**Government of the Punjab**

**IRRIGATION DEPARTMENT**

**SARGODHA IRRIGATION ZONE**

**SARGODHA.**

******

***draft***

***FLOOD FIGHTING PLAN***

***2025***

**Executive Engineer, Kirana division LJC, Sargodha.**

**lower jhelum canal Circle, sargodha**

[xen\_kirana@irrigation.punjab.gov.pk](mailto:XEN_kirana@irrigation.punjab.gov.pk)

Phone.048-9230399. Fax. 048-9230649

# PART – AFLOOD FIGHTING PLAN 2025.

Table of Contents

[PART – A](#_PART_–_A)

[1. Salient feature of Kirana Division LJC 1](#_Toc159786281)

[1.1 Location 1](#_Toc159786282)

[1.2 General Description. 1](#_Toc159786283)

[1.3 Administrative setup 3](#_Toc159786284)

[2. Flood Protection and River Training Works 4](#_Toc159786285)

[2.1 Design parameter of Training Works. 4](#_Toc159786286)

[2.2 Location Map. 4](#_Toc159786287)

[3. Brief history of past flood events. 5](#_Toc159786288)

[4. Design Data, Historic peak flood data and previous five years flood data of Head Works / Barrages and or other control points 7](#_Toc159786289)

[4.1 Flood Limits 7](#_Toc159786290)

[4.2 Time Lags of Floods 7](#_Toc159786291)

[4.3 Highest Floods 7](#_Toc159786292)

[4.4 Peak discharges 8](#_Toc159786293)

[5. Flood Histogram 9](#_Toc159786294)

[5. Flood Fighting Strategy 10](#_Toc159786295)

[6. Flood Damages Restoration Works. 13](#_Toc159786296)

[7. Flood Fighting Watching Arrangement. 14](#_Toc159786297)

[7.1 Pre-Flood Arrangement 14](#_Toc159786298)

[7.2 Watching Establishment 15](#_Toc159786299)

[7.3 Arrangement at Sensitive sites 15](#_Toc159786300)

[7.4 Watching Material 16](#_Toc159786301)

[7.5 Arrangement for Sounding & Probing 17](#_Toc159786302)

[7.6 Lighting Arrangement 17](#_Toc159786303)

[7.7 Ration Arrangement 17](#_Toc159786304)

[7.8 P.O.L. Arrangement for Vehicle 17](#_Toc159786305)

[7.9 Transportation 17](#_Toc159786306)

[7.10 Law and order 17](#_Toc159786307)

[7.11 Medical Arrangement for Labour 17](#_Toc159786308)

[7.12 Liaison with other Department 17](#_Toc159786309)

[7.13 Role of the Army 17](#_Toc159786310)

[7.14 Duties of Telephone Attendant 18](#_Toc159786311)

[7.15 Wireless Arrangements 18](#_Toc159786312)

[8. Detail of Encroachment. 19](#_Toc159786313)

[9. Duty Roster/Flood Fighting Program 20](#_Toc159786314)

[10. Emergency Telephone Nos. 21](#_Toc159786315)

[11. Standard operating procedure (SOP) for Breaching Sections 22](#_Toc159786316)

[11.1 History of the breaching section 22](#_Toc159786317)

[11.2 Location, Design, Quantity and Variety of the explosive required for detonation. 22](#_Toc159786318)

[11.3 Arrangement of explosives and security of explosive stores 22](#_Toc159786319)

[11.4 List of the security staff alongwith detail of their training etc 22](#_Toc159786320)

[11.5 Detail of mechanical means as a standby arrangements in case of detonation failure 22](#_Toc159786321)

[11.6 Duty Roster in case of critical situation 22](#_Toc159786322)

[11.7 Breaching Committee with their action plan 22](#_Toc159786323)

[11.8 List of the villages likely to be inundated in case of breach 22](#_Toc159786324)

[11.9 Announcement and detail of evacuation arrangements 22](#_Toc159786325)

[11.10 Details of coordination with Civil/Army Authorities 22](#_Toc159786326)

[11.11 Parallel communication arrangements 22](#_Toc159786327)

[11.12 Index Plan 22](#_Toc159786328)

[*PART – B* 23](#_Toc159786329)

[12. Vulnerable sites on Flood Bund/Structures: 24](#_Toc159786330)

[12.1 Apprehended breach sites in Flood Bunds/Structures 24](#_Toc159786331)

[12.2 Operation of breaching sections. 24](#_Toc159786332)

[12.3 Breaches due to rising of flood water, deterioration of flood bunds etc. 24](#_Toc159786333)

[13. Emergency Contingency Plan for vulnerable site (sites) listed above. Emergency Contingency Plan must include:- 25](#_Toc159786334)

[13.1 Plan showing route of Flood Water coming out of the breach supported with levels. 25](#_Toc159786335)

[13.2 Detail of villages abadies likely to be affected and this should also be shown on the plan 25](#_Toc159786336)

[13.3 Strategy and action taken be explained in detail. This may include 25](#_Toc159786338)

[13.3.1 Arrangements 25](#_Toc159786339)

[13.3.2 Establishment of Flood Fighting Camps. 26](#_Toc159786340)

[13.3.3 Duties of Officers / Officials and their camp sites 26](#_Toc159786341)

[13.3.4 Departmental Machinery available 26](#_Toc159786342)

[13.3.5 Machinery available from Private Source 26](#_Toc159786343)

[13.3.6 Flood Fighting Material required 27](#_Toc159786344)

[13.3.7 Flood Fighting Material available 28](#_Toc159786345)

[13.4 Detail of other infrastructure like electric, Sui Gas, Telephone installations, road network, other buildings, canals and drainage network. 28](#_Toc159786346)

[14. Action Plan 29](#_Toc159786347)

[14.1 Re-shuffling/ recouping plan of reserve stone departmentally. 29](#_Toc159786348)

[14.2 Detail of inlet/outlet crossing along with closing methodology. 29](#_Toc159786349)

[14.3 Deployment of Machinery (Medium to High Flood) River Chenab. 30](#_Toc159786350)

[14.4 Deployment of Machinery (High to Very High Flood) River Chenab. 31](#_Toc159786351)

[14.5 Deployment of Machinery (High to Exceptionally High Flood) River Chenab. 32](#_Toc159786352)

[14.6 Police deployment plan. 33](#_Toc159786353)

[14.7 Detail of synthetic bags with capacity of 500 kg and 1000 kg. 34](#_Toc159786354)

[14.8 Details of polythene sheets of black colour to protect upstream slope against wave action and to control seepage through embankments. 35](#_Toc159786355)

[15. Back up Divisions (in case of breach). 36](#_Toc159786356)

[Plan reserve stock of stone at Mamola guide wall spur. 37](#_Toc159786357)

[LONG SECTION OF KOT NAJA FLOOD PROTECTION BUND *PART -I* 38](#_Toc159786358)

[LONG SECTION OF KOT NAJA FLOOD PROTECTION BUND *PART -II* 39](#_Toc159786359)

[L-Section of Mamola Guide Wall Spur 40](file:///D:\Drive2\office%20work%202011-24\FLOOD\Flood%20Fighting%20Plan%202011-24\F.F.Plan%202024%20(Kirana)\F.F.Plan%202024%20Kirana%20Division%20LJC%20Sargodha\Draft%20F%20F%20Plan%20Kirana%202024%2023-02-2024.docx#_Toc159786360)

[L-Section of Inverted Hockey Spur 41](file:///D:\Drive2\office%20work%202011-24\FLOOD\Flood%20Fighting%20Plan%202011-24\F.F.Plan%202024%20(Kirana)\F.F.Plan%202024%20Kirana%20Division%20LJC%20Sargodha\Draft%20F%20F%20Plan%20Kirana%202024%2023-02-2024.docx#_Toc159786361)

[Revised L-Section of Khadir Disty Flood Bund 42](file:///D:\Drive2\office%20work%202011-24\FLOOD\Flood%20Fighting%20Plan%202011-24\F.F.Plan%202024%20(Kirana)\F.F.Plan%202024%20Kirana%20Division%20LJC%20Sargodha\Draft%20F%20F%20Plan%20Kirana%202024%2023-02-2024.docx#_Toc159786362)

[INDEX PLAN 43](#_Toc159786363)

CHAPTER-1

# 1. Salient feature of Kirana Division LJC

## 1.1 Location

Kirana Canal Division Sargodha falls in Chenab-Jhelum Doab areas comprising part of Lower Jhelum Canal Sargodha which off-takes from left flank of river Jhelum having its jurisdiction upto right flank of river Chenab partially in District, Sargodha and Chiniot.

There are three Main Channels in the jurisdiction of this Division which are as under:-

**1. Kirana Disty: RD 0 -** **206542 (Tail) Discharge 440.68 Cs.**

**2. Khadir Disty: RD 0 -** **273600 (Tail) Discharge 235 Cs.**

**3. Lalian Disty: RD 0 -** **184000 (Tail) Discharge 375 Cs.**

These 03 No. Systems irrigate the areas in District Sargodha & Chiniot and are controlled by respective Sub Divisional Officers headed by the Executive Engineer Kirana Division LJC, Sargodha. Names and locations of Sub Divisional Offices are given below.

|  |  |  |
| --- | --- | --- |
| **Sr. #** | **Name of Sub Division** | **Location (Head Quarter)** |
| **1** | Laluwali Sub Division | Laluwali Canal Rest House at RD 60000/L of Lalian Disty |
| **2** | Khadir Sub Division | Kot Naja Canal Rest House at RD 33000-34000/R of Khadir Disty |
| **3** | Kirana Sub Division | At Katchary Road Sargodha |

## 1.2 General Description.

This Division falls in Chenab-Jhelum Doab areas. Detail description of Canal Systems and river reach are as per following.

1. **Khadir Irrigation system**

This Canal System Khadir Disty off-take at RD 117220/L of Khadir Feeder with designed discharge of 235 Cs. Its jurisdiction starts from tail of Khadir Feeder and ends near village Pipal Bhutta of Tehsil Lalian District Chiniot. It consists of 16 Nos. irrigation channels which traverse along the right bank of river Chenab partially in District Sargodha & District Chiniot.

XEN: / KIRANA

Khadir Disty system is protected by **Kot Naja Flood Bund (Length RD 91440 – 132500) 8.212 Mile & Mamola Guide Wall Spur (Length RD 0-7000) 1.40 Mile**. The Flood bund from RD 0 - 91440 now falls in jurisdiction in Bhalwal Division whereas RD 91440 - 132500 is controlled by Kirana Division till it meets Khadir Disty at RD 66000-67000 and now it’s called Khadir Disty Flood Bund RD 66+450 to 68+034 (0.317 miles) and L.B.N Drain.

