

**Government of the People's Republic of Bangladesh
Ministry of Water Resources**



BANGLADESH WATER DEVELOPMENT BOARD (BWDB)

**CONSULTANCY SERVICES FOR FEASIBILITY STUDIES AND PREPARATION OF DETAILED DESIGN FOR
COASTAL LIVELIHOOD IMPROVEMENT AND ADAPTATION ENHANCEMENT PROJECT (CLIMATE)**

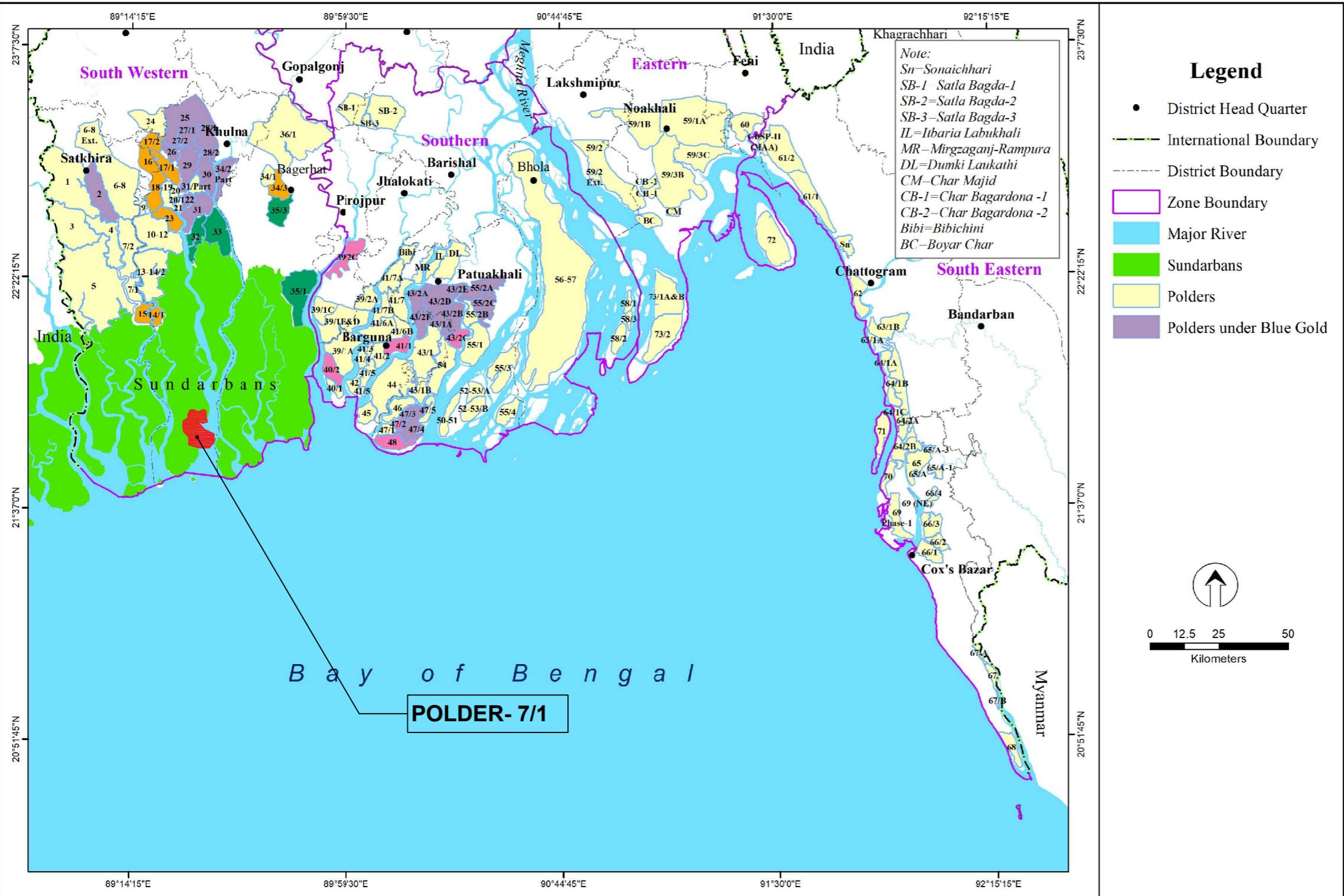
**DETAILED DESIGN OF PROPOSED NEW DRAINAGE SLUICE (DS-2) (2V-1.5MX1.8M)
AT CH. 12+140 KM IN POLDER 7/1 UNDER CLIMATE PROJECT, BWDB, DISTRICT-SATKHIRA**

APRIL, 2023

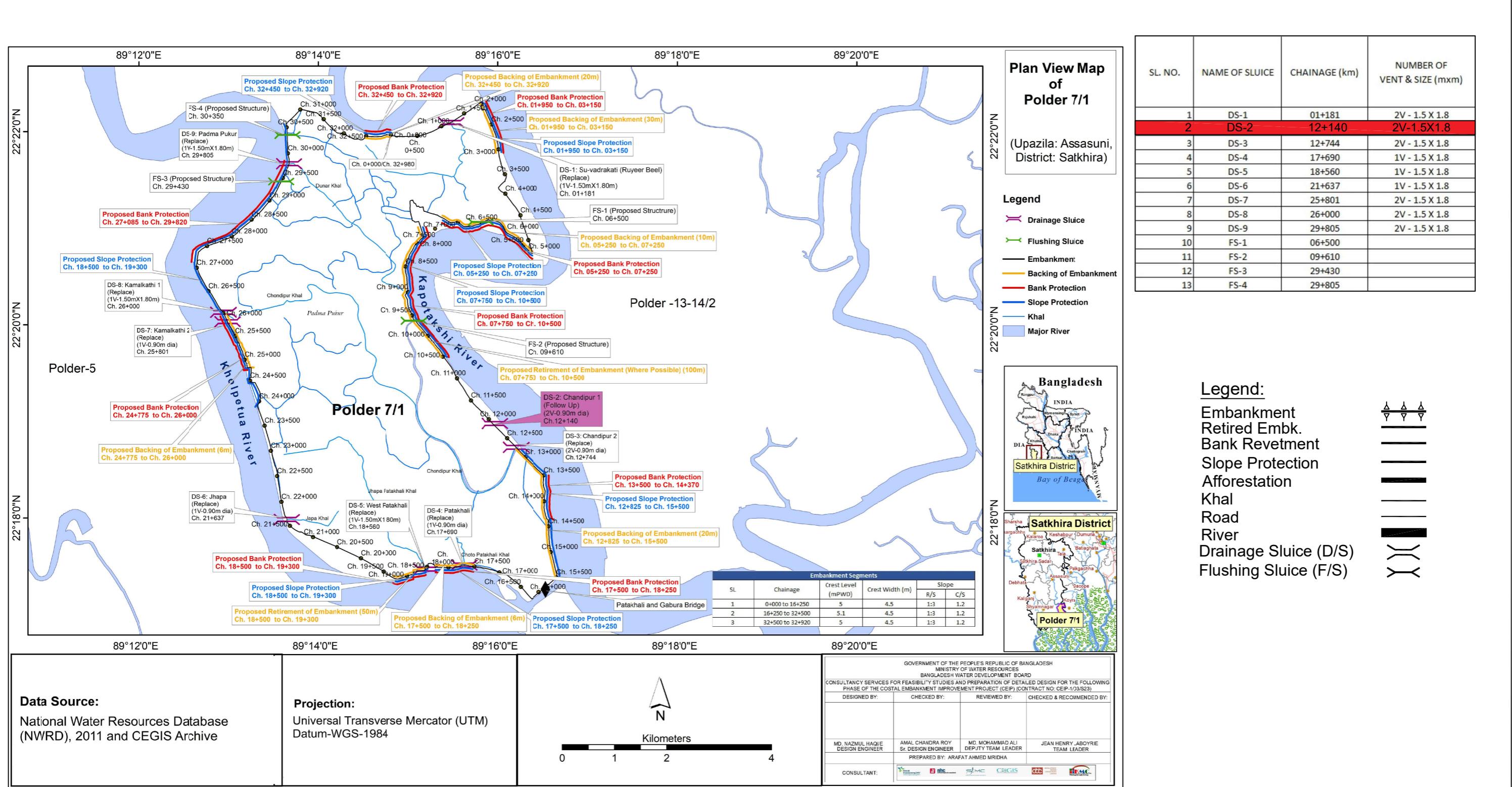
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CEIP-II/ P-7/1 / SLUICE DS- 02

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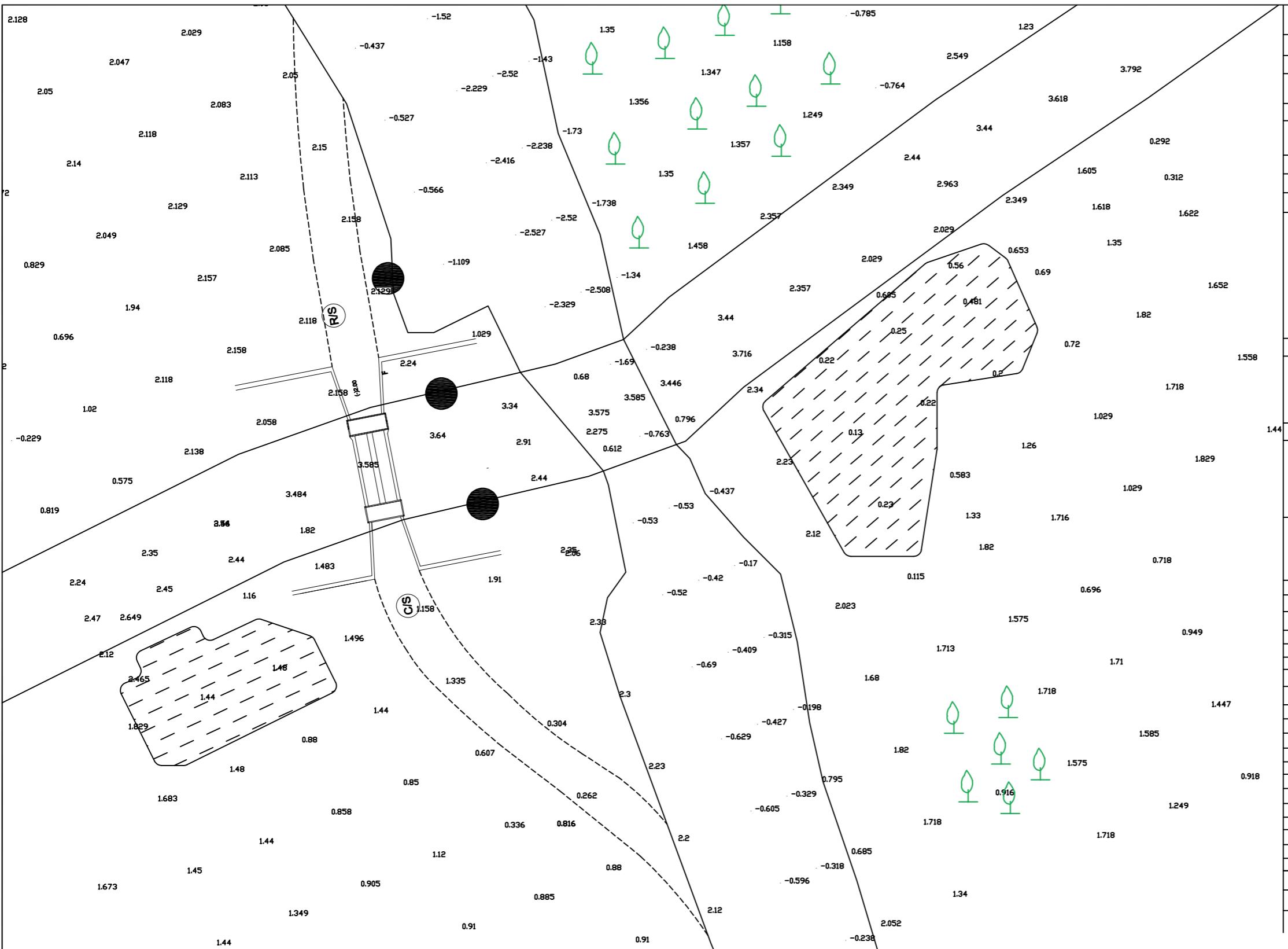
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH MINISTRY OF WATER RESOURCES BANGLADESH WATER DEVELOPMENT BOARD						
CONSULTANCY SERVICES FOR FEASIBILITY STUDIES AND PREPARATION OF DETAILED DESIGN FOR THE COASTAL LIVELIHOOD IMPROVEMENT AND ADAPTATION ENHANCEMENT PROJECT (CLIMATE) (CONTRACT NO: CEIP-1/D3/S23)						
BANGLADESH WATER DEVELOPMENT BOARD			DETAILED DESIGN OF PROPOSED NEW DRAINAGE SLUICE DS- 2 (2V-1.50mx1.80m) AT Km 12+140 IN POLDER 7/1 UNDER CLIMATE PROJECT, BWDB, DISTRICT-SATKHIRA			
DESIGN CIRCLE-8			LOCATION MAP			
CHECKED BY:	REVIEWED BY:	APPROVED BY:	DESIGNED BY:	CHECKED BY:	REVIEWED BY:	CHECKED & RECOMMENDED BY:
ASSISTANT ENGINEER	EXECUTIVE ENGINEER	SUPERINTENDING ENGINEER	MD. NAZMUL HAQUE DESIGN ENGINEER	K M HUMAYUN KABIR Sr. DESIGN ENGINEER	MD. MOHAMMAD ALI DEPUTY TEAM LEADER	JEAN HENRY LABOYRIE TEAM LEADER
			DRG NO: 1 OF 25	DRAWN BY: ASADUZZAMAN RAHAT	DATE: 16-04-2023	
			CONSULTANT:			



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BANGLADESH WATER DEVELOPMENT BOARD
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POLDER MAP

BANGLADESH WATER DEVELOPMENT BOARD			POLDER MAP		
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CHECKED BY:	REVIEWED BY:	APPROVED BY:	DESIGNED BY:	CHECKED BY:	REVIEWED BY:
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			DRG NO: 2 OF 25	DRAWN BY: ASADUZZAMAN RAHAT	DATE: 16-04-2023
CONSULTANT:			CONSULTANT:	Royal HaskoningDHV nmc SMC CEGIS EBCD ERMC	cc Development Consultants Limited

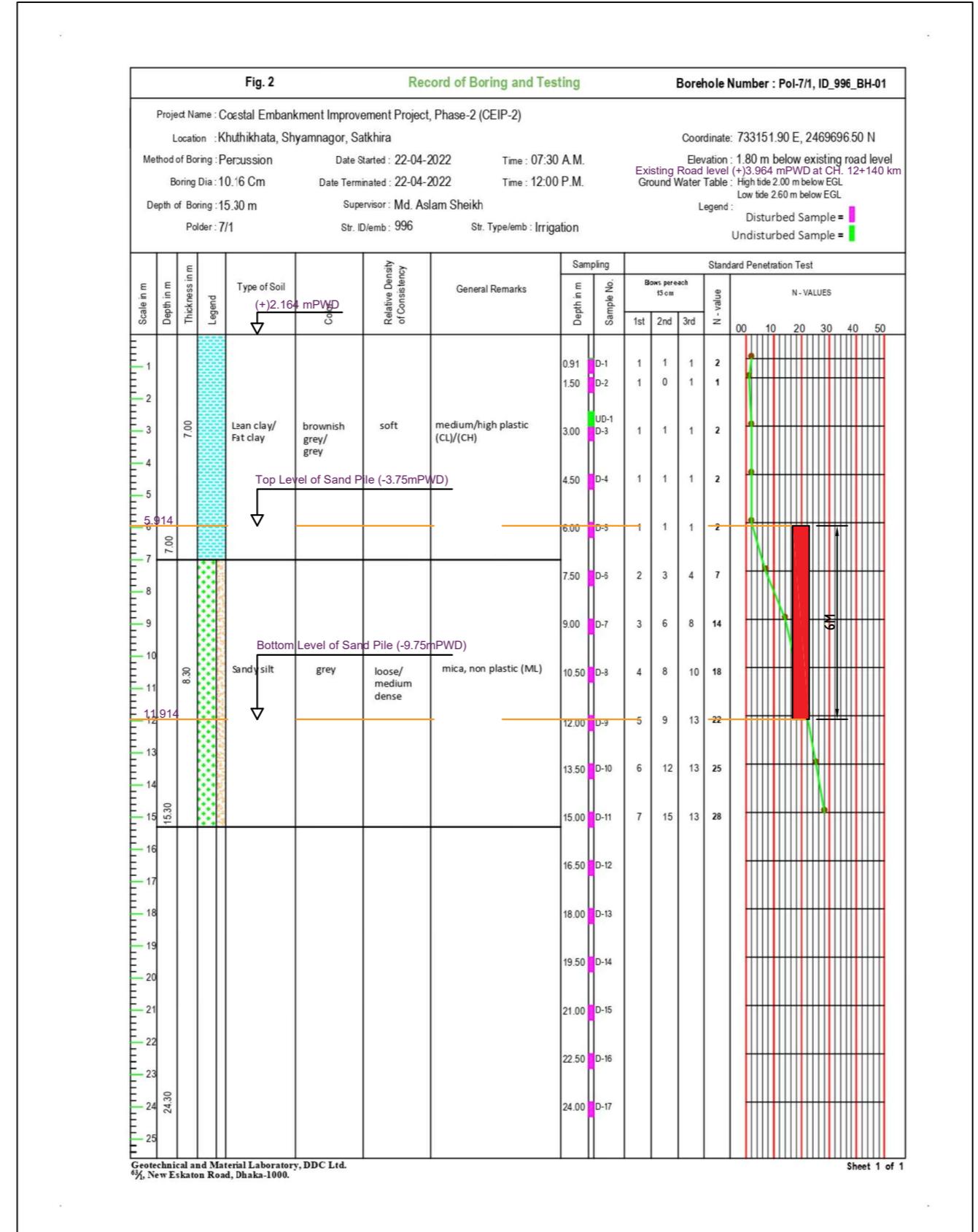


CLIENT:		
BANGLADESH WATER DEVELOPMENT BOARD		
PROJECT NAME:		
COSTAL EMBANKMENT IMPROVEMENT PROJECT, PHASE -II, (CEIP-II)		
DRAWING TITLE:		
STRUCTURE SITE SURVEY POLDER NO: 7/1		
SURVEY DATE:	16.02.2022	
STRUCTURE INFORMATION:		
STRUCTURE ID: DS-01 VENT: 2		
STRUCTURE LOCATION:		
EASTING: 423621.6 NORTHING: 473610.7 KHAL: SUVODRAKATHI VILLAGE: RUYEER BEEL UPAZILA: ASSASUNE DISTRICT: SATKHIRA		
REFERENCE BM/TBM		
PBM 01/1 EASTING: 4204071972 NORTHNG: 473731.266 mSOB: 1.2395 mPWD: 1.6995		
BOREHOLE INFORMATION:		
BOREHOLE ID: 156 BOREHOLE POINT GROUND LEVEL: BH - 01: BH - 02: BH - 03:		
BOREHOLE POSITION(BTM) BH - 01 BH - 02 BH - 03 E : 732204.04 E : 732205.52 E : 732206.60 N : 2475452.58 N : 2475446.15 N : 2475467.50		
LEGEND:		
ITEMS	SYMBOL	
EXISTING EMBANKMENT	—	
PROPOSED EMBANKMENT	—	
EXISTING PCCA BUILDING	▨	
EXISTING SEM PCCA BUILDING	▨	
EXISTING TIN SHED/HAT	▨	
EXISTING MOSQUE	▨	
ELECTRIC POLE WITH LINE	● EP	
EXISTING STRUCTURE	▨	
PROPOSED STRUCTURE	▨	
POND, KHAL, DITCH etc	▨	
EXISTING BC ROAD	—	
EXISTING HBB ROAD	—	
EXISTING KACHA ROAD	—	
TUBEWELL	○	
TREES	▨	
TBM & RL	▨	
BOREHOLE	● BH	
EXISTING TOE LINE	—	
SURVEY BY:	SPMC LTD.	
SURVEYOR	CHECKED BY	
	TANJIM NILOY	

SITE PLAN

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH MINISTRY OF WATER RESOURCES BANGLADESH WATER DEVELOPMENT BOARD			DETAILED DESIGN OF PROPOSED NEW DRAINAGE SLUICE DS- 2 (2V-1.50mx1.80m) AT Km 12+140 IN POLDER 7/1 UNDER CLIMATE PROJECT, BWDB, DISTRICT-SATKHIRA			
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			DRG NO: 3 OF 25	DRAWN BY: ASADUZZAMAN RAHAT		DATE: 16-04-2023
			CONSULTANT:	Royal HaskoningDHV nmc S/IMC C GIS cc Development Consultants Limited EFCMC		

BORE HOLE OF DS- 02
BH - 01



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 BANGLADESH WATER DEVELOPMENT BOARD
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BANGLADESH WATER DEVELOPMENT BOARD			BORE LOGS			
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			DRG NO: 4 OF 25	DRAWN BY: ASADUZZAMAN RAHAT	DATE: 16-04-2023	
			CONSULTANT:	Royal HaskoningDHV nmc SLMC CAGIS cc Development Consultants Limited ERMC		

NOTES

1. TECHNICAL SPECIFICATIONS FOR CEIP-1 ALREADY APPROVED BY BWDB SHALL BE FOLLOWED FOR CEIP-2.
2. ALL DIMENSIONS ARE IN MILLIMETERS AND ALL ELEVATIONS ARE IN CORRECTED mPWD UNLESS OTHERWISE MENTIONED IN THE DRAWINGS.
3. COMPRESSIVE STRENGTH OF REINFORCED CEMENT CONCRETE SHALL HAVE MINIMUM 28 DAYS CYLINDER STRENGTH, $f_c \geq 22.00 \text{ N/mm}^2$ AND SHALL BE CHECKED BY COLLECTING SAMPLES AND TESTING DURING CONSTRUCTION.
4. REINFORCING BAR SHALL BE DEFORMED MILD STEEL HAVING YIELD STRENGTH, $f_y \geq 400 \text{ N/mm}^2$
5. CONCRETE FOR CC BLOCKS SHALL HAVE MINIMUM STRENGTH, $f'_c \geq 15 \text{ N/mm}^2$ AT 28 DAYS.
6. CURING OF CONCRETE SHALL BE CONTINUED FOR MINIMUM 21 DAYS AFTER CASTING.
7. CONCRETE SHALL BE POURED IN DRY BED CONDITION.
8. THE SURFACE OF CONSTRUCTION JOINTS SHALL BE WASHED THOROUGHLY WITH WATER JET & SHALL BE CLEAN ENOUGH. SURFACE SHALL BE DRY PRIOR TO PLACEMENT OF ADJOINING CONCRETE.
9. CONCRETE MIXTURE SHALL BE POURED AS SOON AS POSSIBLE BUT NOT LATER THAN 45 MINUTES AFTER MIXING.
10. THE 75 mm LEAN CONCRETE AT BASE SHALL BE IN 1:3:6.
11. THE LEAN CONCRETE AT FOUNDATION OF THE PROPOSED SLUICE SHALL BE PLACED AFTER PROPERLY PREPARING & COMPACTING EXCAVATED BASE.
12. CLEAR COVER FOR REINFORCEMENT SHALL BE AS FOLLOWS:
Wall and floor slab: 75mm (both face), Operation deck slab: 40mm, Railing: 25mm
13. MINIMUM LAP LENGTH SHALL BE 40 TIMES THE BAR DIAMETER.
14. MINIMUM 150 mm SAND SHALL BE PLACED ON COMPACTED EXCAVATED BASE, IF NO FOUNDATION TREATMENT IS SUGGESTED.
15. SAND FILLING IF ANY REQUIRED IN FOUNDATION SHOULD BE DONE WITH SAND OF $F.M \geq 1.50$ IN LAYERS OF 150 mm AND COMPACTED TO ATTAIN MINIMUM 50% RELATIVE DENSITY.
16. BACK FILLING SHOULD BE DONE WITH AVAILABLE LOCAL SAND $F.M \geq 0.80$.
17. GEOTEXTILE FILTER THICKNESS SHALL BE $\geq 3\text{mm}$ UNDER 2KPa PRESSURE.
18. BM ESTABLISHED UNDER CEIP-2 SHOULD BE USED AS REFERENCE FOR SURVEY DURING EXECUTION OF WORK.
19. ALL DRAWINGS WILL HAVE BEEN PREPARED BASED ON THE DESIGN COMPUTATIONS.
20. THE EMBEDDED PARTS OF GATE TO BE INSTALLED DURING CONSTRUCTION OF BOX SHALL BE DONE IN ACCORDANCE WITH APPROVED MECHANICAL DRAWING
21. STEEL SHEET PILES SHALL BE HOT ROLLED FROM STRUCTURAL CARBON STEEL AND SHALL HAVE THE FOLLOWING SIZE, WEIGHT, CHEMICAL AND MECHANICAL PROPERTIES

SIZE AND WEIGHT

- a. MINIMUM WIDTH = 400-600mm.
- b. HEIGHT $\geq 100\text{mm}$, THICKNESS $\geq 10.5\text{mm}$ ($\pm 0.5\text{mm}$)

CHEMICAL PROPERTIES

- a. PHOSPHORUS 0.04 % (maximum)
- b. SULPHUR = 0.04 % (maximum)

MECHANICAL PROPERTIES

- a. TENSILE STRENGTH $\geq 490 \text{ N/mm}^2$
- b. YIELD STRENGTH $\geq 295 \text{ N/mm}^2$.
- c. ELONGATION = 17 % (MINIMUM).

