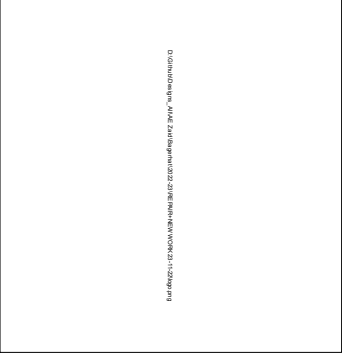


Bangladesh Water Development Board



Protection of Morelganj Upazila Sadar and adjacent areas from erosion of Pangusi river in Bagerhat District and Re-excavation/Dredging of Bishkhali river

River Bank Protective Work From Sannashi to Khawlia From km 0.000 to km 4.500 = 4.500 km

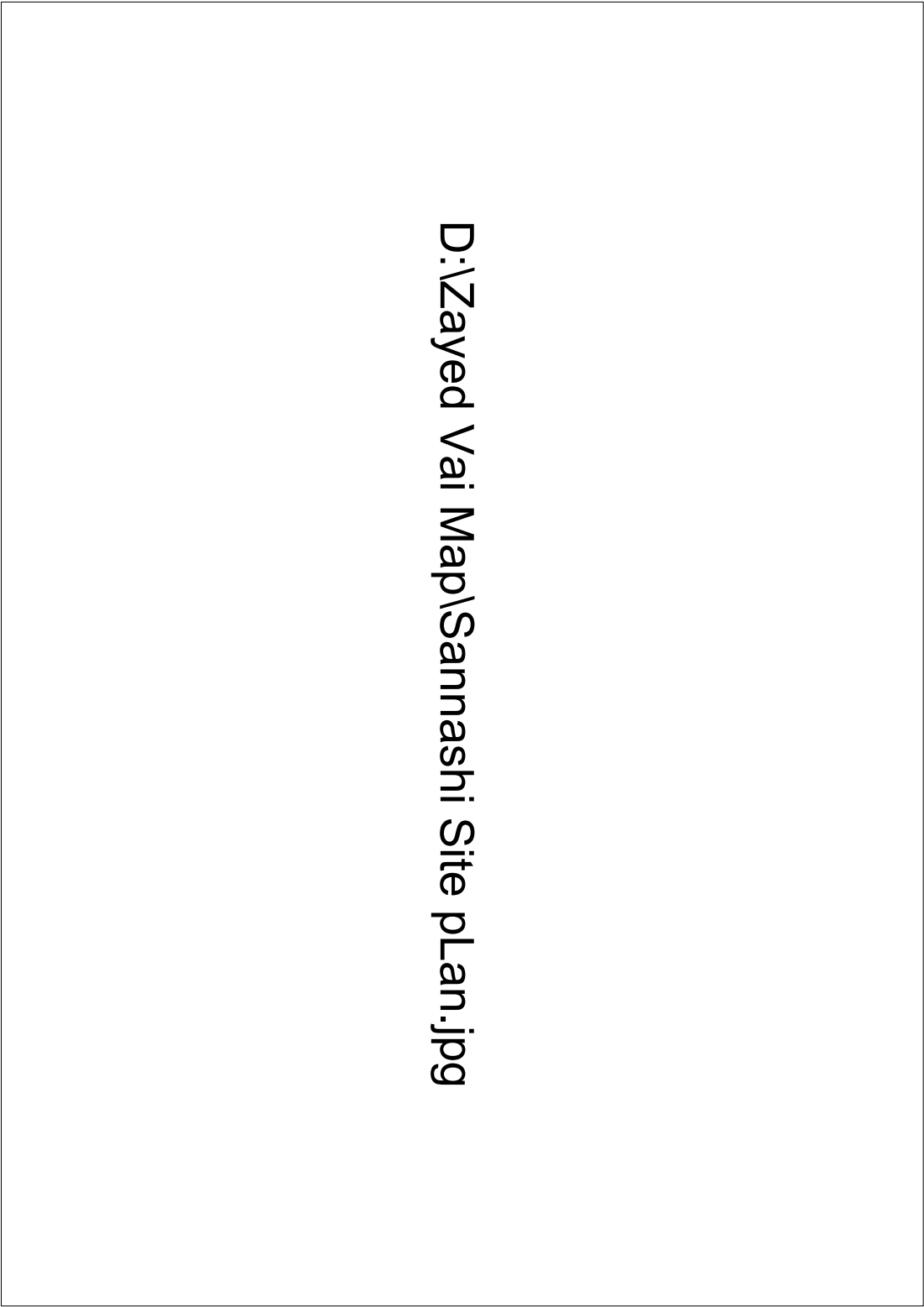
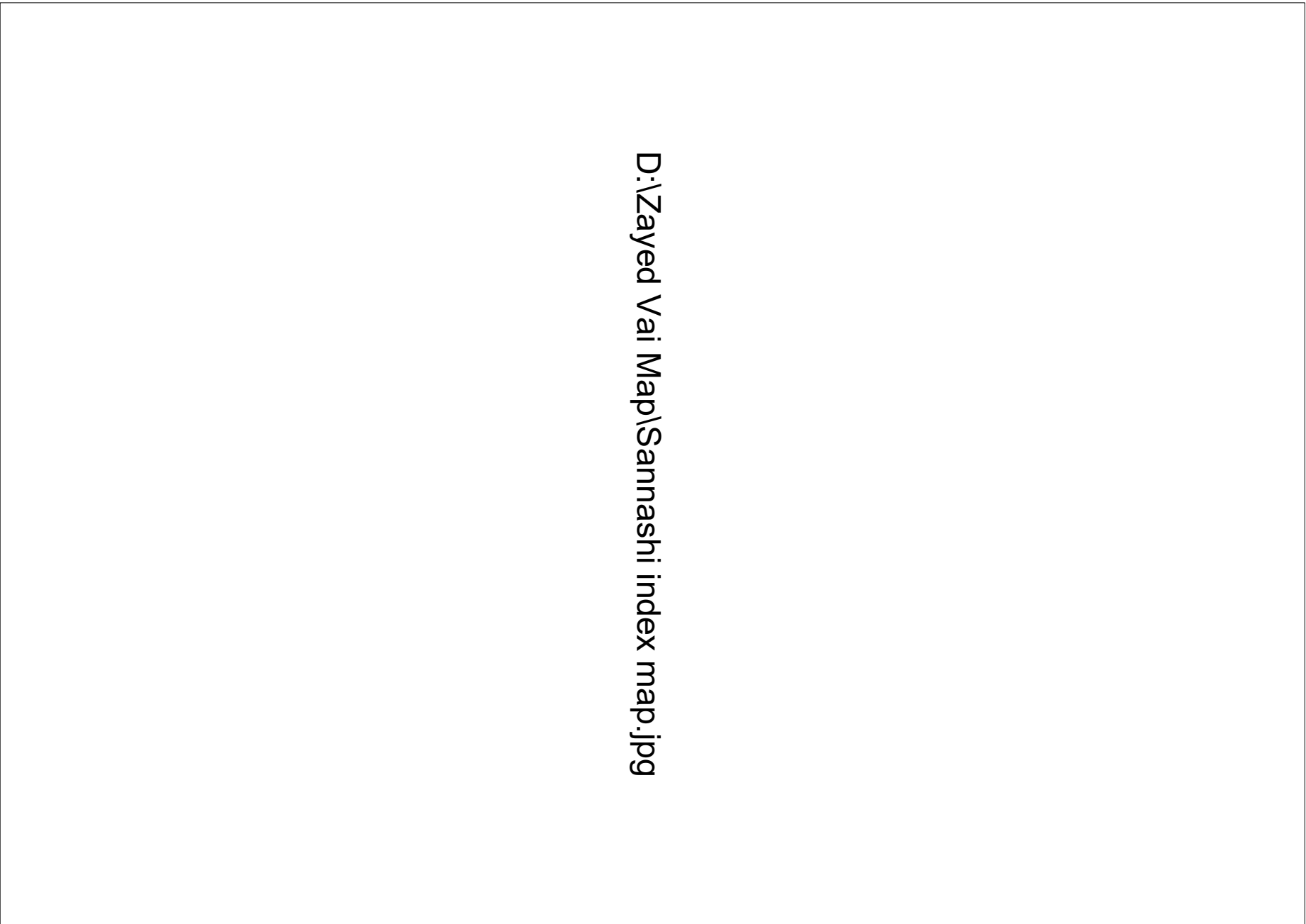
Bagerhat O&M Division

Designed by:Design Circle-8,BWDB,Dhaka

November,2022

D:\Zayed Vai Map\Sannashi index map.jpg

D:\Zayed Vai Map\Sannashi Site plan.jpg



Bangladesh Water Development Board	
Office of The Superintending Engineer, Design Circle-8	
Protection of Morrelganj Upazila Sadar and adjacent areas from erosion Pangusi river in Bagerhat District and Re-excavation/Dredging of <u>Bishkhali river</u>	
River Bank Protective Work From Sannashi to Khawlia From km 0.00(to km 4.500 = 4.500 km	
INDEX MAP & SITE MAP	
DESIGNED BY:	RECOMMENDED BY:
(ZAYED BIN SAIF),AE	(MOHAMMAD SAIF UDDIN),SE
CHECKED BY:	APPROVED BY:
(JAKARIA PERVEZ),EE	(MD. ENAYET ULLAH),CE,DESIGN
DATE:08-11-2022	Drawing No:DC-8-XXXX-01/50

1. THIS DRAWING HAS BEEN PREPARED BASED ON DATA SENT BY THE SUPERINTENDING ENGINEER, KHULNA O & M CIRCLE, BWDB, KHULNA VIDE MEMO NO: 293, DATED-24/08/2022.

2. FOR ANY ERROR, OMISSION OR CONFUSION PLEASE REFER TO THIS OFFICE AS QUICK AS POSSIBLE FOR NECESSARY ACTION.

3. THE WORK SHALL BE EXECUTED WITH PRIOR FINANCIAL & ADMINISTRATIVE APPROVAL AND TECHNICAL SANCTION FROM THE COMPETENT AUTHORITY.

4. ALL DIMENSIONS ARE IN MILLIMETRE (mm) AND ALL ELEVATIONS ARE IN METRE (PWD) UNLESS OTHERWISE MENTIONED IN THE DRAWING.

5. THE MATERIAL & WORKMANSHIP SHALL CONFORM TO THE STANDARD SPECIFICATIONS OF BWDB MANUAL.

6. NECESSARY LAND SHALL BE ARRANGED BEFORE EXECUTION OF WORK.

7. THE GEO-TEXTILE FILTER HAVE THICKNESS OF 3.00 mm.

8. GEO-TEXTILE FILTER SHALL BE EXTENDED UPTO 1000 mm BELOW THE W.W.L/TOE & SHALL HAVE TO BE ANCHORED CAREFULLY AT THE TOP OF THE SLOPE AS SHOWN IN THE DRAWING.

9. GEO-TEXTILE MATERIALS SHALL BE PRESERVED AGAINST UV RAY AND FROM ANY OTHER DAMAGES.

10. GEO-TEXTILE MATERIALS AFTER PLACING SHALL NEVER BE EXPOSED TO SUNLIGHT. GEO-TEXTILE FILTER SHALL BE COVERED IMMEDIATELY AFTER PLACEMENT.

12. FULL LENGTH OF PROPOSED PROTECTIVE WORK SHALL BE DONE AT A TIME IN ONE DRY SEASON FOR EFFECTIVENESS.

13. IF THERE ARE ANY POND OR DITCH EXISTS WITHIN 100 m DISTANCE FROM THE RIVER BANK, IT MUST BE PROPERLY FILLED UPTO G.L WITH LOCAL EARTH AND SHALL BE COMPACTED AS PER SCHEDULE BEFORE STARTING THE PROTECTIVE WORK.

