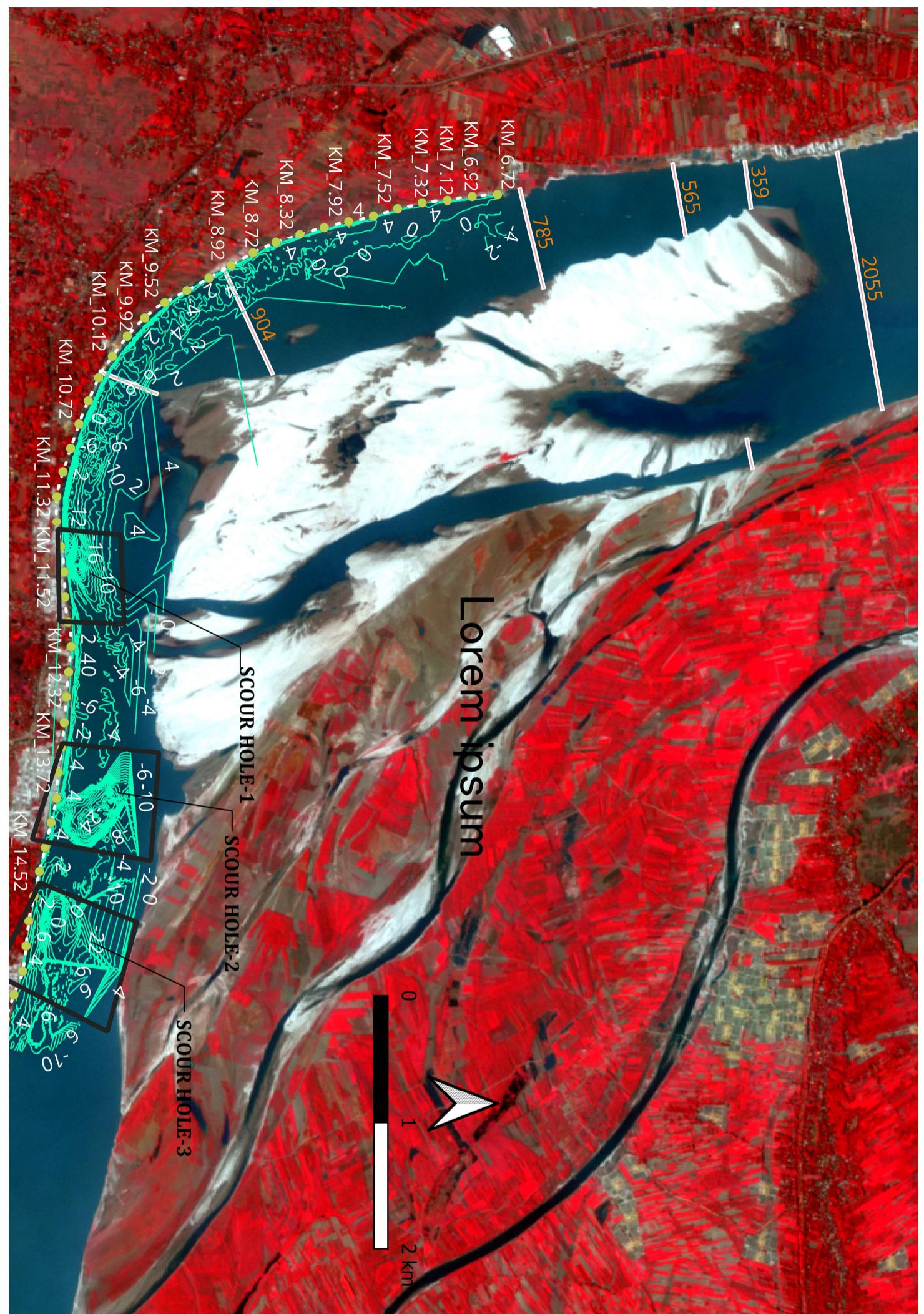


Contents

Serial No.	Name of Drawings	Sheet No.
1	Index Map	1 of 34
2	Scour Hole-1, Scour Hole-2, Scour Hole-3	2, 3, 4 of 34
3	Site Plan	5 of 34
4	Notes	6, 7, 8 & 9 of 34
5	Typical x-sections	10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20 & 21 of 34
6	Details of key and berm	22 of 34
7	Details of Protective work	23 of 34
8	Details of Filter Drain	24 of 34
9	Details of U/S end Termination	25 & 26 of 34
10	Details of D/S end Termination	27 & 28 of 34
11	Notes for stair, R.C.C U-drain & Name plate	29 of 34
12	Plan & section of stair	30 of 34
13	Sections and details of stair	31 of 34
14	Sections and details of R.C.C U-drain	32 of 34
15	Details of typical change room	33 of 34
16	Details of name plate	34 of 34



INDEX MAP
(Not to Scale)

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

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

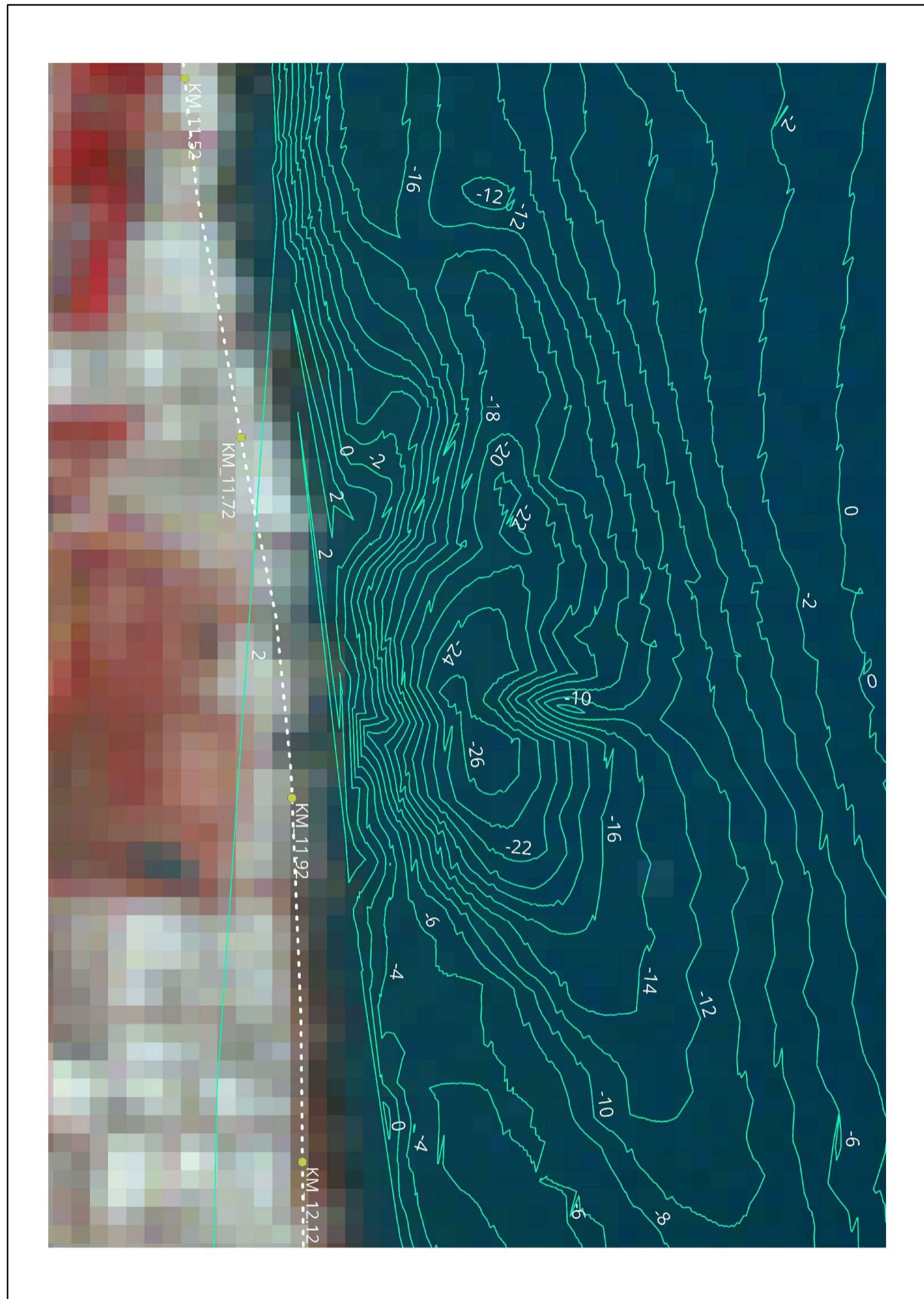
Design of Protective Work along the R/B of Padma River from KM 6.720 to KM 15.720=9.000 KM at Talbaria, Barupara and Bahalbaria union, Upazila: Mirpur, District: Kushtia

Kushtia WD Division, BWDB, Kushtia.

INDEX MAP

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-5-0000-01/34



SCOUR HOLE-1

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

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

SCOUR HOLE-1

DESIGNED BY:

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(MD. MAHFUZUR RAHMAN), CE, DESIGN

DATE: 00-00-2025

DWG NO.: DC-5-0000-02/34



SCOUR HOLE-2

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

"Protection of Talbaria area of Mirpur Upazila & Kamarkandi area of Shelaiddah Union of Kunarkhali 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.

SCOUR HOLE-2

DESIGNED BY:

(SHAMMI AKHTER, SDE)

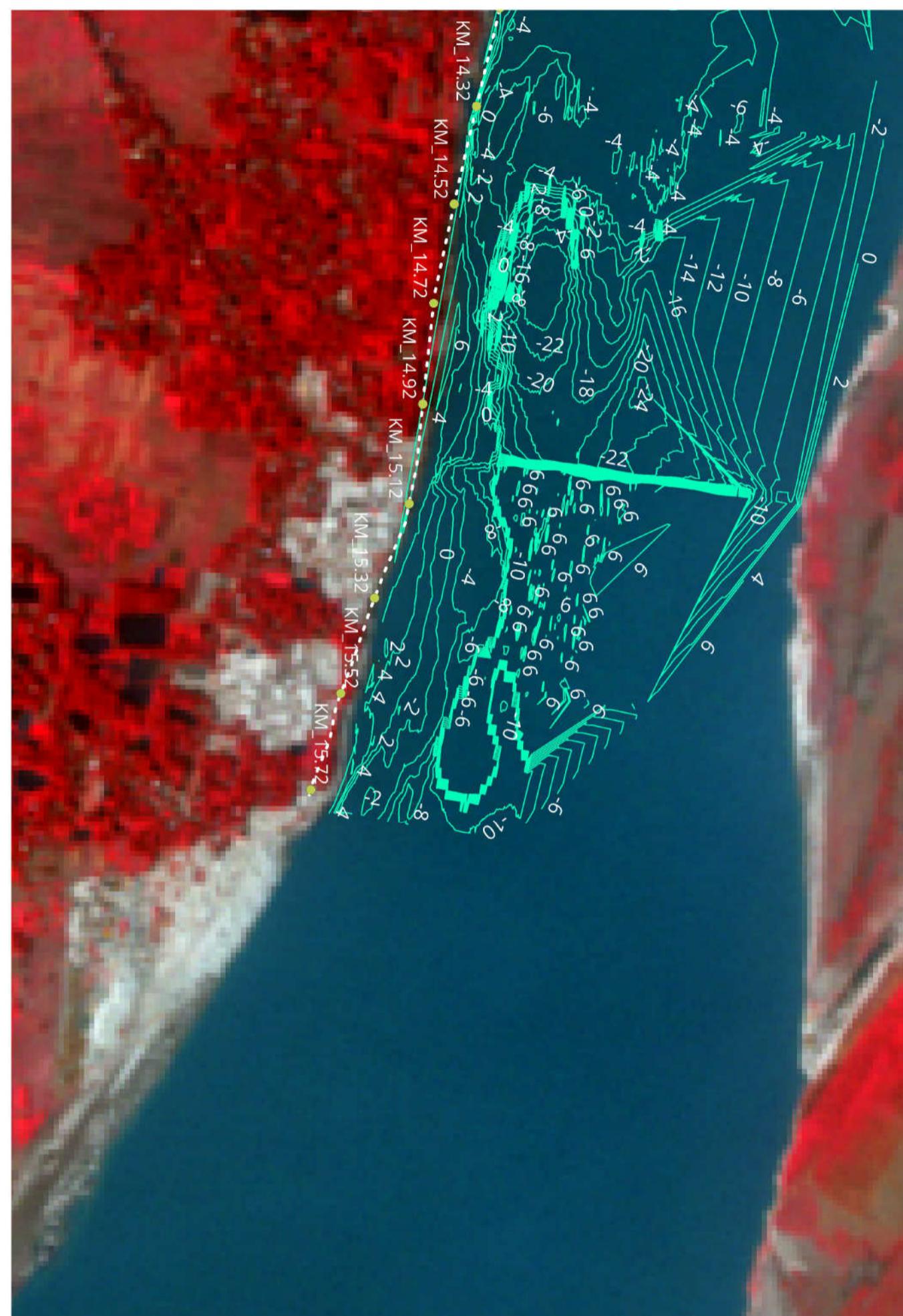
CHECKED BY:

(JAKARIA PERVEZ, SDE)

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(MD. MAHFUZUR RAHMAN), CE, DESIGN

(MST. TASMEM JAHAN), EE	(MD. MAHFUZUR RAHMAN), CE, DESIGN
DATE: 00-00-2025	DWG NO.: DC-5-0000-03/34



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

"Protection of Talbaria area of Mirpur Upazila & Kamarkandi area of Shelaiddah Union of Kunarkhali 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.

SCOUR HOLE-3

DESIGNED BY:

(SHAMMI AKHTER), SDE
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RECOMMENDED BY:

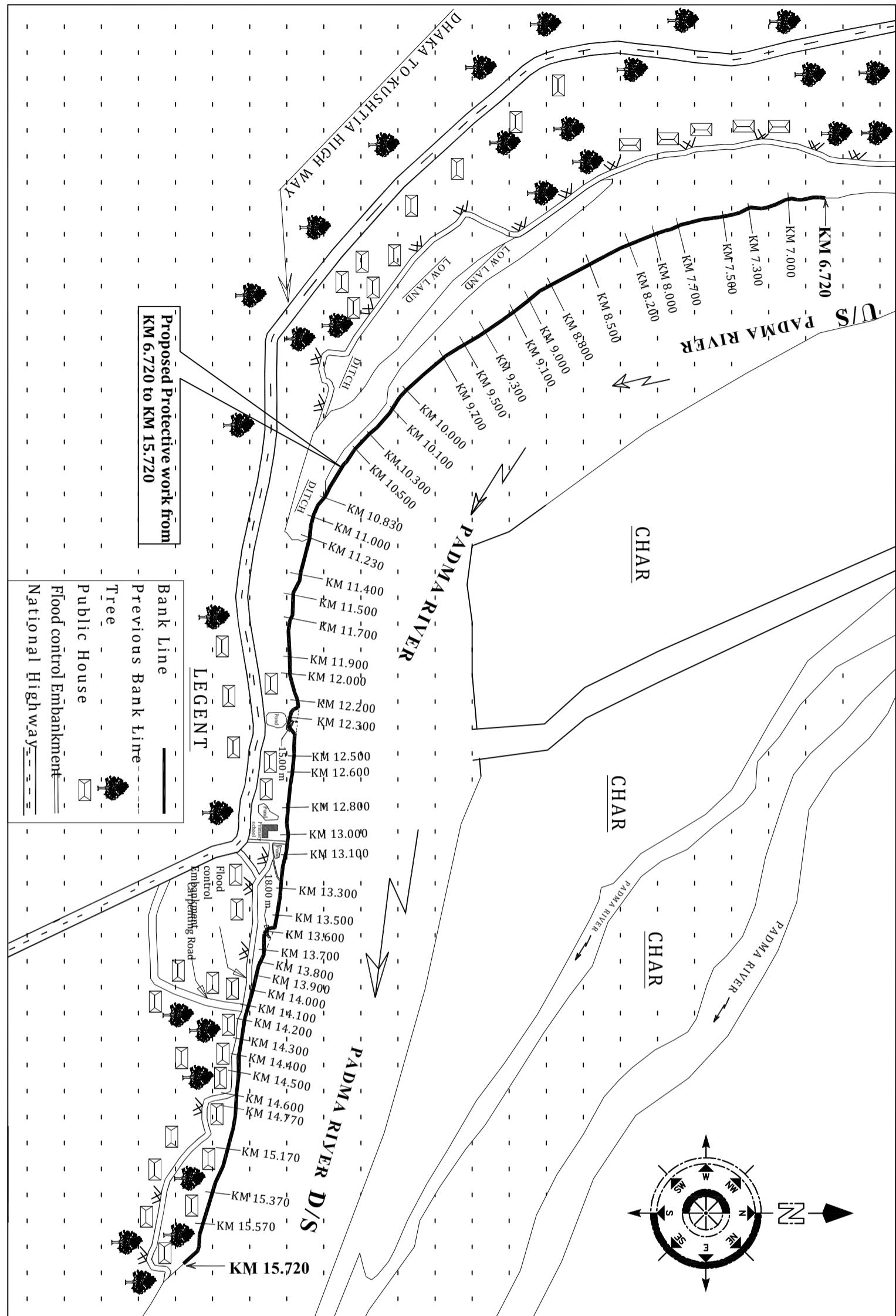
(JAKARIA PERVEZ), SDE

APPROVED BY:

(MST. TASMEM JAHAN), EE

(MD. MAHFUZUR RAHMAN), CE, DESIGN

DATE: 00-00-2025 DWG NO.: DC-5-0000-04/34



OFFICE OF THE SUPERINTENDING ENGINEER	
DESIGN CIRCLE-5	
"Protection of Talbaria area of Mirpur Upazila & Kamorkandi area of Shelaïdah 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.
SITE PLAN	
DESIGNED BY: (SHAMMI AKHTER), SDE	RECOMMENDED BY: (JAKARIA PERVEZ), SE
CHECKED BY :	APPROVED BY :
(MST. TASMEM JAHAN), EE	(MD. MAHFUZUR RAHMAN, CE, DESIGN)
DATE: 00-00-2025	DWG NO.: DC-5-0000-05/34

DESIGN PREPARATION NOTES:

1. THIS REVISED 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-14/1258, DATE-07/01/2025.
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. THIS DESIGN IS PREPARED ON BASIS OF DECISION TAKEN ON THAT MEETING. MINUTES OF THAT MEETING PUBLISHED VIDE MEMO NO:XXXX/XX/XX DATED:XXXX-XX-XX BY THE CHIEF ENGINEER DESIGN AND RESEARCH.