22. SHEET PILE MUST BE ANCHORED PROPERLY AND TOP OF EVERY CONNECTIVE SHEET PILE MUST HAVE TACK WELDING.

THE GATE SHALL BE INSTALLED BEFORE THE OPERATION OF THE STRUCTURE.

23. ANY ERROR/OMISSION IF DETECTED SHALL BE REFERRED TO THE CONCERNED DESIGN OFFICE THROUGH CEIP-2 CONSULTANTS

FOR TAKING NECESSARY ACTION.

24. DIVERSION CANAL MUST BE EXCAVATED AS PER DRAWING

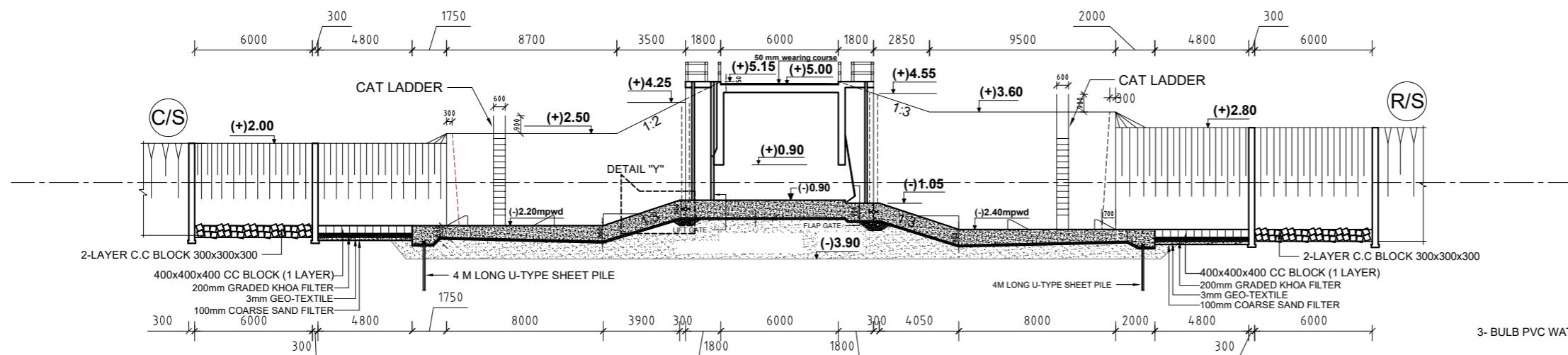
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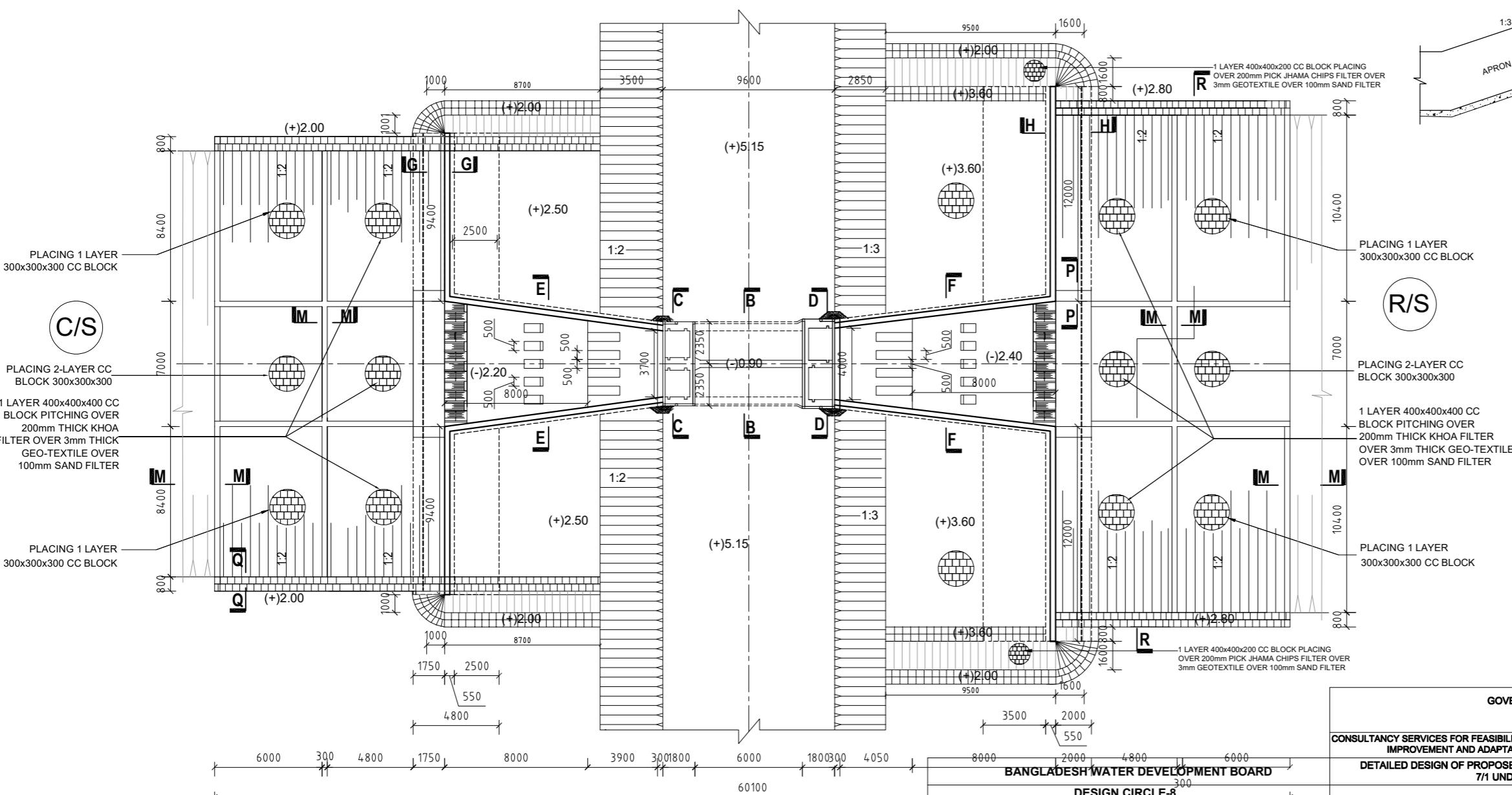
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GENERAL NOTES

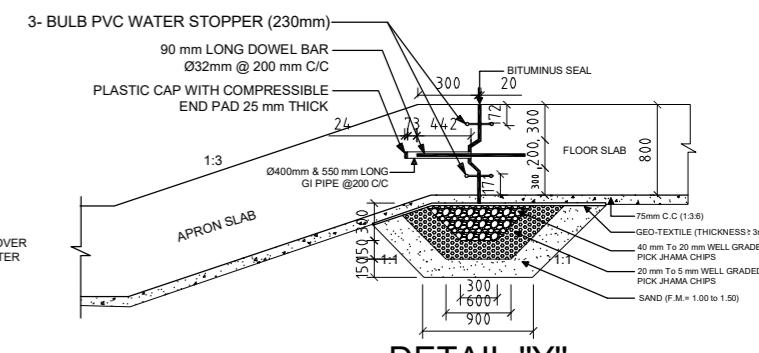
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			DRG NO: 1 OF 25	DRAWN BY: ASAIDUZZAMAN RAHAT		DATE: 16-04-2023
			CONSULTANT:	ROYAL HOLLOWAY&DHV nbc SOMC C&GIS dgc EKM		



SECTION A-A



PLAN



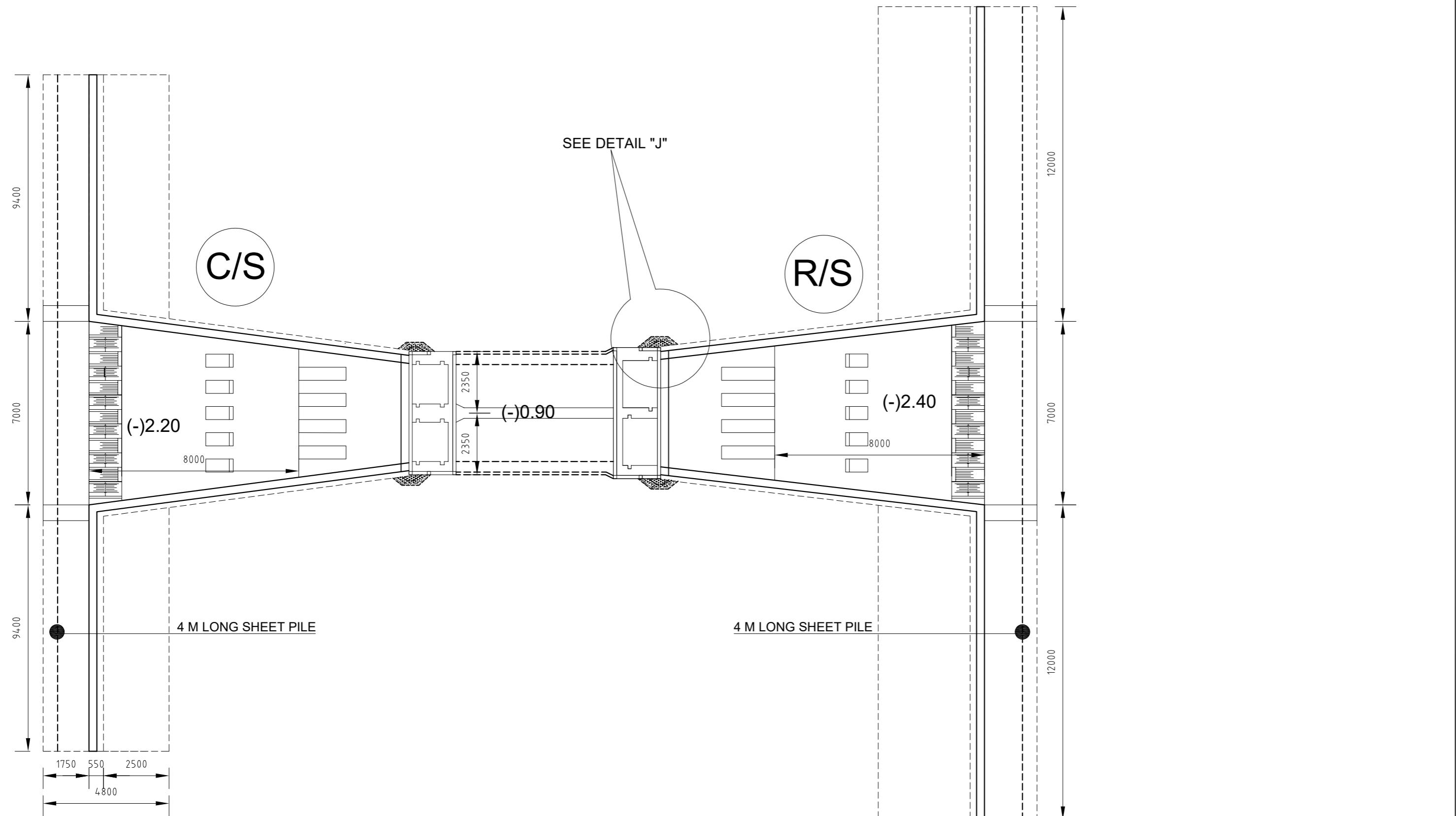
DETAIL "Y"

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PLAN & SECTIONAL ELEVATION

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			DRG NO: 6 OF 25	DRAWN BY: ASADUZZAMAN RAHAT		DATE: 16-04-2023
			CONSULTANT:	Royal HaskoningDHV nmc SJM CGIS	cc Development Consultants Limited	EMC Working for safe living



STEEL SHEET PILE LAYOUT

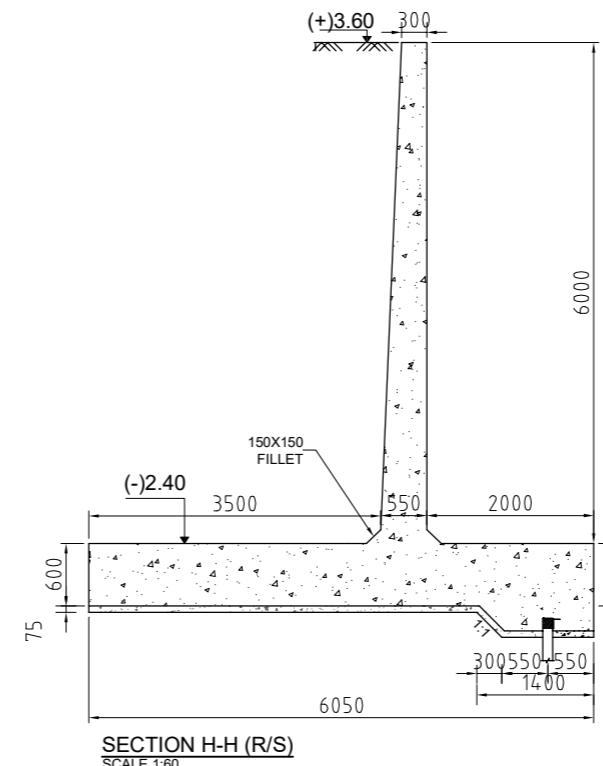
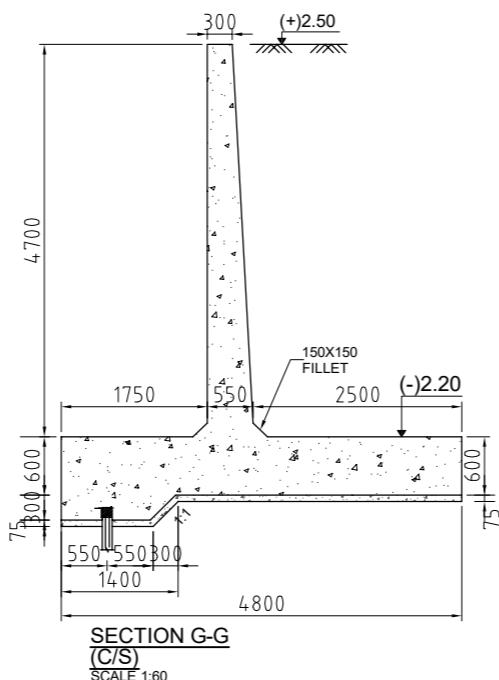
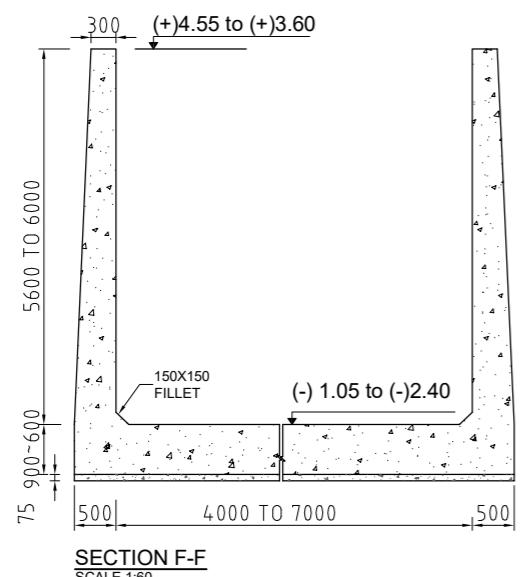
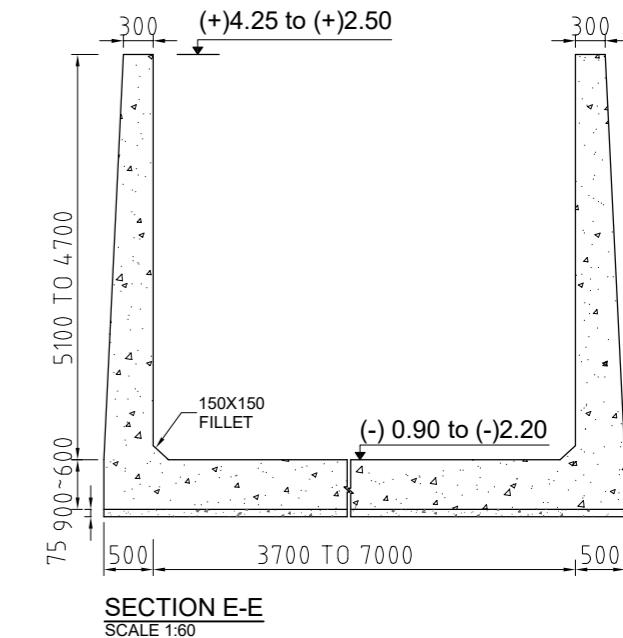
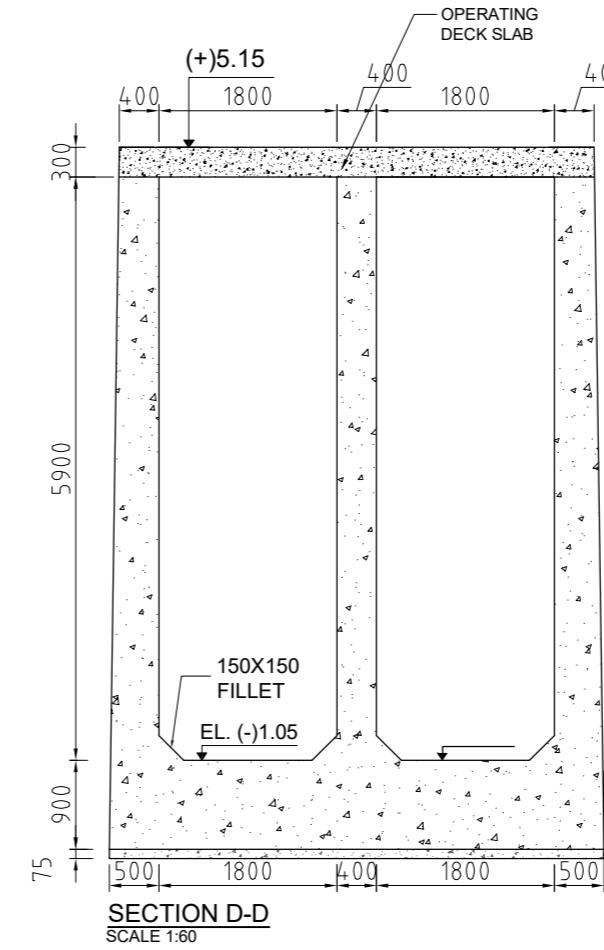
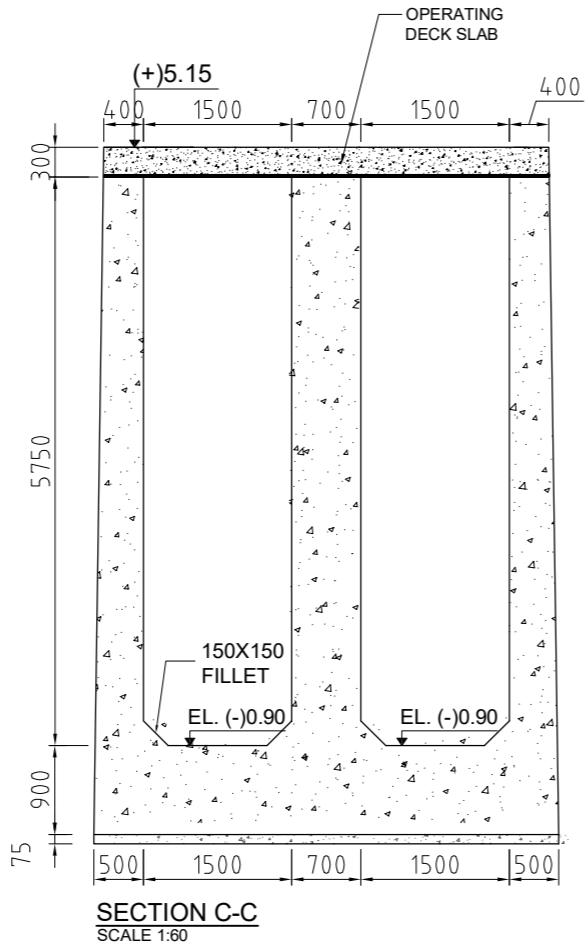
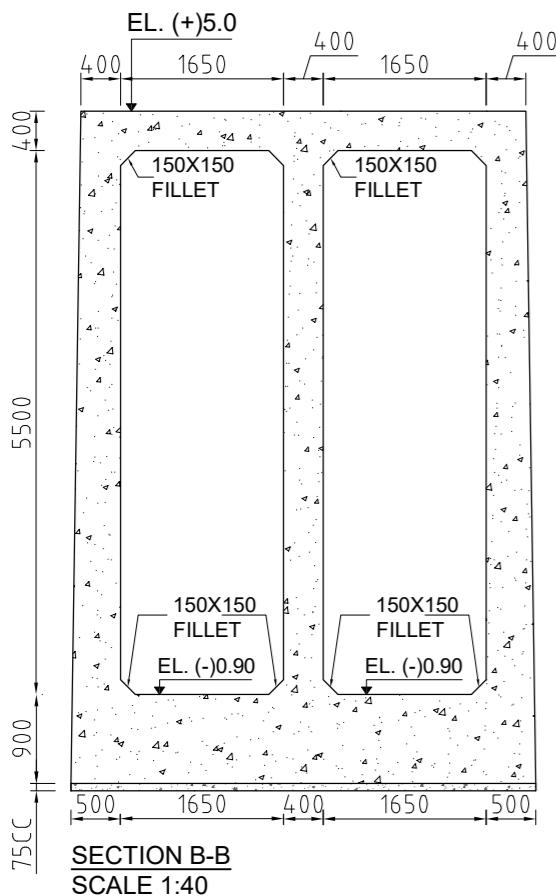
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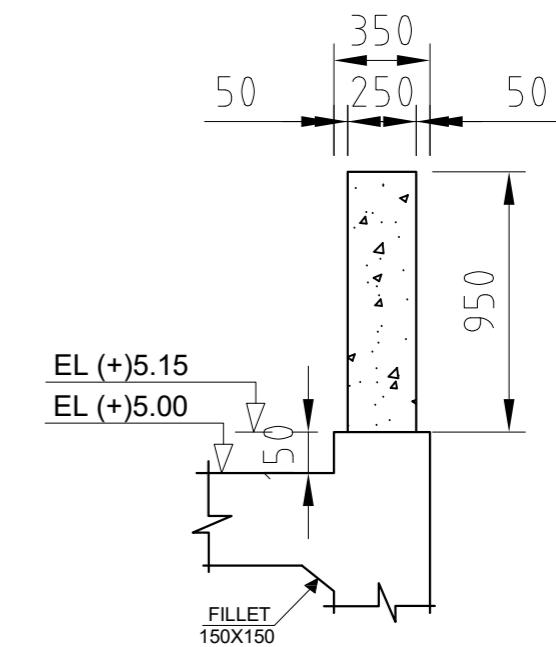
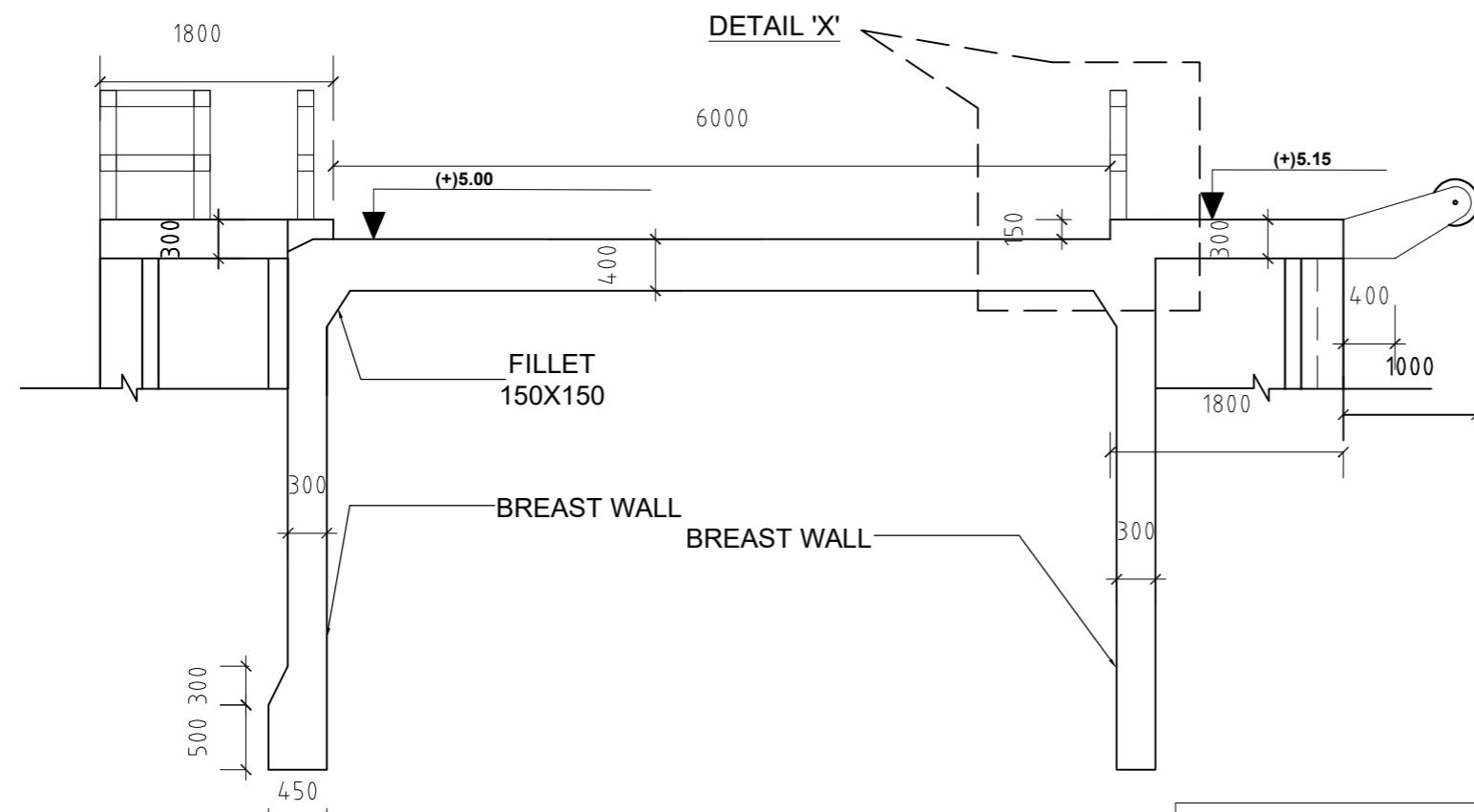
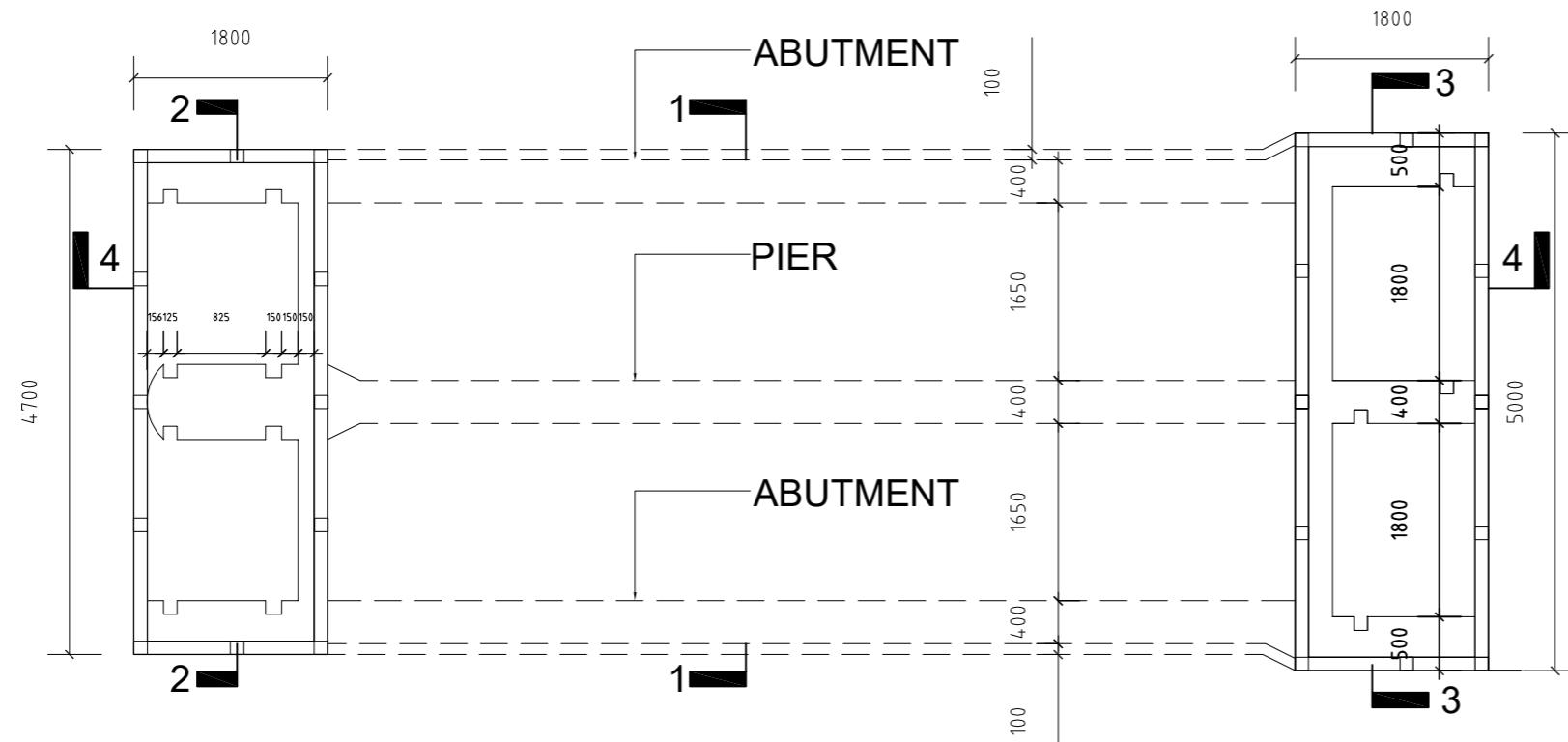
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STEEL SHEET PILE LAYOUT

