

# Bangladesh Water Development Board



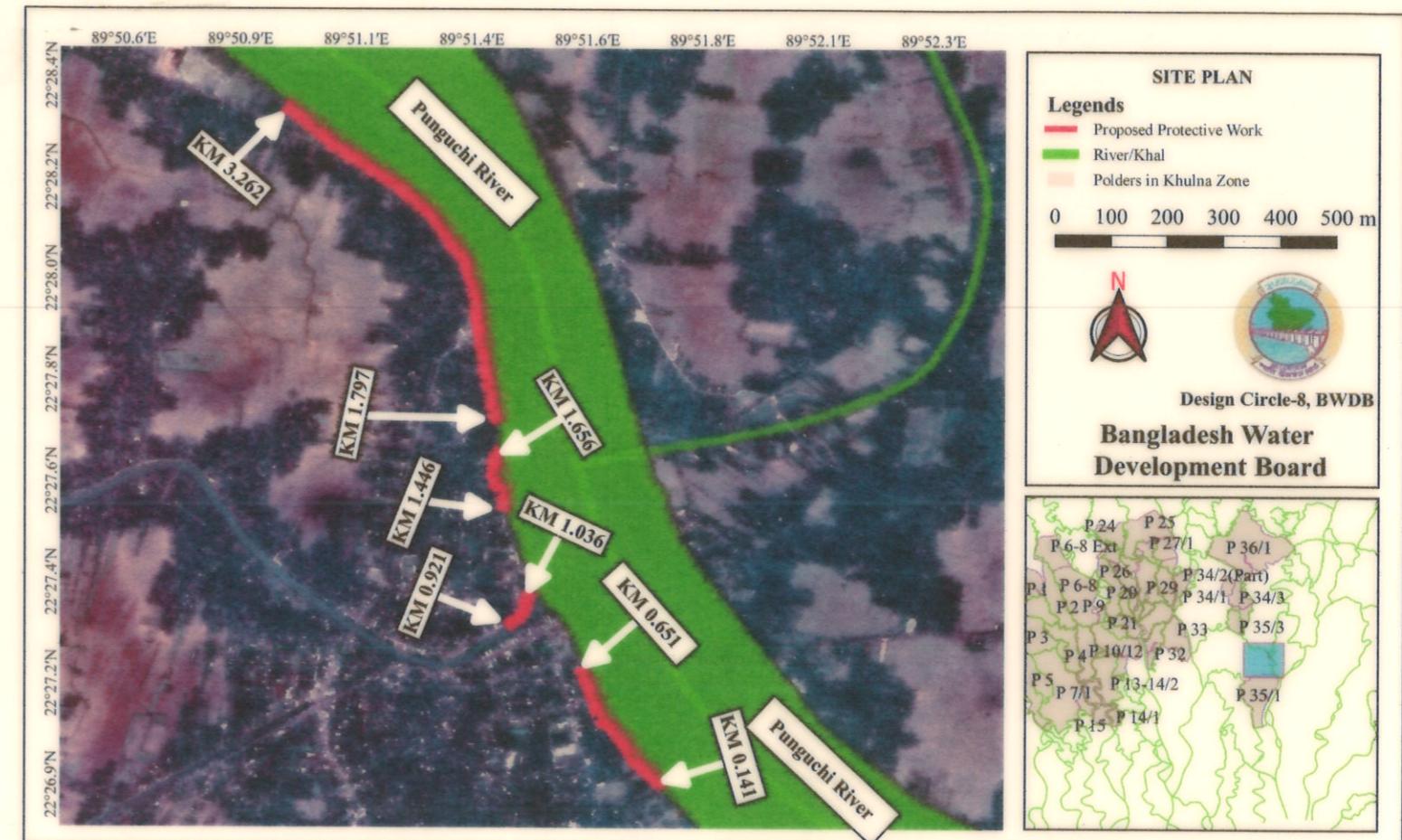
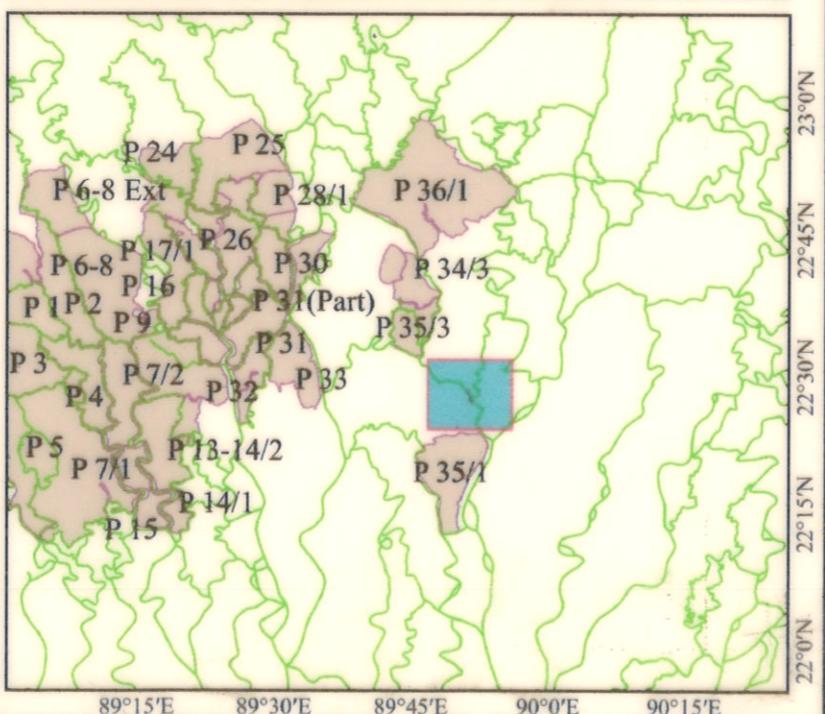
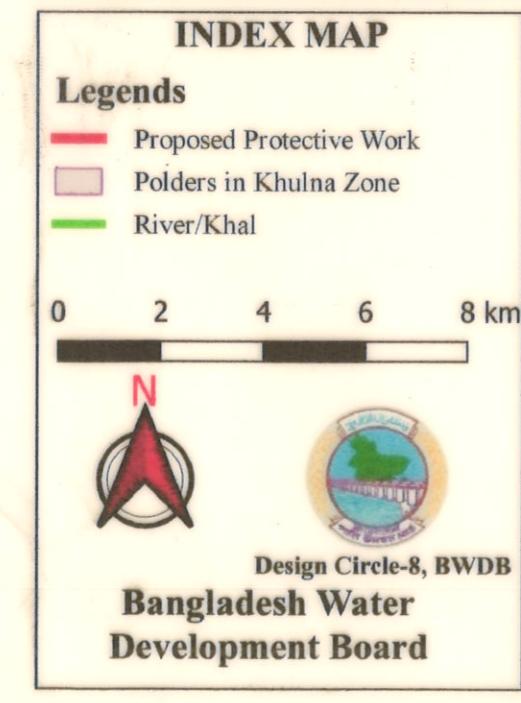
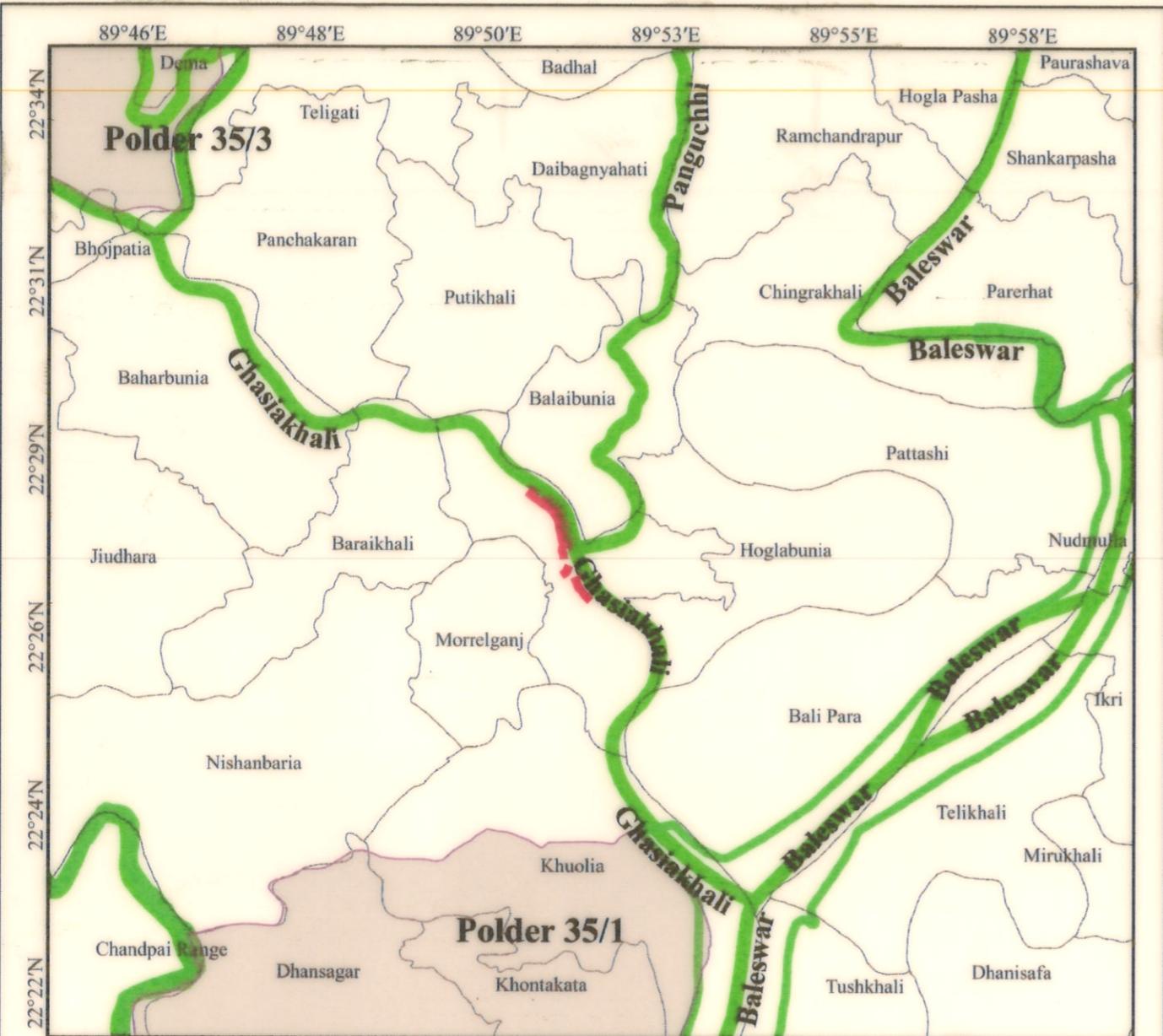
Protection of Morrelgonj Upazila Sadar & Adjacent Area from Erosion of Panguchi River &  
Re-excavation/Dredging of Biskhali River in Bagerhat District.

Design of River Bank Protective Work of Adjacent Area of Morrelgonj Ferry Ghat in between KM 0.000 To KM 3.262 Total 2300m  
Along The Right Bank of Panguchi River  
at Upazila-Morrelgonj, District-Bagerhat under Bagerhat O & M Division, BWDB, Bagerhat.

Bagerhat O & M Division, BWDB, Bagerhat.

Designed by: Design Circle-8, BWDB, Dhaka.

October, 2002



<b>BANGLADESH WATER DEVELOPMENT BOARD</b>	
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 Bagerhat District.	
Design of River Bank Protective Work of Adjacent Area of Morrelgonj Ferry Ghat in between KM 0.000 To KM 3.262 Total 2300m Along The Right Bank of Panguchi River at Upazila-Morrelgonj, District-Bagerhat under Bagerhat O & M Division, BWDB, Bagerhat.	
<b>SITE PLAN &amp; INDEX MAP</b>	
DESIGNED BY:  <i>[Signature]</i> (ZAYED BIN SAIF), AE	RECOMMENDED BY:  <i>[Signature]</i> (MOHAMMAD SAIF UDDIN), SE
CHECKED BY:  <i>[Signature]</i> (JAKARIA PERVEZ), EE	APPROVED BY:  <i>[Signature]</i> (MD. ENAYET ULLAL), CE, Design
DATE: 23-11-2022 DWG NO.: DC-8-0314-01/18	

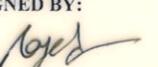
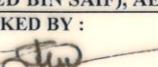
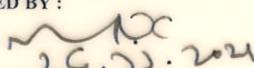
GENERAL NOTES :

1. THIS DRAWING FOR DPP HAS BEEN PREPARED BASED ON DATA SENT BY THE SUPERINTENDING ENGINEER, KHULNA O & M CIRCLE, BWDB, KHULNA VIDE MEMO NO: 852, DATED-10/12/2019.
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.
11. SAND LAYER BELOW GEO-TEXTILE SHALL BE MADE BY USING SAND OF F.M. 1.0 TO 1.50.
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.

SPECIAL NOTES:

1. FOR SUSTAINABILITY OF THE WORK IN THE PROPOSED LENGTH OF PROTECTION, ALL DUMPING AND PITCHING WORK SHALL BE COMPLETED IN THE DRY SEASON. UNDER NO CIRCUMSTANCES, DUMPING WORK SHALL BE DONE DURING MONSOON OR WHEN WATER LEVEL IS MORE THAN THE WORKING LWL SHOWN IN THE DRAWING.

CHAINAGE:	DESIGN WILL BE FOLLOWED FOR EXECUTION
FROM KM 0.000 TO KM 0.141 TOTAL 141m	DC-8-0313-04/16 (REPAIR WORK)
FROM KM 0.141 TO KM 0.651 TOTAL 510m	DC-8-0314-04/18 (NEW WORK)
FROM KM 0.651 TO KM 0.921 TOTAL 270m	DC-8-0313-05/16 (REPAIR WORK)
FROM KM 0.921 TO KM 1.036 TOTAL 115m	DC-8-0314-05/18 (NEW WORK)
FROM KM 1.036 TO KM 1.446 TOTAL 410m	DC-8-0313-06/16 (REPAIR WORK)
FROM KM 1.446 TO KM 1.656 TOTAL 210m	DC-8-0314-06/18 (NEW WORK)
FROM KM 1.656 TO KM 1.797 TOTAL 141m	DC-8-0313-07/16 (REPAIR WORK)
FROM KM 1.797 TO KM 3.262 TOTAL 1465m	DC-8-0314-07/18 (NEW WORK) DC-8-0314-08/18 (NEW WORK) DC-8-0314-09/18 (NEW WORK)

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 Bagerhat District.	
Design of Protective Work of Adjacent Area of Morrelgonj Ferry Ghat in between KM 0.000 To KM 3.262 Total 2300m Along The Right Bank of Panguchi River at Upazila-Morrelgonj, District-Bagerhat under Bagerhat O & M Division, BWDB, Bagerhat.	
NOTES	
DESIGNED BY:  (ZAYED BIN SAIF), AE	RECOMMENDED BY:  (MOHAMMAD SAIF UDDIN), SE
CHECKED BY:  (JAKARIA PERVEZ), EE	APPROVED BY:  (MD. ENAYET ULLAL), CE, Design
DATE: 23-11-2022	
DWG NO.: DC-8-0314-02/18	

**NOTES FOR C.C BLOCKS:**

1. CONCRETE FOR C.C BLOCK FOR DUMPING SHALL HAVE MINIMUM CYLINDER STRENGTH OF 10.50N/mm<sup>2</sup> AND FOR PLACING SHALL HAVE MINIMUM CYLINDER STRENGTH OF 12.00N/mm<sup>2</sup> 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.