14. SLOPE OF PITCHING WORK SHALL BE MAINTAINED AS PER EXISTING SLOPE OR AS PER Rehabilitation SECTION, BUT NOT STEEPER THAN 2H:1V. ALL BANK IRREGULARITIES ABOVE WORKING WATER LEVEL SHALL BE REMOVED. NECESSARY CUTTING & FILLING SHALL BE DONE IN THIS RESPECT AS PER FIELD REQUIREMENT.

15. A SMOOTH TRANSITION TO BE PROVIDED BETWEEN HIGHER & LOWER LEVEL AND FLATTER & STEEPER SLOPE OF THE PROTECTIVE WORK. TOP LEVEL OF PITCHING WORK SHOULD BE MATCH WITH EXISTING BANK LEVEL.

16. AT THE STARTING AND AT THE END OF THE PROTECTIVE WORK TRANSITION TO THE EXISTING UNPROTECTED BANK OR THE PREVIOUSLY COMPLETED WORK MUST BE GRADUAL AND TANGENTIAL.

NOTES FOR C.C BLOCKS:.

1. CONCRETE FOR C.C BLOCK SHALL HAVE MINIMUM CYLINDER STRENGTH OF 15.00N/mm² AT 28 DAYS.

2. CURING OF C.C BLOCKS SHALL BE CONTINUED FOR 21 DAYS

3. THE PITCHING WORK SHALL BE PLACED ON PROPERLY COMPACTED SLOPE.

1. EACH BAG DELIVERED AT SITE SHALL BE MARKED WITH LABELS THAT IDENTIFY BRAND NAME, CONTRACT PACKAGE NO, SIZE OF BAG, ATE OF PRODUCTION OF GEOTEXTILE, NAME OF CONTRACTOR ETC.

2. SEWING SHALL BE DONE BY MACHINE WITH LOCK STITCH (TYPE 301 UNDER ISO 4915/DIN61400) OR DOUBLE CHAIN STITCH (TYPE 401 UNDER ISO 4915/DIN61400) AS PER BWDB TECHNICAL SPECIFICATION AND TENDER DOCUMENT. THREAD FOR STITCHING SHOULD BE 100% POLYPROPYLENE OR NYLON.

3. FILLING MATERIAL OF GEOBAG SHOULD BE SAND AND 80% SHOULD RETAIN ON #100 SEIVE. SAND SHOULD BE FREE FROM CLAY & ORGANIC MATTER.

4. MATERIAL OF GEOBAG SHALL BE 100% POLYPROPYLENE.

5. SIEVE ANALYSIS FOR CHECKING 80% RETAINED ON #100 SIEVE AND TEST FOR CLAY & ORGANIC MATTER CONTENT SHOULD BE DONE (AS PER ACTUAL NEED). SPECIFICATIONS OF GEOTEXTILE SHALL BE AS PER ITEM CODE 40-500-40.

1. WORK SHALL BE EXECUTED ONLY WHEN WL IS AT OR NEAR WORKING L.W.L AS SHOWN IN THE DRAWING.

2. 2. SURVEY BOAT EQUIPPED WITH NECESSARY DUMPING EQUIPMENT, SURVEY EQUIPMENT & SURVEY TEAM SHOULD BE ENSURED AT SITE BEFORE START OF DUMPING.

3. 3. DUMPING MATERIALS SHALL BE DUMPED FROM BARGE EQUIPPED WITH GUIDED FENCE SO THAT DUMPING MATERIALS CAN BE DUMPED INTO PROPER POSITION.

Bangladesh Water Development Board	
Office of The Superintending Engineer, Design Circle-8	
Protection of Morrelganj Upazila Sadar and adjacent areas from erosion Pangusi river in Bagerhat District and Re-excavation/Dredging of <u>Bishkhali river</u>	
River Bank Protective Work From Sannashi to Khawlia From km 0.00 to to km 4.500 = 4.500 km	
NOTES	
DESIGNED BY:	RECOMMENDED BY:
(ZAYED BIN SAIF),AE	(MOHAMMAD SAIF UDDIN),SE
CHECKED BY:	APPROVED BY:
(JAKARIA PERVEZ),EE	(MD. ENAYET ULLAH),CE,DESIGN
DATE:06-06-2021	Drawing No:DC-8-0073-02/09

- 4. THE FOLLOWING EQUIPMENT SHOULD BE USED FOR DUMPING.
 - a.. FLAT TOP BARGE /PONTOONS/BOAT SHALL BE USED FOR DUMPING .
 - b.. ENGINE BOAT - FOR TRANSPORTING THE DUMPING MATERIAL TO THE BARGE.
 - c.. TOPOGRAPHIC & BATHYMETRIC SURVEY TEAM EQUIPPED WITH TOTAL STATION.
 - d.. NO DUMPING SHALL ALLOWED WITHOUT PROPERLY POSITIONED & ANCHORED FLAT TOP BARGE OR DUMPING PONTON OR BOAT.
 - 6. SPECIAL CARE SHALL BE TAKEN FOR ANCHORING OF DUMPING PONTON/ BOAT.
 - 7. WORK SHALL BE STARTED FROM U/S END AND FROM DUMPING END TO BANK.
 - 8. FOLLOWING CONSTRUCTION SEQUENCE SHALL BE FOLLOWED DURING EXECUTION OF THIS PROTECTIVE WORK:
 - a.. EXECUTION OF WORK SHALL BE DONE FROM THE EXTREME END OF DUMPING TO TOWARDS THE BANK.
 - b.. DUMPING OF GEOBAG BELOW L.W.L.
 - c.. DUMPING OF C.C BLOCKS BELOW LWL OVER GEOBAG.
 - d.. SLOPE PREPARATION & PITCHING WORK ABOVE LWL.
 - 1. AS BUILT DRAWING CONTAINING CROSS SECTIONS AT 50 m INTERVAL SHALL BE PREPARED IMMEDIATELY AFTER COMPLETION OF DUMPING.
 - 2. THE RIVER BEHAVIOUR WITH RESPECT TO SCOUR AND EROSION AND PERFORMANCE OF REVETMENT WORK DURING AND AFTER EXECUTION SHALL BE MONITORED CAREFULLY ON REGULAR BASIS TO TAKE TIMELY MITTIGATIVE AND STRENGTHENING MEASURES .REGULAR MONITORING OF THIS PROTECTIVE WORK MUST BE DONE THROUGH BATHYMETRIC SURVEY .
 - 3. FROM JUNE TO OCTOBER BATHYMETRIC SURVEY SHOULD BE DONE ON REGULAR INTERVAL & SHALL BE KEPT AS RECORD FOR FURTHER USE.
 - 4. DREDGING ADJACENT TO PROTECTIVE WORK SHALL NOT BE ALLOWED.

ITEM CODE:

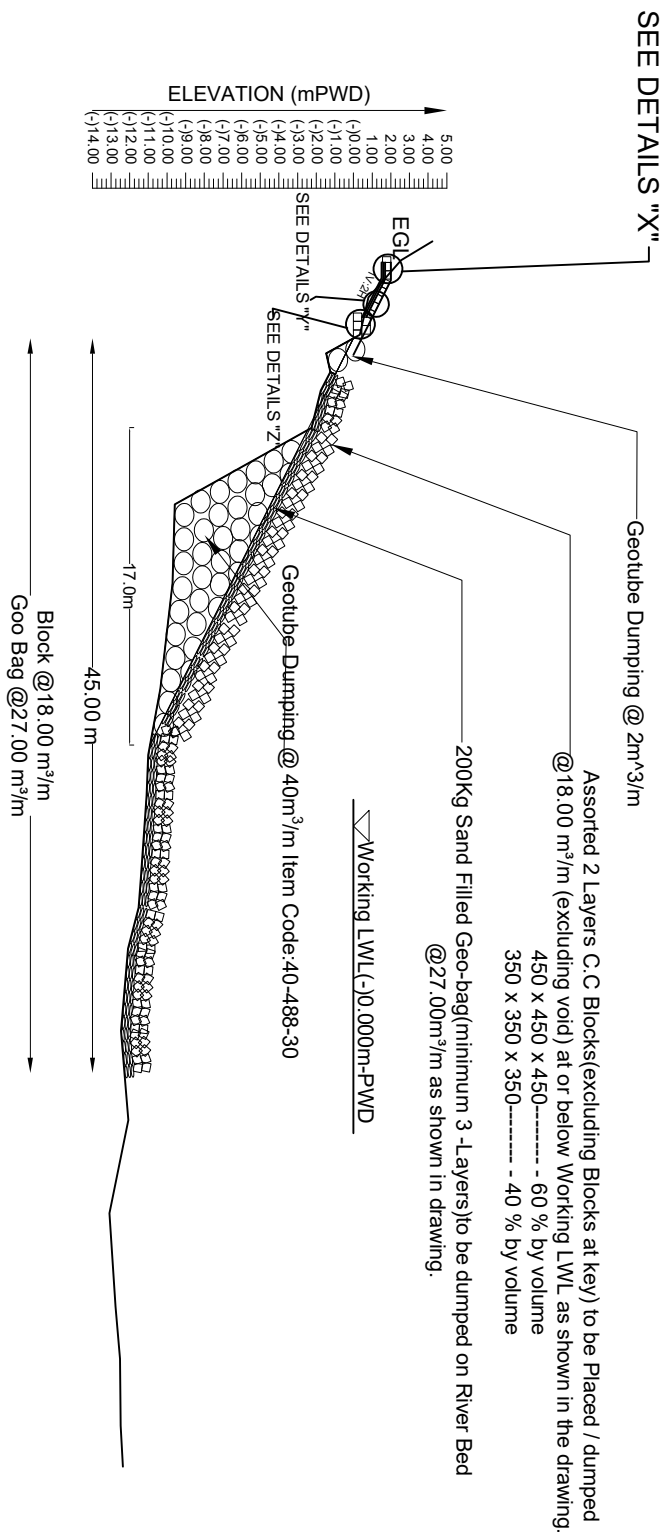
- 1. DUMPING BLOCK 450X450X450 : 40-170-25
- 2. DUMPING BLOCK 350X350X350 : 40-170-45
- 3. PLACING BLOCK 400X400X200 : 40-190-40
- 4. GEOTUBE 40-488-30

Bangladesh Water Development Board			
Office of The Superintending Engineer, Design Circle-8			
Protection of Morreiganj Upazila Sadar and adjacent areas from erosion Panguisi river in Bagerhat District and Re-excavation/Dredging of Bishkhali river			
River Bank Protective Work From Sannashi to Khawlia From km 0.00(to km 4.500 = 4.500 km			
NOTES			
DESIGNED BY:	RECOMMENDED BY:		
(ZAYED BIN SAIF),AE	(MOHAMMAD SAIF UDDIN),SE		
CHECKED BY:	APPROVED BY:		
(JAKARIA PERVEZ),EE	(MD. ENAYET ULLAH),CE,DESIGN		
DATE:06-06-2021	Drawing No:DC-8-0073-02/09		

Special Notes For Revised Bathymetric Survey :

1. IN PROVIDED BATHYMETRIC SURVEY DATA SOME X-SECTIONS HAVE UNUSAL SHAPES WHICH RESULT IN EXCESSIVE FILLING.
2. FOR PROPER INVESTIGATION, SAFE AND ECONOMICAL DESIGN FILED OFFICE IS REQUESTED TO CONDUCT BATHYMETRIC SURVEY ALONG THE WHOLE REACH OF THE WORK AT 20 METER INTERVAL TO DETERMINE THE SCOUR HOLES AND GEOTUBE FILLING VOLUME BEFORE EXECUTION OF THE WORK.
- 4.FIELD OFFICE HAS TO SEND ABOVE SURVEY DATA FOR REVISION OF GEO-TUBE FILL VOLUME BEFORE INITIATION OF ANY DUMPING WORK TO THE DESIGN OFFICE.
- 5.DUMPING WORK CAN PROCEED ONLY AFTER GETTING REVISED DRAWING FOR GEO-TUBE FILLING.
6. THE COST OF SURVEYING SHOULD BE INCLUDED IN ESTIMATE AND BOQ.

