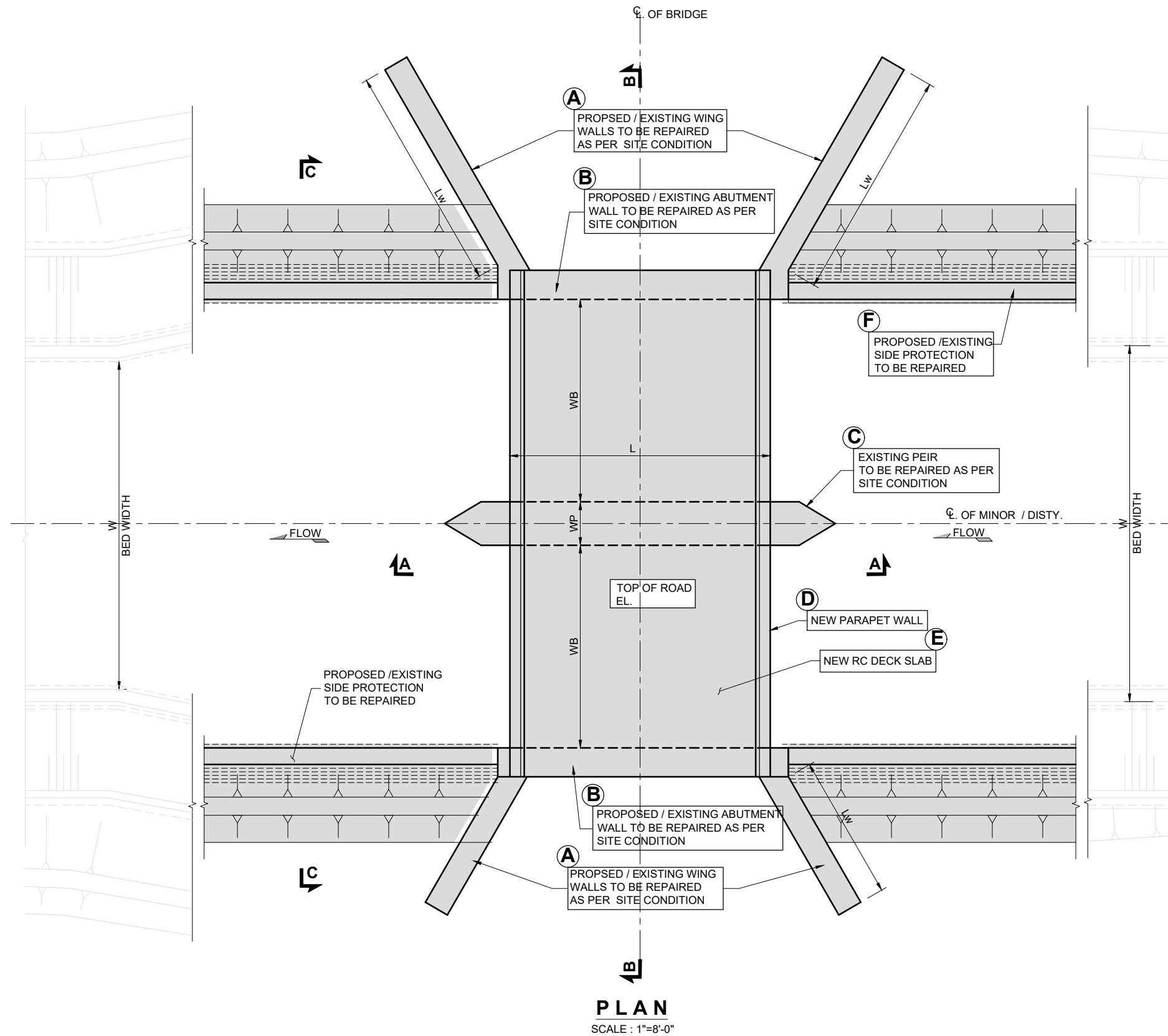
REV.	DATE	DESCRIPTION	BY	CKD.	APPR.	APPROVED	DRAWN	F.A
							SUBMITTED	M.M
							RECOMMENDED	Q.L
							CHD/VER	F.R.K
								N.A



**NES NATIONAL ENGINEERING SERVICES PAKISTAN (PVT) LIMITED**  
HEAD OFFICE : NESPAK HOUSE, 1-C BLOCK N,  
MODEL TOWN EXTENSION, LAHORE PAKISTAN

TYPICAL PLAN AND CROSS SECTION  
FOR REHABILITATION WORKS OF DISTYS AND MINORS  
STONE PROTECTION  
(CASE-4A)  
DATE: JUNE, 2023  
DRAWING NO. 4593/TD/061/RW-04  
REV. 1