**NOTES FOR GEOBAG:**

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.

**MONITORING:**

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 MITIGATIVE 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

**NOTES FOR DUMPING:**

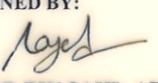
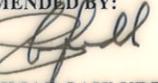
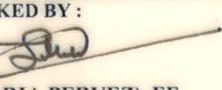
1. WORK SHALL BE EXECUTED ONLY WHEN WL IS AT OR NEAR WORKING L.W.L AS SHOWN IN THE DRAWING.
2. SURVEY BOAT EQUIPPED WITH NECESSARY DUMPING EQUIPMENT, SURVEY EQUIPMENT & SURVEY TEAM SHOULD BE ENSURED AT SITE BEFORE START OF DUMPING.
3. DUMPING MATERIALS SHALL BE DUMPED FROM BARGE EQUIPPED WITH GUIDED FENCE SO THAT DUMPING MATERIALS CAN BE DUMPED INTO PROPER POSITION.
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.

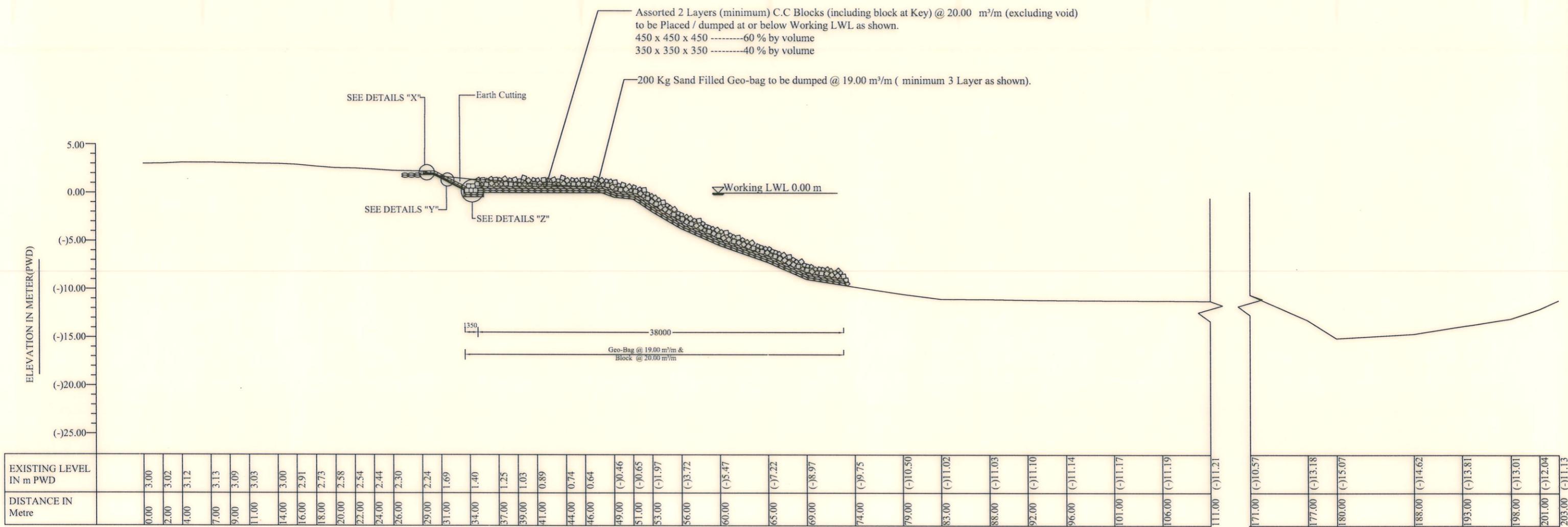
BANGLADESH WATER DEVELOPMENT BOARD  
OFFICE OF THE SUPERINTENDING ENGINEER  
DESIGN CIRCLE-8

Protection of Morrelgonj Upazila Sadar & Adjacent Area from  
Erosion of Panguchi River & Re-excavation/Dredging of Biskhali  
River in Bagerhat District.

Design of River Bank Protective Work of Adjacent Area of Morrelgonj Ferry  
Ghat in between KM 0.000 To KM 3.262  
Total 2300m Along The Right Bank of Panguchi River  
at Upazila-Morrelgonj, District-Bagerhat  
under Bagerhat O & M Division, BWDB, Bagerhat.

**NOTES**

DESIGNED BY:  (ZAYED BIN SAIF), AE	RECOMMENDED BY:  (MOHAMMAD SAIF UDDIN), SE
CHECKED BY:  (JAKARIA PERVEZ), EE	APPROVED BY:  (MD. ENAYET ULLAH), CE, Design
DATE: 23-11-2022	DWG NO.: DC-8-0314-03/18



TYPICAL X-SECTION AT KM 0.500  
(Applicable from KM 0.141 TO KM 0.651)

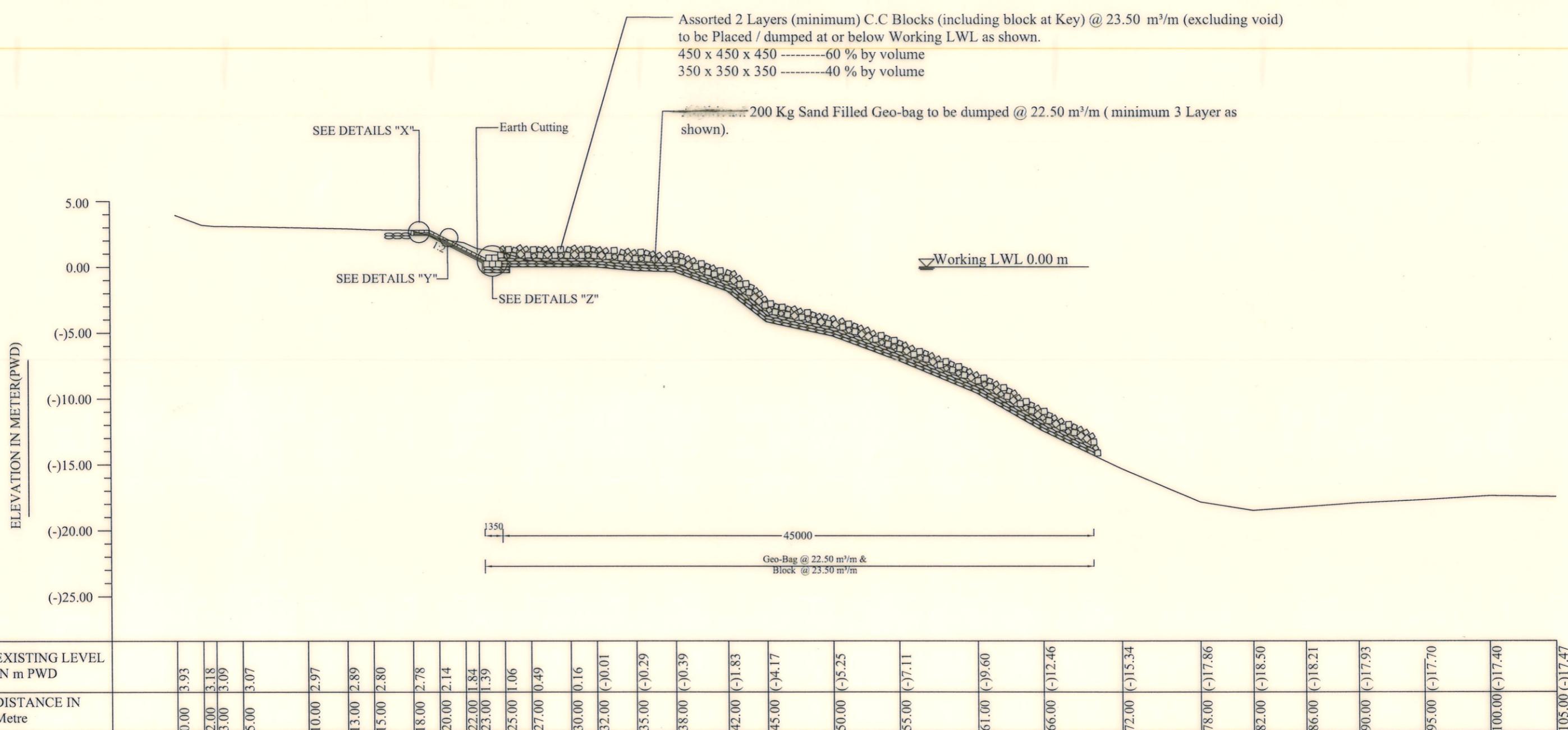
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Total 2300m Along The Right Bank of Panguchi River at Upazila-Morrelgonj,  
District-Bagerhat under Bagerhat O & M Division, BWDB, Bagerhat.

TYPICAL SECTION AT KM 0.500

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-8-0314-04/18



TYPICAL X-SECTION AT KM 1.000  
(Applicable from KM 0.921 TO KM1.036)

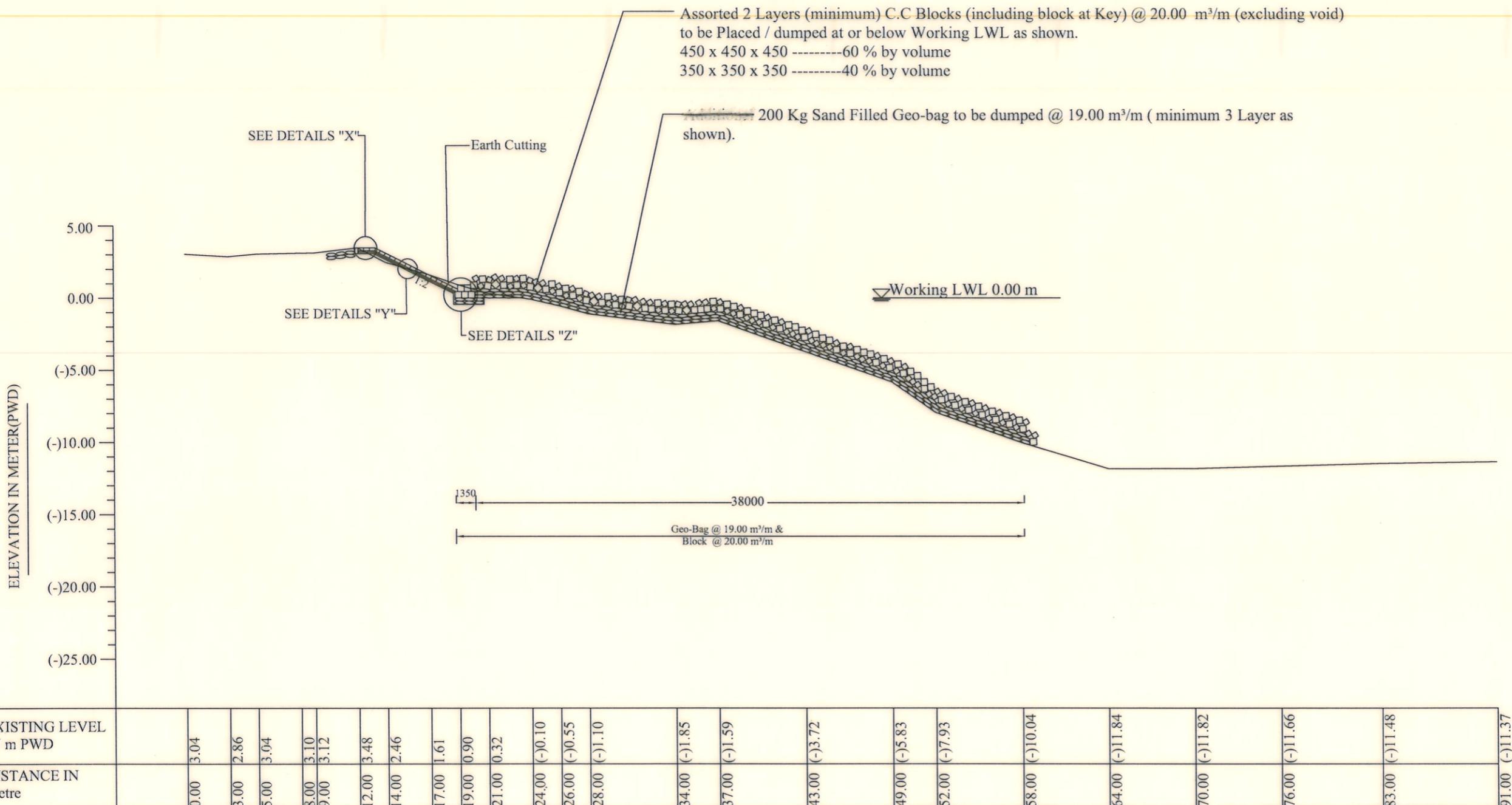
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District-Bagerhat under Bagerhat O & M Division, BWDB, Bagerhat.

TYPICAL SECTION AT KM 1.000

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-8-0314-05/18



TYPICAL X-SECTION AT KM 1.500  
(Applicable from KM 1.446 TO KM 1.656 )

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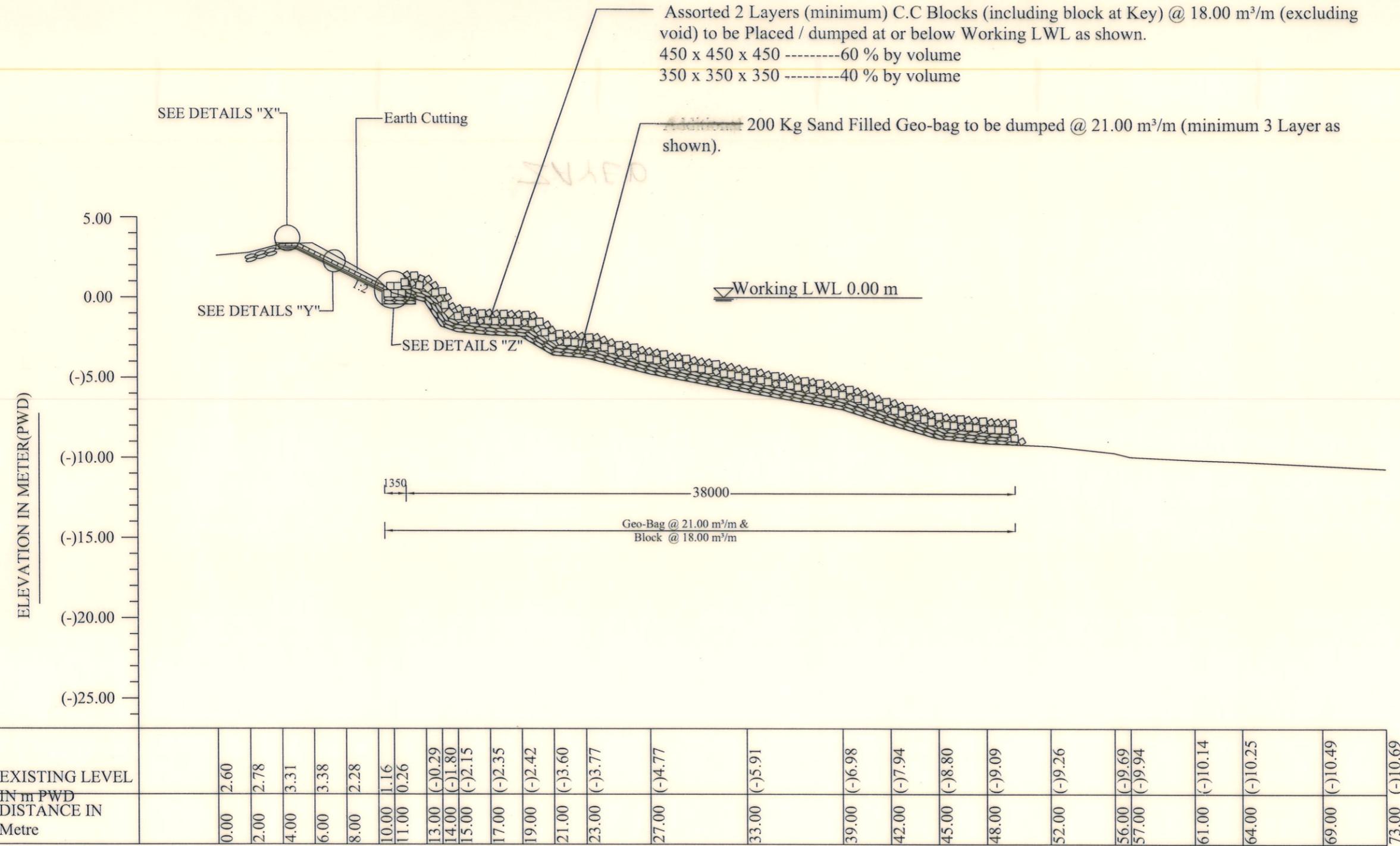
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District-Bagerhat under Bagerhat O & M Division, BWDB, Bagerhat.