The Bund runs along right bank of the River Chenab with average distance from the river are about five miles.

Mamola Guide Wall Spur is located near village Muhammad Wala and protects agricultural land, local abadies and public infrastructure from flood havoc at large.

**2. Lalian Disty System**

This irrigation System off-takes from tail RD 104300/L of Southern Branch near Ghullapur Canal Rest House. Its designed discharge is 375 Cs. and consists of 15 No Minor & Sub Minor. Length of Lalian Disty: is 184000 ft. and ends near Chak 62/SB Tehsil Lalian District Chiniot.

**3. Kirana Disty System**

This irrigation System off-takes from tail at RD 104300/R of Southern Branch near Ghullapur Canal Rest House. Designed discharge is 440.68 Cs. It consists of 14 No off-taking channel. The length of Kirana Disty is 206542 ft. and ends near Tehsil Sillanwali. Its main off-taking channel is Chokera Disty: having discharge of 118 Cs.

The territorial jurisdiction of this Division falls in District, Sargodha & Chiniot. Network of Three major canals to provide gravity flow perennial irrigation with various intensities viz 75% & 40% to feed an overall C.C.A comprising 363152 acres in addition to commanding 419609 acres well flourished superb garden areas and orchards through 706 No outlets by utilizing 1074.68 Cs: discharge supplemented by river supplies from Mangla Dam reservoir through Lower Jhelum Canal, off-taking at Rasul Barrage.

XEN: / KIRANA

## 1.3 Administrative setup

**Administrative setup plan of Kirana Division LJC attached**

CHAPTER-2

# Flood Protection and River Training Works

## 2.1 Design parameter of Training Works.

There is one flood protection bund & two river training works in this Division which are as under.

**I- Flood Embankment.**

1. **Kot Naja Flood Bund RD: 91+440 – RD: 132+500 (8.212 Mile)**
2. **Khadir Disty Flood Bund RD: 66+450 – 68+034 (0.317 Mile)**

**II- River Training Work.**

1. **Mamola Guide Wall Spur RD: 0+000 – 7+000 (1.40 Mile)**

with16 No. earthen studs = 16 x300’(0.96 Mile)

1. **8 No. solid stone studs at Darbar Syed Sahib Shah**

**Design Parameters**.

**I- Flood Embankment.**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Description** | **Length (Mile)** | **Top Width (ft:)** | | **Side Slope** | | **Year of Construction** |
| **RD** | **Width** | **R/S** | **C/S** |
| Kot Naja Flood Bund RD 91+440-132+500 | 8.212 | 91440-132500 | 20.00 | 3:1 | 2:1 | 1905 |
| 25.00 | 3:1 | 2:1 | Rehabilitation in 2019 by PIU. |
| Khadir Disty Flood Bund RD: 66+450 – 68+034 | 0.317 | 66450-68034 | 25.00 | 3:1 | 2:1 | 2023 |

**II River Training Work.**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Description** | **Length (Mile)** | **Top Width (ft:)** | | **Side Slope** | | **Year of Construction** |
| **RD** | **Width** | **R/S** | **C/S** |
| Mamola Guide Wall Spur RD 0+000-7+000 | 1.40 | 0-7000 | 25.00 | 3:1 | 2:1 | 1997 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Description** | **Length (ft.)** | **Top Width (ft:)** | **Side Slope** | **Year of Construction** |
| **8 No. solid stone studs at Darbar Syed Sahib Shah** | | | | |
| Stud No.1 | 25 | 15 | 1:1 | 2015 |
| Stud No.2 | 50 |
| Stud No.3 | 60 |
| Stud No.4 | 80 |
| Stud No.5 | 25 |
| Stud No.6 | 25 |
| Stud No.7 | 50 |
| Stud No.8 | 80 | 2022 |

## 2.2 Location Map.

Location map attached with page-43.

XEN: / KIRANA

CHAPTER-3

# Brief history of past flood events.

During flood of 1995-1996, the spill of river Chenab with 644397 & 853231 Cs. discharge respectively touched Kot Naja flood bund in reaches RD: 63000 to 90000 with no damage occurred,

However, in 1997 the river Chenab with its peak on 28.8.1997 having discharge of 873443 Cs. damaged Mamola spur due to parallel flow action on D/S side.

On 13-14/03/2007 heavy rains in catchment area in the territory of Jammu & Kashmir caused high flood in river Chenab, This unexpected flood was recorded as 289000 Cs: and its effect reached at Mamola guide wall spur site, a significant change in the flow pattern of river at this high discharge intensity was observed. Due to this, the upstream curved portion (Nose) was under direct hit of the river current which caused swirls formation in the vicinity of nose. The eddies generation caused abnormal scouring which resulted launching / washing away of apron in length of 172 ft. The damage was further intensified during the flood 2010 upto 200 ft. length. To restore the structure the work namely: Rehabilitation of Mamola Guide Wall Spur on Right Side of River Chenab was completed before flood season 2014.

During flood of 2014, the spill of river Chenab with 903504 Cs. Discharges also touched Kot Naja flood bund in reach RD 49000 to 71000 and damage occurred in reach RD 70000-71000 which was filled later on. No damage occurred to Guide Walls Flood Bund in 2015 & 2016 against discharges of 161054 Cs. & 405542 Cs. respectively.

During flood season 2017, river regime upstream of Motorway (M-2) Bridge was changed due to obstruction caused by choked bays along left side of the river, resultantly, river flow has been diverted along right bank and created emergent situation posing threat to abadies, Agricultural Land & Imambargah.

**PROTECTION OF ABADIES AND AGRICULTURE LAND OF VILLAGE TALIBWALA DOWNSTREAM MOTORWAY M-2 BRIDGE**

A group of people met the Deputy Commissioner, Sargodha on 22-01-2020 who vide his letter No. 100/FRC dated 31-01-2020 informed that their village Tallibwala having population of 5000 people is under direct threat of the River Chenab, which has eroded about 200 Acres of Land. They also submitted that if no protective measures are adopted their agriculture land and houses will be vanished soon.

As there is no Irrigation infrastructure under the threat of River Chenab, according to Flood Policy Notified vide No. SO(Flood)VII-3/2004 dated12-07-2019 being a Chairman of District Disaster Management Committee Deputy Commissioner, Sargodha desired to provide appropriate solution for protection of land under river action. The matter was referred to Departmental Expert Committee for possible solution vide Chief Engineer, letter No. 4844/W-II/238/84 dated 14-03-2020.

Continuous erosion of agriculture land by current flows downstream Qadirabad Barrage near Village Talibwala. The erosive action will soon erode/inundate the Village Talibwala just 300 ft away from the River bank Talibwala require emergent provision of Flood protection / embankment. In this regard Physical model Study for a long-term technical solution has been completed at Nandipur Research Institute and resultantly PRO Hydraulics vide letter No. 1373/PRO (H)/83-M dated 27.06.2023 shared minutes of meeting of the DEC held on 22.06.2023. The PC-I has been approved by Administrative Department vide No. SO.(Floods)VI-11/2023 dated 20.10.2023 amounting to Rs. 216.947 Millions & construction of Inverted Hockey Spur of work started at site and it will be completed before flood season 2025 due to availability of funds.

XEN: / KIRANA

CHAPTER-4

# Design Data, Historic peak flood data and previous five years flood data of Head Works / Barrages and or other control points

## 4.1 Flood Limits

Floods limits for River Chenab are as below:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Head Works** | **Lac Cs:** | | | | |
| **Low** | **Medium** | **High** | **Very High** | **Exceptionally High** |
| Marala | 1.00 to 1.50 | 1.50 to 2.00 | 2.00 to 4.00 | 4.00 to 6.00 | More than 6.00 |
| Khanki | 1.00 to 1.50 | 1.50 to 2.00 | 2.00 to 4.00 | 4.00 to 6.00 | More than 6.00 |
| Qadirabad | 1.00 to 1.50 | 1.50 to 2.00 | 2.00 to 4.00 | 4.00 to 6.00 | More than 6.00 |
| **Source:** Federal Flood Commission Islamabad. | | | | | |

## 4.2 Time Lags of Floods

Following are the time lags for high flood condition in River Chenab.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Location** | | **Distance (Km)** | **Time Lag (Hour)** | | **Remarks** |
| **From** | **To** | **Range** | **Indicative Average** |
| **Marala** | **Khanki** | 56 | 10-14 | 12 | **i)** Indicative average time lags values may vary in view of conditions / factors prevalent at the time of flood flows.  **ii)** These values are for high flood conditions and may be used by the concerned agencies for rescue / evacuation purposes. |
| **Khanki** | **Qadirabad** | 30 | 06-10 | 7 |
| **Qadirabad** | **Trimmu.** | 214 | 60-84 | 72 |
| **Qadirabad** | **MainaHazara.** | 40 | - | 12 |
| **MainaHazara.** | **ChiniotBridge** | 80 | - | 24 |
| **Source:** Federal Flood Commission Islamabad. | | | | | |

## 4.3 Highest Floods

The highest flood discharges recorded downstream Qadirabad Barrage during last five year are as under:

|  |  |
| --- | --- |
| **Year** | **D/S Qadirabad** |
| 2020 | 258954 Cs |
| 2021 | 167812 Cs |
| 2022 | 202149 Cs |
| 2023 | 185749 Cs |
| 2024 | 145219 Cs. |