**TYPICAL DRAWINGS OF REHABILITATION  
OF HYDRAULIC STRUCTURES  
(DRAIN & DISTRIBUTARIES)**







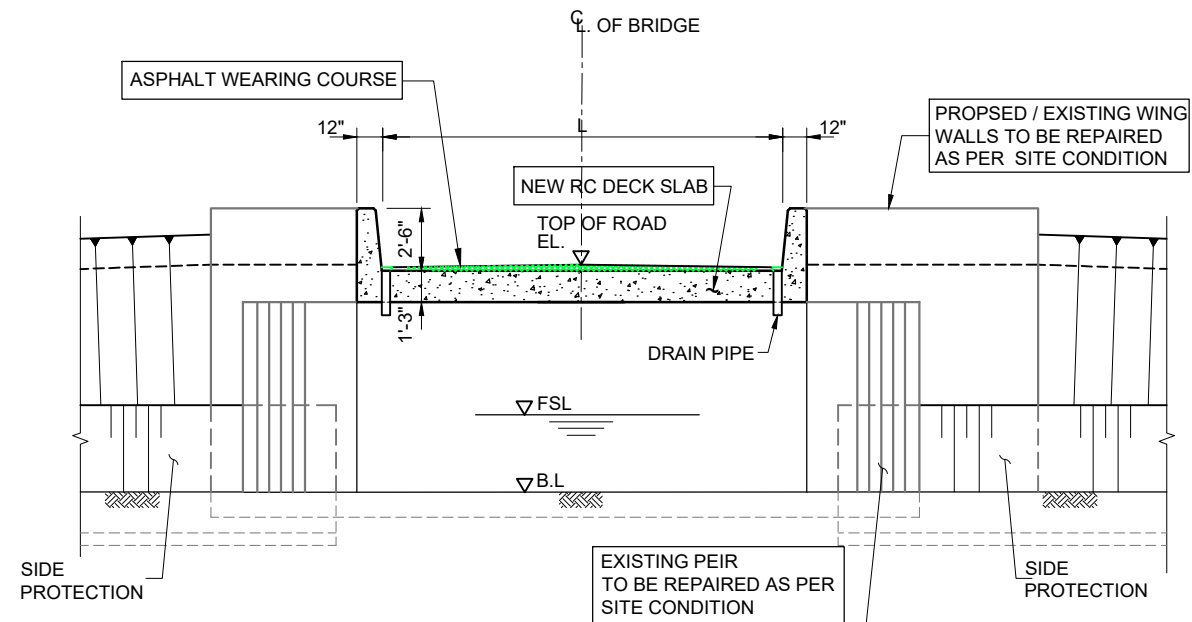
**LEGEND:**  
 EXISTING STRUCTURE:   
 PROPOSED STRUCTURE: 

- REFERENCE DRAWINGS:**
1. GENERAL NOTES .....DRG. NO. 4593/TD/061/GN-01
  2. TYPICAL SECTIONS OF .....DRG. NO.4593/TD/061/RHS-01 (SHEET 02 OF 02)
  3. BRICK RETAINING WALL/ABUTMENT..DRG. NO.4593/TD/061/RHS-04
  4. STONE PROTECTION WORK.....DRG. NO.4593/TD/061/RHS-05
  5. TYPICAL DETAILS .....DRG. NO.4593/TD/061/RHS-06

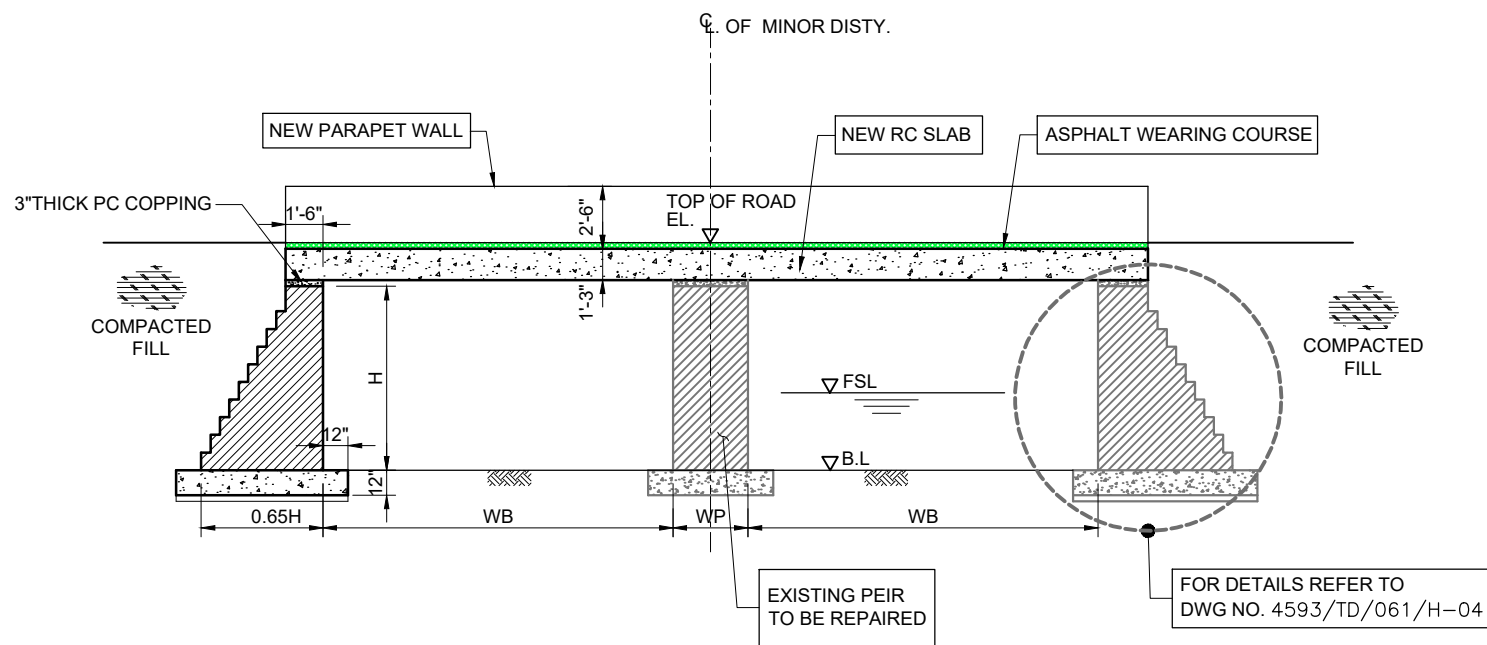
- NOTES:**
1. THE CONSTRUCTION SHALL BE MADE AFTER THE APPROVAL OF SHOP DRAWINGS.
  2. BANK WIDTH/DOWEL TO BE ADOPTED AS PER RESPECTIVE DISTY/MINOR L-SECTIONS.
  3. WING WALL SHALL BE CONSTRUCTED WHERE MISSING. FOR REFERENCE SEE TYPICAL MASONRY RETAINING WALL/ABUTMENT WALL DRAWING NO. CASE-4.
  4. DISMANTLE TO EXISTING SLAB IN CASE OF NEW SLAB.