DURING CONSTRUCTION, MONITORING AND ADAPTATION:

1. AS DECISION TAKEN ON JOINT DISCUSSION MEETING MENTIONED IN DESIGN PREPARATION NOTES FIELD OFFICE SHALL MAKE NECESSARY ARRANGEMENT FOR MULTIBEAM BATHYMETRY SURVEY AS REQUIRED AND SCHEDULED BY THE CONCERNED DESIGN AND FIELD OFFICE. BASED ON WORK EXECUTION SPEED, FLOOD CONDITION SURVEY MAY SCHEDULED ON EVERY 7-15 DAYS.
2. DATA COLLECTION AND DATA PROCESSING OF MULTIBEAM SURVEY SHALL BE CARRIED OUT BY JOINT TEAM OF KUSTIA MORPHOLOGY DIVISION AND IWM. AN ENGINEER NOMINATED BY CONCERNED DESIGN OFFICE SHALL BE PRESENT DURING DATA COLLECTION.
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 250 KG POLYPROPYLENE GEOBAG IN ORDER TO ADDRESS ADAPTATION THAT MAY BE REQUIRED.

DESIGN UPDATES:

1. DUE TO CAUSES EXPLAINED IN DESIGN PREPARATION NOTE NO : 3, AN UPDATED 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 BUT NO LATTER THAN 2 MONTHS FROM ISSUANCE OF THIS DRAWING.
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.

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-5-0000-06/34

SCOUR HOLE FILLING NOTES:

1. PRIOR TO DUMPING WORK FOR FILLING PRE-WORK MULTI BEAM SURVEY SHALL BE DONE. FROM THE SURVEY WORK 3D MAP OF RIVER BED PREFABRILY IN STL FORMAT AND 2D MAP SHALL BE PREP.
2. BASED ON MAP AREAL EXTENT AND VOLUME REQUIREMENTS FOR SCOUR HOLE FILLING SHALL BE CALCULATED PRECISELY.
3. SCOUR HOLE SHALL BE FILLED BY DUMPING FROM BARGE. BARGE SHALL BE PRECISELY POSITIONED BY RTK GPS.
4. RECORD OF FILLING WORK SHALL BE KEPT IN VIDEOGRAPHY.
5. AFTER COMPLETION OF FILLING WORK POST WORK SHALL BE TAKEN BY MULTI BEAM BATHYMETRY SURVEY AND MAP SHALL BE PREPARED.
6. MEASUREMENT AND PAYMENT FOR FILLING WORK SHALL BE BASED ON PRE-WORK AND POST-WORK SURVEY AS MENTIONED ABOVE.

FILTER DRAIN CONSTRUCTION AND DITCH FILLING NOTES:

1. FIELD OFFICE SHALL CONDUCT ARIAL PHOTOGRAHMETRY SURVEY FOR PROPER PLANNING OF FILTER DRAIN AND DITCH FILLING.
2. SURVEY REPORT SHALL CONTAIN FEARTURES WITH ELEVATION.
3. BASED ON SURVEY REPORT PLAN FOR FILTER DRAIN AND DITCH FILLING SHALL BE MADE.

DESIGNED BY: (SHAMMI AKHTER), SDE	RECOMMENDED BY: (JAKARIA PERVEZ), SE
CHECKED BY:	APPROVED BY:
(MST. TASMEM JAHAN), EE DATE: 00-00-2025	(MD. MAHFUZUR RAHMAN), CE, DESIGN DWG NO.: DC-5-0000-07/34

GENERAL NOTES:

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 WL./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 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 150 m DISTANCE FROM THE RIVER BANK, IT MUST BE PROPERLY FILLED UPTO G.L (BANK LEVEL) WITH LOCAL EARTH AND SHALL BE COMPACTED AS PER SCHEDULE BEFORE STARTING THE PROTECTIVE WORK (PITCHING WORK).
13. SLOPE OF PITCHING WORK SHALL BE MAINTAINED AS PER DESIGN SECTION. 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 UNPROTECTED BANK OR THE PREVIOUSLY COMPLETED WORK MUST BE GRADUAL AND

NOTES FOR SAND CEMENT (6:1) NEW GEO-BAGS

For the preparation of sand cement geo-bags (175 kg), the following step by step Procedure shall be followed:

- (i) Sand and cement shall be mixed properly by mixture machine.
- (ii) Water of required workable quantity shall be added to the dry mix.

TANGENTIAL
(iii) Wet mortar shall be put into the geo-bags.

16. a) TO PREVENT BANK EROSION & DUMPING CONSIDERING THE STRANGUE OF GEOTEXTILE ADDITIONAL PROTECTION WORK MAY BE DONE AS PER DETAILS "A" (SEE SHEET NO.27 of 33) (IF REQUIRED) IMMEDIATELY PLACED IN THEIR FINAL POSITION AS SHOWN IN THE DRAWING.
b) BEFORE EXECUTION OF SUCH A PROTECTION WORK, OFFICE SHALL OBTAIN NECESSARY W.L. ADMINISTRATIVE APPROVAL AND TECHNICAL SANCTION FROM THE COMPETENT AUTHORITY.
- c) COUNTING AND QUALITY CONTROL FOR SUCH WORK SHALL CONFORM STANDARD PRACTICE OF BWDB SPECIAL NOTES.
- d) THIS GEOTEXTILE FILTER & PITCHING ZONE REMAIN UNDER ATTACHED FIGURE OF WORK ZONE ACCORDING TO APPROVED DRAWING AND IN PRESENCE OF COMPETENT AUTHORITY.
2. 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.
3. ALL DUMPING MATERIALS (BLOCK & GEO-BAG) MUST BE DUMPED AT DUMPING ZONE ACCORDING TO APPROVED DRAWING.
4. THIS DRAWING SUPERSEDES THE PREVIOUS APPROVED WORKING DRAWING (DWG NO.:DC-5-5712- 01/33 to 33/33, DATE: 27-02-2024) FOR THE SAME WORK.
5. 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.
6. CLOSE CROSS-SECTION OF RIVER SHALL BE TAKEN BEFORE, DURING AND AFTER EXECUTION OF PROTECTIVE WORK AND CONFIRM UNIFORM DUMPING AS PER DESIGN.
7. HEEL OF CUTTING EARTH (FOR SLOPE PREPARATION) AT TOE OF PITCHING BLOCK OR IN DUMPING ZONE MUST NOT BE ALLOWED.
8. 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.
9. VOLUME OF DUMPING MATERIALS CALCULATED IN THIS DRAWING CONSIDERING 100 YEARS RETURN PERIOD & ANGULAR FLOW AND PRESENT MORPHOLOGICAL CONDITION.
10. THE LENGTH OF PROPOSED PROTECTIVE WORK HAS BEEN FIXED AS PER STUDY (SEPTEMBER, 2022). IN PRESENT SITUATION U/S BANK IS MORE VULNERABLE AND ERODING IN THIS SITUATION THE PROTECTION WORK WILL BE NEEDED U/S OF PROPOSED PROTECTIVE WORK TO MAKE IT MORE SUSTAINABLE OTHERWISE THE PROPOSED WORK WILL BE VULNERABLE.
11. ALL SAFETY PRECAUTIONS MUST BE TAKEN DURING EXECUTION OF WORK.
12. DREDGING ADJACENT OR IN FRONT OF PROTECTIVE WORK SHALL NOT BE ALLOWED.

**BANGLADESH WATER DEVELOPMENT BOARD
OFFICE OF THE SUPERINTENDING ENGINEER**

"Protection of Talbaria area of Mirpur Upazila & Kamarkandi area of Shelaiddah 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, Barupara and Bahalbaria union, Upazila: Mirpur, District: Kushtia Kushtia WD Division, BWDB, Kushtia.

NOTES

DESIGNED BY: RECOMMENDED BY:

(SHAMMI AKHTER), SDE (JAKARIA PERVEZ), SE

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(MST. TASMEM JAHAN), EE (MD. MAHFUZUR RAHMAN), CE, DESIGN

DATE: 00-00-2025 DWG NO.: DC-5-0000-08/34

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.

January, 2025

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 ANTI-OXIDANTS (1%) MAY BE MIXED AS ADDITIVES.
5. EN 11924:2000 IS FOR ALLOWABLE MAXIMUM EXPOSURE TIME DURING INSTALLATION OF GEOTEXTILE FILTER AND GEOBAG.
6. 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.
7. 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.

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.
4. A 'NEED BASED DUMPING' APPROACH SHALL BE TAKEN WHERE THE SCOUR HOLES ARE IDENTIFIED AT FIRST AND ADDRESSED ACCORDINGLY.
5. 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.
6. GEO-BAGS MUST BE HANDLED WITH CARE. **NO DAMAGED BAGS SHALL BE USED FOR ANY PART OF THE WORK.**
7. DESIGN CIRCLE-5
"Protection of Talbaria area of Mirpur Upazila & Kamarkandi and Minamul Haqkhali Upazila in Kushtia District through BWDB of Padma River"
8. GEO-BAGS SHALL BE FILLED FULL WITH **SAND AND MINIMUM ACHIEVING THE SPECIFIED WEIGHT AND OTHER SPECIFICATIONS AS PER BWDB SCHEDULE.**

BANGLADESH WATER DEVELOPMENT BOARD

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, Baruipara and Bahalbaria union, Upazila: Mirpur, District: Kushtia Kushtia WD Division, BWDB, Kushtia.

NOTES

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(JAKARIA PERVEZ), SE

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APPROVED BY:

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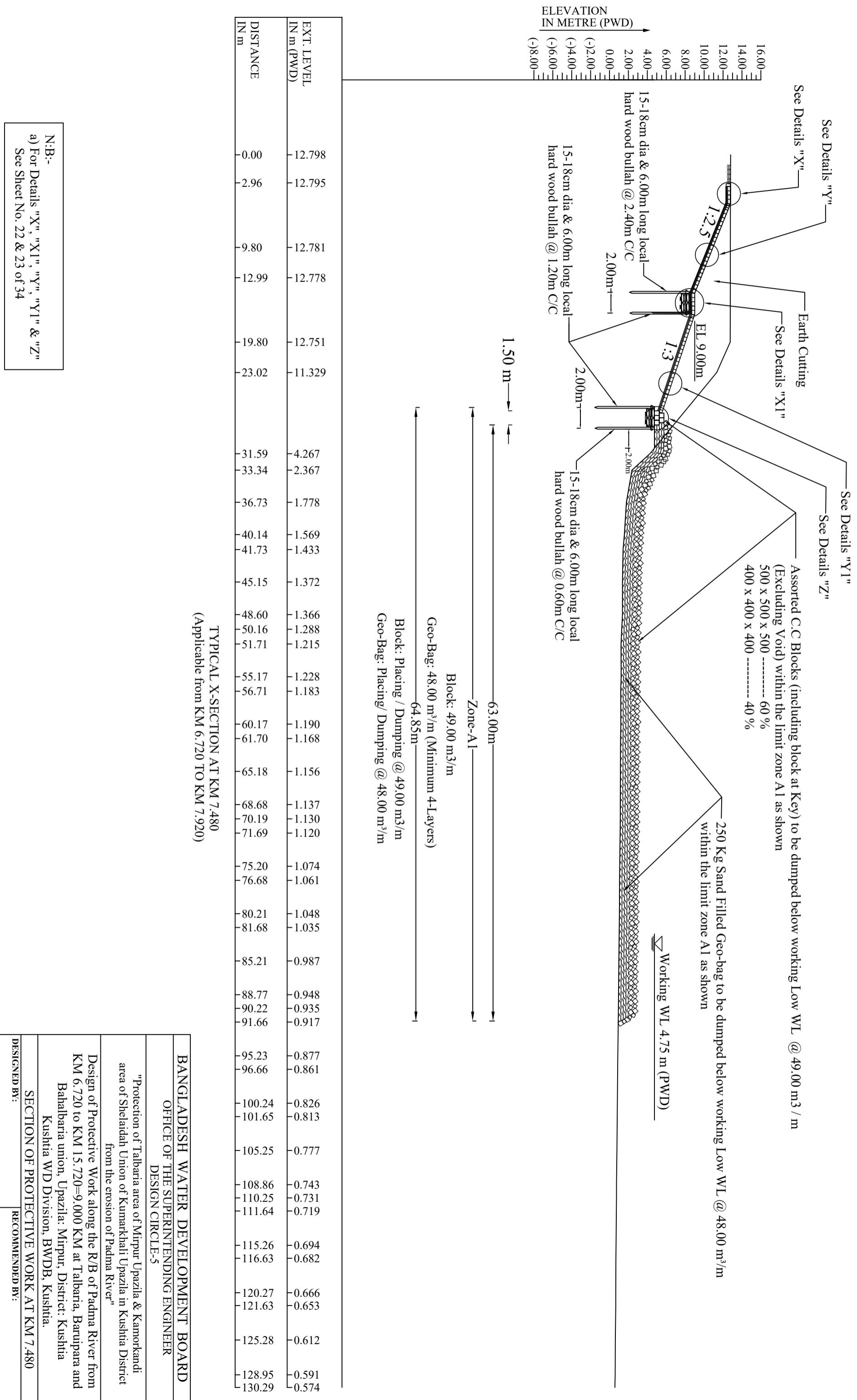
(MD. MAHFUZUR RAHMAN), CE, DESIGN

