

Bangladesh Water Development Board



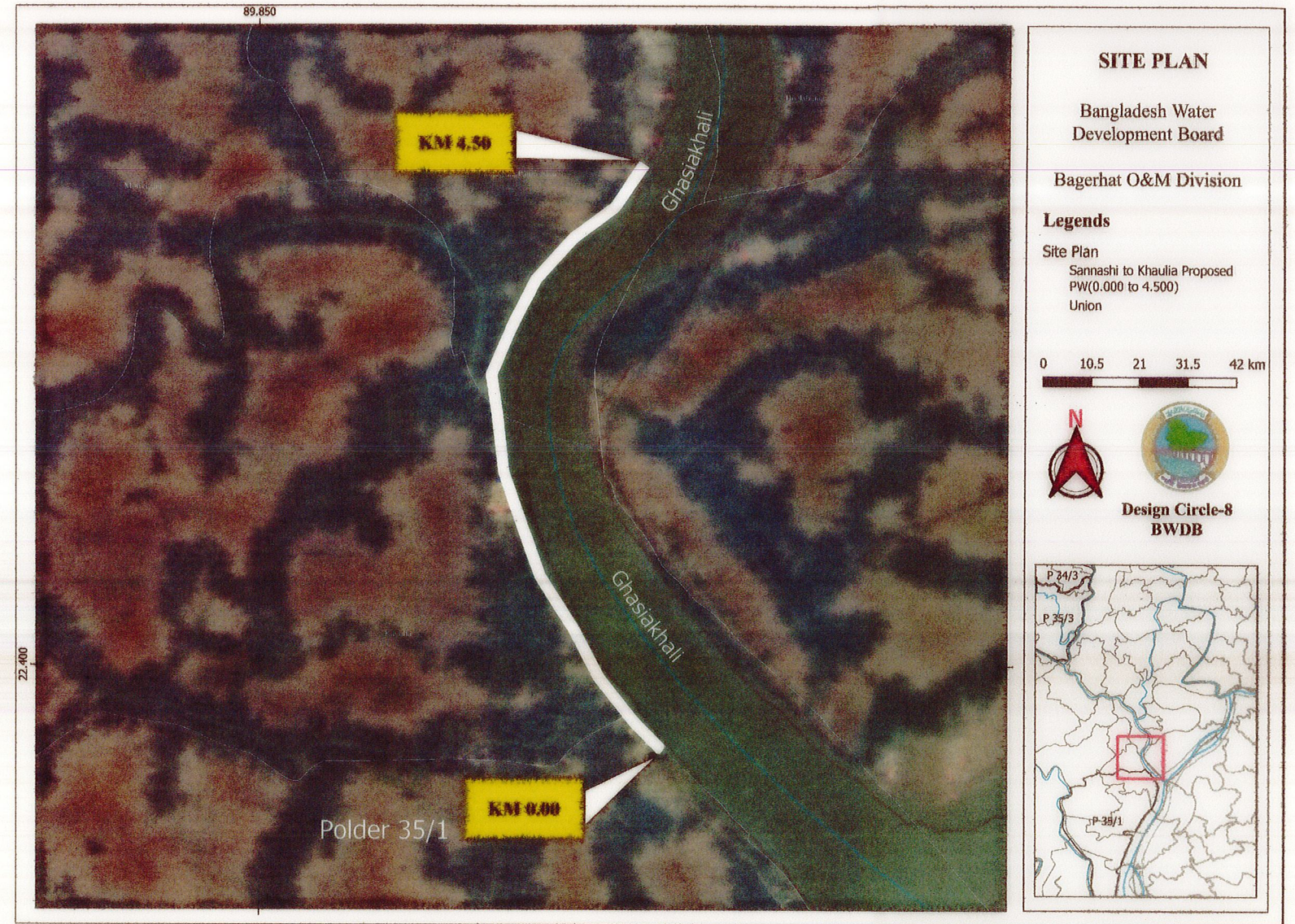
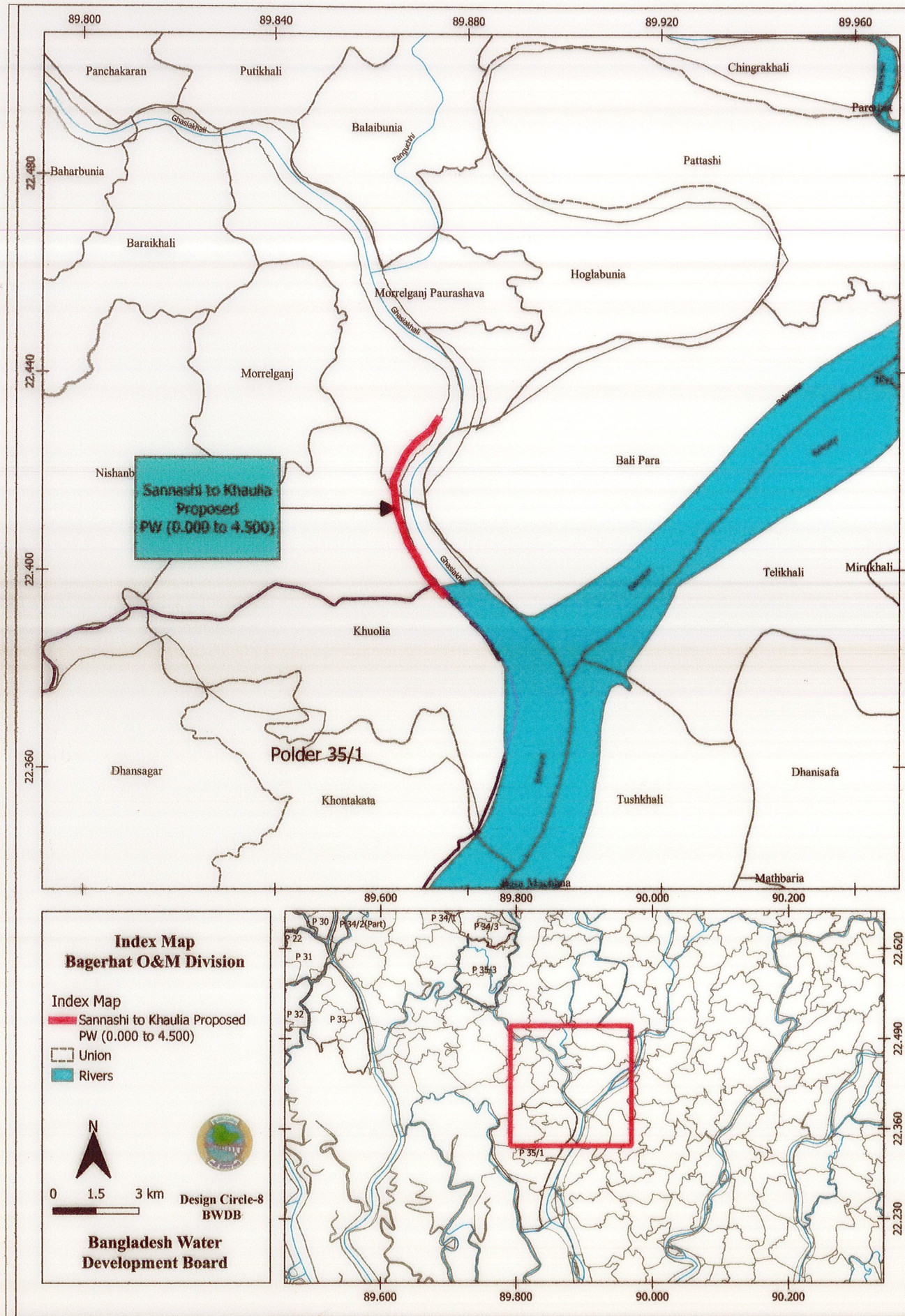
Protection of Morrelganj Upazila Sadar and adjacent areas from erosion of Panguchi river in Bagerhat District and Re-excavation/Dredging of Bishkhali river

**Design of Protective Work along the Right Bank of Panguchi
River 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

February, 2023


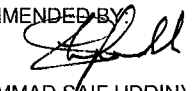
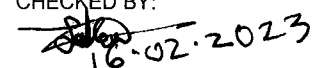



Bangladesh Water Development Board	
Office of The Superintending Engineer, Design Circle-8	
Protection of Morrelganj Upazila Sadar and adjacent areas from erosion of Panguchi river in Bagerhat District and Re-excavation/Dredging of Bishkhali river	
Design of Protective Work along the Right Bank of Panguchi River From Sannashi to Khawlia From km 0.000 to km 4.500 = 4.500 km	
INDEX MAP & SITE MAP	
DESIGNED BY: (SAKIB BIN RAFI), AE	RECOMMENDED BY: (MOHAMMAD SAIF UDDIN), SE
CHECKED BY: (JAKARIA PERVEZ), EE	APPROVED BY: (MD. ENAYET ULLAH), CE, DESIGN
DATE: 16-02-2023	Drawing No: DC-8-0344-01/17

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:.