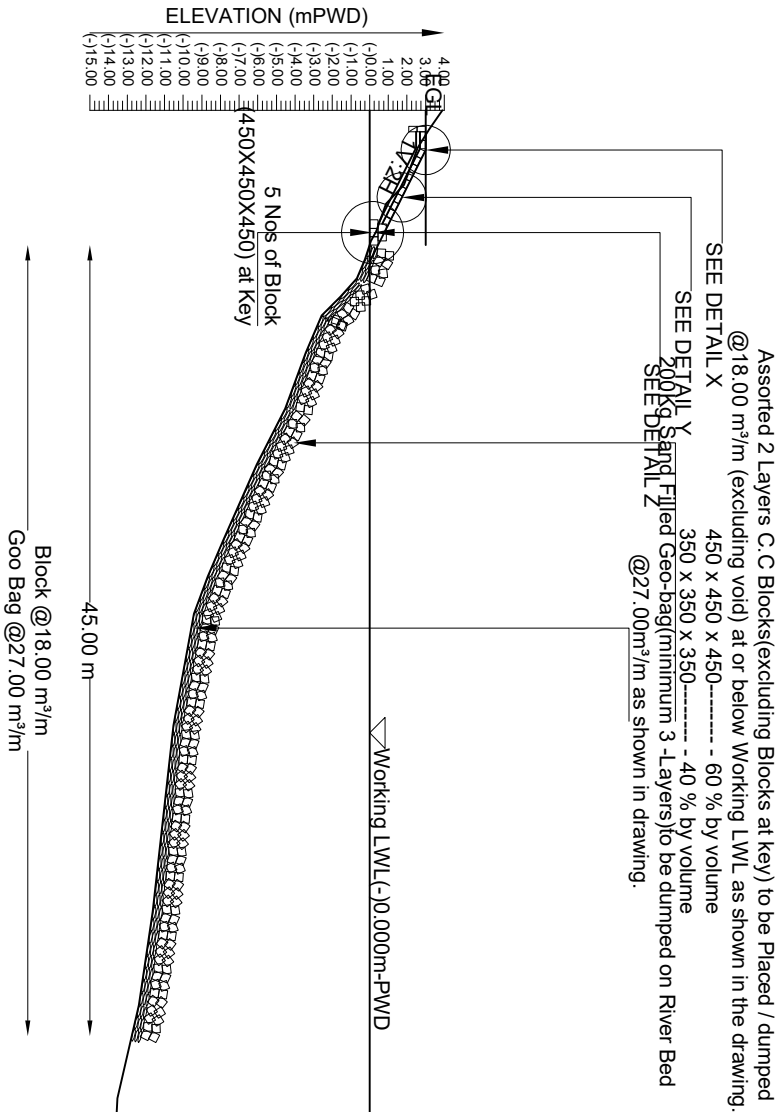
Bangladesh Water Development Board			
Office of The Superintending Engineer, Design Circle-8			
Protection of Morreiganj Upazila Sadar and adjacent areas from erosion Pangusi river in Bagerhat District and Re-excavation/Dredging of Bishkhali river			
River Bank Protective Work From Sannashi to Khawlia From km 0.00(to km 4.500 = 4.500 km			
NOTES			
DESIGNED BY:	RECOMMENDED BY:		
(ZAYED BIN SAIF),AE	(MOHAMMAD SAIF UDDIN),SE		
CHECKED BY:	APPROVED BY:		
(JAKARIA PERVEZ),EE	(MD. ENAYET ULLAH),CE,DESIGN		
DATE:08-11-2022	Drawing No:DC-8-XXXX-03/50		



Existing Bed Level in (mPWD)	
11.004	4.234
12.004	2.555
14.005	0.804
16.006	0.344
17.006	(-)1.456
18.007	(-)1.236
19.007	(-)1.756
21.008	(-)2.256
25.108	(-)9.580
29.350	(-)9.700
35.004	(-)10.350
38.558	(-)11.010
40.708	(-)11.100
45.167	(-)11.400
46.743	(-)11.530
48.943	(-)12.090
53.351	(-)12.460
58.145	(-)12.070
63.144	(-)13.080
68.144	(-)12.760
70.948	(-)12.520
74.546	(-)12.480
76.743	(-)12.370

TYPICAL CROSS SECTION AT KM 0.000
(APPLICABLE FROM KM 0.000 TO KM 0.070)

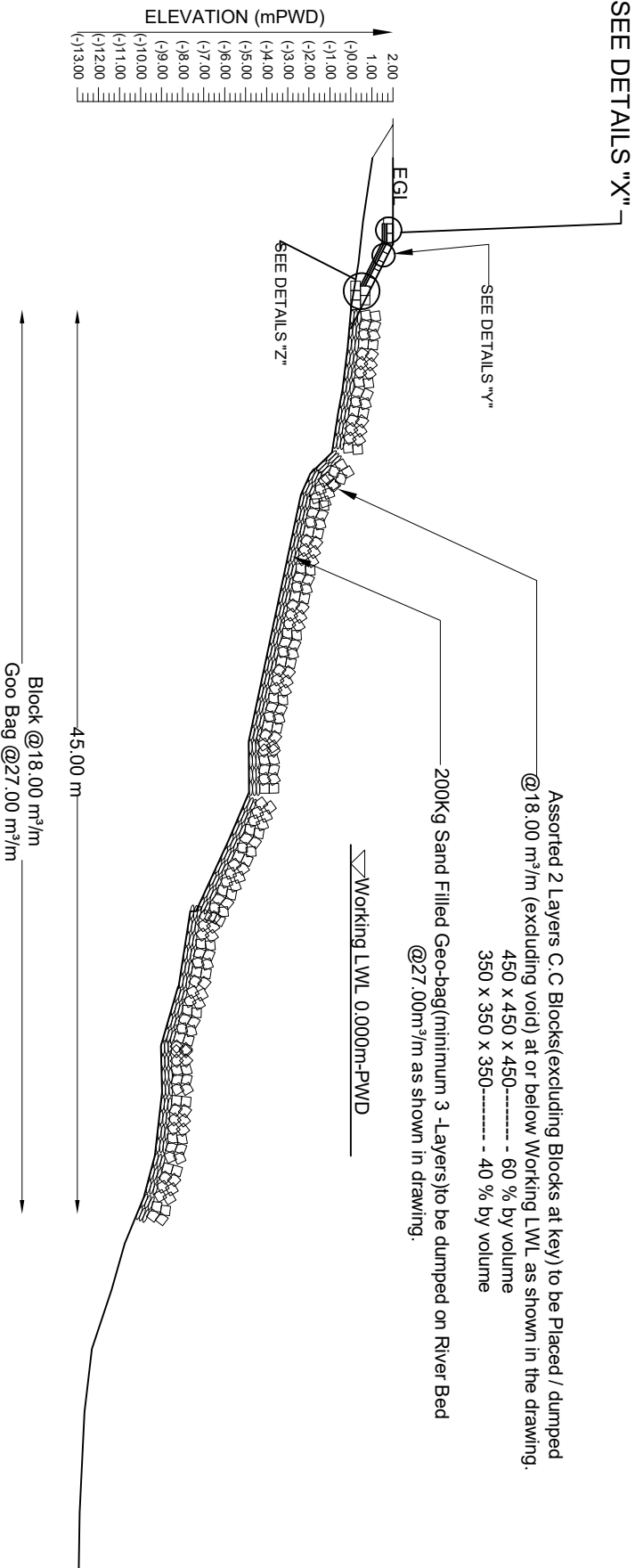
Bangladesh Water Development Board			
Office of The Superintending Engineer, Design Circle-8			
Protection of Morreiganj Upazila Sadar and adjacent areas from erosion Panguisi river in Bagerhat District and Re-excavation/Dredging of Bishkhali river			
River Bank Protective Work From Sannashi to Khawlia From km 0.000 to km 4.500 = 4.500 km			
TYPICAL CROSS SECTION OF FROM SANNASHI TO KHAWLIA PROTECTIVE WORK			
DESIGNED BY:	RECOMMENDED BY:		
(ZAYED BIN SAIF),AE	(MOHAMMAD SAIF UDDIN),SE		
CHECKED BY:	APPROVED BY:		
(JAKARIA PERVEZ),EE	(MD. ENAYET ULLAH),CE,DESIGN		
DATE:08-11-2022	Drawing No:DC-8-XXXX-04/50		



Existing Bed Level in (mPWD)	
7.000	3.893
8.000	3.203
9.000	2.573
11.000	1.843
12.000	0.881
13.500	0.341
15.000	(-)0.249
16.000	(-)0.679
17.000	(-)1.579
18.000	(-)2.579
20.000	(-)3.429
23.000	(-)4.529
26.000	(-)6.049
30.000	(-)7.829
32.000	(-)8.679
34.000	(-)9.429
40.000	(-)10.529
50.000	(-)11.629
55.000	(-)12.379
60.000	(-)13.529
65.000	(-)13.779
70.000	(-)14.429
75.000	(-)13.479
80.000	(-)13.729
85.000	(-)12.429

TYPICAL CROSS SECTION AT KM 0.080
(APPLICABLE FROM KM 0.070 TO KM 0.190)

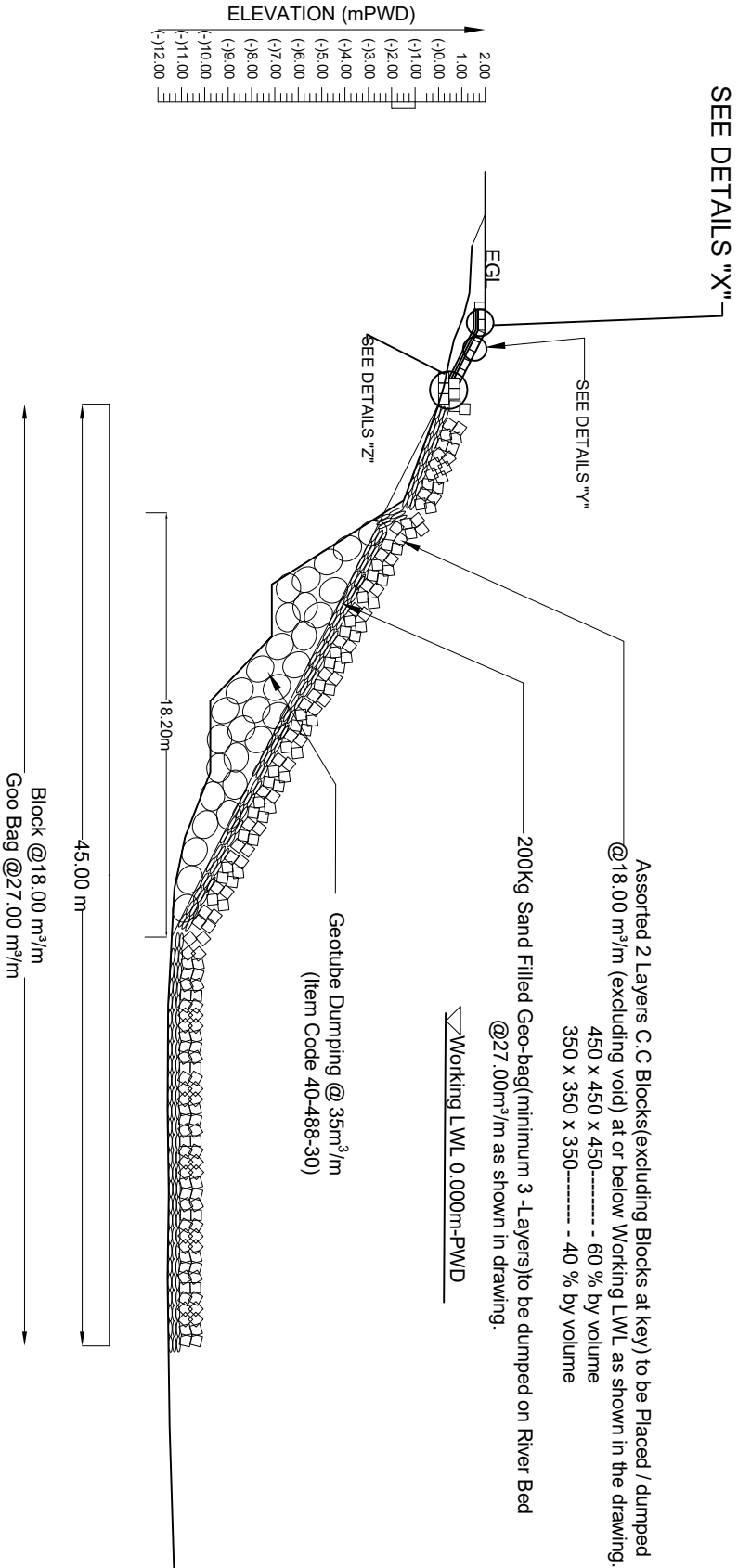
Bangladesh Water Development Board			
Office of The Superintending Engineer, Design Circle-8			
Protection of Morrelganj Upazila Sadar and adjacent areas from erosion Pangusi river in Bagerhat District and Re-excavation/Dredging of Bishkhali river			
River Bank Protective Work From Sannashi to Khawlia From km 0.000 to km 4.500 = 4.500 km			
TYPICAL CROSS SECTION OF PROTECTIVE WORK FROM SANNASHI TO KHAWLIA			
DESIGNED BY:	RECOMMENDED BY:		
(ZAYED BIN SAIF),AE	(MOHAMMAD SAIF UDDIN),SE		
CHECKED BY:	APPROVED BY:		
(JAKARIA PERVEZ),EE	(MD. ENAYET ULLAH),CE,DESIGN		
DATE:06-06-2021	Drawing No:DC-8-0073-06/09		