TYPICAL SECTION AT KM 1.500

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-8-0314-06/18



TYPICAL X-SECTION AT KM 2.300  
 (Applicable from KM 1.797 TO KM 2.400)

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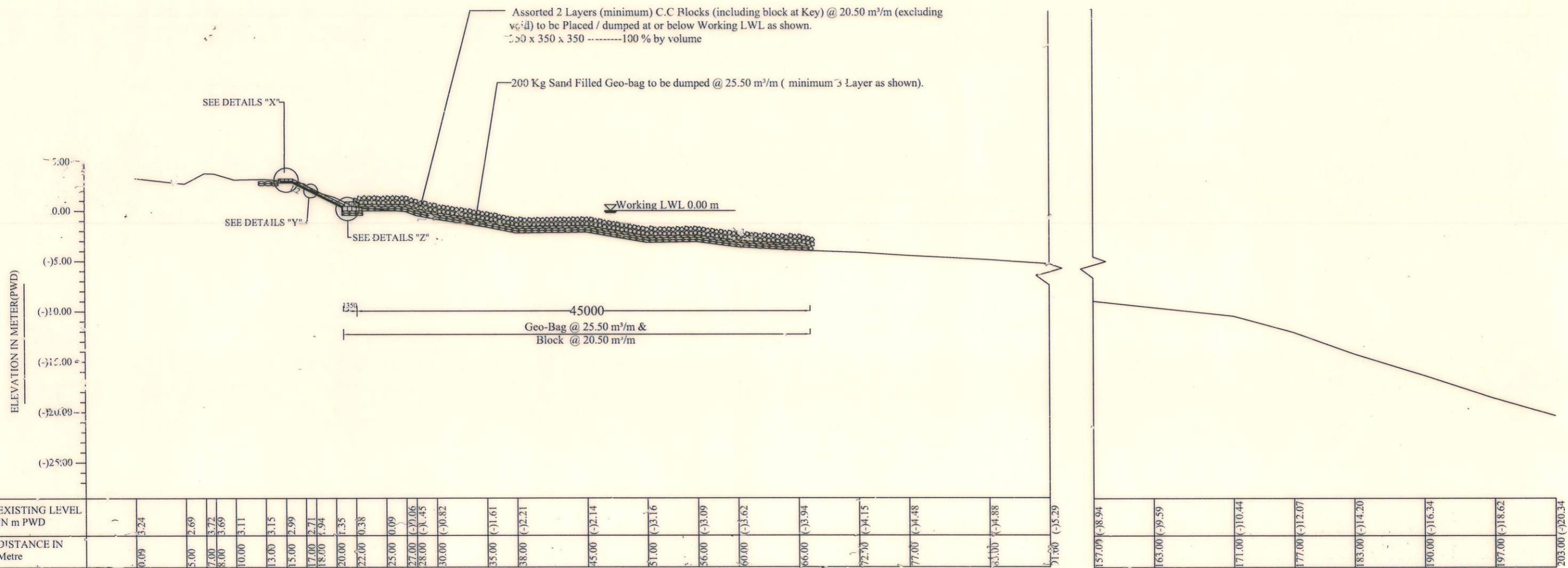
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TYPICAL SECTION AT KM 2.300

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-8-0314-07/18



TYPICAL X-SECTION AT KM 2.600  
(Applicable from KM 2.400 TO KM 2.700)

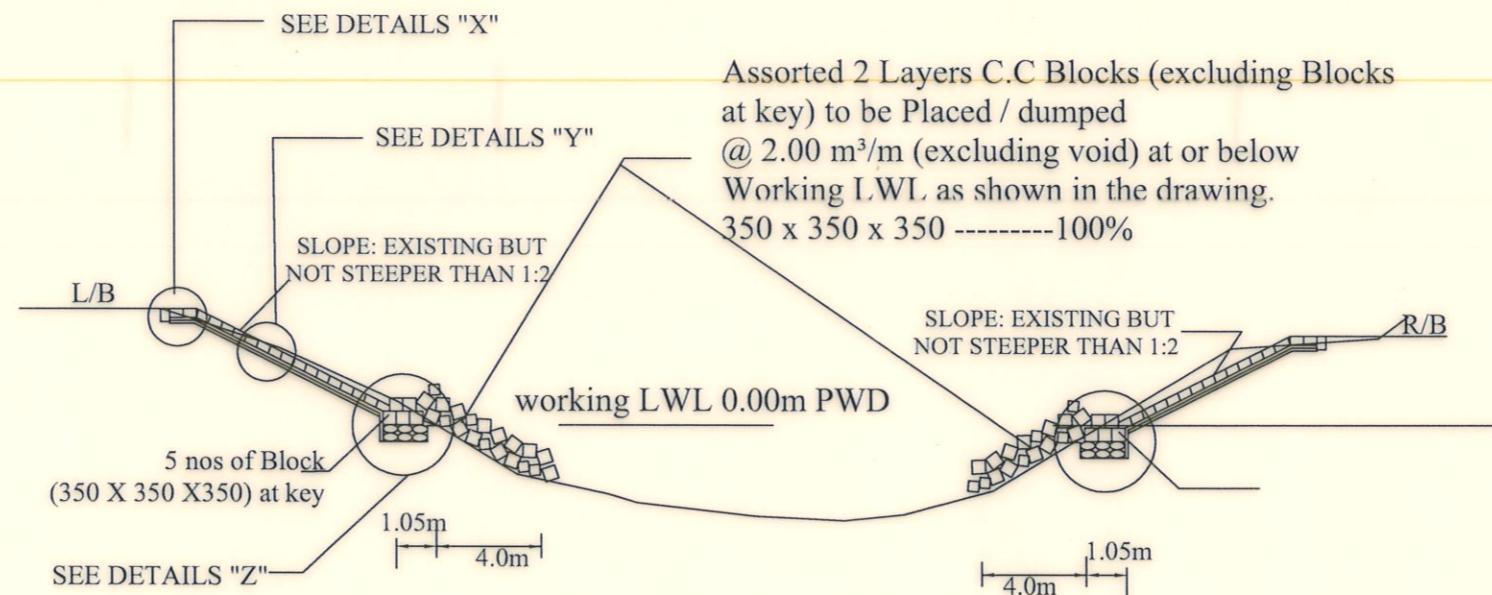
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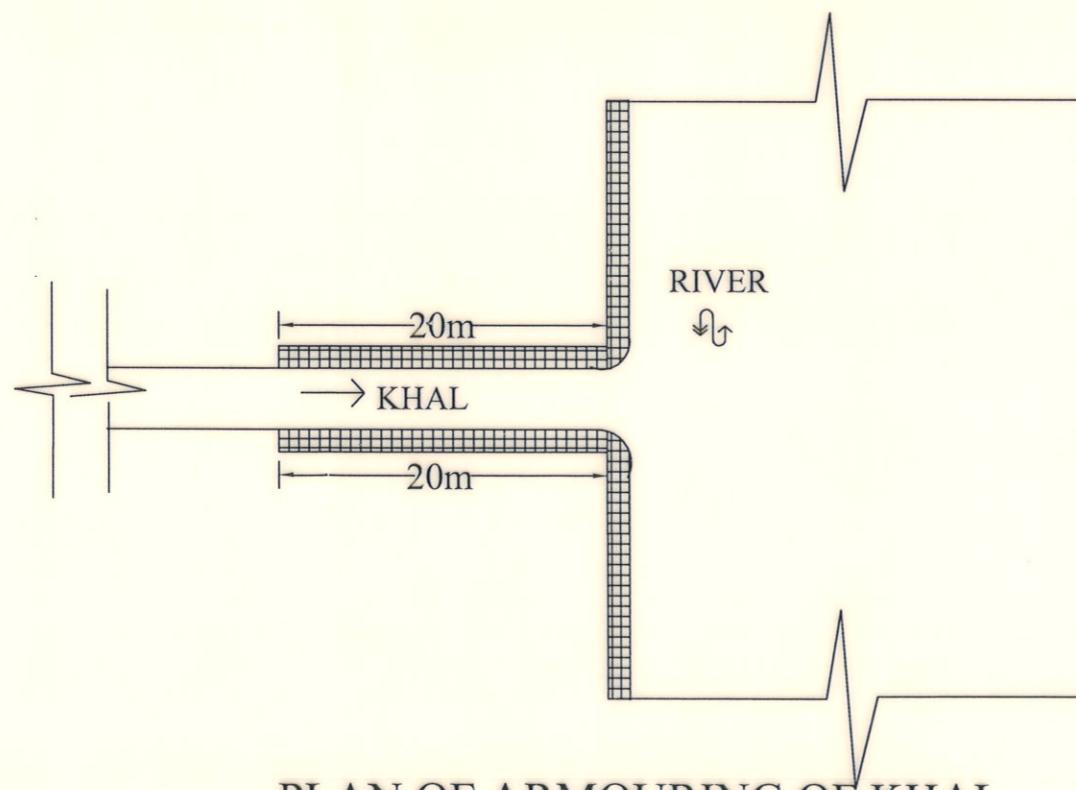
TYPICAL SECTION AT KM 2.600