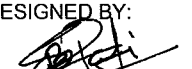

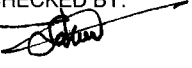

1. CONCRETE FOR C.C BLOCK SHALL HAVE MINIMUM CYLINDER STRENGTH OF 15.00N/mm² AT 28 DAYS.
2. CURING OF C.C BLOCKS SHALL BE CONTINUED FOR 21 DAYS
3. THE PITCHING WORK SHALL BE PLACED ON PROPERLY COMPACTED SLOPE.
1. EACH BAG DELIVERED AT SITE SHALL BE MARKED WITH LABELS THAT IDENTIFY BRAND NAME, CONTRACT 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. SURVEY BOAT EQUIPPED WITH NECESSARY DUMPING EQUIPMENT, SURVEY EQUIPMENT & SURVEY TEAM SHOULD BE ENSURED AT SITE BEFORE START OF DUMPING.
3. DUMPING MATERIALS SHALL BE DUMPED FROM BARGE EQUIPPED WITH GUIDED FENCE SO THAT DUMPING MATERIALS CAN BE DUMPED INTO PROPER POSITION.

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CHECKED BY:  (JAKARIA PERVEZ), EE	APPROVED BY:  (MD. ENAYET ULLAH), CE, DESIGN
DATE: 16-02-2023	Drawing No: DC-8-0344-02/17

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 PONTOON OR BOAT.
6. SPECIAL CARE SHALL BE TAKEN FOR ANCHORING OF DUMPING PONTOON/ 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 40-488-60

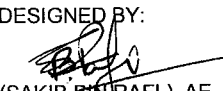
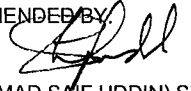
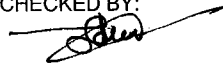

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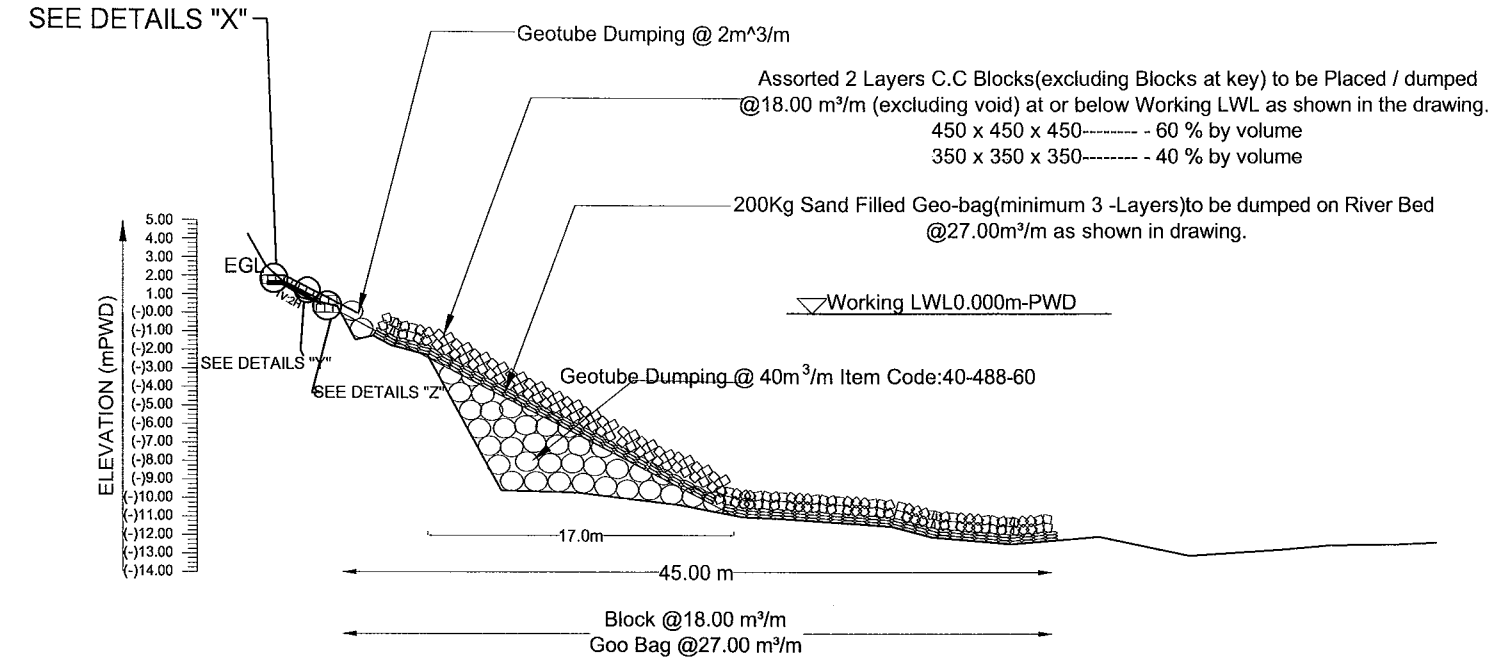
Special Notes For Revised Bathymetric Survey :

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.

Special Notes


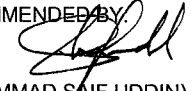


1. THIS DRAWING SUPERSEDES PREVIOUSLY APPROVED DRAWING NO. DC-80332. DATED 10/01/2023. SO THE DRAWING NO. DC-8-0332 WILL BE TREATED AS VOID.

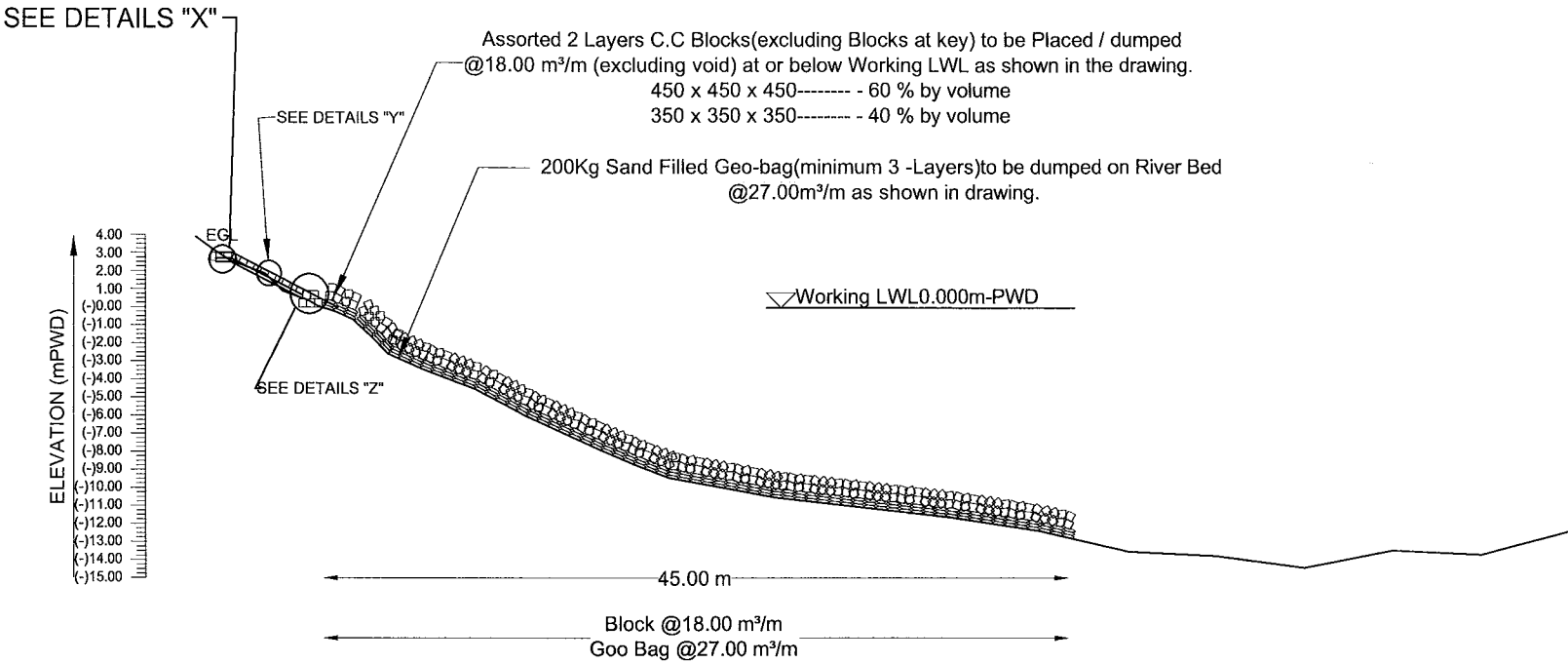
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Existing Bed Level in (mPWD)	4.234	2.555	0.804	0.344	-1.456	-1.236	-1.756	-2.256	-9.580	-9.700	-10.350	-11.010	-11.100	-11.400	-11.530	-12.090	-12.460	-12.070	-13.080	-12.760	-12.520	-12.480	-12.370
Distance(m)	11.004	12.004	14.005	16.006	17.006	18.007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


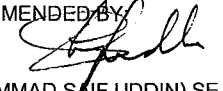
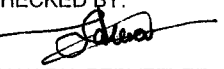

TYPICAL CROSS SECTION AT KM 0.000
(APPLICABLE FROM KM 0.000 TO KM 0.070)

