

BANGLADESH WATER DEVELOPMENT BOARD



Design Data for Re-excavation of 7 nos khal- Chaprail Khal 1.850 km, Puthimari Khal 1.850 Km, Shemanar Branch Khal 0.925 km, Sonakhali Khal 3.680 Km, Bonna bari Khal 2.705 km, Kamla Bati Khal 1.810 km, Narayan khali Khal 2.950 km Total 15.770 Km in polder-3 in c/w Tarail-Pachuria Sub-Project under CRISP-WRM under Specialized Division, BWDB, Gopalganj during the year 2024-2025.

Name of the Project : Implementation of integrated water resources management for improvement of Drainage congestion in Tungipara and Kotalipara Upazila under Gopalganj District.

Name of the Office : Sub-Project Management Office,
IDWRM-KT (CRISP-WRM)
Specialized Division, BWDB, Gopalganj.

TECHNICAL REPORT

This data checklist has been prepared for the design of the Re-excavation of 7 nos khal-Chaprail Khal 1.850 km, Puthimari Khal 1.850 Km, Shemanar Branch Khal 0.925 km, Sonakhali Khal 3.680 Km, Bonna bari Khal 2.705 km, Kamla Bati Khal 1.810 km, Narayan khali Khal 2.950 km Total 15.770 Km in polder-3 in c/w Tarail-Pachuria Sub-Project under CRISP-WRM under Specialized Division, BWDB, Gopalganj during the year 2024-2025.

The Tarail-Pachuria Sub-Project is located in Tungipara & Kotalipara Upazila of Gopalganj district. The Sub-Project is bounded by the Madhumoti River, Ghagor River & Gopalganj-ghagor-Paysharhat Khal. In this sub-project, many hydraulic structures i.e., Drainage Sluices and Outlets constructed in different periods. But the sluice connecting khal & other drainage khal and Internal natural Khals have not been re-excavated for a long time. So, all kinds of khals are mostly silted up. For this reason, drainage systems are not operated successfully. In the rainy season, a vast area of the polder-3 is waterlogged and damages the standing crops, properties, and livelihood. As per the demand of local people & affected farmers, the Re-excavation of 7 nos khal-Chaprail Khal, Puthimari Khal, Shemanar Branch Khal, Sonakhali Khal, Bonna bari Khal, Kamla Bati Khal, Narayan khali Khal has been included in the CRISP-WRM Project. The total length of the 7 nos Khal is 15.770 KM. This Khals needs to be re-excavated for the improvement of the drainage facility. For this re-excavation, a design is required.

Necessary Design data has been collected, processed, and submitted herewith for preparing the design.

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FOR

7 NOS RE-EXCAVATION OF KHAL

Sl No	Name of Khal	Excavation Length (km)	Page		Remarks
			From	To	
1	2	3	4	5	6
01	Chaprail Khal	1.850			
02	Puthimari Khal	1.850			
03	Shemanar Branch Khal	0.925			
04	Sonakhali Khal	3.680			
05	Bonna bari Khal	2.705			
06	Kamla Bati Khal	1.810			
07	Narayan khali Khal	2.950			
Total		15.770km			

Data Statement

For Re-excavation of Khal

Sl . N o	Name of Component	Type	Length (km)	Proposed Design Value			Outfall	Offtake	Remarks if any
				Side slope (Both side)	Bed Level	Bed width			
1	2	3	4	5	6	7	8	9	10
1.	Chaprail Khal	Re-excavation	1.850	1: 2	(-)2.00m PWD	7.00 m	Chandkathi River	Sonakh ali khal	
2.	Puthimari Khal	Re-excavation	1.850	1: 2	(-)2.00m PWD	6.00 m	Narayan khali Khal	Ruthair khal	
3.	Shemanar Branch Khal	Re-excavation	0.925	1: 2	(-)2.20m PWD	6.00 m	Narayan khali Khal	Tarail Khal	
4.	Sonakhali Khal	Re-excavation	3.680	1: 2	(-)2.20m PWD	From km 0.00 to km 2.50, = 4.00m & From km 2.50 to km 3.680 = 8.00m	Ghogor River	Tarail Khal	
5.	Bonna bari Khal	Re-excavation	2.705	1: 2	(-)2.00m PWD	8.00 m	Dariea River	Sonakh ali khal	
6.	Kamla Bati Khal	Re-excavation	1.810	1: 2	(-)1.50m PWD	6.00 m	Chandkathi River	Dariar Khal	
7.	Narayan khali Khal	Re-excavation	2.950	From km 0.00 to km 0.600 RB 1:1.50 , From km 0.00 to km 0.600 LB & Rrom Km 0.600 to km 2.950 Both Bank 1:2	(-)2.20m PWD	4.00 m	Ghogor River	Sheman ar Branch Khal	
Total			15.770km						