**PLAN**  
 SCALE : 1"=8'-0"

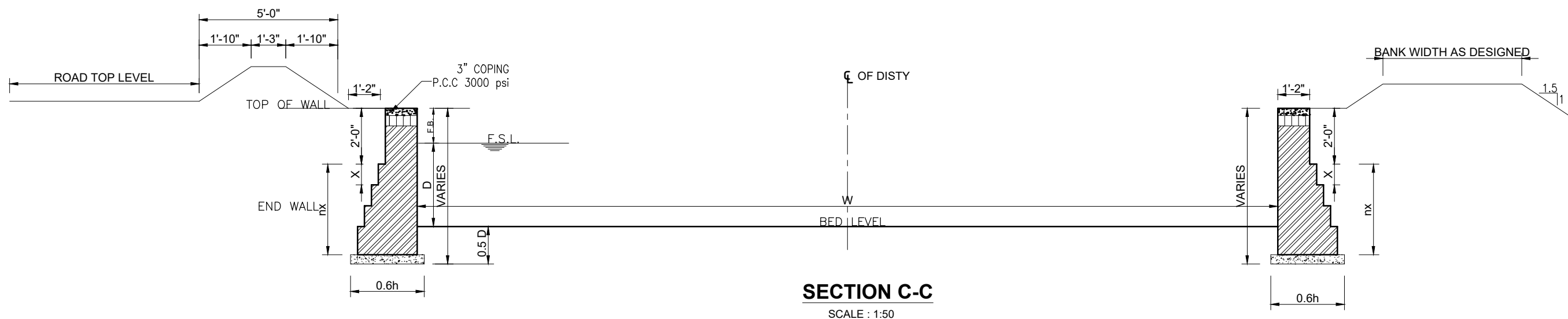
EMERGENCY FLOOD ASSISTANCE PROJECT (EFAP)-KP "RECONSTRUCTION AND REHABILITATION OF IRRIGATION AND DRAINAGE SYSTEM AND FLOOD PROTECTION WORKS IN KHYBER PAKHTUNKHWA"	 <b>GOVERNMENT OF KHYBER PAKHTUNKHWA</b> <b>IRRIGATION DEPARTMENT</b>					DRAWN F.A. SUBMITTED M.M. RECOMMENDED Q.L. CHD/VER F.R.K. APPROVED N.A.	 <b>NATIONAL ENGINEERING SERVICES PAKISTAN (PVT) LIMITED</b> HEAD OFFICE : NESPAK HOUSE, 1-C BLOCK N, MODEL TOWN EXTENSION, LAHORE PAKISTAN	<b>TYPICAL PLAN FOR REHABILITATION WORKS OF BRIDGE (DRAINS &amp; DISTRIBUTARIES)</b>		DATE AUG 2023 DWG. NO. 4593/TD/061/RHS-01 REV. 0
		REV.	DATE	DESCRIPTION	BY	CKD.		APPR.	APPROVED	