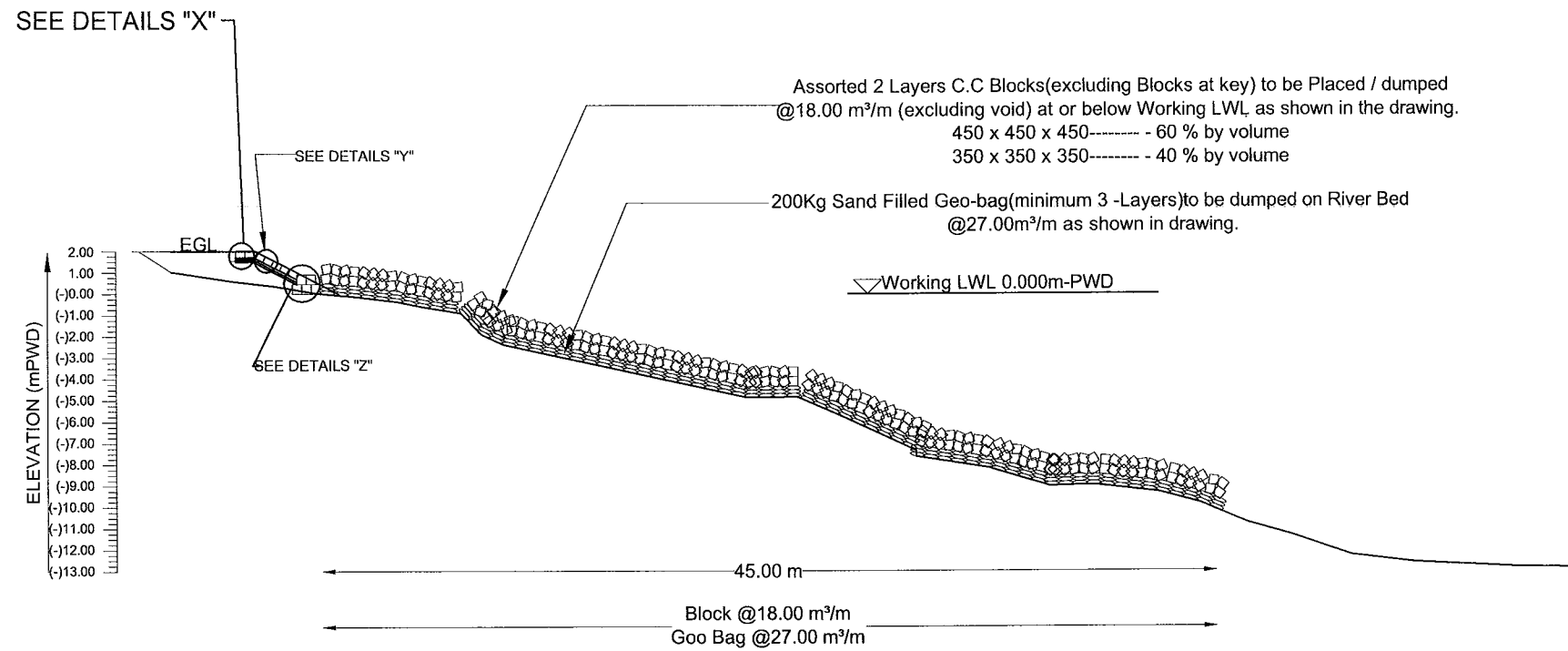
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Existing Bed Level in (mPWD)	3.893	3.203	2.573	1.843	0.881	0.341	(-)0.249	(-)0.679	(-)1.579	(-)2.579	(-)3.429	(-)4.529	(-)6.049	(-)7.829	(-)8.679	(-)9.429	(-)10.529	(-)11.629	(-)12.379	(-)13.529	(-)13.779	(-)14.429	(-)13.479	(-)13.729	(-)12.429
Distance(m)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


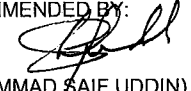
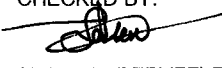
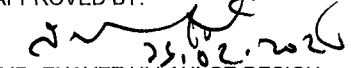
TYPICAL CROSS SECTION AT KM 0.080
(APPLICABLE FROM KM 0.070 TO KM 0.190)

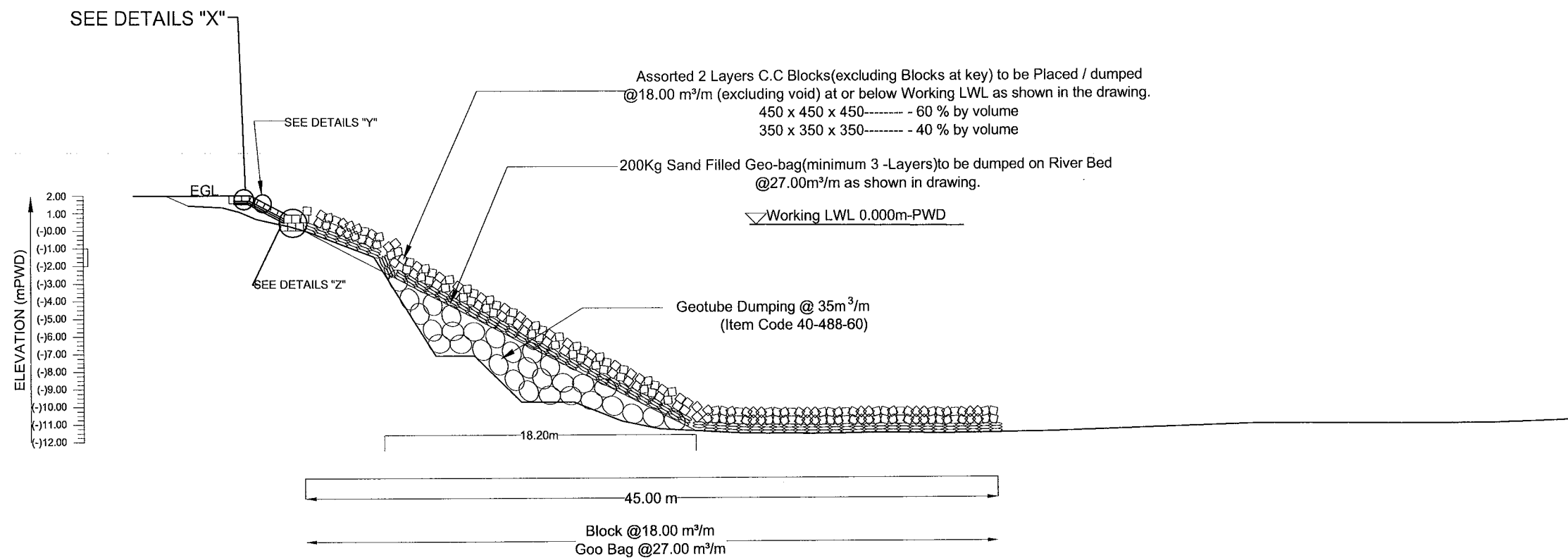
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Existing Bed Level in (mPWD)	1.027	0.582	0.357	0.017	(-)0.153	(-)0.393	(-)0.593	(-)0.903	(-)1.923	(-)2.383	(-)4.860	(-)4.840	(-)5.800	(-)7.360	(-)8.190	(-)9.030	(-)9.980	(-)9.310	(-)9.840	(-)10.750	(-)11.370	(-)12.310	(-)12.660	(-)12.900	(-)12.930
Distance(m)	29.000	32.000	34.000	36.000	38.000	40.000	41.000	43.000	44.000	45.000	56.732	59.159	61.412	64.801	68.401	71.202	73.401	76.409	78.401	80.603	82.806	85.603	88.614	93.401	96.016

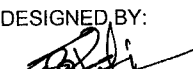

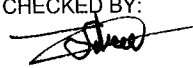
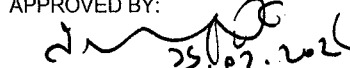
TYPICAL CROSS SECTION AT KM 0.200
(APPLICABLE FROM KM 0.190 TO KM 1.050)

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

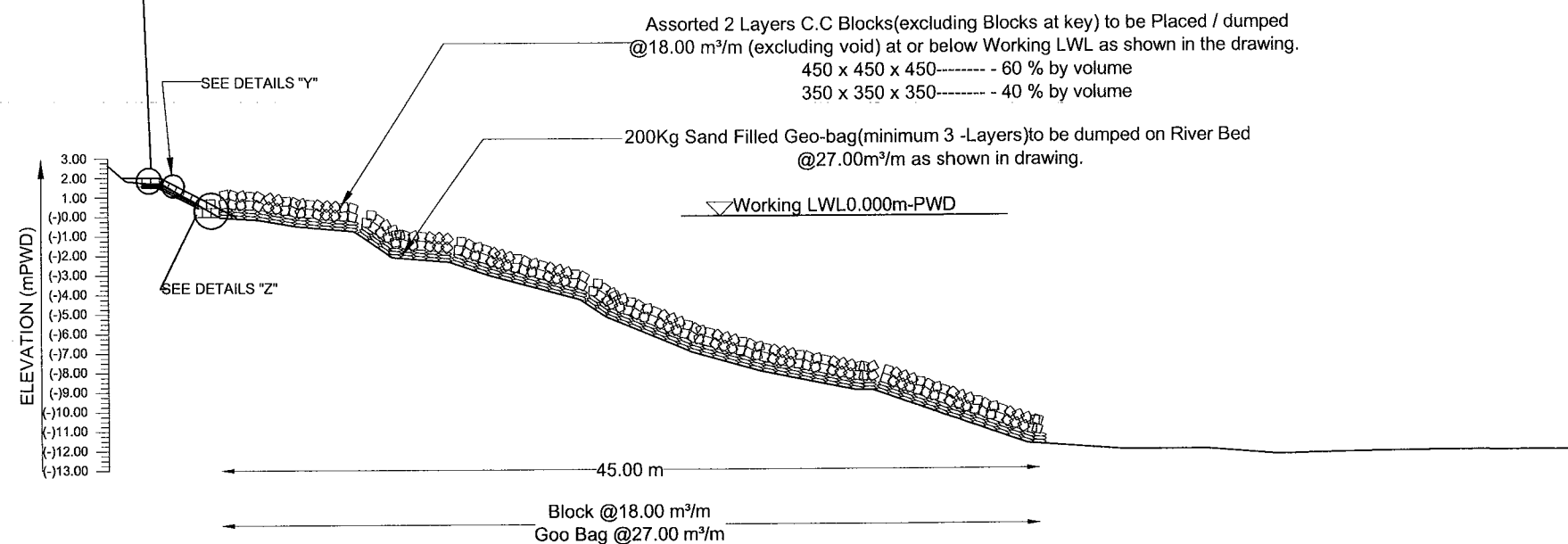
TYPICAL CROSS SECTION AT KM 1.100
(APPLICABLE FROM KM 1.050 TO KM 1.140)