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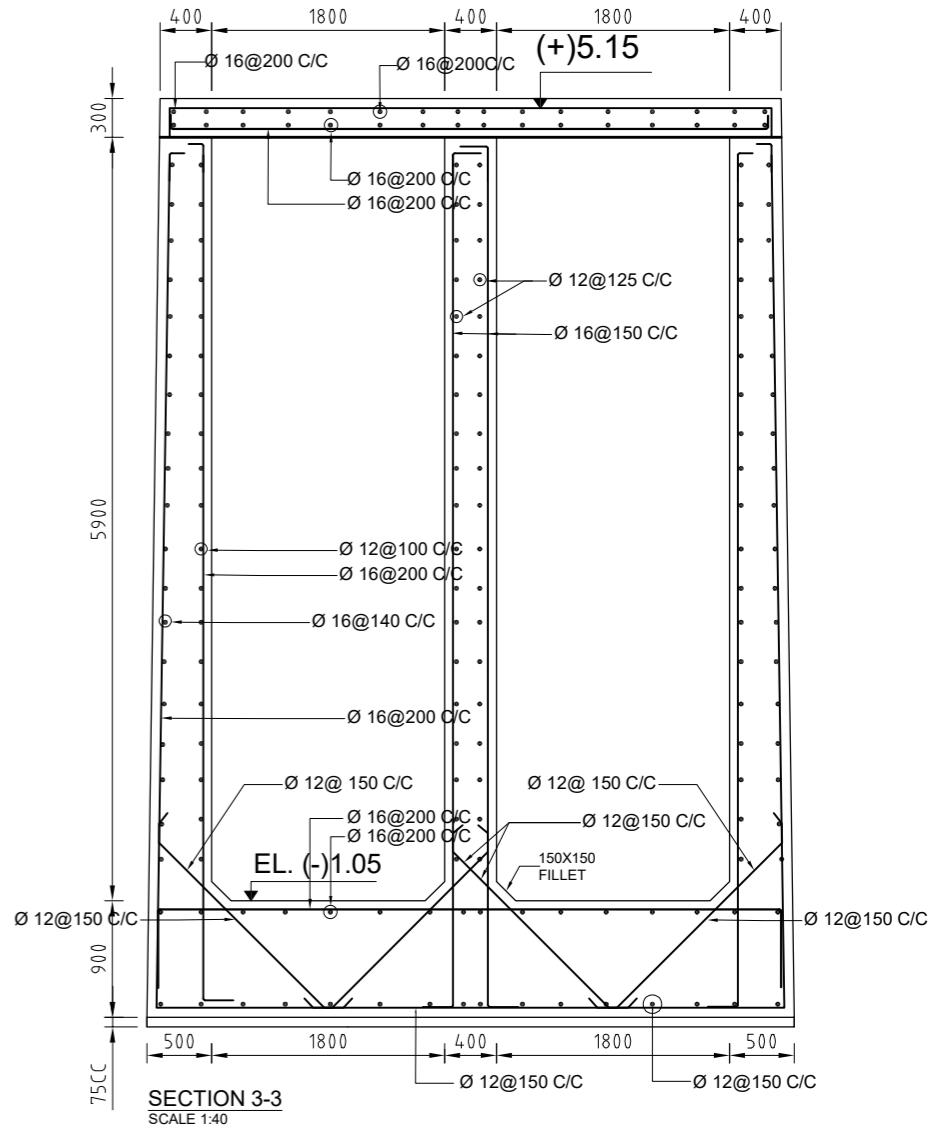
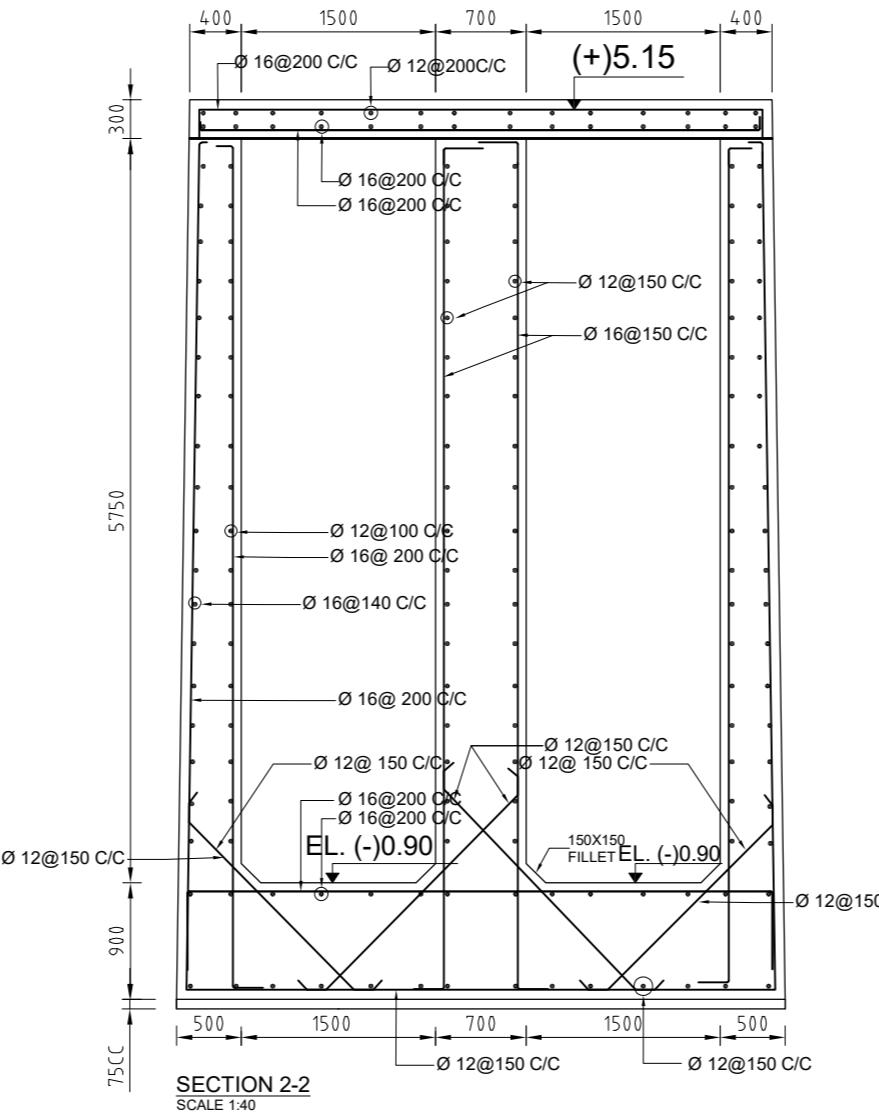
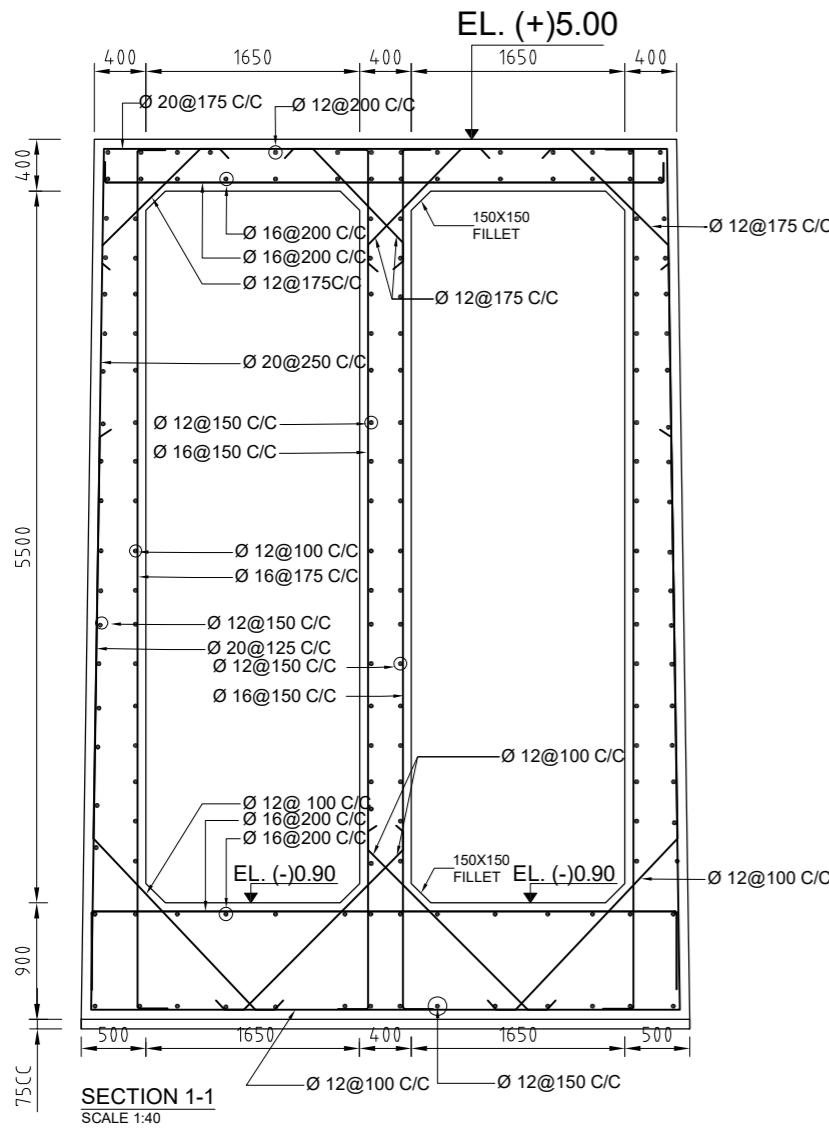


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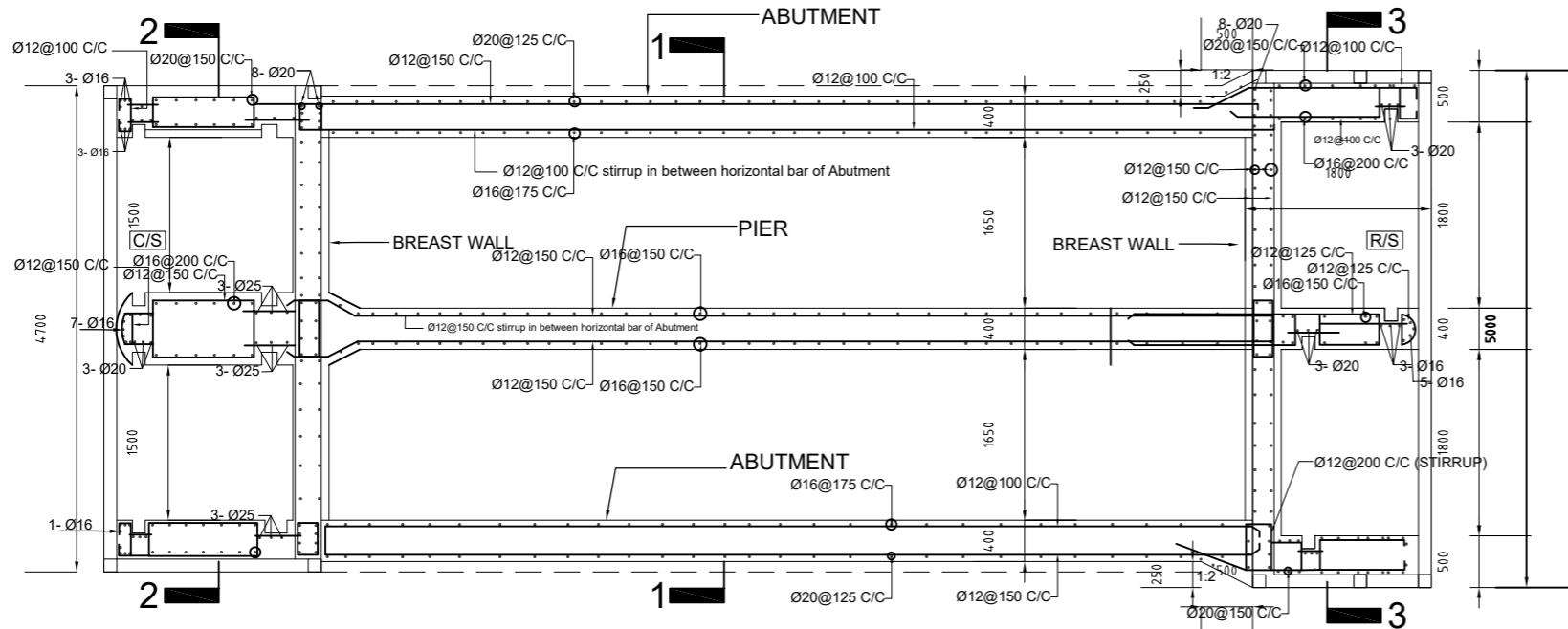
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DESIGN CIRCLE-8			CONCRETE OUTLINE OF ABUTMENT, PIER & BREAST WALL			
CHECKED BY:	REVIEWED BY:	APPROVED BY:	DESIGNED BY:	CHECKED BY:	REVIEWED BY:	CHECKED & RECOMMENDED BY:
ASSISTANT ENGINEER	EXECUTIVE ENGINEER	SUPERINTENDING ENGINEER	MD. NAZMUL HAQUE DESIGN ENGINEER	K M HUMAYUN KABIR Sr. DESIGN ENGINEER	MD. MOHAMMAD ALI DEPUTY TEAM LEADER	JEAN HENRY LABOYRIE TEAM LEADER
			DRG NO: 9 OF 25	DRAWN BY: ASADUZZAMAN RAHAT		DATE: 16-04-2023
			CONSULTANT:	Royal HaskoningDHV nmc SJMCS CAGIS	development consultants limited	ccdc Working for safe living

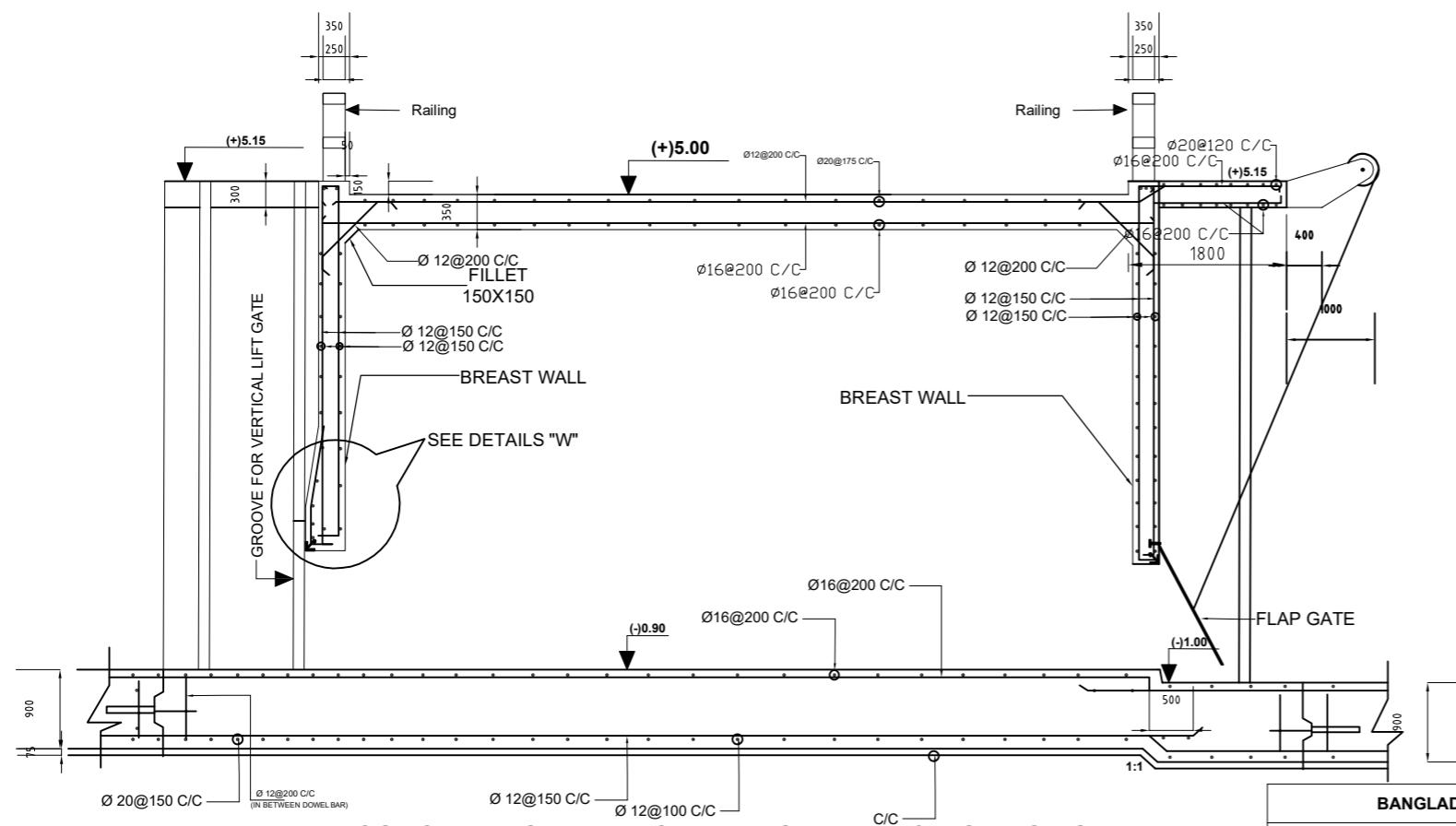


GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
MINISTRY OF WATER RESOURCES
BANGLADESH WATER DEVELOPMENT BOARD
CONSULTANCY SERVICES FOR FEASIBILITY STUDIES AND PREPARATION OF DETAILED DESIGN FOR THE COASTAL LIVELIHOOD IMPROVEMENT AND ADAPTATION ENHANCEMENT PROJECT (CLIMATE) (CONTRACT NO: CEIP-1/D3/S23)

