

Bangladesh Water Development Board



"Protection of Talbaria area of Mirpur Upazila & Kamorkandi area of Shelaidah Union of Kumarkhali Upazila in Kushtia District from the erosion of Padma River"

**Design of Protective Work along the R/B of Padma River from
KM 6.720 to KM 15.720=9.000 KM at Talbaria, Baruipara and Bahalbaria union,
Upazila: Mirpur, District: Kushtia.**

Kushtia WD Division, BWDB, Kushtia.

Designed by: Design Circle-5, BWDB, Dhaka.

February, 2024

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Bangladesh Water Development Board

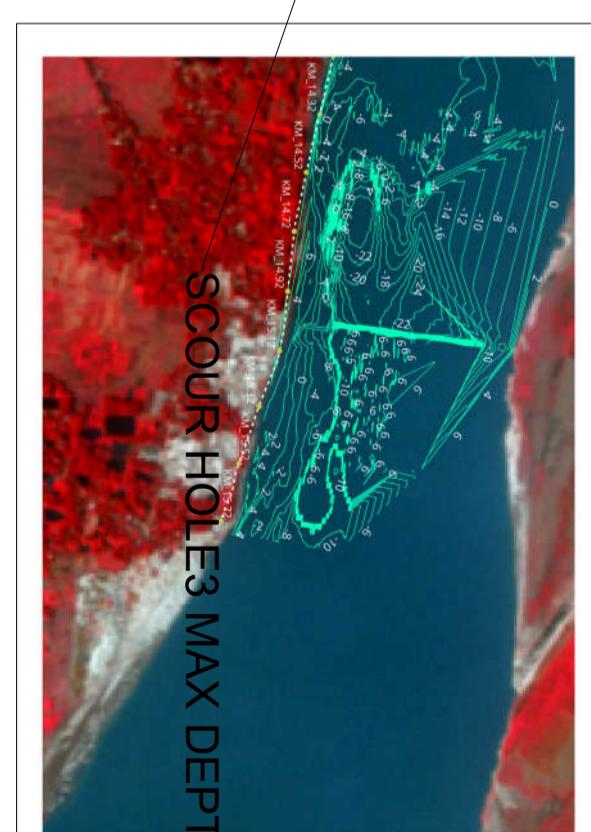
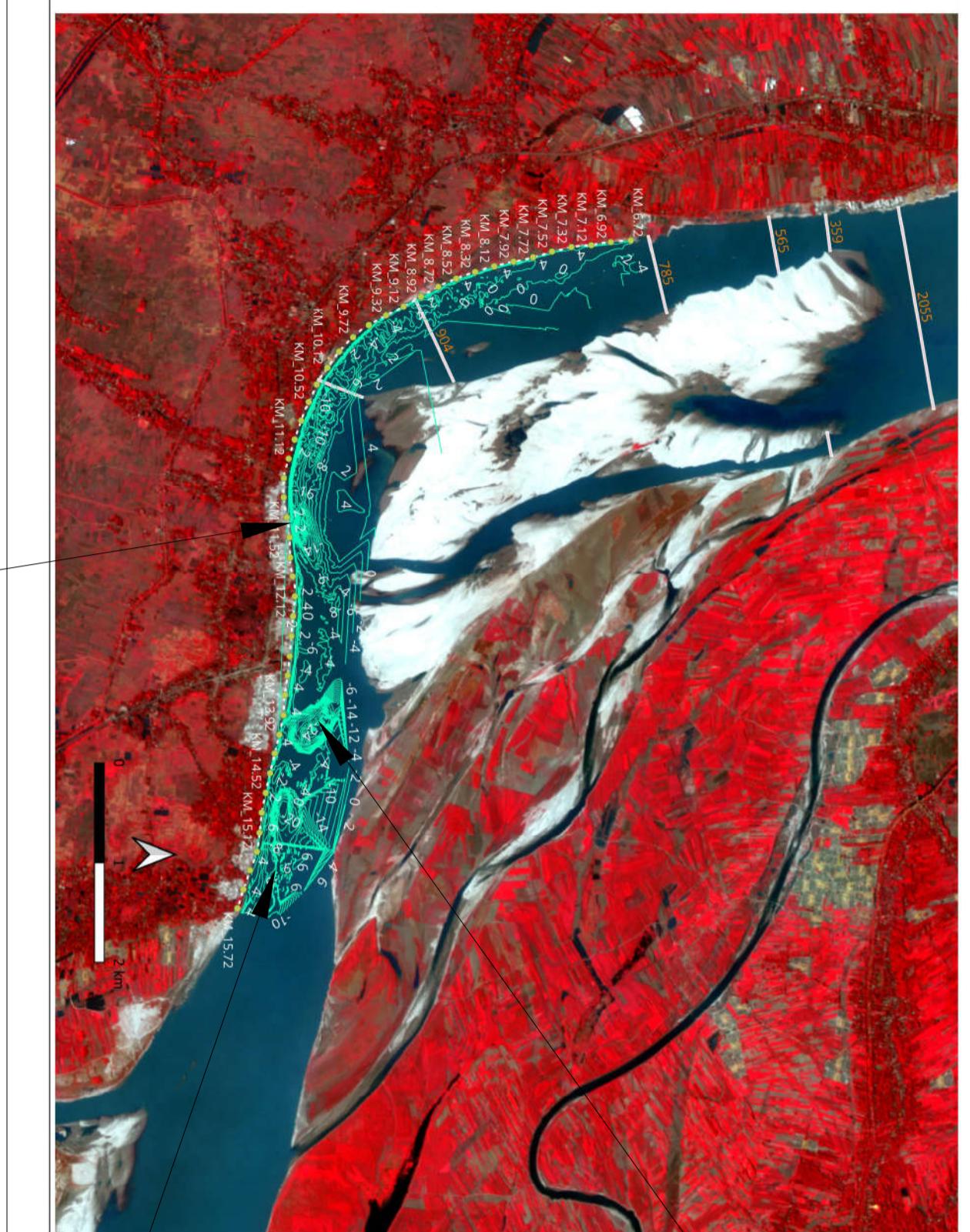
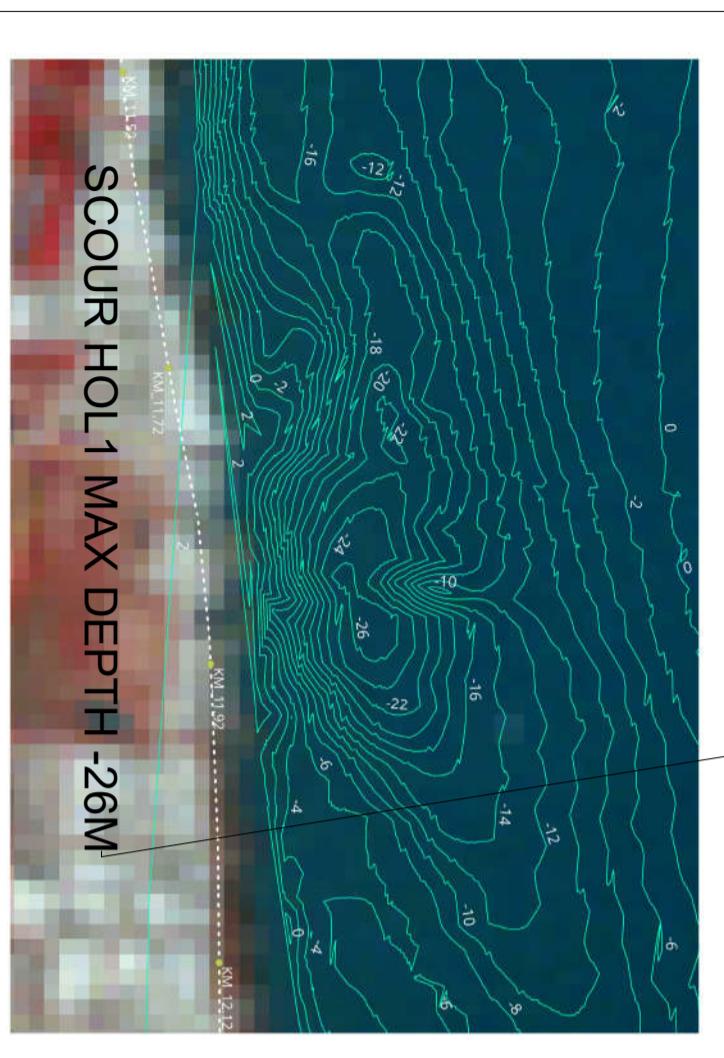
Office of The Superintending Enginner,Design Circle-2

Protection of Talbaria area of Mijpur Upazila & Kamarkandi area of Shelaiddah Union of Kumirkhali Upazila
Kushtia District from the erosion of Padma River

Design of Protective Work along the R/B of Padma River from KM 6.720 to KM 15.720-9.000 ft
at Talbaria, Baruipara and Bahabaria union, Upazila: Mijpur, District: Kushtia Kushtia O & N
Division, BWDB, Kushtia.

TABLE OF CONTENTS

DESIGNED BY: (SHAMMI AKHTER),SDE	RECOMMENDED BY: (JAKARIA PERVEZ),SE
CHECKED BY: (MST.TASMEM JAHAN),EE	APPROVED BY: (MD MAHFUZUR RAHMAN),CE,DESIC
DATE:XX-XX-XXXX	Drawing No:DC-5-XXXX-XX/XX