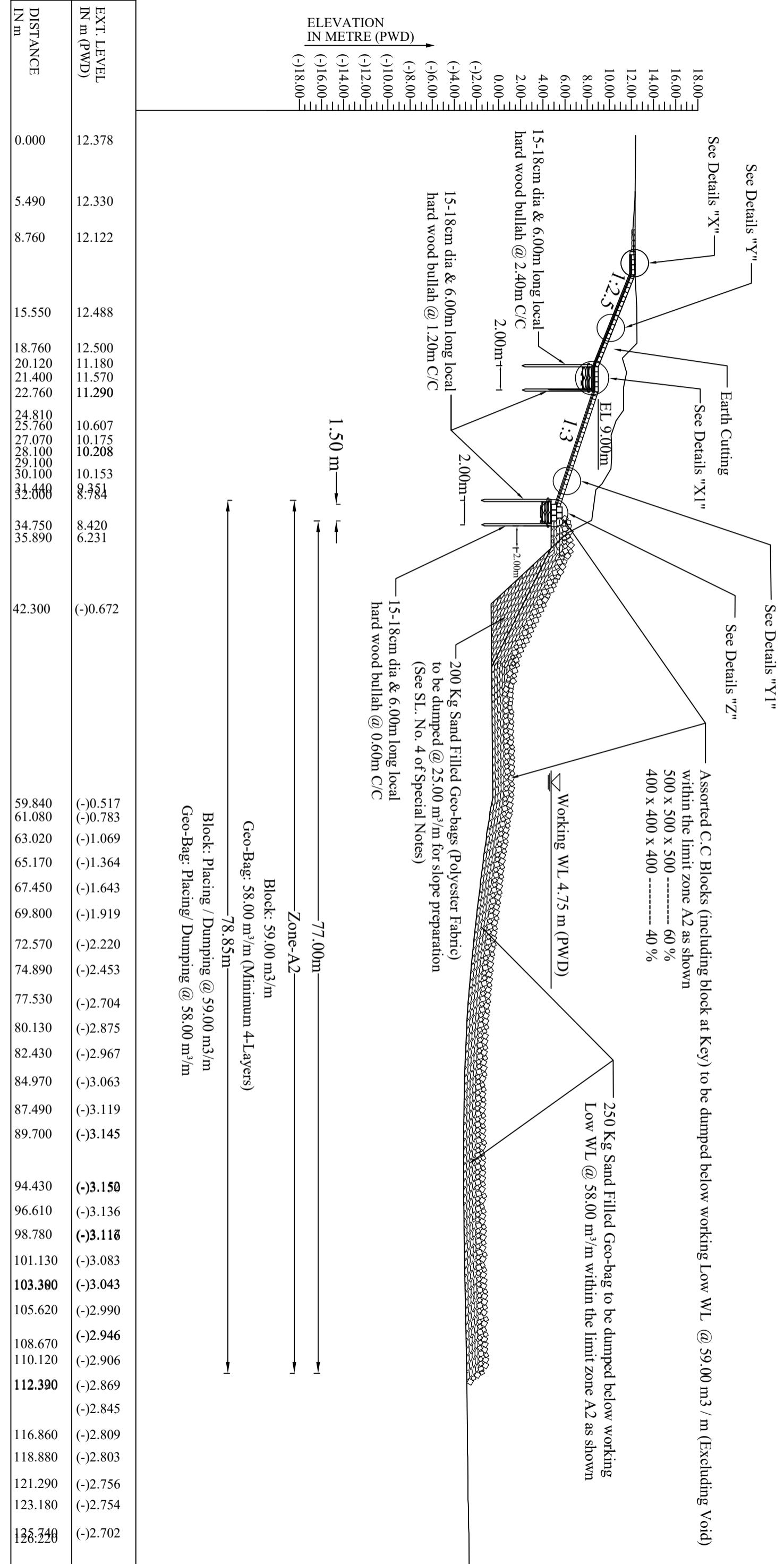
DATE: 00-00-2025

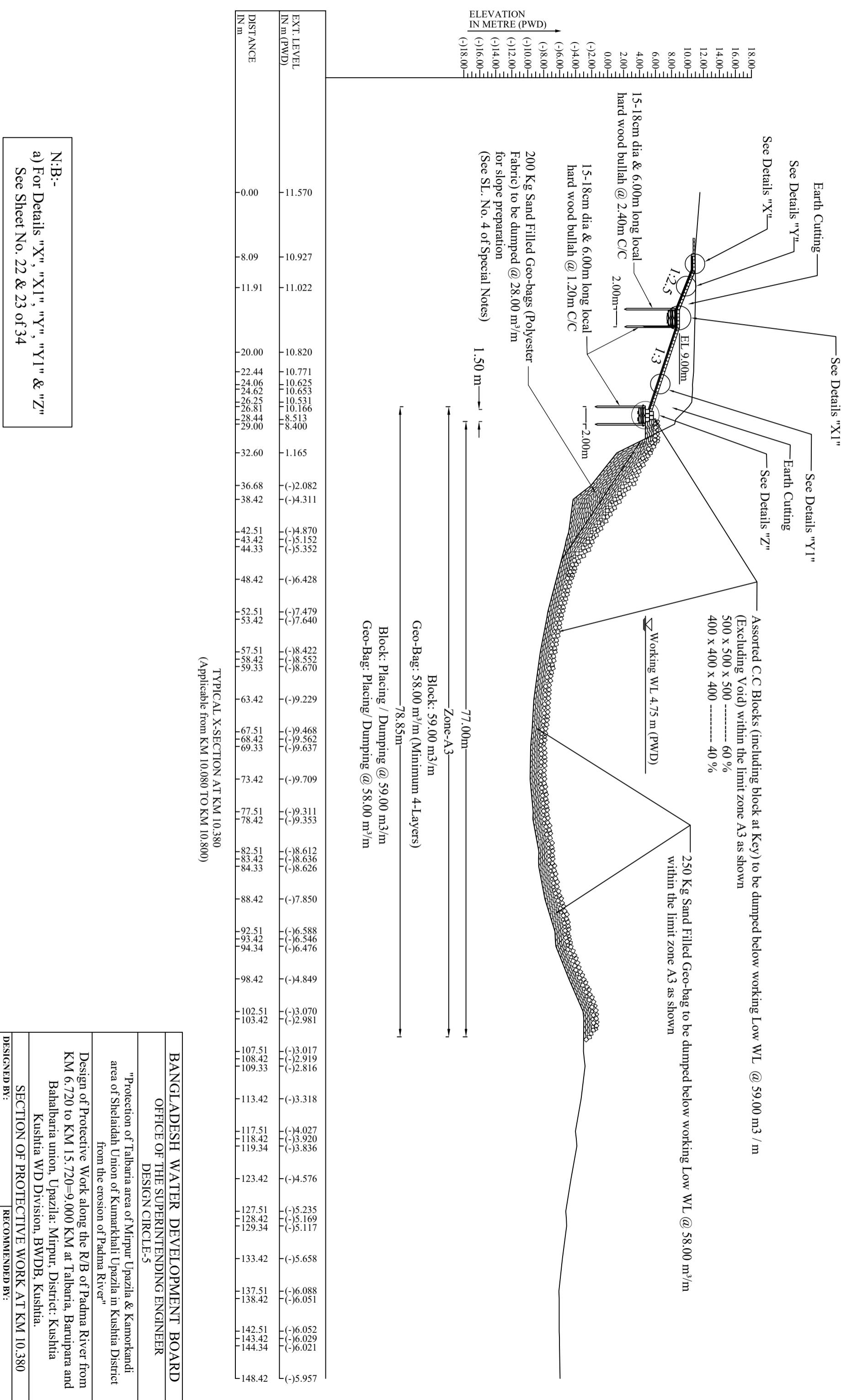
DWG NO.: DC-5-0000-09/34

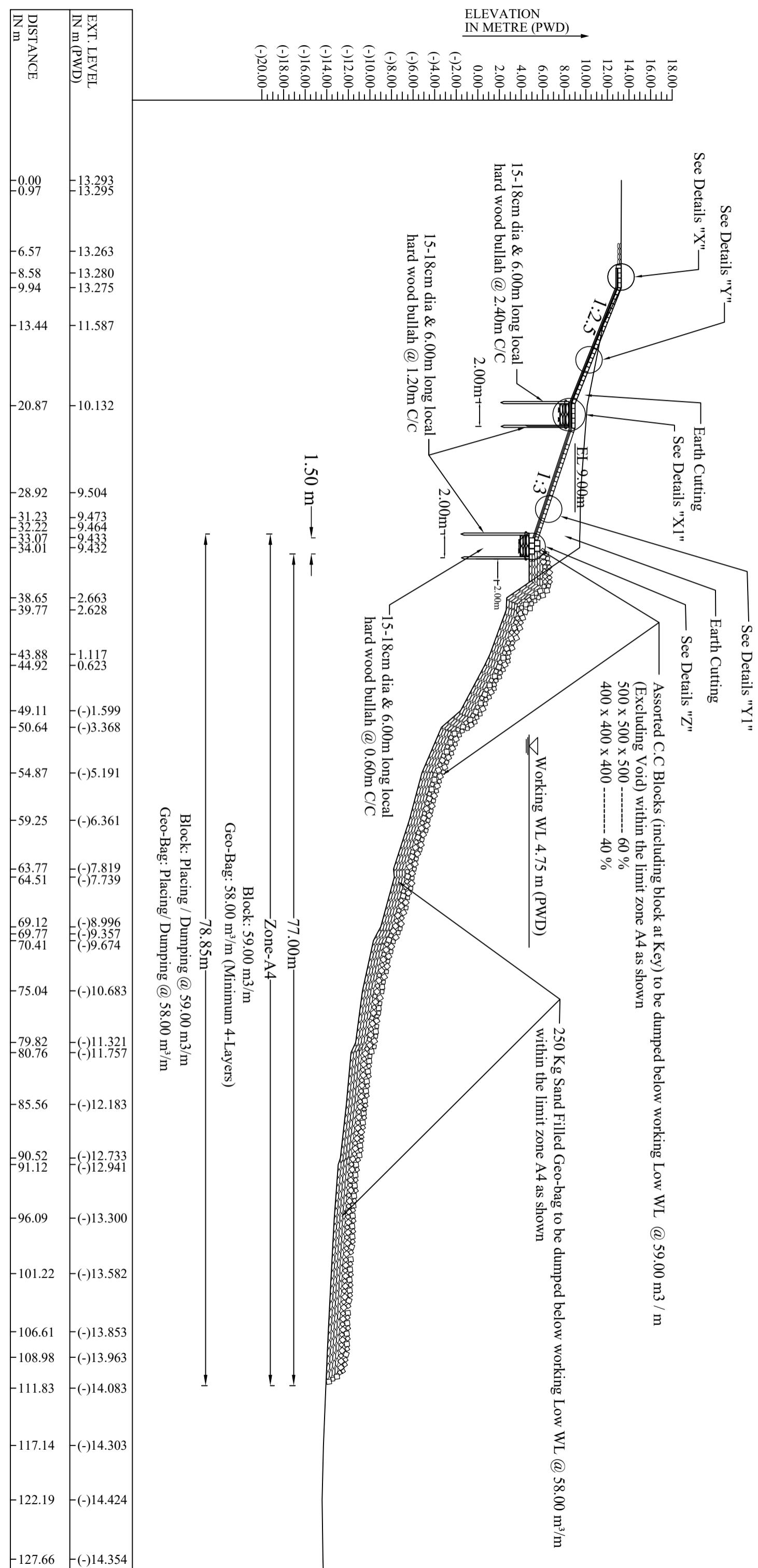
NOTES FOR DUMPING:

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 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.









BANGLADESH WATER DEVELOPMENT BOARD
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Kushtia WD Division, BWDB, Kushtia.

SECTION OF PROTECTIVE WORK AT KM 11.000

DESIGNED BY:

(SHAMMI AKHTER, SDE)

RECOMMENDED BY:

(JAKARIA PERVEZ, SE)

CHECKED BY:

(MST. TASMEM JAHAN, EE)

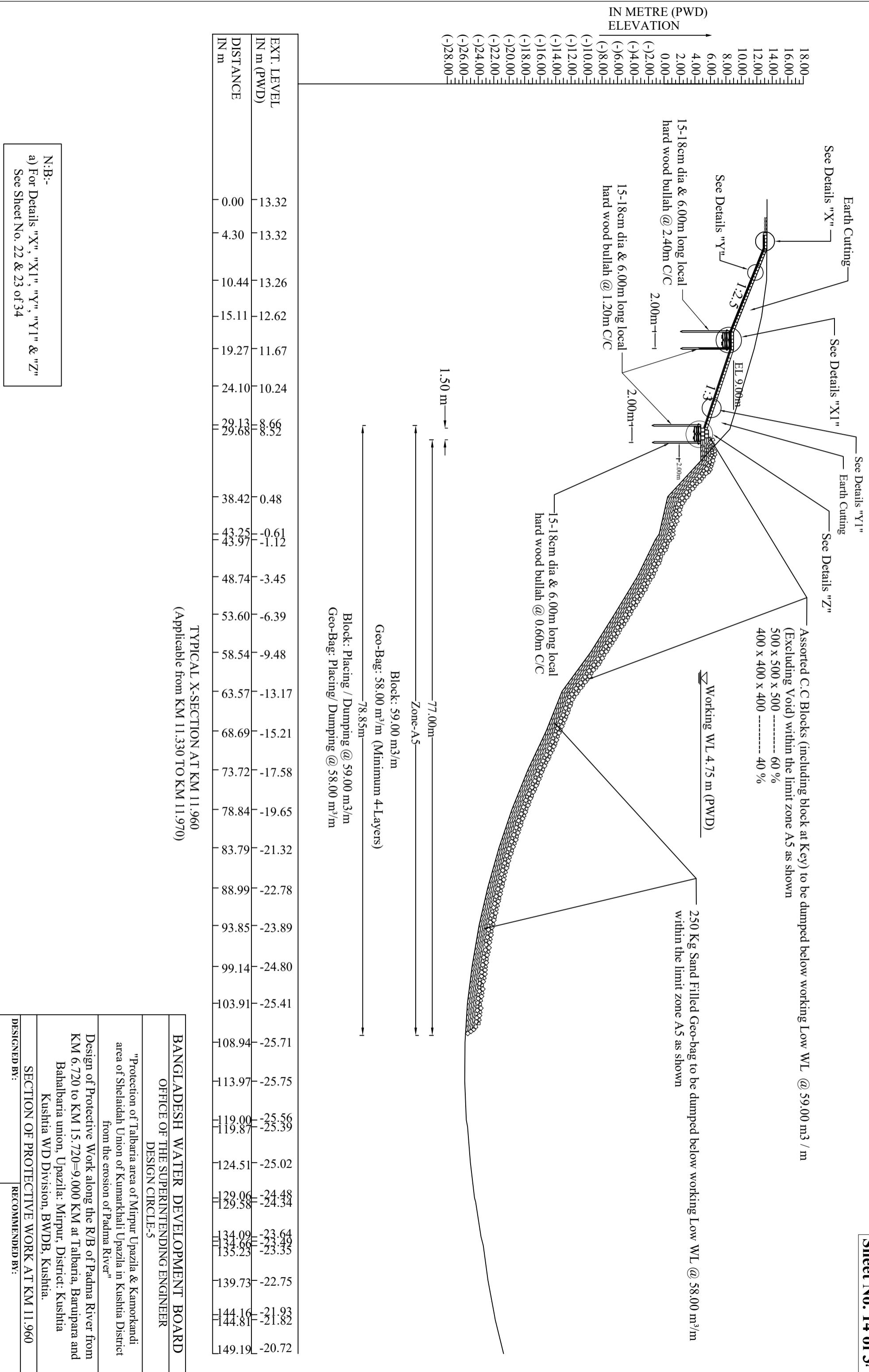
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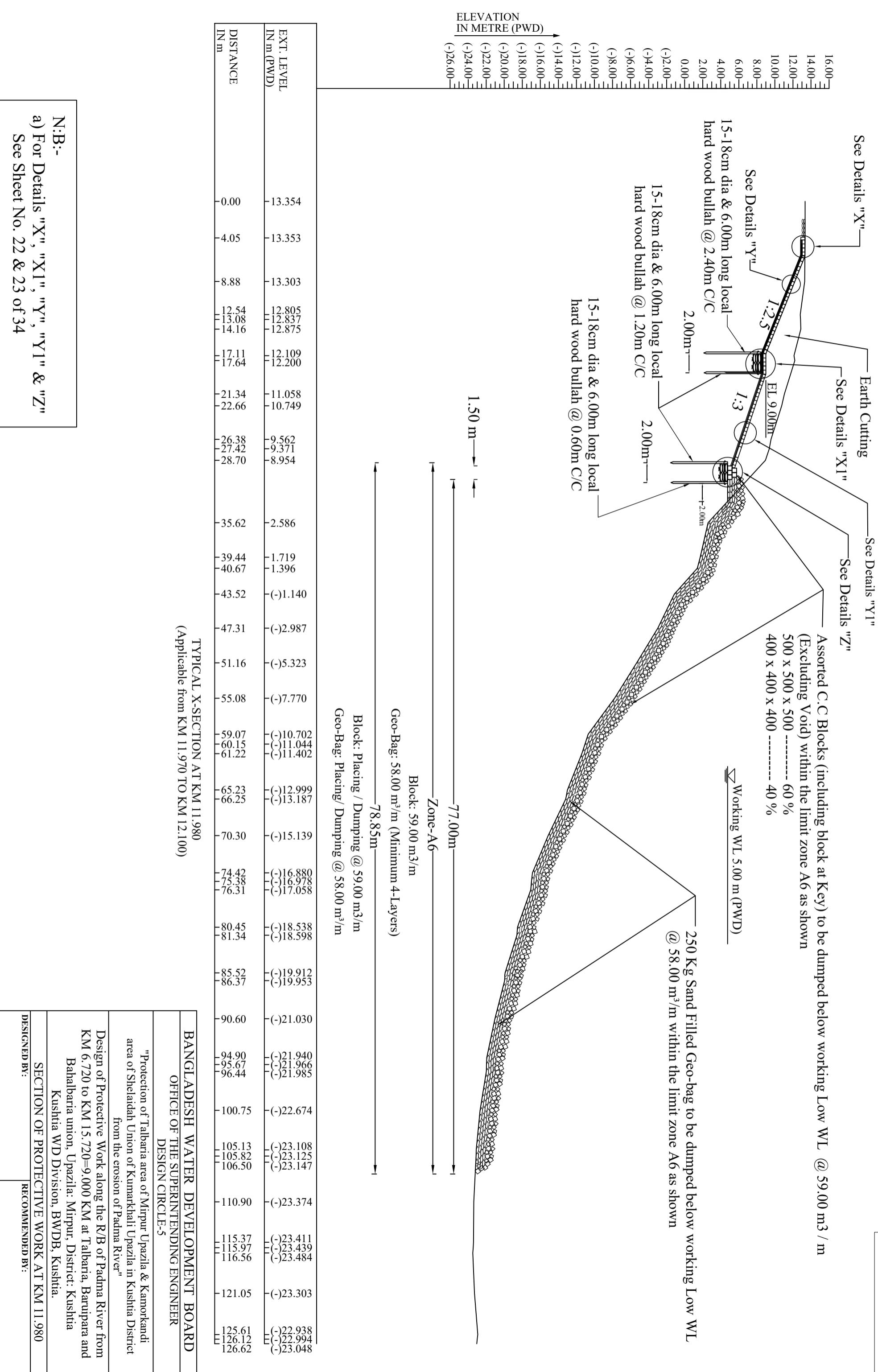
(MD. MAHFUZUR RAHMAN, CE, DESIGN)