XEN: / KIRANA

## 4.4 Peak discharges

|  |  |  |
| --- | --- | --- |
| Date | Discharge (Cs) | Pond Level (ft.) |
| Downstream Qadirabad Barrage | | |
| 02.09.1983 | 303121 | 696.00 |
| 09.08.1984 | 108476 | 694.20 |
| 08.08.1985 | 321917 | 696.50 |
| 05.08.1986 | 342758 | 695.70 |
| 27.07.1987 | 97879 | 691.40 |
| 26.09.1988 | 892299 | 700.30 |
| 31.07.1989 | 498474 | 697.60 |
| 22.03.1990 | 347205 | 695.90 |
| 15.04.1991 | 249663 | 694.50 |
| 11.09.1992 | 948530 | 700.50 |
| 11.07.1993 | 434754 | 697.30 |
| 21.07.1994 | 425567 | 697.00 |
| 29.07.1995 | 644397 | 699.00 |
| 24.08.1996 | 853231 | 700.50 |
| 28.08.1997 | 873442 | 700.80 |
| 05.03.1998 | 259713 | 694.50 |
| 08.08.1999 | 122447 | 691.60 |
| 23.07.2000 | 291349 | 693.70 |
| 08.08.2001 | 136575 | 691.70 |
| 14.08.2002 | 226398 | 694.60 |
| 19.02.2003 | 367408 | 696.20 |
| 18.08.2004 | 90043 | 691.50 |
| 06.07.2005 | 369847 | 697.00 |
| 04.09.2006 | 443206 | 699.10 |
| 14.03.2007 | 289002 | 693.05 |
| 01.08.2008 | 190438 | 692.05 |
| 17.08.2009 | 55535 | 690.85 |
| 07.08-2010 | 319733 | 696.01 |
| 17-09-2011 | 164604 | 691.85 |
| 05-08-2012 | 180789 | 691.97 |
| 15-08-2013 | 403403 | 696.90 |
| 07-09-2014 | 903504 | 701.70 |
| 13-07-2015 | 161054 | 694.50 |
| 08-08-2016 | 405542 | 696.95 |
| 03-08-2017 | 154420 | 694.00 |
| 14-08-2018 | 172031 | 692.80 |
| 01-08-2019 | 159544 | 684.70 |
| 29-08-2020 | 258954 | 693.00 |
| 29-07-2021 | 167812 | 688.25 |
| 12-08-2022 | 202149 | 694.00 |
| 20-07-2023 | 185749 | 692.95 |
| 16-08-2024 | 145219 | 691.80 |

XEN: / KIRANA

# 5. Flood Histogram

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

CHAPTER-5

# Flood Fighting Strategy

In view of the experience of past year’s floods history, constant watch is required during the flood season, great care and caution will be required for fixation of appropriate relief spots for flood fighting on different canals, flood bund and spur.

**Canal System.**

Khadir system runs parallel to river Chenab and up to RD 67+500 is protected from the spill of river by Kot Naja flood bund. The remaining part of Khadir Disty RD95000 to 273600-Tail and its allied channels on left side always remain under threat of river spill and require continuous watching. The Khadir Disty System comprises of following canals.

|  |  |  |  |
| --- | --- | --- | --- |
| **Canal System** | **Canal** | **Length (mile)** | **Discharge (Cs)** |
| Khadir Disty System. | Khadir Disty. | 54.72 | 235.00 |
| Ahmad Nagar Minor. | 3.35 | 8.00 |
| Pillowal Minor. | 5.94 | 11.00 |
| Khai Branch Disty. | 6.67 | 19.00 |
| Jabana Minor | 1.58 | 4.50 |
| Walla Minor | 3.67 | 13.00 |
| Pir Punja Minor. | 4.01 | 7.00 |
| Vijhulke Minor. | 2.30 | 3.50 |
| Kalri Minor. | 2.39 | 3.00 |

**Camp / Sites.**

The Department has proposed to install camp stations for protection of irrigation canals on Kot Naja Flood Bund, Mamola Guide wall spur and 8 No. solid stone studs at Darbar Syed Sahib Shah.

**On Canals.**

|  |  |  |  |
| --- | --- | --- | --- |
| **Canals** | **Reach RD** | **Length (mile)** | **Battle Camp Station** |
| KhadirDisty. | 95000-180000 | 17.00 | Yakhuwala Rest House. |
| KhadirDisty. | 180000-273000-T | 18.60 | Ghausewala Rest House. |
| Ahmad Nagar Mr. | 0 – Tail | 3.35 | Yakhuwala Rest House. |
| Pillowal Mr. | 0 – Tail | 5.90 | Yakhuwala Rest House. |
| Khai Branch Disty. | 0 – Tail | 6.67 | Yakhuwala Rest House. |
| Jabana Mr. | 0 – Tail | 1.58 | Yakhuwala Rest House. |
| Walla Mr. | 0 – Tail | 3.67 | Ghausewala Rest House. |
| PirPunja Mr. | 0 – Tail | 4.01 | Ghausewala Rest House. |
| Vijhulke Mr. | 0 – Tail | 2.30 | Ghausewala Rest House. |
| Kalri Mr. | 0 – Tail | 2.40 | Ghausewala Rest House. |

XEN: / KIRANA

**On Bund, Spur& river training work.**

|  |  |  |  |
| --- | --- | --- | --- |
| **Description** | **Reach RD** | **Length (mile)** | **Battle Camp Station** |
| Kot Naja Flood Bund. | 91440-132500 | 8.212 | RD 93750 |
| Mamola Guide Wall Spur. | 0-7000 | 1.40 | RD 0+000 |
| 8 No solid stone studs | At Darbar Syed Sahib Shah | | |

The Sub Divisional Officer, Khadir Sub Division will be the overall in-charge for operation of Kot Naja Flood bund, channels on Khadir system, Mamola Guide Wall spur and 8 No solid stone studs.

* Above mentioned camps will be installed on sites for supervision of the protection activities during emergency. For all spots sufficient articles of stock items will be available in all these camps.
* There are provisions for engagement of work charge establishment to supplement the efforts of regular establishments.
* Sub Divisional Officer, Kirana Sub Division will remain in touch with Flood Control Office, during Flood period after receiving warning that the river is in high flood, he will immediately shift his headquarter to Kot Naja Flood bund at RD 93750 and assist Sub Divisional Officer, Khadir in flood fighting operation.
* Sub Divisional Officer, Laluwali will shift his headquarter to Yakhuwala Rest House to supervise and provide guidance to Sub Engineer Yakhuwala till the danger is over and the flood water subsides.
* Executive Engineer Kirana Canal Division is fully competent to change duty of any officer / official.

Following channels are directly affected by the **RIVER Chenab** spills. The channels function as flood embankment and protection to the towns **(like Mahiwal, Yakhuwala),** abadies, crops and other infrastructure, against the flood. The reaches of channels which are affected by river spills and where the channels function as flood bunds are:-

|  |  |  |  |
| --- | --- | --- | --- |
| **Sr. #** | **Channel** | **Reach** | **Length (mile)** |
| **1.** | Khadir Disty: | RD: 0-67500. | 13.50 |
| **2.** | Ahmad Nagar Mr. | RD: 0-16730- Tail | 3.35 |
| **3.** | Pillowal Minor. | RD: 0-29715- Tail | 9.43 |
|  |  | **Total** | **26.28** |

XEN: / KIRANA

In view of vulnerable location of channels, being in the flood plain, it is essential to take up flood preparedness activities like strengthening weak and ghat sites, clearance of jungle, shrubs from banks and slopes and making them fit to face the ensuing floods. Therefore a gang of one man per mile is employed from 1st June to 30TH September for preparedness of the upcoming flood, in addition to existing establishment of one beldar in six miles length of canal.

1. LOW FLOOD DISCHARGE 100000 – 150000 Cs.

No extra labour will be employed. The labour arranged for preparedness will continue as such.

1. MEDIUM FLOOD DISCHARGE 150000 – 200000 Cs

In medium flood the scale will be two men / mile / shift for three shift in a day and arranged through the external contractor.

1. HIGH FLOOD DISCHARGE 200000 – 400000 Cs.

The flood water spills out and inundates the low lying areas and touches the flood bund. The watching is necessary to be arranged. Therefore, three men for day & night per mile are employed, including the existing gang as arranged by the external contractor.

1. VERY HIGH FLOOD DISCHARGE 400000 – 600000 Cs.

All activities will remain as such. The watching establishment will be raised to two men per mile on channels and four men per mile for three shifts on Kot Naja Flood Bund as arranged by the external contractor.

v. EXCEPTIONALLY HIGH FLOOD ABOVE 600000 Cs.

This stage warrants alarming situation. The watching labour will be raised to three men per mile per shift on channels and six men per mile per shift for three shifts on bund. On receipt of exceptionally high flood warning, Deputy Collector, Kirana along with concerned Zilladars and Canal Patwaries will shift their camp at Yakhuwala Rest House.

XEN: / KIRANA

CHAPTER-6

# Flood Damages Restoration Works.

Overall condition of flood protection infrastructure was satisfactory. However, no any damages to houses / lives have been reported. River erosive action was observed near Darbar Syed Sahib Shah Village Talibwala along right Bank of River Chenab Downstream Motorway M-2 Bridge. There is no structure damage during the flood season 2024 and hence, no flood restoration work is pending in Kirana Canal Division. However Construction of Inverted Hockey Spur as proposed by the Director Hydraulics Irrigation Research Institute Lahore is under progress at site along-with it is planned to rehabilitate the Mamola Guide Wall Spur before flood season 2025. It may rehabilitate depending upon availability of funds alongwith repairing/ maintenance of Kot Naja Flood Bund through filling rain cuts & gharas etc.

XEN: / KIRANA

CHAPTER-7

# Flood Fighting Watching Arrangement.

## 7.1 Pre-Flood Arrangement

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Sr. No.** | **Activity** | | **Newly Progress** | | **Compliance Report** | |
| **I.** | **Preparation of Flood Fighting Plan.** | | | | | |
|  | a) Submission of Draft Divisional Plans by Zonal Chiefs to Chief Engineer Drainage and Flood(after scrutiny by SEs/CEs). | | **01-03-2025** | | Submitted | |
|  | b) Review by Chief Engineer D&F. | | **31-03-2025** | | Review & Corrected by CE D&F Lahore vide No. D&F/2023/791/25/76 dated 13/04/2023 | |
|  | c) Final submission of Flood Fighting Plans. | | **15-04-2025** | |  | |
| **II.** | **Inspection of Flood Infrastructure.** | | | | | |
|  | By XENs | | **15-03-2025** | |  | |
|  | By SEs /CEs) | | **31-03-2025** | |  | |
|  | By Departmental& Army Teams | | **31-03-2025** | |  | |
| **III.** | **Identification of encroachments on bunds and spurs to the civil administration.** | | **31-03-2025** | | No encroachment on flood bund / spur | |
| **IV.** | **Painting gauges, RD Marks, data boards and repair to flood bunds etc.** | | **31-05-2025** | | Will be completed within target date | |
| **V.** | **Replenishment of reserve stock of stone and flood fighting materials.** | | | | | |
|  | a) Identification of needs. | | **28-02-2025** | | Sanctioned = 2.497 (0.50+1.997) Lac. Cft  Available = 0.130 Lac. Cft  Balance = 2.367 Lac. Cft | |
|  | b) Funding /Procurement Arrangements. | | **15-03-2025** | | Estimate Sanctioned & tender called but no tender received. | |
|  | c) Procurement, stacking, prescribed field checks. | | **31-05-2025** | | - | |
| **VI.** | **Installation of wireless sets** | | **15-06-2025** | | Will be installed within target date | |
| **VII.** | **Opening of zonal flood cells** | |  | |  | |
|  | a) Duty rosters. | | **01-06-2025** | | Will be issued up to target date | |
|  | b) Operative. | | **15-06-2025** | | Will be operative within target date | |
| **Structure wise Detail of Reserve stock of stone** | | | | | | |
|  | **Sanctioned** | **Available** | | **Balance** | | **Remarks** |
| **1** | (Mamola Guide Wall Spur) 0.50 Lac. Cft | 0.13 Lac. Cft | | 0.37 Lac. Cft | | Estimate Sanctioned & tender called but no tender received. |
| **2** | (8 No Solid Stone Studs) 1.997 Lac. Cft | 0 | | 1.997 Lac. Cft | |

**Consolidated Status of reserve stock of stone**

|  |  |  |  |
| --- | --- | --- | --- |
| **Status of Reserve Stock of Stone (Lac. Cft)** | | | |
| **Sanctioned Reserve Stock limit** | **Available quantity** | **Balance quantity** | **Status of procurement of balance quantity** |
| **2.497** | **0.13** | **2.367** | Estimate Sanctioned & tender called but no tender received. |

XEN: / KIRANA

## 7.2 Watching Establishment

**Labour.**

Manpower will be engaged during the flood season on work charge basis through advertisement and external contractor for watching and general maintenance of channel and flood bunds.