Existing Bed Level in (mPWD)	
29.000	1.027
32.000	0.582
34.000	0.357
36.000	0.017
38.000	(-)0.153
40.000	(-)0.393
41.000	(-)0.593
43.000	(-)0.903
44.000	(-)1.923
45.000	(-)2.383
56.732	(-)4.860
59.159	(-)4.840
61.412	(-)5.800
64.801	(-)7.360
68.401	(-)8.190
71.202	(-)9.030
73.401	(-)8.980
76.409	(-)9.310
78.401	(-)9.840
80.603	(-)10.750
82.806	(-)11.370
85.603	(-)12.310
88.614	(-)12.660
93.401	(-)12.900
96.016	(-)12.930

TYPICAL CROSS SECTION AT KM 0.200
(APPLICABLE FROM KM 0.190 TO KM 1.050)

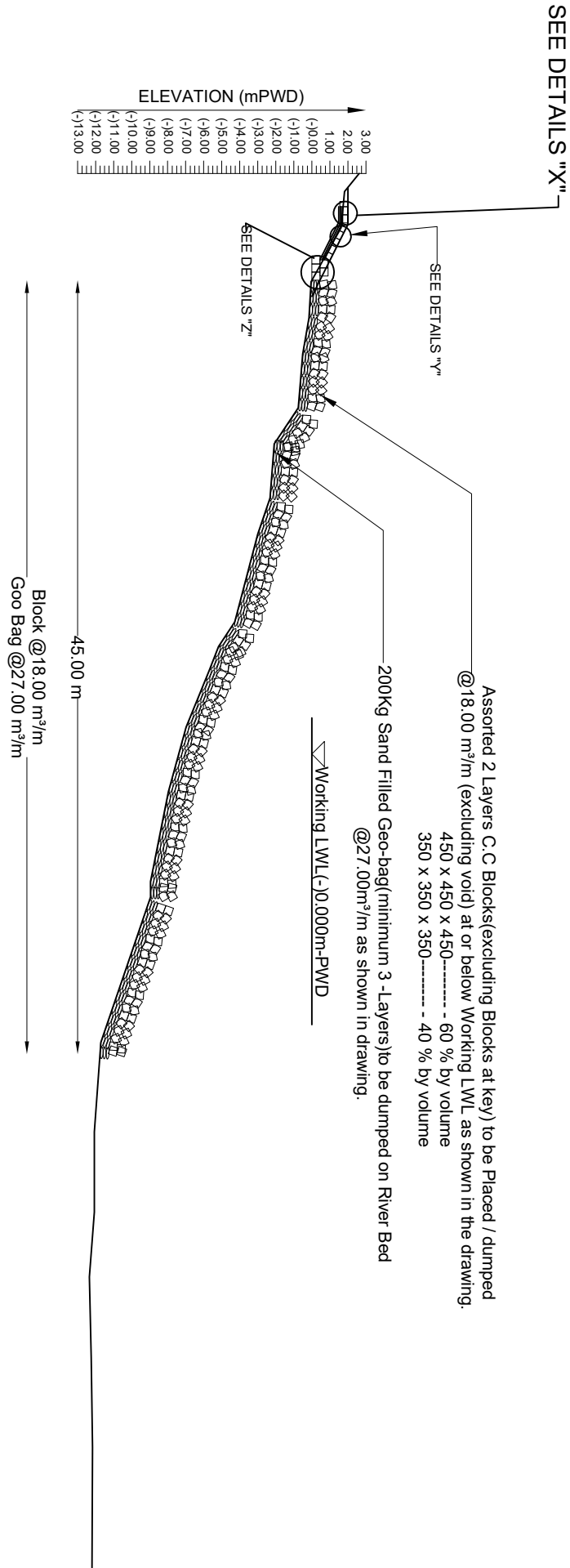
Bangladesh Water Development Board			
Office of The Superintending Engineer, Design Circle-8			
Protection of Morreiganj Upazila Sadar and adjacent areas from erosion Panguisi river in Bagerhat District and Re-excavation/Dredging of Bishkhali river			
River Bank Protective Work From Sannashi to Khawlia From km 0.000 to km 4.500 = 4.500 km			
TYPICAL CROSS SECTION OF FROM SANNASHI TO KHAWLIA			
DESIGNED BY:	PROTECTIVE WORK		
DESIGNED BY:	RECOMMENDED BY:		
(ZAYED BIN SAIF),AE	(MOHAMMAD SAIF UDDIN),SE		
CHECKED BY:	APPROVED BY:		
(JAKARIA PERVEZ),EE	(MD. ENAYET ULLAH),CE,DESIGN		
DATE:08-11-2022	Drawing No:DC-8-XXXX-06/50		



Existing Bed Level in (mPWD)	
22.003	1.429
24.003	1.329
25.003	1.069
26.003	0.659
27.003	0.429
28.004	0.229
29.003	(-)0.071
32.882	(-)1.490
36.487	(-)7.130
38.707	
41.481	(-)9.760
44.533	
47.304	(-)10.850
49.523	(-)11.300
54.515	(-)11.570
58.955	(-)11.590
62.560	(-)11.540
66.166	
72.543	(-)11.510
77.536	(-)11.350
84.193	(-)11.150
92.790	(-)11.200
97.782	
102.221	(-)11.060

TYPICAL CROSS SECTION AT KM 1.100
(APPLICABLE FROM KM 1.050 TO KM 1.140)

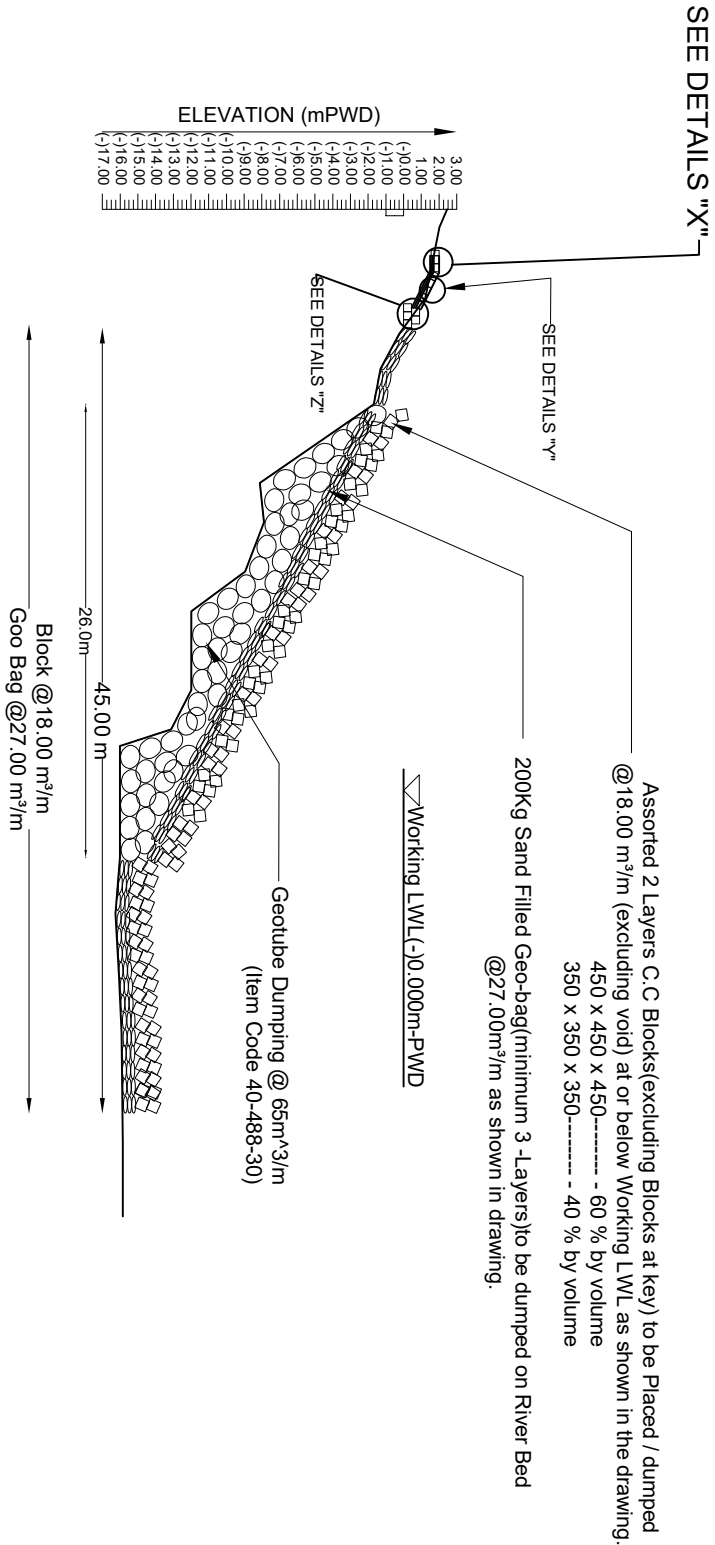
Bangladesh Water Development Board	
Office of The Superintending Engineer, Design Circle-8	
Protection of Morrelganj Upazila Sadar and adjacent areas from erosion Pangusi river in Bagerhat District and Re-excavation/Dredging of Bishkhali river	
River Bank Protective Work From Sannashi to Khawlia From km 0.00 to km 4.500 = 4.500 km	
TYPICAL CROSS SECTION OF FROM SANNASHI TO KHAWLIA	
DESIGNED BY:	PROTECTIVE WORK
(ZAYED BIN SAIF),AE	RECOMMENDED BY:
(MOHAMMAD SAIF UDDIN),SE	
CHECKED BY:	APPROVED BY:
(JAKARIA PERVEZ),EE	(MD. ENAYET ULLAH),CE,DESIGN
DATE:08-11-2022	Drawing No:DC-8-XXXX-15/50