**SECTION A-A**  
SCALE : 1"=8'-0"



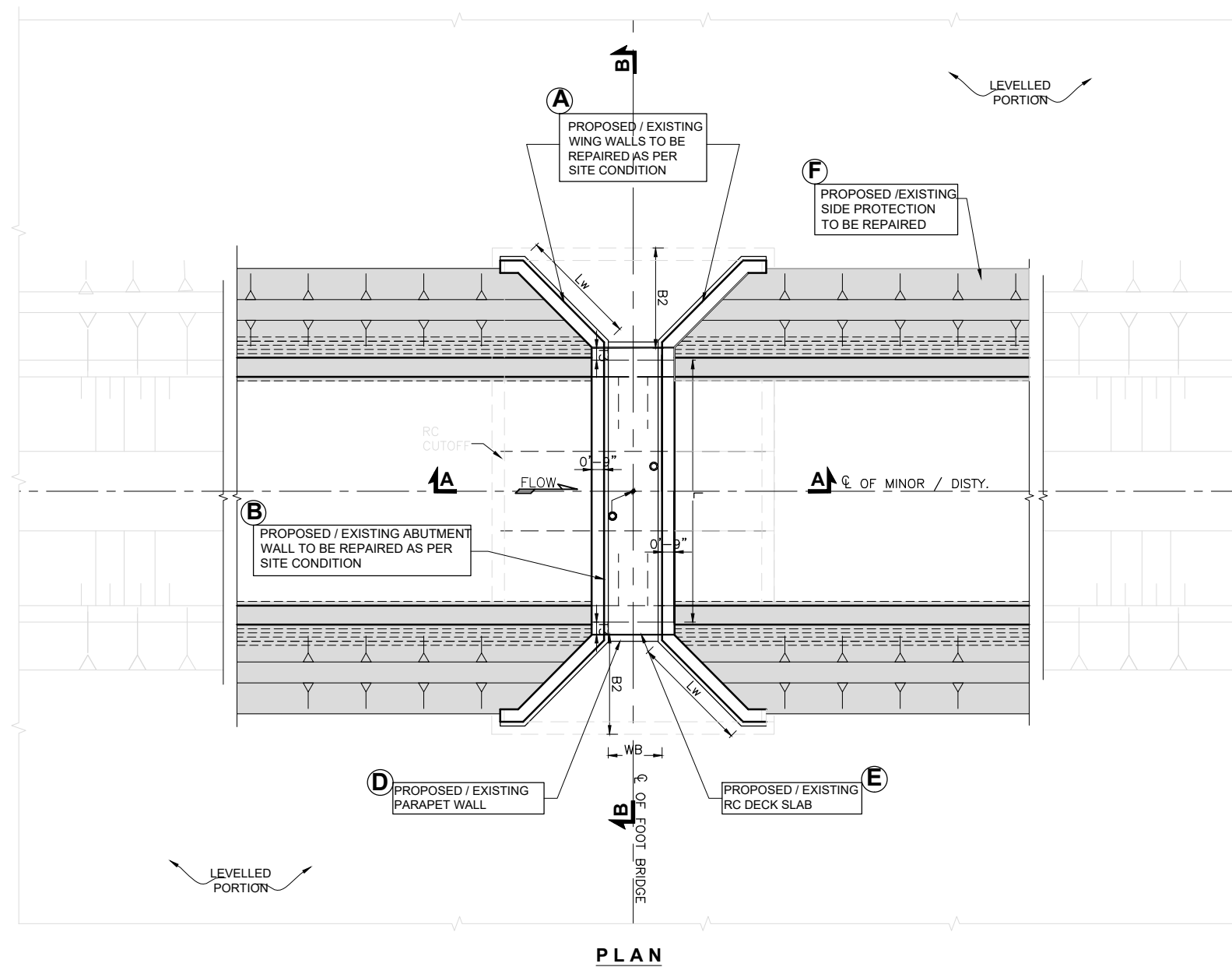
**SECTION B-B**  
SCALE : 1"=8'-0"





**SECTION C-C**  
SCALE : 1:50



REV.	DATE	DESCRIPTION	BY	CKD.	APPR.	APPROVED	
						DRAWN	F.A
						SUBMITTED	M.M
						RECOMMENDED	Q.L
						CHD/VER	F.R.K
							N.A



**LEGEND:**

EXISTING STRUCTURE:   
 PROPOSED STRUCTURE: 

**REFERENCE DRAWINGS:**

1. GENERAL NOTES .....DRG. NO. 4593/TD/061/GN-01
2. TYPICAL SECTIONS .....DRG. NO.4593/TD/061/RHS-01
3. BRICK RETAINING WALL/ABUTMENT....DRG. NO.4593/TD/061/RHS-04
4. STONE PROTECTION WORK.....DRG. NO.4593/TD/061/RHS-05
5. TYPICAL DETAILS .....DRG. NO.4593/TD/061/RHS-06

**NOTES:**

1. THE CONSTRUCTION SHALL BE MADE AFTER THE APPROVAL OF SHOP DRAWINGS.
2. BANK WIDTH/DOWEL TO BE ADOPTED AS PER RESPECTIVE DISTY/MINOR L-SECTIONS.
3. WING WALL SHALL BE CONSTRUCTED WHERE MISSING. FOR REFERENCE SEE TYPICAL MASONRY RETAINING WALL/ABUTMENT WALL DRAWING NO. CASE-4
4. DISMTELE TO EXISTING SLAB IN CASE OF NEW SLAB.

(SHEET 1 OF 2)

EMERGENCY FLOOD ASSISTANCE PROJECT (EFAP)-KP  
 "RECONSTRUCTION AND REHABILITATION OF  
 IRRIGATION AND DRAINAGE SYSTEM AND FLOOD  
 PROTECTION WORKS IN KHYBER PAKHTUNKHWA"