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-8-0314-08/18



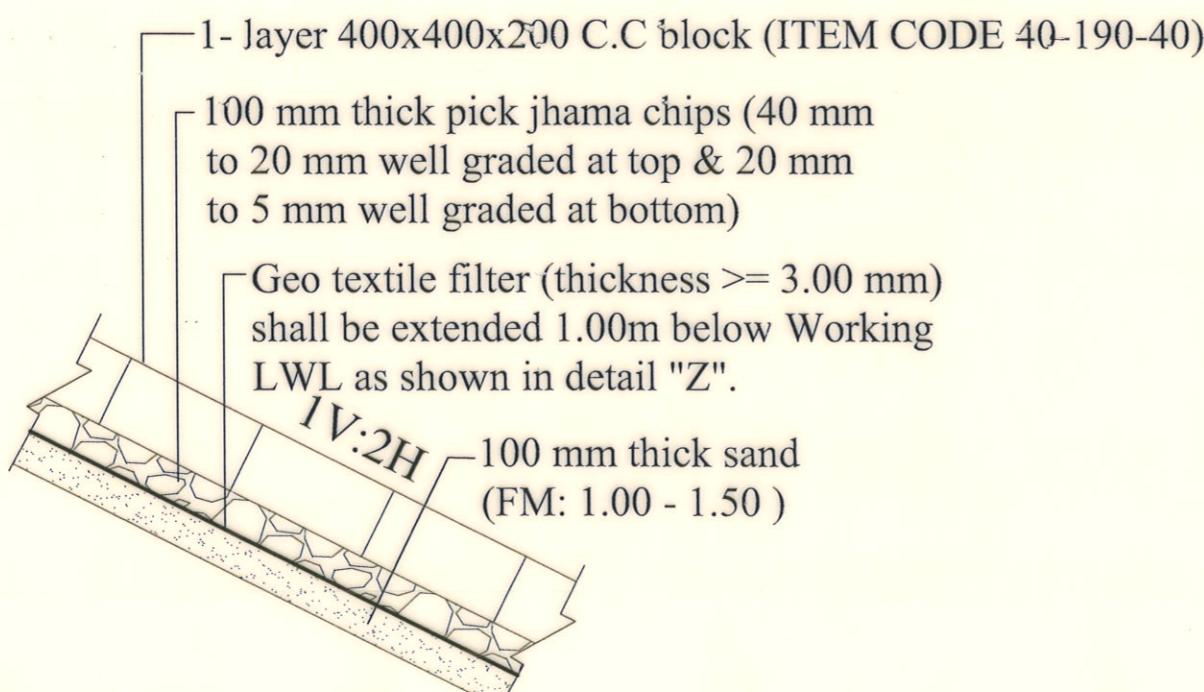
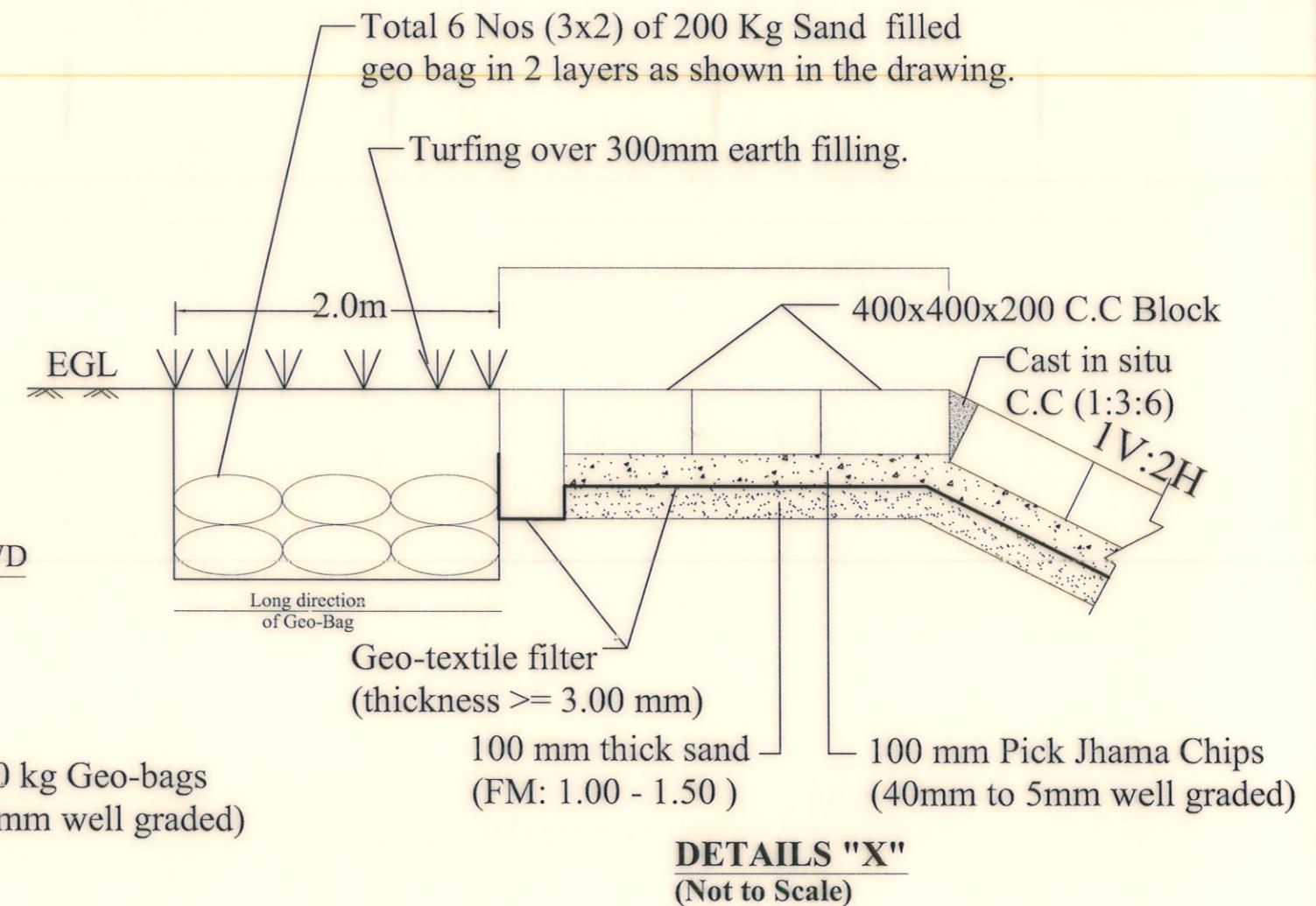
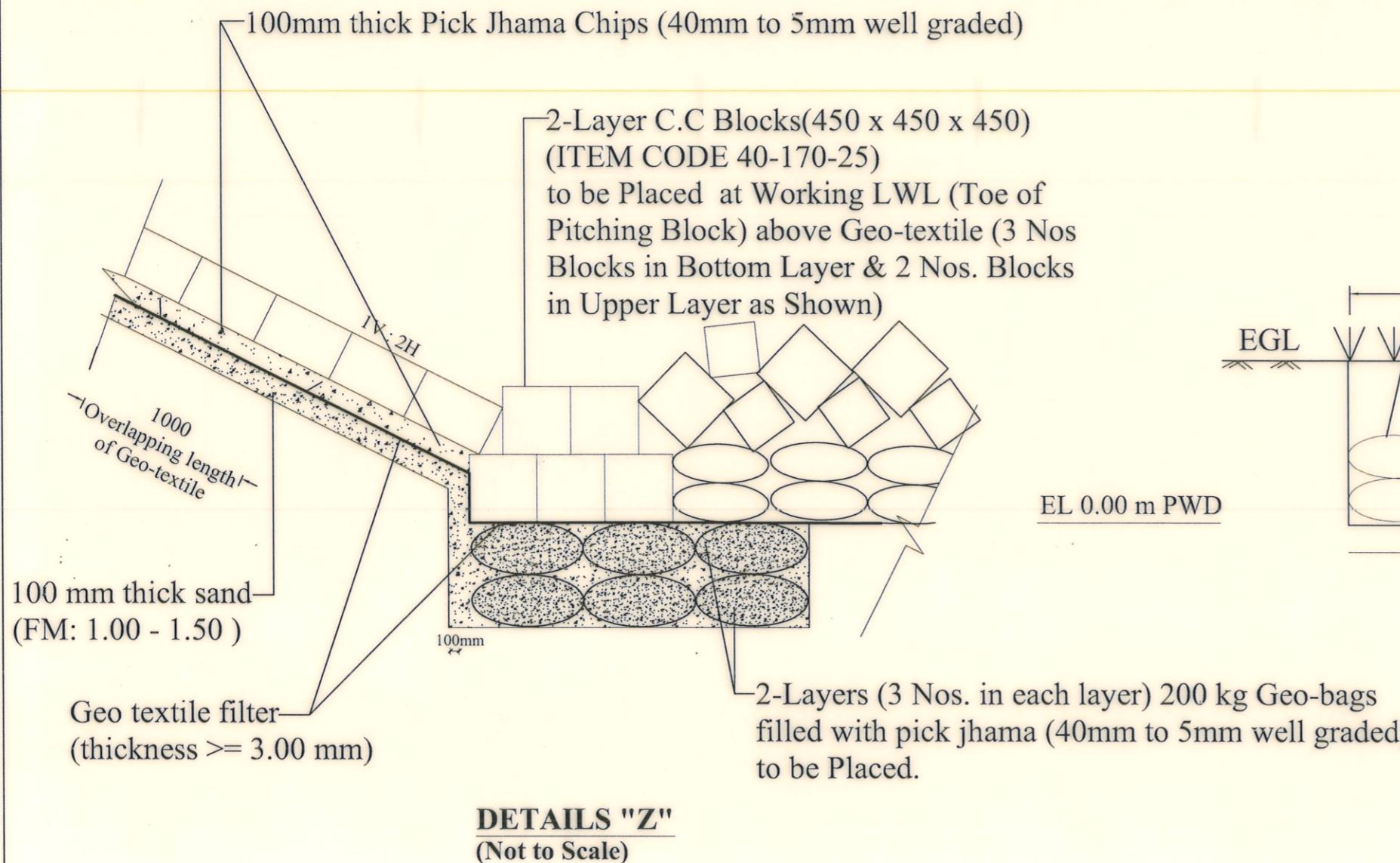
### TYPICAL X-SECTION FOR ARMOURING OF PROTECTIVE WORK AT CONFLUENCE OF KHAL

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



PLAN OF ARMOURING OF KHAL  
(NOT TO SCALE)

<b>BANGLADESH WATER DEVELOPMENT BOARD</b>	
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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



Scale: Not to Scale

BANGLADESH WATER DEVELOPMENT BOARD OFFICE OF THE SUPERINTENDING ENGINEER DESIGN CIRCLE-8	
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DESIGNED BY:  (ZAYED BIN SAIF), AE	RECOMMENDED BY:  (MD. MAHFUZUR RAHMAN), SE
CHECKED BY:  (JAKARIA PERVEZ ), EE	APPROVED BY:  (MD. ENAYET ULLAH), CE, Design
<b>DATE: 23-11-2022 DWG NO.: DC-8-0314-11/18</b>	

### GENERAL NOTES FOR STAIR, R.C.C U-DRAIN & NAME PLATE :

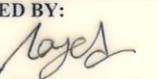
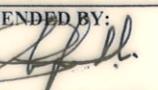
1. THE SPECIFICATION OF MATERIALS & WORKMANSHIP SHALL CONFORM TO THE STANDARD TECHNICAL SPECIFICATION OF BWDB IN GENERAL.
2. THE FOLLOWING SPECIFICATION OF MATERIALS & WORKS SHALL BE FOLLOWED:
  - a. CONCRETE STRENGTH (CYLINDER TEST) IN R.C.C WORKS : 22 N/mm<sup>2</sup>  
BLINDING LAYER CONCRETE : 1:3:6
  - b. YIELD STRENGTH OF REINF. BAR (DEFORMED BAR) : 400 N/mm<sup>2</sup>
  - c. CLEAR COVER FOR R.C.C WORK : 65mm (unless otherwise mentioned in the drawing)
3. CONCRETE SHALL BE POURED IN DRY BED CONDITIONS.
4. CONCRETE MIXTURE SHALL BE POURED AS QUICK AS POSSIBLE BUT NOT LATER THAN 45 MINUTES AFTER MIXING.
5. THE SURFACE OF CONSTRUCTION JOINTS SHALL BE WASHED THOROUGHLY WITH WATER JET & SHALL BE CLEAN ENOUGH. SURFACE SHALL BE KEPT DRY PRIOR TO PLACEMENT OF ADJOINING CONCRETE.
6. COMPRESSIVE STRENGTH OF C.C. BLOCK SHOULD NOT BE LESS THAN 12.00 N/MM<sup>2</sup> BY CYLINDER TEST AT 28 DAYS AND USING STONE CHIPS AS COARSE AGGREGATE.
7. CURING OF C.C. BLOCK SHALL BE CONTINUED FOR MINIMUM 21 DAYS.
8. FILLING IN FOUNDATION TREATMENT SHALL BE DONE BY COMPACTED SAND OF F.M  $\geq$  1.00 AS SHOWN IN THE DRAWING (IF REQUIRED).
9. LAP LENGTH / DEVELOPMENT LENGTH OF REINFORCING BARS SHALL BE 40 BAR DIA.
10. LAPS SHALL BE STAGGERED SO THAT NOT MORE THAN 50% OF BARS ARE LAPPED IN ANY ONE CROSS SECTION. WHERE BARS MUST BE LAPPED IN ONE CROSS SECTION, THE LAP LENGTH SHALL NOT BE LESS THAN 1.3 TIMES MINIMUM LAP LENGTH.
11. REINFORCING BAR SHALL BE SUPPORTED IN ITS PROPER POSITION BY USE OF MORTAR BLOCKS, SUPPORTS OR BY OTHER APPROVED MEANS.
12. LOCATION & NUMBERS OF RCC STAIR, R.C.C U-DRAIN & NAME PLATE SHALL BE FIXED FOLLOWING THE ACTUAL FIELD REQUIREMENT.
13. DIMENSIONS AND LEVELS SHOWN IN THE DRAWINGS ARE IN MILLIMETER AND METER PWD RESPECTIVELY.
14. THE COMPACTION MUST BE ENSURED BY THE CONCERNED FIELD EXECUTIVE ENGINEER.
5. CUT-OFF WALL OF STAIR & R.C.C U-DRAIN MUST BE CONSTRUCTED FROM THE LOWER PART (NEAR LWL) UPWARDS.
6. DRAWING FOR STAIR, R.C.C U-DRAIN & NAME PLATE ARE AN INTEGRAL PART OF THIS PROPOSED PROTECTIVE WORKS.
17. ANY OMISSION / CORRECTION SHALL BE IMMEDIATELY INFORMED TO THE DESIGN CIRCLE-8, BWDB, DHAKA FOR TAKING NECESSARY ACTION.

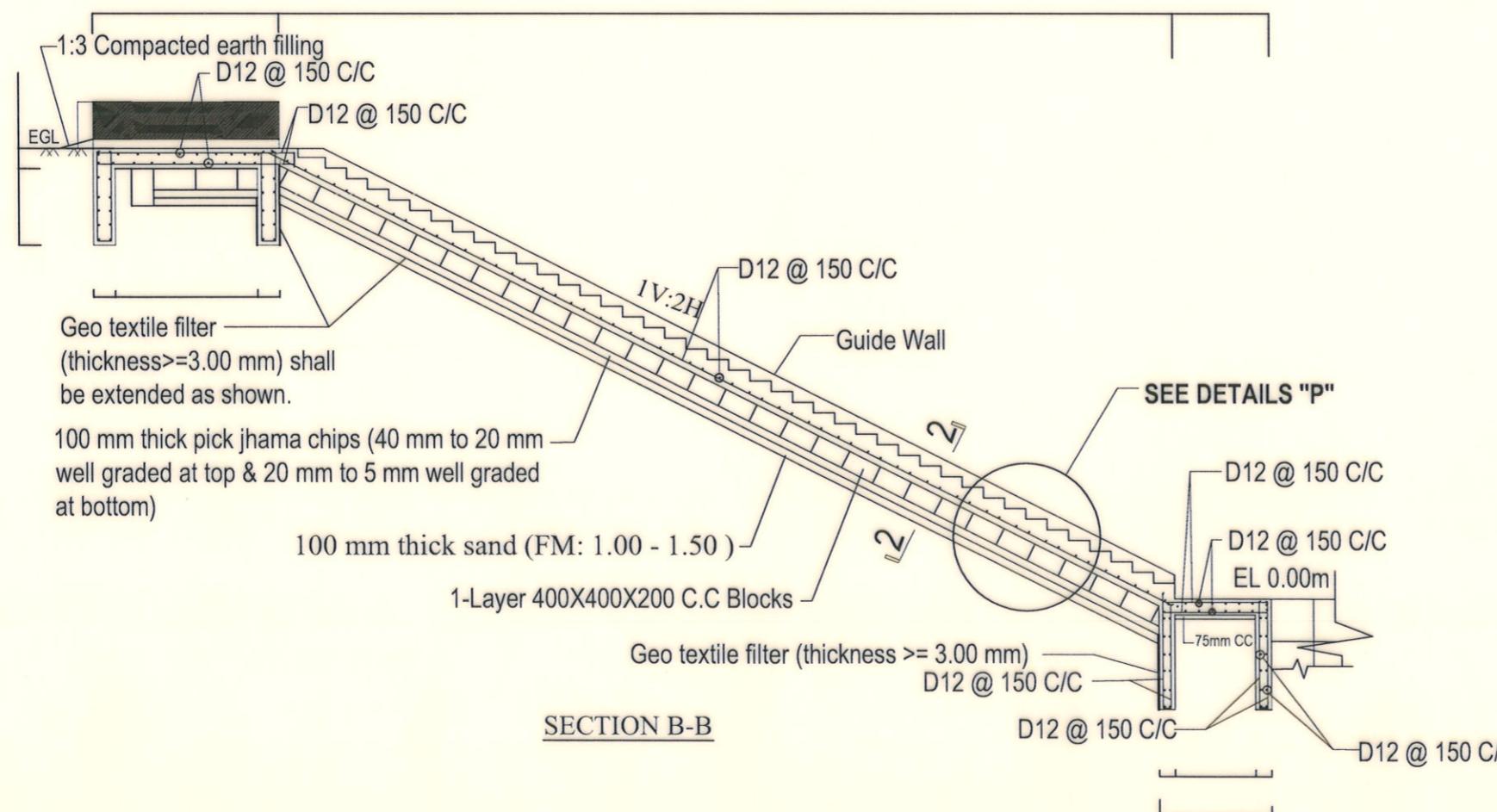
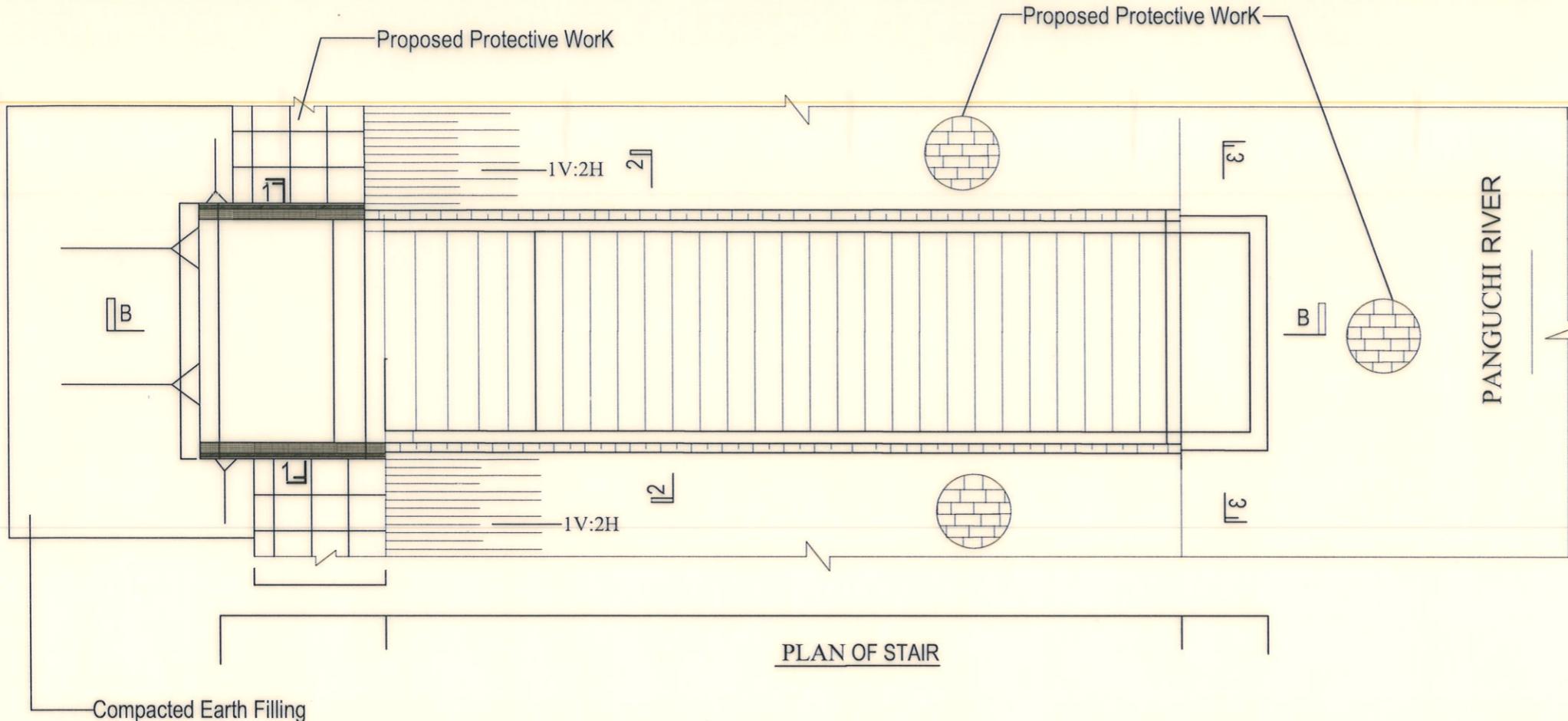
BANGLADESH WATER DEVELOPMENT BOARD  
OFFICE OF THE SUPERINTENDING ENGINEER  
DESIGN CIRCLE-8