Bangladesh Water Development Board

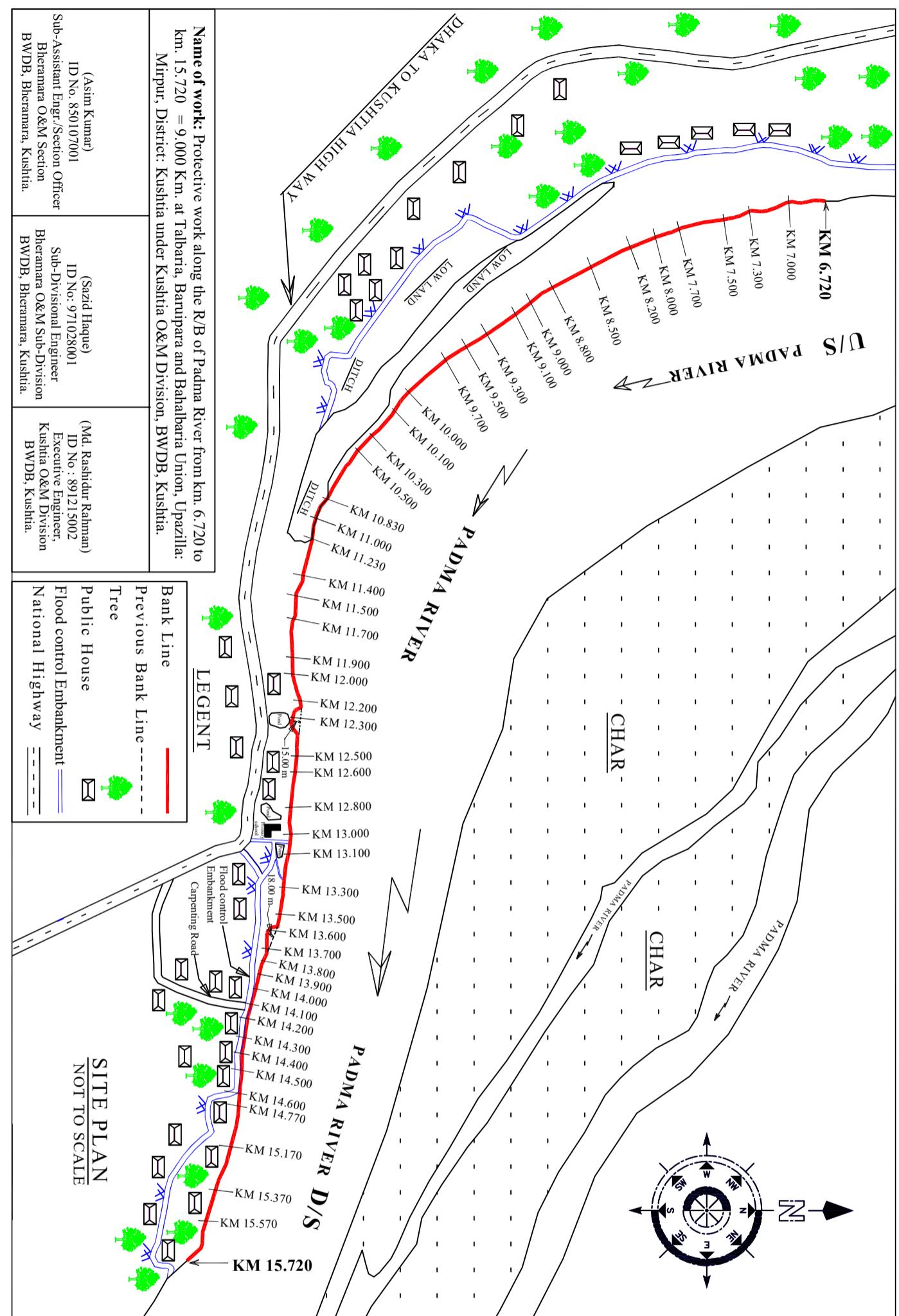
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Protection of Talbaria area of Mipur Upazila & Kamarkandi area of Shelaiddah Union of Kumirkhali Upazila
Kushita District from the erosion of Padma River

Design of Protective Work along the R/B of Padma River from KM 6.720 to KM 15.720-9.000 ft
at Talbaria, Baruapara and Bahabaria union, Upazila: Mipur, District: Kushita O & N Division, BWDB, Kushita.

INDEX MAP

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Kushtha District from the erosion of Padma River

Design of Protective Work along the R/B of Padma River from KM 6.720 to KM 15.720=9,000 h at Talbaria, Baruipara and Bahalbaria union, Upazila, Miltpur, District: Kushtia Kushtia O & M Division RWDR Kushtia

SITE PLAN	
DESIGNED BY:	RECOMMENDED BY:
(SHAMMI AKHTER),SDE	(JAKARIA PERVEZ),SE
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DATE:XX-XX-XXXX	Drawing No:DC-5-XXXXX-XX/XX

1. THIS WORKING DRAWING FOR PROTECTION WORK HAS BEEN PREPARED BASED ON DATA SENT BY THE SUPERINTENDING ENGINEER, KUSHTIA O&M CIRCLE, BWDB, KUSHTIA VIDE HIS OFFICE MEMO NO: 6P-14/1045, DATE: 24/01/2024.
2. THIS REVISED WORKING DRAWING PREPARED ON THE BASIS OF REVISED BATHYMETRY SURVEY DATA PROVIDED BY FIELD OFFICE.

3. RIVER IN TALBARIA REACH IS HIGHLY DYNAMIC. BANKLINE IS SHIFTING, CHAR AREA RAPIDLY CHANGING SHAPE AND SIZE. LOCATION OF SCOUR HOLES IS NOT FIXED AND UNCERTAIN.
4. A JOINT MEETING BETWEEN BWDB, DESIGN OFFICE, FIELD OFFICE AND STUDY TEAM WAS HELD ON 15-01-2025. MINUTES OF THE MEETING SHALL CONFORM AS INTEGRAL PART OF THIS DRAWING AND ATTACHED IN DRAWING SHEET 4/15
5. THIS REVISED DRAWING IS PREPARED ON THE BASIS OF DECISION TAKEN ON THIS MEETING WITH AUTHORIZATION FROM THE COMPETENT AUTHORITY.

DESIGN UPDATES:

1. DUE TO CAUSES EXPLAINED IN DESIGN PREPARATION NOTE NO : 3, A RENEWED MATHEMATICAL MODEL IS NECESSARY.
2. DUE TO URGENCY OF SITUATION THIS COULD NOT BE DONE.
3. SO COMPETENT AUTHORITY HAS DECIDED TO UPDATE THE MATHEMATICAL MODEL IN PARALLEL TO CONSTRUCTION WORK.
4. FIELD OFFICE SHALL MAKE NECESSARY PROVISION TO UPDATE THE MATHEMATICAL MODEL. THEY SHALL ENSURE THAT THE RESULT IS AVAILABLE AS EARLY AS POSSIBLE.
5. IF ANY CHANGE/ADAPTATION REQUIRED FROM THE RESULT INTERPRETATION OF THE MODEL STUDY THIS DRAWING SHALL BE UPDATED ACCORDINGLY.
6. ADAPTATION REQUIREMENTS SHALL BE MET FROM GEOBAG PROVISION MENTIONED IN DURING CONSTRUCTION MONITORING AND ADAPTATION NOTE : 6.

DURING CONSTRUCTION, MONITORING AND ADAPTATION:

1. AS DECISION TAKEN ON JOINT DISCUSSION MEETING FIELD OFFICE SHALL MAKE NECESSARY ARRANGEMENT FOR MULTIBEAM BATHYMETRY SURVEY ON EVERY SEVEN DAYS.
2. DATA COLLECTION AND DATA PROCESSING OF MULTIBEAM SURVEY SHALL BE CARRIED OUT BY JOINT TEAM OF KUSTIA MORPHOLOGY DIVISION AND IWM.
3. SURVEY TEAM SHALL SUBMIT PROCESSED DATA IN FORMAT REQUIRED BY THE DESIGN CIRCLE-5.
4. NECESSARY PROVISION SHALL BE MADE ON REVISED DPP FOR COST OF SURVEYING.
5. DESIGN OFFICE SHALL PROPOSE NECESSARY ADAPTATION BASED ON REVISED SURVEY DATA.
6. FIELD OFFICE SHALL MAKE PROVISION FOR 20 M³/M ADDITIONAL GEOBAG IN ORDER TO ADDRESS ADAPTATION THAT MAY BE REQUIRED.

BANGLADESH WATER DEVELOPMENT BOARD

OFFICE OF THE SUPERINTENDING ENGINEER

DESIGN CIRCLE-5

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Kushtia O & M Division, BWDB, Kushtia.

NOTES

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RECOMMENDED BY:

(SHAMMI AKHTER), SDE

CHECKED BY :

(JAKARIA PERVEZ), SE

(MST. TASMEM JAHAN), EE

APPROVED BY :

(MST. TASMEM JAHAN), EE

DATE: XX-XX-2025

DWG NO.: DC-5-0000-05/XX

MINUTES OF DESIGN REVIEW MEETING

বিষয়	আলোচনা	সিদ্ধান্ত
	<p>প্রধান প্রকৌশলী, নকশা ও গবেষণা মহোদয় বলেন যে, Mathematical Model Update সময়সাপেক্ষ ব্যাপার। তাই Mathematical Model Update করে Design প্রণয়ন সম্ভব নয়। তবে যেহেতু adaption এর ব্যবস্থা আছে, Mathematical Model Update করে তার ফলাফলের ভিত্তিতে প্রযোজনীয় ব্যবস্থা নেওয়া হোতে পারে।</p> <p>তিনি Field Office কে অতি সত্ত্বর Model Update এর ব্যবস্থা নিতে বলেন।</p> <p>নির্বাচী প্রকৌশলী, কৃষ্ণীয়া পালি উন্নয়ন বিভাগ এ বিষয়ে অতি সত্ত্বর ব্যবস্থা নিবেন বলে সতত সবাইকে অবহিত করেন।</p>	<p>Update এর Result নকশা সারকেন-এ প্রেরণ করবেন।</p>

২। সতত অন্য কোন আলাচনার বিষয় না থাকায় প্রধান প্রকৌশলী নকশা ও গবেষণা মহোদয় সকলকে ধন্যবাদ জ্ঞাপন করে সতত কার্যক্রম সমাপ্ত করেন।

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DATE:XX-XX-XXXX Drawing No:DC-5-XXXX-XX/XX

TANGENTIAL.