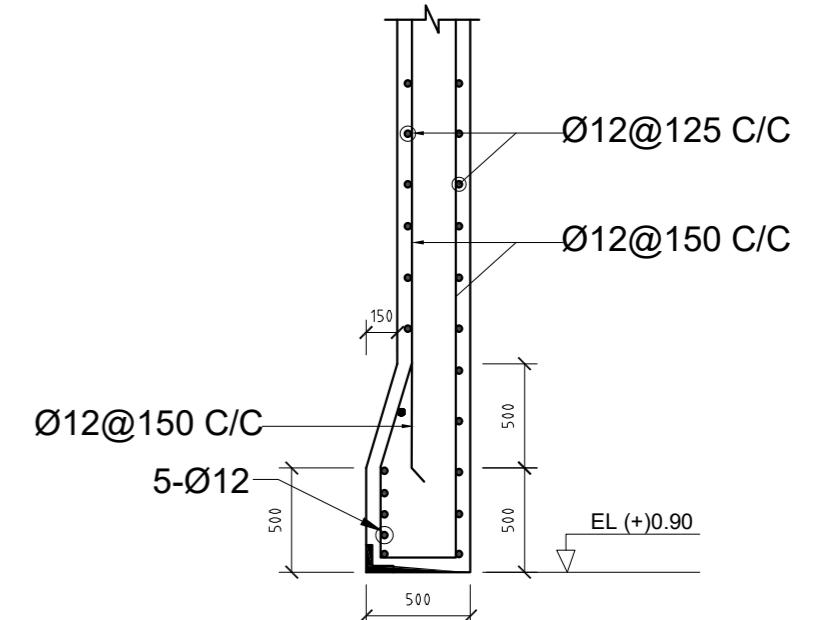
BANGLADESH WATER DEVELOPMENT BOARD			DETAILED DESIGN OF PROPOSED NEW DRAINAGE SLUICE DS- 2 (2V-1.50mx1.80m) AT Km 12+140 IN POLDER 7/1 UNDER CLIMATE PROJECT, BWDB, DISTRICT-SATKHIRA			
DESIGN CIRCLE-8			REINFORCEMENT DETAILS OF BARREL & EXTENDED PART C/S & R/S			
CHECKED BY:	REVIEWED BY:	APPROVED BY:	DESIGNED BY:	CHECKED BY:	REVIEWED BY:	CHECKED & RECOMMENDED BY:
ASSISTANT ENGINEER	EXECUTIVE ENGINEER	SUPERINTENDING ENGINEER	MD. NAZMUL HAQUE DESIGN ENGINEER	K M HUMAYUN KABIR Sr. DESIGN ENGINEER	MD. MOHAMMAD ALI DEPUTY TEAM LEADER	JEAN HENRY LABOYRIE TEAM LEADER
			DRG NO: 10 OF 25	DRAWN BY: ASADUZZAMAN RAHAT		DATE: 16-04-2023
			CONSULTANT:	Royal HaskoningDHV nmc SJMCS C GIS	development consultants limited	cc Working for safe living



REINFORCEMENT DETAILS OF ABUTMENT & PIER ACROSS THE CENTER OF VENT OPENING



CONCRETE OUTLINE OF BREAST WALL & BOX TOP SLAB



GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
MINISTRY OF WATER RESOURCES
BANGLADESH WATER DEVELOPMENT BOARD

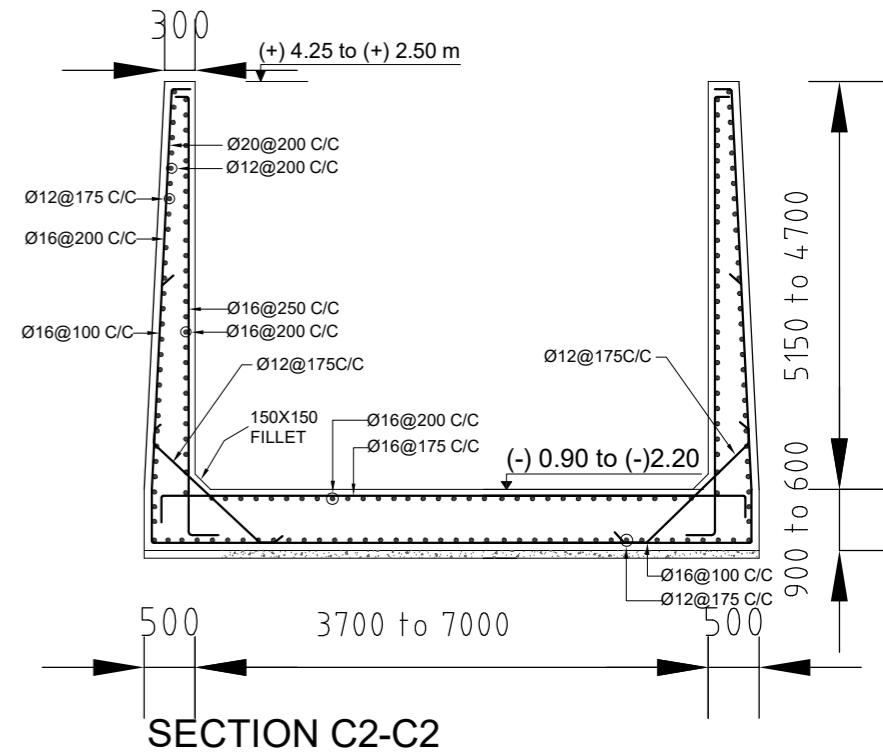
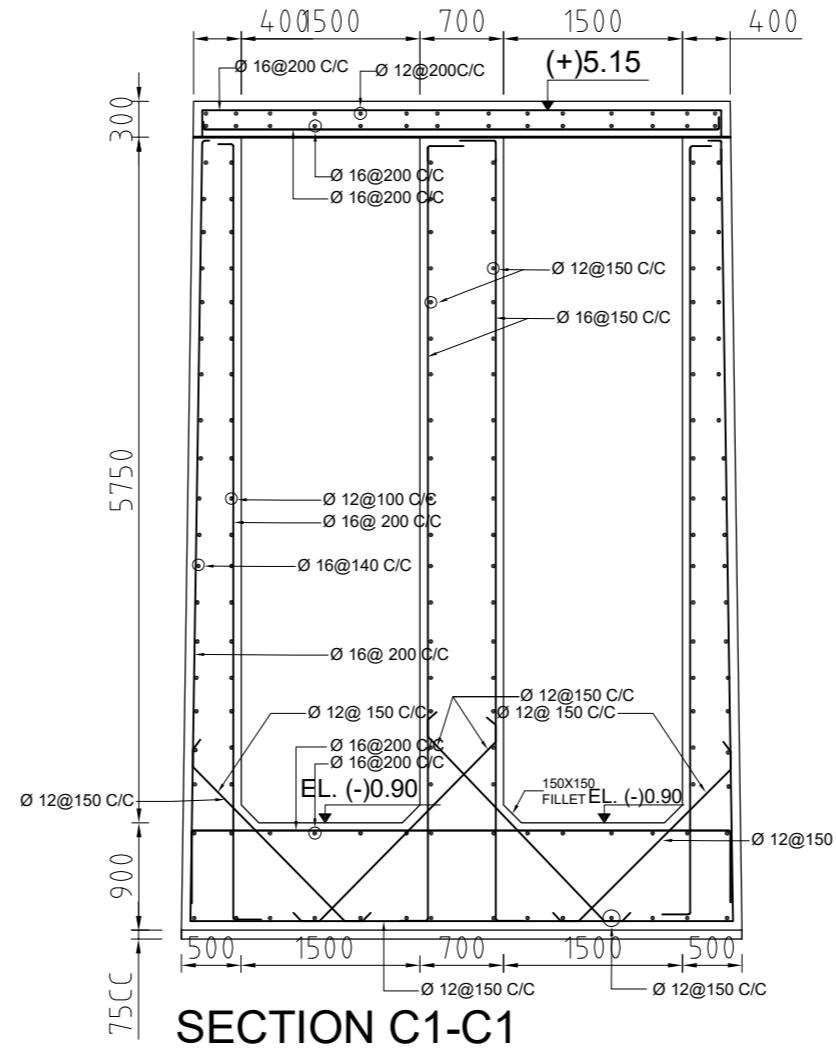
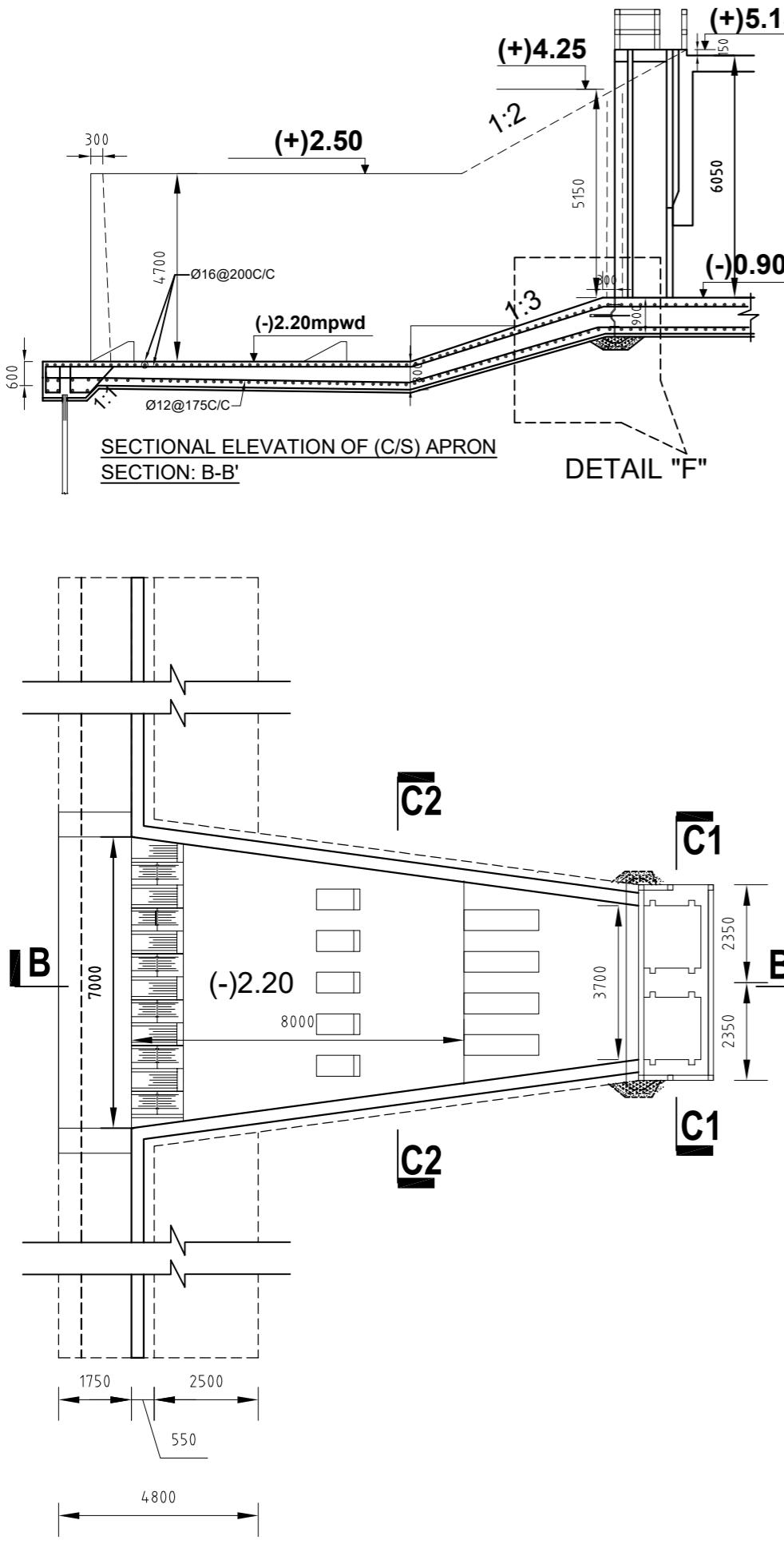
CONSULTANCY SERVICES FOR FEASIBILITY STUDIES AND PREPARATION OF DETAILED DESIGN FOR THE COASTAL LIVELIHOOD IMPROVEMENT AND ADAPTATION ENHANCEMENT PROJECT (CLIMATE) (CONTRACT NO: CEIP-1/D3/S23)

DETAILED DESIGN OF PROPOSED NEW DRAINAGE SLUICE DS- 2 (2V-1.50m x 1.80m) AT Km 12+140 IN POLDER 7/1 UNDER CLIMATE PROJECT, BWDB, DISTRICT-SATKHIRA

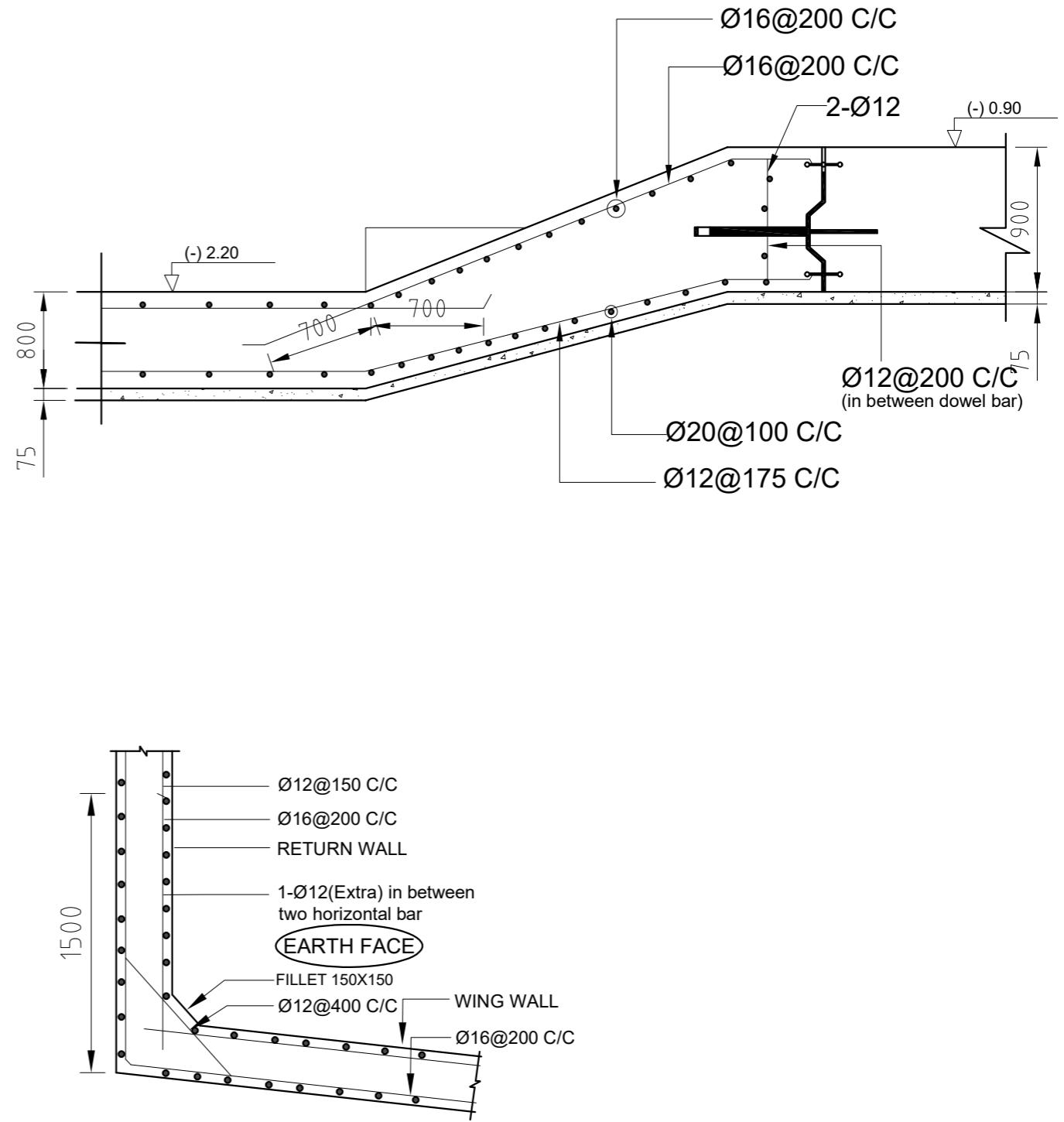
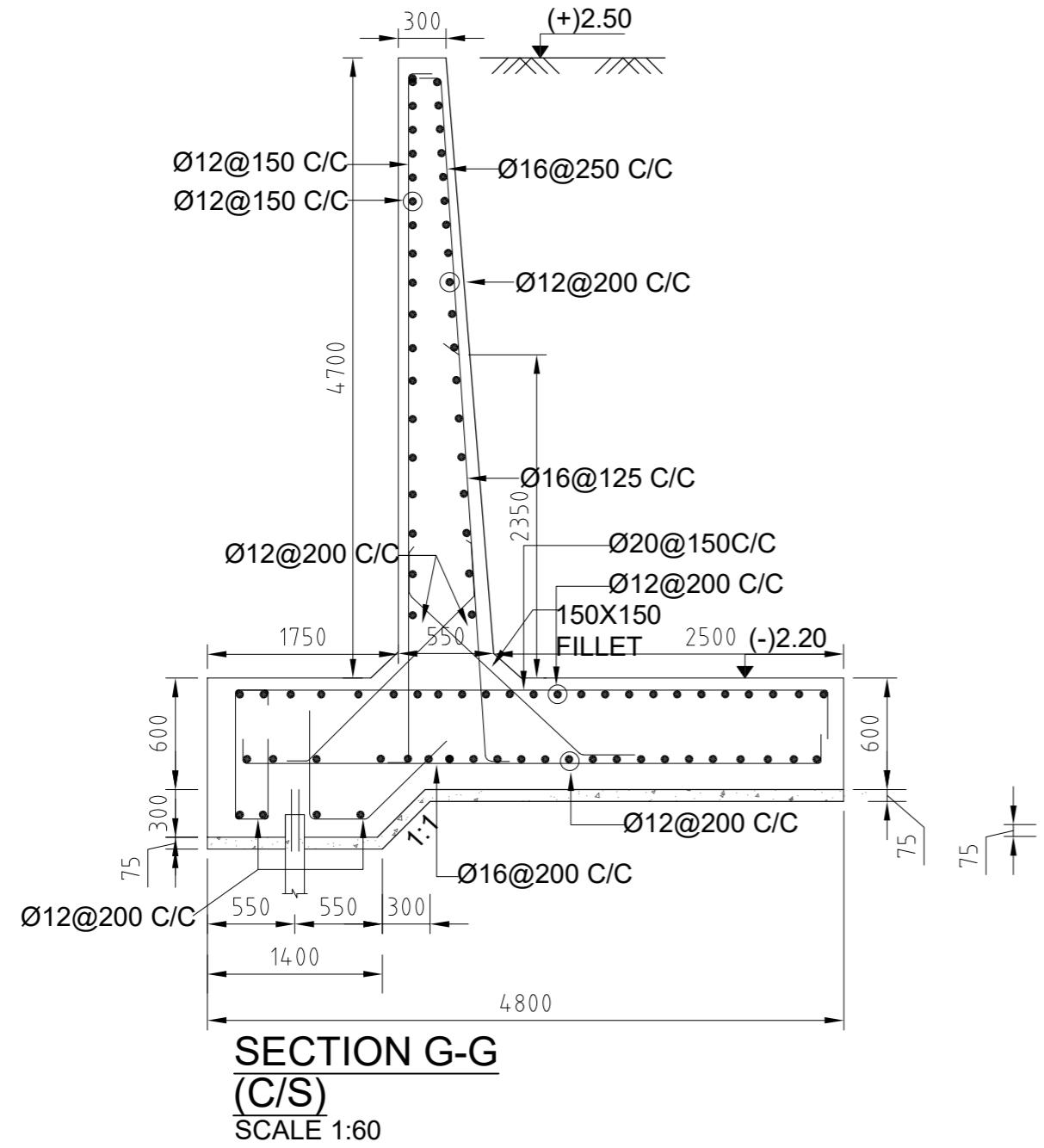
BANGLADESH WATER DEVELOPMENT BOARD

DESIGN CIRCLE-8

CHECKED BY:	REVIEWED BY:	APPROVED BY:	DESIGNED BY:	CHECKED BY:	REVIEWED BY:	CHECKED & RECOMMENDED BY:
ASSISTANT ENGINEER	EXECUTIVE ENGINEER	SUPERINTENDING ENGINEER	MD. NAZMUL HAQUE DESIGN ENGINEER	K M HUMAYUN KABIR Sr. DESIGN ENGINEER	MD. MOHAMMAD ALI DEPUTY TEAM LEADER	JEAN HENRY LABOYRIE TEAM LEADER
			DRG NO: 11 OF 25	DRAWN BY: ASADUZZAMAN RAHAT		DATE: 16-04-2023
			CONSULTANT:	Royal HaskoningDHV nmc SJMCS CAGIS	ccdc Development Consultants Limited	EMC Working for safe living