Existing Bed Level in (mPWD)	
22.000	2.632
23.000	1.815
25.000	1.632
28.000	(-)0.048
30.000	(-)0.158
32.000	(-)0.508
35.000	(-)0.748
37.000	(-)2.088
40.000	(-)2.318
41.999	(-)2.998
46.872	(-)4.280
48.241	(-)5.180
49.612	(-)5.720
52.703	(-)6.980
56.302	(-)7.960
61.274	(-)8.950
62.133	
70.195	(-)11.710
75.165	(-)12.070
79.626	
83.226	(-)12.340
87.687	(-)12.250
92.658	(-)12.170
99.349	(-)12.200

TYPICAL CROSS SECTION AT KM 1.400
(APPLICABLE FROM KM 1.140 TO KM 1.850)

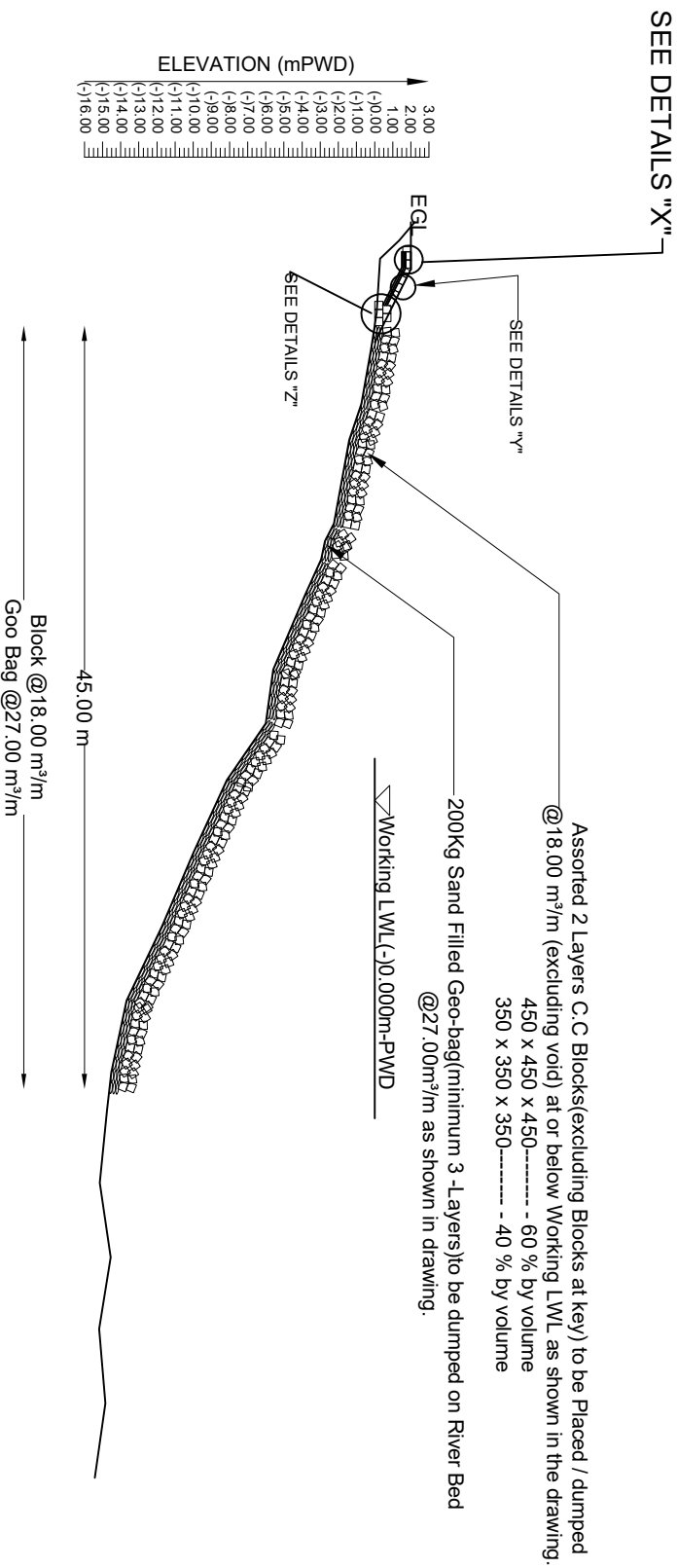
Bangladesh Water Development Board			
Office of The Superintending Engineer, Design Circle-8			
Protection of Morreiganj Upazila Sadar and adjacent areas from erosion Pangusi river in Bagerhat District and Re-excavation/Dredging of Bishkhali river			
River Bank Protective Work From Sannashi to Khawlia From km 0.00 to km 4.500 = 4.500 km			
TYPICAL CROSS SECTION OF FROM SANNASHI TO KHAWLIA			
DESIGNED BY:	PROTECTIVE WORK	RECOMMENDED BY:	
(ZAYED BIN SAIF),AE		(MOHAMMAD SAIF UDDIN),SE	
CHECKED BY:		APPROVED BY:	
(JAKARIA PERVEZ),EE		(MD. ENAYET ULLAH),CE,DESIGN	
DATE:08-11-2022		Drawing No:DC-8-XXXX-18/50	



Existing Bed Level in (mPWD)	
18.999	2.463
19.998	2.020
23.998	1.230
25.998	(-)0.230
27.998	(-)1.310
29.998	(-)1.680
34.438	(-)8.110
36.668	(-)7.890
39.458	(-)8.950
41.683	(-)11.980
43.910	
46.137	
48.365	(-)13.120
49.295	(-)16.020
52.453	
55.612	
58.771	(-)16.260
62.292	(-)16.060
65.450	(-)15.930
71.766	(-)15.850
75.859	

TYPICAL CROSS SECTION AT KM 1.900
(APPLICABLE FROM KM 1.850 TO KM 1.940)

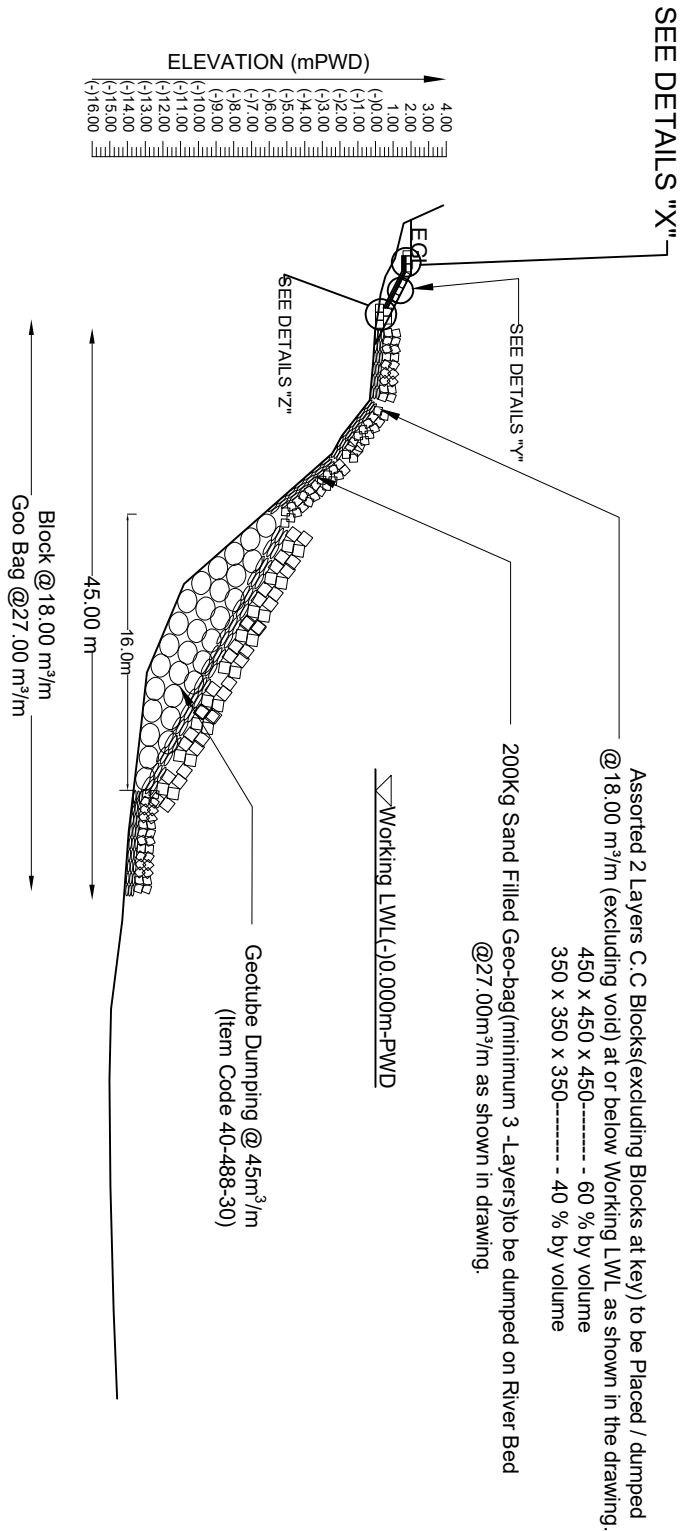
Bangladesh Water Development Board			
Office of The Superintending Engineer, Design Circle-8			
Protection of Morreiganj Upazila Sadar and adjacent areas from erosion Panguisi river in Bagerhat District and Re-excavation/Dredging of Bishkhali river			
River Bank Protective Work From Sannashi to Khawlia From km 0.00(to km 4.500 = 4.500 km			
TYPICAL CROSS SECTION OF FROM SANNASHI TO KHAWLIA			
DESIGNED BY:	PROTECTIVE WORK		
RECOMMENDED BY:			
(ZAYED BIN SAIF),AE	(MOHAMMAD SAIF UDDIN),SE		
CHECKED BY:	APPROVED BY:		
(JAKARIA PERVEZ),EE	(MD. ENAYET ULLAH),CE,DESIGN		
DATE:08-11-2022	Drawing No:DC-8-XXXX-23/50		



Distance(m)	Existing Bed Level in (mPWD)
24.007	2.204
25.008	1.354
26.008	0.304
29.009	0.104
31.010	(-)0.195
34.011	(-)0.736
36.011	(-)1.396
40.601	(-)2.250
41.589	(-)2.740
42.578	(-)2.940
44.557	(-)3.840
48.660	(-)5.590
51.628	(-)6.000
54.742	(-)8.140
58.699	(-)9.970
62.802	(-)11.710
66.907	(-)13.680
70.862	(-)14.520
72.990	(-)14.760
76.944	(-)15.150
81.048	(-)14.550
85.004	(-)15.180
89.108	(-)14.850
93.213	(-)15.420

TYPICAL CROSS SECTION AT KM 2.500
(APPLICABLE FROM KM 1.940 TO KM 2.650)