N.B:-

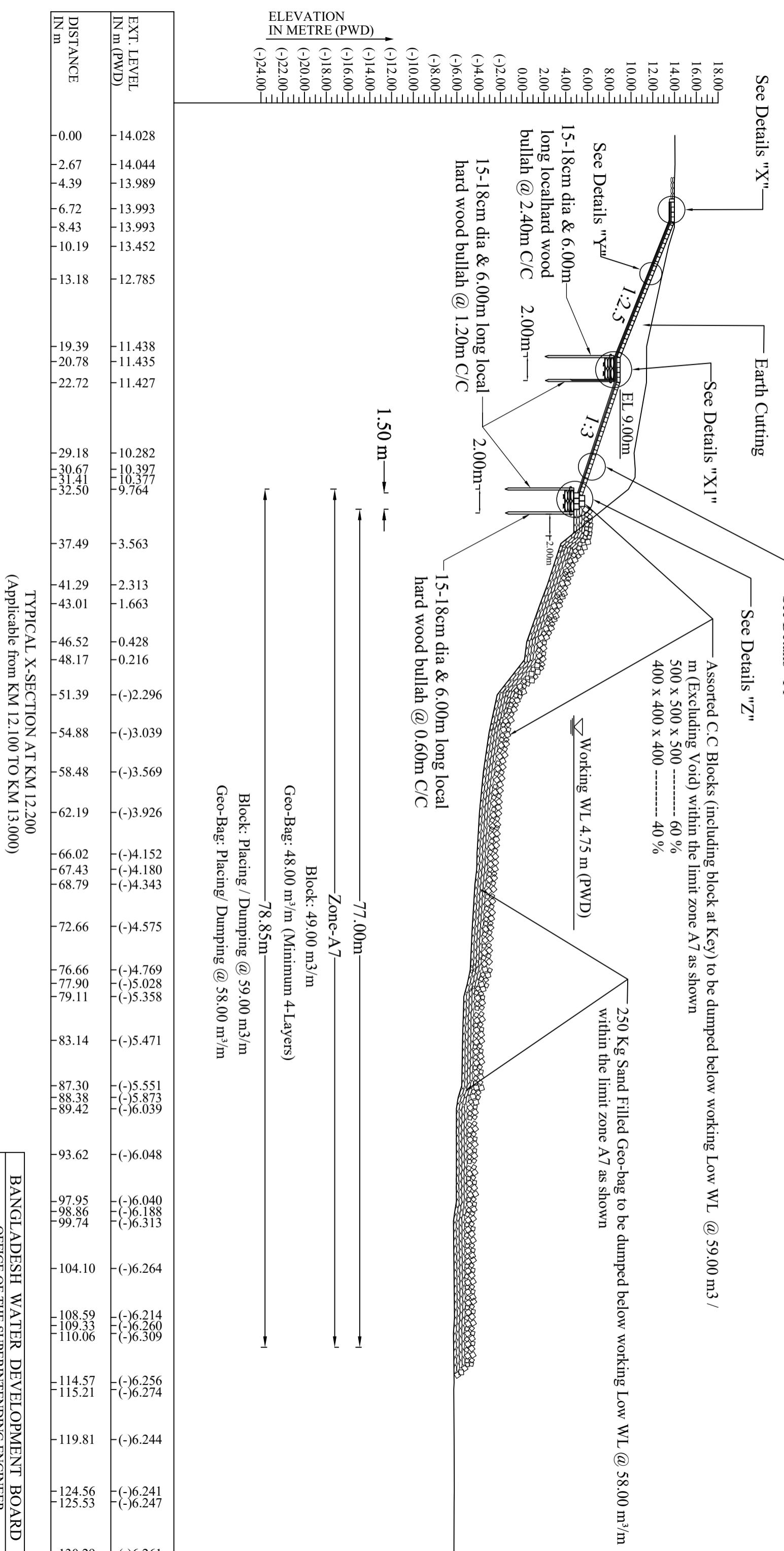
a) For Details "X", "X1", "Y", "Y1" & "Z"

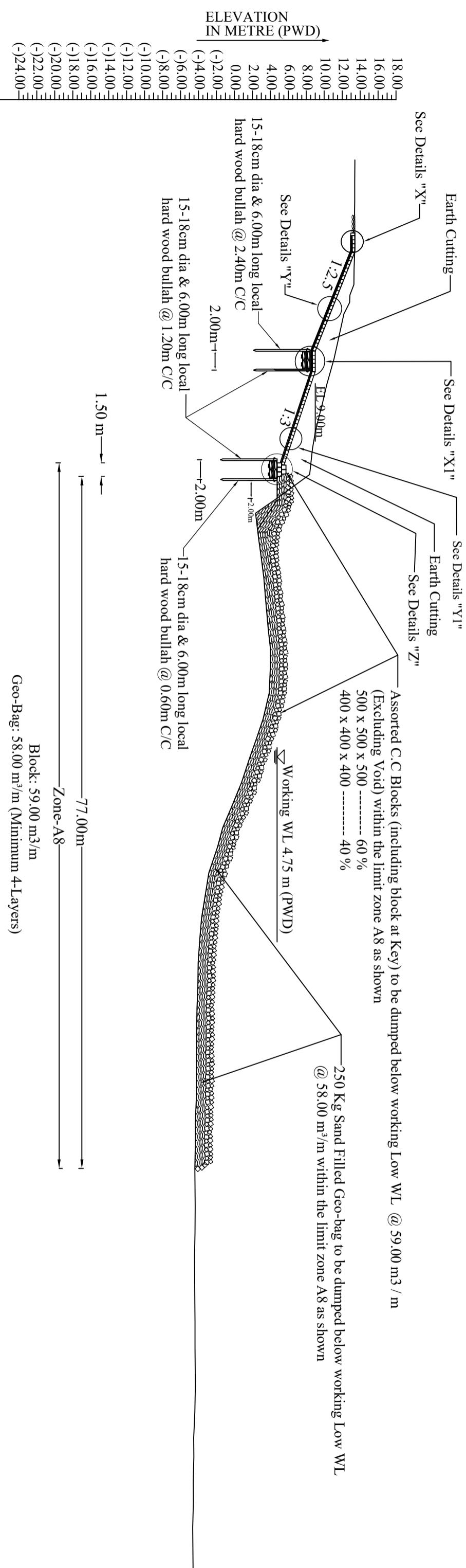
See Sheet No. 22 & 23 of 34





N:B:-
a) For Details "X", "X1", "Y", "Y1" & "Z"
See Sheet No. 22 & 23 of 34





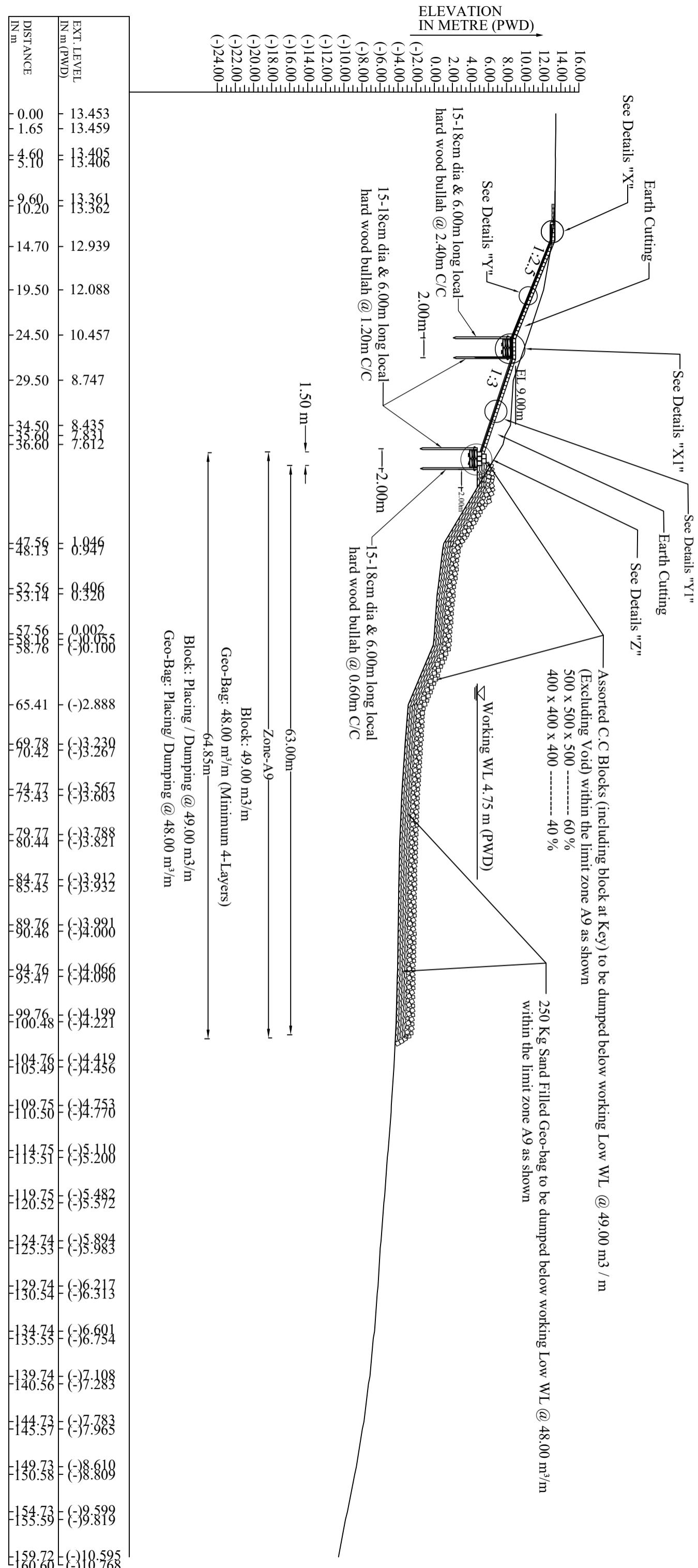
EXT. LEVEL IN m (PWD)	DISTANCE IN m
-0.00	13.426
-2.37	13.393
-4.59	13.393
-6.71	13.397
-9.58	13.426
-12.13	13.324
-13.85	13.301
-15.00	12.825
-17.13	12.190
-20.00	11.570
-22.13	11.096
-25.00	10.294
-27.13	9.790
-29.99	9.068
-32.13	8.700
-34.99	8.374
-37.44	5.053
-39.29	2.353
-42.17	2.710
-44.29	2.988
-46.42	3.265
-49.29	3.513
-52.17	3.761
-54.29	3.997
-56.42	4.007
-59.29	3.867
-62.17	3.196
-64.29	2.485
-66.42	1.729
-69.29	0.781
-72.17	(-)0.384
-74.29	(-)1.315
-76.42	(-)1.867
-79.29	(-)2.849
-82.17	(-)3.309
-84.29	(-)3.647
-86.42	(-)3.828
-89.29	(-)4.029
-92.16	(-)4.069
-94.29	(-)4.167
-96.42	(-)4.198
-99.29	(-)4.214
-102.16	(-)4.239
-104.29	(-)4.238
-107.16	(-)4.355
-109.29	(-)4.339
-112.16	(-)4.410
-114.29	(-)4.386
-116.42	(-)4.369
-119.29	(-)4.384
-122.16	(-)4.442
-124.29	(-)4.420
-127.16	(-)4.410
-129.29	(-)4.393
-132.16	(-)4.382
-134.29	(-)4.367
-136.42	(-)4.354
-139.29	(-)4.410
-142.16	(-)4.527
-144.29	(-)4.511
-147.16	(-)4.582
-149.29	(-)4.565
-152.16	(-)4.645

TYPICAL X-SECTION AT KM 13.420
(Applicable from KM 13.000 TO KM 13.680)

N:B:-
a) For Details "X", "X1", "Y", "Y1" & "Z"
See Sheet No. 22 & 23 of 34

BANGLADESH WATER DEVELOPMENT BOARD OFFICE OF THE SUPERINTENDING ENGINEER DESIGN CIRCLE-5	"Protection of Talbaria area of Mirpur Upazila & Kamorkandi area of Shelaiddah 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.	SECTION OF PROTECTIVE WORK AT KM 13.420
DESIGNED BY: (SHAMMI AKHTER, SDE) CHECKED BY: (MST. TASMEM JAHAN, EE)	RECOMMENDED BY: (JAKARIA PERVEZ, SE) APPROVED BY: (MD. MAHFUZUR RAHMAN, CE, DESIGN)

DATE: 00-01-2025 DWG NO.: DC-5-0000-17/34



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

"Protection of Talbaria area of Mirpur Upazila & Kamorkandi area of Shelaiddah 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.

SECTION OF PROTECTIVE WORK AT KM 13.880

- N:B:-
a) For Details "X", "X1", "Y", "Y1" & "Z"
See Sheet No. 22 & 23 of 34

DESIGNED BY:

(SHAMMI AKHTER), SDE
CHECKED BY:

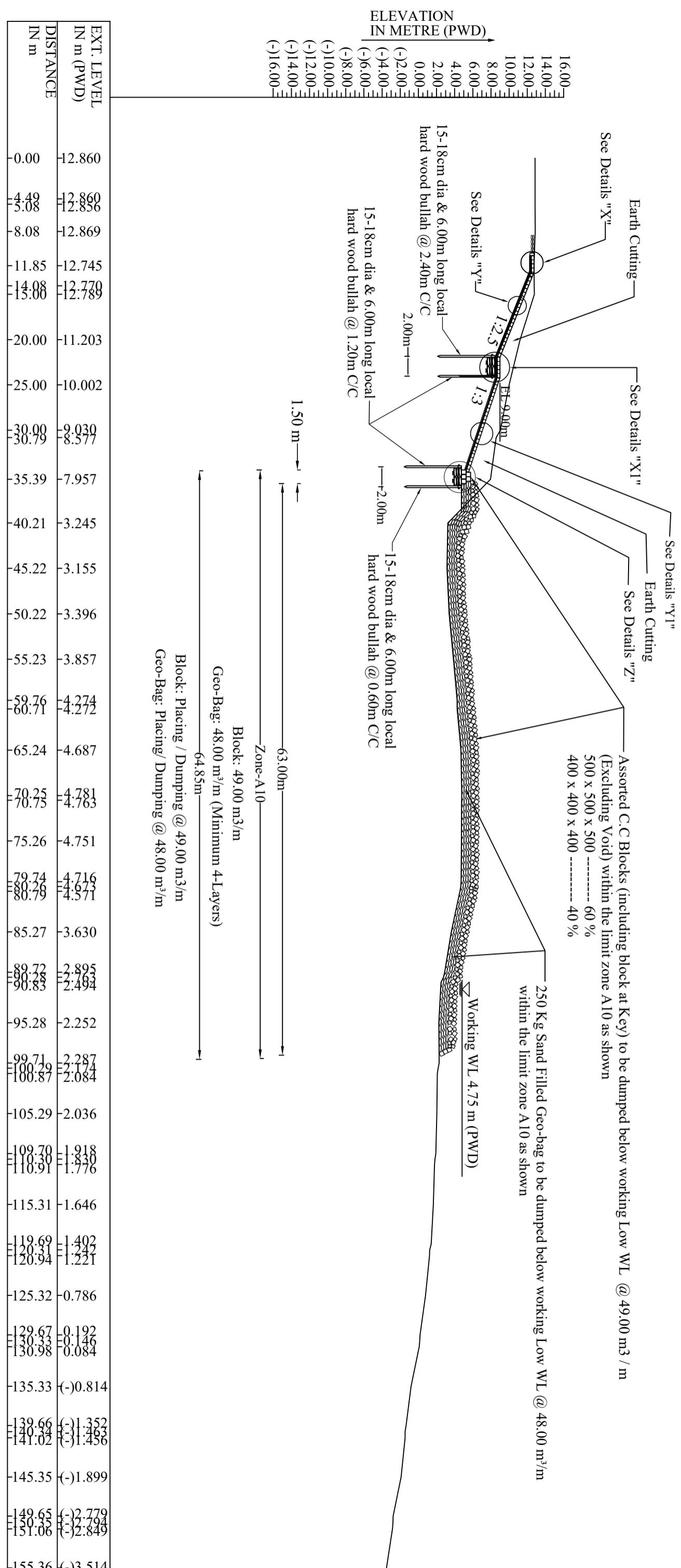
RECOMMENDED BY:

(JAKARIA PERVEZ), SE

APPROVED BY:

(MST. TASMEM JAHAN), EE

DATE: 00-01-2025 DWG NO.: DC-5-0000-18/34



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

"Protection of Talbaria area of Mirpur Upazila & Kamorkandi area of Shelaiddah 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.