GOVERNMENT OF KHYBER  
 PAKHTUNKHWA  
 IRRIGATION DEPARTMENT

REV.	DATE	DESCRIPTION	BY	CKD.	APPR.	APPROVED	CHD/VER	F.R.K	N.A

**NES** NATIONAL ENGINEERING  
**PAK** SERVICES PAKISTAN (PVT)  
 LIMITED

HEAD OFFICE : NESPAK HOUSE, 1-C BLOCK N,  
 MODEL TOWN EXTENSION, LAHORE PAKISTAN

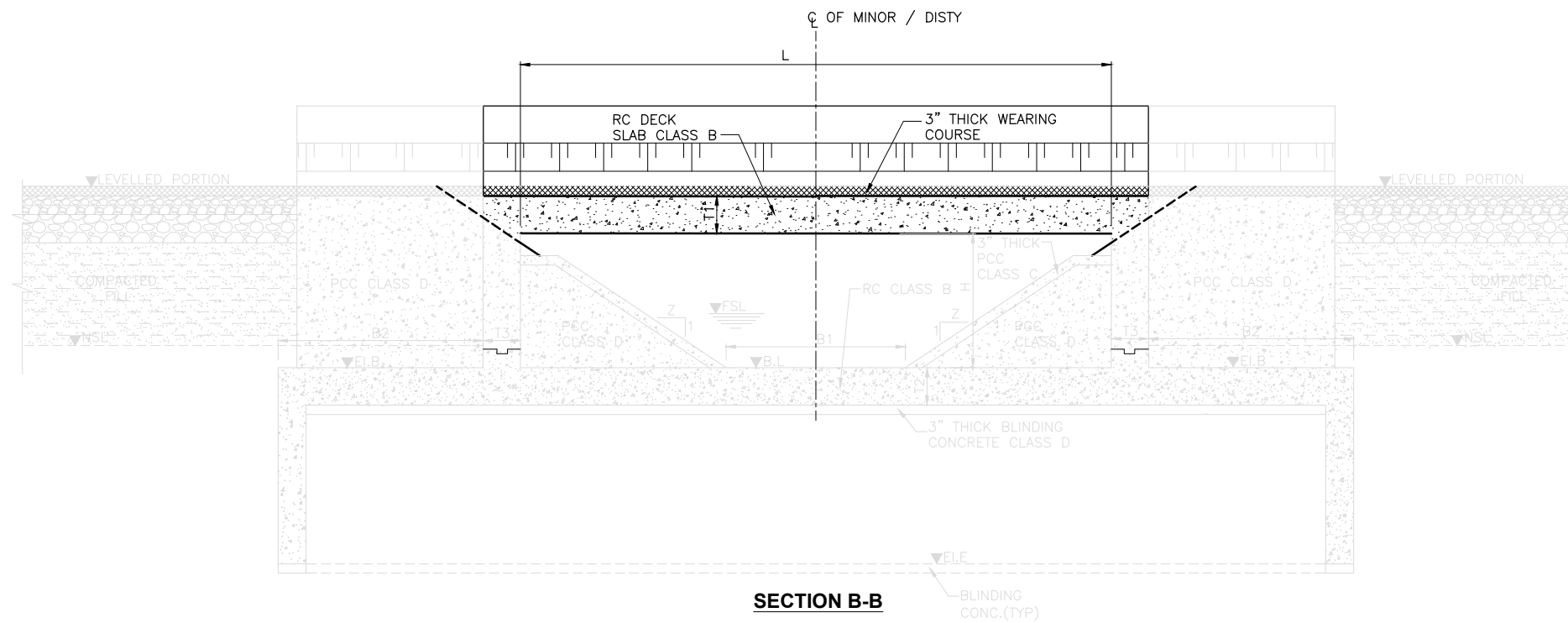
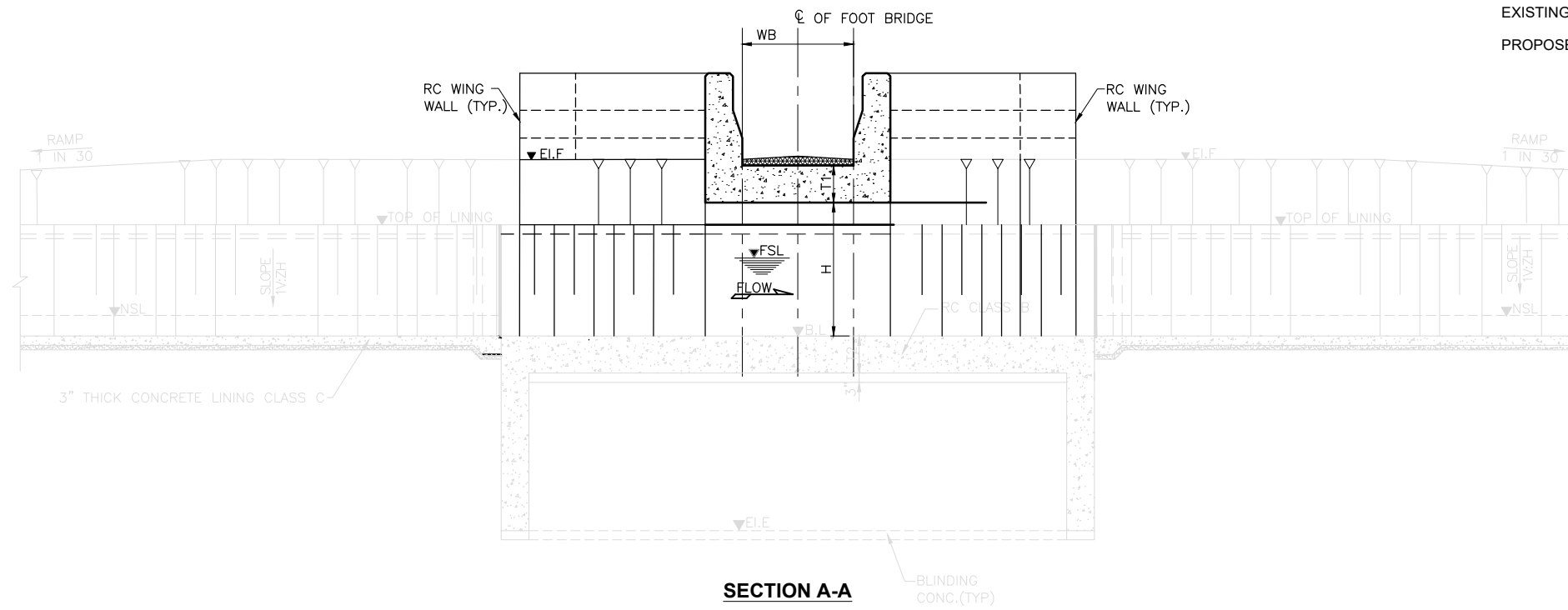
<b>TYPICAL PLAN FOR REHABILITATION WORKS OF FOOT BRIDGE (DRAINS &amp; DISTRIBUTARIES)</b>		DATE	DWG. NO.	REV.
		AUG 2023	4593/TD/061/RHS-02	0