1. FOR ANY ERROR, OMISSION OR CONFUSION PLEASE REFER TO THIS OFFICE AS QUICK AS POSSIBLE FOR NECESSARY ACTION.
2. THE WORK SHALL BE EXECUTED WITH PRIOR FINANCIAL & ADMINISTRATIVE APPROVAL, TECHNICAL SANCTION FROM THE COMPETENT AUTHORITY AND WITHIN DPP/BUDGET PROVISION.
3. ALL DIMENSIONS ARE IN MILLIMETRE (mm) AND ALL ELEVATIONS ARE IN METRE (PWD) UNLESS OTHERWISE MENTIONED IN THE DRAWING.
4. THE MATERIAL & WORKMANSHIP SHALL CONFORM TO THE STANDARD SPECIFICATIONS OF BWDB MANUAL.
5. NECESSARY LAND (IF REQUIRED) SHALL BE ARRANGED BY FIELD OFFICE BEFORE EXECUTION OF WORK.
6. THE GEO-TEXTILE FILTER HAVE THICKNESS \geq 3.00 mm.
7. GEO-TEXTILE FILTER SHALL BE EXTENDED UPTO 1000 mm BELOW THE WORKING LOW W.L./TOE OF PITCHING WORK AS SHOWN IN THE DRAWING.
8. GEO-TEXTILE MATERIALS SHALL BE PRESERVED AGAINST UV RAY AND FROM ANY OTHER DAMAGES.
9. GEO-TEXTILE MATERIALS AFTER PLACING SHALL NEVER BE EXPOSED TO SUNLIGHT.
10. TO MAKE SAND LAYER BELOW GEO-TEXTILE BY USING F.M. 1.0 TO 1.50 OF SAND.
11. FULL LENGTH OF PROPOSED PROTECTIVE WORK SHALL BE DONE AT A TIME IN ONE DRY SEASON FOR EFFECTIVENESS.
12. 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.
13. SLOPE OF PITCHING WORK SHALL BE MAINTAINED AS PER EXISTING SLOPE OR AS PER DESIGN SECTION, BUT NOT STEEPER THAN 2.5H:1V & 3H:1V. ALL BANK IRREGULARITIES ABOVE WORKING WATER LEVEL SHALL BE REMOVED. NECESSARY CUTTING & FILLING SHALL BE DONE IN THIS RESPECT AS PER FIELD REQUIREMENT.
14. A SMOOTH TRANSITION TO BE PROVIDED BETWEEN HIGHER & LOWER LEVEL AND FLATTER & STEEPER SLOPE OF THE PROTECTIVE WORK. TOP LEVEL & SLOPE OF PITCHING WORK SHALL BE MATCHED WITH EXISTING BANK LEVEL & SLOPE OF PITCHING WORK.
15. AT THE STARTING AND AT THE END OF THE PROTECTIVE WORK TRANSITION TO THE EXISTING

a) SPECIAL NOTES: INK LINE SHIFTING AND CONSIDERING MANUFACTURING TIME OF C.C. BLOCK ADDITIONAL OBSERVATION & SUPERVISION MUST AS PER DETAILS "A" (SEE SHEET NO.27 of 33) IF REQUIRED.

b) FOR SUSTAINABILITY OF THE WORK, IN THE PROPOSED LENGTH OF PROTECTION, ALL DUMPING WORK SHALL BE DONE IN THE DRY SEASON (NO RAINFALL & NO MONSOON). OTHERWISE, ADMINISTERING APPROVAL AND TECHNICAL SANCTION FROM THE COMPETENT AUTHORITY.

c) CO WORKSHOP & WORKSHOP ON THE PROTECTION WHICH WORK SHALL CONFORM STANDARD PRACTICE OF BWDB.

d) THIS APPROVED DRAWING (GEO-TEXTILE & DUMPING ZONE) MUST BE UNIFORMLY DUMPED AT DUMPING ZONE ACCORDING TO APPROVED DRAWING AND IN PRESENCE OF COMPETENT AUTHORITY.

4. SLOPE DEVELOPMENT BELOW WORKING LWL BY DUMPING 200 KG SAND FILLED GEO-BAGS (POLYESTER FABRIC) MUST BE DONE PROPERLY AS SHOWN IN THE DRAWING. POST WORK SECTION MUST BE TAKEN & TO BE RECORDED IN THE LEVEL BOOK AFTER COMPLETION OF THIS SLOPE DEVELOPMENT WORK BY GEO-BAG BEFORE STARTING THE DUMPING OF GEO-BAG / C.C BLOCK.

5. THIS DRAWING SUPERSIDES THE PREVIOUS APPROVED WORKING DRAWING (DWG NO.:DC-5-5712-01/33 to 33/33, DATE: 00-00-2025) FOR THE SAME WORK.

6. BEFORE EXECUTION OF WORK, CROSS SECTIONS WILL BE TAKEN AND COMPARE WITH DESIGN SECTION, IF ANY DISSIMILARITY HAS BEEN OBSERVED THEN IT SHALL BE INFORMED TO THE CONCERNED DESIGN OFFICE FOR FURTHER NECESSARY ACTION.

7. CLOSE CROSS-SECTION OF RIVER SHALL BE TAKEN BEFORE, DURING AND AFTER EXECUTION OF PROTECTIVE WORK AND CONFIRM UNIFORM DUMPING AS PER DESIGN.

8. HEAP OF CUTTING EARTH (FOR SLOPE PREPARATION) AT TOE OF PITCHING BLOCK OR IN DUMPING ZONE MUST NOT BE ALLOWED.

9. IN PRESENT SITUATION AN ANGULAR FLOW HIT TOWARDS THE RIGHT BANK OF PADMA RIVER, SHIFTING THE THALWEG CLOSED TO THE RIGHT BANK AND ILLEGAL & UNPLANNED SAND LIFTING FROM RIVER BED, RIVER BANK EROSION HAS BEEN OCCURRED DURING LAST MONSOON & POST MONSOON PERIOD. THIS HAS BEEN TAKEN CONSIDERATION DURING PREPARATION OF THIS DRAWING.

10. VOLUME OF DUMPING MATERIALS CALCULATED IN THIS DRAWING CONSIDERING 100 YEARS RETURN PERIOD & ANGULAR FLOW.

11. THE LENGTH OF PROPOSED PROTECTIVE WORK IS FIXED BY THE FIELD OFFICE. THE PROTECTION WORK WILL BE NEEDED U/S OF PROPOSED PROTECTIVE WORK TO MAKE IT MORE SUSTAINABLE OTHERWISE THE PROPOSED WORK WILL BE VULNERABLE.

12. ALL SAFETY PRECAUTIONS MUST BE TAKEN DURING EXECUTION OF WORK.

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(MST. TASMEM JAHAN), EE

(MD. MAHFUZUR RAHMAN), CE, DESIGN

DATE: 00-00-2025

DWG NO.: DC-5-0000-03/33

NOTES FOR GEOBAG (POLYPROPYLENE):

1. EACH BAG DELIVERED AT SITE SHALL BE MARKED WITH LABELS THAT IDENTIFY BRAND NAME, CONTRACT PACKAGE NO, SIZE OF BAG, DATE 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 SIEVE. SAND SHOULD BE FREE FROM CLAY & ORGANIC MATTER.
4. IN GEOTEXTILE FABRIC, POLYPROPYLENE SHALL BE 97% AND ADDITIVES SHALL BE 3%. CARBON BLACK (2%) AND ANTIOXIDANTS (1%) MAY BE MIXED AS ADDITIVES.
5. ISO 13438:2018 IS FOR TEST OF SERVICE LIFE OF GEOTEXTILE FABRIC AND GEOBAG.
6. EN 11924:2000 IS FOR ALLOWABLE MAXIMUM EXPOSURE TIME DURING INSTALLATION OF GEOTEXTILE FILTER AND GEOBAG.
7. THE GEO-TEXTILE PRODUCT MANUFACTURER SHALL CERTIFY THE PERFORMANCE (VALUE) OF THEIR PRODUCT DESCRIBING DIFFERENT PROPERTIES SUCH AS EFFECTIVE OPENING SIZE Ø90, MASS, THICKNESS, STRENGTH, ELONGATION, MAXIMUM EXPOSURE TIME, DURABILITY (OR VALUE TIME) ETC.
8. 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 SCHEDULE.

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 BY ADAPTIVE APPROACH. IF ANY DETRIMENTAL MORPHOLOGICAL CHANGES IS OBSERVED, THEN DESIGN OFFICE MUST BE INFORMED WITH ADEQUATE DATA SO THAT NECESSARY ACTION CAN BE TAKEN.
3. DREDGING ADJACENT OR IN FRONT OF PROTECTIVE WORK SHALL NOT BE ALLOWED.

NOTES FOR C.C BLOCKS:

1. CONCRETE FOR C.C BLOCK SHALL HAVE MINIMUM CYLINDER STRENGTH OF 12.00N/mm² FOR PITCHING BLOCK & 10.50N/mm² FOR DUMPING BLOCK AT 28 DAYS (STONE CHIPS USE AS COARSE AGGREGATE).
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 DUMPING:

1. WORK SHALL BE EXECUTED ONLY WHEN WL IS AT OR NEAR WORKING LOW 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 SHALL BE USED FOR DUMPING.
 - a. FLAT TOP BARGE / PONTOONS/DUMPING 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 DUMPING BOAT.
5. SPECIAL CARE SHALL BE TAKEN FOR ANCHORING OF DUMPING PONTOON/BOAT.
6. WORK SHALL BE STARTED FROM U/S END AND FROM DUMPING END TO BANK.
7. 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 WORKING LOW W.L.
 - c. DUMPING OF C.C BLOCKS BELOW WORKING LOW W.L. OVER GEOBAG.
 - d. SLOPE PREPARATION & PITCHING WORK ABOVE WORKING LOW W.L.

8. A 'NEED BASED DUMPING' APPROACH SHALL BE TAKEN WHERE THE SCOUR HOLES ARE IDENTIFIED AT FIRST AND ADDRESSED ACCORDINGLY.
9. A BASELINE SURVEY SHALL BE DONE FOR ACTUAL DISTRIBUTION OF GEO-BAGS ACCORDING TO PREVAILING RIVER CONDITIONS BEFORE START OF THE WORK. A SECOND SURVEY SHALL BE UNDER TAKEN WITHIN 12 HOURS BEFORE DUMPING IN A DESIGNATED NEXT AREA AND AT NOT MORE THAN 10.00 METRES IN INTERVAL BETWEEN ADJACENT CROSS SECTIONS. IF ANY ADVERSE SITUATION ARISED, IT SHOULD BE REPORTED TO THE COMPETENT AUTHORITY FOR NECESSARY ACTION.