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SEE DETAILS "X"

SEE DETAILS "Y"

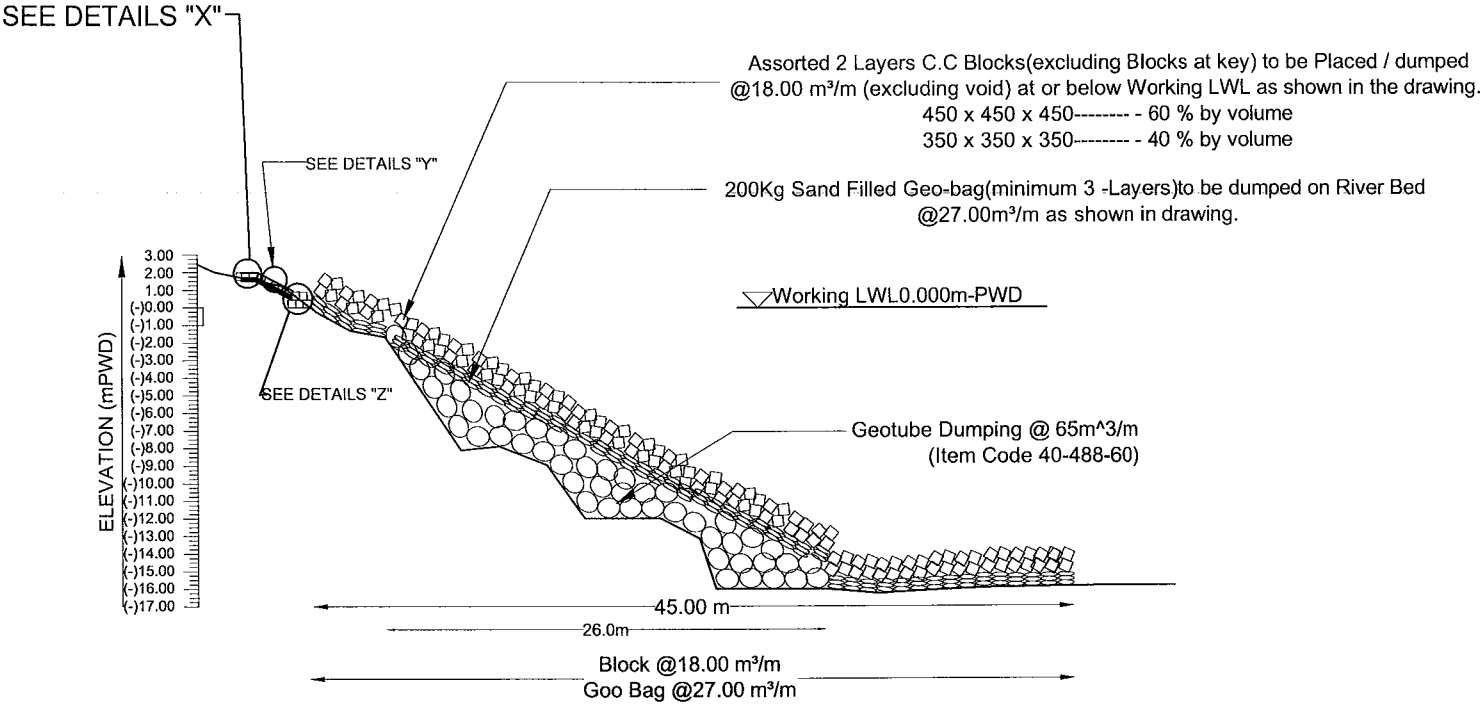
SEE DETAILS "Z"



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


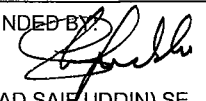
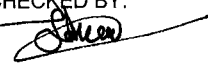

TYPICAL CROSS SECTION AT KM 1.400
(APPLICABLE FROM KM 1.140 TO KM 1.850)

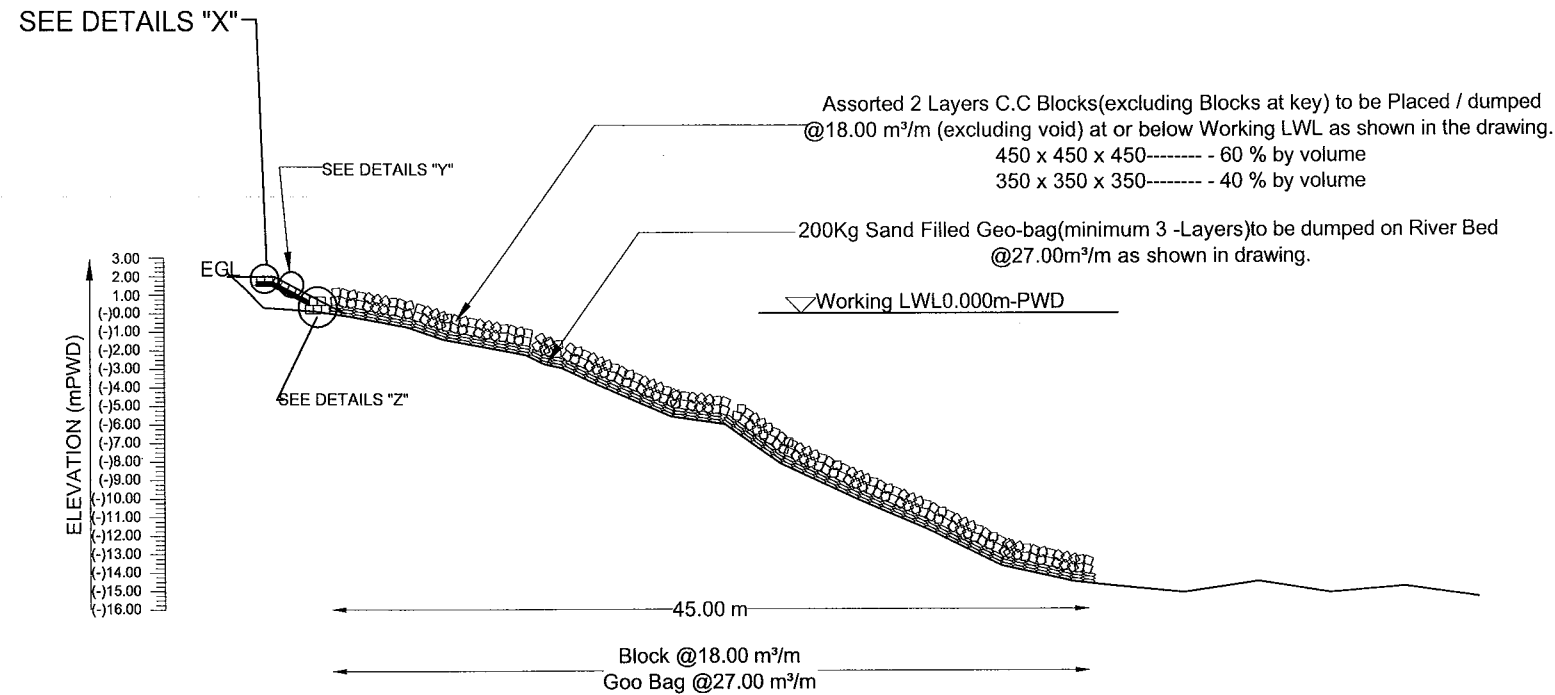
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DESIGNED BY: (SAKIB BIN RAFI), AE	RECOMMENDED BY: (MOHAMMAD SAIF UDDIN), SE
CHECKED BY: (JAKARIA PERVEZ), EE	APPROVED BY: (MD. ENAYET ULLAH), CE, DESIGN
DATE: 16-02-2023	Drawing No: DC-8-0344-09/17



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


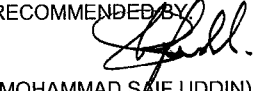
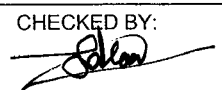
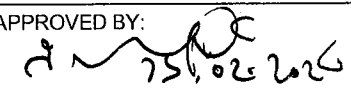
TYPICAL CROSS SECTION AT KM 1.900
(APPLICABLE FROM KM 1.850 TO KM 1.940)