Protection of Morrelgonj Upazila Sadar & Adjacent Area From Erosion of Panguchi River & Dredging of Biskhali River in Bagerhat District.

Design of River Bank Protective Work of Adjacent Area of Morrelgonj Ferry Ghat in between KM 0.000 To KM 3.262 Total 2300m Along The Right Bank of Panguchi River at Upazila-Morrelgonj, District-Bagerhat under Bagerhat O & M Division, BWDB, Bagerhat.

NOTES FOR STAIR, R.C.C U-DRAIN & NAME PLATE

DESIGNED BY:  (ZAYED BIN SAIF), AE	RECOMMENDED BY:  (MOHAMMAD SAIF UDDIN), SE
CHECKED BY:  (JAKARIA PERVEZ), EE	APPROVED BY:  (MD. ENAYET ULLAH), CE, Design



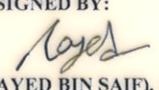
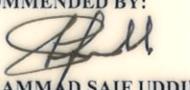
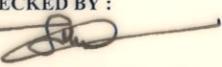
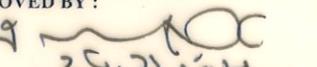
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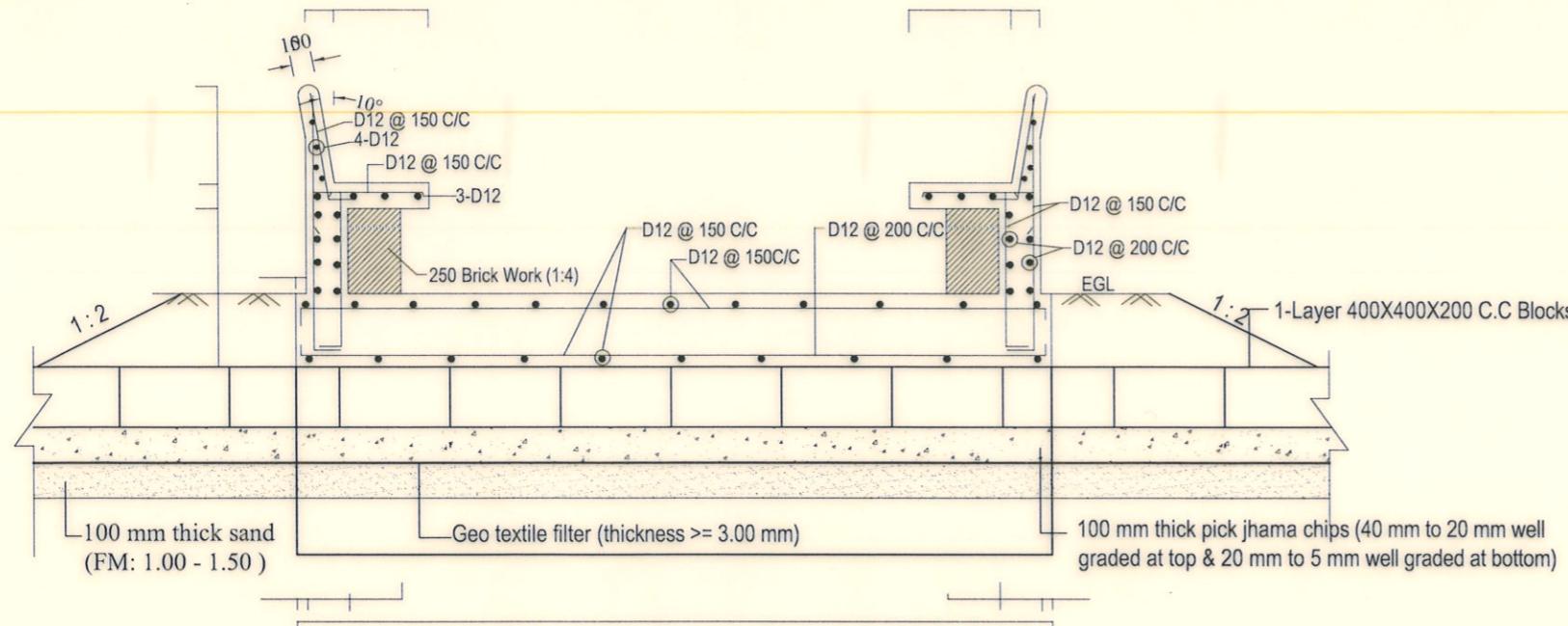
BANGLADESH WATER DEVELOPMENT BOARD  
OFFICE OF THE SUPERINTENDING ENGINEER  
DESIGN CIRCLE-8

Protection of Morrelgonj Upazila Sadar & Adjacent Area From Erosion of Panguchi River & Dredging of Biskhali River in Bagerhat District.

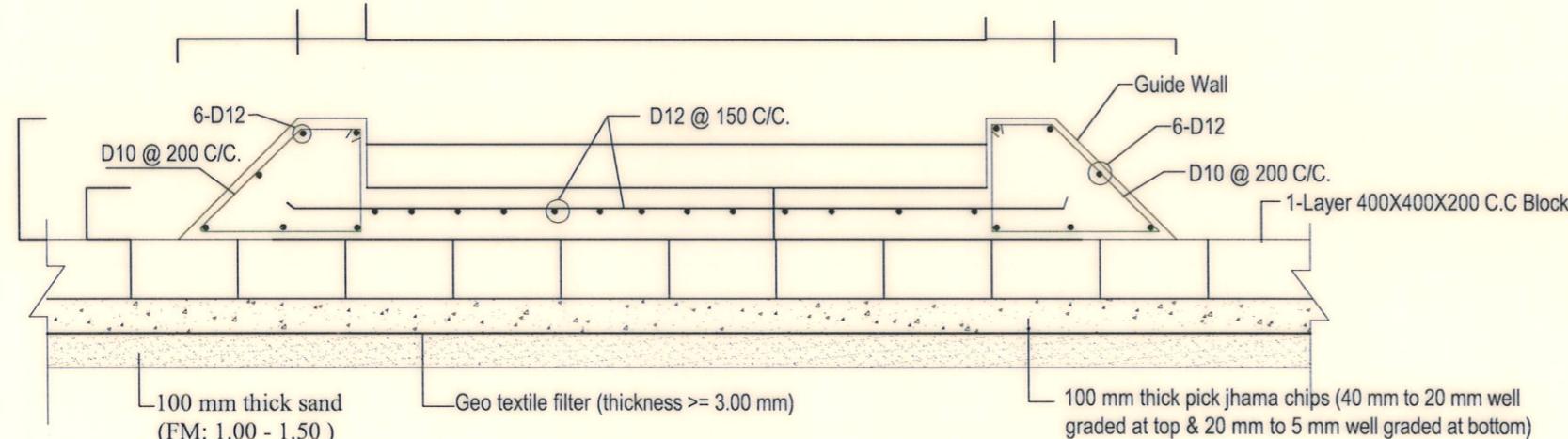
Design of River Bank Protective Work of Adjacent Area of Morrelgonj Ferry Ghat in between KM 0.000 To KM 3.262 Total 2300m Along the Right Bank of Panguchi River at Upazila-Morrelgonj, District-Bagerhat under Bagerhat O & M Division, BWDB, Bagerhat.

## PLAN &amp; SECTION OF STAIR

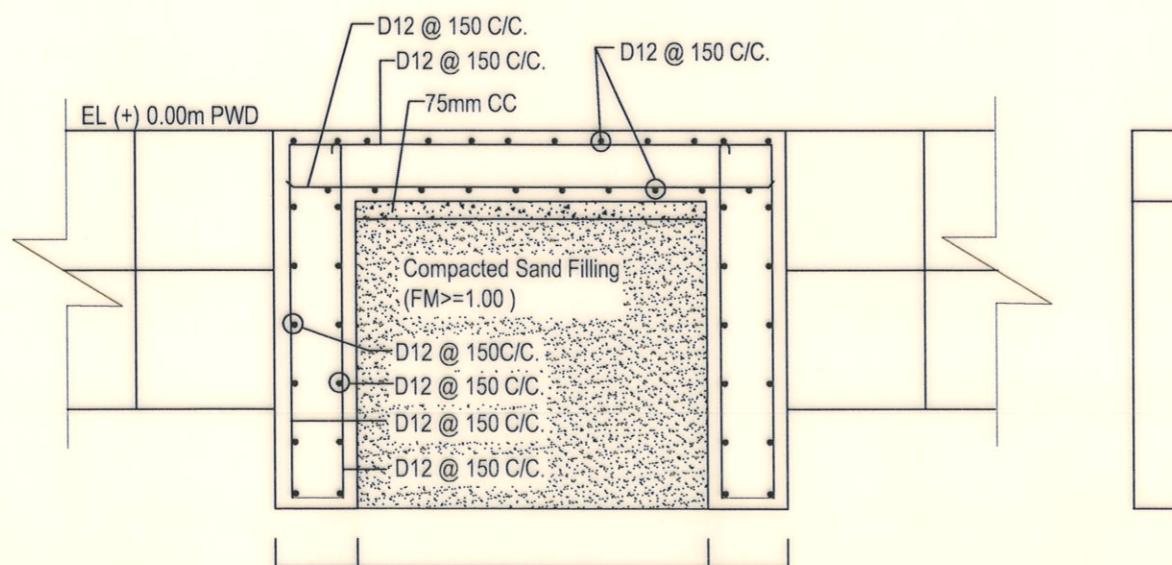
DESIGNED BY:  (ZAYED BIN SAIF), AE	RECOMMENDED BY:  (MOHAMMAD SAIF UDDIN), SE
CHECKED BY:  (JAKARIA PERVEZ), EE	APPROVED BY:  (MD. ENAYET ULLAH), CE, Design
DATE: 23-11-2022	DWG NO.: DC-8-0314-13/18



**SECTION 1-1**  
(See Plan of Stair)

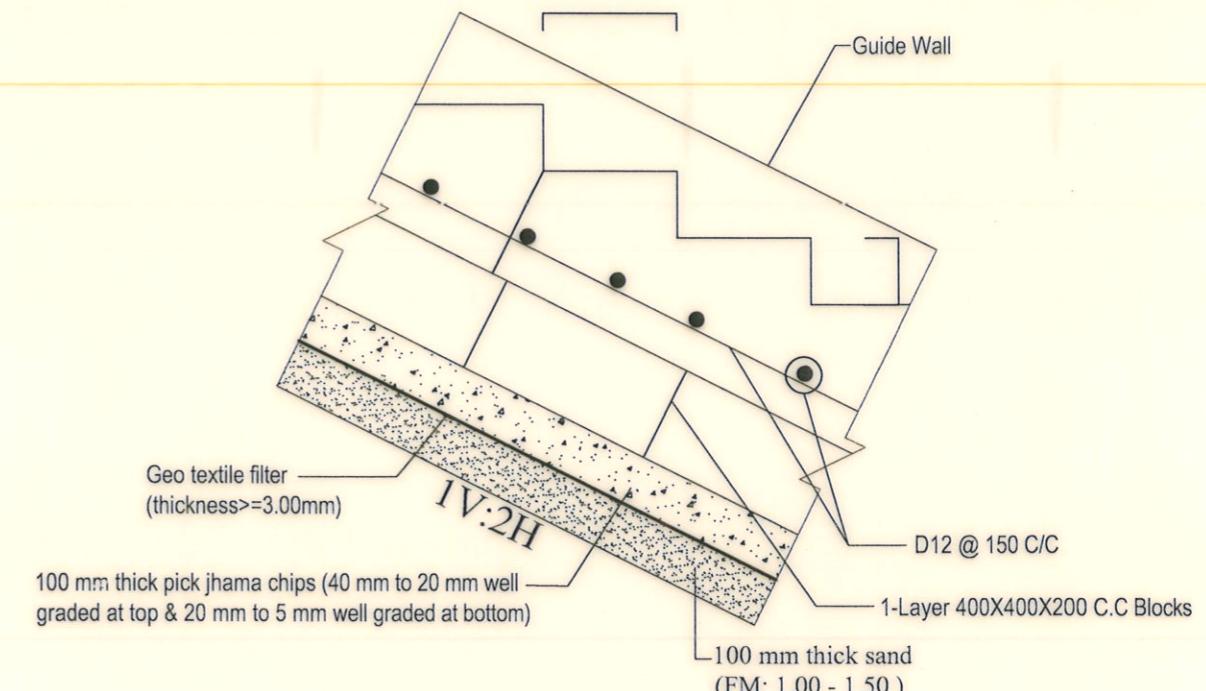


**SECTION 2-2**  
(See Plan & Section of Stair)

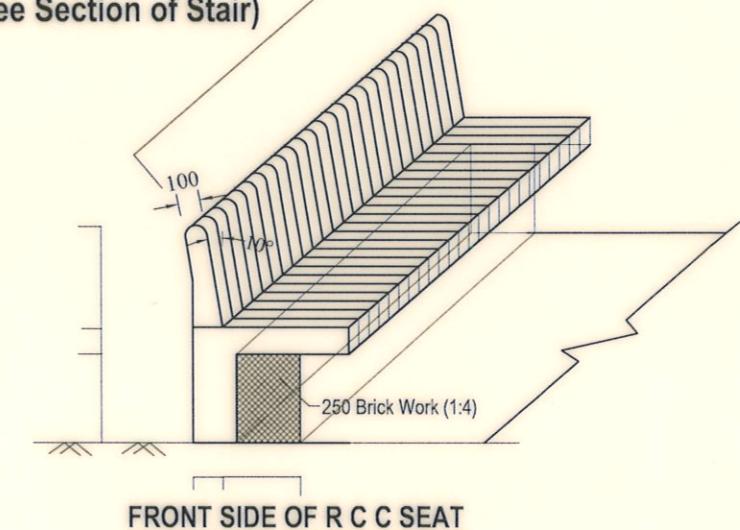


**SECTION 3-3**  
(See Plan of Stair)

Scale: Not to Scale



**DETAILS "P"**  
(See Section of Stair)



**FRONT SIDE OF R C C SEAT**

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 River Bank Protective Work of Adjacent Area of Morrelgonj Ferry Ghat in between KM 0.000 To KM 3.262 Total 2300m Along the Right Bank of Panguchi River at Upazila-Morrelgonj, District-Bagerhat under Bagerhat O & M Division, BWDB, Bagerhat.