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

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(JAKARIA PERVEZ), SDE

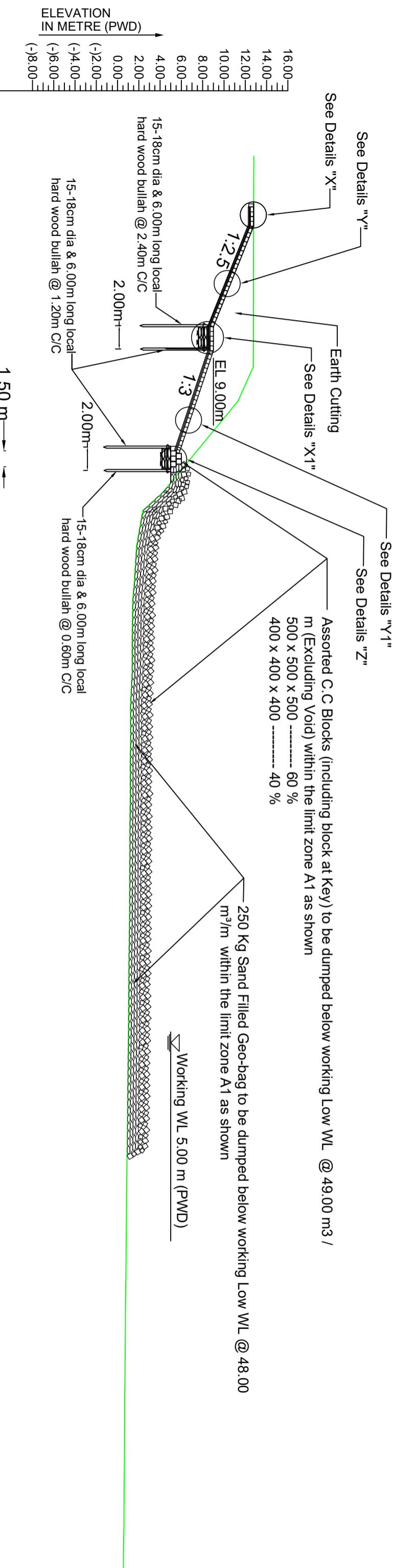
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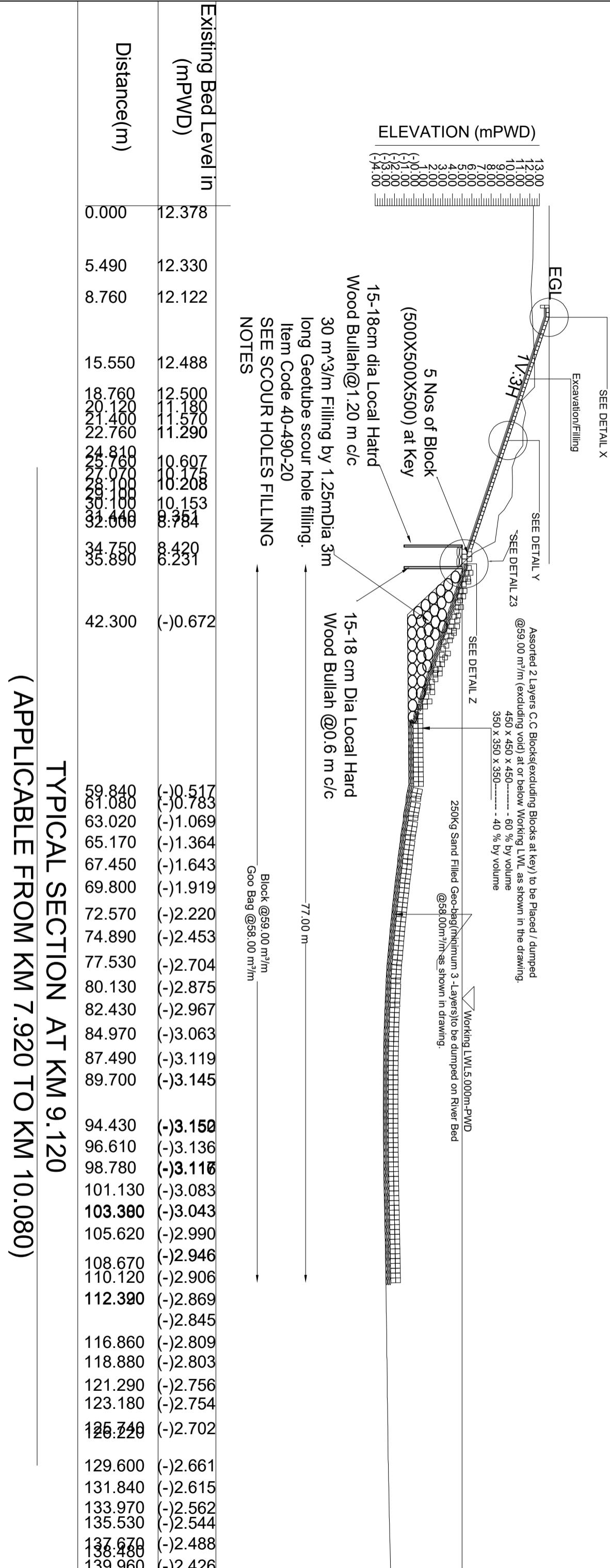
(MD. MAHFUZUR RAHMAN), CE, DESIGN



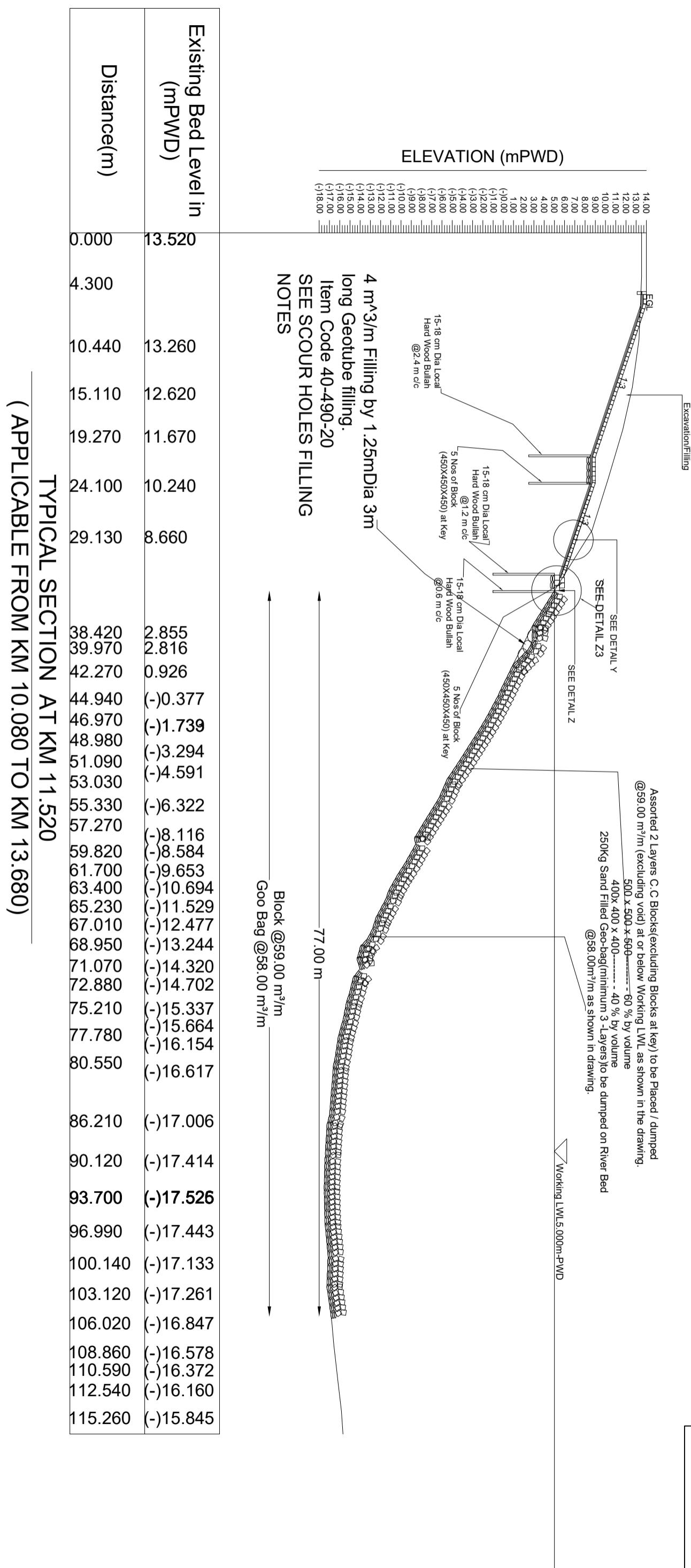
TYPICAL X-SECTION AT KM 7.480
(Applicable from KM 6.720 TO KM 7.920)

EXT. LEVEL IN m (PWD)	DISTANCE IN m
-0.00	-0.00
-2.96	-9.80
-9.80	-12.99
-12.99	-19.80
-19.80	-23.02
-23.02	-31.59
-31.59	-33.34
-33.34	-36.73
-36.73	-40.14
-40.14	-41.73
-41.73	-45.15
-45.15	-48.60
-48.60	-50.16
-50.16	-51.71
-51.71	-55.17
-55.17	-56.71
-56.71	-60.17
-60.17	-61.70
-61.70	-65.18
-65.18	-68.68
-68.68	-70.19
-70.19	-71.69
-71.69	-75.20
-75.20	-76.68
-76.68	-80.21
-80.21	-81.68
-81.68	-85.21
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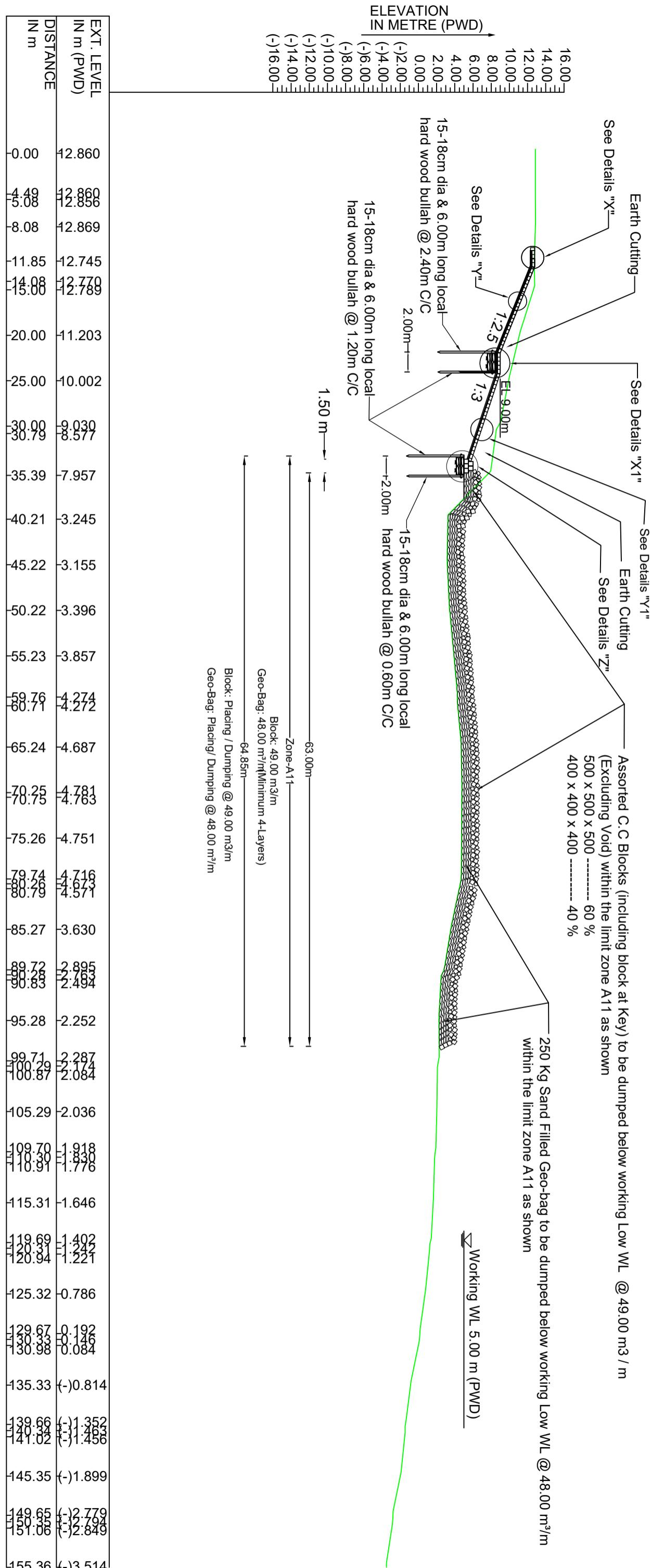
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OFFICE OF THE SUPERINTENDING ENGINEER	
DESIGN CIRCLE-5	
<p>"Protection of Talbaria area of Mirpur Upazila & Kamarkandi area of Shelaiddah Union of Kumarkhali Upazila in Kushtia District from the erosion of Padma River"</p> <p>Design of Protective Work along the R/B of Padma River from KM 6.720 to KM 15.720=9.000 KM at Talbaria, Baruijara and Bahalbaria union, Upazila: Mirpur, District: Kushtia Kushtia WD Division, BWDB, Kushtia.</p>	
SECTION OF PROTECTIVE WORK AT KM 7.480	
DESIGNED BY:	RECOMMENDED BY:
(SHAMMI AKHTER, SDE) CHECKED BY:	(JAKARIA PERVEZ), SE APPROVED BY:
(MST. TASMEM JAHAN), EE DATE: 00-01-2025	(MD. MAHFUZUR RAHMAN), CE, DESIGN DWG NO.: DC-5-0000-05/33