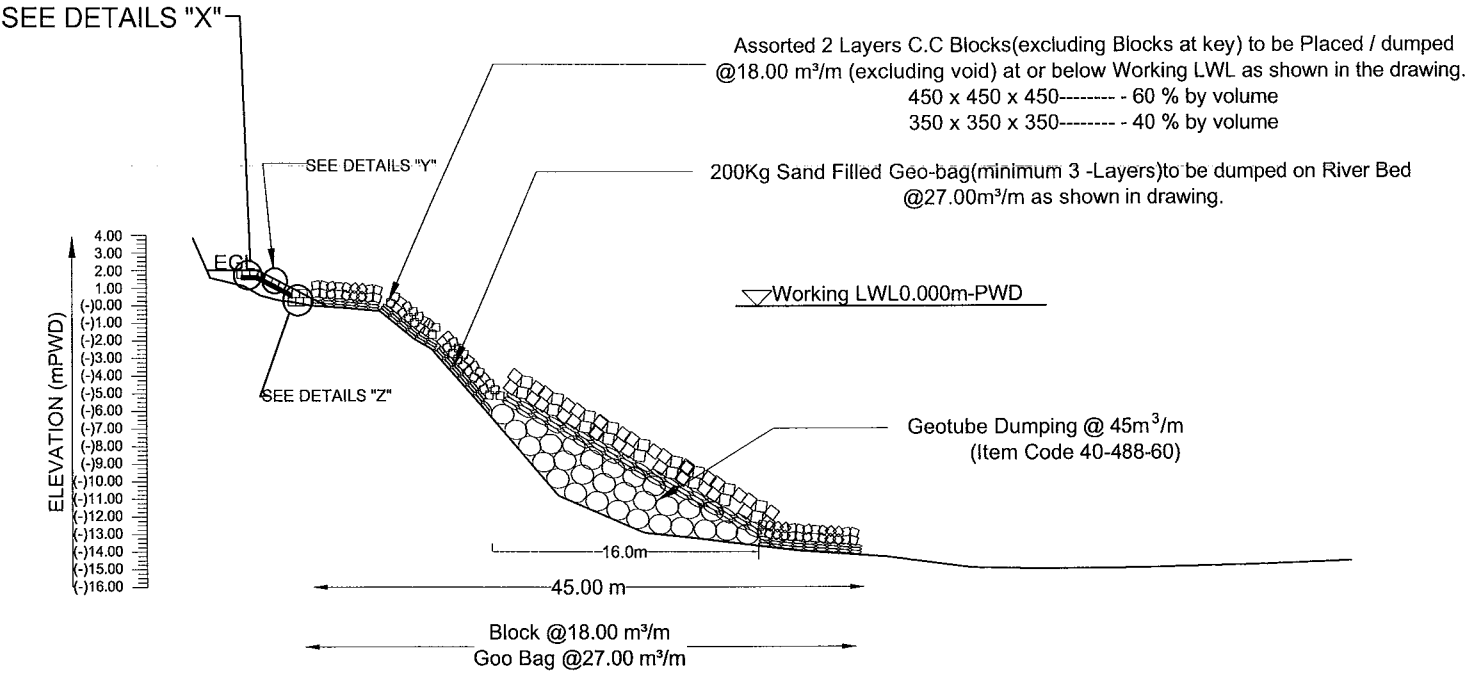
Bangladesh Water Development Board	
Office of The Superintending Enginner,Design Circle-8	
Protection of Morrelganj Upazila Sadar and adjacent areas from erosion of Panguchi river in Bagerhat District and Re-excavation/Dredging of Bishkhali river	
Design of Protective Work along the Right Bank of Panguchi River 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:  (SAKIB BIN RAFI), AE	RECOMMENDED BY:  (MOHAMMAD SAIF UDDIN),SE
CHECKED BY:  (JAKARIA PERVEZ),EE	APPROVED BY:  (MD. ENAYET ULLAH),CE,DESIGN
DATE:16-02-2023	Drawing No:DC-8-0344-10/17



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


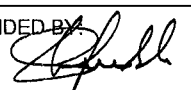
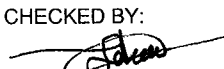

TYPICAL CROSS SECTION AT KM 2.500
(APPLICABLE FROM KM 1.940 TO KM 2.650)

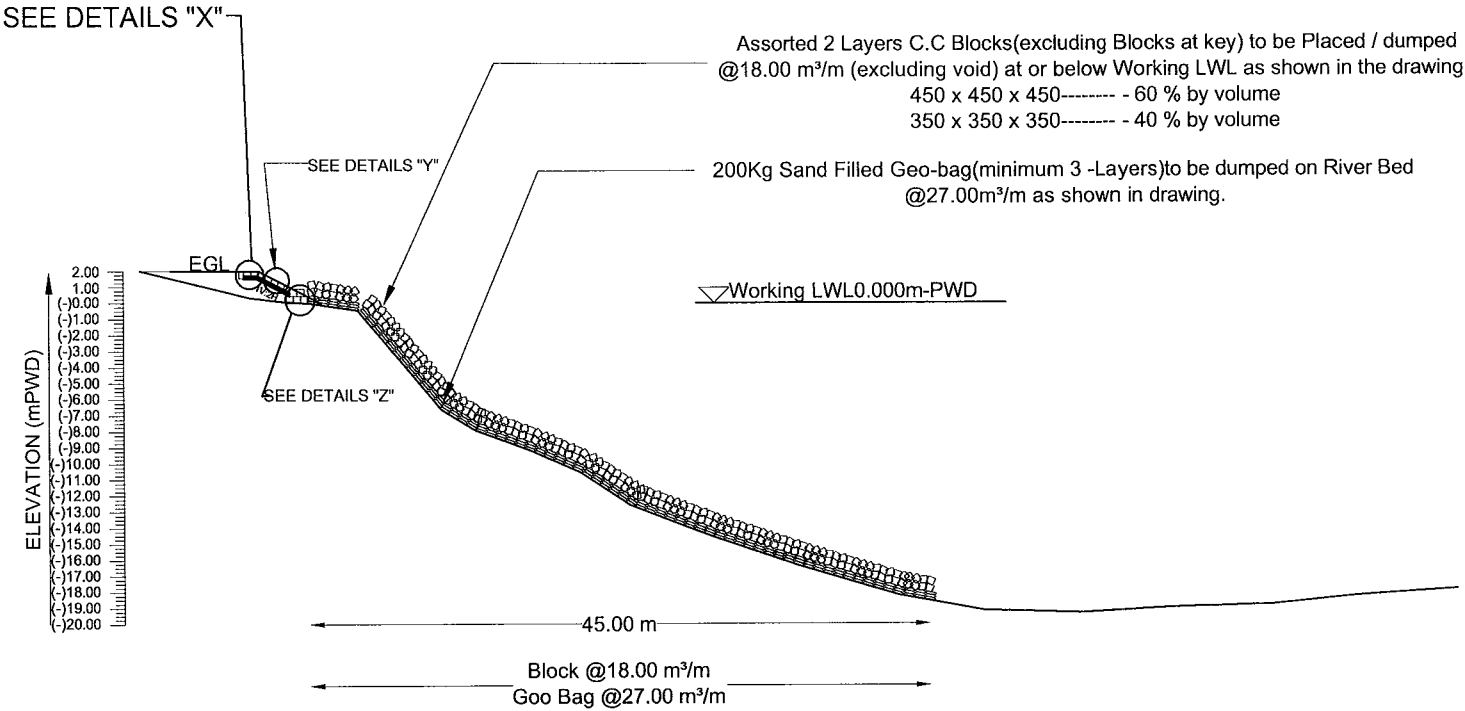
Bangladesh Water Development Board	
Office of The Superintending Engineer,Design Circle-8	
Protection of Morrelganj Upazila Sadar and adjacent areas from erosion of Panguchi river in Bagerhat District and Re-excavation/Dredging of Bishkhali river	
Design of Protective Work along the Right Bank of Panguchi River From Sannashi to Khawlia From km 0.000 to km 4.500 = 4.500 km	
TYPICAL CROSS SECTION OF FROM SANNASHI TO KHALIA PROTECTIVE WORK	
DESIGNED BY:  (SAKIB BIN RAFI), AE	RECOMMENDED BY:  (MOHAMMAD SAIF UDDIN),SE
CHECKED BY:  (JAKARIA PERVEZ),EE	APPROVED BY:  (MD. ENAYET ULLAH),CE,DESIGN
DATE:16-02-2023	Drawing No:DC-8-0344-11/17



Existing Bed Level in (mPWD)	3.839	1.582	1.102	0.957	0.297	0.167	(-0.013)	(-0.143)	(-0.323)	(-1.893)	(-2.443)	(-10.800)	(-15.840)	(-12.910)	(-13.220)	(-13.940)	(-14.290)	(-14.920)	(-15.010)	(-14.970)	(-14.780)	(-14.580)
Distance(m)	26.001	27.001	29.001	30.001	31.001	32.001	33.001	35.001	37.001	39.001	40.001	47.381	49.381	52.381	55.381	61.380	66.380	71.380	75.380	81.379	88.379	93.379


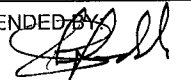
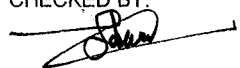

TYPICAL CROSS SECTION AT KM 2.700
(APPLICABLE FROM KM 2.650 TO KM 2.740)