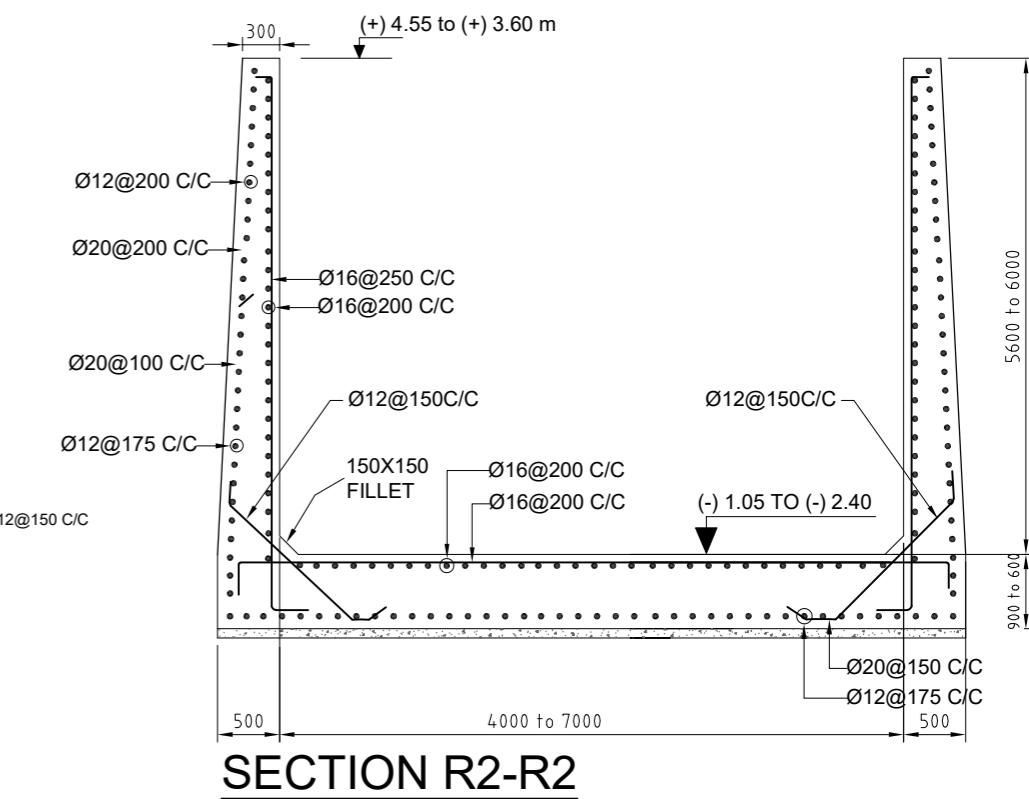
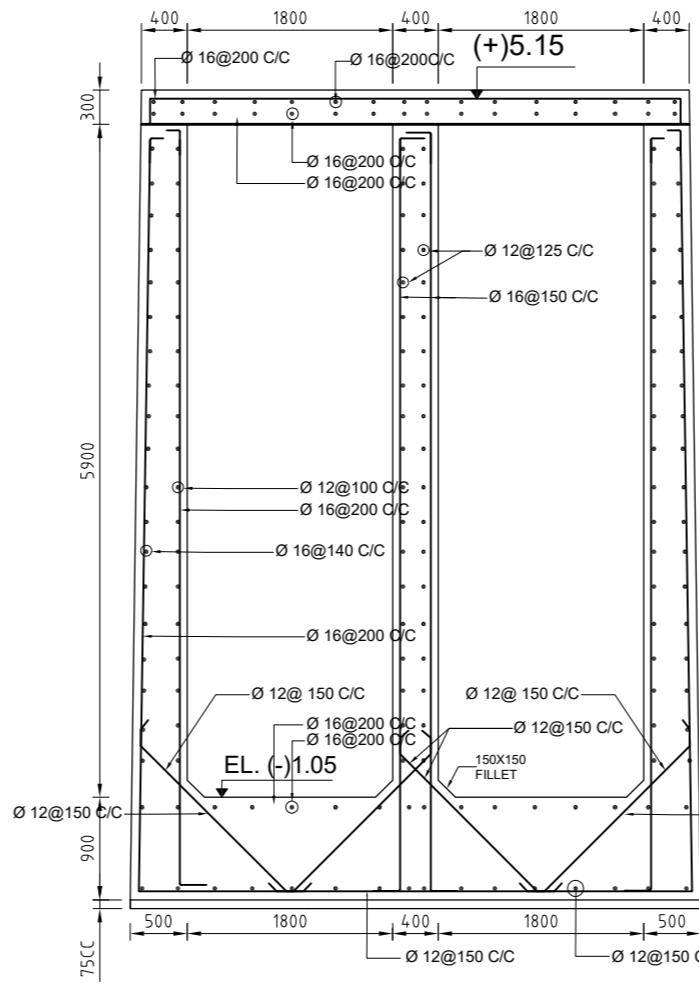
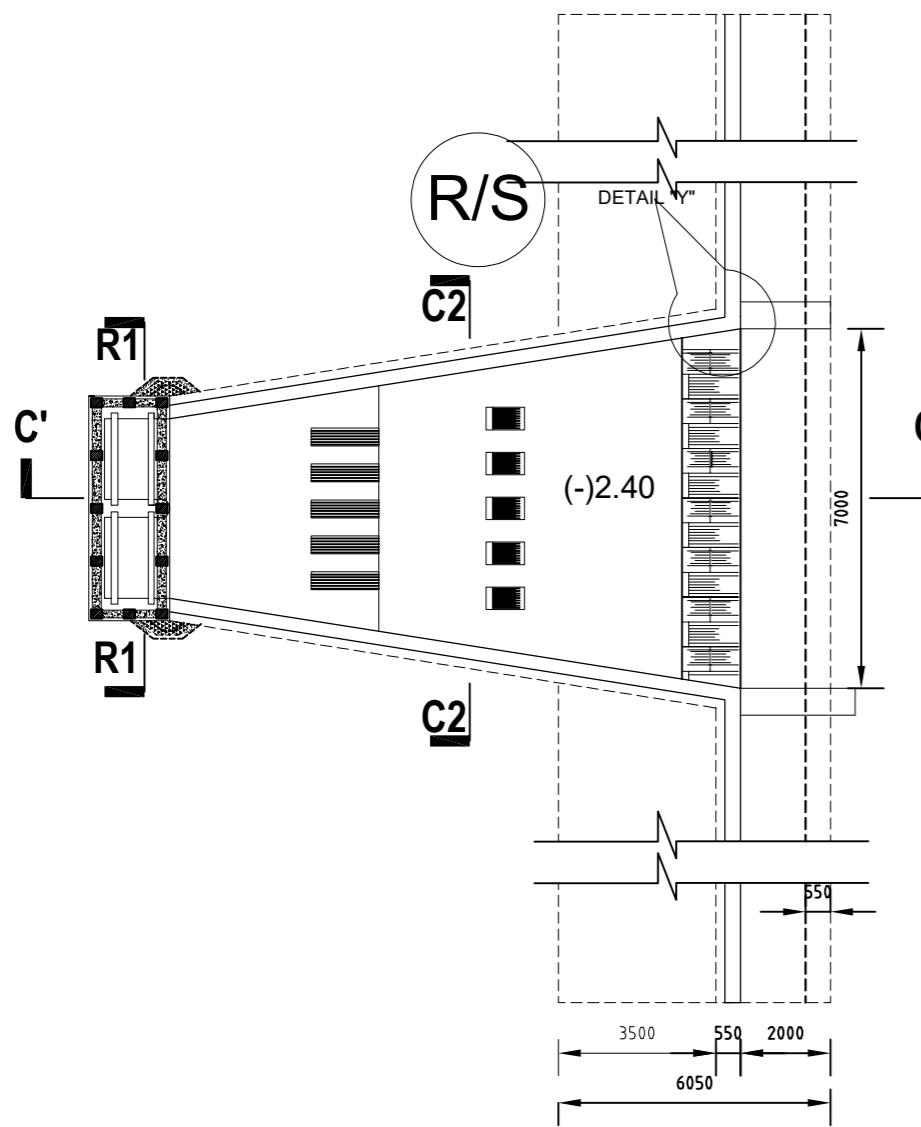
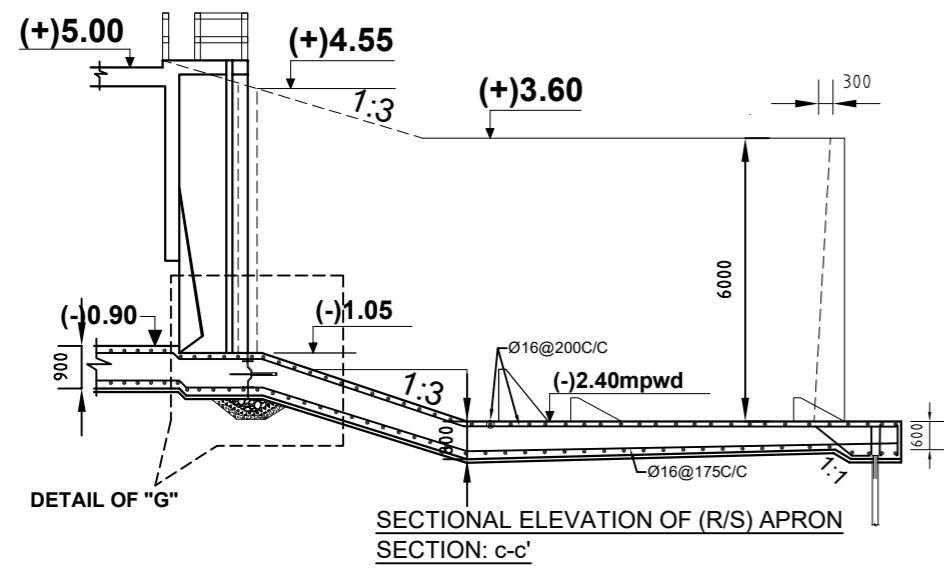


BANGLADESH WATER DEVELOPMENT BOARD			DETAILED DESIGN OF PROPOSED NEW DRAINAGE SLUICE DS- 2 (2V-1.50m x 1.80m) AT Km 12+140 IN POLDER 7/1 UNDER CLIMATE PROJECT, BWDB, DISTRICT-SATKHIRA			
DESIGN CIRCLE-8			REINFORCEMENT DETAILS OF C/S APRON, BARREL AND WING WALL			
CHECKED BY:	REVIEWED BY:	APPROVED BY:	DESIGNED BY:	CHECKED BY:	REVIEWED BY:	CHECKED & RECOMMENDED BY:
ASSISTANT ENGINEER	EXECUTIVE ENGINEER	SUPERINTENDING ENGINEER	MD. NAZMUL HAQUE DESIGN ENGINEER	K M HUMAYUN KABIR Sr. DESIGN ENGINEER	MD. MOHAMMAD ALI DEPUTY TEAM LEADER	JEAN HENRY LABOYRIE TEAM LEADER
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			CONSULTANT:			

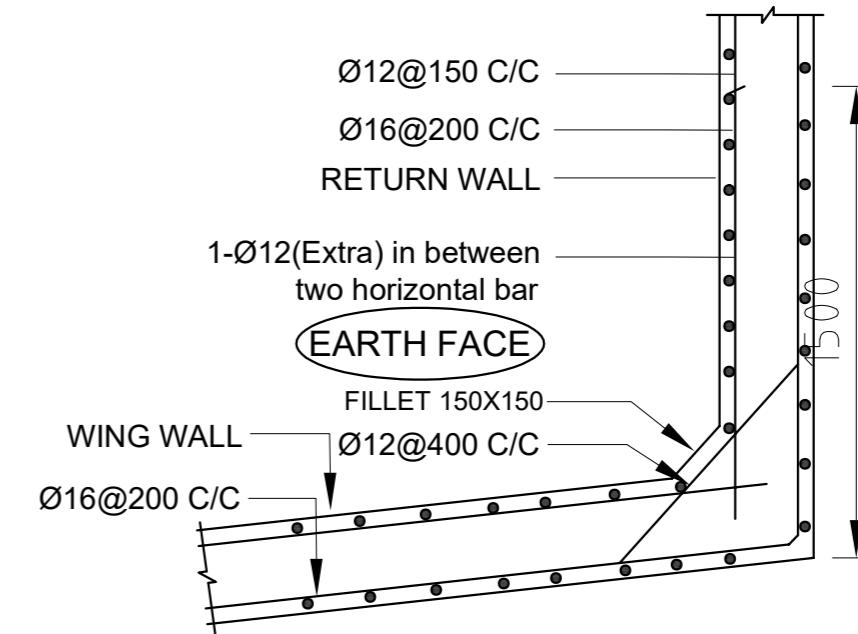
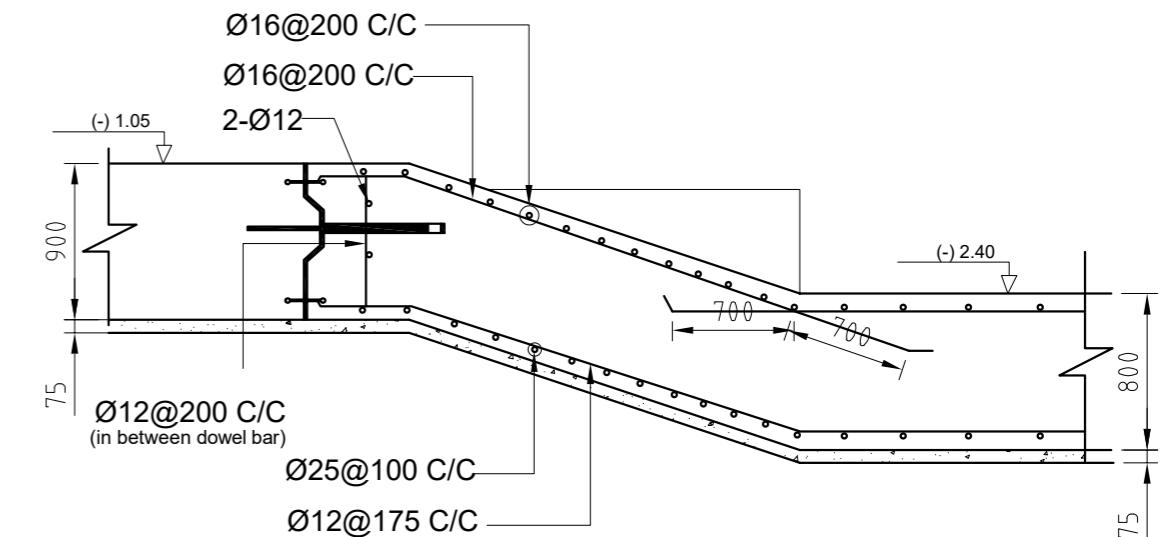
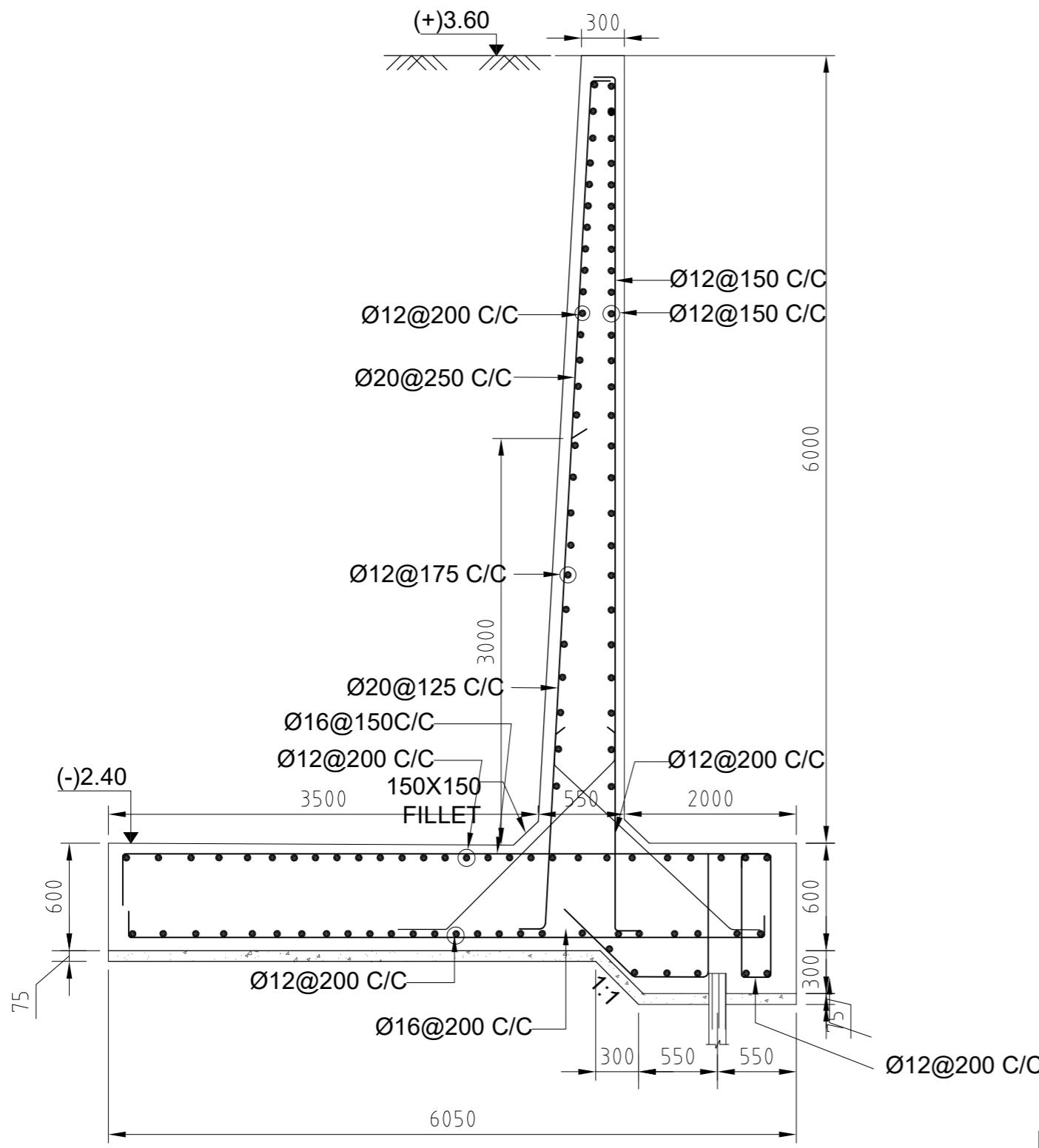


GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
MINISTRY OF WATER RESOURCES
BANGLADESH WATER DEVELOPMENT BOARD
CONSULTANCY SERVICES FOR FEASIBILITY STUDIES AND PREPARATION OF DETAILED DESIGN FOR THE COASTAL LIVELIHOOD IMPROVEMENT AND ADAPTATION ENHANCEMENT PROJECT (CLIMATE) (CONTRACT NO: CEIP-1/D3/S23)

BANGLADESH WATER DEVELOPMENT BOARD			DETAILED DESIGN OF PROPOSED NEW DRAINAGE SLUICE DS- 2 (2V-1.50m x 1.80m) AT Km 12+140 IN POLDER 7/1 UNDER CLIMATE PROJECT, BWDB, DISTRICT-SATKHIRA			
DESIGN CIRCLE-8			REINFORCEMENT DETAILS OF R/S RETURN WALL & OTHERS			
CHECKED BY:	REVIEWED BY:	APPROVED BY:	DESIGNED BY:	CHECKED BY:	REVIEWED BY:	CHECKED & RECOMMENDED BY:
ASSISTANT ENGINEER	EXECUTIVE ENGINEER	SUPERINTENDING ENGINEER	MD. NAZMUL HAQUE DESIGN ENGINEER	K M HUMAYUN KABIR Sr. DESIGN ENGINEER	MD. MOHAMMAD ALI DEPUTY TEAM LEADER	JEAN HENRY LABOYRIE TEAM LEADER
			DRG NO: 13 OF 25	DRAWN BY: ASADUZZAMAN RAHAT		DATE: 16-04-2023
			CONSULTANT:			



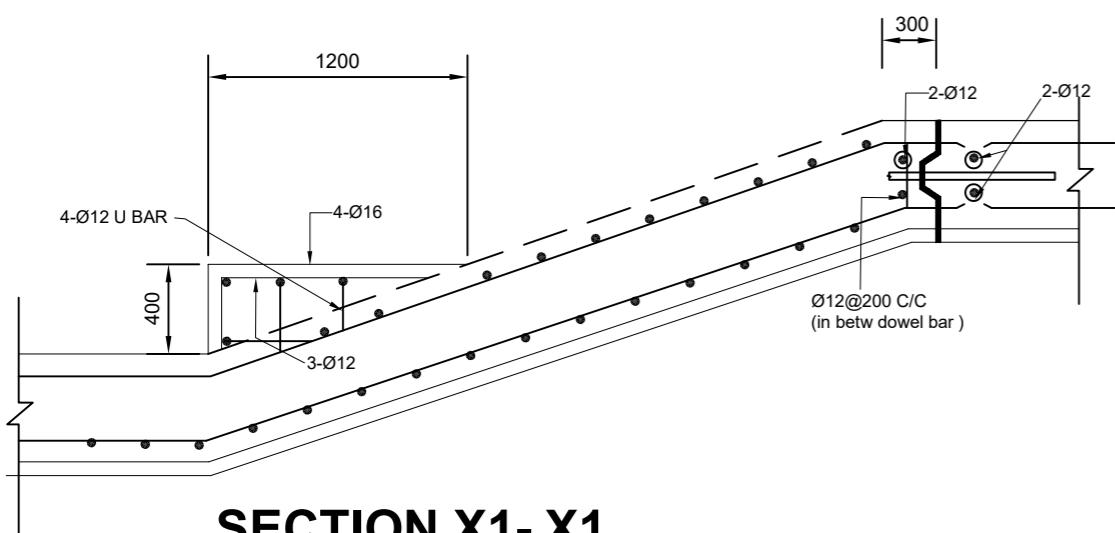
BANGLADESH WATER DEVELOPMENT BOARD			DETAILED DESIGN OF PROPOSED NEW DRAINAGE SLUICE DS- 2 (2V-1.50m x 1.80m) AT Km 12+140 IN POLDER 7/1 UNDER CLIMATE PROJECT, BWDB, DISTRICT-SATKHIRA			
DESIGN CIRCLE-8			REINFORCEMENT DETAILS OF R/S APRON, BARREL AND WING WALL			
CHECKED BY:	REVIEWED BY:	APPROVED BY:	DESIGNED BY:	CHECKED BY:	REVIEWED BY:	CHECKED & RECOMMENDED BY:
ASSISTANT ENGINEER	EXECUTIVE ENGINEER	SUPERINTENDING ENGINEER	MD. NAZMUL HAQUE DESIGN ENGINEER	K M HUMAYUN KABIR Sr. DESIGN ENGINEER	MD. MOHAMMAD ALI DEPUTY TEAM LEADER	JEAN HENRY LABOYRIE TEAM LEADER
			DRG NO: 14 OF 25	DRAWN BY: ASADUZZAMAN RAHAT		DATE: 16-04-2023
			CONSULTANT:	Royal HaskoningDHV nmc SJMCS CGIS	cc Development Consultants Limited	ERMC Working for safe living



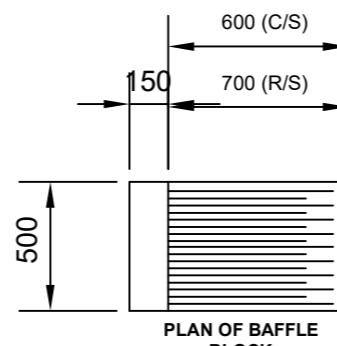
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
MINISTRY OF WATER RESOURCES
BANGLADESH WATER DEVELOPMENT BOARD

CONSULTANCY SERVICES FOR FEASIBILITY STUDIES AND PREPARATION OF DETAILED DESIGN FOR THE COASTAL LIVELIHOOD IMPROVEMENT AND ADAPTATION ENHANCEMENT PROJECT (CLIMATE) (CONTRACT NO: CEIP-1/03/S23)

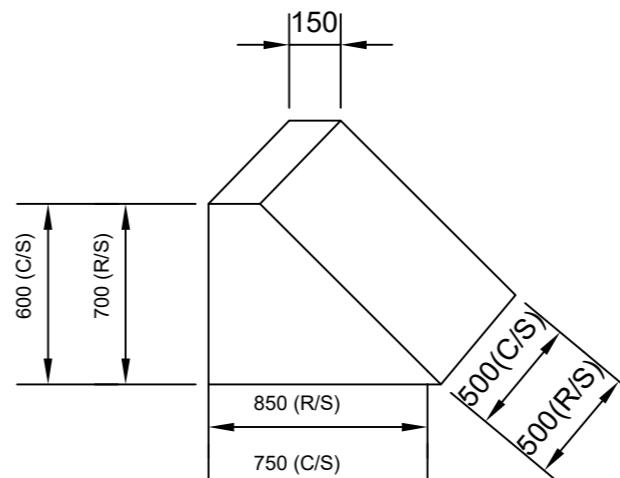
BANGLADESH WATER DEVELOPMENT BOARD			DETAILED DESIGN OF PROPOSED NEW DRAINAGE SLUICE DS- 2 (2V-1.50mx1.80m) AT Km 12+140 IN POLDER 7/1 UNDER CLIMATE PROJECT, BWDB, DISTRICT-SATKHIRA			
DESIGN CIRCLE-8			REINFORCEMENT DETAILS OF R/S RETURN WALL & OTHERS			
CHECKED BY:	REVIEWED BY:	APPROVED BY:	DESIGNED BY:	CHECKED BY:	REVIEWED BY:	CHECKED & RECOMMENDED BY:
ASSISTANT ENGINEER	EXECUTIVE ENGINEER	SUPERINTENDING ENGINEER	MD. NAZMUL HAQUE DESIGN ENGINEER	K M HUMAYUN KABIR Sr. DESIGN ENGINEER	MD. MOHAMMAD ALI DEPUTY TEAM LEADER	JEAN HENRY LABOYRIE TEAM LEADER
			DRG NO: 15 OF 25	DRAWN BY: ASADUZZAMAN RAHAT		DATE: 16-04-2023
				CONSULTANT:	nhc	SMC GIS