1. During normal flood stage, (No extra labour will be employed. The labour arranged for preparedness will continue as such)
2. During low flood stage, (The flood water flows within river bank. No extra labour will be employed)
3. In medium flood the scale will be two men / mile / shift for three shift in a day.
4. During high flood four men/ mile / shift for three shifts per day will be employed.
5. During very high flood stage of 6.00 Lac Cusecs discharge, the 6 men / mile / shift in three shifts will be employed.

After every three miles there will be a Mate and for every five miles there will be a Mistry in addition to Mate to supervise the work of Beldars.

**Labour During Emergency.**

* Manpower will be arranged by the respective Deputy Commissioner in case of emergency to meet with situation or through external contractor.
* 4 Nos dozers and 6 Nos tractor trollies with P.O.L will be arranged by the Agricultural Department through concerned Deputy Commissioner in District Sargodha &Chiniot.
* S.H.O of concerned police station will assist Irrigation Department.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Site of Watching (RD)** | **Length(mile)** | **Canal / River Works** | **Labour** | |
| **Mate** | **Beldar** |
| 95000-273600 | 35.72 | Khadir Disty. | 3 | 20 |
| 0-16730 | 3.35 | Ahmad Nagar Minor. | 1 | 4 |
| 0-29715 | 5.90 | Pillowal Minor. | 1 | 6 |
| 0-33362 | 6.67 | Khai Branch Disty. | 1 | 7 |
| 0-7908 | 1.58 | Jabana Minor. | - | 1 |
| 0-18356 | 3.67 | Walla Minor. | 1 | 4 |
| 0-20050 | 4.01 | Pir Punja Minor. | 1 | 4 |
| 0-11500 | 2.30 | Vijhulke Minor. | 1 | 3 |
| 0-11976 | 2.40 | Kalri Minor. | - | 3 |
| 91440-132500 | 8.212 | Kot Naja Flood Bund. | 3 | 9 |
| 0-7000 | 1.40 | Mamola Guide Wall Spur | 1 | 9 |

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Site | LENGTH | **Flood Limits** | | | | | | | | | |
| **Normal Flood Stage** | | **Low Flood Stage** | | **Medium Flood Stage** | | **High Flood Stage** | | **Very High Flood Stage** | |
| - | | - | | 2 Men per mile per shift | | 4 Men per mile per shift | | 6 Men per mile per shift | |
| **Man** | **Shift** | **Man** | **Shift** | **Man** | **Shift** | **Man** | **Shift** | **Man** | **Shift** |
| Kot Naja Flood  91440 -132500  & Khadir Disty Flood Bund RD: 66450 – 68034 | 8.212 (Mile)  0.317 (Mile)  Total 8.529 | No extra labour will be employed. | | The flood water flows within river bank. No extra labour will be employed. | | 63 | 3 Shift | 117 | 3 Shift | 171 | 3 Shift |
| 8 No. solid stone studs at Darbar Syed Sahib Shah | (8 Suds)  Say = 1 | 9 | 3 Shift | 15 | 3 Shift | 21 | 3 Shift |
| Mamola Guide Wall Spur | 1.40+0.96 = 2.36 (Mile) Say = 2.5 | 18 | 3 Shift | 33 | 3 Shift | 51 | 3 Shift |
| **Total** | | **90** | **3 Shift per day** | **165** | **3 Shift per day** | **243** | **3 Shift per day** |

## 7.3 Arrangement at Sensitive sites

Following are the main spots where watching camps will be established on temporary basis.

1. Kot Naja Flood Bund. RD 93760.
2. Mamola Guide Wall Spur. RD 0+000.
3. 8 No. Solid stone stud. At Darbar Syed Sahib Shah.

XEN: / KIRANA

## 7.4 Watching Material

Following materials shall be kept at each watching hut (The material will be shifted to watching huts as soon as the intimation of Medium / High Flood limit is received).

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Sr. No.** | **Name of item** | **Unit** | **Total quantity required for 3 No watching hut** | **Available quantity for 3 No. Watching huts** | **Balance quantity required**  **For 3 No. Watching huts** | **Status of arranging / purchasing balance quantity** |
| **1** | Axes (Large) | No. | 15 | 8 | 7 | **Subject to availability of funds, the materials shall be purchased before start of flood season 2025** |
| **2** | Bamboos 8' to 10' (for Lighting arrangements) | No. | 60 | 0 | 60 |
| **3** | Baskets (Medium) | No. | 60 | 4 | 56 |
| **4** | Buckets Plastic (Medium) | No. | 15 | 0 | 15 |
| **5** | Chouldaries (Medium) | No. | 3 | 1 | 2 |
| **6** | E.G. Bags (50 Kg) | No. | 3000 | 700 | 2300 |
| **7** | Energy Savers (50 Watt) | No. | 75 | 50 | 25 |
| **8** | Folding Chair | No. | 18 | 14 | 4 |
| **9** | Folding Chairs Plastic | No. | 15 | 3 | 12 |
| **10** | Folding Table | No. | 3 | 2 | 1 |
| **11** | Funnels | No. | 6 | 2 | 4 |
| **12** | G.I. Buckets (Large) | No. | 15 | 8 | 7 |
| **13** | GI. Wire (16 SWG) | Per Kg | 300 | 0 | 300 |
| **14** | GI. Wire (18 SWG) | Per Kg | 300 | 0 | 300 |
| **15** | Generator (3500 Watt) | No. | 3 | 3 | 0 |
| **16** | Hand Saws | No. | 6 | 3 | 3 |
| **17** | Handle for Kassi / Axes | No. | 30 | 0 | 30 |
| **18** | Holder for Lamp | No. | 90 | 30 | 60 |
| **19** | Kassi with Handles | No. | 15 | 8 | 7 |
| **20** | Kerosene Oil | Liter | 90 | 0 | 90 |
| **21** | Killas | No. | 300 | 0 | 300 |
| **22** | Life Jacket | No. | 15 | 13 | 2 |
| **23** | M. Oil | Liter | 12 | 0 | 12 |
| **24** | Manila Rope | Per Kg | 6 | 4 | 2 |
| **25** | Match Boxes | Packet | 30 | 0 | 30 |
| **26** | Material Holding Box | No. | 3 | 1 | 2 |
| **27** | Munj / Patha / Trungers | No. | 300 | 0 | 300 |
| **28** | Needles | No. | 6 | 2 | 4 |
| **29** | Oil Extractors | No. | 3 | 2 | 1 |
| **30** | Plastic Bags | No. | 1500 | 500 | 1000 |
| **31** | Petrol | Liter | 150 | 0 | 150 |
| **32** | Rain Coats (XXL size) | No. | 15 | 7 | 8 |
| **33** | Steel Charpoy | No. | 9 | 6 | 3 |
| **34** | Sutli | Per Kg | 30 | 9 | 21 |
| **35** | Switch / Plugs | No. | 36 | 24 | 12 |
| **36** | Torches (Medium) Rechargeable | No. | 9 | 6 | 3 |
| **37** | Umbrella (Large) | No. | 15 | 2 | 13 |
| **38** | Wheel Barrow | No. | 3 | 0 | 3 |
| **39** | Wires 7/29 | Meter | 300 | 200 | 100 |
| **40** | Wooden Boards 10’ x 12’ | No. | 6 | 4 | 2 |
| **41** | Wooden Hammers (diameter 4") | No. | 6 | 4 | 2 |

XEN: / KIRANA

## 7.5 Arrangement for Sounding & Probing

This item relates to Barrage / Head Works Canal Division.

## 7.6 Lighting Arrangement

Lighting arrangements will be made available.

## 7.7 Ration Arrangement

The establishment and supervisory staff will make their own food arrangements. However in the event of dearth of commodities, the Civil Authorities will be approached to store sufficient ration.

## 7.8 P.O.L. Arrangement for Vehicle

Respective Deputy District Officer, (Revenue) will be requested by the Sub Divisional Officer in-charge to provide help some reserve at the nearest petrol pumps to keep the vehicles on. Any obstruction found there will be pointed out by the Sub Divisional Officer.

## 7.9 Transportation

In general civil authorities have never been able to spare any vehicle for us, but we have no other cushion available to depend upon. It is therefore urged that the Deputy Commissioner, concerned may please ensure availability of dependable vehicle from the pool of the District.

## 7.10 Law and order

Kot Naja Flood bund falls within the administrative jurisdiction of District Sargodha & Chiniot proportionately, Mamola Guide wall spur and 8 No Solid Stone Studs fall in District Chiniot. In case of observing any sort of law and order situation from the public sides, it shall immediately be contacted by the Sub Divisional Officer, concerned with the respective authority of civil administration to maintain the situation at site to avoid any mishap.

## 7.11 Medical Arrangement for Labour

It is the responsibility of District Government to provide medical facilities in flood areas where required.

## 7.12 Liaison with other Department

Executive Engineer, Kirana Canal Division will keep liaison with the Civil and Army Authorities and will keep the Superintending Engineer L.J.C, Sargodha fully apprised of the flood situation.

## 7.13 Role of the Army

Role of the Army is very important in case of any emergent situation arising due to high floods. A continuous liaison with the Army Authorities will be maintained during floods and if required necessary help will be sought.