Bangladesh Water Development Board	
Office of The Superintending Engineer,Design	
Circle-5	
Protection of Talbaria area of Mirpur Upazila & Kamarkandi area of Shelaiaidah Union Kumarkhali Upazila in Kushtia District from the erosion of Padma River	
Design of Protective Work along the R/B of Padma River from KM 6.720 to KM 15.720=9.000 KM at Talbaria, Baruipara and Barabbaria union, Upazila: Mirpur, District: Kushtia Kushtia O & M Division, BWDB, Kushtia.	
TYPICAL CROSS SECTION OF TALBARIA PROTECTIVE WORK	
DESIGNED BY: (SHAMMI AKHTER),SDE	RECOMMENDED BY: (JAKARIA PERVEZ),SE
CHECKED BY:	APPROVED BY: (MD. MAHFUZUR RAHMAN),CE,DES
DATE:XX-XX-2025	Drawing No:DC-5-00XX-0X/XX



DESIGNED BY:	RECOMMENDED BY:
(SHAMMI AKHTER),AE	(JAKARIA PERVEZ),SE
CHECKED BY:	APPROVED BY:
(MST.TASMEM JAHAN),EE	(MD. MAHFUZUR RAHMAN),CE,DESI
DATE:06-06-2021	Drawing No:DC-8-00773-06/09



TYPIICAL X-SECTION AT KM 14.980
(Applicable from KM 14.800 TO KM 15.400)

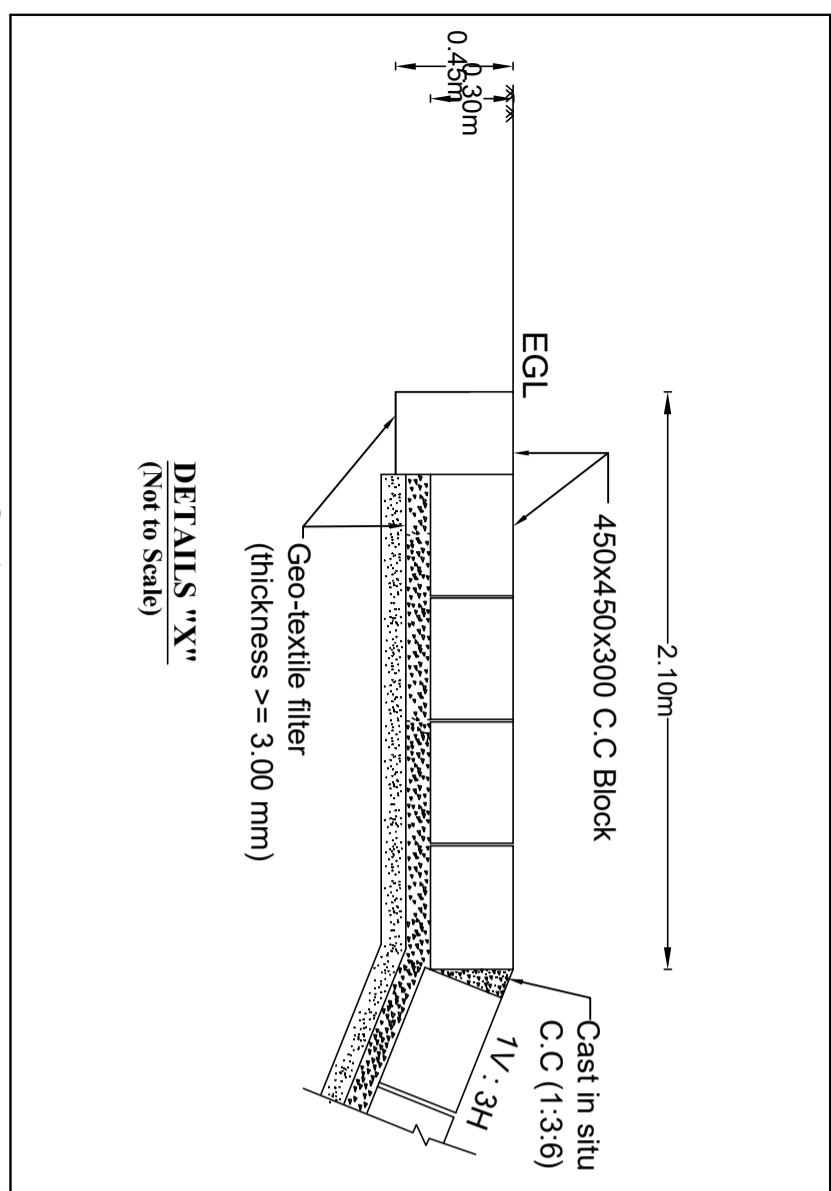
EXT. LEVEL IN m (PWD)	IN m (PWD)
-0.00	12.860
-4.49	12.856
-8.08	12.869
-11.85	12.745
-14.08	12.778
-20.00	11.203
-25.00	10.002
-30.00	9.030
-30.79	8.577
-35.39	7.957
-40.21	3.245
-45.22	3.155
-50.22	3.396
-55.23	3.857
-59.76	4.274
-60.71	4.272
-65.24	4.687
-70.25	4.781
-70.75	4.763
-75.26	4.751
-79.74	4.716
-80.79	4.673
-85.27	3.630
-89.72	2.895
-90.63	2.494
-95.28	2.252
-99.71	2.287
-100.87	2.174
-105.29	2.036
-109.70	1.918
-110.91	1.830
-115.31	1.646
-119.69	1.402
-120.94	1.221
-125.32	0.786
-129.67	0.192
-130.98	0.146
-135.33	(-)0.814
-139.66	(-)1.352
-141.02	(-)1.456
-145.35	(-)1.899
-149.65	(-)2.779
-151.00	(-)2.849
-155.36	(-)3.514

N.B:-
a) For Details "X", "Y" & "Z" See Sheet No. 27 of 33

REVISIONS

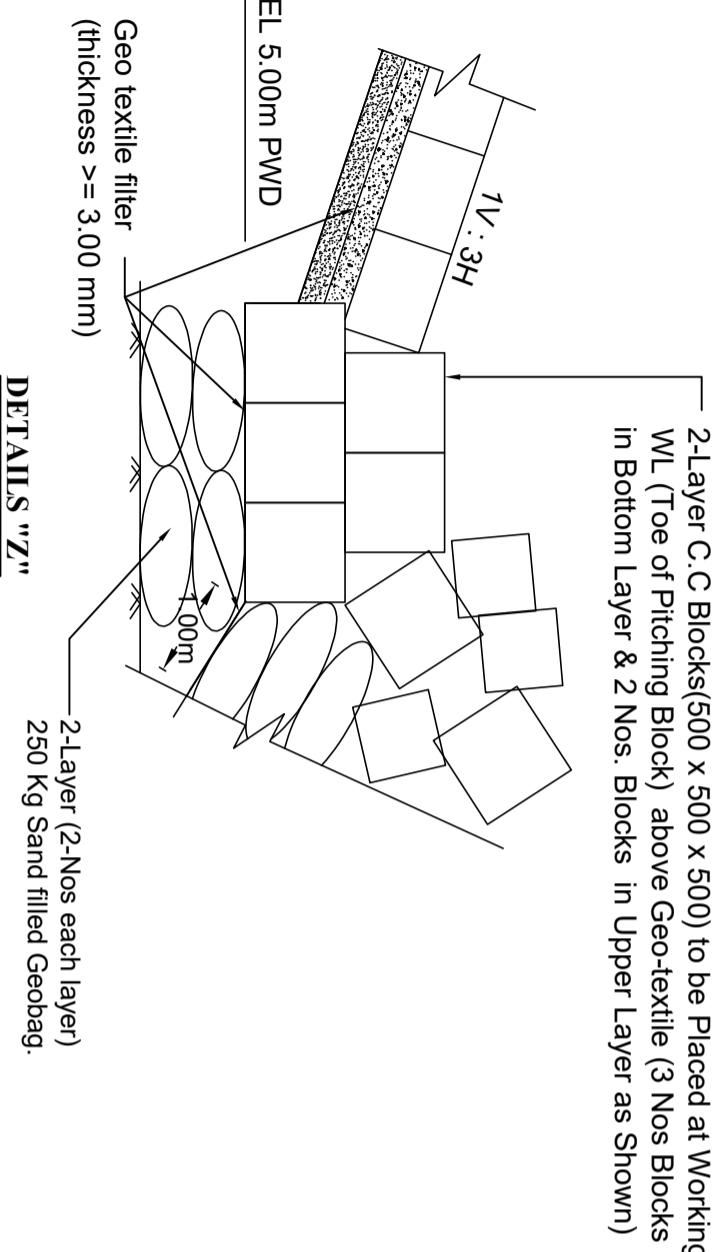
DESIGNED BY:	RECOMMENDED BY:
(SHAMMI AKHTER, SDE)	(JAKARIA PERVEZ), SE
CHECKED BY:	APPROVED BY:
(MST. TASMEM JAHAN), EE	(MD. MAHFUZUR RAHMAN), CE, DESIGN