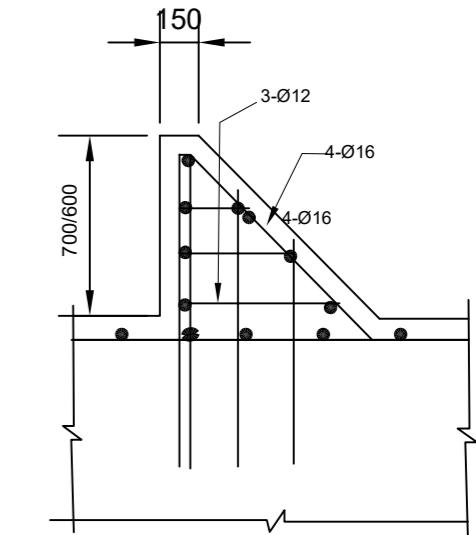
SECTION X1-X1



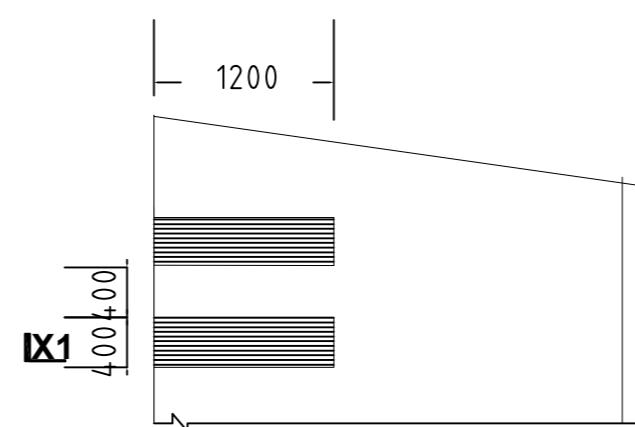
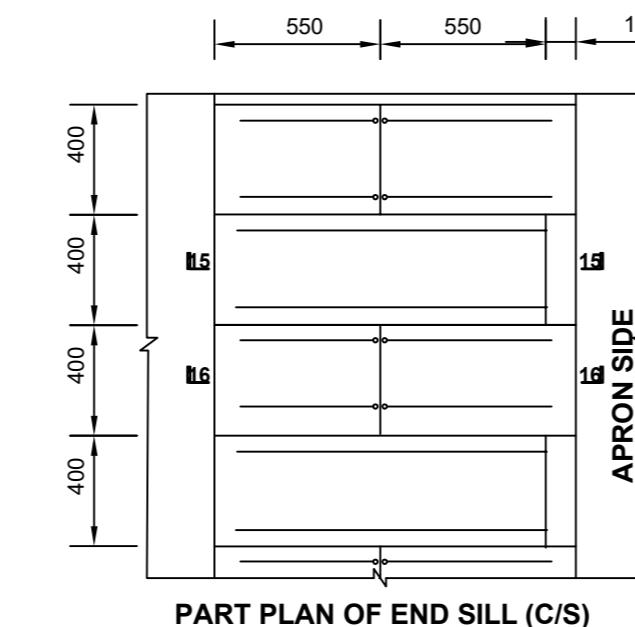
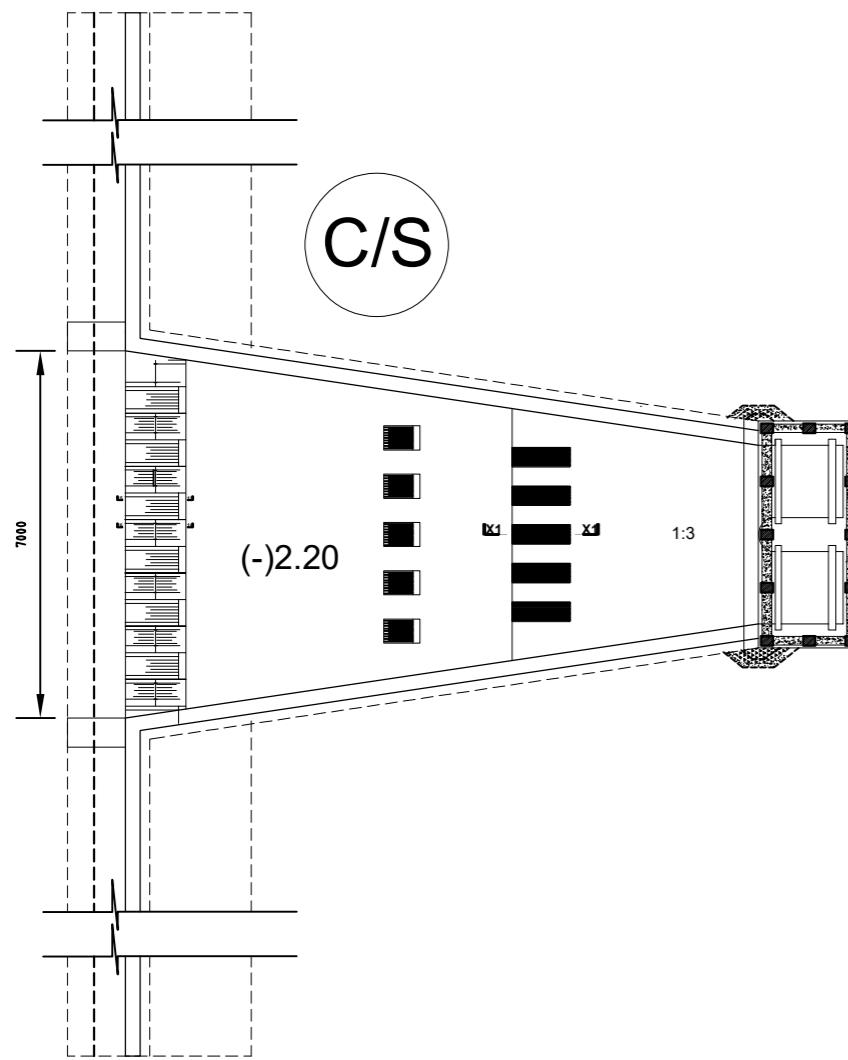
PLAN OF BAFFLE BLOCK



ISOMETRIC VIEW OF BAFFLE BLOCK



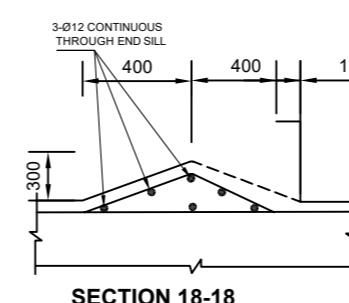
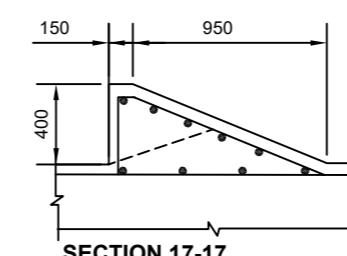
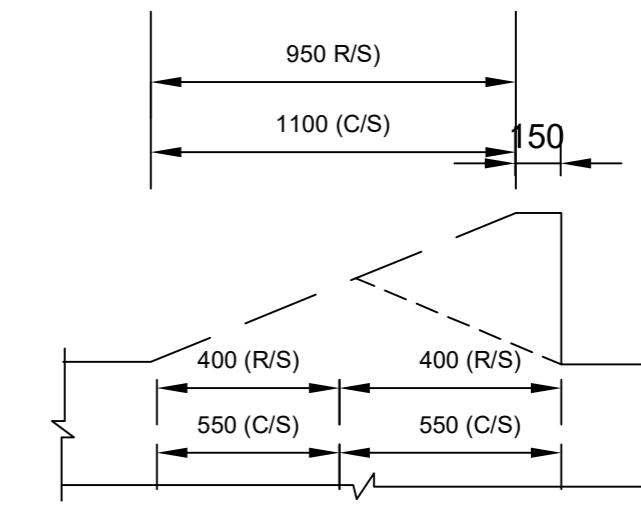
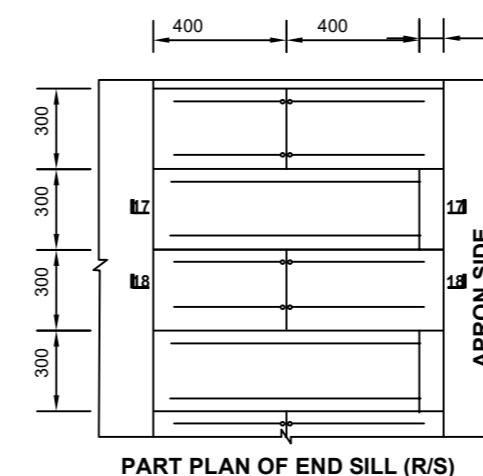
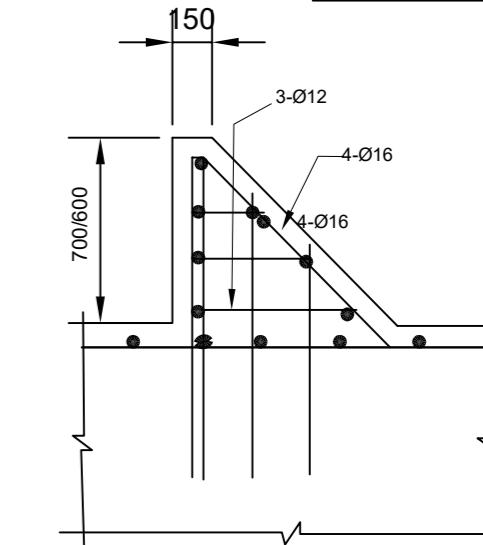
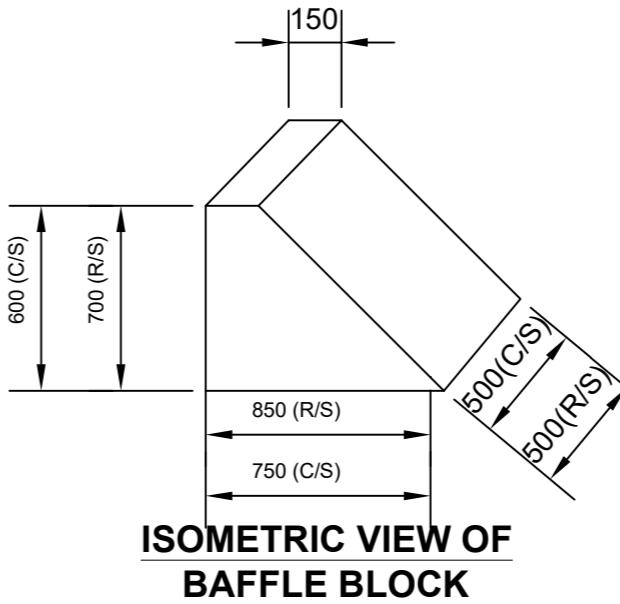
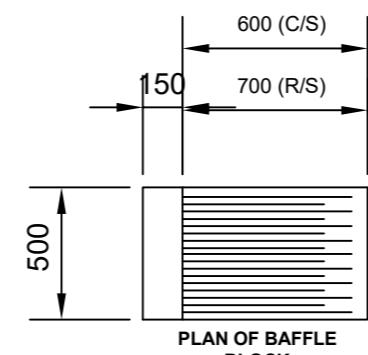
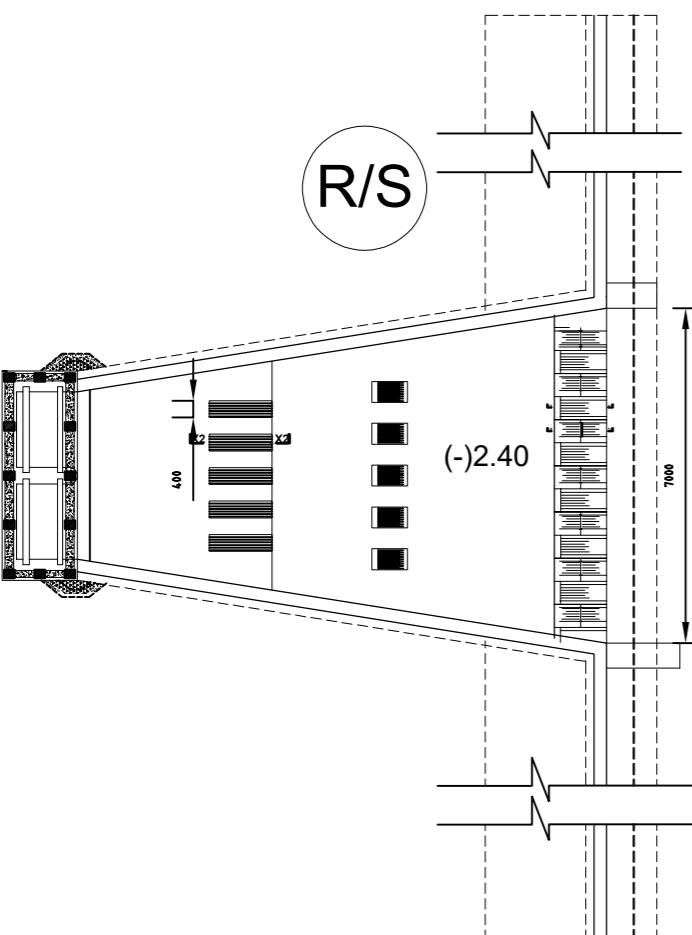
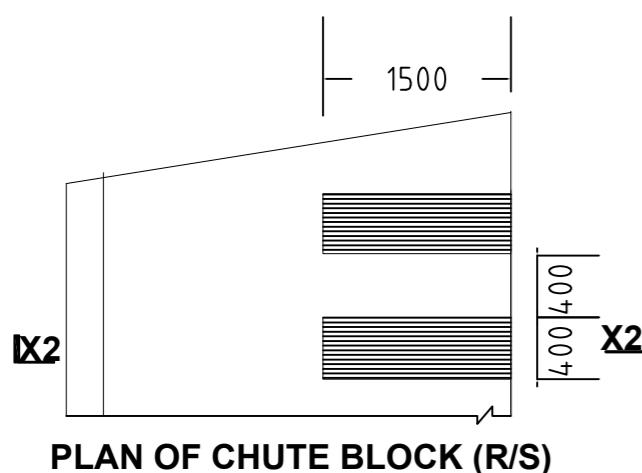
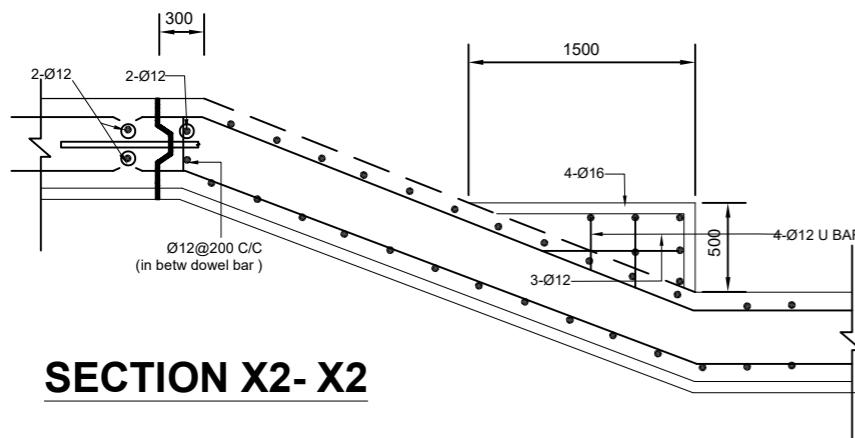
REINF. DETAILS OF BAFFLE BLOCK



PLAN OF CHUTE BLOCK (C/S)

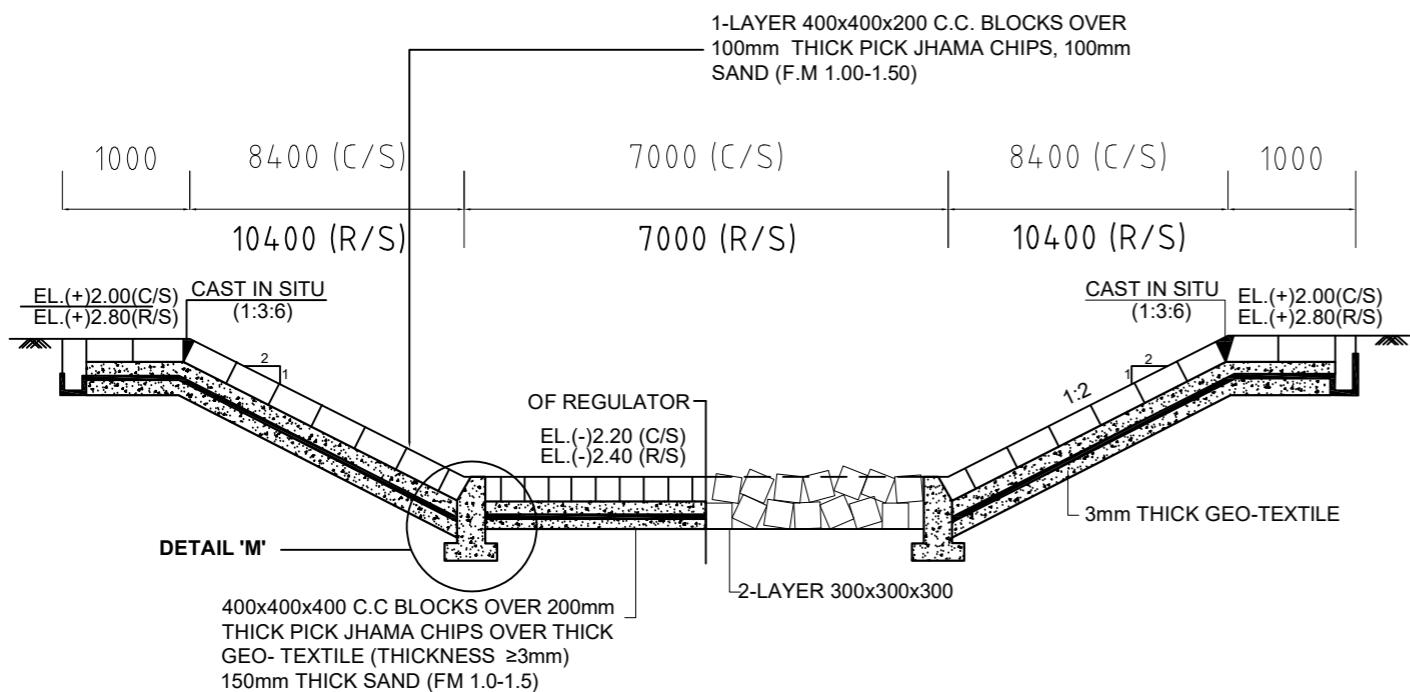
REV:	DATE:	DESCRIPTION:	ABU SAYEED MD. MASUM	MD. SAIF UDDIN	SALEH ADIB TURASH	DATED: 23-02-2023
REVIEWED BY	CHECKED BY	APPROVED BY	EXECUTIVE ENGINEER	SUPERINTENDING ENGINEER	JUNIOR DESIGN ENGINEER	DRG.NO.CEIP-2/P-7/1 SLUICE DS- 2

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH			
MINISTRY OF WATER RESOURCES			
BANGLADESH WATER DEVELOPMENT BOARD			
COASTAL EMBANKMENT IMPROVEMENT PROJECT, PHASE-II (CEIP-II)			
DESIGN OF DRAINAGE SLUICE DS-2 (2V-1.50mx1.80m) AT Ch. 12+140 Km IN POLDER NO. 7/1 UNDER SATKHIRA O&M DIVISION, BWDB, SATKHIRA DURING THE YEAR 2022-2023			
CHUTE, ENDSILL & BAFFLE REINFORCEMENT DETAILS (C/S)			
CONSULTANT :	Royal HaskoningDHV Sub Consultants DDC, SPMC, KMC, CEGIS	DESIGNED BY	CHECKED BY
REVIEWED BY	CHECKED BY	APPROVED BY	REVIEWED BY
MD. NAZMUL HAQUE	MD. ANWAR HOSSAIN BHUIYAN	MOHAMMAD ALI	JEAN HENRY LABOYRIE
DESIGN ENGINEER	DESIGN ENGINEER	DEPUTY TEAM LEADER	TEAM LEADER
SALEH ADIB TURASH		DATED: 23-02-2023	
JUNIOR DESIGN ENGINEER	DRG.NO.CEIP-2/P-7/1 SLUICE DS- 2	SHEET 16 OF 25	

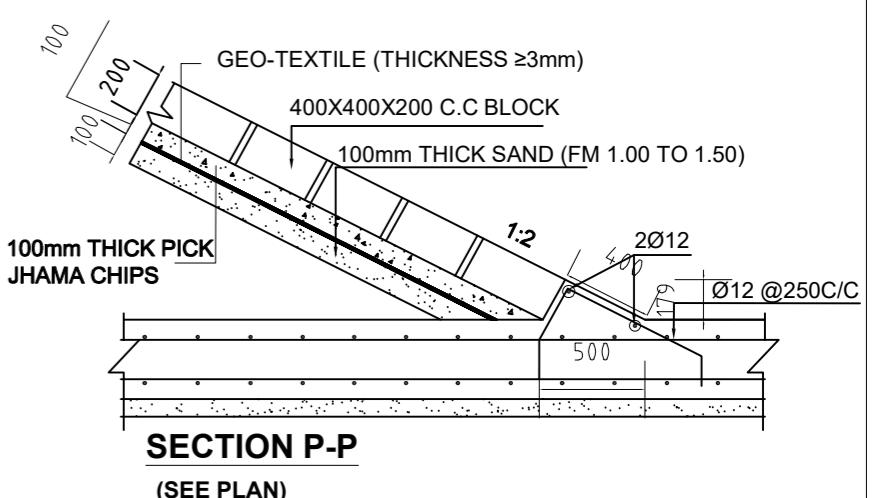
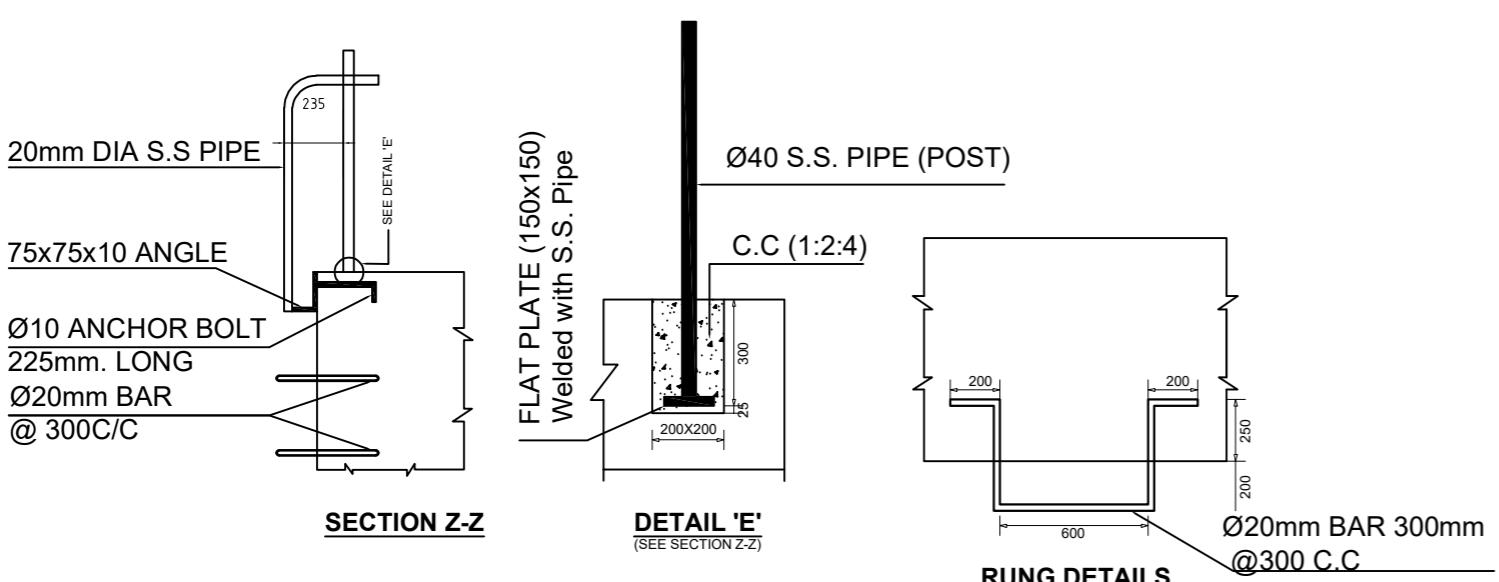
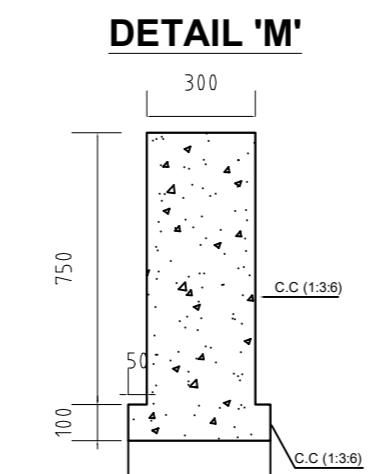
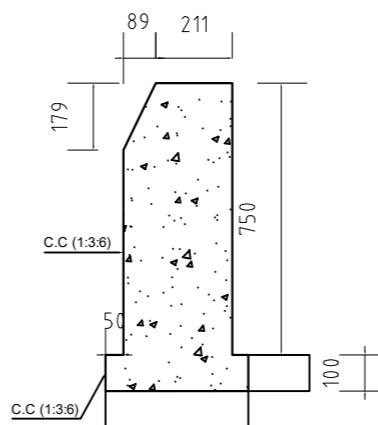
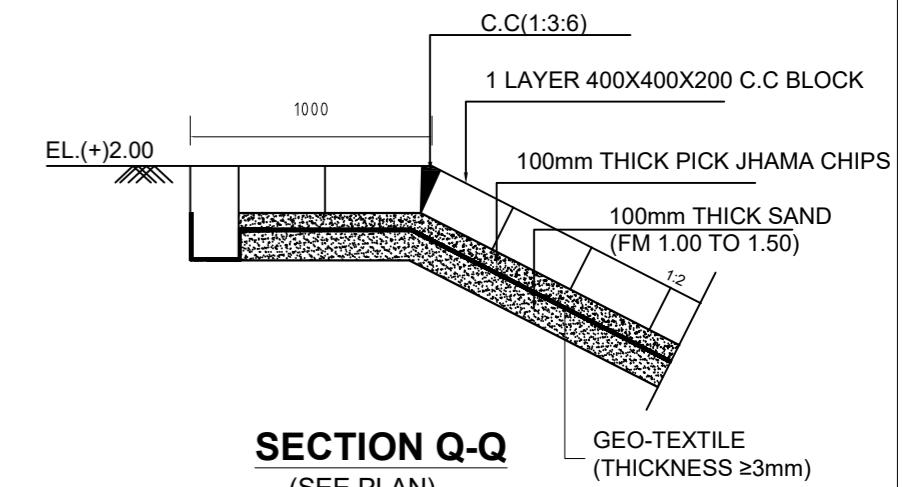
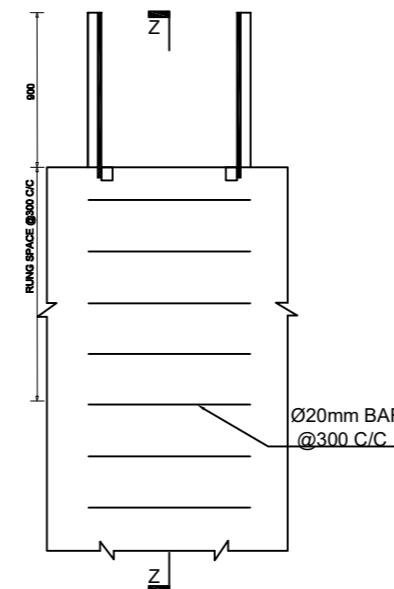


GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH			
MINISTRY OF WATER RESOURCES			
BANGLADESH WATER DEVELOPMENT BOARD			
COASTAL EMBANKMENT IMPROVEMENT PROJECT, PHASE-II (CEIP-II)			
DESIGN OF DRAINAGE SLUICE DS-2 (2V-1.50m x 1.80m) AT Ch. 12+140 Km IN POLDER NO. 7/1 UNDER SATKHIRA O&M DIVISION, BWDB, SATKHIRA DURING THE YEAR 2022-2023			
CHUTE, ENDSILL & BAFFLE REINFORCEMENT DETAILS (R/S)			
CONSULTANT : Royal HaskoningDHV Sub Consultants DDC, SPMC, KMC, CEGIS		DESIGNED BY CHECKED BY REVIEWED BY RECOMMENDED BY	
BANGLADESH WATER DEVELOPMENT BOARD		MD. NAZMUL HAQUE MD. ANWAR HOSSAIN BHUIYAN MOHAMMAD ALI JEAN HENRY LABOYRIE	
DESIGN CIRCLE -8		DESIGNED BY CHECKED BY APPROVED BY	
REVIEWED BY CHECKED BY APPROVED BY		MD. SAIF UDDIN	
EXECUTIVE ENGINEER SUPERINTENDING ENGINEER		SALEH ADIB TURASH	
JUNIOR DESIGN ENGINEER		DATED: 23-02-2023	
DRG.NO.CEIP-2/P-7/1 SLUICE DS-2		SHEET 17 OF 25	

REV:	DATE:	DESCRIPTION:	ABU SAYEED MD. MASUM	MD. SAIF UDDIN	SALEH ADIB TURASH	DATED: 23-02-2023
			EXECUTIVE ENGINEER	SUPERINTENDING ENGINEER	JUNIOR DESIGN ENGINEER	DRG.NO.CEIP-2/P-7/1 SLUICE DS-2



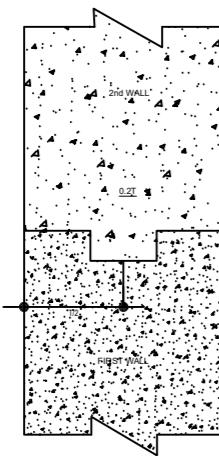
SECTION R-R (SEE PLAN)



GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH			
MINISTRY OF WATER RESOURCES			
BANGLADESH WATER DEVELOPMENT BOARD			
COASTAL EMBANKMENT IMPROVEMENT PROJECT, PHASE-II (CEIP-II)			
DESIGN OF DRAINAGE SLUICE DS-2 (2V-1.50mx1.80m) AT Ch. 12+140 Km IN POLDER NO. 7/1 UNDER SATKHIRA O&M DIVISION, BWDB, SATKHIRA DURING THE YEAR 2022-2023			
DETAILS OF PROTECTIVE WORKS & OTHERS			
BANGLADESH WATER DEVELOPMENT BOARD		CONSULTANT : Royal HaskoningDHV Sub Consultants DDC, SPMC, KMC, CEGIS	
DESIGN CIRCLE -8			DESIGNED BY
REVIEWED BY	CHECKED BY	APPROVED BY	
MD. NAZMUL HAQUE	MD. ANWAR HOSSAIN BHUIYAN	MOHAMMAD ALI	JEAN HENRY LABOYRIE
DESIGN ENGINEER	DESIGN ENGINEER	DEPUTY TEAM LEADER	TEAM LEADER
SALEH ADIB TURASH		DATED: 23-02-2023	
JUNIOR DESIGN ENGINEER	DRG.NO.CEIP-2/P-7/1 SLUICE DS- 2	SHEET 18 OF 25	

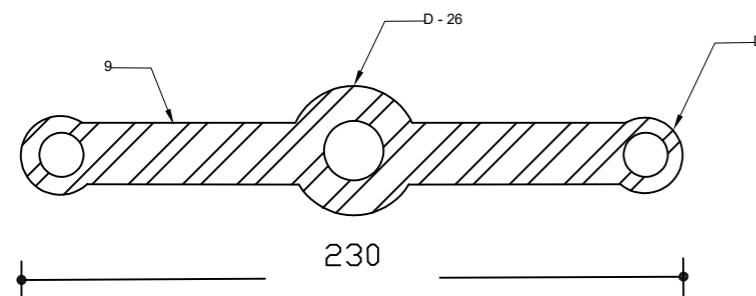
REV :	DATE :	DESCRIPTION :
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ABU SAYEED MD. MASUM	MD. SAIF UDDIN	SALEH ADIB TURASH	
EXECUTIVE ENGINEER	SUPERINTENDING ENGINEER		
JUNIOR DESIGN ENGINEER	DRG.NO.CEIP-2/P-7/1 SLUICE DS- 2	SHEET 18 OF 25	



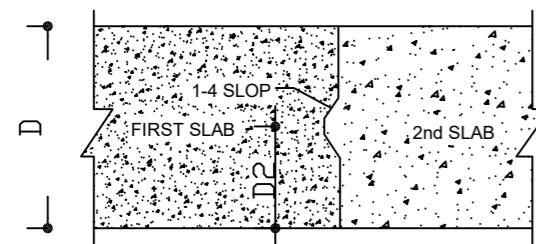
DETAILS OF CONSTRUCTION

JOINT (FOR WALL)



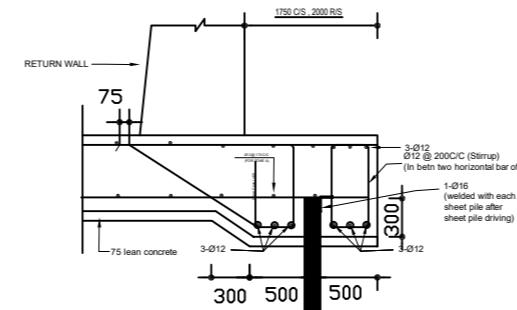
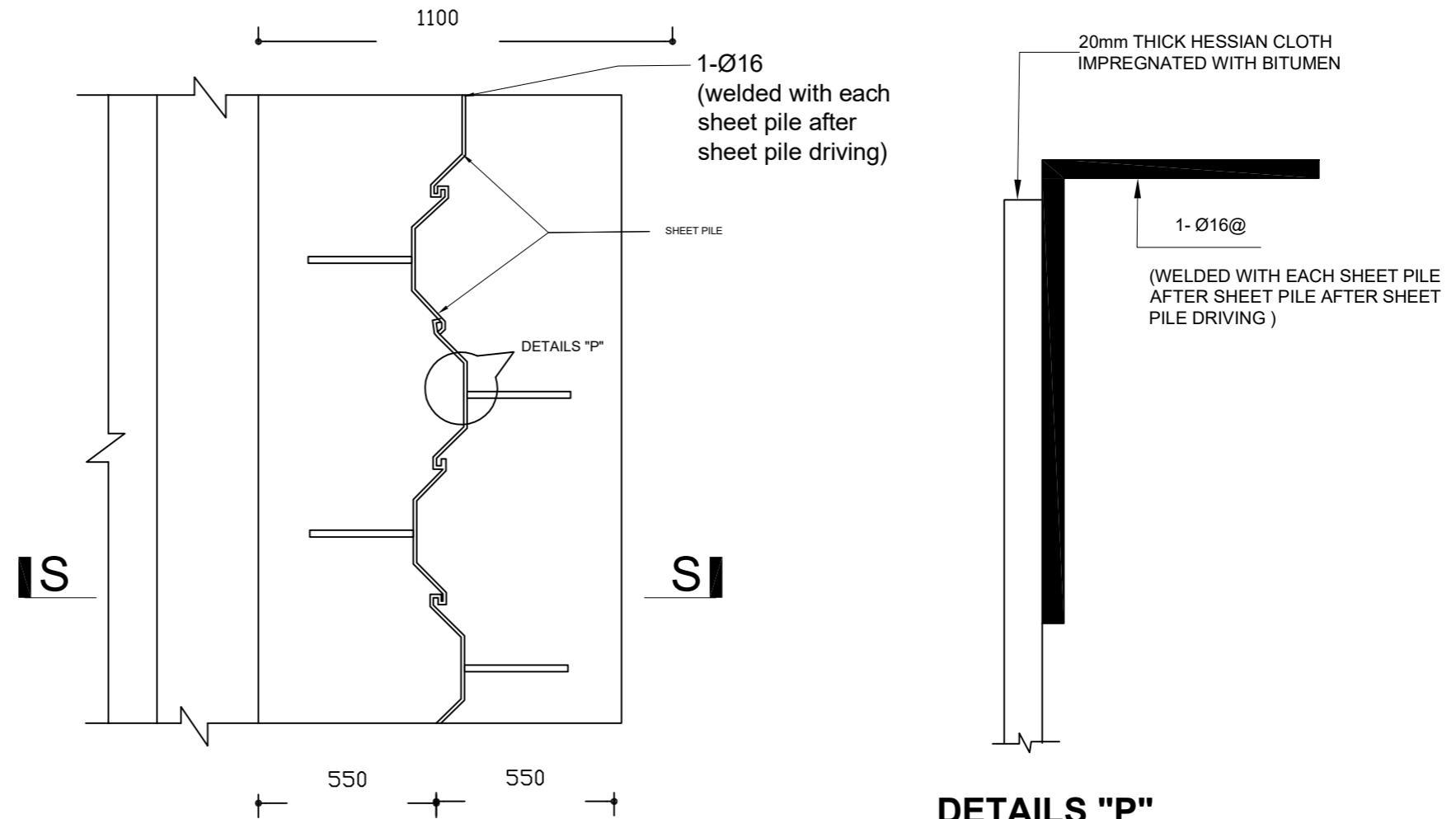
DETAILS OF CONSTRUCTION

JOINT (FOR WALL)



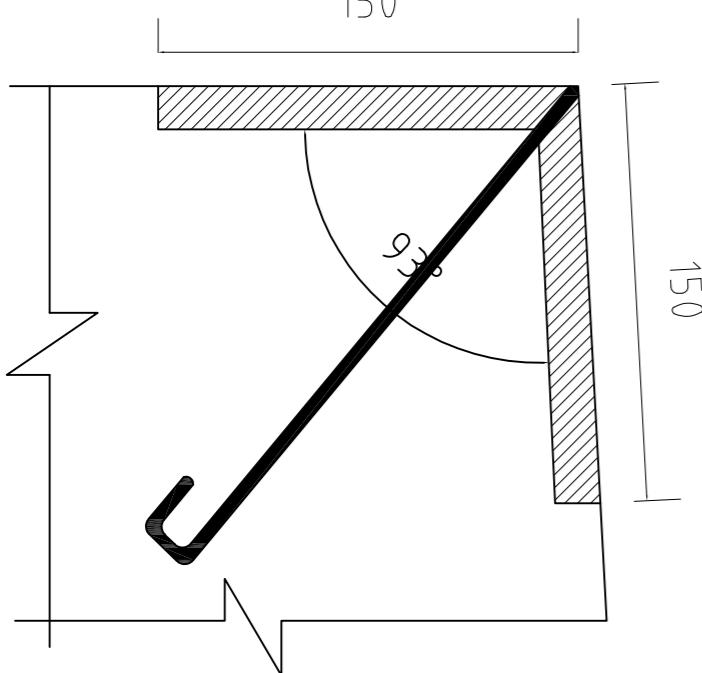
DETAILS OF CONSTRUCTION

JOINT (FOR WALL)

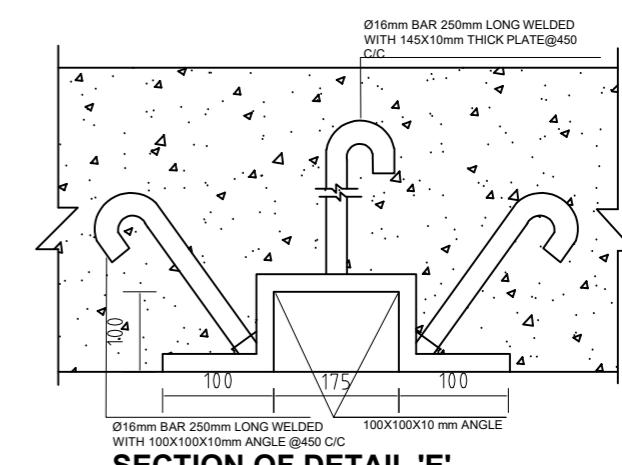
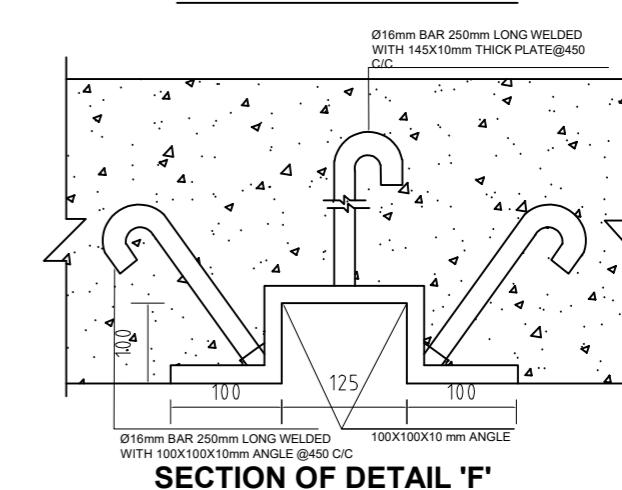
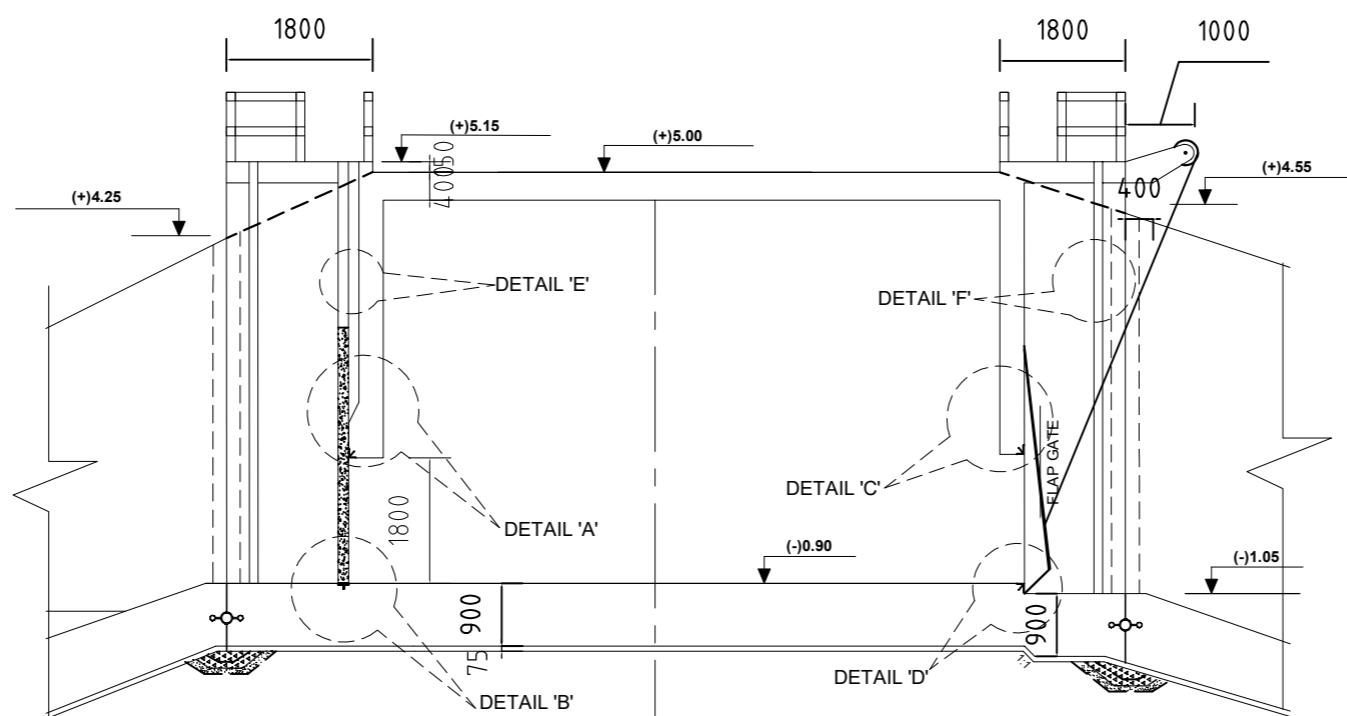
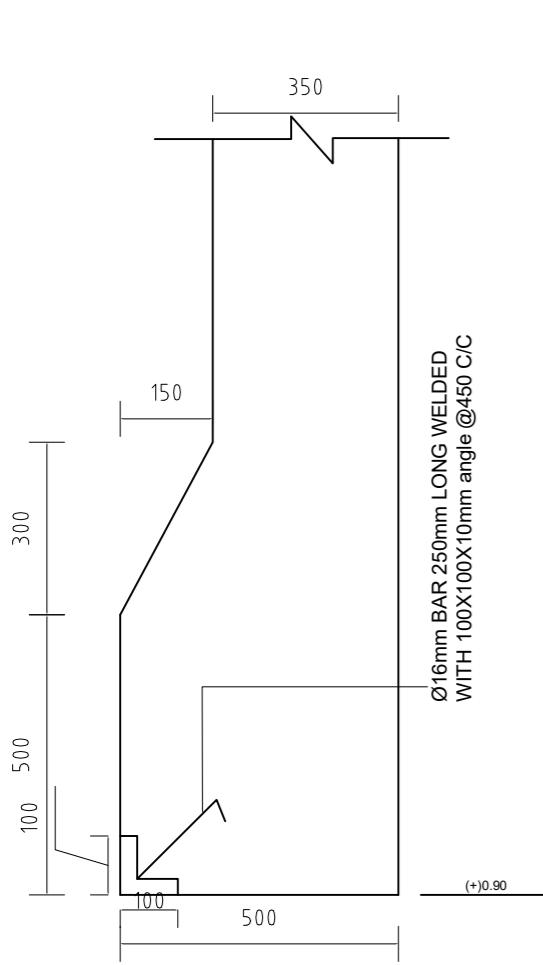
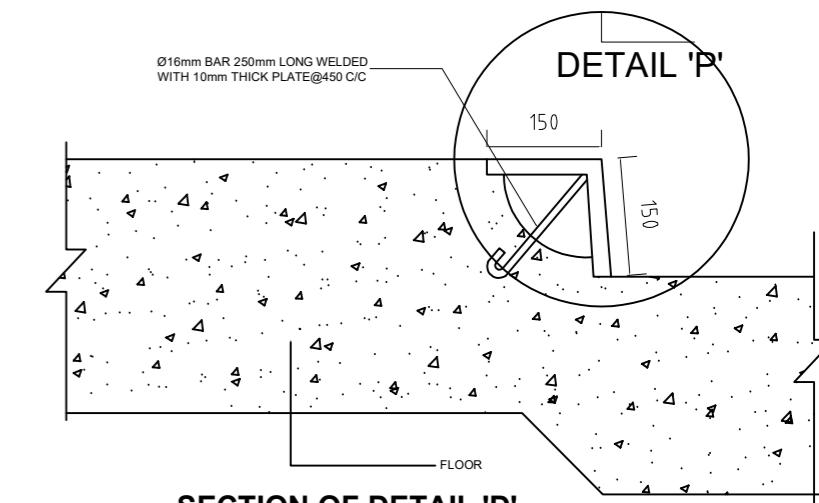
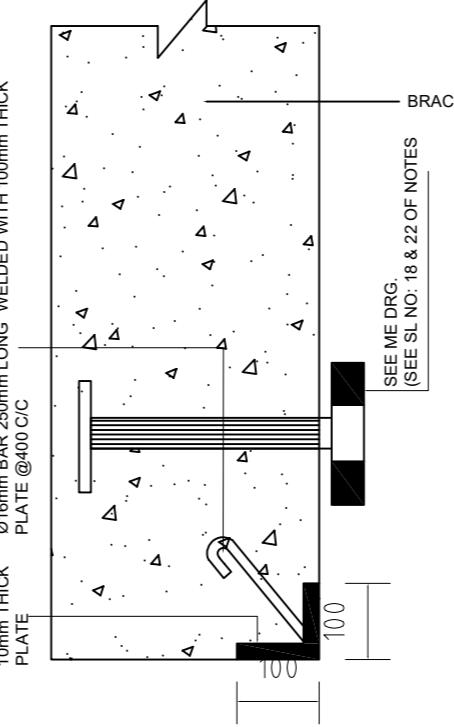
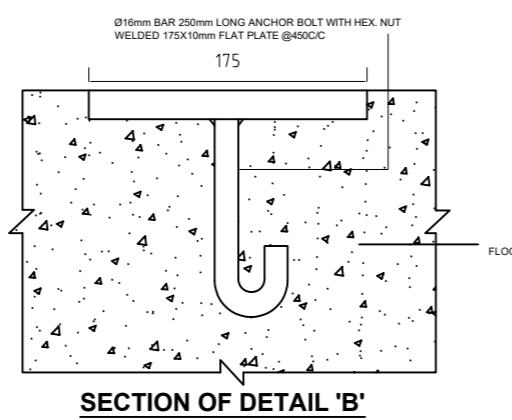


DETAILS OF SHEET PILE CAPI UNDER APRON (SECTION S-S)

BANGLADESH WATER DEVELOPMENT BOARD			DETAILS OF CONSTRUCTION CONTRACT, SHEET FILE CAF & WATER STOPPER			
DESIGN CIRCLE -8			CONSULTANT : Royal HaskoningDHV Sub Consultants DDC, SPMC, KMC, CEGIS			
REVIEWED BY	CHECKED BY	APPROVED BY	DESIGNED BY	CHECKED BY	REVIEWED BY	RECOMMENDED BY
			MD. NAZMUL HAQUE	MD. ANWAR HOSSAIN BHUIYAN	MOHAMMAD ALI	JEAN HENRY LABOYRIE
			DESIGN ENGINEER	DESIGN ENGINEER	DEPUTY TEAM LEADER	TEAM LEADER
	ABU SAYEED MD. MASUM	MD. SAIF UDDIN	SALEH ADIB TURASH		DATED: 23-02-2023	
	EXECUTIVE ENGINEER	SUPERINTENDING ENGINEER	JUNIOR DESIGN ENGINEER		DRG.NO.CEIP-2/P-7/1 SLUICE DS- 2	SHEET 19 OF 25