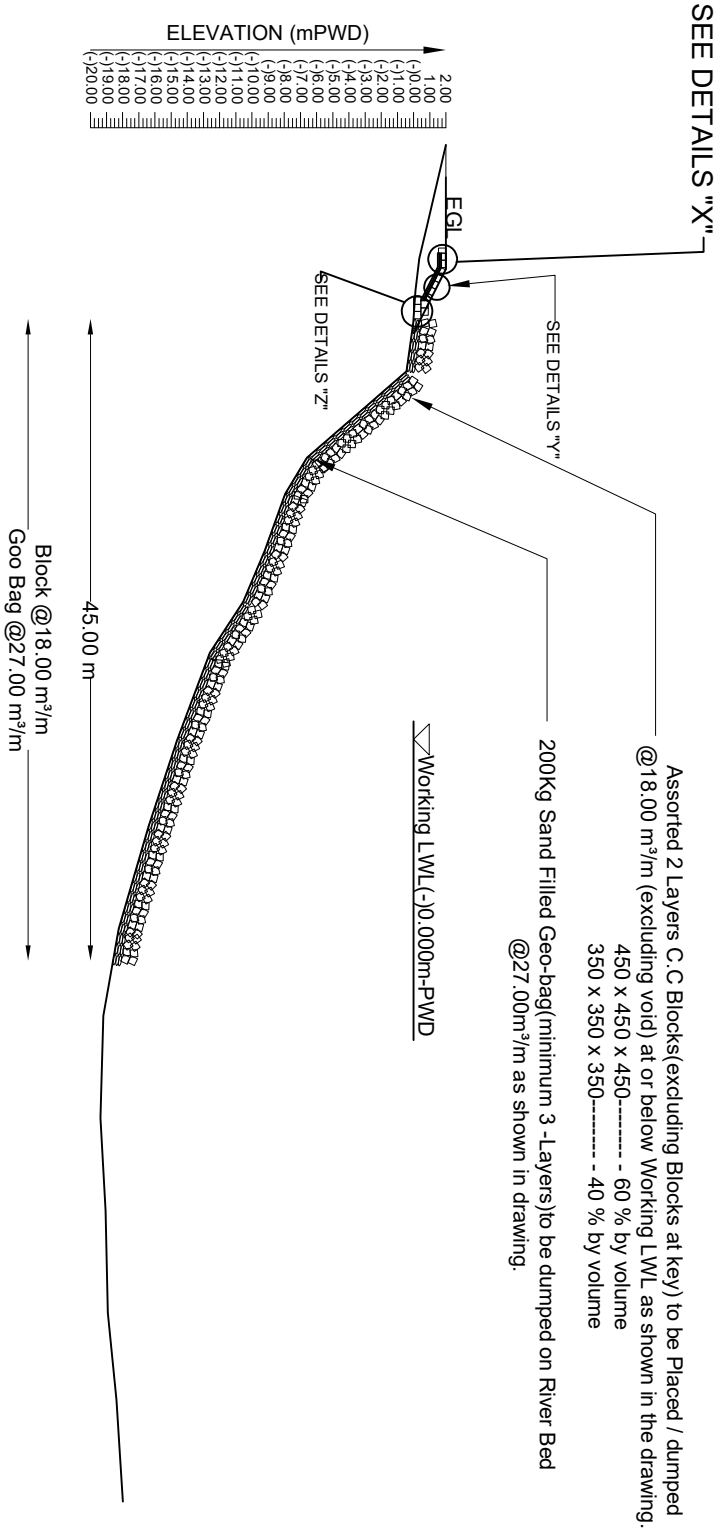
Bangladesh Water Development Board	
Office of The Superintending Engineer, Design Circle-8	
Protection of Morrelganj Upazila Sader and adjacent areas from erosion Pangusi river in Bagerhat District and Re-excavation/Dredging of Bishkhali river	
River Bank Protective Work From Sannashi to Khawlia From km 0.00 to km 4.500 = 4.500 km	
TYPICAL CROSS SECTION OF FROM SANNASHI TO KHAWLIA	
DESIGNED BY: (ZAYED BIN SAIF),AE	PROTECTIVE WORK RECOMMENDED BY: (MOHAMMAD SAIF UDDIN),SE
CHECKED BY:	APPROVED BY:
(JAKARIA PERVEZ),EE	(MD. ENAYET ULLAH),CE,DESIGN
DATE:08-11-2022	Drawing No.:DC-8-XXXX-29/50



Existing Bed Level in (mPWD)	
Distance(m)	
26.001	3.839
27.001	1.582
29.001	1.102
30.001	0.557
31.001	0.297
32.001	0.167
33.001	(-)-0.013
35.001	(-)-0.143
37.001	(-)-0.323
39.001	(-)-1.893
40.001	(-)-2.443
47.381	(-)-10.800
49.381	(-)-5.840
52.381	(-)-12.910
55.381	(-)-13.220
61.380	(-)-13.940
66.380	(-)-14.290
71.380	(-)-14.920
75.380	(-)-15.010
81.379	(-)-14.970
88.379	(-)-14.780
93.379	(-)-14.580

TYPICAL CROSS SECTION AT KM 2.700
(APPLICABLE FROM KM 2.650 TO KM 2.740)

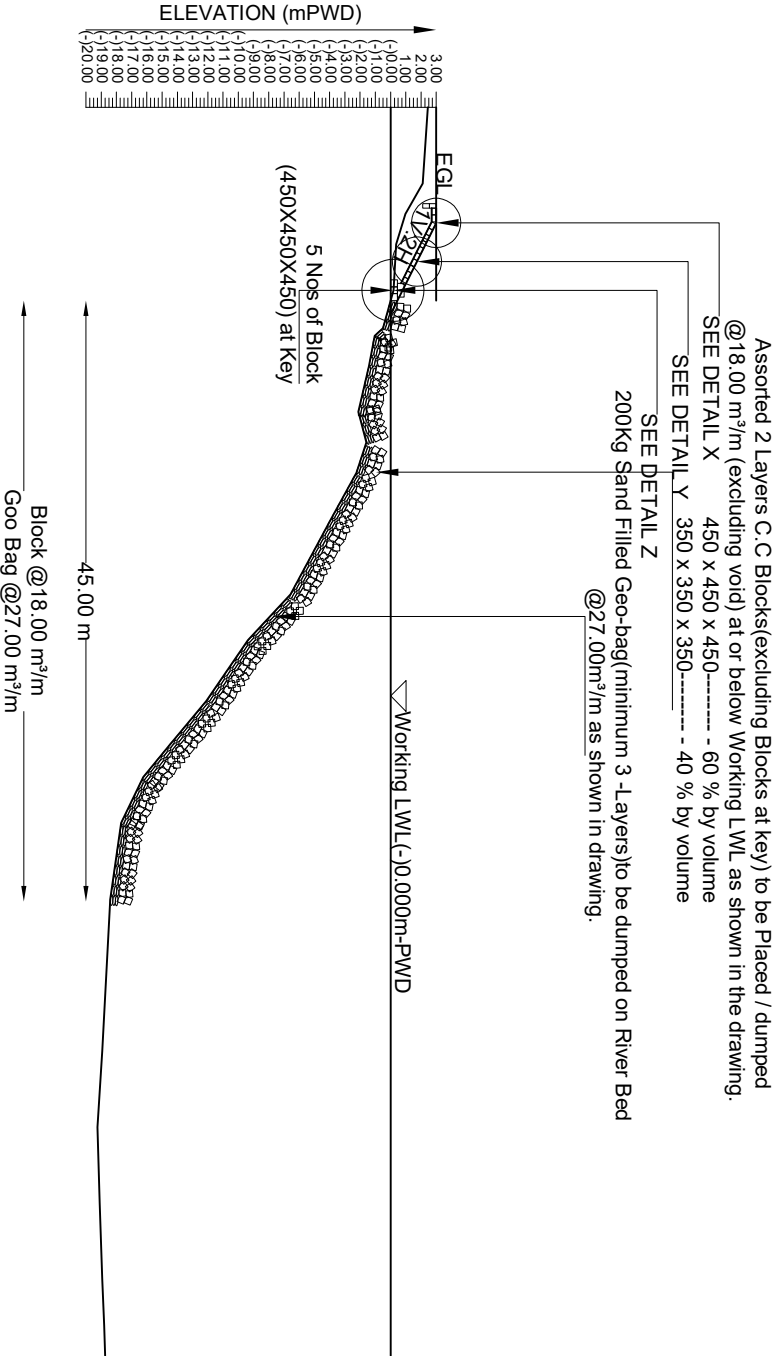
Bangladesh Water Development Board	
Office of The Superintending Engineer, Design Circle-8	
Protection of Morrelganj Upazila Sadar and adjacent areas from erosion Pangusi river in Bagerhat District and Re-excavation/Dredging of Bishkhali river	
River Bank Protective Work From Sannashi to Khawlia From km 0.001 to km 4.500 = 4.500 km	
TYPICAL CROSS SECTION OF FROM SANNASHI TO KHAWLIA	
DESIGNED BY:	PROTECTIVE WORK RECOMMENDED BY:
(ZAYED BIN SAIF),AE	(MOHAMMAD SAIF UDDIN),SE
CHECKED BY:	APPROVED BY:
(JAKARIA PERVEZ),EE	(MD. ENAYET ULLAH),CE,DESIGN
DATE:08-11-2022	Drawing No:DC-8-XXXX-31/50



Existing Bed Level in (mPWD)	
Distance(m)	
16.000	1.532
18.999	0.832
20.999	0.355
22.999	0.105
24.999	(-)0.015
27.999	(-)0.445
29.999	(-)2.745
33.354	(-)6.610
35.580	(-)7.950
39.108	(-)9.210
42.264	(-)10.550
45.420	(-)12.600
50.805	(-)14.630
56.190	(-)16.400
62.505	(-)18.240
67.890	(-)19.200
74.206	(-)19.370
79.960	(-)19.060
86.273	(-)18.920
91.658	(-)18.390
97.973	(-)17.990

TYPICAL CROSS SECTION AT KM 3.300
(APPLICABLE FROM KM 2.740 TO KM 3.550)

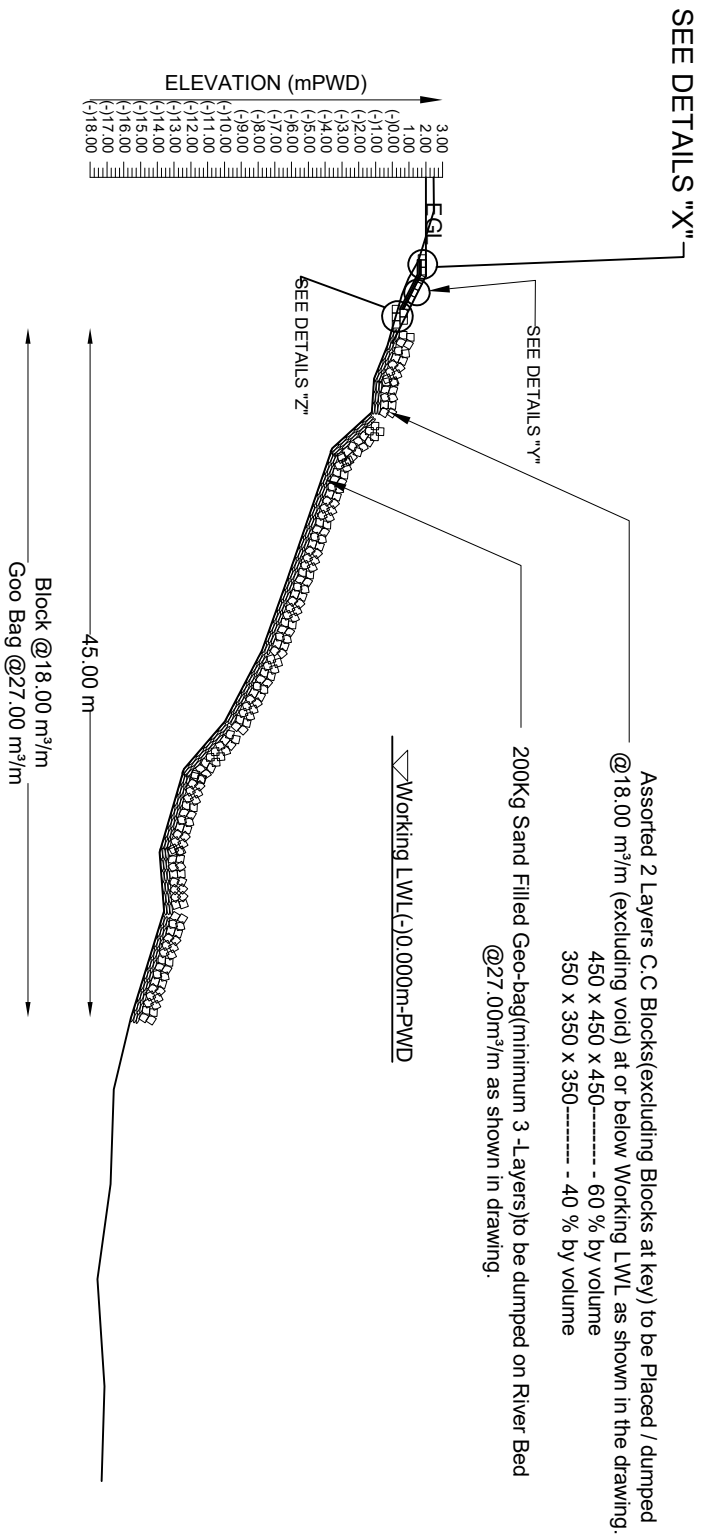
Bangladesh Water Development Board			
Office of The Superintending Engineer, Design Circle-8			
Protection of Morreiganj Upazila Sadar and adjacent areas from erosion Pangusi river in Bagerhat District and Re-excavation/Dredging of Bishkhali river			
River Bank Protective Work From Sannashi to Khawlia From km 0.00(to km 4.500 = 4.500 km			
TYPICAL CROSS SECTION OF FROM SANNASHI TO KHAWLIA			
DESIGNED BY:	PROTECTIVE WORK	RECOMMENDED BY:	
(ZAYED BIN SAIF),AE		(MOHAMMAD SAIF UDDIN),SE	
CHECKED BY:		APPROVED BY:	
(JAKARIA PERVEZ),EE		(MD. ENAYET ULLAH),CE,DESIGN	
DATE:08-11-2022	Drawing No:DC-8-XXXX-37/50		