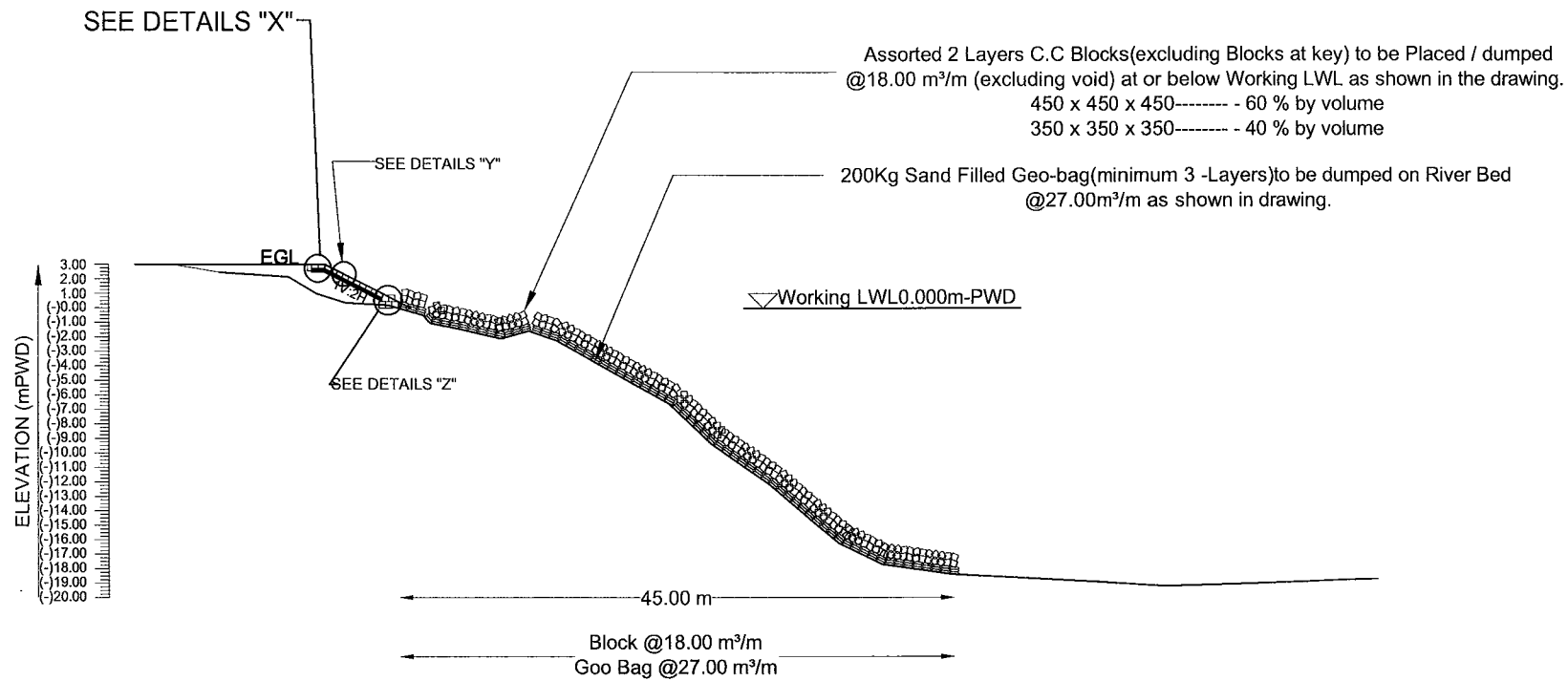
Bangladesh Water Development Board	
Office of The Superintending Enginner,Design Circle-8	
Protection of Morrelganj Upazila Sadar and adjacent areas from erosion of Panguchi river in Bagerhat District and Re-excavation/Dredging of Bishkhali river	
Design of Protective Work along the Right Bank of Panguchi River 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:  (SAKIB BIN RAFI), AE	RECOMMENDED BY:  (MOHAMMAD SAIF UDDIN), SE
CHECKED BY:  (JAKARIA PERVEZ),EE	APPROVED BY:  (MD. ENAYET ULLAH),CE,DESIGN
DATE:16-02-2023	Drawing No:DC-8-0344-12/17



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


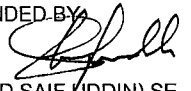
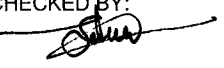

TYPICAL CROSS SECTION AT KM 3.300
(APPLICABLE FROM KM 2.740 TO KM 3.550)

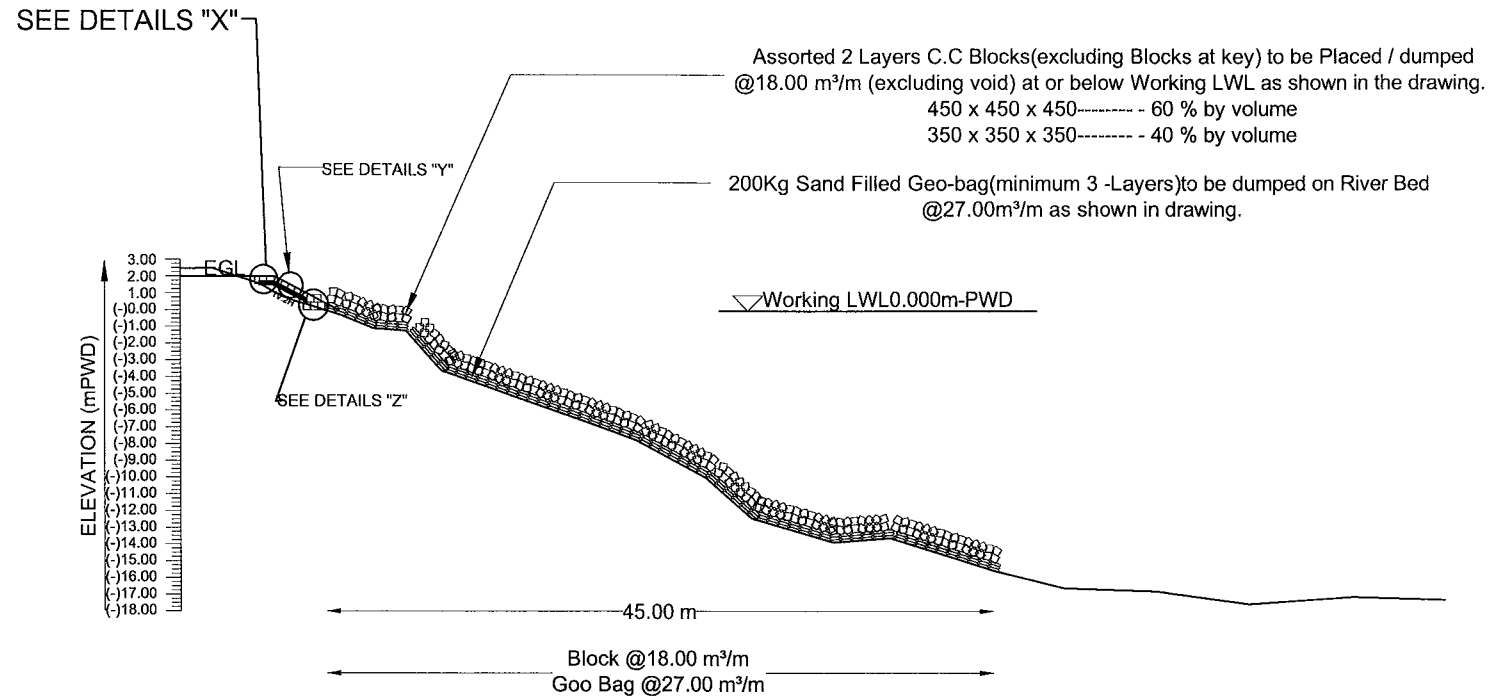
Bangladesh Water Development Board	
Office of The Superintending Engineer,Design Circle-8	
Protection of Morrelganj Upazila Sadar and adjacent areas from erosion of Panguchi river in Bagerhat District and Re-excavation/Dredging of Bishkhali river	
Design of Protective Work along the Right Bank of Panguchi River 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:  (SAKIB BIN RAFI), AE	RECOMMENDED BY:  (MOHAMMAD SAIF UDDIN),SE
CHECKED BY:  (JAKARIA PERVEZ),EE	APPROVED BY:  (MD. ENAYET ULLAH),CE,DESIGN
DATE:16-02-2023	Drawing No:DC-8-0344-13/17



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

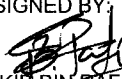
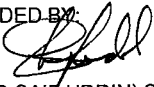
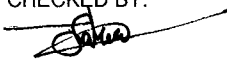

TYPICAL CROSS SECTION AT KM 3.580
(APPLICABLE FROM KM 3.550 TO KM 3.640)