**SECTIONS & DETAILS OF STAIR**

DESIGNED BY:

(ZAYED BIN SAIF), AE

RECOMMENDED BY:

(MOHAMMAD SAIF UDDIN), SE

CHECKED BY:

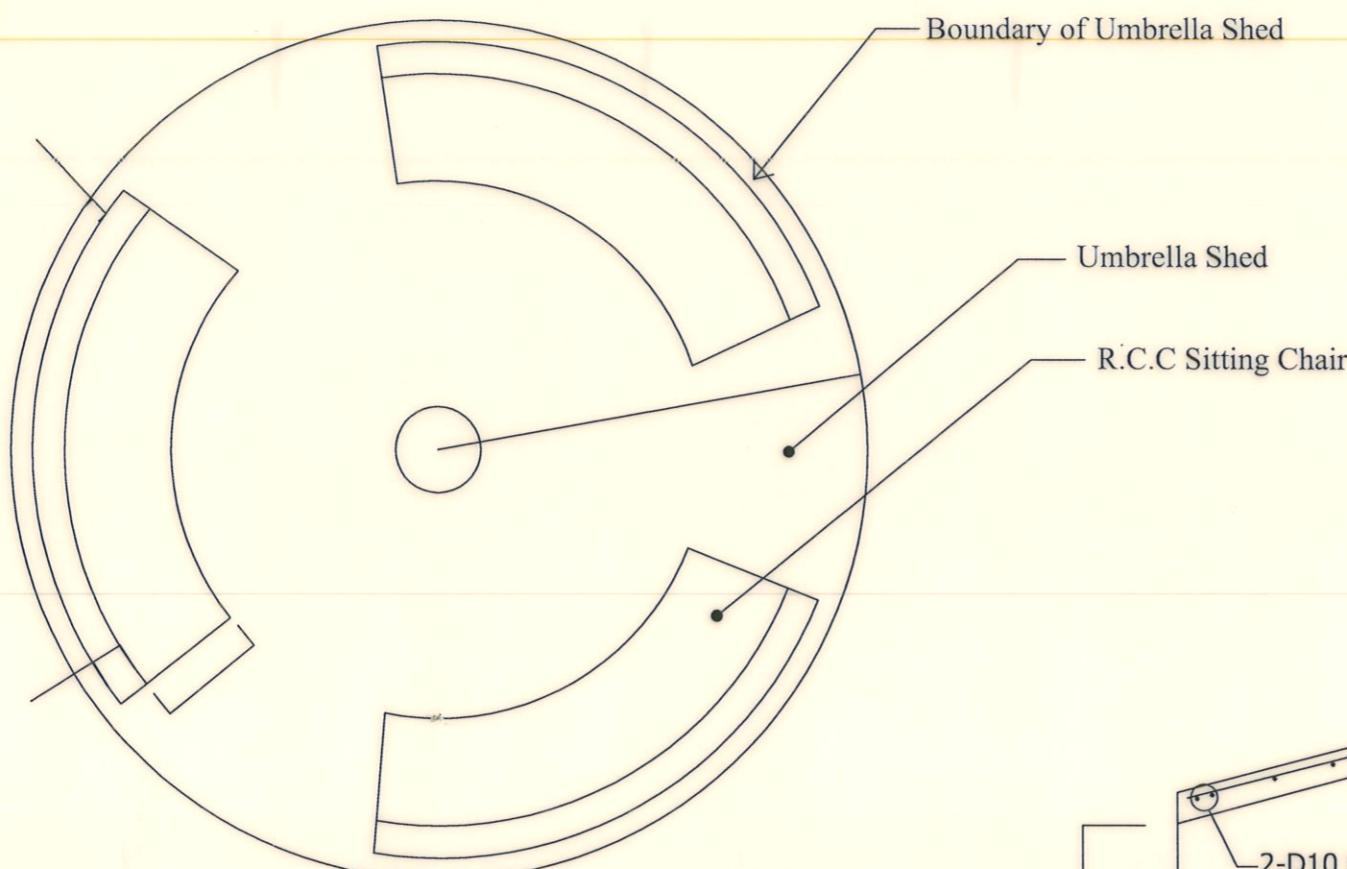
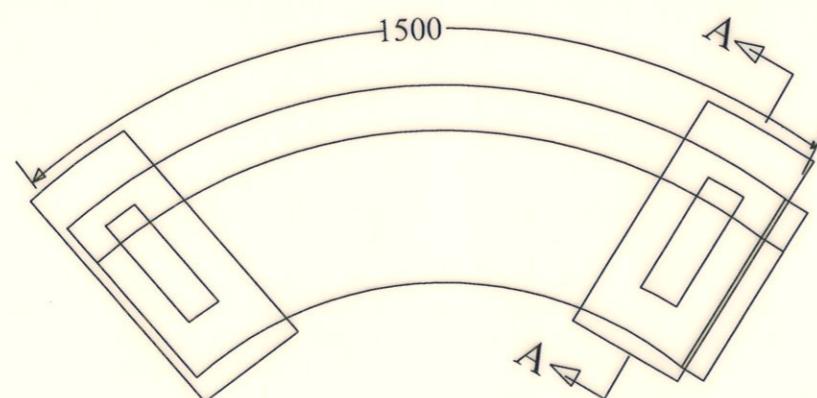
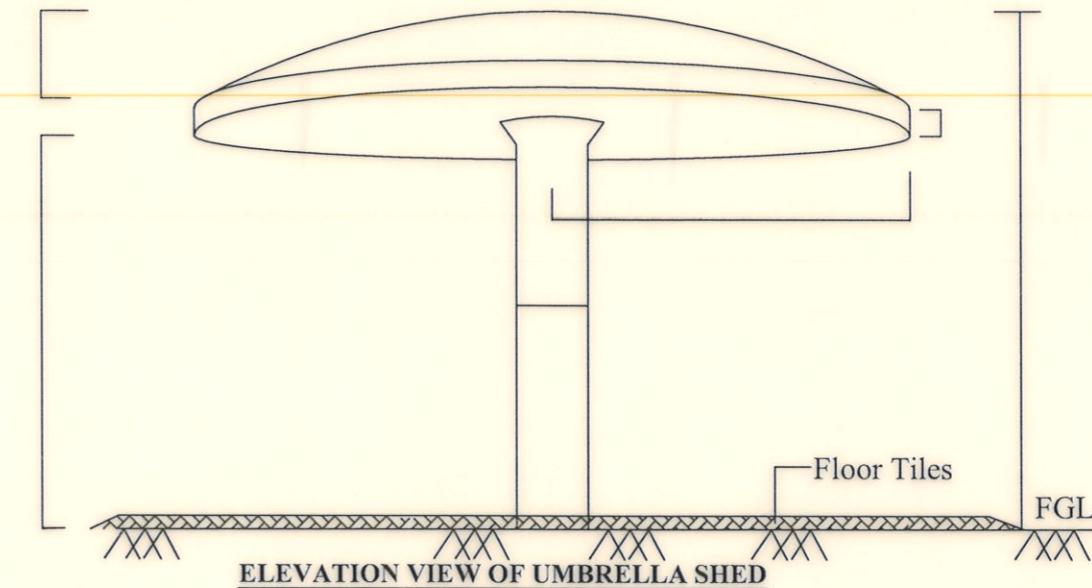
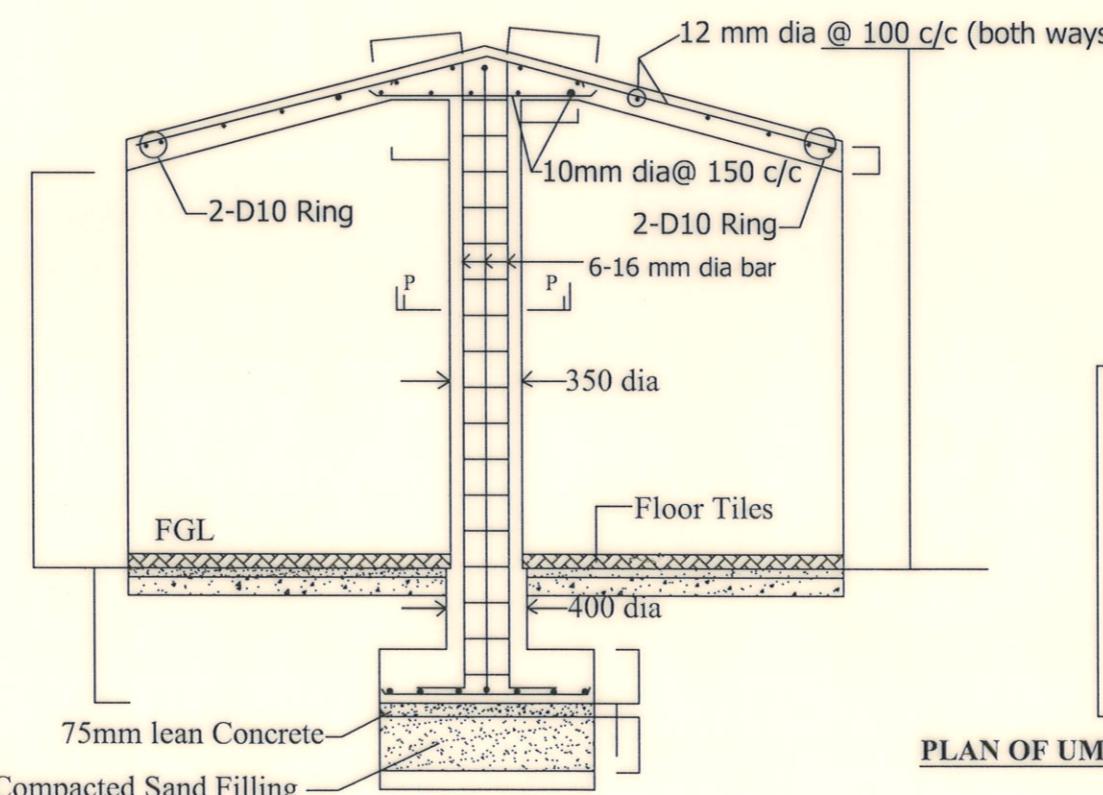
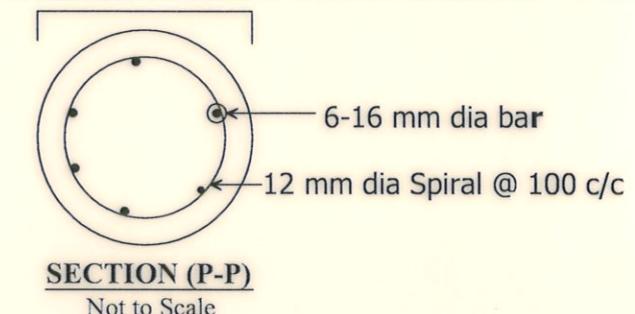
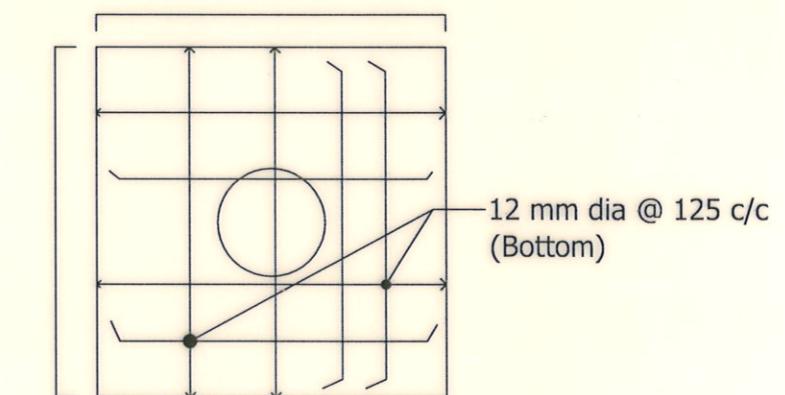
(JAKARIA PERVEZ), EE

APPROVED BY:

(MD. ENAYET ULLAH), CE, Design

DATE: 23-11-2022

DWG NO.: DC-8-0314-14/18

**PLAN OF UMBRELLA SHED WITH R.C.C SITTING CHAIR**Not to Scale**PLAN OF R.C.C SITTING CHAIR**Not to Scale**ELEVATION VIEW OF UMBRELLA SHED**Not to Scale**SECTIONAL ELEVATION VIEW OF UMBRELLA SHED**Not to Scale**SECTION (P-P)****PLAN OF UMBRELLA SHED COLUMN FOOTING**Not to Scale