Existing Bed Level in (mPWD)	
18.005	2.450
23.000	2.120
25.000	0.976
27.000	0.370
30.000	0.190
32.500	(-)0.500
35.000	(-)1.420
38.000	(-)2.110
40.000	(-)1.580
42.000	(-)2.250
45.000	(-)3.890
50.000	(-)6.570
53.000	(-)9.360
57.000	(-)12.090
60.000	(-)14.610
62.000	(-)16.240
65.000	(-)17.690
70.000	(-)18.400
80.000	(-)18.940
85.000	(-)19.240
90.000	(-)19.110
95.000	(-)18.930
98.000	(-)18.810
100.000	(-)18.750

TYPICAL CROSS SECTION AT KM 3.580
(APPLICABLE FROM KM 3.550 TO KM 3.640)

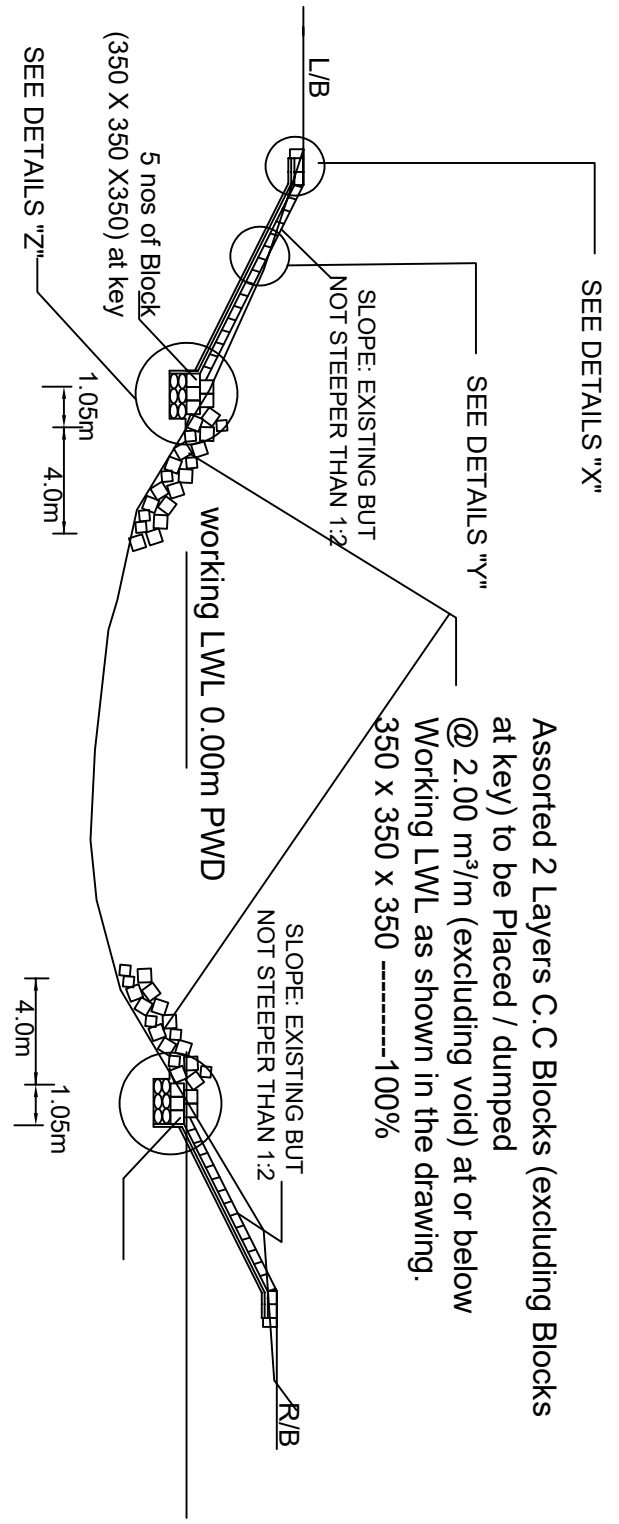
Bangladesh Water Development Board			
Office of The Superintending Engineer, Design Circle-8			
Protection of Morreiganj Upazila Sadar and adjacent areas from erosion Pangusi river in Bagerhat District and Re-excavation/Dredging of Bisakhali river			
River Bank Protective Work From Sannashi to Khawlia From km 0.00(to km 4.500 = 4.500 km			
TYPICAL CROSS SECTION OF PROTECTIVE WORK FROM SANNASHI TO KHAWLIA			
DESIGNED BY:	RECOMMENDED BY:		
(ZAYED BIN SAIF),AE	(MOHAMMAD SAIF UDDIN),SE		
CHECKED BY:	APPROVED BY:		
(JAKARIA PERVEZ),EE	(MD. ENAYET ULLAH),CE,DESIGN		
DATE:06-06-2021	Drawing No:DC-8-0073-08/09		



Existing Bed Level in (mPWD)	
13.000	2.459
15.000	2.478
18.000	1.544
18.999	0.975
20.000	0.575
21.000	0.295
22.000	(-)0.005
23.000	(-)0.290
25.000	(-)1.095
27.000	(-)1.225
29.151	(-)3.580
33.390	(-)5.040
36.954	(-)6.260
41.191	(-)7.770
45.430	(-)9.970
48.256	(-)12.410
53.232	(-)13.860
56.735	(-)13.600
63.121	(-)15.580
67.360	(-)16.600
73.013	(-)16.790
78.667	(-)17.560
85.052	(-)17.150
90.705	(-)17.310

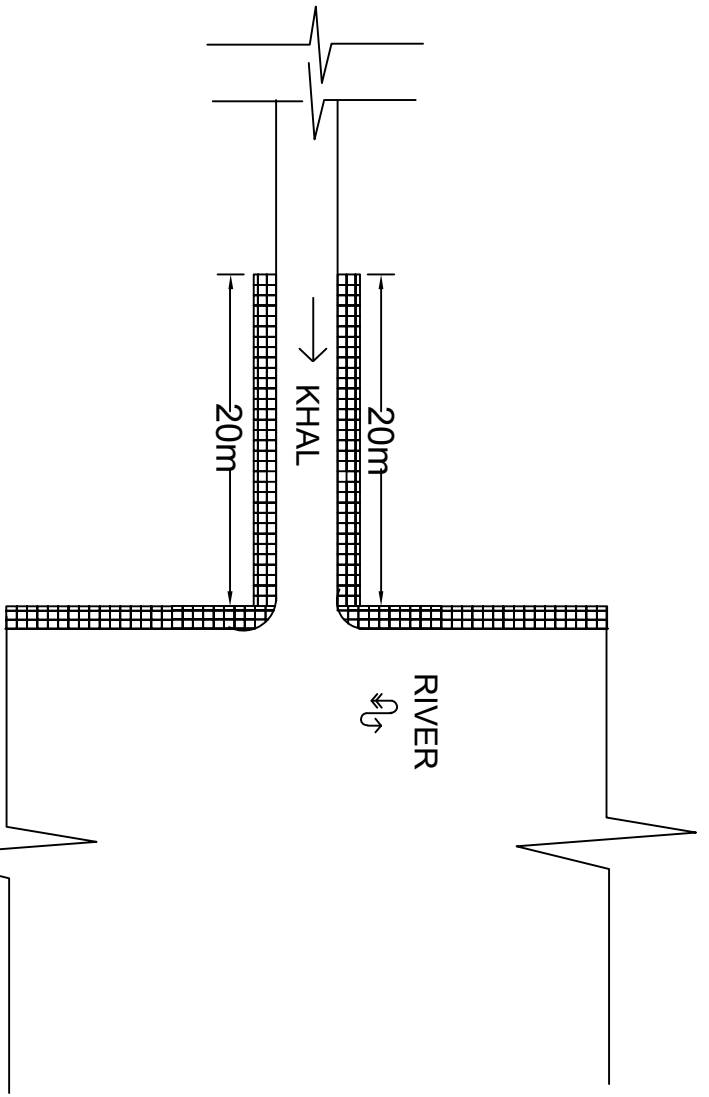
TYPICAL CROSS SECTION AT KM 4.200
(APPLICABLE FROM KM 3.640 TO KM 4.500)

Bangladesh Water Development Board			
Office of The Superintending Engineer, Design Circle-8			
Protection of Morreiganj Upazila Sadar and adjacent areas from erosion Panguisi river in Bagerhat District and Re-excavation/Dredging of Bishkhali river			
River Bank Protective Work From Sannashi to Khawlia From km 0.00(to km 4.500 = 4.500 km			
TYPICAL CROSS SECTION OF FROM SANNASHI TO KHAWLIA			
DESIGNED BY:	PROTECTIVE WORK		
DESIGNED BY:	RECOMMENDED BY:		
(ZAYED BIN SAIF),AE	(MOHAMMAD SAIF UDDIN),SE		
CHECKED BY:	APPROVED BY:		
(JAKARIA PERVEZ),EE	(MD. ENAYET ULLAH),CE,DESIGN		
DATE:08-11-2022	Drawing No:DC-8-XXXX-46/50		