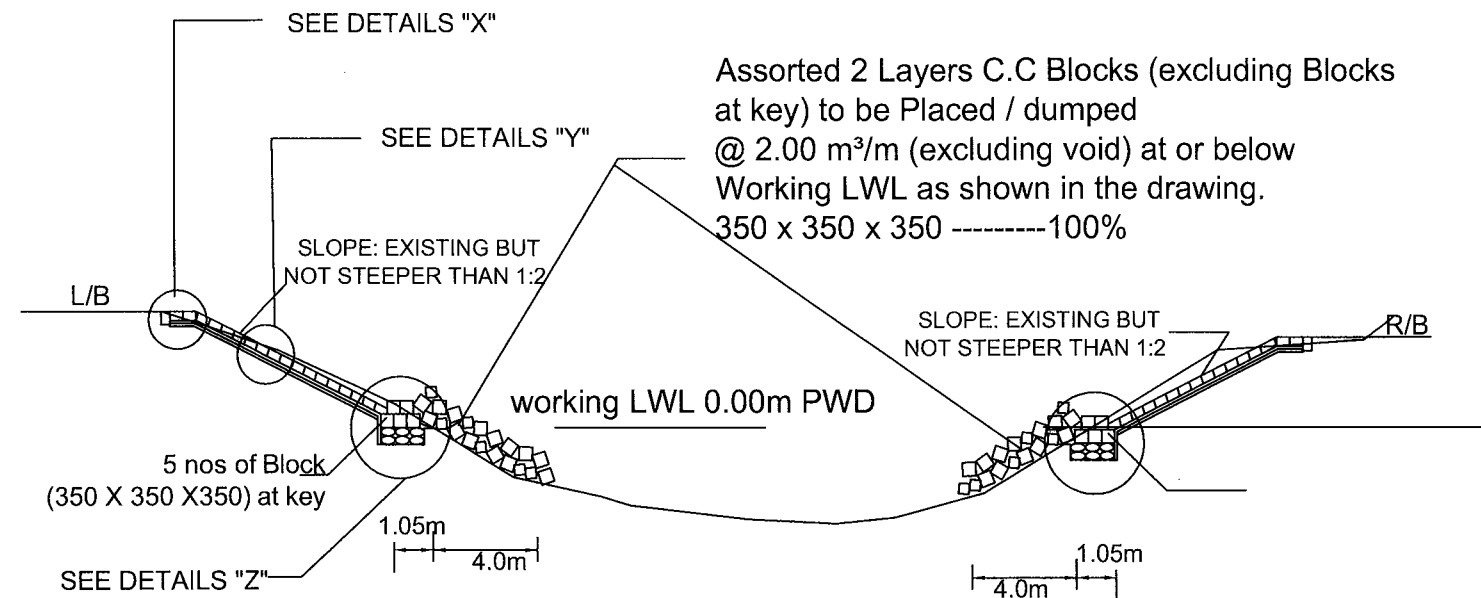
Bangladesh Water Development Board	
Office of The Superintending Enginner,Design Circle-8	
Protection of Morrelganj Upazila Sadar and adjacent areas from erosion of Panguchi river in Bagerhat District and Re-excavation/Dredging of Bishkhali river	
Design of Protective Work along the Right Bank of Panguchi River From Sannashi to Khawlia From km 0.000 to km 4.500 = 4.500 km	
TYPICAL CROSS SECTION OF PROTECTIVE WORK FROM SANNASHI TO KHALIA	
DESIGNED BY:  (SAKIB BIN RAFI), AE	RECOMMENDED BY:  (MOHAMMAD SAIF UDDIN),SE
CHECKED BY:  (JAKARIA PERVEZ),EE	APPROVED BY:  (MD. ENAYET ULLAH),CE,DESIGN
DATE:16-02-2023	Drawing No:DC-8-0344-14/17



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

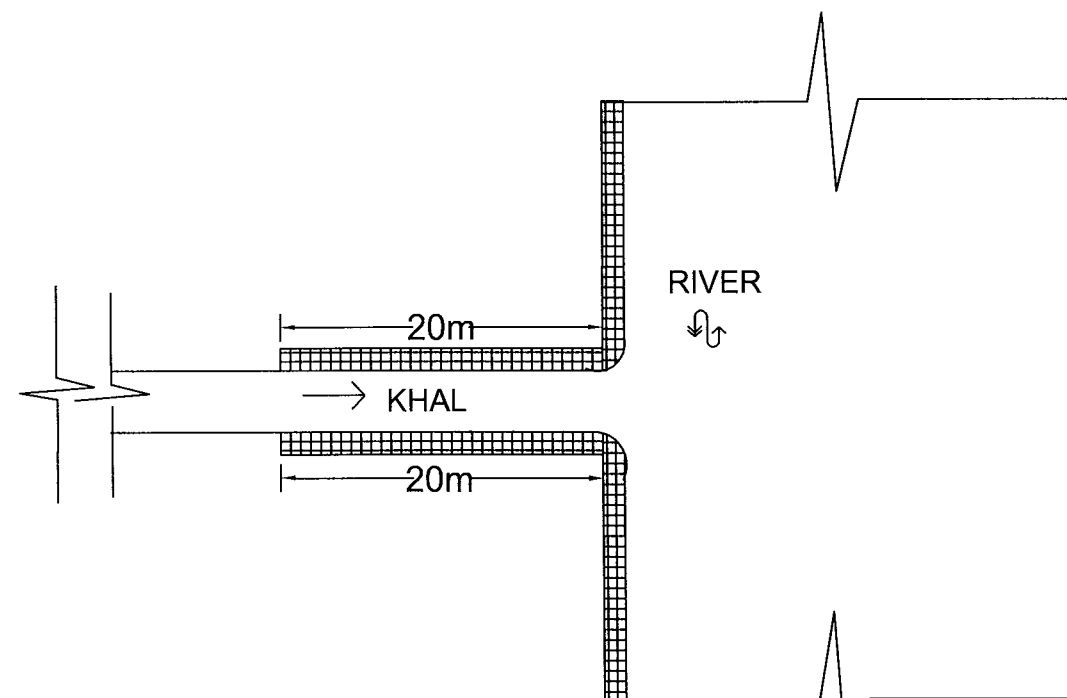
TYPICAL CROSS SECTION AT KM 4.200
(APPLICABLE FROM KM 3.640 TO KM 4.500)

Bangladesh Water Development Board	
Office of The Superintending Engineer, Design Circle-8	
Protection of Morrelganj Upazila Sadar and adjacent areas from erosion of Panguchi river in Bagerhat District and Re-excavation/Dredging of Bishkhali river	
Design of Protective Work along the Right Bank of Panguchi River 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:  (SAKIB BIN RAFI), AE	RECOMMENDED BY:  (MOHAMMAD SAIF UDDIN), SE
CHECKED BY:  (JAKARIA PERVEZ), EE	APPROVED BY:  (MD. ENAYET ULLAH), CE, DESIGN
DATE: 05-02-2023	Drawing No: DC-8-0344-15/17