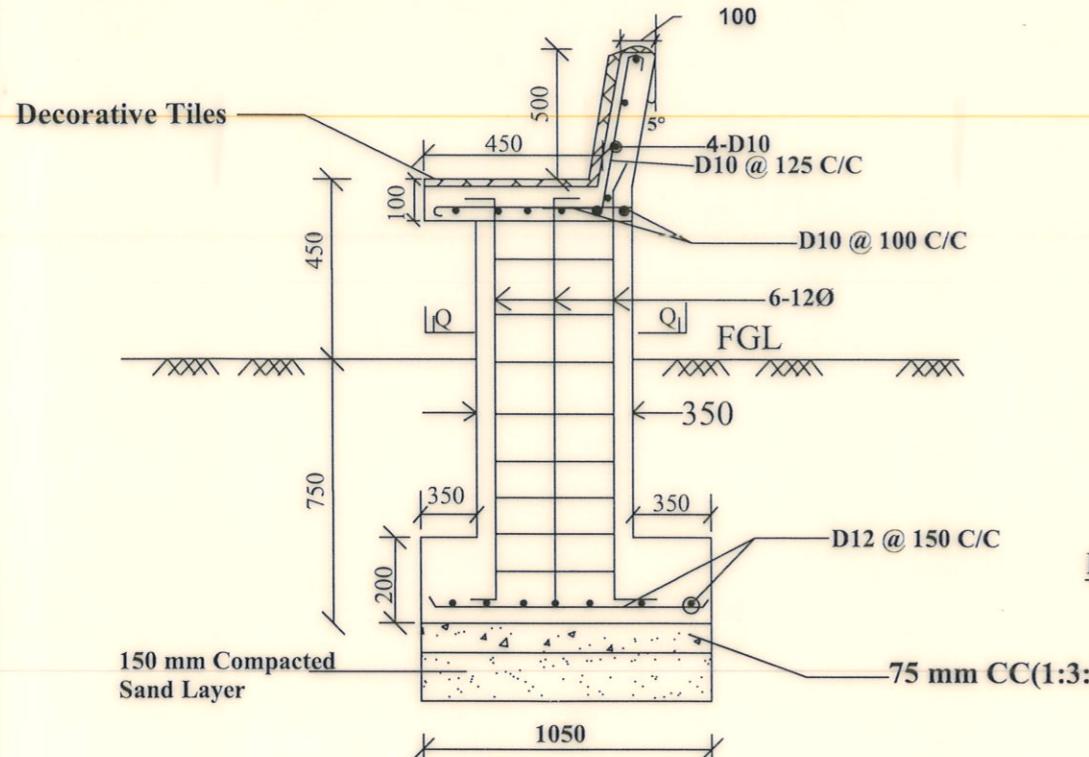
BANGLADESH WATER DEVELOPMENT BOARD  
OFFICE OF THE SUPERINTENDING ENGINEER  
DESIGN CIRCLE-8

Protection of Morrelgonj Upazila Sadar & Adjacent Area From Erosion of Panguchi River & Dredging of Biskhali River in Bagerhat District.

Design of River Bank Protective Work of Adjacent Area of Morrelgonj Ferry Ghat in between KM 0.000 To KM 3.262 Total 2300m Along the Right Bank of Panguchi River at Upazila-Morrelgonj, District-Bagerhat under Bagerhat O & M Division, BWDB, Bagerhat.

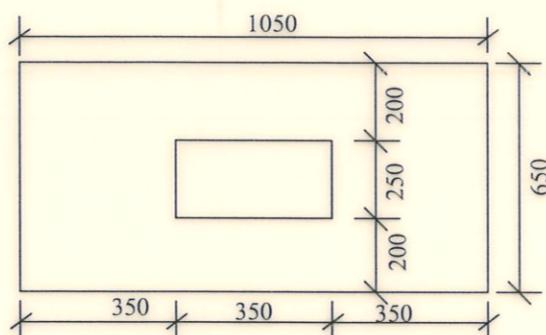
**DETAILS OF UMBRELLA SHED & BENCH**

DESIGNED BY:  (ZAYED BIN SAIF), AE	RECOMMENDED BY:  (MOHAMMAD SAIF UDDIN), SE
CHECKED & RECOMMENDED BY:  (JAKARIA PERVEZ), EE	APPROVED BY:  (MD. ENAYET ULLAH), CE, Design
DATE: 23-11-2022	DWG NO.: DC-8-0314-15/18

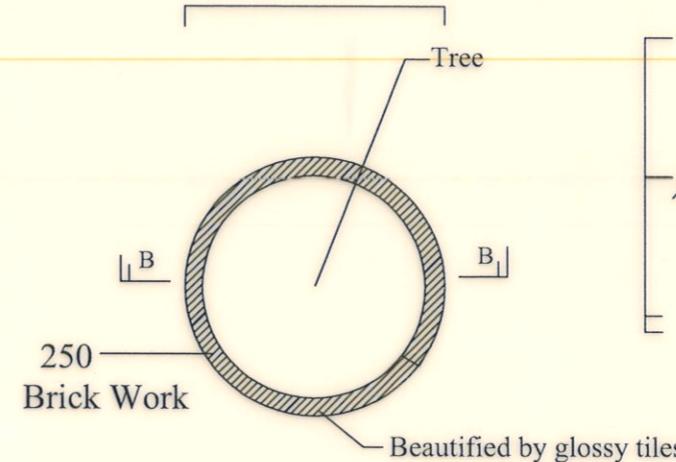


### **DETAILS OF R.C.C SITTING CHAIR (SECTION A-A)**

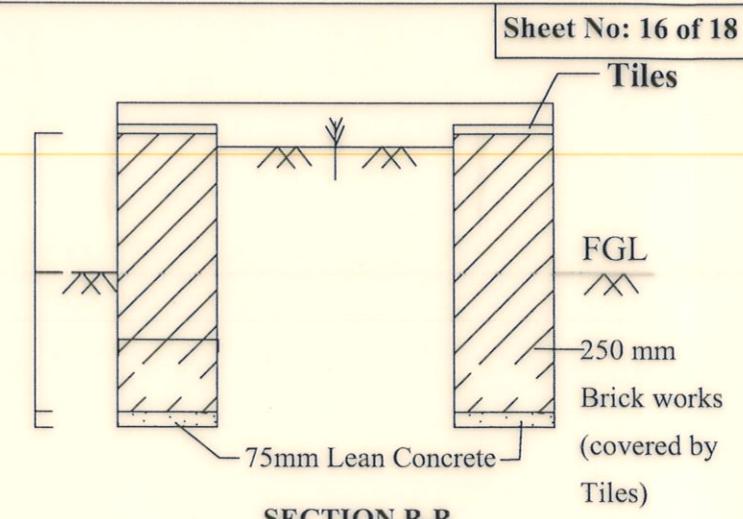
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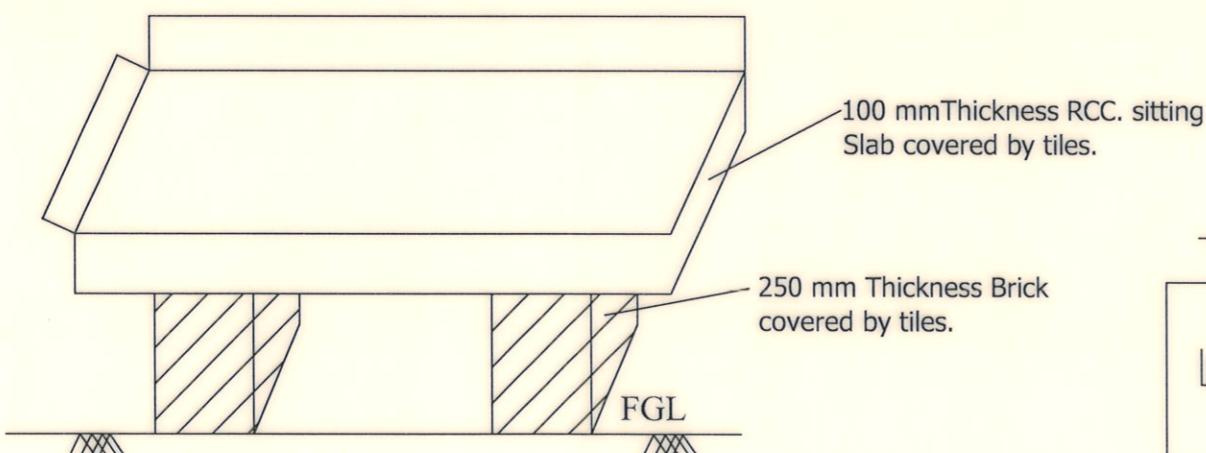
## **PLAN OF FOOTING OF R.C.C SITTING CHAIR**



## PERIPHERIAL WALL OF TREE

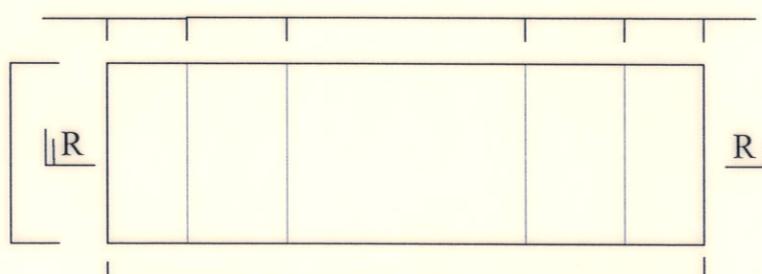


## **SECTION B-B**



### ELEVATION VIEW OF BENCH

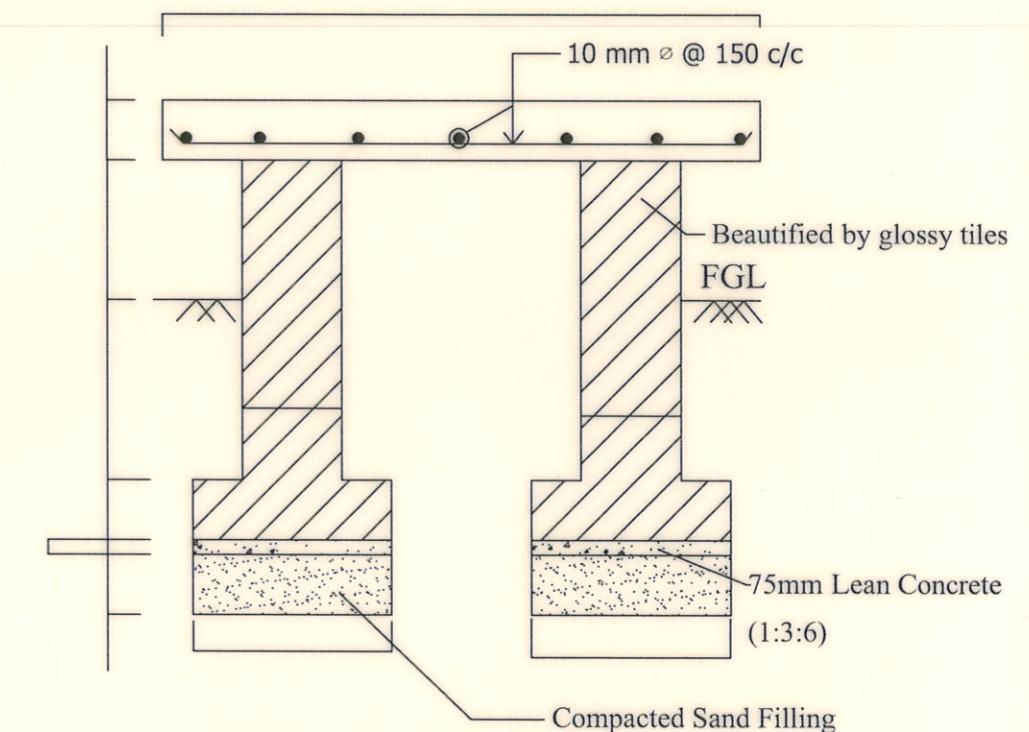
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## PLAN OF BENCH