SECTION OF PROTECTIVE WORK AT KM 14.980

DESIGNED BY:

(SHAMMI AKHTER, SDE)

RECOMMENDED BY:

(JAKARIA PERVEZ, SE)

N:B:-
a) For Details "X", "X1", "Y", "Y1" & "Z"
See Sheet No. 22 & 23 of 34

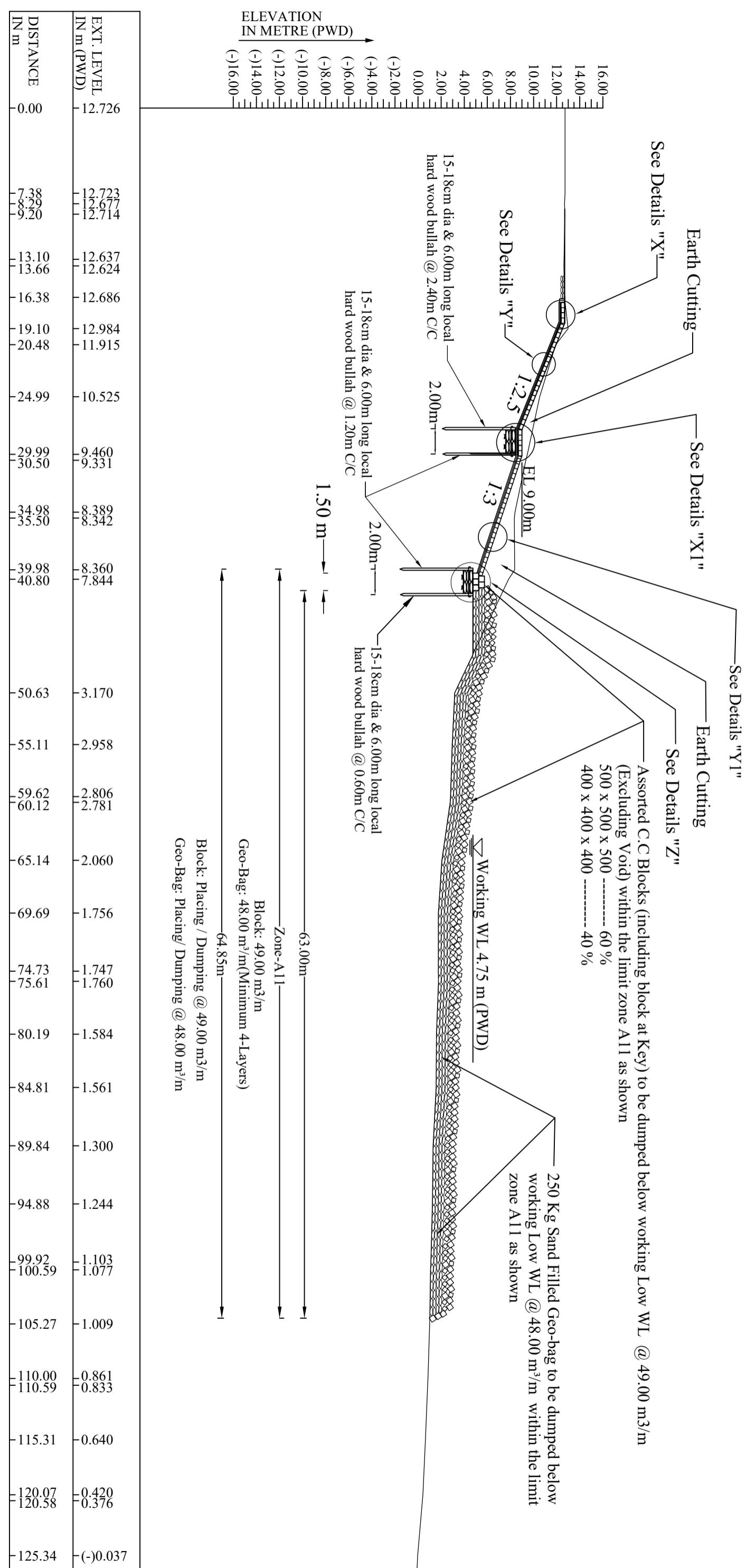
CHECKED BY:

(MST. TASMEM JAHAN, EE)

APPROVED BY:

(MD. MAHFUZUR RAHMAN, CE, DESIGN)

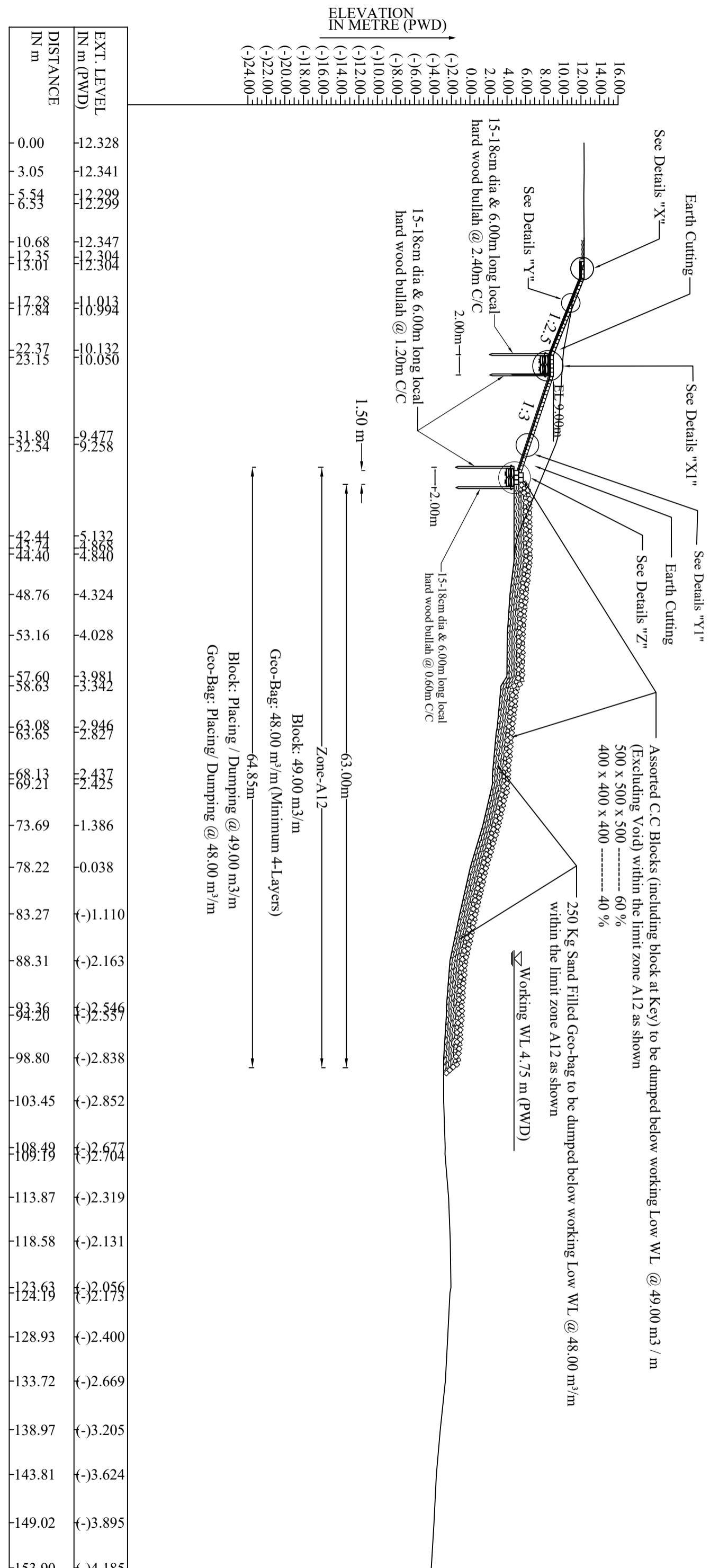
DATE: 00-01-2025 DWG NO.: DC-5-0000-19/34



TYPICAL X-SECTION AT KM 15.460
(Applicable from KM 15.400 TO KM 15.600)

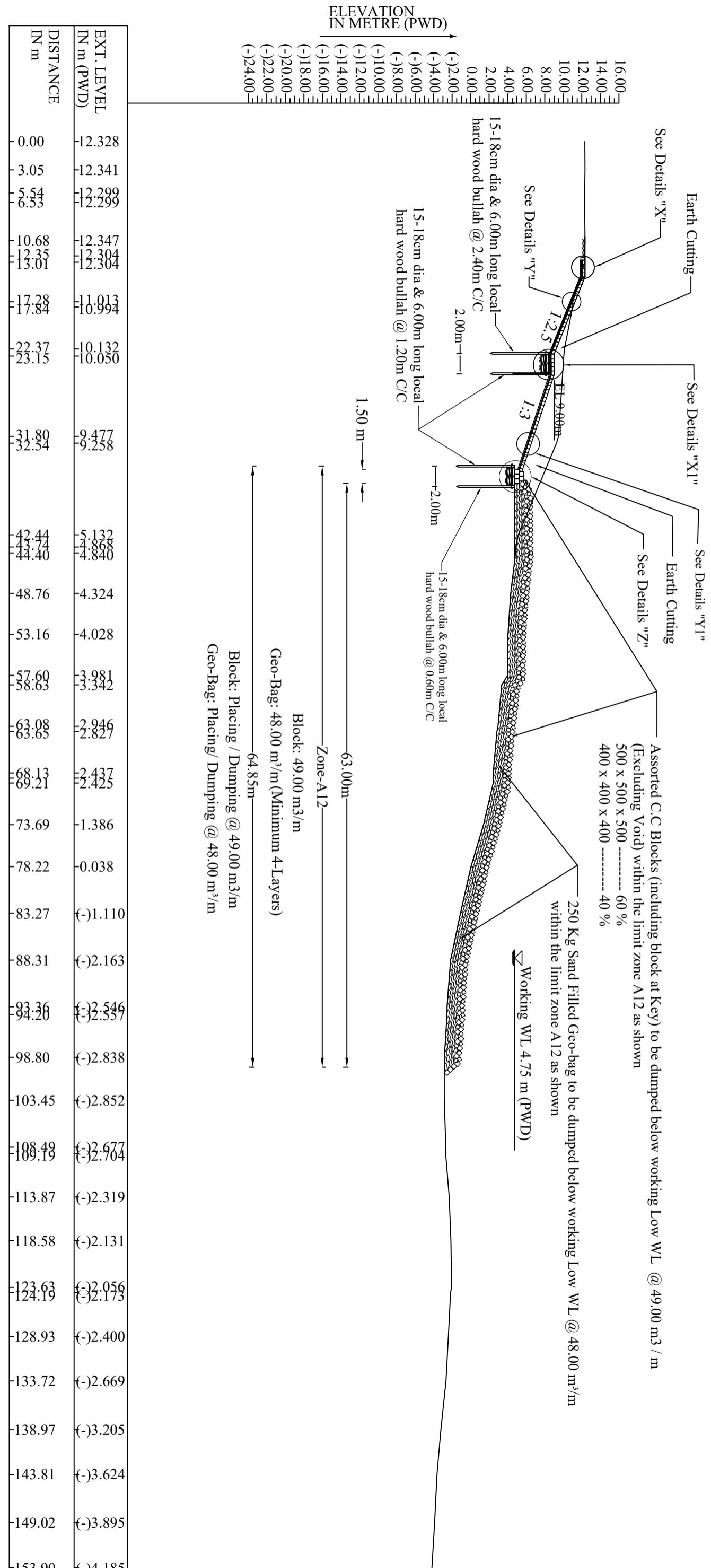
N:B:-
a) For Details "X", "X1", "Y", "Y1" & "Z"
See Sheet No. 22 & 23 of 34

BANGLADESH WATER DEVELOPMENT BOARD	
OFFICE OF THE SUPERINTENDING ENGINEER	
DESIGN CIRCLE-5	
"Protection of Talbaria area of Mirpur Upazila & Kamorkandi area of Shelaiddah 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.
SECTION OF PROTECTIVE WORK AT KM 15.460	
DESIGNED BY:	RECOMMENDED BY:
(SHAMMI AKHTER, SDE)	(JAKARIA PERVEZ, SE)
CHECKED BY:	APPROVED BY:
(MST. TASMEM JAHAN, EE)	(MD. MAHFUZUR RAHMAN, CE, DESIGN)
DATE: 27-02-2024	DWG NO.: DC-5-5712-20/34



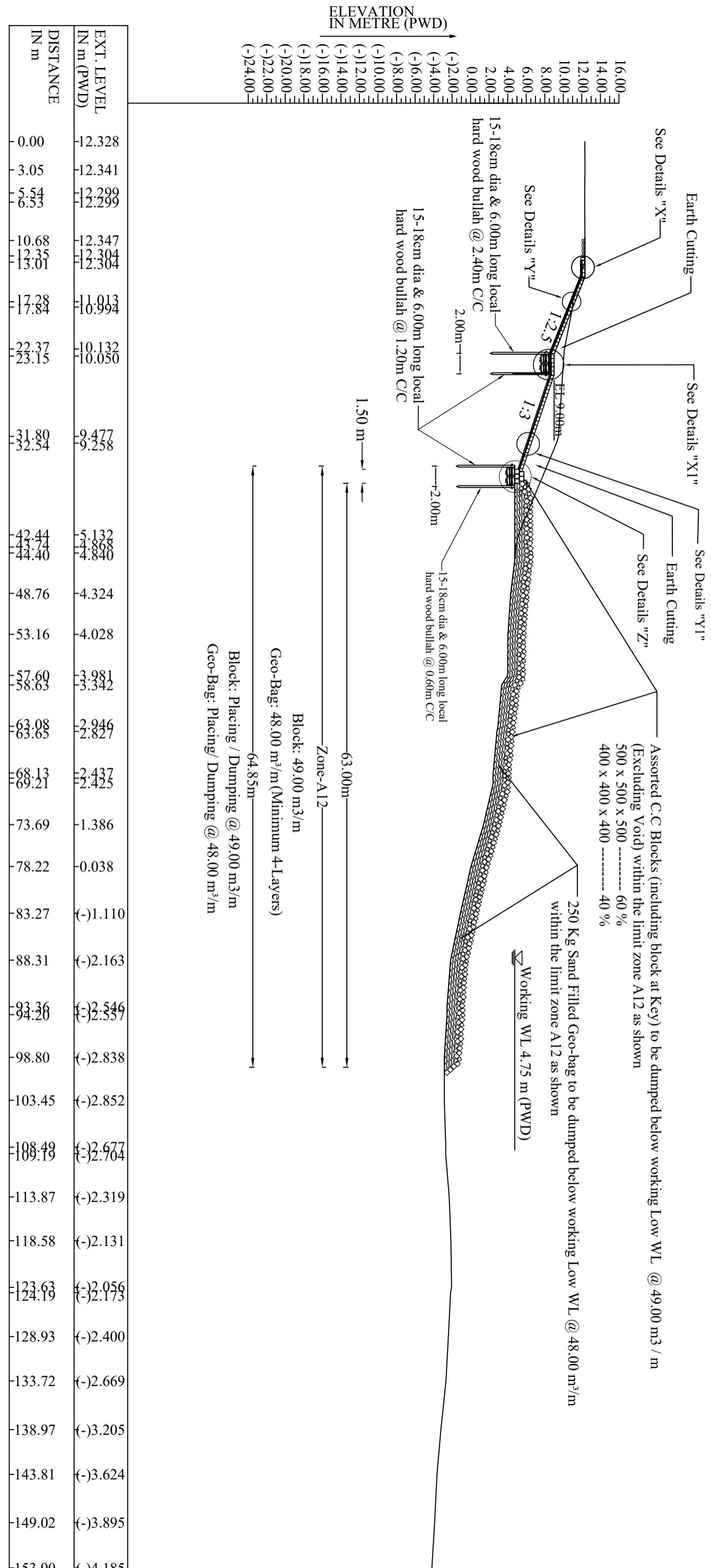
N:B:-
a) For Details "X", "X1", "Y", "Y1" & "Z"
See Sheet No. 22 & 23 of 34

BANGLADESH WATER DEVELOPMENT BOARD	
OFFICE OF THE SUPERINTENDING ENGINEER	
DESIGN CIRCLE-5	
<p>"Protection of Talbaria area of Mirpur Upazila & Kamorkandi 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, Baruipara and Bahalbaria union, Upazila: Mirpur, District: Kushtia Kushtia WD Division, BWDB, Kushtia.</p>	
SECTION OF PROTECTIVE WORK AT KM 15.660	
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-5-0000-21/34