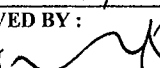


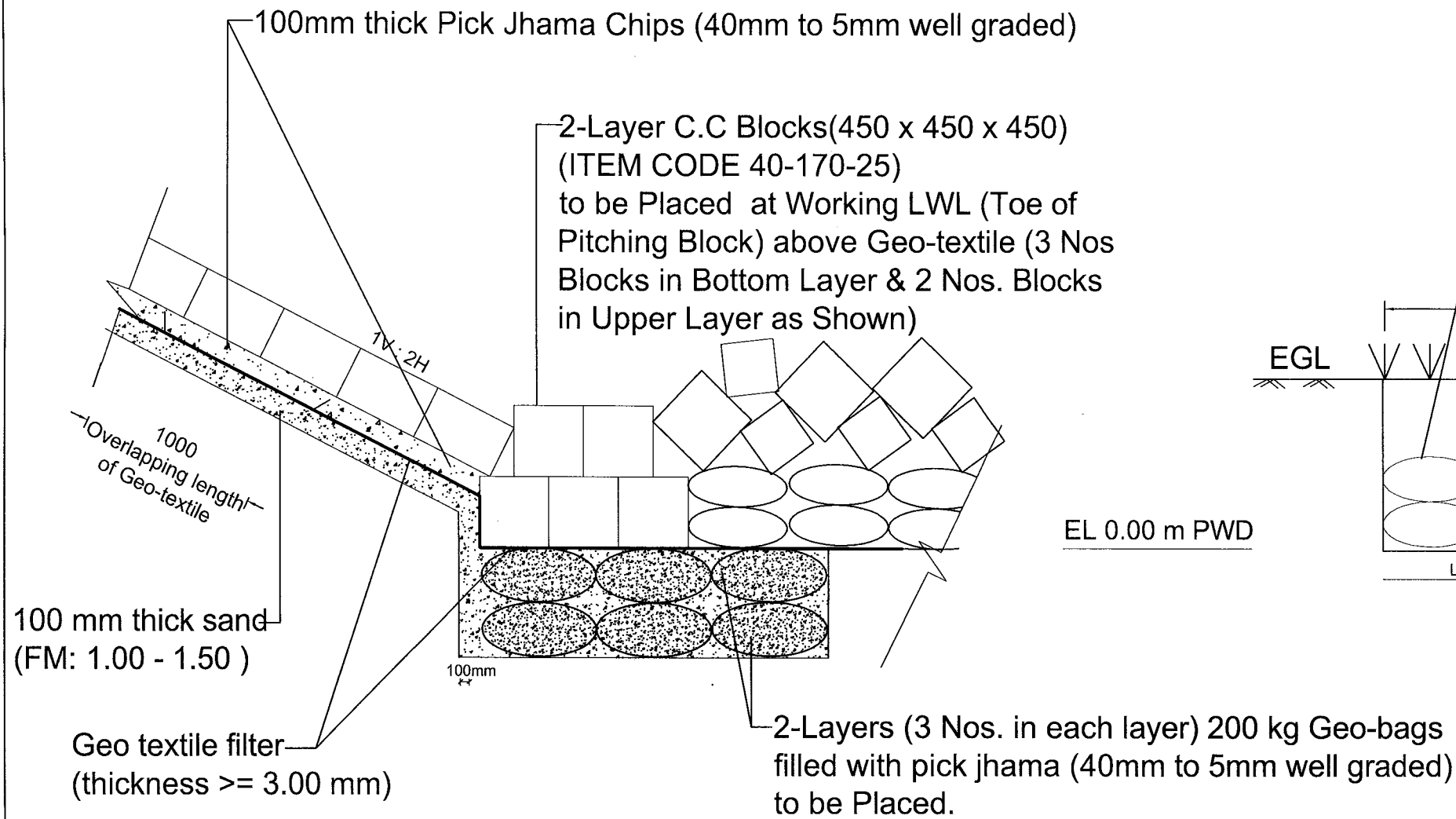
TYPICAL X-SECTION FOR ARMOURING OF PROTECTIVE WORK AT CONFLUENCE OF KHAL

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

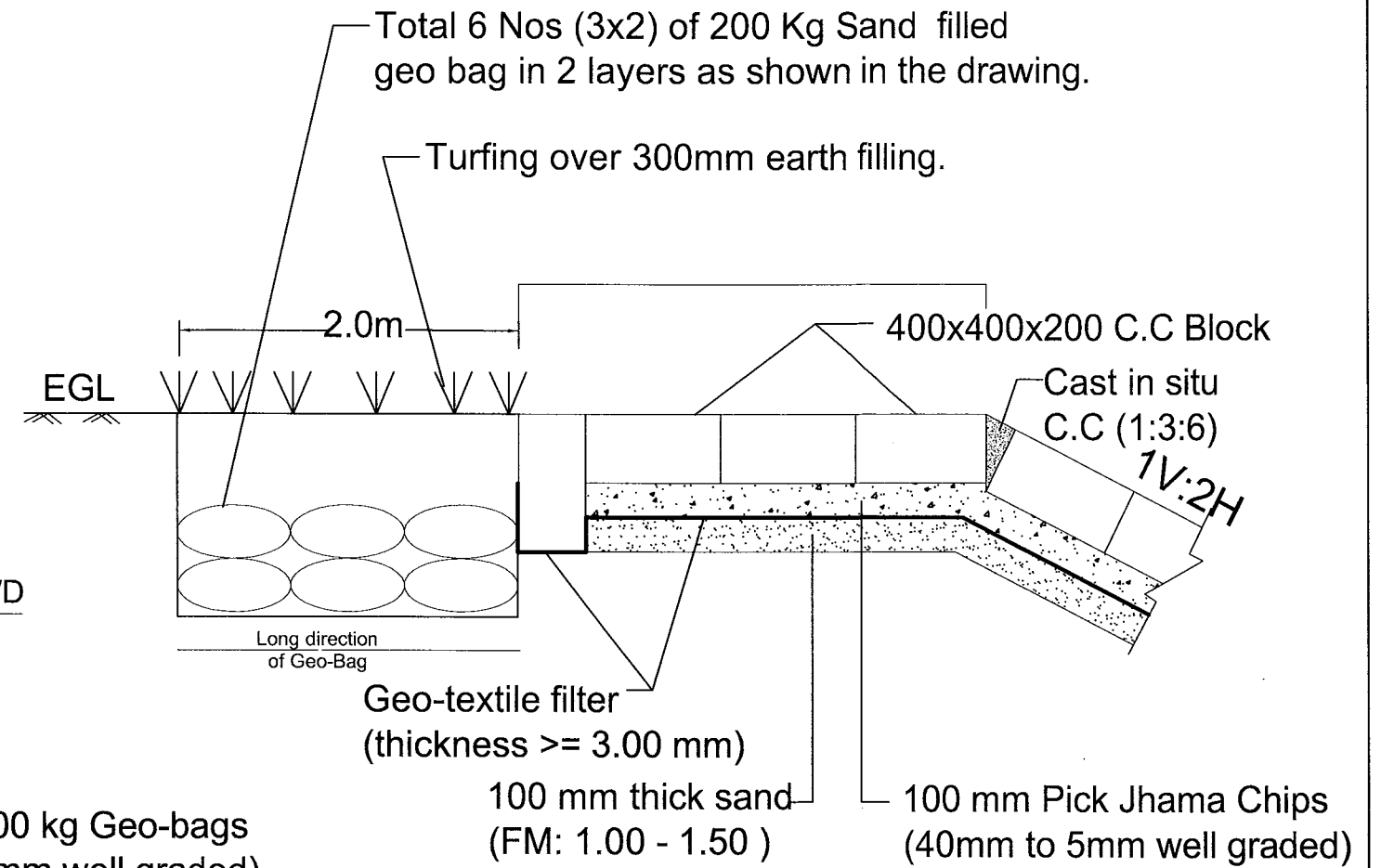


PLAN OF ARMOURING OF KHAL
(NOT TO SCALE)

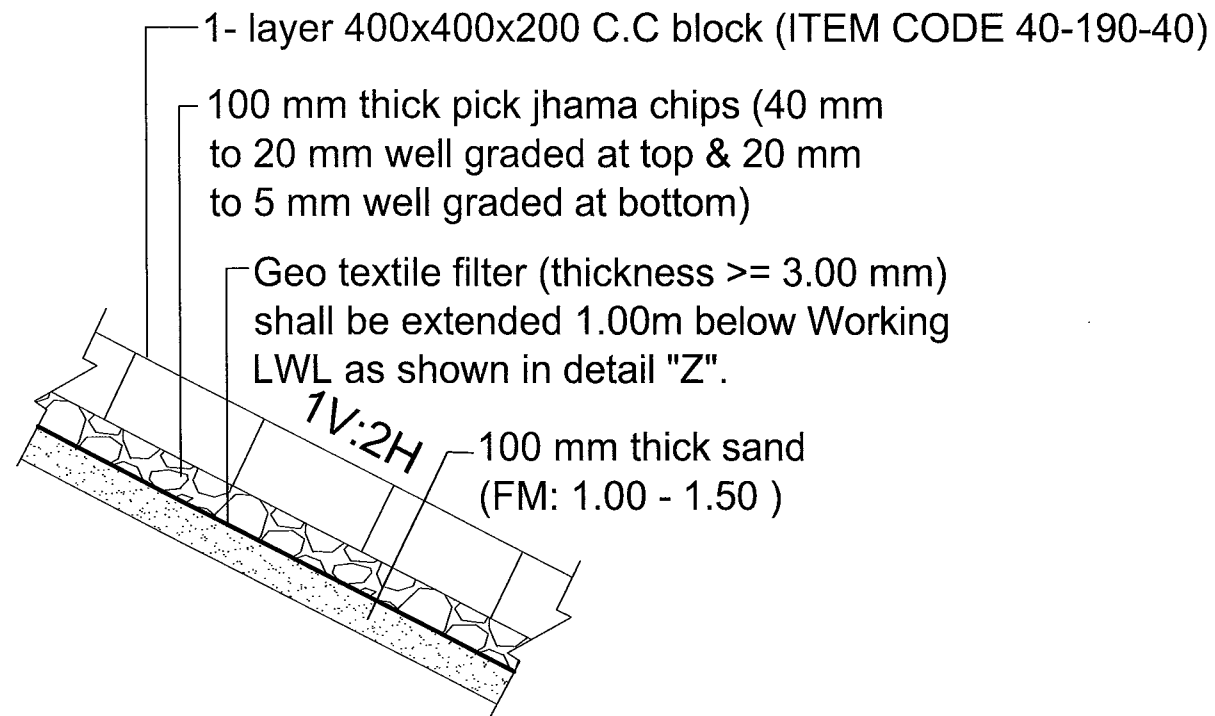
BANGLADESH WATER DEVELOPMENT BOARD	
OFFICE OF THE SUPERINTENDING ENGINEER	
DESIGN CIRCLE-8	
Protection of Morrelgonj Upazila Sadar & Adjacent Area from Erosion of Panguchi River & Re-excavation/Dredging of Biskhalli River in Bagerhat District.	
Design of Protective Work along the Right Bank of Panguchi River From Sannashi to Khawlia From km 0.000 to km 4.500 = 4.500 km	
TYPICAL SECTION FOR KHAL ARMOURING	
DESIGNED BY:  (SAKIB BIN RAFI), AE	RECOMMENDED BY:  (MOHAMMAD SAIF UDDIN), SE
CHECKED BY:  (JAKARIA PERVEZ), EE	APPROVED BY:  (MD. ENAYET ULLAH), CE, Design
DATE: 16-02-2023	DWG NO.: DC-8-0344-16/17



DETAILS "Z"
(Not to Scale)


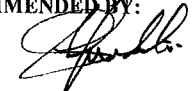




DETAILS "X"
(Not to Scale)



DETAILS "Y"
(Not to Scale)

Scale: 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.	
Design of Protective Work along the Right Bank of Panguchi River From Sannashi to Khawlia From km 0.000 to km 4.500 = 4.500 km	
DETAILS OF PROTECTIVE WORK	
DESIGNED BY:  (SAKIB BIN RAFI), AE	RECOMMENDED BY:  (MOHAMMAD SAIF UDDIN), SE
CHECKED BY:  (JAKARIA PERVEZ), EE	APPROVED BY:  (MD. ENAYET ULLAH), CE, Design
DATE:16-02-2023	DWG NO.: DC-8-0344-17/17