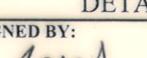
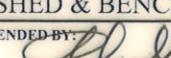
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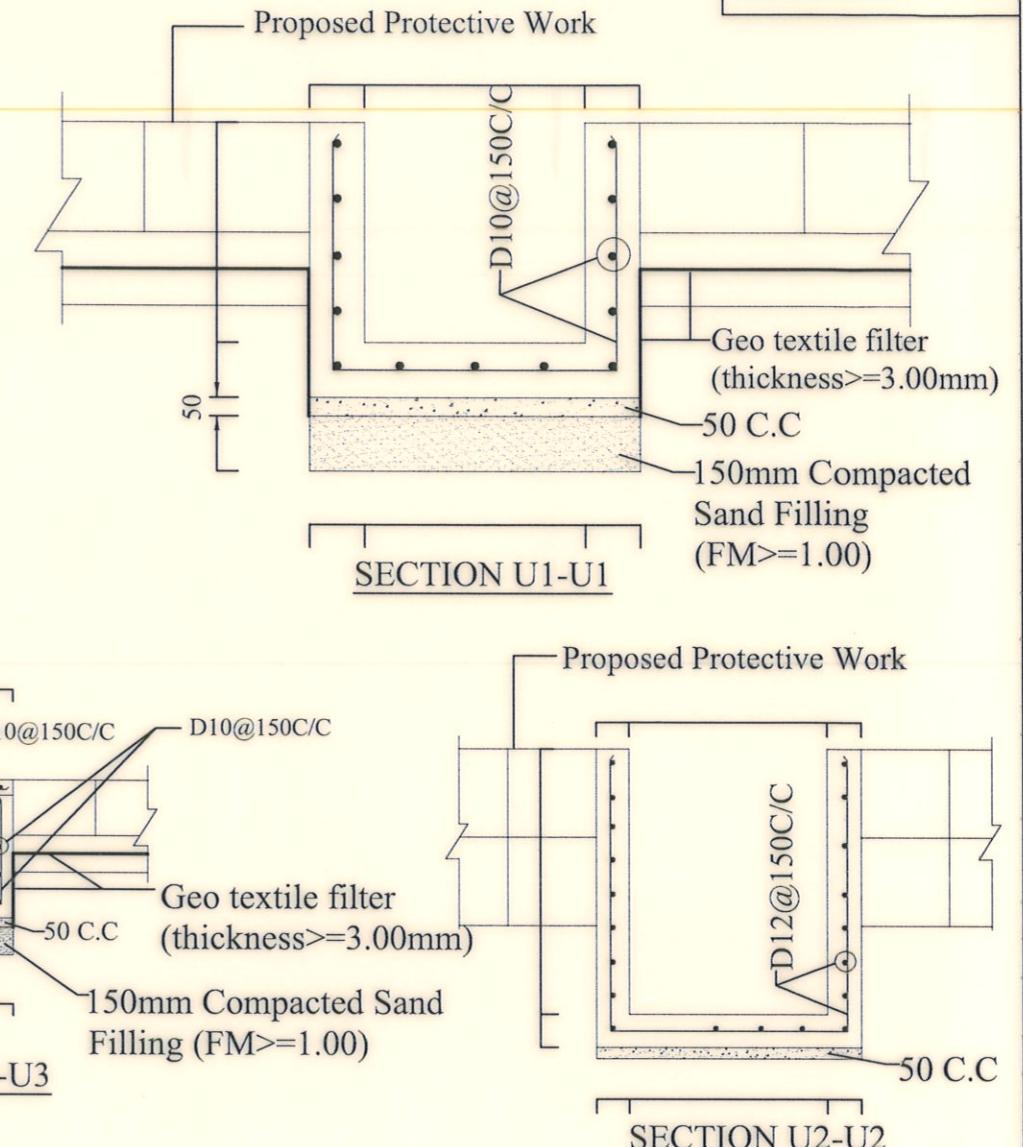
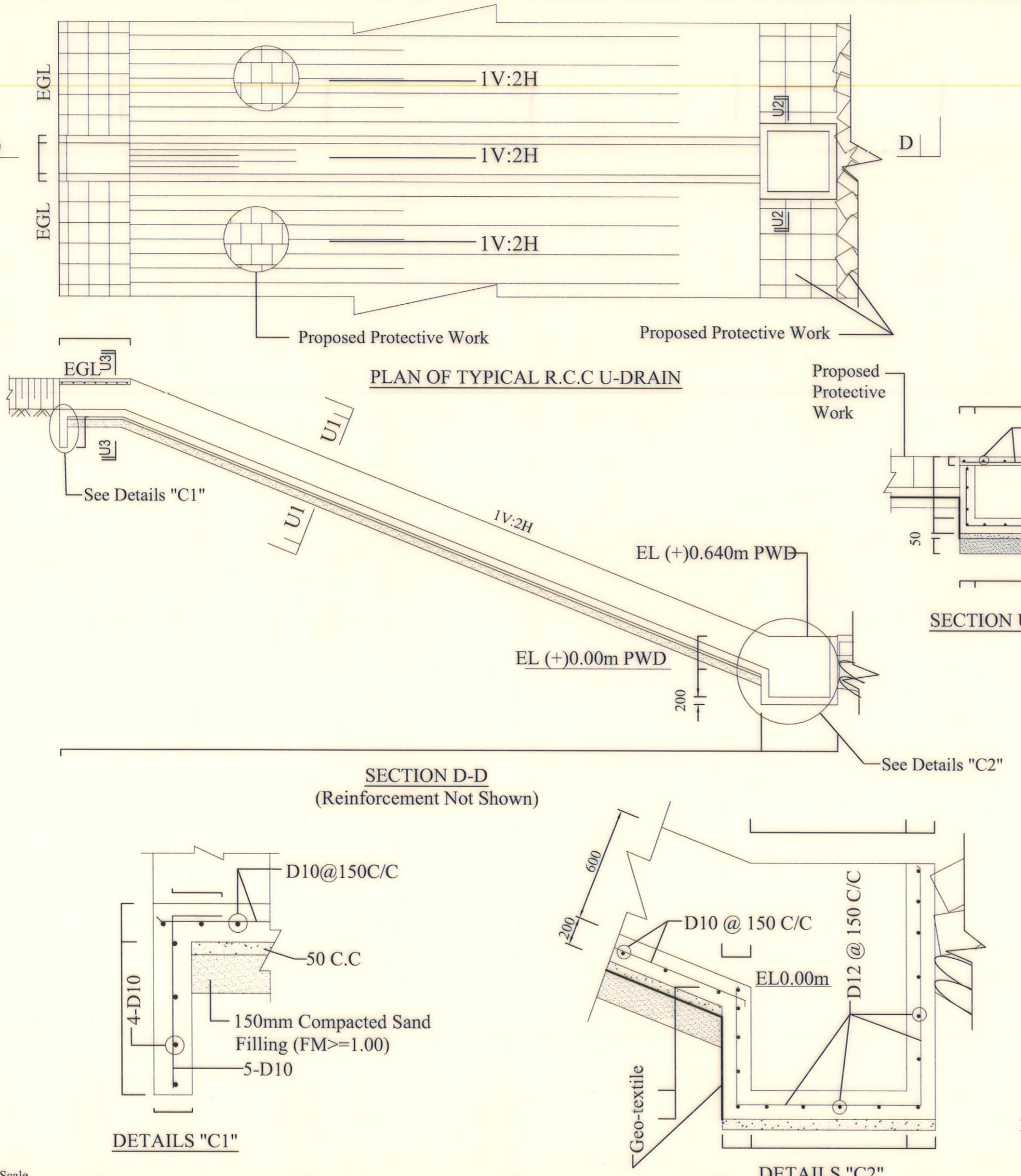
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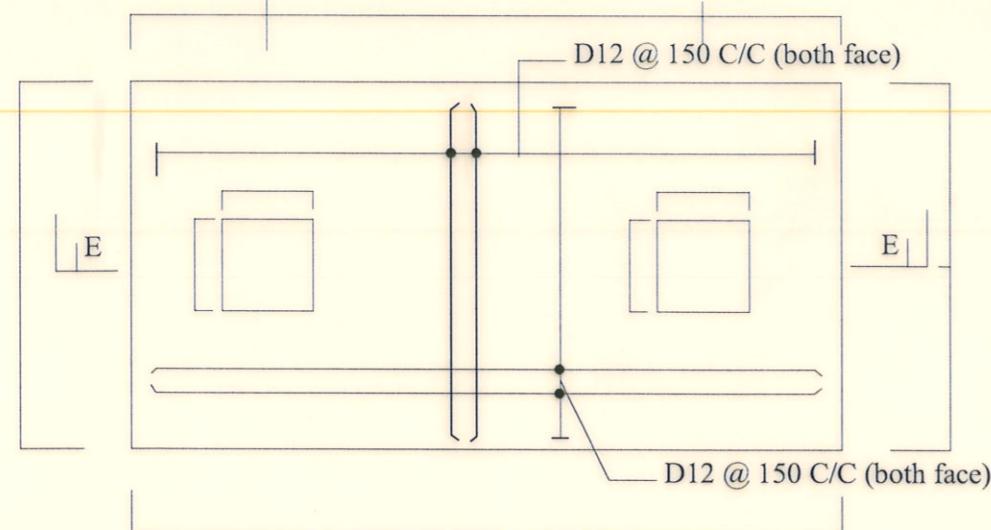
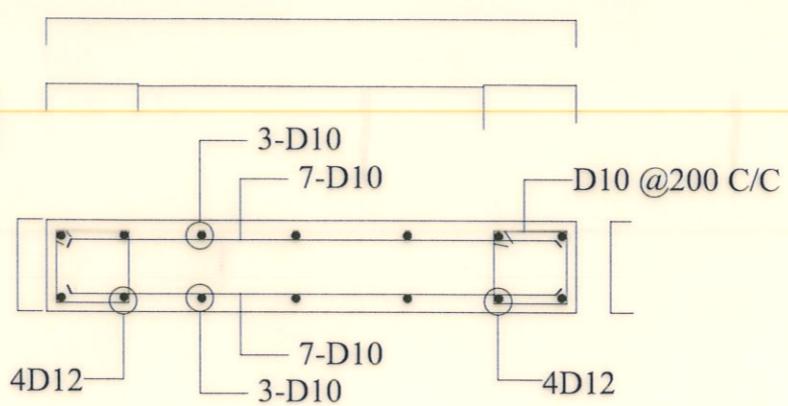
## **REINFORCEMENT DETAILS OF BENCH**

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**Section of (Sec R-R)**

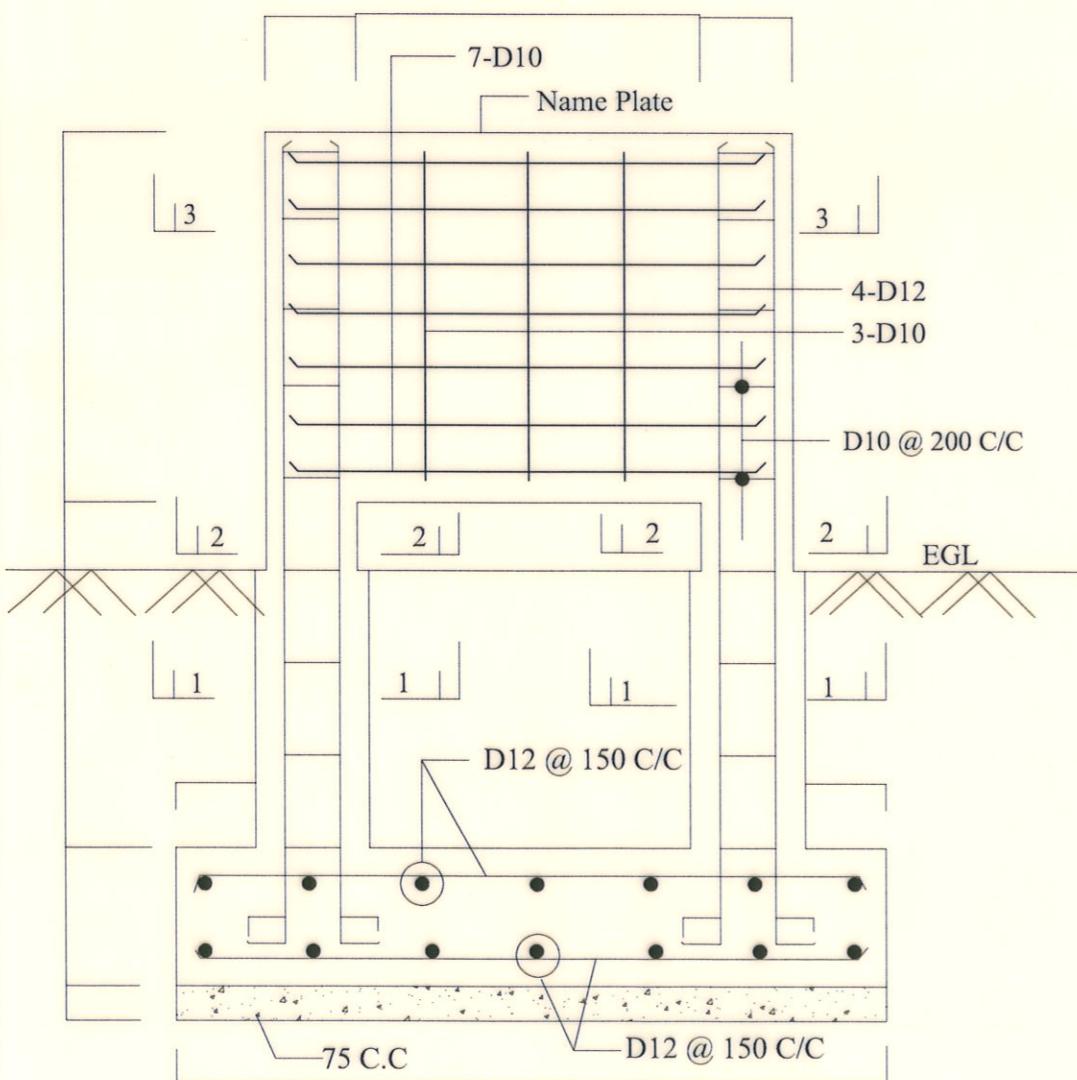
<p style="text-align: center;"><b>BANGLADESH WATER DEVELOPMENT BOARD</b>  <b>OFFICE OF THE SUPERINTENDING ENGINEER</b>  <b>DESIGN CIRCLE-8</b></p> <p>Protection of Morrelgonj Upazila Sadar &amp; Adjacent Area From Erosion of Panguchi River &amp; Dredging of Biskhali River in Bagerhat District.</p>	
<p style="text-align: center;">Design of River Bank Protective Work of Adjacent Area of Morrelgonj Ferry Ghat in between KM 0.000 To KM 3.262 Total 2300m Along the Right Bank of Panguchi River at Upazila-Morrelgonj, District-Bagerhat under Bagerhat O &amp; M Division, BWDB, Bagerhat.</p>	
<b>DETAILS OF UMBRELLA SHED &amp; BENCH</b>	
<p><b>DESIGNED BY:</b>    (ZAYED BIN SAIF), AE</p>	<p><b>RECOMMENDED BY:</b>    (MOHAMMAD SAIF UDDIN), SE</p>
<p><b>CHECKED &amp; RECOMMENDED BY:</b>    (JAKARIA PERVEZ), EE</p>	<p><b>APPROVED BY :</b>    (MD. ENAYET ULLAH), CE, Design</p>
<p><b>DATE:</b> 23-11-2022</p>	<p><b>DWG NO :</b> DC-8-0314-16/18</p>



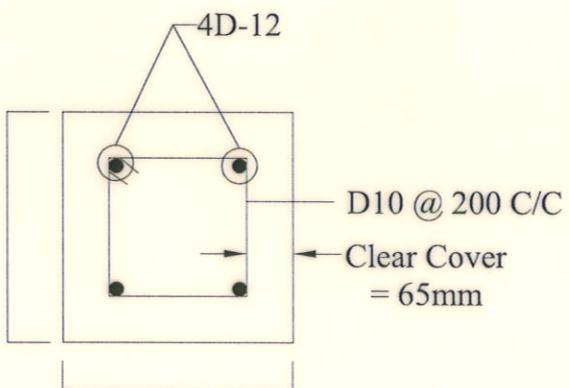
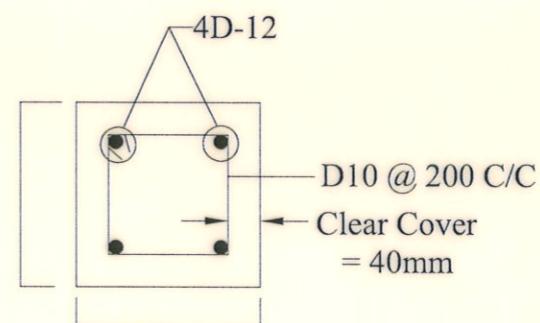
DATE	PREPARED	CHD	REM	APPROVED
REVISIONS				
BANGLADESH WATER DEVELOPMENT BOARD				
OFFICE OF THE SUPERINTENDING ENGINEER				
Rehabilitation CIRCLE-5				
Protection of Morrelgonj Upazila Sadar & Adjacent Area From Erosion of Panguchi River & Dredging of Biskhali Riverin Bagerhat District.				
Design of River Bank Protective Work of Adjacant Area of Morrelgonj Ferry Ghat in between KM 0.000 To KM 3.262 Total 2300m Along the Right Bank of Panguchi River at Upazila-Morrelgonj, District-Bagerhat under Bagerhat O & M Division, BWDB, Bagerhat.				
DETAILS OF R.C.C U-DRAIN				
DESIGNED BY: 	RECOMMENDED BY: 			
CHECKED BY: 	APPROVED BY: 			
(JAKARIA PERVEZ), EE				
(MD. ENAYET ULLAH), CE, Design				

**FOOTING FOR NAME PLATE****SECTION 3-3**

I:\Panguchi KM 0.000 TO KM 4.500\2.png

**SECTION E-E**

Scale : Not To Scale

**SECTION 1-1****SECTION 2-2**

BANGLADESH WATER DEVELOPMENT BOARD  
OFFICE OF THE SUPERINTENDING ENGINEER  
Rehabilitation CIRCLE-5

Protection of Morrelgonj Upazila Sadar & Adjacent Area From Erosion  
of Panguchi River & Dredging of Biskhali Riverin Bagerhat District.

Design of River Bank Protective Work of Adjancat Area of Morrelgonj  
Ferry Ghat in between KM 0.000 To KM 3.262 Total 2300m Along the  
Right Bank of Panguchi River at Upazila-Morrelgonj, District-Bagerhat under  
Bagerhat O & M Division, BWDB, Bagerhat.

**DETAILS OF NAME PLATE**

DESIGNED BY:

(ZAYED BIN SAIF), AE

(MOHAMMAD SAIF UDDIN), SE

CHECKED BY:

(JAKARIA PERVEZ), EE

(MD. ENAYETULLAH), E, Design

DATE: 23-11-2022

DWG NO.: DC-8-0314-18/18