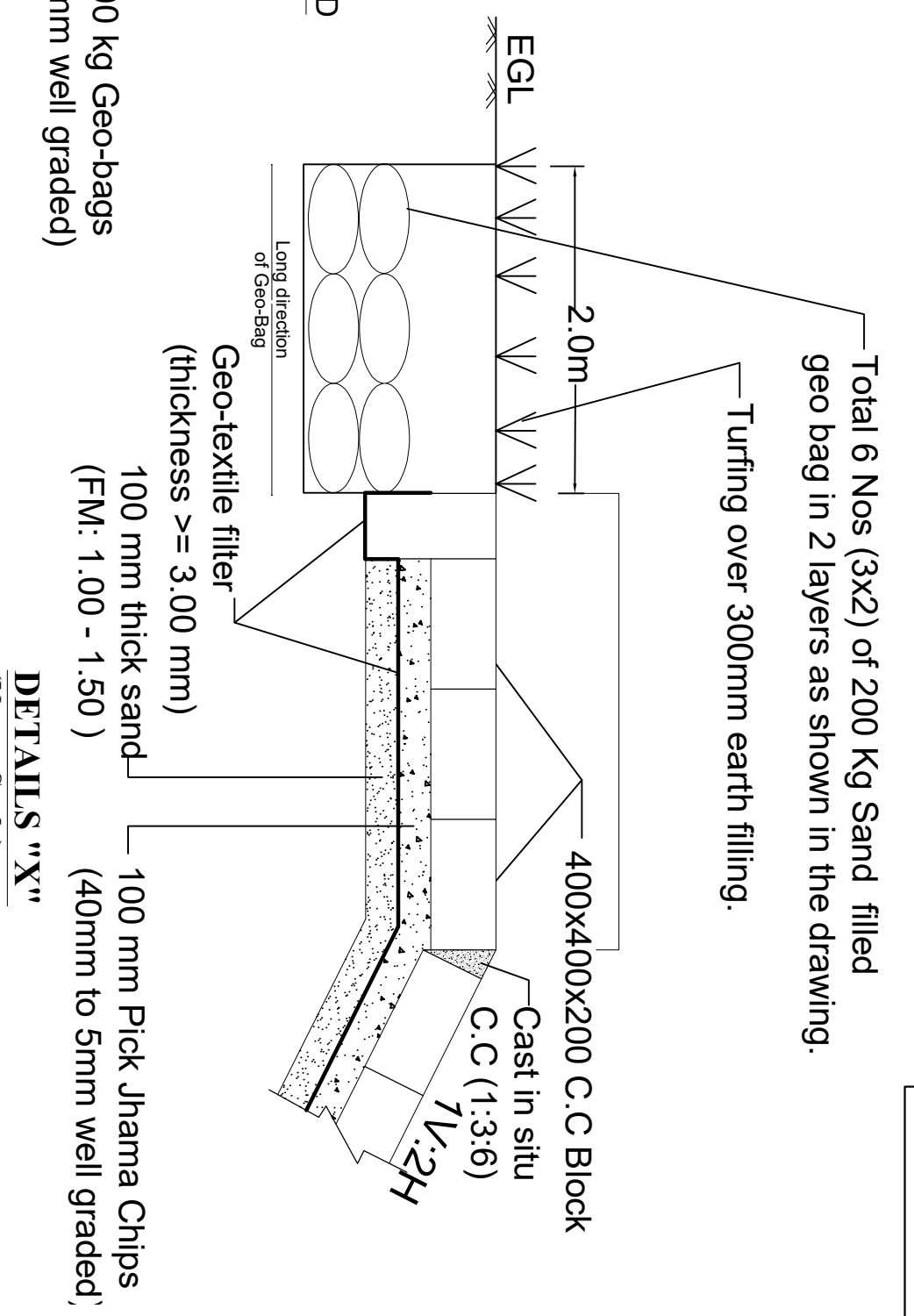
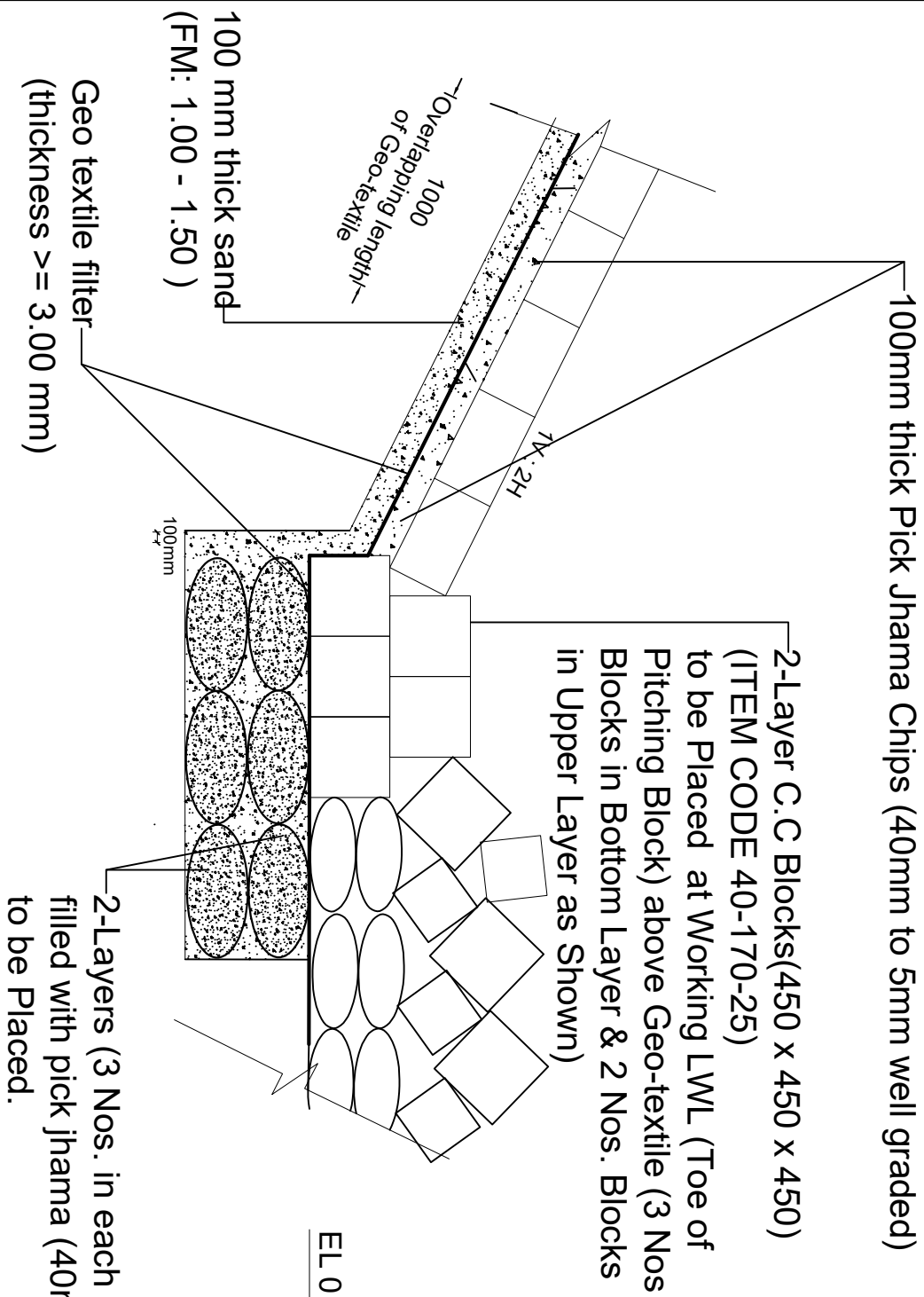
TYPICAL X-SECTION FOR ARMOURING OF PROTECTIVE WORK AT CONFLUENCE OF KHAL

(Limit of Wprk: To be Extended 20m towards Khal from Confluence of Khal and River)



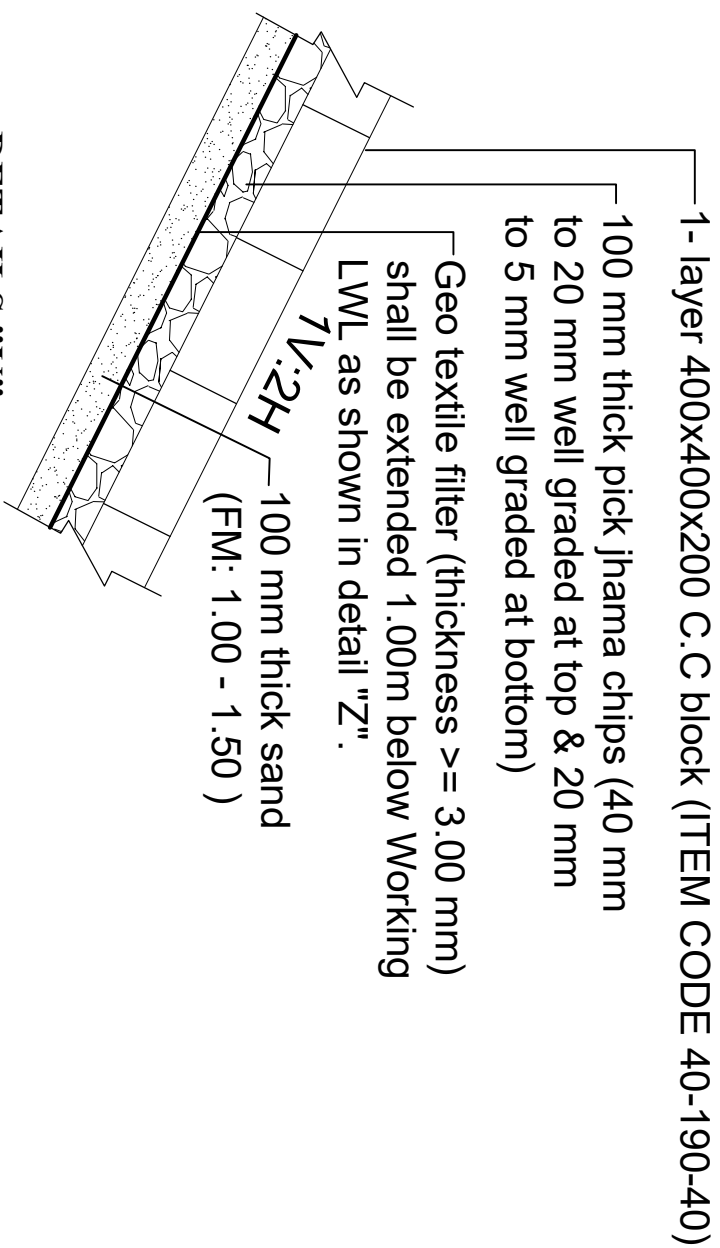
PLAN OF ARMOURING OF KHAL
(NOT TO SCALE)

BANGLADESH WATER DEVELOPMENT BOARD	
OFFICE OF THE SUPERINTENDING ENGINEER	
DESIGN CIRCLE-8	
Protection of Morrelgonj Upazila Sadar & Adjacent Area from Erosion of Panguchi River &Re-excavation/Dredging of Biskhali River in Bagertat District.	
River Bank Protective Work From Sannashi to Khawlia From km 0.000 to km 4.500 = 4.500 km	
TYPICAL SECTION FOR KHAL ARMOURING	
DESIGNED BY:	RECOMMENDED BY:
(ZAYED BIN SAIF), AE	(MOHAMMAD SAIF UDDIN), SE
CHECKED BY :	APPROVED BY :
(JAKARIA PERVEZ), EE	(MD. ENAYET ULLAH), CE, Design
DATE: 23-11-2022	DWG NO.: DC-8-0314-10/18



DETAILS "Z"

(Not to Scale)



DETAILS "Y"

(Not to Scale)

BANGLADESH WATER DEVELOPMENT BOARD	
OFFICE OF THE SUPERINTENDING ENGINEER	
DESIGN CIRCLE-8	
Protection of Morrelgonj Upazila Sadar & Adjacent Area From Erosion of Panguchi River & Dredging of Biskhali River in Bagerhat District.	
River Bank Protective Work From Sannashi to Khawlia From km 0.000 to km 4.500 = 4.500 km	
DETAILS OF PROTECTIVE WORK	
DESIGNED BY:	RECOMMENDED BY:
(ZAYED BIN SAIF), AE	(MD. MAHFUZUR RAHMAN), SE
CHECKED BY :	APPROVED BY :
(JAKARIA PERVEZ), EE	(MD. ENAYET ULLAH), CE, Design
DATE: 23-11-2022	DWG NO.: DC-8-0314-11/18