XEN: / KIRANA

## 7.14 Duties of Telephone Attendant

Phone and cell No of all officers / officials have been given in Flood Fighting Plan 2025 to make immediate contact at any emergency during flood.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Sr. No. | Name of officer / official | Period | Time | |
| From | To |
| 1 | Malik Imam Bakhsh  (Executive Engineer)  03300-6025902 | During flood Season 2025. | 24 Hours | |
| 2 | Hafiz Ahmad Hassan  (Sub Divisional Officer)  0307-5387907 | During flood Season 2025. | 24 Hours | |
| 3 | Telegraph Office Sargodha  048-9230408 | During flood Season 2025. | 24 Hours | |

## 7.15 Wireless Arrangements

Wireless system will be installed w.e.f. 15-06-2025 in the vehicle of Executive Engineer, Kirana Toyota HILUX No. GBA 429 and Sub Divisional Officer, Khadir Jeep No. SGF 8645.

XEN: / KIRANA

CHAPTER-8

# Detail of Encroachment.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Sr. No. | Total Encroachment | Removed | Remaining | Remarks |
| Nil | | | | |

1. **Detail of Critical Encroachment.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Sr. No. | Total Encroachment | Removed | Remaining | Remarks |
| Nil | | | | |

XEN: / KIRANA

CHAPTER-9

# Duty Roster/Flood Fighting Program

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **DUTY ROSTER OF KEY PERSONAL DURING FLOOD SEASON 2025** | | | | | | | | | | | | | | | | |
| **SITE** | **LENGTH** | **STAGE-I DISCHARGE** | **LABOUR REQUIRED** | **LABOUR FOR WATCHING BE DEPUTED  (PER SHIFT)** | | **STAGE-II  DISCHARGE** | **LABOUR REQUIRED** | **LABOUR FOR WATCHING BE DEPUTED  (PER SHIFT)** | | **STAGE-III  DISCHARGE** | **LABOUR REQUIRED** | **ESTABLISHMENT TO BE DEPUTED (PER SHIEFT)** | | | | **STAGE-IV  DISCHARGE EXCEEDING  8 LAC Cs.** |
| **MATE** | **BELDAR** | **MATE** | **BELDAR** | **SDO** | **SUB ENGINEER** | **MATE** | **BAILDAR** |
| Kot Naja Flood Bund RD 91440- 132500 & Khadir Disty Flood Bund RD: 66450 – 68034 | 8.212 (Mile)  +  0.317 (Mile)  Total 8.529 | 2.0 lac Cs  to  4.0 lac Cs. | Two men  per mile per shift for Three shifts per day & night | 9 | 54 | 4.0 lac Cs  to  6.0 lac Cs. | Four men per mile per shift for Three shifts per day | 9 | 108 | 6.0 lac Cs.  To 8.0 lac Cs. | Six men per mile per shift for three shifts on bund.  On receipt of exceptionally high flood warning, Deputy Collector, Kirana along with concerned Zilladars and Canal Patwaries will shift their camp at Yakhuwala Rest House. | Ahmad Khan Javaid  (Sub Divisional Officer 0300-5127788) | Sub Engineer  Kot Naja Section  Intazar Hussain (0300-6005812) | 9 | 162 | Establishment will be deputed as per stage-III |
| 8 No. solid stone studs at Darbar Syed Sahib Shah | Stud No. 1 = 25 Stud No. 2 = 50 Stud No. 3 = 60 Stud No. 4 = 80 Stud No. 5 = 25 Stud No. 6 = 25 Stud No. 7 = 50  Stud No. 8 = 80 Total =395 ft.  8 No. Studs Say =1 | 3 | 6 | 3 | 12 | Sub Engineer  Yakhuwala Section  Babar Rasheed  (0343-7868557 | 3 | 18 |
| Mamola Guide Wall Spur | (1.40 + 0.96)  2.36 (Mile)  Say = 2.5 | 3 | 15 | 3 | 30 | Sub Engineer Ghausewala Section Haroon Shahzad (0345-8678646) | 3 | 48 |
| Total | | | 3 Shift per day | 90 | | Total | 3 Shift per day | 165 | |  |  | Total | 3 Shift per day | 243 | |  |

XEN: / KIRANA

CHAPTER-10

# Emergency Telephone Nos.

|  |  |  |  |
| --- | --- | --- | --- |
| **Sr. No.** | **Name of Post & Designation** | **Telephone / Cell. No.** | |
| **Office** | **Residence** |
| **1** | Minister Irrigation & Power Department, Punjab Lahore | 042-99212809  042-99211761 | - |
| Fax 042-99212810 | - |
| **2** | Secretary Irrigation Department, Punjab Lahore | 042-99212117 | 042-99200286 |
| 042-99212118 |
| Fax 042-99212116 |
| **3** | Chief Engineer, Sargodha Irrigation Zone, Sargodha. | 048-9230445 | 0322-4486727 |
| Fax 048-9230414 | 048-9230451 |
| **4** | Flood Emergency Officer Sargodha Irrigation Zone Sargodha. | 048-9230446 | 0302-9079639 |
| Fax 048-9230414 |  |
| **5** | Chief Engineer, Drainage and Flood Zone Lahore. | 042-99233551 | 0300-7315880 |
| Fax 042-99230731 |
| **6** | Director Flood, Drainage and Flood Zone Lahore. | 042-99233552 | 0334-4669308 |
| **7** | Flood Warning Center Jail Road Lahore. | 042-99205371  Fax 042-99205372 | - |
| **8** | Superintending Engineer Lower Jhelum Canal Circle Sargodha. | 048-9230413 | 048-9230463 |
| Fax 048-9230832 | 0300-6752753 |
| **9** | Superintending Engineer Drainage Circle Sargodha. | 048-9230450 | 0345-8100407 |
| **10** | Executive Engineer, Sargodha Division L.J.C, Sargodha. | 048-9230409 | 0300-0147499 |
| Fax 048-9230918 |
| **11** | Executive Engineer, Kirana Division L.J.C, Sargodha. | 048-9230399 | 0300-6025902 |
| Fax 048-9230649 |
| **12** | Executive Engineer, Shahpur Division L.J.C, Sargodha. | 048-9230447 | 0321-1198572 |
| Fax 048-9230836 |
| **13** | Executive Engineer, Bhalwal Division L.J.C, At Sargodha. | 048-9230406 | 0300-6363739 |
| **14** | Executive Engineer, Rasul Division L.J.C, Rasul. | 0546-553211 | 0340-7159459 |
| **15** | Executive Engineer, Drainage Division Sargodha. | 048-9230453 | 0300-8199708 |
| **16** | Executive Engineer, Drainage Division Bhalwal. | - | 0333-8899931 |
| **17** | Deputy Commissioner, Sargodha. | 048-9230025 | 048-9230046 |
| 048-9230026 |
| **18** | Deputy Commissioner, Chiniot. | 047-9210111-14 | - |
| **19** | In-charge Vigilance Cell Irrigation & Power Department Punjab Lahore. | 042-9213157 | - |
| **20** | Telegraph Office Sargodha (Flood Emergency Center Sargodha) | 048-9230408 | - |
| **21** | Sub Divisional Officer, Khadir Sub Division. | - | 0307-5387907 |
| **22** | Sub Divisional Officer, Laluwali Sub Division. | - | 0300-9606306 |
| **23** | Sub Divisional Officer, Kirana Sub Division. | 048-3741259 | 0307-5387907 |

XEN: / KIRANA

CHAPTER-11

# Standard operating procedure (SOP) for Breaching Sections

## 11.1 History of the breaching section

No breaching section in Kirana Canal Division Sargodha.

## 11.2 Location, Design, Quantity and Variety of the explosive required for detonation.

Does not relate.

## 11.3 Arrangement of explosives and security of explosive stores

Does not relate.

## 11.4 List of the security staff alongwith detail of their training etc

Does not relate.

## 11.5 Detail of mechanical means as a standby arrangements in case of detonation failure

Does not relate.

## 11.6 Duty Roster in case of critical situation

Does not relate.

## 11.7 Breaching Committee with their action plan

Does not relate.

## 11.8 List of the villages likely to be inundated in case of breach

Does not relate.

## 11.9 Announcement and detail of evacuation arrangements

Does not relate.

## 11.10 Details of coordination with Civil/Army Authorities

Does not relate.

## 11.11 Parallel communication arrangements

Does not relate.

## 11.12 Index Plan

Does not relate.

**Sub Divisional Officer, Executive Engineer,**

Khadir Sub Division L.J.C, Kirana Division L.J.C,

At Kot Naja Rest House. Sargodha.

**Superintending Engineer,**

Lower Jhelum Canal Circle,

Sargodha.

**Chief Engineer,**

Sargodha Irrigation Zone,

Sargodha.

# *PART – B*

CHAPTER-12

# 12. Vulnerable sites on Flood Bund/Structures:

## 12.1 Apprehended breach sites in Flood Bunds/Structures

There is no vulnerable site along flood bund in jurisdiction of Kirana Canal Division LJC Sargodha.

## 12.2 Operation of breaching sections.

There is no breaching section in Kirana Division.

## 12.3 Breaches due to rising of flood water, deterioration of flood bunds etc.

No such

XEN: / KIRANA

CHAPTER-13

# 13. Emergency Contingency Plan for vulnerable site (sites) listed above. Emergency Contingency Plan must include:-

## 13.1 Plan showing route of Flood Water coming out of the breach supported with levels.

There is no vulnerable site along flood bund in jurisdiction of Kirana Canal Division LJC Sargodha.

## 13.2 Detail of villages abadies likely to be affected and this should also be shown on the plan

## No *such*

## 13.3 Strategy and action taken be explained in detail. This may include

### 13.3.1 Arrangements

There is no vulunerable site on existing Flood Bunds / Structures; however, spilled water will inundate areas on right side of River as flood water will spread up in height of ranging 2 ft: damaging crops, kacha houses. The spilled water will again fall in the River Chenab once the flood subsides.

The in-charge ***Sub Divisional Officer, Khadir Canal Sub Division and Deputy Collector, Kirana Division LJC Sargodha*** taking the cognizance of situation will make liaison with the civil administration and Police Department to arrange:

* 1. Proclamation on loudspeakers etc. for evacuation of abadies inside the route of flood water.
  2. Prepare maps for the area inundated and carry out immediate survey for damages to crops and other properties.
  3. Establish Flood Camp at RD 93760 Kot Naja Flood Bund to monitor the emergent flood situation. If any obstruction is found in way of flood water, it will be removed by deploying establishment and machines such like tractors, excavator machine and bulldozers as per situation prevailing at site. Efforts would be made that flood water may not stand in crops as well as abadies, to minimize the losses / damages and ultimately will fall again the same way in River Chenab within the shortest possible time.
  4. Keep a close liaison with Civil Administration, Public Representatives. Army authorities and the Executive Engineer Sargodha Canal Division Sargodha. List of phone numbers of above authorities have been mentioned in this flood fighting plan (Chapter No. 10).