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Data Checklist for the Re-excavation of Chaprail Khal

1.	Name of the proposed Khal	:	Chaprail Khal
2.	Catchments Area	:	280.00 Hac
3.	The lowest level up to which drainage requires	:	(-) 1.00 m (PWD)
4.	Avg. Ground level of the area	:	0.53 m (PWD)
5.	Length of the Khal	:	1.850km
6.	Bed level of the outfall Khal/River	:	(-) 1.80 (PWD) (Chandkathi River)
7.	Name of the related Structure	:	
8.	Tidal or non-tidal leakage in hour	:	6.00 hours
9.	The proposed bed width of the Khal	:	7.00 m
10.	The proposed bed level of the Khal	:	(-) 2.50 m (PWD)
11.	Proposed Bed Slope of the Khal	:	
12.	Proposed side slope of the Khal	:	1:2 (Both Side)
13.	Cross section of Khal	:	Enclosed.
14.	The long section of Khal	:	Enclosed.
15.	X-Section of the outfall River	:	Enclosed.
16.	X-Section of the Offtake Khal	:	Enclosed.
17.	Site plan of the proposed Khal (Showing drainage network)	:	Enclosed.
18.	Index map	:	Enclosed.
19.	Water level data for 10 years of near gauge station	:	enclosed herewith
20.	Distance of gauge station from Khal	:	25.00 km (SW –198. Madaripur Beel Route (MBR) Channel Haridaspur)
21.	Rainfall of the locality mm/day	:	Enclosed herewith (CL– 409 Haridaspur, Gopalganj.)
22.	Type of canal, drainage / Irrigation	:	Drainage.

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Data Checklist for the Re-excavation of Puthimari Khal

1.	Name of the proposed Khal	:	Puthimari Khal
2.	Catchments Area	:	280.00 Hac
3.	The lowest level up to which drainage requires	:	(-) .50 m (PWD)
4.	Avg. Ground level of the area	:	-0.53 m (PWD)
5.	Length of the Khal	:	1.850 km
6.	Bed level of the outfall Khal/River	:	(-) 0.88 (PWD) (Narayan khali Khal) Already Proposed for Re-excavation at Bed level (-) 2.20m PWD
7.	Name of the related Structure	:	
8.	Tidal or non-tidal leakage in hour	:	6.00 hours
9.	The proposed bed width of the Khal	:	6.00m
10.	The proposed bed level of the Khal	:	At (-) 2.00 m (PWD)
11.	Proposed Bed Slope of the Khal	:	
12.	Proposed side slope of the Khal	:	1:20 (Both Side)
13.	Cross section of Khal	:	Enclosed.
14.	The long section of Khal	:	Enclosed.
15.	X-Section of the outfall River	:	Enclosed.
16.	X-Section of the Offtake Khal	:	Enclosed.
17.	Site plan of the proposed Khal (Showing drainage network)	:	Enclosed.
18.	Index map	:	Enclosed.
19.	Water level data for 10 years of near gauge station	:	enclosed herewith
20.	Distance of gauge station from Khal	:	22.00 km (SW –198. Madaripur Beel Route (MBR) Channel Haridaspur)
21.	Rainfall of the locality mm/day	:	Enclosed herewith (CL– 409 Haridaspur, Gopalganj.)
22.	Type of canal, drainage / Irrigation	:	Drainage.