**LEGEND:**

EXISTING STRUCTURE: 

PROPOSED STRUCTURE: 



(SHEET 2 OF 2)

EMERGENCY FLOOD ASSISTANCE PROJECT (EFAP)-KP  
"RECONSTRUCTION AND REHABILITATION OF  
IRRIGATION AND DRAINAGE SYSTEM AND FLOOD  
PROTECTION WORKS IN KHYBER PAKHTUNKHWA"



GOVERNMENT OF KHYBER  
PAKHTUNKHWA  
IRRIGATION DEPARTMENT

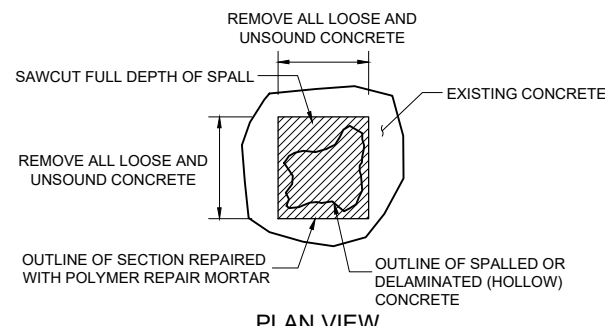
REV.	DATE	DESCRIPTION	BY	CKD.	APPR.	APPROVED	N.A.

DRAWN	F.A
SUBMITTED	M.M
RECOMMENDED	Q.L
CHD/VER	F.R.K
APPROVED	N.A

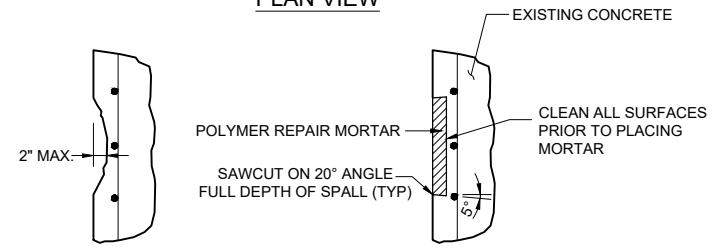
**NES** NATIONAL ENGINEERING  
**PAR** SERVICES PAKISTAN (PVT)  
LIMITED

HEAD OFFICE : NESPAK HOUSE, 1-C BLOCK N,  
MODEL TOWN EXTENSION, LAHORE PAKISTAN

TYPICAL PLAN FOR REHABILITATION WORKS OF FOOT BRIDGE (DRAINS & DISTRIBUTARIES)		DATE	DWG. NO.	REV.
		AUG 2023	4593/TD/061/RHS-02	0

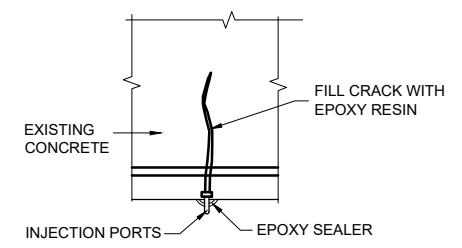
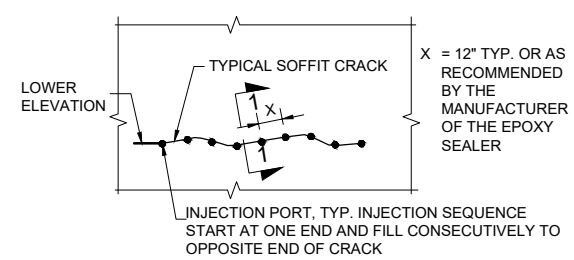


PLAN VIEW

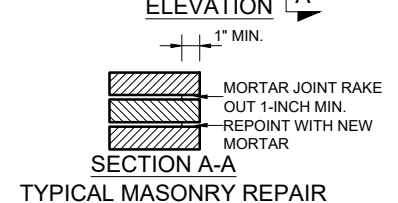
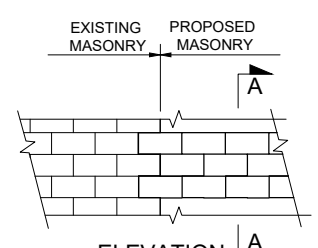