XEN: / KIRANA

### 13.3.2 Establishment of Flood Fighting Camps.

|  |  |
| --- | --- |
| **Bund / Spur** | **Location of Camps** |
| Kot Naja Flood Bund. | RD 93750 |
| Mamola Guide Wall Spur. | RD 0+000 |
| 8 No. solid stone studs | At Darbar Syed Sahib Shah |

### 13.3.3 Duties of Officers / Officials and their camp sites

|  |  |  |  |
| --- | --- | --- | --- |
| **Camp No.** | **Location** | **Officer’s**  **( Name + Designation + Mobile No )** | **Officials**  **( Name + Designation + Mobile No )** |
| 1 | Kot Naja Flood Bund at RD 93750 | **Malik Imam Bakhsh**  (Executive Engineer) 0341-4911422  **Hafiz Ahmad Hassan**  (Sub Divisional Officer) 0307-5387907 | Intazar Hussain Sub Engineer  Kot Naja. (0300-6005812) |
| 2 | 8 No. solid stone studs At Darbar Syed Sahib Shah (Yakewala) | Babar Rasheed Sub Engineer  Yakhuwala. (0343-7868557) |
| 3 | Mamola Guide Wall Spur at RD 0+000 | Haroon Shahzad Sub Engineer Ghausewala (0345-8678646) |

### 13.3.4 Departmental Machinery available

1 No. tractor trolley with front & rare blade in working condition is in control of Kirana Division LJC Sargodha. However in case of any emergency during flood season, Government machinery / bulldozers of Agricultural Engineering Department Punjab will be arranged.

### 13.3.5 Machinery available from Private Source

If needed it will be arranged / hired from private source. Machinery can be hired in case of emergency as following Points have been identified for hiring of Machinery:-

|  |  |  |
| --- | --- | --- |
| **Sr. No.** | **Site Location** | **Machinery Available** |
| **1** | **Kalowal** | 1. Excavator. 2. Tractor Trolley. 3. Front Blade Tractor. |
| **2** | **Kot Qazi** | 1. Excavator. 2. Tractor Trolley. 3. Front Blade Tractor. |

XEN: / KIRANA

### 13.3.6 Flood Fighting Material required

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Sr. No** | **Item** | **Unit** | **Total Required Quantity** | **Available Quantity** | **Balance Quantity** | **Remarks** |
| 1 | Axes (Large) | No. | 15 | 8 | 7 | Material required at sites  1. Kot Naja Rest House RD 32000/R Khadir Disty:  2. Yakuwala Rest House RD 122000/L Khadir Disty:  3. Ghausewala Rest House RD 236000/R Khadir Disty:  Subject to availability of funds, the materials shall be purchased before start of flood season 2025 |
| 2 | Bamboos 8' to 10' (for Lighting arrangements) | No. | 60 | 0 | 60 |
| 3 | Baskets (Medium) | No. | 60 | 4 | 56 |
| 4 | Buckets Plastic (Medium) | No. | 15 | 0 | 15 |
| 5 | Chouldaries (Medium) | No. | 3 | 1 | 2 |
| 6 | E.G. Bags (50 Kg) | No. | 3000 | 700 | 2300 |
| 7 | Energy Savers (50 Watt) | No. | 75 | 50 | 25 |
| 8 | Folding Chair | No. | 18 | 14 | 4 |
| 9 | Folding Chairs Plastic | No. | 15 | 3 | 12 |
| 10 | Folding Table | No. | 3 | 2 | 1 |
| 11 | Funnels | No. | 6 | 2 | 4 |
| 12 | G.I. Buckets (Large) | No. | 15 | 8 | 7 |
| 13 | GI. Wire (16 SWG) | Per Kg | 300 | 0 | 300 |
| 14 | GI. Wire (18 SWG) | Per Kg | 300 | 0 | 300 |
| 15 | Generator (3500 Watt) | No. | 3 | 3 | 0 |
| 16 | Hand Saws | No. | 6 | 3 | 3 |
| 17 | Handle for Kassi / Axes | No. | 30 | 0 | 30 |
| 18 | Holder for Lamp | No. | 90 | 30 | 60 |
| 19 | Kassi with Handles | No. | 15 | 8 | 7 |
| 20 | Kerosene Oil | Liter | 90 | 0 | 90 |
| 21 | Killas | No. | 300 | 0 | 300 |
| 22 | Life Jacket | No. | 15 | 13 | 2 |
| 23 | M. Oil | Liter | 12 | 0 | 12 |
| 24 | Manila Rope | Per Kg | 6 | 4 | 2 |
| 25 | Match Boxes | Packet | 30 | 0 | 30 |
| 26 | Material Holding Box | No. | 3 | 1 | 2 |
| 27 | Munj / Patha / Trungers | No. | 300 | 0 | 300 |
| 28 | Needles | No. | 6 | 2 | 4 |
| 29 | Oil Extractors | No. | 3 | 2 | 1 |
| 30 | Plastic Bags | No. | 1500 | 500 | 1000 |
| 31 | Petrol | Liter | 150 | 0 | 150 |
| 32 | Rain Coats (XXL size) | No. | 15 | 7 | 8 |
| 33 | Steel Charpoy | No. | 9 | 6 | 3 |
| 34 | Sutli | Per Kg | 30 | 9 | 21 |
| 35 | Switch / Plugs | No. | 36 | 24 | 12 |
| 36 | Torches (Medium) Rechargeable | No. | 9 | 6 | 3 |
| 37 | Umbrella (Large) | No. | 15 | 2 | 13 |
| 39 | Wheel Barrow | No. | 3 | 0 | 3 |
| 40 | Wires 7/29 | Meter | 300 | 200 | 100 |
| 41 | Wooden Boards 10’ x 12’ | No. | 6 | 4 | 2 |

XEN: / KIRANA

### 13.3.7 Flood Fighting Material available

Detail of flood fighting material available and stored at Kot Naja Rest House At RD 32000/R, Yakuwala Rest House At RD 122000/L & Ghausewala Rest House At RD 236000/R of Khadir Disty: is given as page No. 31 (Sr # 13.3.6)

## 13.4 Detail of other infrastructure like electric, Sui Gas, Telephone installations, road network, other buildings, canals and drainage network.

No such installation like Sui Gas, Telephone etc.: exists in the route of flood water from breach site.

XEN: / KIRANA

CHAPTER-14

# 14. Action Plan

## 14.1 Re-shuffling/ recouping plan of reserve stone departmentally.

Reshuffling of stone is not required. Recouping of reserved stone will be done before start of flood season 2025.

## 14.2 Detail of inlet/outlet crossing along with closing methodology.

Following are the water course crossing on Kot Naja Flood Bund in Kirana Canal Division.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Sr. No** | **RD of Water course crossing** | **Sr. No** | **RD of Water course crossing** | **Closing Methodology.** |
| **1** | RD 95500 | **8** | RD 111721 | Water course crossing will be plugged through earth filled gunny bags when required. |
| **2** | RD 97600 | **9** | RD 112980 |
| **3** | RD 99200 | **10** | RD 114010 |
| **4** | RD 101400 | **11** | RD 117505 |
| **5** | RD 105919 | **12** | RD 120952 |
| **6** | RD 106520 | **13** | RD 124300 |
| **7** | RD 107120 |  |  |

XEN: / KIRANA

## 14.3 Deployment of Machinery (Medium to High Flood) River Chenab.

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Sr.No.** | **Name of structure** | **Length in Mile** | **Vulnerable Reach** | **Camp Location** | **Site Incharge by name & Cell No.** | **Machinery Deployed** | | | | **Labour Beldar + Mate** | **Availability of Stone (Lac Cft)** |
| **Excavator** | **Dozer** | **Trolleys/ Dumpers** | **Tractor with front blade** |
|
| **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** | **11** | **12** |
| **FLOOD BUNDALONG RIVER CHENAB IN KIRANA CANAL DIVISION LJC SARGODHA** | | | | | | | | | | | |
| **1** | **Kot Naja Flood Bund RD 91440- 132500 & Khadir Disty Flood Bund RD: 66450 – 68034** | 8.529 | Nil | RD: 93760 | Sub Engineer  Kot Naja Section  Intazar Hussain  (0300-6005812) | 1 | - | 2 | 1 | 54+9=63 3 Shift per day | Not Required |
| **2** | **8 No. solid stone studs** | 8 No. Studs | 8 No. Studs | 8 No. Studs at Darbar Syed Sahib Shah Village Yakewala | Sub Engineer  Yakhuwala Section  Babar Rasheed  (0343-7868557) | - | - | - | - | 6+3=9  3 Shift per day | Not Required |
| **3** | **Mamola Guide Wall Spur** | 2.36  (1.40+0.96) | RD: 0-7000 | RD: 0 | Sub Engineer Ghausewala Section  Haroon Shahzad  (0345-8678646) | 1 | - | 2 | 1 | 15+3=18  3 Shift per day | 0.13 |
| **Total** | | | | | | **2** | **-** | **4** | **2** | **90** | **0.13** |

\* Payment for machinery & work charge employees subject to verification by TPM/Consultants.

XEN: / KIRANA

## 14.4 Deployment of Machinery (High to Very High Flood) River Chenab.

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Sr.No.** | **Name of structure** | **Length in Mile** | **Vulnerable Reach** | **Camp Location** | **Site Incharge by name & Cell No.** | **Machinery Deployed** | | | | **Labour Beldar + Mate** | **Availability of Stone (Lac Cft)** |
| **Excavator** | **Dozer** | **Trolleys/ Dumpers** | **Tractor with front blade** |
|
| **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** | **11** | **12** |
| **FLOOD BUND ALONG RIVER CHENAB IN KIRANA CANAL DIVISION LJC SARGODHA** | | | | | | | | | | | |
| **1** | **Kot Naja Flood Bund RD 91440- 132500 & Khadir Disty Flood Bund RD: 66450 – 68034** | 8.529 | Nil | RD: 93760 | Sub Engineer  Kot Naja Section  Intazar Hussain  (0300-6005812) | 1 | - | 2 | 1 | 108+9=117 3 Shift per day | Not Required |
| **2** | **8 No. solid stone studs** | 8 No. Studs | 8 No. Studs | 8 No. Studs at Darbar Syed Sahib Shah Village Yakewala | Sub Engineer  Yakhuwala Section  Babar Rasheed  (0343-7868557) | 1 | - | 2 | 1 | 12+3=15  3 Shift per day | Not Required |
| **3** | **Mamola Guide Wall Spur** | 2.36  (1.40+0.96) | RD: 0-7000 | RD: 0 | Sub Engineer Ghausewala Section  Haroon Shahzad  (0345-8678646) | 1 | - | 2 | 1 | 30+3=33  3 Shift per day | 0.13 |
| **Total** | | | | | | **3** | **-** | **6** | **3** | **165** | **0.13** |

\* Payment for machinery & work charge employees subject to verification by TPM/Consultants.