DATE: 00-01-2025	DWG NO.: DC-5-0000-05/33
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DETAILS "X"
(Not to Scale)

BOX1
(Not to Scale)



DETAILS "Y"
(Not to Scale)

BOX2
(Not to Scale)

DETAILS "Z"
(Not to Scale)

DETAILS

Bangladesh Water Development Board

Office of The Superintending Enginner, Design Circle-2

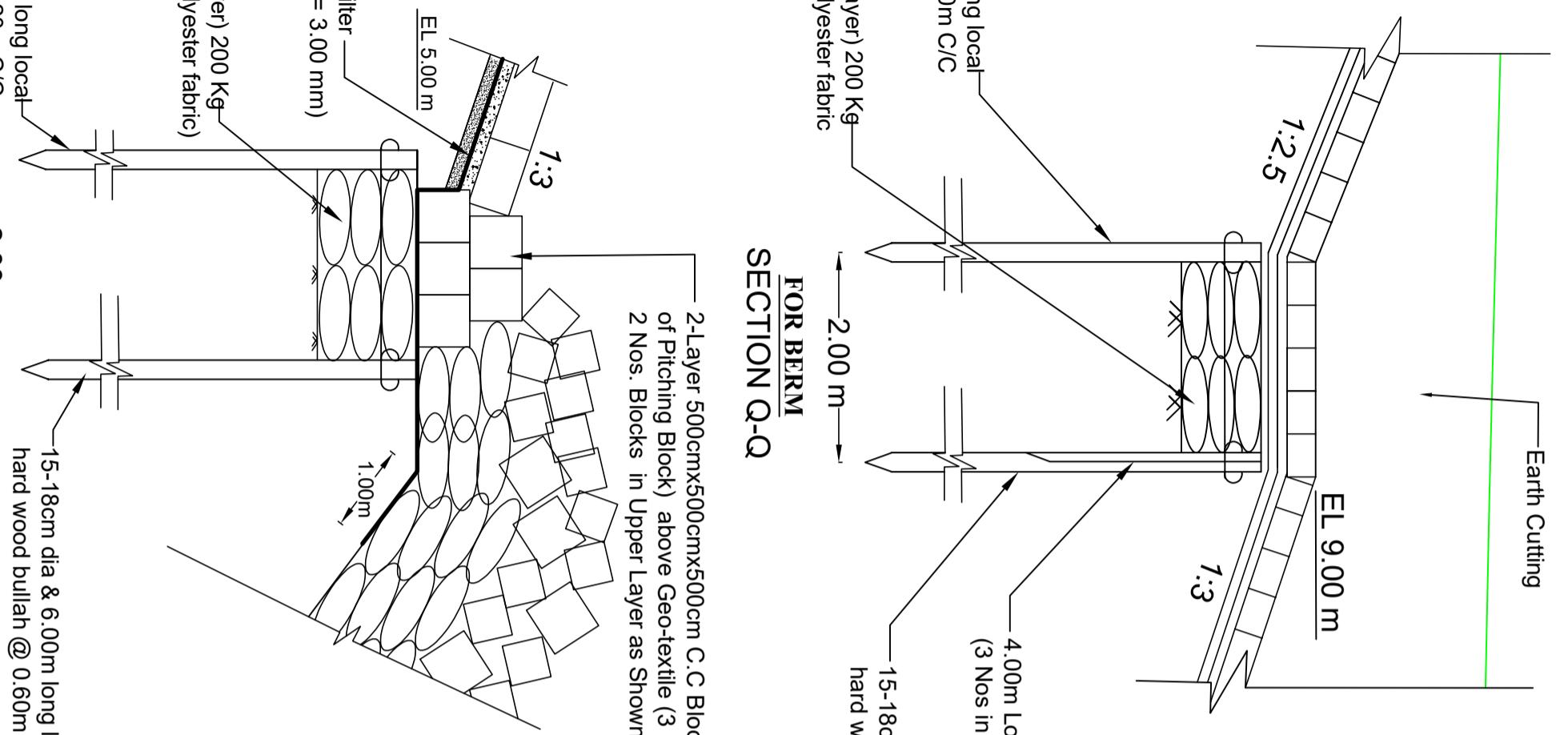
Protection of Talbaria area of Mijpur Upazila & Kamarkandi area of Shelaiddah Union of Kumirkhali Upazila Kushtia District from the erosion of Padma River

Design of Protective Work along the R/B of Padma River from KM 6.720 to KM 15.720-9.000 ft at Talbaria, Baruipara and Bahabaria union, Upazila: Mijpur, District: Kushtia Kushtia O & N Division, BWDB, Kushtia.

BOX3
(Not to Scale)

DESIGNED BY:
(SHAMMI AKHTER),SDE
RECOMMENDED BY:
(JAKARIA PERVEZ),SE

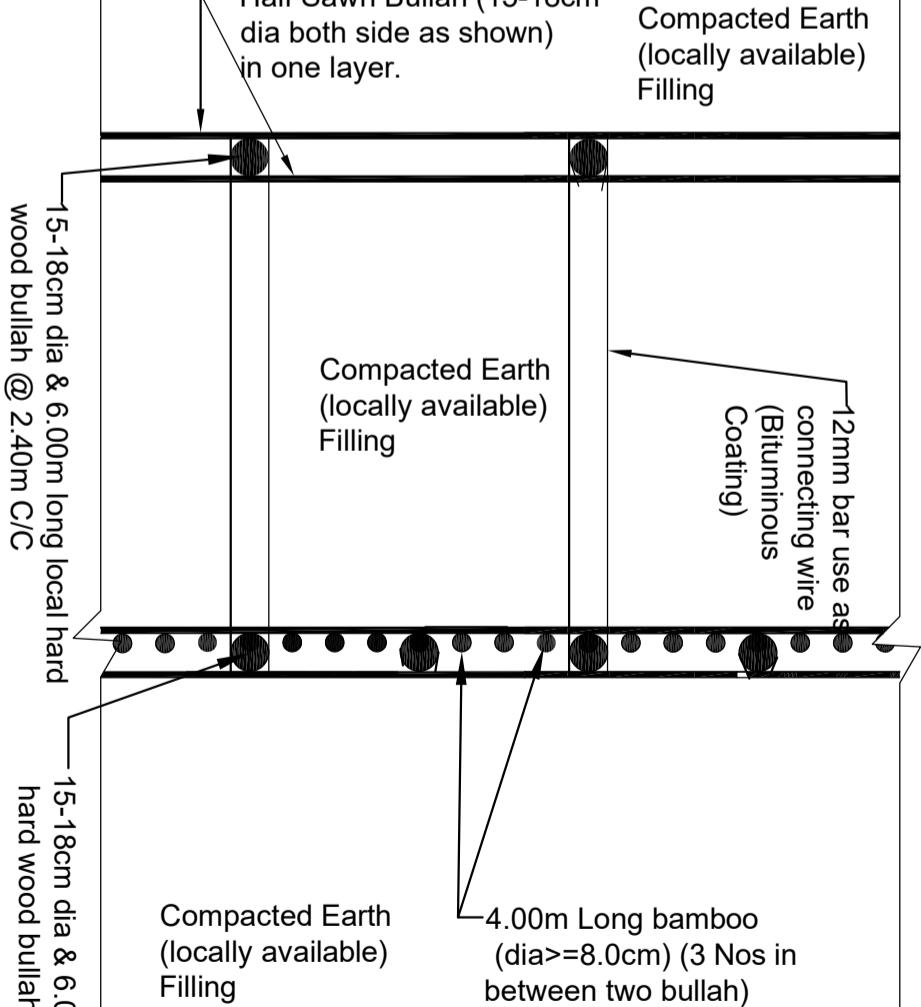
CHECKED BY:
(MST.TASMEM JAHAN),EE
APPROVED BY:
(MD MAHFUZR RAHMAN),CE,DESIC
DATE:06-06-2021 Drawing No:DCC-8-0073-08/09



15-18cm dia & 6.00m long local hard wood bullah @ 2.40m C/C
 3-Layers (2-Noseach layer) 200 Kg Sand filled Geobagspolyester fabric
 15-18cm dia & 6.00m long local hard wood bullah @ 1.20m C/C
 4.00m Long bamboo (dia>=8.0cm)
 (3 Nos in between two bullah)

15-18cm dia & 6.00m long local hard wood bullah @ 1.20m C/C
 15-18cm dia & 6.00m long local hard wood bullah @ 2.40m C/C

SECTION Q-Q



Compacted Earth (locally available) Filling
 Compacted Earth (locally available) Filling
 Compacted Earth (locally available) Filling
 4.00m Long bamboo (dia>=8.0cm) (3 Nos in between two bullah)

PLAN FOR WOODEN BULLAH, BAMBOO & GEO BAG PLACING (Applicable from KM 6.720 to KM 15.720)

Plan for Berm (Details "XI")

	DATE	PREPARED	CHD	REM	APPROVED

REVISIONS
 BANGLADESH WATER DEVELOPMENT BOARD
 OFFICE OF THE SUPERINTENDING ENGINEER
 DESIGN CIRCLE-5
 "Protection of Talbaria area of Mirpur Upazila & Kamorkandi area of Shelaidah Union of Kumarkhali Upazila in Kushtia District from the erosion of Padma River"
 Design of Protective Work along the R/B of Padma River from KM 6.720 to KM 15.720=9.000 KM at Talbaria, Barujipara and Bahalbaria union, Upazila: Mirpur, District: Kushtia
 Kushtia WD Division, BWDB, Kushtia.

TITLE: DETAILS OF KEY AND BERM
 DESIGNED BY: MST. TASMEM JAHAN, EE
 RECOMMENDED BY: SHAMMI AKHTER, SDE
 CHECKED BY: JAKARIA PERVEZ, SE
 APPROVED BY: MD. MAHFUZUR RAHMAN, CE, DESIGN
 DATE: 00-00-2025 DWG NO.: DC-5-0000-05/33

15-18cm dia & 6.00m long local hard wood bullah @ 1.20m C/C
 15-18cm dia & 6.00m long local hard wood bullah @ 0.60m C/C
 15-18cm dia & 6.00m long local hard wood bullah @ 1.20m C/C
 2.00 m

15-18cm dia & 6.00m long local hard wood bullah @ 1.20m C/C
 Plan for Key
 (Details "Z")

Scale: Not To Scale

TYPIICAL PLAN OF FILTER DRAIN

(Applicable length= Length of Balu Mohol area + 25.00m)

This technical drawing shows a cross-section of a wall, labeled with a horizontal arrow at the top right pointing to the right as 'B-B'. The wall consists of several layers. At the base is a layer with a triangular hatching pattern. Above this is a thick layer with a grid pattern. The main body of the wall has vertical lines representing studs or panels. A horizontal dimension line indicates a width of 2.25 m. A vertical dimension line indicates a height of 1.50 m. Three sections of the wall are labeled with their respective thicknesses: 1V : 2.5H, 1V : 3H, and 1V : 2.5H. A callout labeled 'SEE DETAIL- C' points to a circular inset at the bottom right showing a magnified view of a corner or joint detail.