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Data Checklist for the Re-excavation of Shemanar Branch Khal

1.	Name of the proposed Khal	:	Shemanar Branch Khal
2.	Catchments Area	:	150.00 Hac
3.	The lowest level up to which drainage requires	:	(-) 1.00 m (PWD)
4.	Avg. Ground level of the area	:	0.90 m (PWD)
5.	Length of the Khal	:	0.925 km
6.	Bed level of the outfall Khal/River	:	(-) 0.88 (PWD) (Narayan khali Khal) Already Proposed for Re-excavation at Bed level (-) 2.20m PWD
7.	Name of the related Structure	:	
8.	Tidal or non-tidal leakage in hour	:	6.00 hours
9.	The proposed bed width of the Khal	:	6.00m
10.	The proposed bed level of the Khal	:	(-) 2.20 m (PWD)
11.	Proposed Bed Slope of the Khal	:	
12.	Proposed side slope of the Khal	:	1:20 (Both Side)
13.	Cross section of Khal	:	Enclosed.
14.	The long section of Khal	:	Enclosed.
15.	X-Section of the outfall River	:	Enclosed.
16.	X-Section of the Offtake Khal	:	Enclosed.
17.	Site plan of the proposed Khal (Showing drainage network)	:	Enclosed.
18.	Index map	:	Enclosed.
19.	Water level data for 10 years of near gauge station	:	enclosed herewith
20.	Distance of gauge station from Khal	:	23.00 km (SW –198. Madaripur Beel Route (MBR) Channel Haridaspur)
21.	Rainfall of the locality mm/day	:	Enclosed herewith (CL– 409 Haridaspur, Gopalganj.)
22.	Type of canal, drainage / Irrigation	:	Drainage.

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Data Checklist for the Re-excavation of Char Sonakhali Khal

1.	Name of the proposed Khal	:	Sonakhali Khal
2.	Catchments Area	:	450.00 Hac
3.	The lowest level up to which drainage requires	:	(-) 1.00 m (PWD)
4.	Avg. Ground level of the area	:	1.53 m (PWD)
5.	Length of the Khal	:	3.680 km
6.	Bed level of the outfall Khal/River	:	(-) 8.37m (PWD) (Ghagor River)
7.	Name of the related Structure	:	
8.	Tidal or non-tidal leakage in hour	:	6.00 hours
9.	The proposed bed width of the Khal	:	From km 0.00 to km 2.50, = 4.00m & From km 2.50 to km 3.680 = 8.00m
10.	The proposed bed level of the Khal	:	(-) 2.20 m (PWD)
11.	Proposed Bed Slope of the Khal	:	
12.	Proposed side slope of the Khal	:	1:2 (Both Side)
13.	Cross section of Khal	:	Enclosed.
14.	The long section of Khal	:	Enclosed.
15.	X-Section of the outfall River	:	Enclosed.
16.	X-Section of the Offtake Khal	:	Enclosed.
17.	Site plan of the proposed Khal (Showing drainage network)	:	Enclosed.
18.	Index map	:	Enclosed.
19.	Water level data for 10 years of near gauge station	:	enclosed herewith
20.	Distance of gauge station from Khal	:	24.00 km (SW –198. Madaripur Beel Route (MBR) Channel Haridaspur)
21.	Rainfall of the locality mm/day	:	Enclosed herewith (CL– 409 Haridaspur, Gopalganj.)
22.	Type of canal, drainage / Irrigation	:	Drainage.

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Data Checklist for the Re-excavation of Bonna bari Khal

1.	Name of the proposed Khal	:	Bonna bari Khal
2.	Catchments Area	:	400.00 Hac
3.	The lowest level up to which drainage requires	:	(-) 1.0 m (PWD)
4.	Avg. Ground level of the area	:	0.60 m (PWD)
5.	Length of the Khal	:	2.705 km
6.	Bed level of the outfall Khal/River	:	(-) 5.77m (PWD) (Dariea River)
7.	Name of the related Structure	:	
8.	Tidal or non-tidal leakage in hour	:	6.00 hours
9.	The proposed bed width of the Khal	:	For 8.00 m.
10.	The proposed bed level of the Khal	:	(-) 2.00 m (PWD)
11.	Proposed Bed Slope of the Khal	:	
12.	Proposed side slope of the Khal	:	1:2 (Both Side)
13.	Cross section of Khal	:	Enclosed.
14.	The long section of Khal	:	Enclosed.
15.	X-Section of the outfall River	:	Enclosed.
16.	X-Section of the Offtake Khal	:	Enclosed.
17.	Site plan of the proposed Khal (Showing drainage network)	:	Enclosed.
18.	Index map	:	Enclosed.
19.	Water level data for 10 years of near gauge station	:	enclosed herewith
20.	Distance of gauge station from Khal	:	26.00 km (SW –198. Madaripur Beel Route (MBR) Channel Haridaspur)
21.	Rainfall of the locality mm/day	:	Enclosed herewith (CL– 409 Haridaspur, Gopalganj.)
22.	Type of canal, drainage / Irrigation	:	Drainage.