XEN: / KIRANA

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 14.5 Deployment of Machinery (High to Exceptionally High Flood) River Chenab. | | | | | | | | | | | | | |
| **Sr.No.** | | **Name of structure** | | **Length in Mile** | **Vulnerable Reach** | **Camp Location** | **Site Incharge by name & Cell No.** | **Machinery Deployed** | | | | **Labour Beldar + Mate** | **Availability of Stone**  **(Lac Cft)** |
| **Excavator** | **Dozer** | **Trolleys/ Dumpers** | **Tractor with front blade** |
|
| **1** | | **2** | | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** | **11** | **12** |
| **FLOOD BUND ALONG RIVER CHENAB IN KIRANA CANAL DIVISION LJC SARGODHA** | | | | | | | | | | | | | |
| **1** | | **Kot Naja Flood Bund RD 91440- 132500 & Khadir Disty Flood Bund RD: 66450 – 68034** | 8.529 | | Nil | RD: 93760 | Sub Engineer  Kot Naja Section  Intazar Hussain  (0300-6005812) | 2 | - | 6 | 2 | 162+9=171 3 Shift per day | Not Required |
| **2** | | **8 No. solid stone studs** | 8 No. Studs | | 8 No. Studs | 8 No. Studs at Darbar Syed Sahib Shah Village Yakewala | Sub Engineer  Yakhuwala Section  Babar Rasheed  (0343-7868557) | 1 | - | 3 | 1 | 18+3=21  3 Shift per day | Not Required |
| **3** | | **Mamola Guide Wall Spur** | 2.36  (1.40+0.96) | | RD: 0-7000 | RD: 0 | Sub Engineer Ghausewala Section  Haroon Shahzad  (0345-8678646) | 1 | - | 3 | 2 | 48+3=45  3 Shift per day | 0.13 |
| **Total** | | | | | | | | **5** | **-** | **15** | **6** | **243** | **0.13** |

\* Payment for machinery & work charge employees subject to verification by TPM/Consultants.

XEN: / KIRANA

## 14.6 Police deployment plan.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Sr.No.** | **Vulnerable sites for illegal cuts during floods.** | **Concerned Canal Division.** | **Concerned Police Station & District.** | **Police personnel to be deployed.** | | **Remarks(If any)** |
| **Inspector/SI/ASI** | **Constables.** |
| 1 | No Vulnerable sites in Kirana Canal Division.  In emergency High Flood Protection of Kot Naja Flood Bund At RD: 91440 - 132500 | Kirana | Kandiwal & Distt: Chiniot. | SI = 1No.  ASI = 1No. | 3 Nos. | - |

XEN: / KIRANA

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 14.7 Detail of synthetic bags with capacity of 500 kg and 1000 kg. | | | | | | | | | | |  |
| **Sr.No.** | **Name of Structure** | **Length in Mile** | **Vulnerable Reach** | **Camp Location** | **Site Incharge by name & Cell No.** | **No. of Synthetic bags** | | | | | **Remarks** |
| **500 Kg** | | **1000 Kg** | | |
| **1** | **2** | **3** | **4** | **5** | **6** | **7** | | **8** | | | **10** |
| **FLOOD BUNDS ALONG RIVER CHENAB IN KIRANA CANAL DIVISION LJC SARGODHA** | | | | | | | | | | |  |
| 1 | **Kot Naja Flood Bund**  **RD 91440- 132500.** | 8.212 | Nil | RD: 93760 | Sub Engineer  Kot Naja Section  Intazar Hussain  (0300-6005812) | Required | Available | Required | Available | | Not available at stock and will be procured in emergency. |
| 200 | Nil | 100 | | Nil |

XEN: / KIRANA

## 14.8 Details of polythene sheets of black colour to protect upstream slope against wave action and to control seepage through embankments.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Sr. No.** | **Name of Structure** | **Length in Mile** | **Vulnerable Reach** | **Camp Location** | **Site Incharge by name & Cell No.** | **Plastic Sheet(Sft)** | | **Remarks** |
|
| **1** | **2** | **3** | **4** | **5** | **6** | **9** | | **10** |
| **FLOOD BUNDS ALONG RIVER CHENAB IN KIRANA CANAL DIVISION LJC SARGODHA** | | | | |  |  | |  | |
| 1 | **Kot Naja Flood Bund**  **RD 91440- 132500.** | 8.212 | Nil | RD: 93760 | Sub Engineer  Kot Naja Section  Intazar Hussain  (0300-6005812) | Required | Available | Not available at stock and will be procured in emergency. | |
| 3000 | Nil |

XEN: / KIRANA

CHAPTER-15

# 15. Back up Divisions (in case of breach).

In case of breach or during emergency, ***Shahpur Canal Division LJC, Sargodha*** and his field staff will act as sister Division.

**Sub Divisional Officer, Executive Engineer,**

Khadir Sub Division L.J.C, Kirana Division L.J.C,

At Kot Naja Rest House. Sargodha.

**Superintending Engineer,**

Lower Jhelum Canal Circle,

Sargodha.

**Chief Engineer,**

Sargodha Irrigation Zone,

Sargodha.

# Plan reserve stock of stone at Mamola guide wall spur.mamola guide wall

# LONG SECTION OF KOT NAJA FLOOD PROTECTION BUND *PART -I*

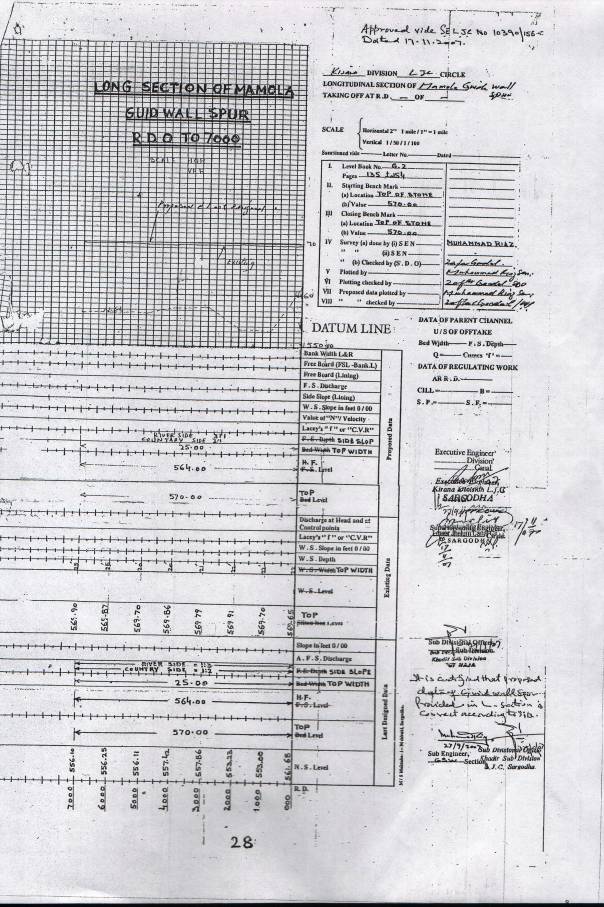
**RD 0-132500-(TAIL)**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **RD74600 RD71600** |  | **RD 64300 RD 63700** |  |  | **RD 46300** | **RD 42400** | **RD 38875 RD 38000** | **RD 32875 RD 31500** | **RD 29145 RD 28500 RD 27450 RD 26185** | **RD 24765** |  |  | **RD 8975** |  |  | **RD OF W/C -XING** | |
| **20’ (RD 0-85250) / RIVER SIDE 3:1**  **/ COUNTRY SIDE 2:1** | | | | | | | | | | | | | | | | **TOP WIDTH / SIDE SLOPE** | **PROPOSED DATA** | |
| **38.30** | **39.60** | **39.90** | **40.20** | **40.90** | **41.50** | **42.50** | **43.60** | **44.60** | **45.80** | **47.00** | **48.60** | **49.90** | **51.40** | **52.70** | **54.20** | **TOP LEVELS WITH 6’ FB ABOVE**  **HFL 1973** | |  | |
| **14’** | **14’** | **14’** | **14’** | **14’** | **14’** | **14’** | **15’** | **15’** | **15’** | **15’** | **15’** | **15’** | **15’** | **15’** | **15’** | **TOP WIDTH** | | **EXISTING DATA** | |
| **35.00** | **36.50** | **36.70** | **37.00** | **37.70** | **38.40** | **39.50** | **40.50** | **41.50** | **42.72** | **43.95** | **45.50** | **46.90** | **48.30** | **49.70** | **651.20** | **TOP LEVELS** | |
| **RIVER SIDE 3 : 1 COUNTRY SIDE 2:1** | | | | | | | | | | | | | | | | **SLOPE** | **LAST DESIGNED DATA** | |
| **15.0’**  **3.0’** | | | | | | | | | | | | | | | | **TOP WIDTH HIGHT OF BANK ABOVE H.F.L** |
| **35.30** | **36.60** | **36.90** | **37.20** | **37.90** | **38.50** | **39.50** | **40.60** | **41.60** | **42.80** | **44.00** | **45.60** | **46.90** | **48.40** | **49.70** | **651.20** | **TOP R.L OF BANK** | |  | |
| **32.30** | **33.60** | **33.90** | **34.20** | **34.90** | **35.50** | **36.50** | **37.60** | **38.60** | **39.80** | **41.00** | **42.60** | **43.90** | **45.40** | **46.70** | **648.20** | **RL. OF HIGH FLOOD 1973** | |
| **32.00** | **31.70** | **32.60** | **33.80** | **36.40** | **33.80** | **37.40** | **38.40** | **38.30** | **38.40** | **42.50** | **42.20** | **42.60** | **45.30** | **44.80** | **649.40** | **NATURAL SURFACE LEVELS** | |
| **75000** | **70000** | **65000** | **60000** | **55000** | **50000** | **45000** | **40000** | **35000** | **30000** | **25000** | **20000** | **15000** | **10000** | **5000** | **0** | **RD** | |