DETAIL 'C'

	DATE	PREPARED	CHD	REM	APPROVED
R E V I S I O N S					
BANGLADESH WATER DEVELOPMENT BOARD					
OFFICE OF THE SUPERINTENDING ENGINEER					

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

Design of Protective Work along the R/B of Padma River from KM 6.720 to KM 15.720=9.000 KM at Talbaria, Baruipurha and Ranbarhia Union, Ibpuzia: Mirnur District; Kishinia

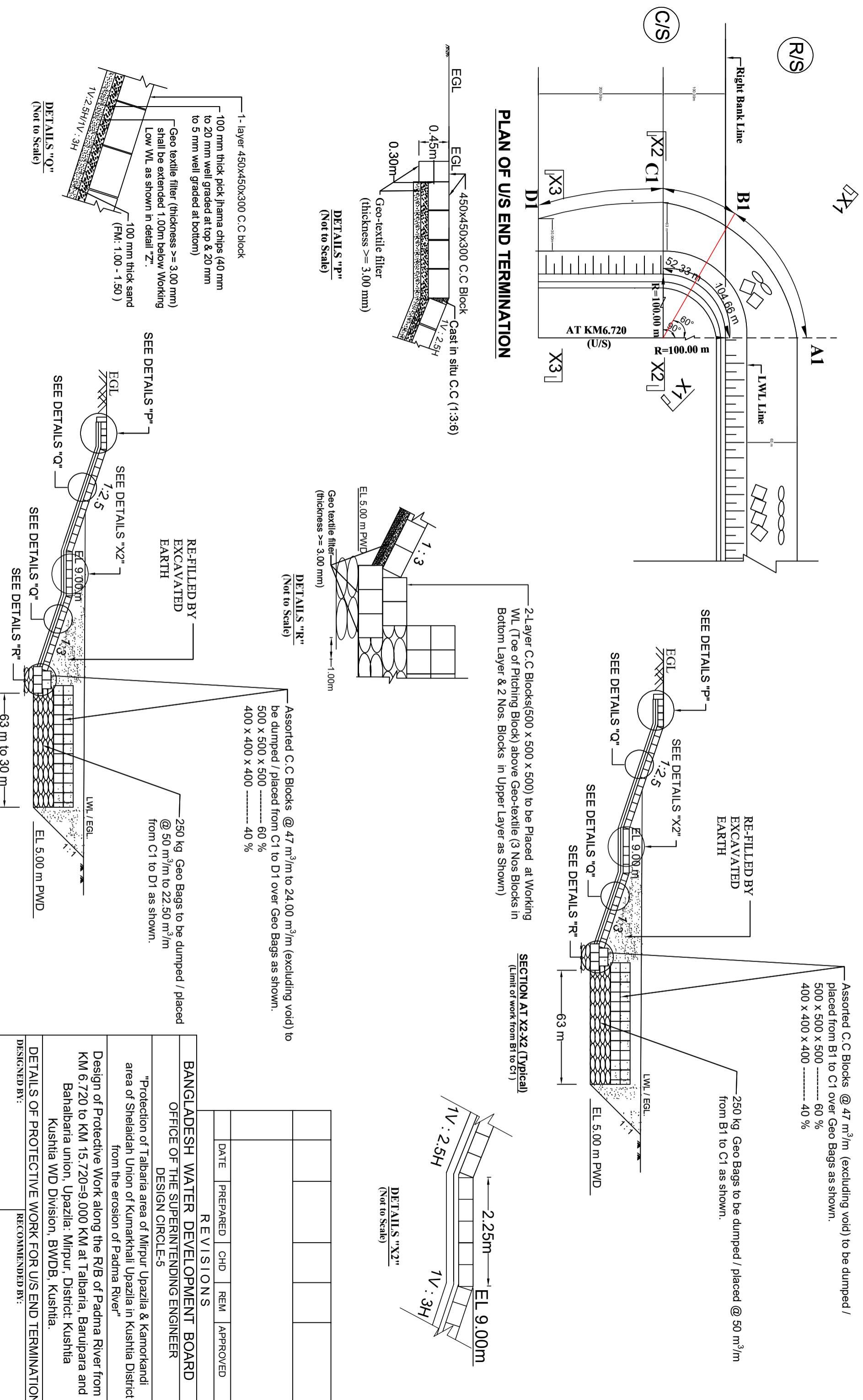
15-18cm dia & 6.00m long locat

SECTION B-B

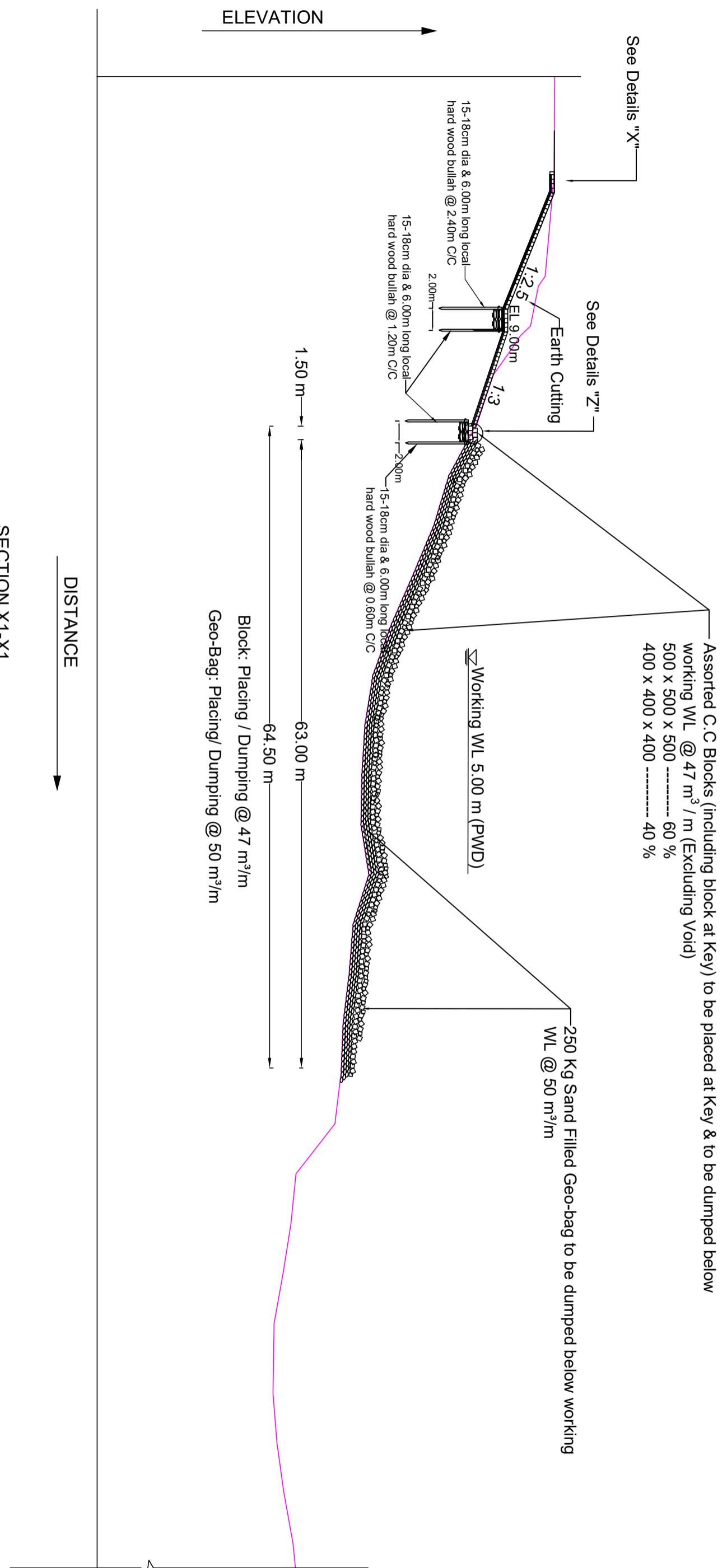
15-18cm dia & 6.00m long local hard wood bullah @ 1.20m C/C

Sheet No. 14 of 17

U/S ————— **P A D M A R I V E K** ————— **D/S**



Sheet No. 15 of 17



SECTION X1-X1
(Limit of work from A1 to B1)

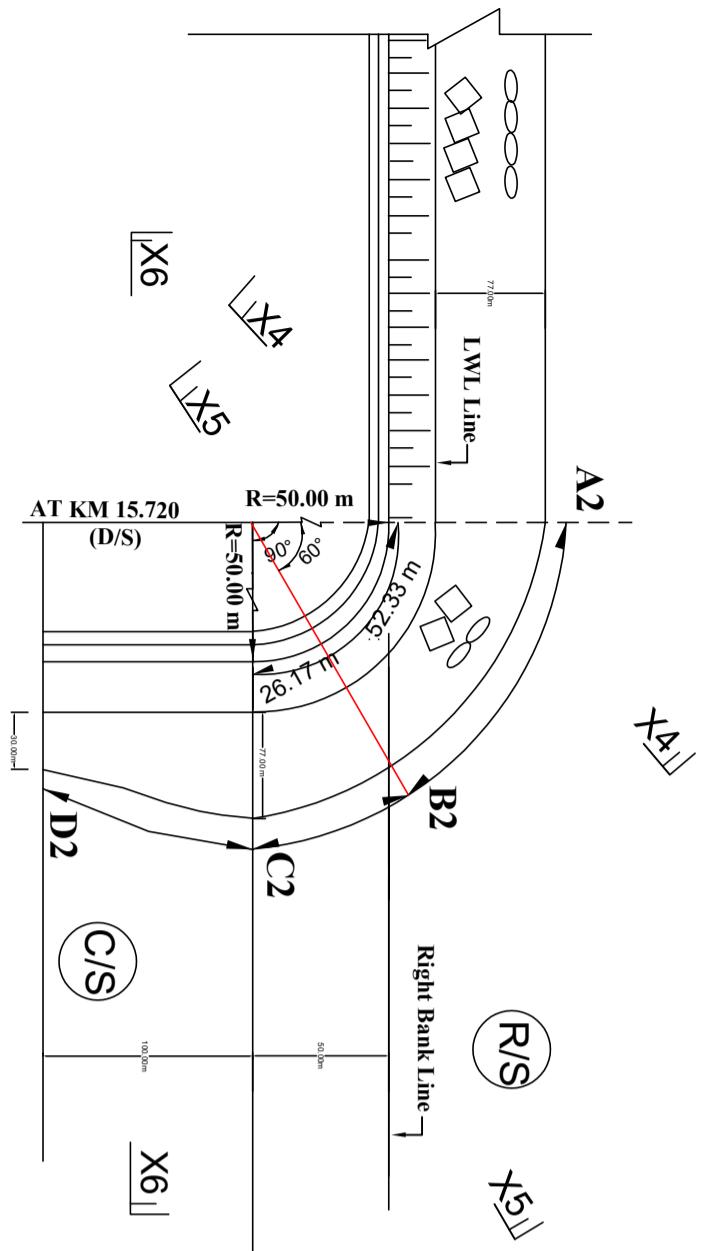
N.B:-
a) For Details "X", "Y" & "Z" See Sheet No. 27 of 33