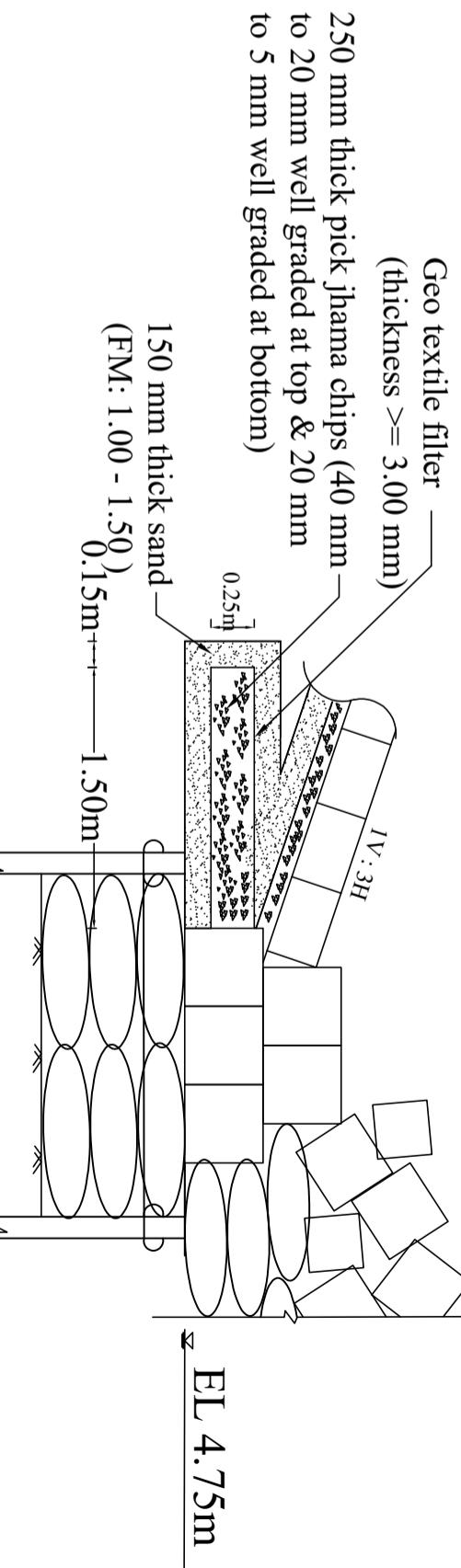
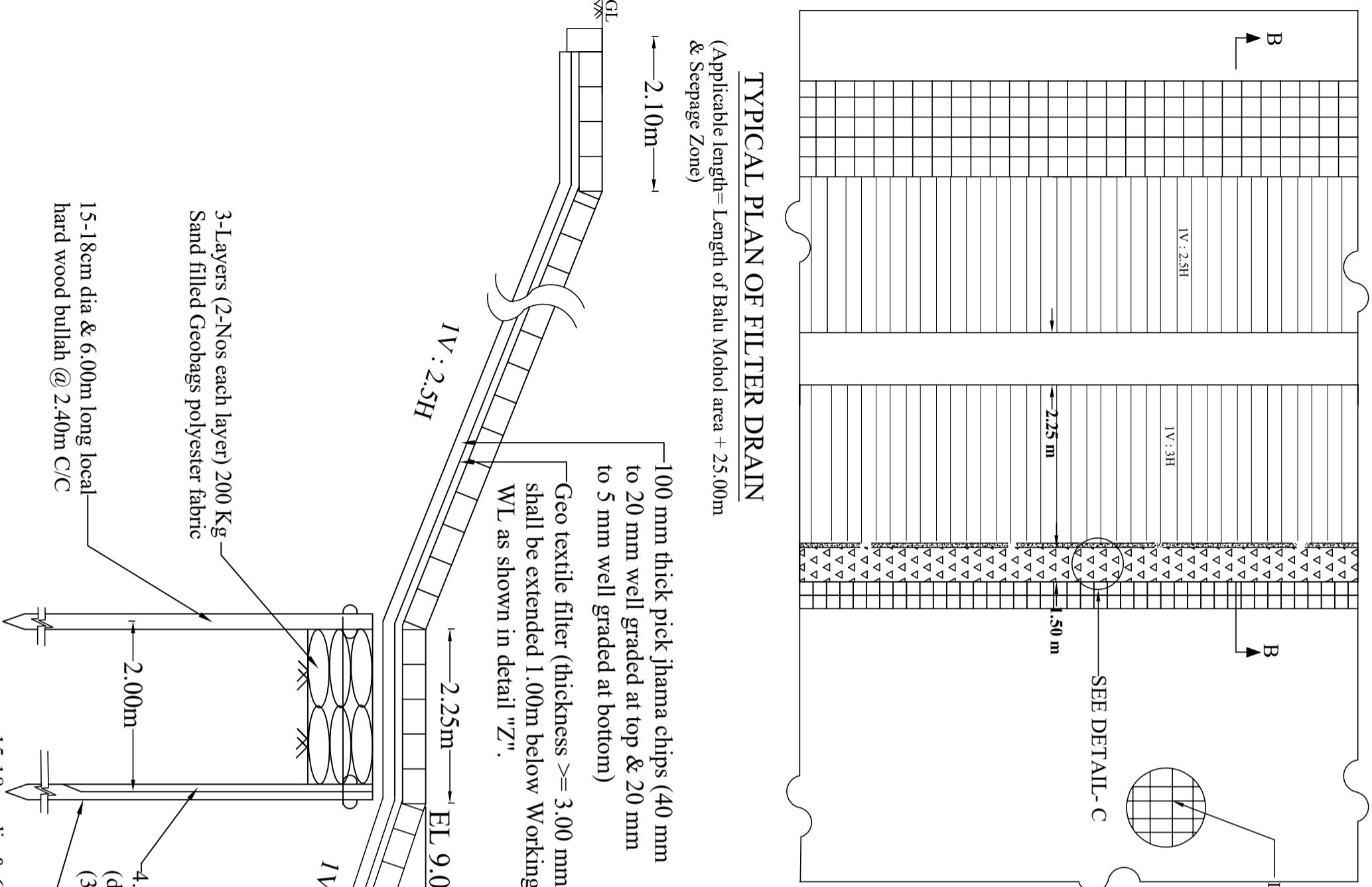
N:B:-
a) For Details "X", "X1", "Y", "Y1" & "Z"
See Sheet No. 22 & 23 of 34

BANGLADESH WATER DEVELOPMENT BOARD	
OFFICE OF THE SUPERINTENDING ENGINEER	
DESIGN CIRCLE-5	
<i>"Protection of Talbaria area of Mirpur Upazila & Kamorkandi area of Shelaiddah 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.	SECTION OF PROTECTIVE WORK AT KM 15.660
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-5-0000-21/34



N:B:-
a) For Details "X", "X1", "Y", "Y1" & "Z"
See Sheet No. 22 & 23 of 34

BANGLADESH WATER DEVELOPMENT BOARD	
OFFICE OF THE SUPERINTENDING ENGINEER	
DESIGN CIRCLE-5	
<p>"Protection of Talbaria area of Mirpur Upazila & Kamorkandi 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, Baruipara and Bahalbaria union, Upazila: Mirpur, District: Kushtia Kushtia WD Division, BWDB, Kushtia.</p>	
SECTION OF PROTECTIVE WORK AT KM 15.660	SECTION OF PROTECTIVE WORK AT KM 15.660
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-5-0000-21/34

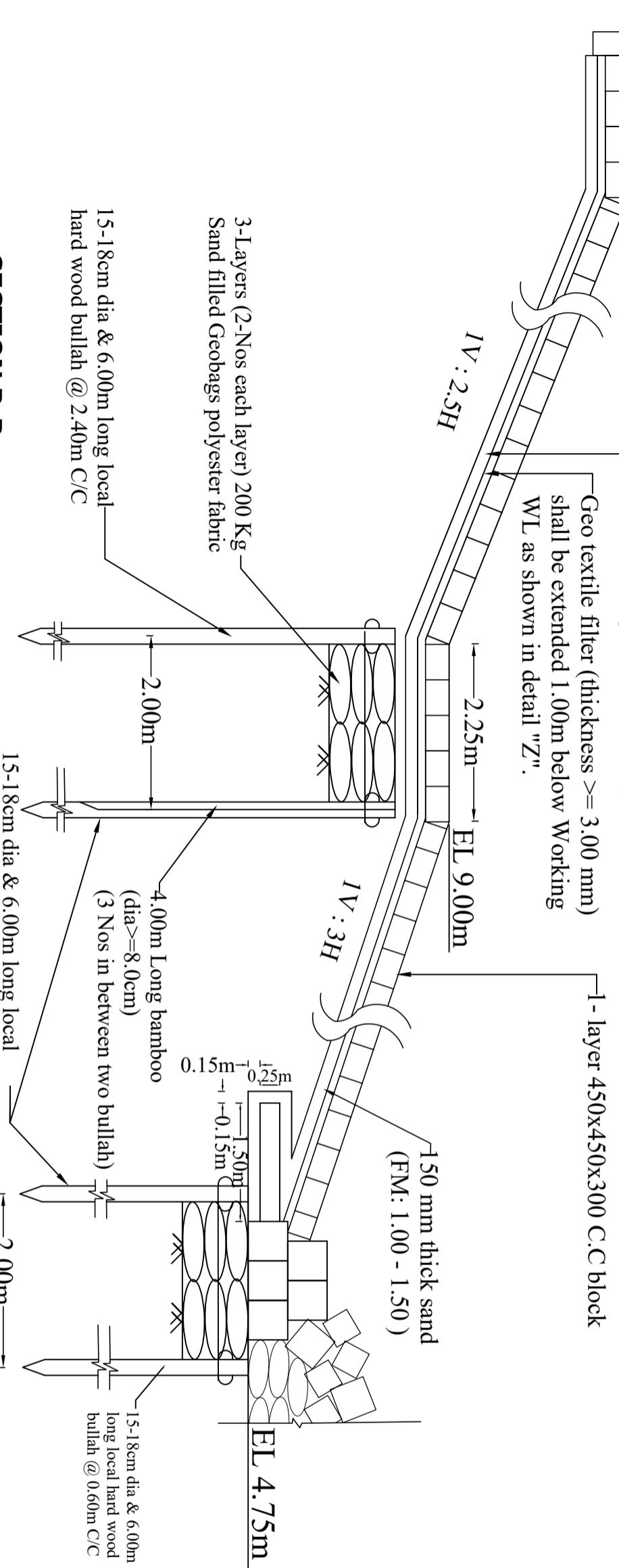


TYPICAL PLAN OF FILTER DRAIN

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

→ 2.10m →

EGL

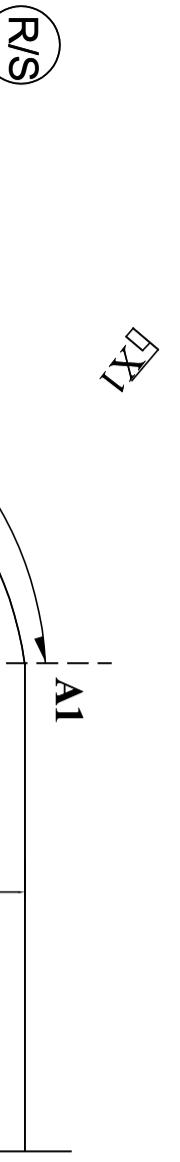


DETAIL 'C'

BANGLADESH WATER DEVELOPMENT BOARD
OFFICE OF THE SUPERINTENDING ENGINEER
DESIGN CIRCLE-5
"Protection of Talbaria area of Mirpur Upazila & Kanorkandi area of Shelaiddah 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, Barupara and Bahalbaria union, Upazila: Mirpur, District: Kushtia Kushtia WD Division, BWDB, Kushtia.
DESIGNED BY: (MST. TASMEM JAHAN, EE)
RECOMMENDED BY: (SHAMMI AKHTER, SE)
CHECKED BY: (JAKARIA PERVEZI, SE)
APPROVED BY: (MD. MAHFUZUR RAHMAN, CE, DESIGN)
DATE: 00-00-2025 DWG NO.: DC-5-0000-24/34

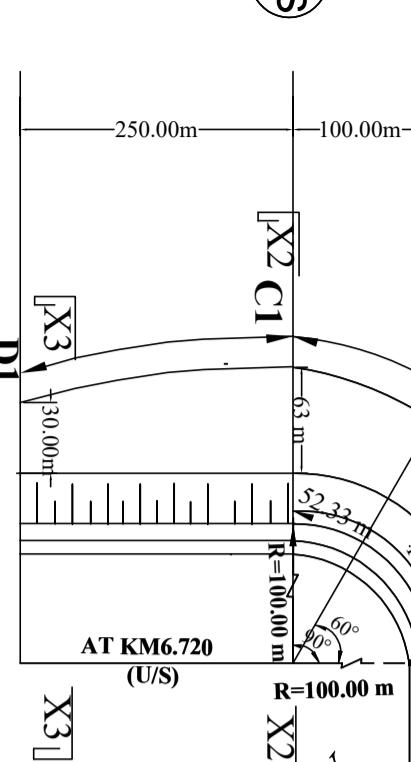
Sheet No. 25 of 34

P A D M A R I V E R → **D/S**



R/S

C/S

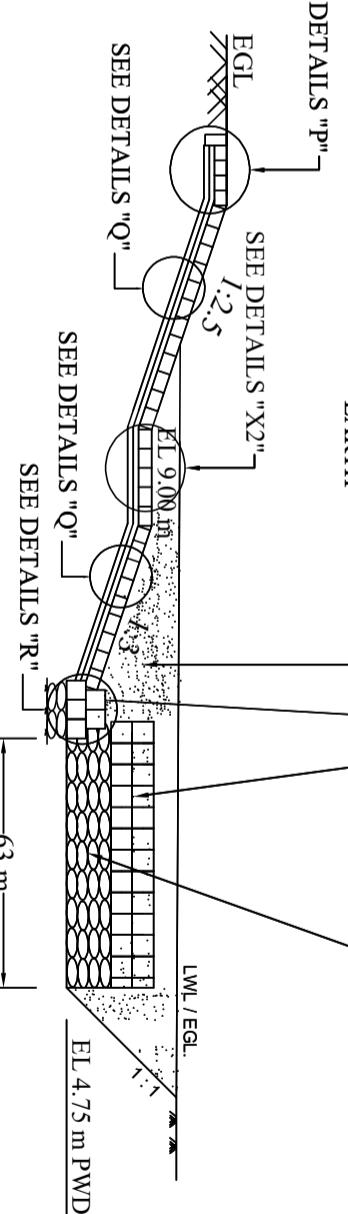


X2

PLAN OF U/S END TERMINATION

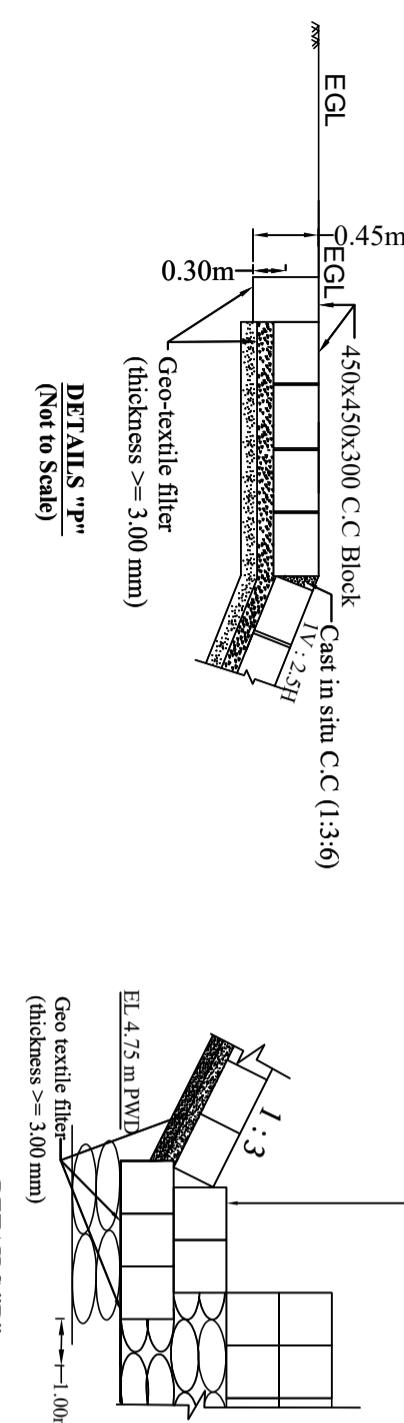
SEE DETAILS "P"
WL (Toe of Pitching Block) above Geo-textile (3 Nos Blocks in Bottom Layer & 2 Nos. Blocks in Upper Layer as Shown)

SECTION AT X2-X2 (Typical) (Limit of work from B1 to C1)



X2

SECTION AT X3-X3 (Typical) (Not to Scale)



X3

D1

DETAILS "P" (Not to Scale)

DETAILS "R"
(Not to Scale)

Assorted C.C. Blocks @ 47 m³/m to 24.00 m³/m (excluding void) to be dumped / placed from C1 to D1 over Geo Bags as shown.

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

- 1- layer 450x450x300 C.C. block
- 100 mm thick pick jhama chips (40 mm to 20 mm well graded at top & 20 mm to 5 mm well graded at bottom)
- Geo textile filter (thickness >= 3.00 mm) shall be extended 1.00m below Working Low WL as shown in detail "Z".

SEE DETAILS "P"

RE-FILLED BY
EXCAVATED
EARTH

250 kg Geo Bags to be dumped / placed @ 50 m³/m to 22.50 m³/m from C1 to D1 as shown.