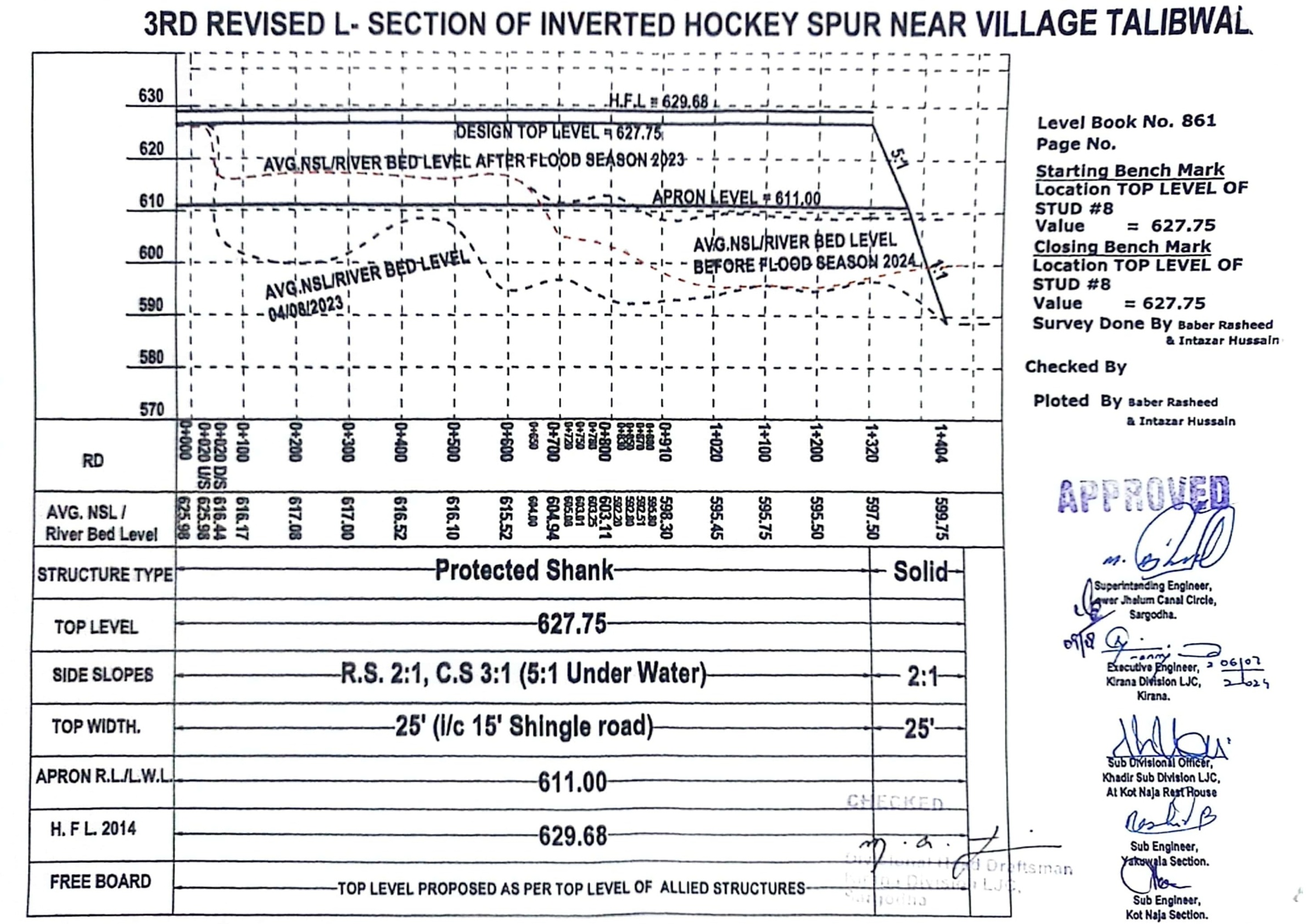
# LONG SECTION OF KOT NAJA FLOOD PROTECTION BUND *PART -II*

**RD 0-132500-(TAIL)**

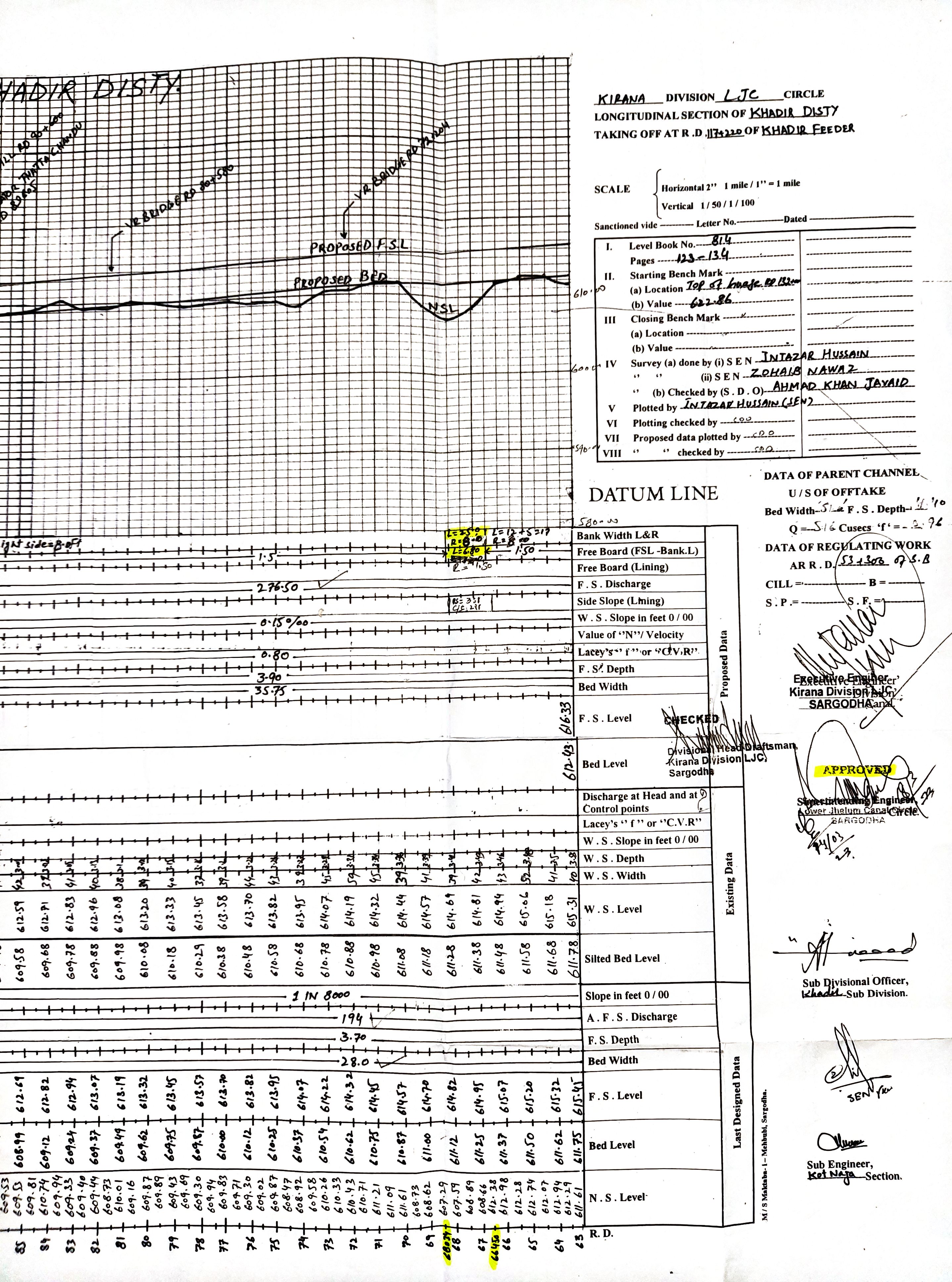
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **RD 124300** | **RD 120952** | **RD 117505** | **RD 114010 RD 112980 RD 111721** | **RD 107120 RD 106520 RD 105519** | | **RD 101400** | | **RD 99200 RD 97600 RD 95500** | |  | |  | **RD OF W/C -XING** |
| **20’( RD 86000-132500-TAIL) / RIVER SIDE 3:1**  **COUNTRY SIDE 2:1** | | | | | | | | **39’**  **43’**  **44’**  **26’** | | | | | | **TOP WIDTH / SIDE SLOPE** | **PROPOSED DATA** |
| **21.69 20.70** | **23.60** | **25.25** | **26.90** | **28.45** | **30.00** | **31.40** | | **32.80** | | **35.50**  **34.56** | | **36.80** | | **TOP LEVELS WITH 6’ FB ABOVE**  **HFL 1973** |
| **14’15’** | **14’** | **15’** | **15’** | **15’** | **15’** | **15’** | | **15’** | | 14’  14’ | | 14’ | | **TOP WIDTH** | **EXISTING DATA** |
| **18.6817.70** | **20.60** | **22.45** | **23.90** | **25.45** | **27.00** | **28.40** | | **29.80** | | **32.50**  **31.50** | | **33.70** | | **TOP LEVELS** |
| **RIVER SIDE 3:1 COUNTRY SIDE 2:1** | | | | | | | | | | | | | | **SLOPE** | **LAST DESIGNED DATA** |
| **15.0’**  **3.0’** | | | | | | | | | | | | | | **TOP WIDTH HIGHT OF BANK ABOVE H.F.L** |
| **18.6917.70** | **20.60** | **22.25** | **23.90** | **25.45** | **27.00** | **28.40** | | **29.80** | | **31.56**  **32.50** | | | **33.80** | **TOP R.L OF BANK** |
| **15.69**  **14.70** | **17.60** | **19.25** | **20.90** | **22.45** | **24.00** | **25.40** | | **26.80** | | **28.56**  **29.50** | | | **30.80** | **RL. OF HIGH FLOOD 1973** |
| **13.85 13.83** | **15.93** | **18.05** | **18.73** | **20.22** | **19.94** | **22.43** | | **26.12** | | **27.02**  **24.37** | | | **30.83** | **NATURAL SURFACE LEVELS** |
| **130000**  **132500** | **125000** | **120000** | **115000** | **110000** | **105000** | **100000** | | **95000** | | **85000**  **85250**  **85500**  **85750**  **86000**  **90000** | | | **80000** | **RD** |



# L-Section of Mamola Guide Wall Spur



# L-Section of Inverted Hockey Spur



# Revised L-Section of Khadir Disty Flood Bund

# D:\Drive2\office work 2011-22\Index Plan Digital\Print Index Plan Kirana Final A3\Print A3 White.jpegINDEX PLAN