Scale: Not To Scale

BANGLADESH WATER DEVELOPMENT BOARD OFFICE OF THE SUPERINTENDING ENGINEER DESIGN CIRCLE-5					
<i>"Protection of Talbaria area of Mirpur Upazila & Kamarkandi area of Shelaibdah Union of Kumarkhali Upazila in Kushtia District from the erosion of Padma River"</i>					
Design of Protective Work along the R/B of Padma River from KM 6.720 to KM 15.720=9.000 KM at Talbaria, Baruipara and Bahalbaria union, Upazila: Mirpur, District: Kushtia Kushtia WD Division, BWDB, Kushtia.					
DETAILS OF U/S END TERMINATION					
DESIGNED BY:	RECOMMENDED BY:				
(SHAMMI AKHTER), SDE	(JAKARIA PERVEZ), SE				
CHECKED BY:	APPROVED BY:				
(MST. TASMEM JAHAN), EE	(MD. MAHFUZUR RAHMAN), CE, DESIGN				
DATE : 00-00-2025	DWG NO.: DC-5-0000-24/33				
REVISIONS					

P A D M A R I V E R

Sheet No. 16 of 17



PLAN OF D/S END TERMINATION

This diagram shows a cross-section of a foundation or wall. The top horizontal line is labeled 'EGL'. Below it, a stepped section is labeled '7.2-5'. To the right, a circular callout labeled 'SEE DETAILS "P"' points to a vertical section of the wall. Another circular callout labeled 'SEE DETAILS "Q"' points to a horizontal section of the wall. A third circular callout labeled 'SEE DETAILS "X2"' points to a horizontal section of the wall. The bottom of the wall is labeled 'EK'.

SECTION AT X5-X5 (Typical) (Limit of work from B2 to C2)

Assorted C.C Blocks @ 47 m³/m (excluding void) to be dumped / placed from B1 to C1 over Geo Bags as shown.

500 x 500 x 500 -----	60 %
400 x 400 x 400 -----	40 %

RE-FILLED BY —
EXCAVATED
EARTH

250 kg Geo Bags to be dumped / placed @ 50 m³/m
from B1 to C1 as shown.

This technical drawing shows a cross-section of a foundation wall. The wall has a stepped profile with different thicknesses at various heights. Key levels are indicated by horizontal lines: EGL (External Grade Line) at the top, EL 5.00 m PWL (Planned Water Level) at the bottom, and several intermediate levels labeled EL 9.00 m, EL 10.00 m, and EL 11.00 m. A vertical dimension of 7.2.5 is shown between the EL 9.00 m and EL 10.00 m levels. The wall is built in multiple courses, with some sections having a wavy pattern. Several callouts point to specific features: 'SEE DETAILS "X2"' points to a section near the top; 'SEE DETAILS "Q"' points to two sections, one near the bottom and another further up; and 'SEE DETAILS "R"' points to a section near the base. A label 'LWL / EGL' is located on the right side of the drawing.

1

– 2-Layer C.C Blocks(500 x 500 x 500) to be Placed at Worksite
WL (Toe of Pitching Block) above Geo-textile (3 Nos Blocks)
Bottom Layer & 2 Nos. Blocks in Upper Layer as Shown)

DETAILS "R"

(Not to Scale)

EL 5.00 m PWD

Geo textile filter
(thickness ≥ 3.00 mm)

1:3

1.00

BELALS K
(Not to Scale)

DETAILS W
(Not to Scale)

be dumped / placed from C1 to D1 over Geo Bags as shown.
500 x 500 x 500 ----- 60 %
400 x 400 x 400 ----- 40 %

RE-FILLED BY

SEE DETAILS "P"

EGL
SEE DETAILS "X"

SEE DETAILS "Q"

SEE DETAILS "Q" SEE DETAILS "R"

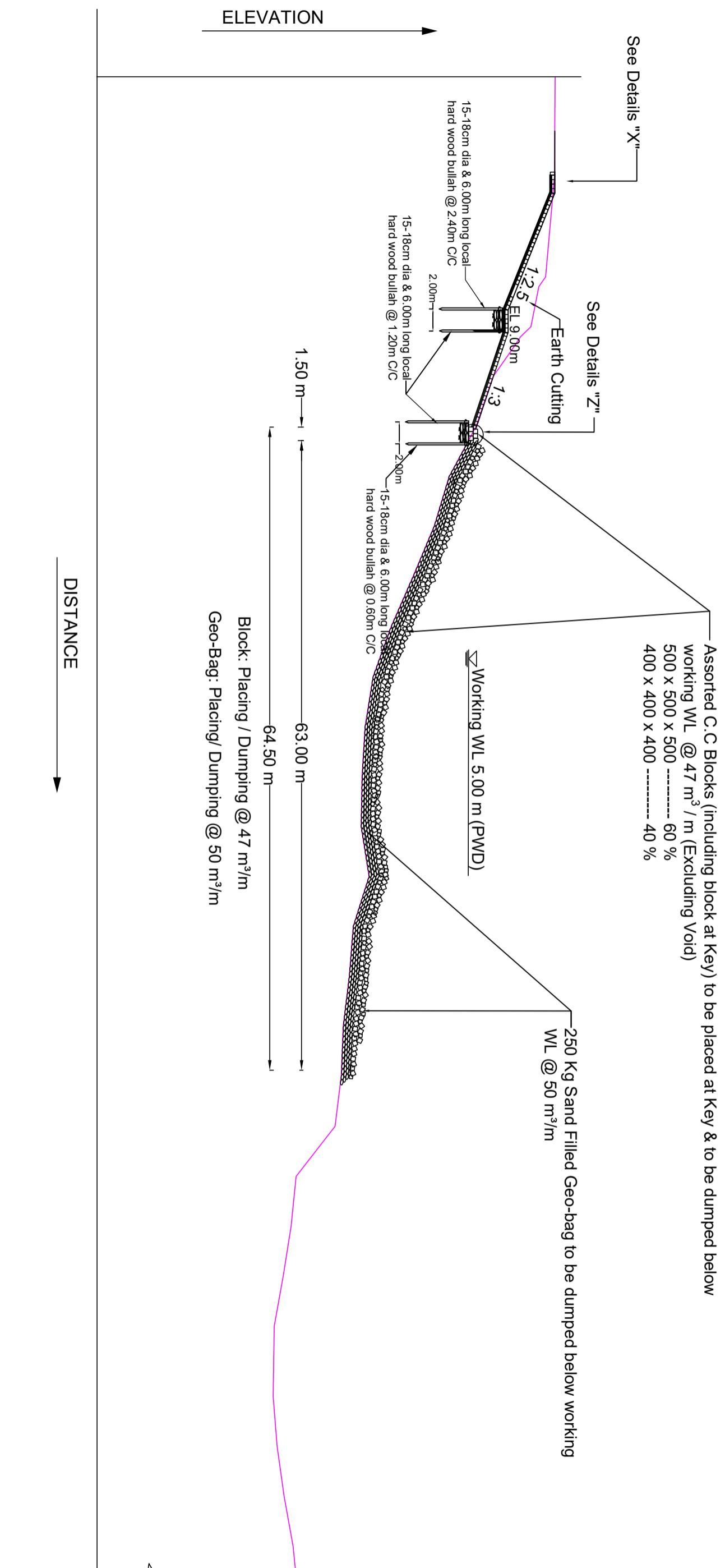
Scale: Not To Scale

DATE	PREPARED	CHD	REM	APPROVED

REVISIONS

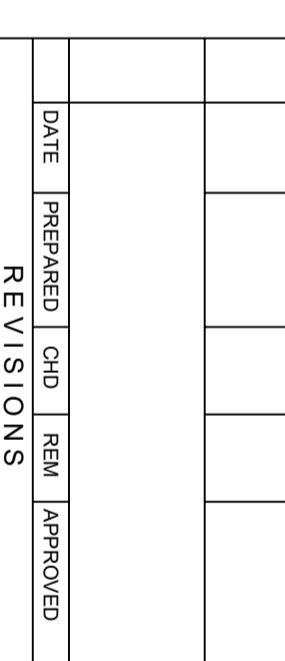
OFFICE OF THE SUPERINTENDING ENGINEER DESIGN CIRCLE-5	
<p align="center">BANGLADESH WATER DEVELOPMENT BOARD</p> <p align="center">"Protection of Talbaria area of Mirpur Upazila & Kamorkandi area of Shelaidah Union of Kumarkhali Upazila in Kushtia District from the erosion of Padma River"</p>	
<p align="center">Design of Protective Work along the RB of Padma River from KM 6.720 to KM 15.720=9.000 KM at Talbaria, Baruipara and Bahalbaria union, Upazila: Mirpur, District: Kushtia Kushtia WD Division, BWDB, Kushtia.</p>	
DETAILS OF PROTECTIVE WORK FOR D/S END TERMINATION	RECOMMENDED BY:
(MST. TASMEM JAHAN), EE	(MD. MAHFUZUR RAHMAN), CE, DESIGN
DATE: 00-00-2025	DWG NO.: DC-5-0000-25/33
(SHAMMI AKHTER), SDE	(JAKARIA PERVEZ), SE
CHECKED BY:	APPROVED BY:

Sheet No. 17 of 17



SECTION X4-X4
(Limit of work from A2 to B2)

Scale: Not To Scale



DESIGNED BY:	DETAILS OF D/S END TERMINATION			
RECOMMENDED BY:				
(SHAMMI AKHTER), SDE CHECKED BY:	(JAKARIA PERVEZ), SE APPROVED BY:			
DATE : 00-00-2025	DATE : MST. TASMEM JAHAN, EE (MD. MAHFUZUR RAHMAN), CE, DESIGN			