EXISTING SPALL REPAIR

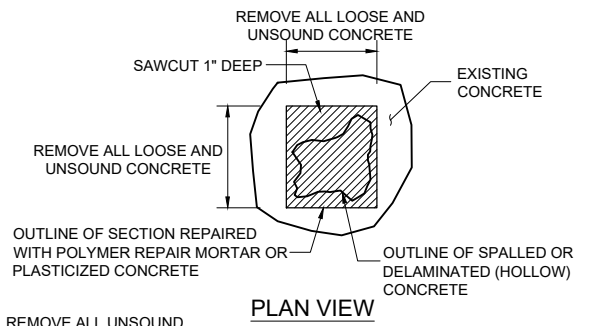
SECTIONS  
REPAIR IF SHALLOW SPALL NOT AFFECTING REINFORCEMENT



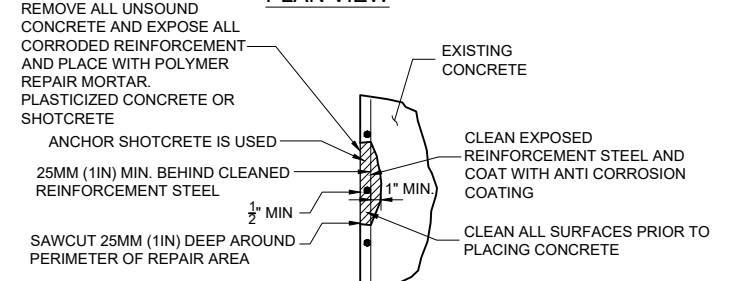
SECTION 1-1  
TYPICAL STRUCTURAL CRACK IN SOFFIT  
SEE NOTE 2.



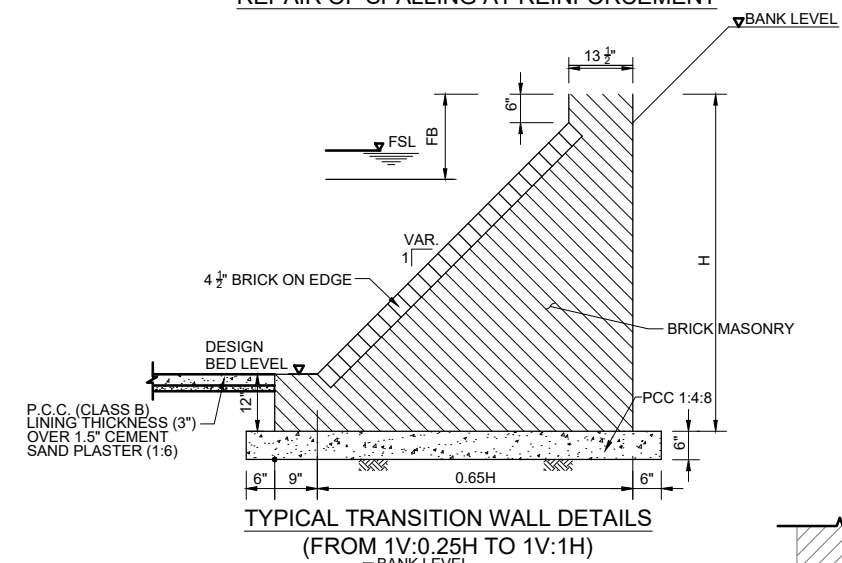
TYPICAL MASONRY REPAIR



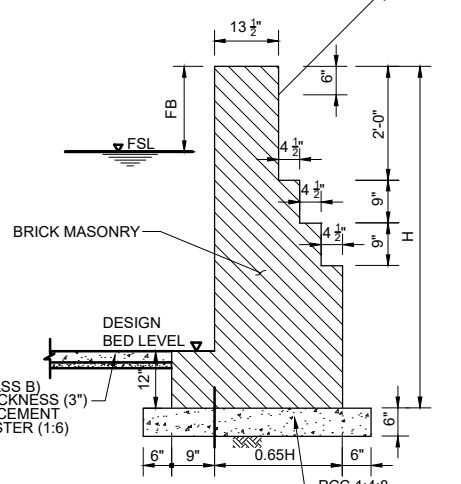
PLAN VIEW



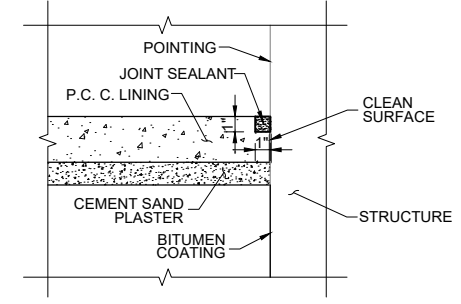
SHOTCRETE REPAIR  
REPAIR OF SPALLING AT REINFORCEMENT



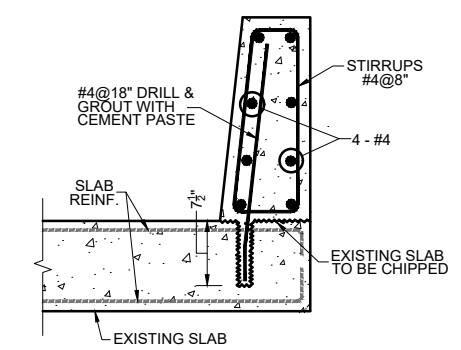
TYPICAL TRANSITION WALL DETAILS  
(FROM 1V:0.25H TO 1V:1H)