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

"Protection of Talbaria area of Mirpur Upazila & Kamarkandi area of Shelaiddah Union of Kumarkhali Upazila in Kushthia 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: Kushthia
Kushthia WD Division, BWDB, Kushthia

DETAILS "Q"
(Not to Scale)

SEE DETAILS "Q"

SEE DETAILS "R"

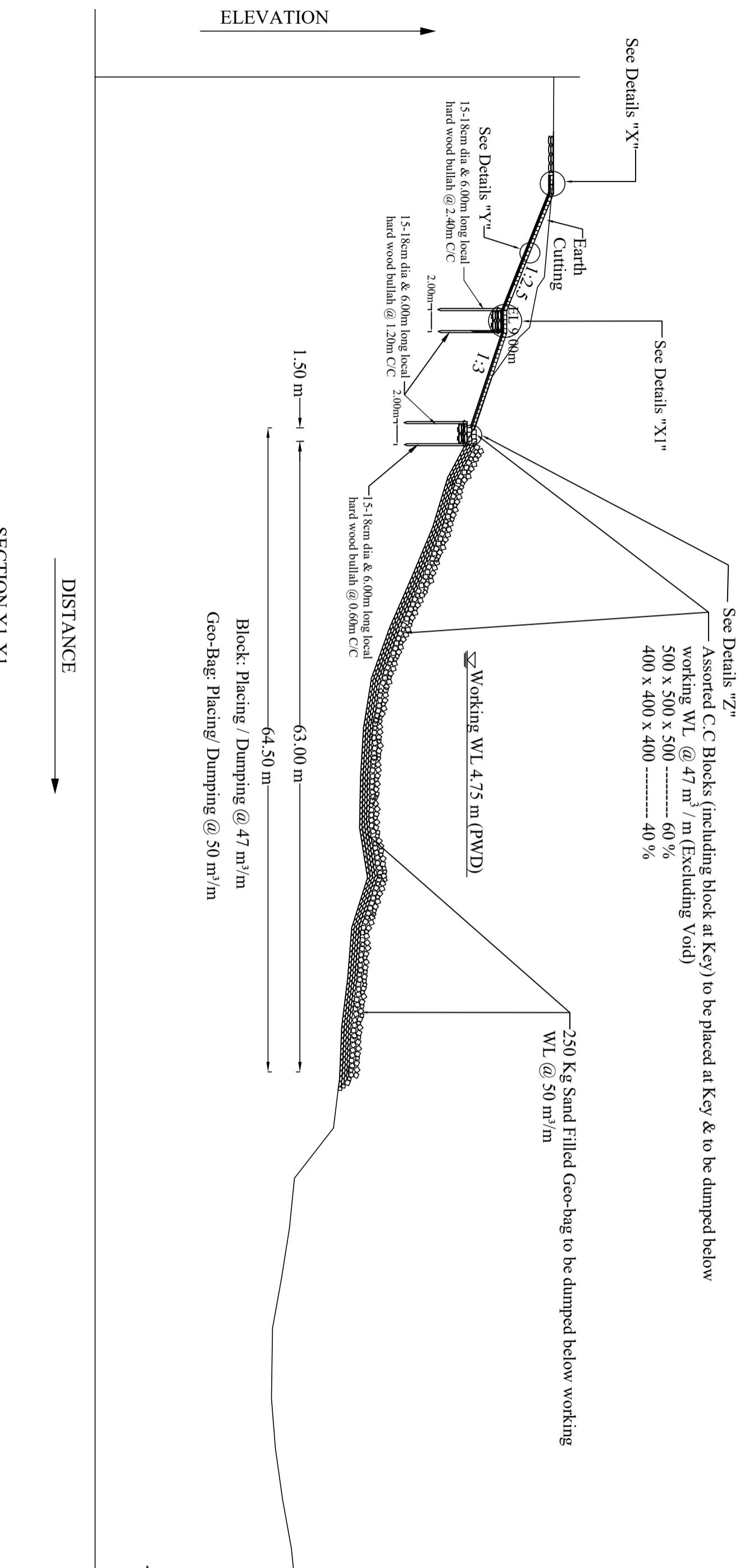
63 m to 30 m

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 %

250 kg Geo Bags to be dumped / placed @ 50 m³/m to 22.50 m³/m from B1 to C1 as shown.

SEE DETAILS "X2"

Sheet No. 26 of 34

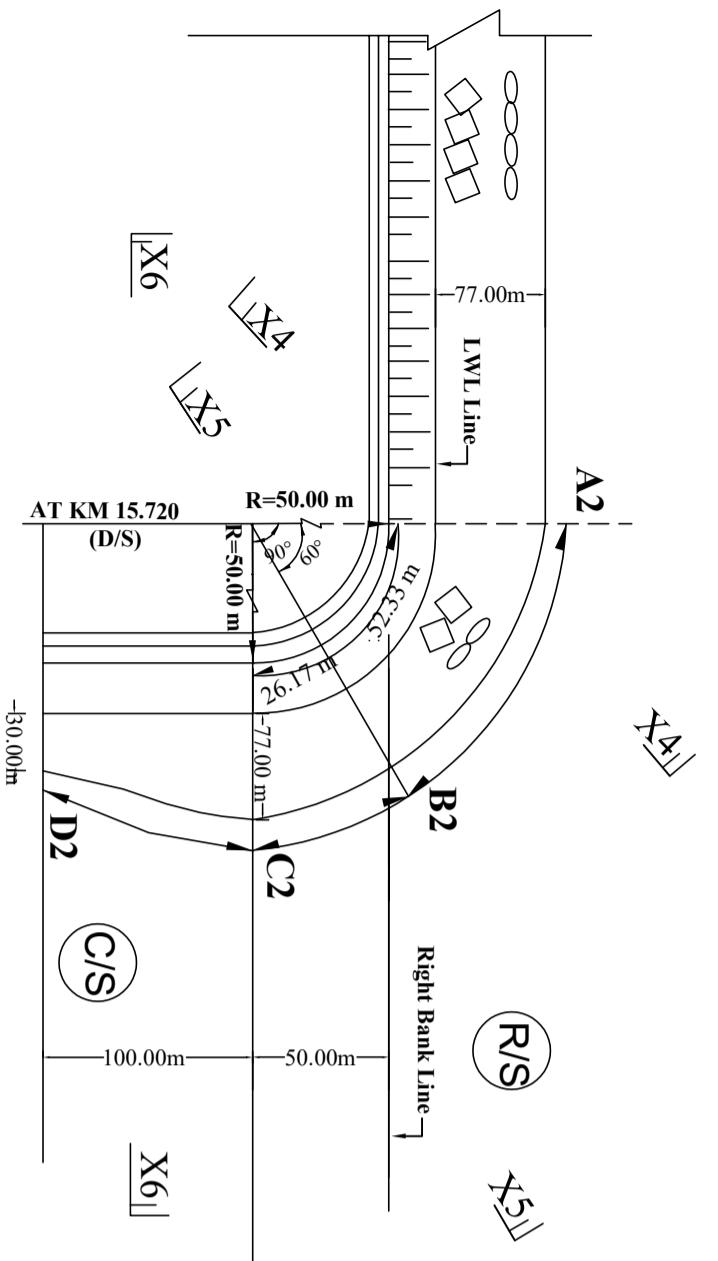


Scale: Not To Scale

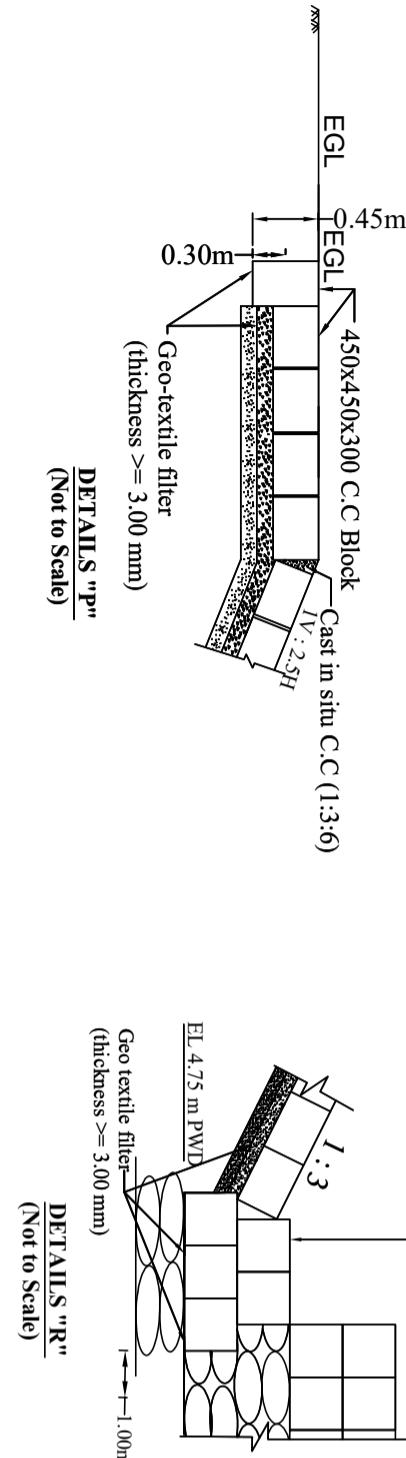
BANGLADESH WATER DEVELOPMENT BOARD	
OFFICE OF THE SUPERINTENDING ENGINEER	
DESIGN CIRCLE-5	
<i>"Protection of Talbaria area of Mirpur Upazila & Kamorkandi area of Shelaiddah Union of Kumarkhali Upazila in Kushtia District from the erosion of Padma River"</i>	
KM 6.720 to KM 15.720=9.000 KM at Talbaria, Baruipara and Bahalbaria union, Upazila: Mirpur, District: Kushtia Kushtia WD Division, BWDB, Kushtia.	DETAILS OF U/S END TERMINATION
DESIGNED BY: (SHAMMI AKHTER, SDE)	RECOMMENDED BY: (JAKARIA PERVEZ, SE)
CHECKED BY: (MST. TASMEM JAHAN, EE)	APPROVED BY: (MD. MAHFUZUR RAHMAN), CE, DESIGN
DATE: 00-00-2025	DWG NO.: DC-5-0000-26/34

Sheet No. 27 of 34

U/S ————— PADMA RIVER ————— D/S



Assorted C.C Blocks (@ 47 m³/m to 24.00 m³/m (excluding void) to be dumped / placed from C1 to D1 over Geo Bags as shown.
WL (Toe of Pitching Block) above Geo-textile (3 Nos Blocks in Bottom Layer & 2 Nos. Blocks in Upper Layer as Shown)



DETAILS "P"
(Not to Scale)

DETAILS "Q"
(Not to Scale)

DETAILS "R"
(Not to Scale)

DETAILS "X2"
(Not to Scale)

DETAILS "X5"
(Not to Scale)

DETAILS "X6"
(Not to Scale)

DETAILS "A2"
(Not to Scale)

DETAILS "B2"
(Not to Scale)

DETAILS "C2"
(Not to Scale)

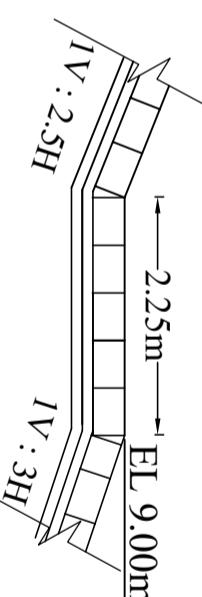
DETAILS "D2"
(Not to Scale)

DETAILS "C/S"
(Not to Scale)

DETAILS "R/S"
(Not to Scale)

Assorted C.C Blocks @ 47 m³/m to 24.00 m³/m (excluding void) to be dumped / placed from C1 to D1 over Geo Bags as shown.
RE-FILLED BY EXCAVATED EARTH
SEE DETAILS "P"
SEE DETAILS "Q"
SEE DETAILS "R"
SEE DETAILS "X2"
SEE DETAILS "X5"
SEE DETAILS "X6"
SEE DETAILS "A2"
SEE DETAILS "B2"
SEE DETAILS "C2"
SEE DETAILS "D2"
SEE DETAILS "C/S"
SEE DETAILS "R/S"

250 kg Geo Bags to be dumped / placed @ 50 m³/m from B1 to C1 over Geo Bags as shown.
500 x 500 x 500 ----- 60 %
400 x 400 x 400 ----- 40 %



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

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

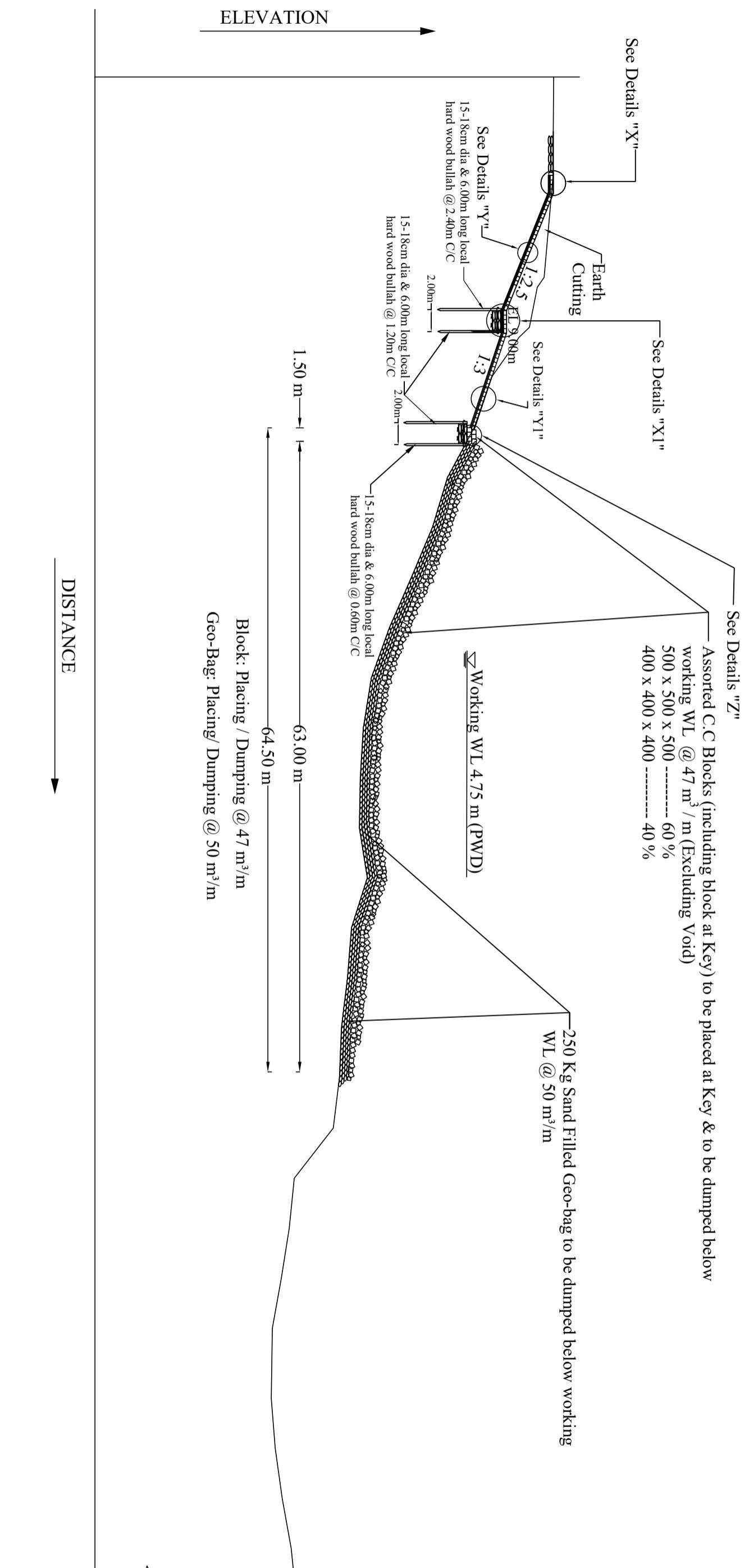
Design of Protective Work along the R/B of Padma River from KM 6.720 to KM 15.720=9.000 KM at Talbaria, Baruipara and Bahalbaria union, Upazila: Mirpur, District: Kushtia Kushtia WD Division, BWDB, Kushtia

DETAILS OF PROTECTIVE WORK FOR D/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-5-0000-27/34

Scale: Not To Scale

SECTION AT X6-X6 (Typical)
(Limit of work from C2 to D2)

Sheet No. 28 of 34



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

Scale: Not To Scale

BANGLADESH WATER DEVELOPMENT BOARD	
OFFICE OF THE SUPERINTENDING ENGINEER	
DESIGN CIRCLE-5	
<i>"Protection of Talbaria area of Mirpur Upazila & Kamorkandi area of Shelaiddah 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.
DESIGNED BY:	DETAILS OF D/S END TERMINATION
(SHAMMI AKHTER, SDE)	RECOMMENDED BY: (JAKARIA PERVEZ, SE)
CHECKED BY: (MST. TASMEM JAHAN, EE)	APPROVED BY: (MD. MAHFUZUR RAHMAN), CE, DESIGN
DATE: 00-00-2025	DWG NO.: DC-5-0000-28/34