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Data Checklist for the Re-excavation of Kamla Bati Khal

1.	Name of the proposed Khal	:	Kamla Bati Khal
2.	Catchments Area	:	240.00 Hac
3.	The lowest level up to which drainage requires	:	(-) 1.0 m (PWD)
4.	Avg. Ground level of the area	:	0.50 m (PWD)
5.	Length of the Khal	:	1.810km
6.	Bed level of the outfall Khal/River	:	(-)6.90m (PWD) (Chatkhali River)
7.	Name of the related Structure	:	
8.	Tidal or non-tidal leakage in hour	:	6.00 hours
9.	The proposed bed width of the Khal	:	6.00 m
10.	The proposed bed level of the Khal	:	(-)1.50m PWD
11.	Proposed Bed Slope of the Khal	:	
12.	Proposed side slope of the Khal	:	1:2 (Both Side)
13.	Cross section of Khal	:	Enclosed.
14.	The long section of Khal	:	Enclosed.
15.	X-Section of the outfall River	:	Enclosed.
16.	X-Section of the Offtake Khal	:	Enclosed.
17.	Site plan of the proposed Khal (Showing drainage network)	:	Enclosed.
18.	Index map	:	Enclosed.
19.	Water level data for 10 years of near gauge station	:	enclosed herewith
20.	Distance of gauge station from Khal	:	23.00 km (SW –198. Madaripur Beel Route (MBR) Channel Haridaspur)
21.	Rainfall of the locality mm/day	:	Enclosed herewith (CL– 409 Haridaspur, Gopalganj.)
22.	Type of canal, drainage / Irrigation	:	Drainage.

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Data Checklist for the Re-excavation of Narayan khali Khal

1.	Name of the proposed Khal	:	Narayan khali Khal
2.	Catchments Area	:	450.00 Hac
3.	The lowest level up to which drainage requires	:	(-) 1.00 m (PWD)
4.	Avg. Ground level of the area	:	0.50 m (PWD)
5.	Length of the Khal	:	2.950km
6.	Bed level of the outfall Khal/River	:	(-)5.58m (PWD) (Dariea River)
7.	Name of the related Structure	:	
8.	Tidal or non-tidal leakage in hour	:	6.00 hours
9.	The proposed bed width of the Khal	:	4.00m
10.	The proposed bed level of the Khal	:	(-)2.20m PWD
11.	Proposed Bed Slope of the Khal	:	
12.	Proposed side slope of the Khal	:	From km 0.00 to km 0.600 RB 1:1.50 ,From km 0.00 to km 0.600 LB & Rrom Km 0.600 to km 2.950 Both Bank 1:20
13.	Cross section of Khal	:	Enclosed.
14.	The long section of Khal	:	Enclosed.
15.	X-Section of the outfall River	:	Enclosed.
16.	X-Section of the Offtake Khal	:	Enclosed.
17.	Site plan of the proposed Khal (Showing drainage network)	:	Enclosed.
18.	Index map	:	Enclosed.
19.	Water level data for 10 years of near gauge station	:	enclosed herewith
20.	Distance of gauge station from Khal	:	21.00 km (SW –198. Madaripur Beel Route (MBR) Channel Haridaspur)
21.	Rainfall of the locality mm/day	:	Enclosed herewith (CL– 409 Haridaspur, Gopalganj.)
22.	Type of canal, drainage / Irrigation	:	Drainage.

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