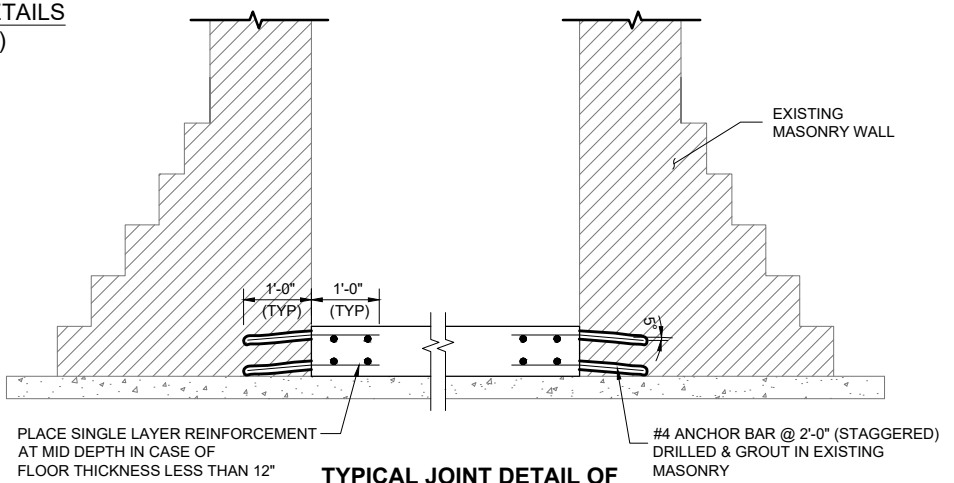
TYPICAL TRANSITION WALL DETAILS  
(FROM 1V:0H TO 1V:0.25H)



JOINT BETWEEN LINING & STRUCTURE



CONNECTION OF NEW PARAPET WITH EXISTING SLAB



TYPICAL JOINT DETAIL OF EXISTING MASONRY & NEW RCC

NOTES:

1. ALL SURVEY BENCH MARKS SHALL BE CONFIRMED WITH RESPECT TO ADJACENT/EXISTING STRUCTURES BY THE REPRESENTATIVES OF THE ENGINEER AND THE CLIENT PRIOR TO LAYING OUT STRUCTURE COORDINATES.
2. THE UNREHABILITATED PORTION OF THE EXISTING STRUCTURE SHALL BE RESTORED TO ORIGINAL DESIGN PARAMETERS OR AS DIRECTED BY THE ENGINEER.
3. ANY DIFFERENCE IN THE PARAMETERS OF THE EXISTING STRUCTURE AND THOSE MENTIONED ON THE DRAWINGS SHALL BE INDICATED ON THE SHOP DRAWINGS WHICH SHALL BE UPDATED ACCORDINGLY AND SUBMITTED TO THE ENGINEER FOR APPROVAL.
4. EXISTING ARCHES OR SLABS TO BE REMOVED (AS SHOWN ON DRAWINGS) WITH CARE TO PREVENT ANY DAMAGE TO THE EXISTING STRUCTURE.
5. LAYOUT AS SHOWN ON THE DRAWING TO BE VERIFIED AT SITE WITH RESPECT TO BANKS, ROADS AND DOWEL ARRANGEMENTS ETC. AND SET OUT AFTER PERFORMING JOINT SURVEY WITH THE ENGINEER.
6. CONCRETE FOR REPAIR SHALL BE OF SHRINKAGE COMPENSATING TYPE HAVING ZERO LONG-TERM SHRINKAGE
7. BEFORE REPAIRING STRUCTURAL CRACKS THESE CRACKS SHALL BE OPENED UP AT RANDOMLY SELECTED POINTS AS DIRECTED BY THE ENGINEER TO ENSURE THAT REINFORCEMENT IS NOT CORRODED. IN CASE OF CORRODED REINFORCEMENT REMEDIAL MEASURES SHALL BE AS PER THE DIRECTIONS OF THE ENGINEER
8. ALL PROPOSED REPAIRS MAY BE MODIFIED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER AS PER SITE CONDITIONS

EMERGENCY FLOOD ASSISTANCE PROJECT (EFAP)-KP  
"RECONSTRUCTION AND REHABILITATION OF IRRIGATION AND DRAINAGE SYSTEM AND FLOOD PROTECTION WORKS IN KHYBER PAKHTUNKHWA"



GOVERNMENT OF KHYBER PAKHTUNKHWA  
IRRIGATION DEPARTMENT

REV.	DATE	DESCRIPTION	BY	CKD.	APPR.	APPROVED

DRAWN	F.A
SUBMITTED	M.M
RECOMMENDED	Q.L
CHD/VER	F.R.K
APPROVED	N.A

**NESPAP** NATIONAL ENGINEERING SERVICES PAKISTAN (PVT) LIMITED

HEAD OFFICE : NESPAP HOUSE, 1-C BLOCK N, MODEL TOWN EXTENSION, LAHORE PAKISTAN

TYPICAL PLAN AND CROSS SECTION FOR REHABILITATION WORKS BRICK RETAINING WALL	
DATE	DWG. NO.
AUG 2023	4593/TD/061/RHS-03
REV.	0