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

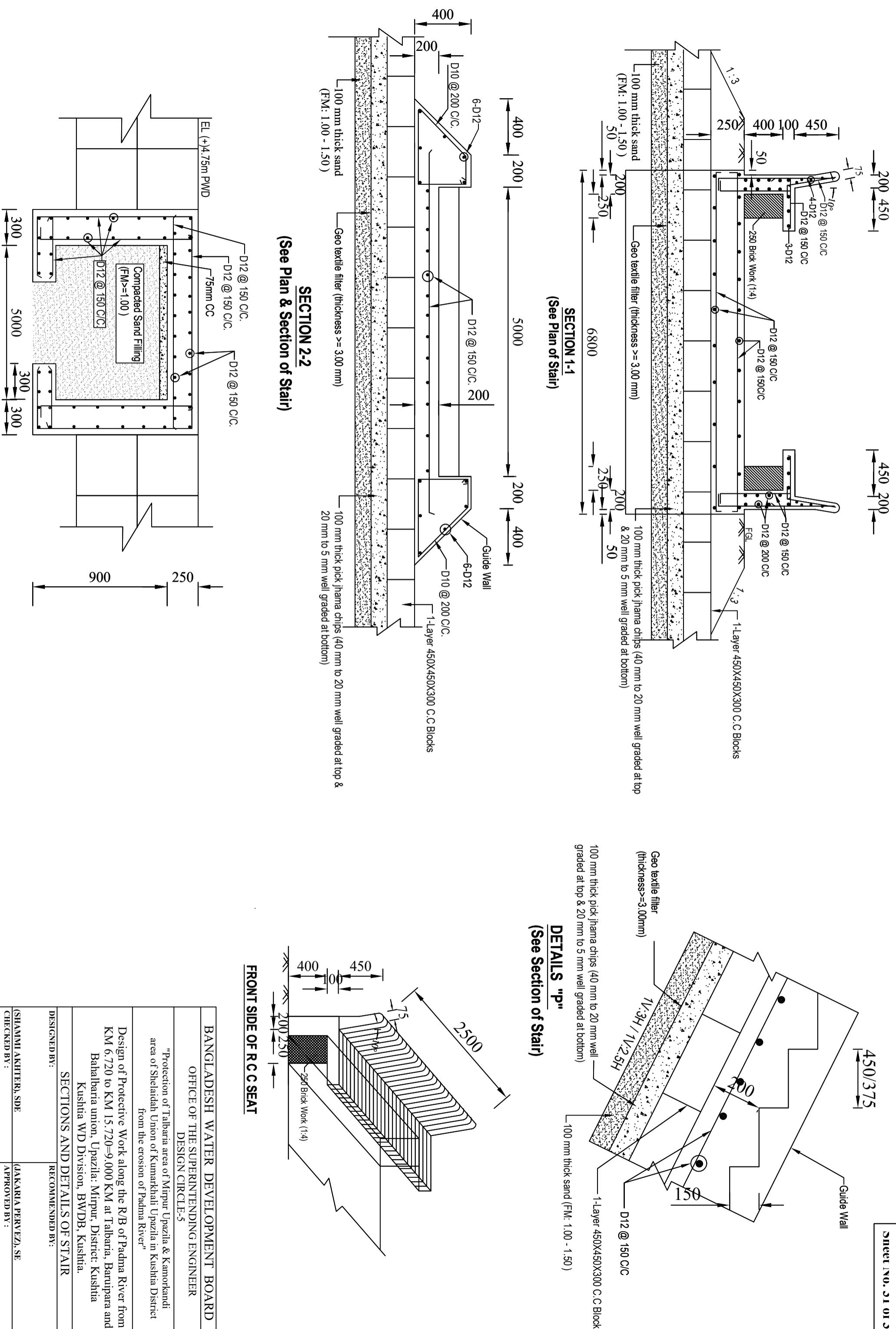
1. THE SPECIFICATION OF MATERIALS & WORKMANSHIP SHALL CONFORM TO THE STANDARD TECHNICAL SPECIFICATION OF BWDB IN GENERAL.

2. THE FOLLOWING SPECIFICATION OF MATERIALS & WORKS SHALL BE FOLLOWED:

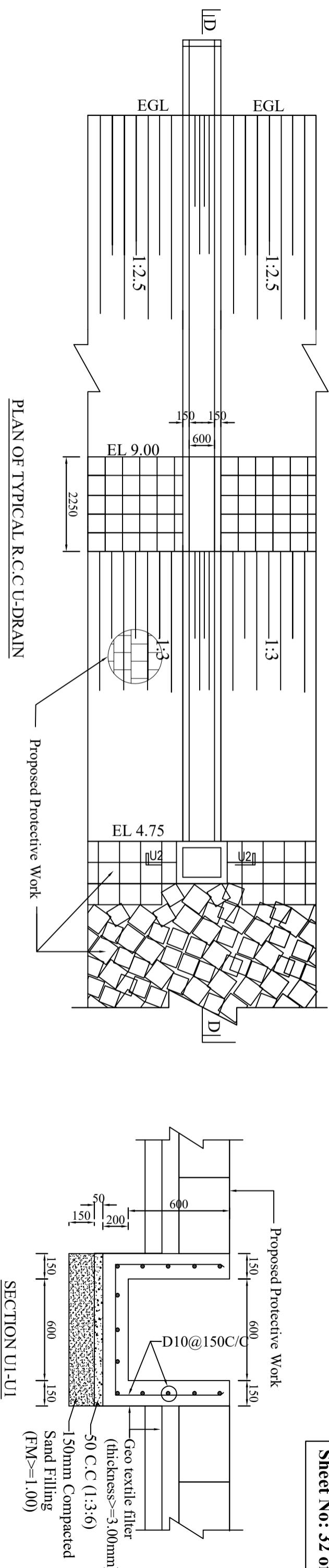
- a. CONCRETE STRENGTH (CYLINDER TEST) IN R.C.C WORKS : 22 N/mm²
BLINDING LAYER CONCRETE (LEAN CONCRETE) : 1:3:6
- b. YIELD STRENGTH OF REINF. BAR (DEFORMED BAR) : 400 N/mm²
- c. CLEAR COVER FOR R.C.C WORK : 65mm (unless otherwise mentioned in the drawing)
- 3. CONCRETE SHALL BE POURED IN DRY BED CONDITIONS.
- 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/MM² 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 ≥ 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 BY FIELD OFFICE ACCORDING TO ACTUAL FIELD REQUIREMENT. STAIR AND DRAIN OF THIS DRAWING ALSO APPLICABLE FOR KM 7.970 TO KM 9.500=1.530 KM (RABINDRA KUTHIBARI AT SHELAIDAH).
- 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.
- 15. CUT-OFF WALL OF STAIR & R.C.C U-DRAIN MUST BE CONSTRUCTED FROM THE LOWER PART (NEAR LWL) TO UPWARDS.
- 16. 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-5, BWDB, DHAKA FOR TAKING NECESSARY ACTION.

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

DATE: 00-00-2025 DWG NO.: DC-5-0000-29/34

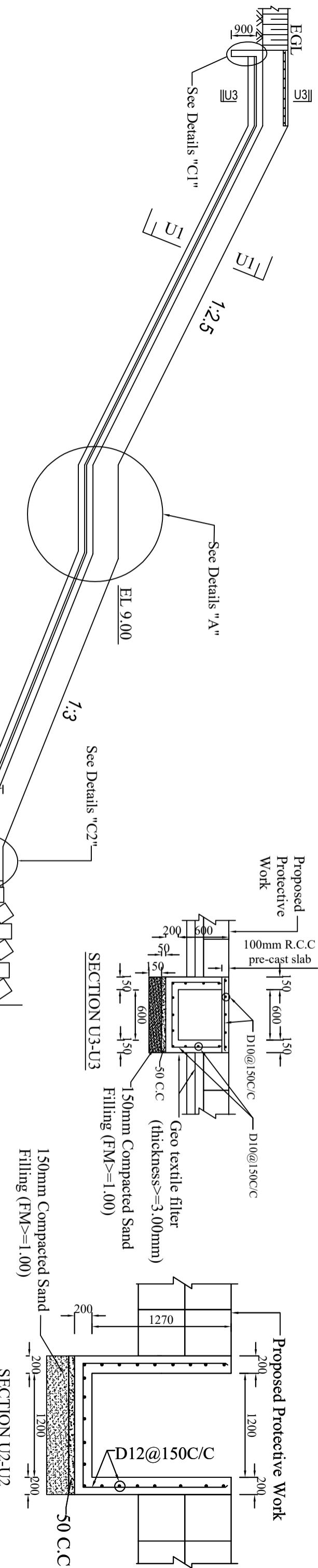


Sheet No: 32 of 3



PLAN OF TYPICAL R.C.C U-DRAIN

SECTION U1-U1

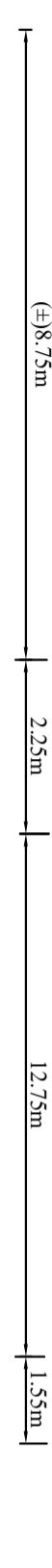


SECTION 03-U

A diagram showing a rectangle with a diagonal line from the bottom-left corner to the top-right corner. The rectangle has a black border and is divided into four quadrants by the diagonal. There are four small black dots, one in each quadrant.



SECTION D-D
(Reinforcement Not Shown)



DETAILS "A"

150mm Compacted Sand
Filling (FM \geq 1.00)

D10 @ 150C/C
EL 9.00

100

350

DETAILS "B"

900 200

4-D10

300

D10@150C/C

150mm Compacted Sand
Filling (FM \geq 1.00)

50 C.C

5-D10

DETAILS "C"

200 600

Geo-textile

600

200

D10 @ 150 C/C
EL 4.75m

200

150

1200

150mm Compacted Sand
Filling (FM \geq 1.00)

1270

200

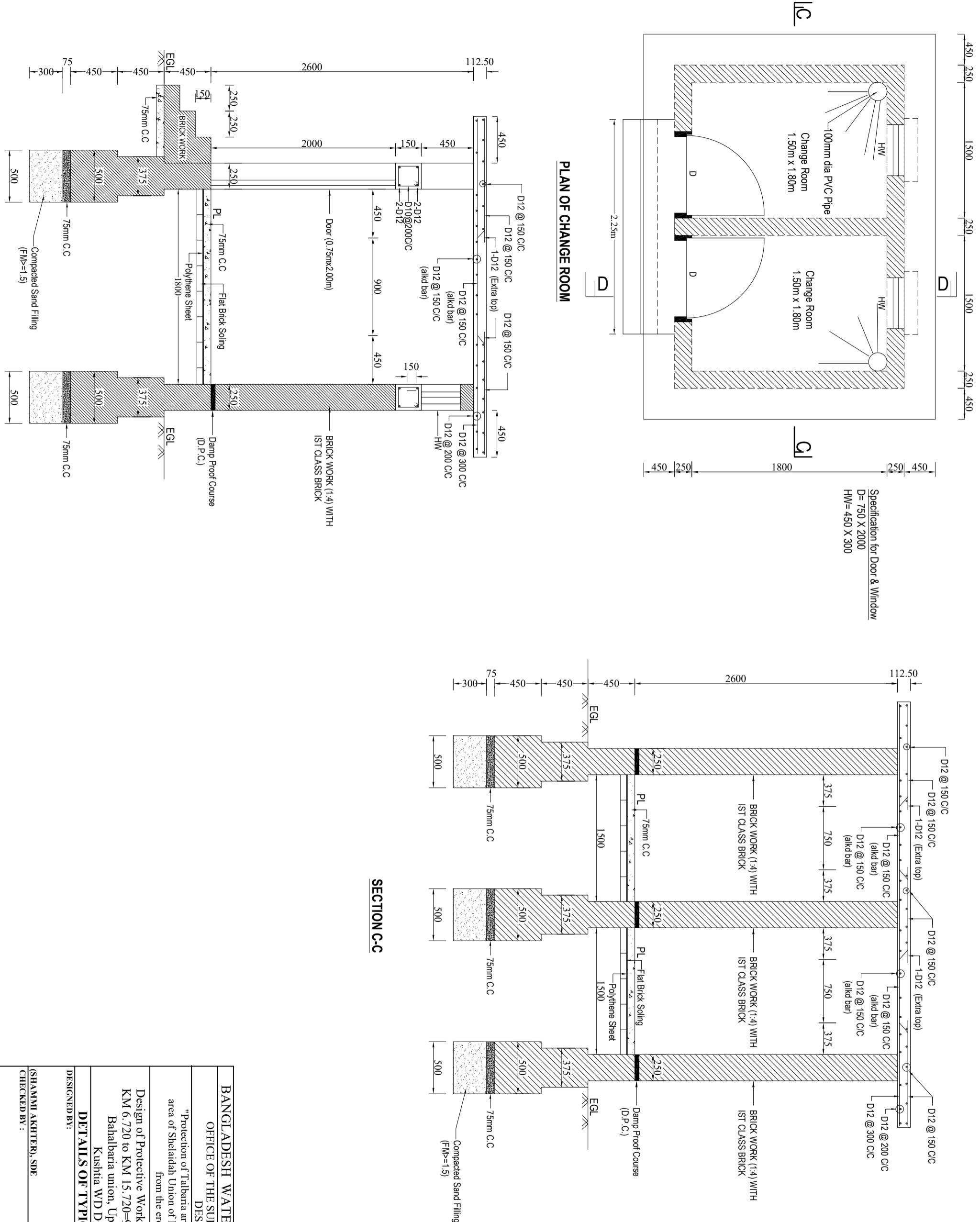
50 C.C

200

D12 @ 150 C/C

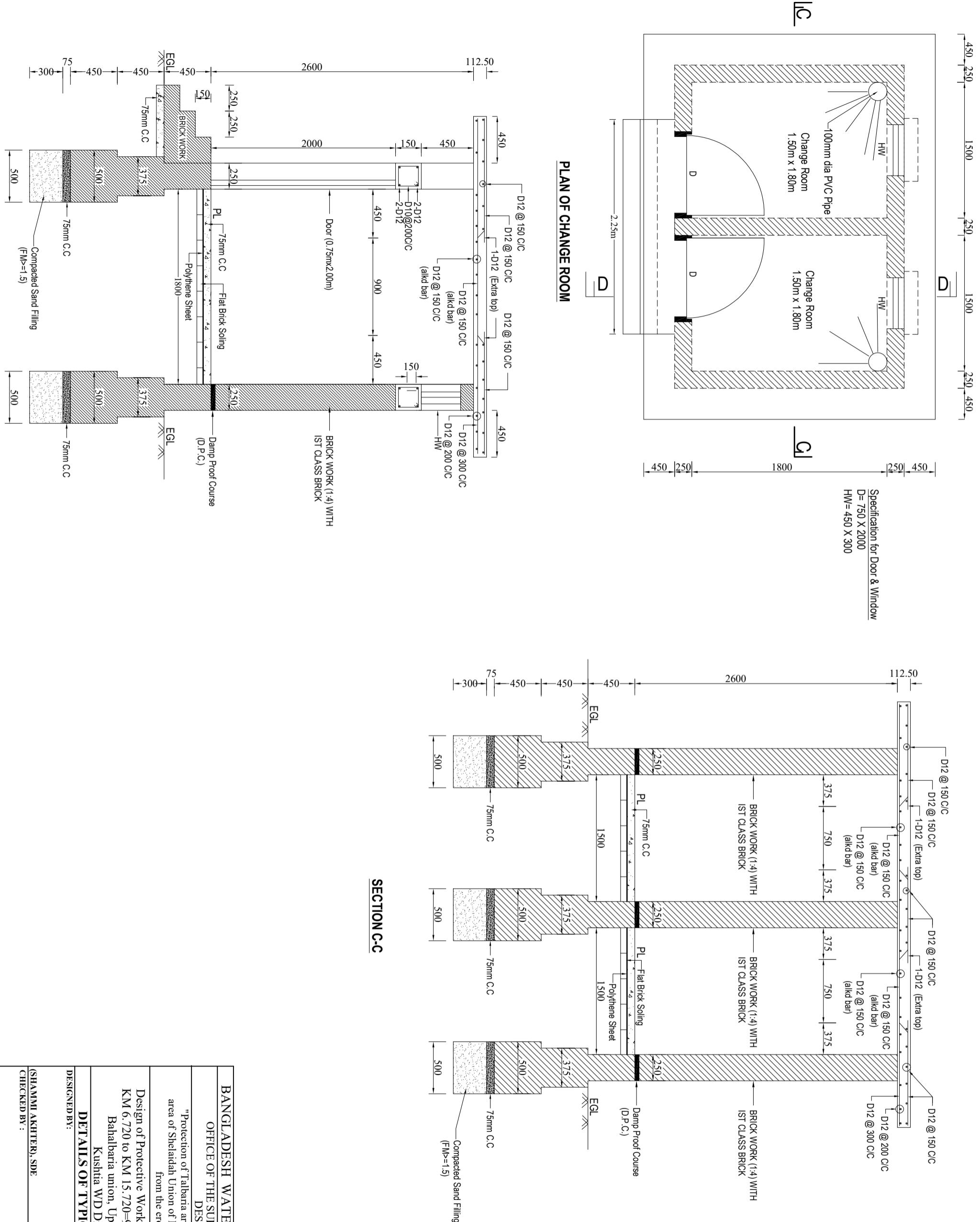
2
1
2
1

BANGLADESH WATER DEVELOPMENT BOARD OFFICE OF THE SUPERINTENDING ENGINEER DESIGN CIRCLE-5	
"Protection of Talbaria area of Mirpur Upazila & Kamorkandi area of Shelaiddah 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.	
DETAILS OF R.C.C.U-DRAIN	
DESIGNED BY: (SHAMMI AKHTER), SDE	RECOMMENDED BY: (JAKARIA PERVEZ), SIE
CHECKED BY: (MST. TASMEM JAHAN), EE	APPROVED BY: (MD. MAHFUZUR RAHMAN), CE, DESIGN
DATE: 00-00-2025	DWG NO.: DC-5-0000-32/34



Scale : Not to Scale

Scale : Not to Scale



Scale : Not to Scale

Scale : Not to Scale