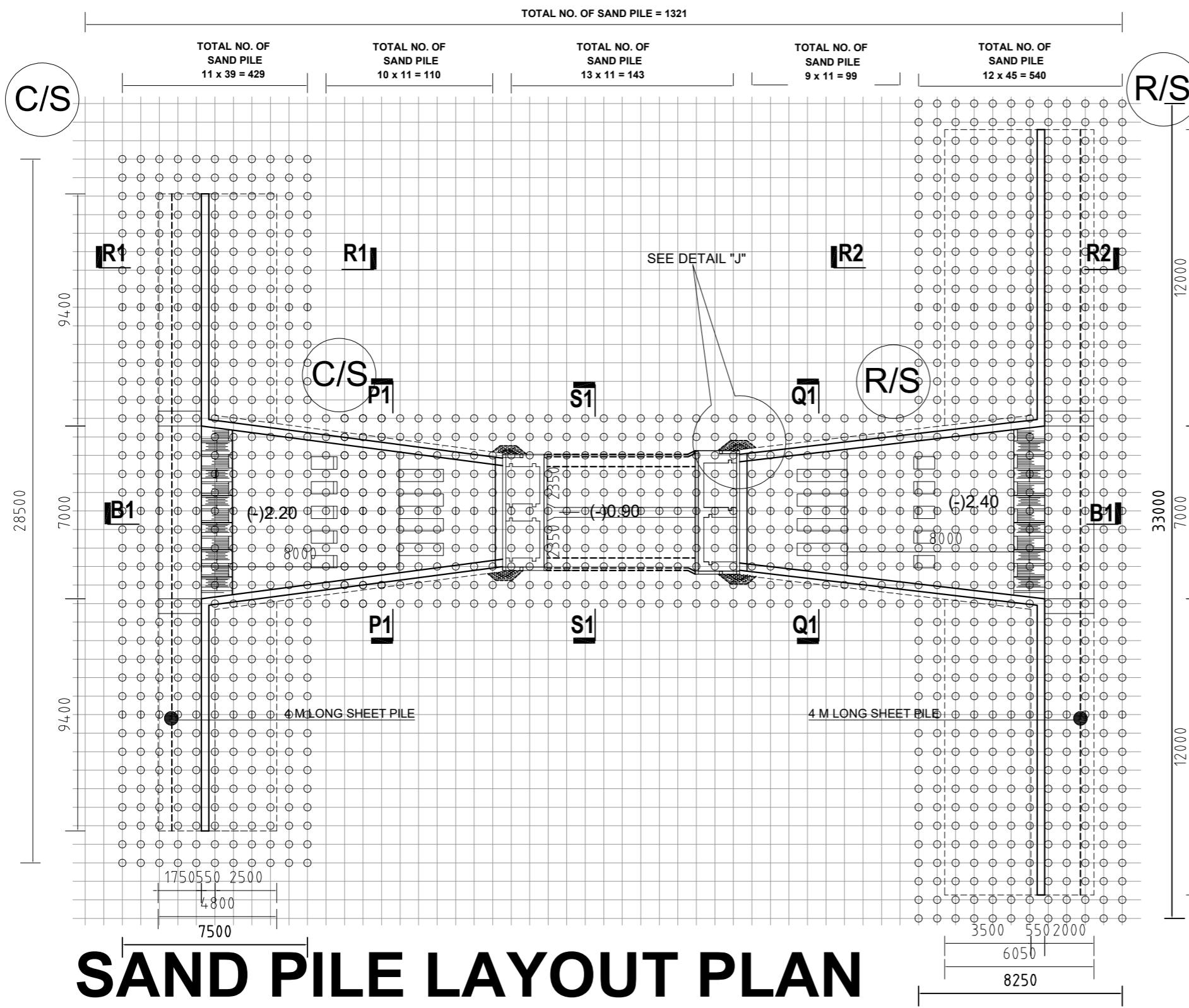


SECTION OF DETAIL - P
SHOWING ONLY FLAT PLATE



GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH			
MINISTRY OF WATER RESOURCES			
BANGLADESH WATER DEVELOPMENT BOARD			
COASTAL EMBANKMENT IMPROVEMENT PROJECT, PHASE-II (CEIP-II)			
DESIGN OF DRAINAGE SLUICE DS-2 (2V-1.50m x 1.80m) AT Ch. 12+140 Km IN POLDER NO. 7/1 UNDER SATKHIRA O&M DIVISION, BWDB, SATKHIRA DURING THE YEAR 2022-2023			
MISCELLANEOUS METAL DETAILS			
BANGLADESH WATER DEVELOPMENT BOARD		CONSULTANT : Royal HaskoningDHV Sub Consultants DDC, SPMC, KMC, CEGIS	
DESIGN CIRCLE -8			REVIEWED BY CHECKED BY APPROVED BY
REV:	DATE:	DESCRIPTION:	ABU SAYEED MD. MASUM MD. SAIF UDDIN
			MD. NAZMUL HAQUE MD. ANWAR HOSSAIN BHUIYAN
			MOHAMMAD ALI JEAN HENRY LABOYRIE
DESIGN ENGINEER	DESIGN ENGINEER	DEPUTY TEAM LEADER	TEAM LEADER
SALEH ADIB TURASH	JUNIOR DESIGN ENGINEER	DRG.NO.CEIP-2/P-7/1 SLUICE DS- 2	SHEET 20 OF 25
DATED: 23-02-2023			

REV:	DATE:	DESCRIPTION:	ABU SAYEED MD. MASUM	MD. SAIF UDDIN	SALEH ADIB TURASH	JUNIOR DESIGN ENGINEER	DRG.NO.CEIP-2/P-7/1 SLUICE DS- 2	SHEET 20 OF 25
			EXECUTIVE ENGINEER	SUPERINTENDING ENGINEER				



SAND PILE LAYOUT PLAN

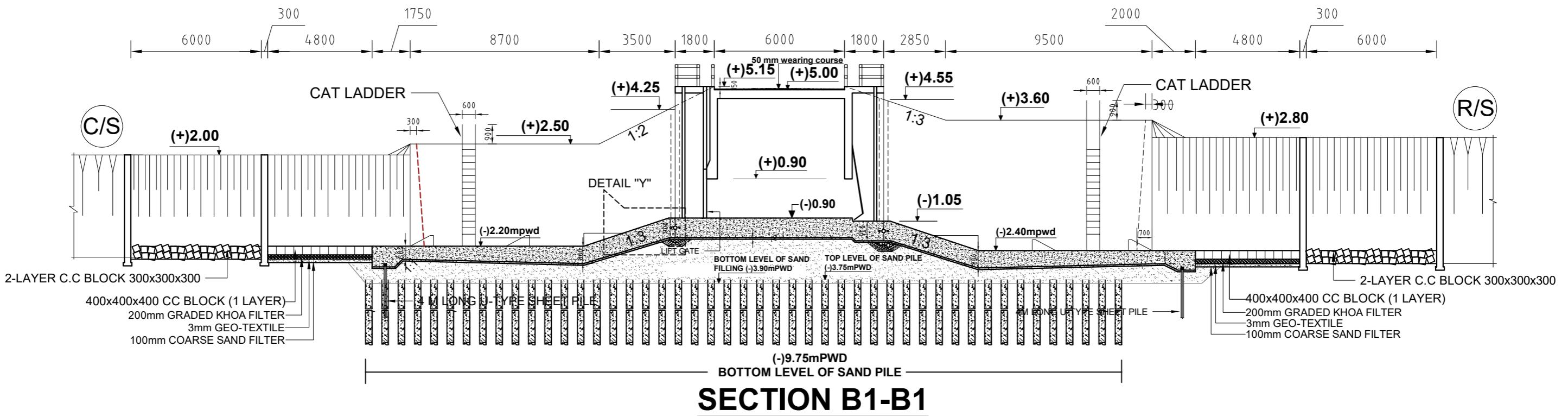
NOTE FOR SAND PILE:

1. SAND PILE OF 6.00m(DS-08) & 5.00m(DS-09) LENGTH WITH 300mm CASING DIA. AS SPECIFIED IN THE DRAWING SHALL HAVE TO BE CONSTRUCTED AS PER STANDARD DISPLACEMENT METHOD.
2. SAND TO BE USED IN PILING SHALL BE FREE FROM ALL ORGANIC AND FOREIGN MATERIALS AND SHALL HAVE FM ≥ 2.00 .
3. DIAMETER LENGTH CONTINUITY OF PILE SHALL HAVE TO BE CHECKED BY MEASURING SAND FORCE VOLUME FOR EACH EXECUTED PILE. THE SAND FORCE VOLUME PER METER AND PER PILE SHALL NOT BE LESS THAN 0.30 CUBIC METER AND 1.8 CUBIC METER RESPECTIVELY.
4. AFTER EXECUTION OF ALL SAND PILE, SPT VALUES SHALL HAVE TO BE DETERMINED BY THE FIELD TESTS. SPT VALUES ATTAINED AT 1.50 METER INTERVALS SHALL BE DETERMINED.
5. AFTER PILING SPT VALUE IN BETWEEN SAND PILES AT FOUNDATION LEVEL SHALL BE MINIMUM 12 TO 14.
6. FOR ANY ERROR, OMISSION OR CONFUSION PLEASE REFER TO CONCERNED DESIGN OFFICE THROUGH CEIP-II CONSULTANTS FOR NECESSARY ACTION.

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
MINISTRY OF WATER RESOURCES
BANGLADESH WATER DEVELOPMENT BOARD

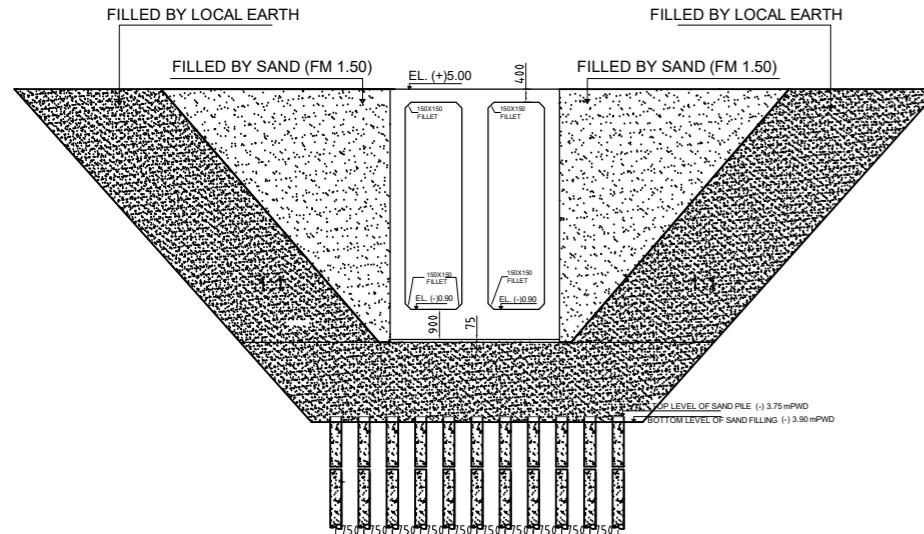
CONSULTANCY SERVICES FOR FEASIBILITY STUDIES AND PREPARATION OF DETAILED DESIGN FOR THE COASTAL LIVELIHOOD IMPROVEMENT AND ADAPTATION ENHANCEMENT PROJECT (CLIMATE) (CONTRACT NO: CEIP-1/D3/S23)

BANGLADESH WATER DEVELOPMENT BOARD			DETAILED DESIGN OF PROPOSED NEW DRAINAGE SLUICE DS- 2 (2V-1.50mx1.80m) AT Km 12+140 IN POLDER 7/1 UNDER CLIMATE PROJECT, BWDB, DISTRICT-SATKHIRA			
DESIGN CIRCLE-8			SAND PILE LAYOUT PLAN			
CHECKED BY:	REVIEWED BY:	APPROVED BY:	DESIGNED BY:	CHECKED BY:	REVIEWED BY:	CHECKED & RECOMMENDED BY:
ASSISTANT ENGINEER	EXECUTIVE ENGINEER	SUPERINTENDING ENGINEER	MD. NAZMUL HAQUE DESIGN ENGINEER	K M HUMAYUN KABIR Sr. DESIGN ENGINEER	MD. MOHAMMAD ALI DEPUTY TEAM LEADER	JEAN HENRY LABOYRIE TEAM LEADER
			DRG NO: 21 OF 25	DRAWN BY: ASADUZZAMAN RAHAT		DATE: 16-04-2023
			CONSULTANT:	Royal HaskoningDHV nmc SJMCS CGIS	development consultants limited	EMC Working for safe living



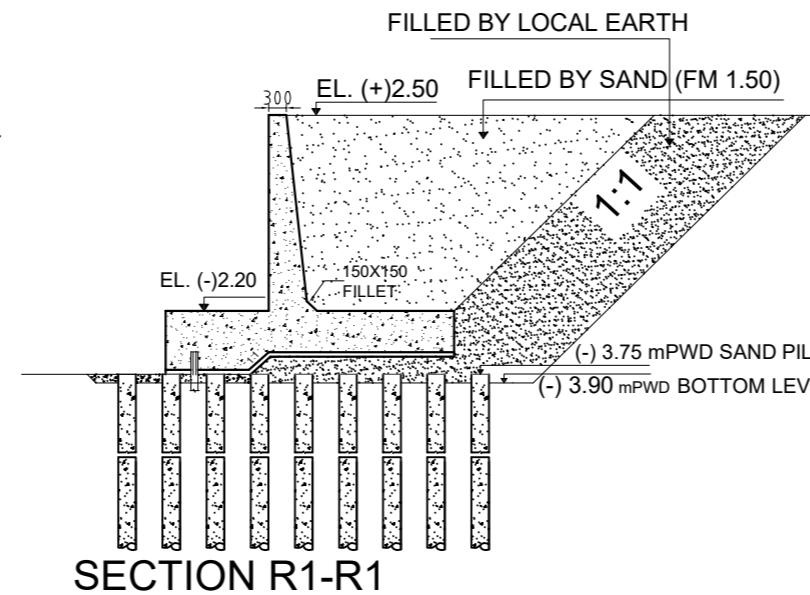
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
MINISTRY OF WATER RESOURCES
BANGLADESH WATER DEVELOPMENT BOARD
CONSULTANCY SERVICES FOR FEASIBILITY STUDIES AND PREPARATION OF DETAILED DESIGN FOR THE COASTAL LIVELIHOOD IMPROVEMENT AND ADAPTATION ENHANCEMENT PROJECT (CLIMATE) (CONTRACT NO: CEIP-1/D3/S23)

BANGLADESH WATER DEVELOPMENT BOARD			DETAILED DESIGN OF PROPOSED NEW DRAINAGE SLUICE DS- 2 (2V-1.50mx1.80m) AT Km 12+140 IN POLDER 7/1 UNDER CLIMATE PROJECT, BWDB, DISTRICT-SATKHIRA			
DESIGN CIRCLE-8			SAND PILE DETAILS OF LONGITUDINAL SECTION			
CHECKED BY:	REVIEWED BY:	APPROVED BY:	DESIGNED BY:	CHECKED BY:	REVIEWED BY:	CHECKED & RECOMMENDED BY:
ASSISTANT ENGINEER	EXECUTIVE ENGINEER	SUPERINTENDING ENGINEER	MD. NAZMUL HAQUE DESIGN ENGINEER	K M HUMAYUN KABIR Sr. DESIGN ENGINEER	MD. MOHAMMAD ALI DEPUTY TEAM LEADER	JEAN HENRY LABOYRIE TEAM LEADER
			DRG NO: 22 OF 25	DRAWN BY: ASADUZZAMAN RAHAT		DATE: 16-04-2023
			CONSULTANT:	Royal HaskoningDHV nmc SJM Consulting Engineers C GIS cc Development Consultants Limited EFCMC		

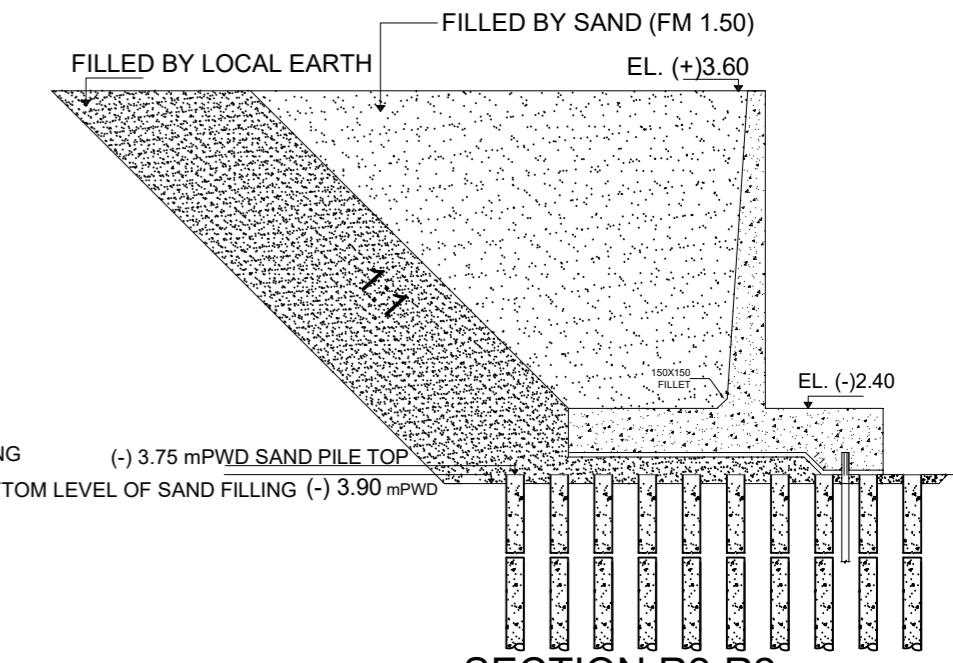


SECTION S1-S1

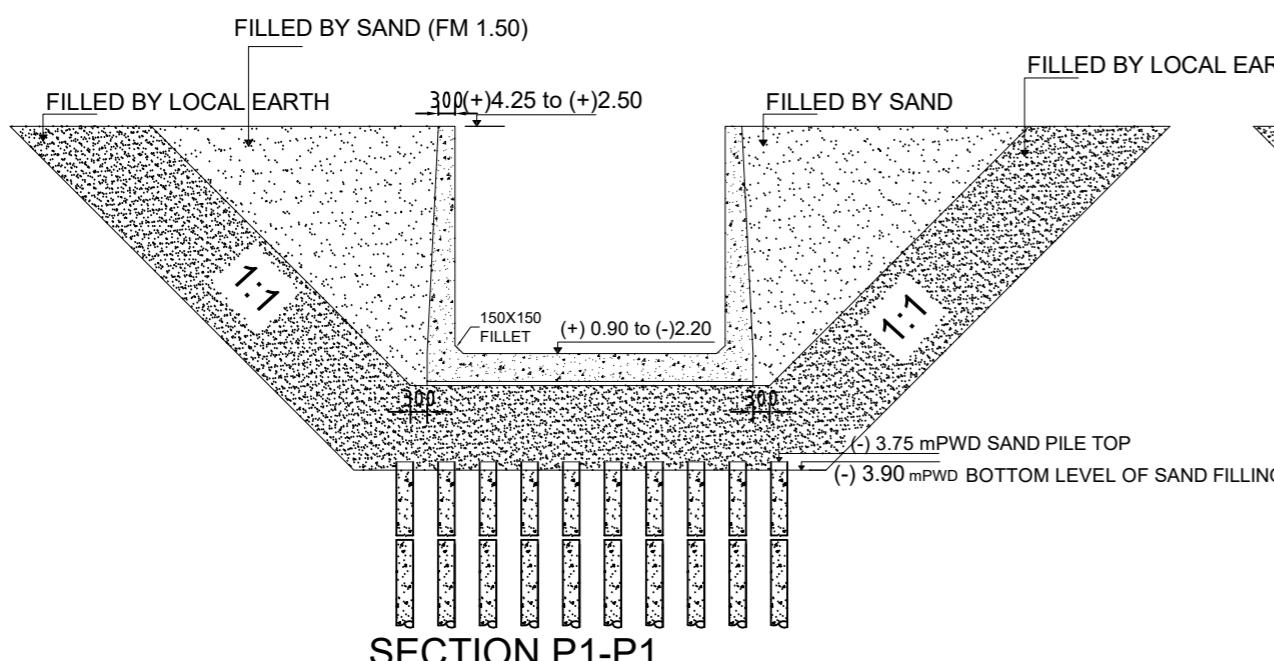
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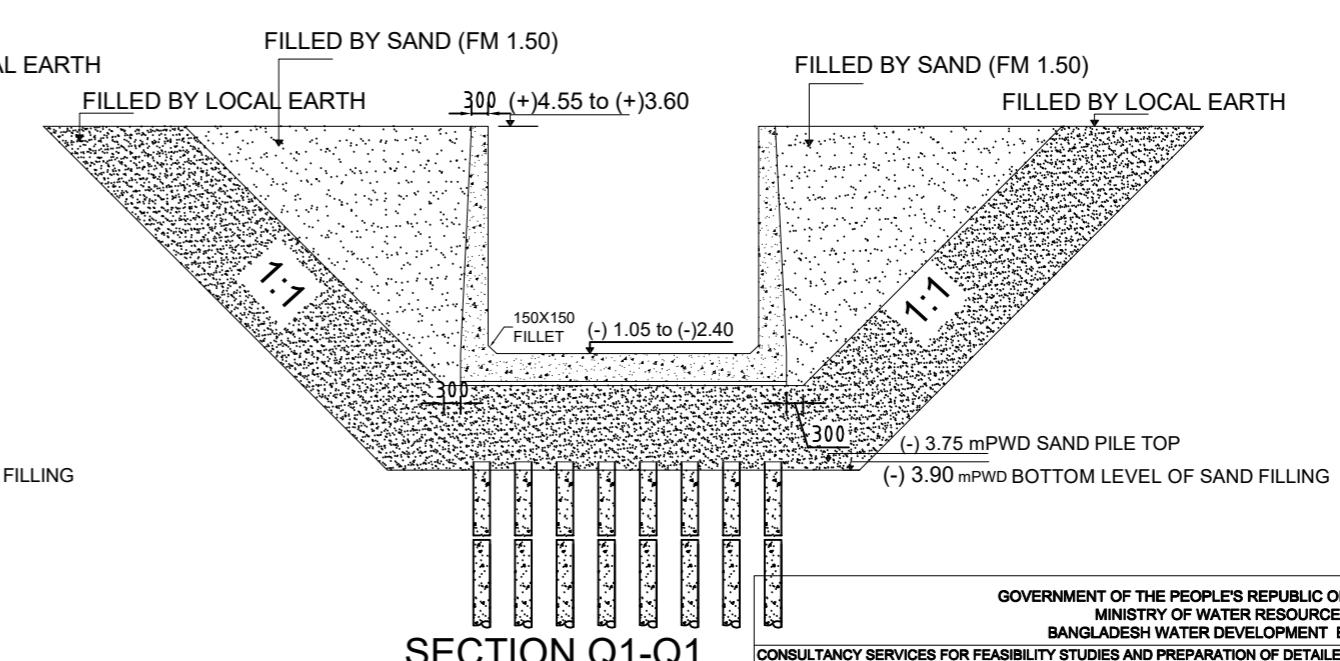
SECTION R1-R1



SECTION R2-R2



SECTION P1-P1



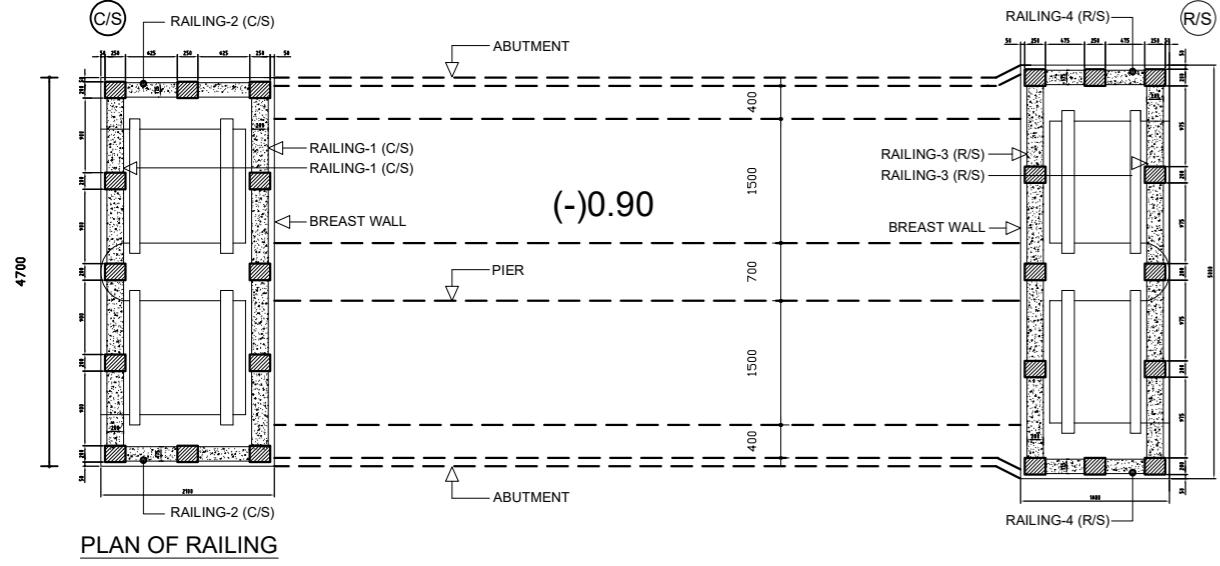
SECTION Q1-Q1

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
MINISTRY OF WATER RESOURCES
BANGLADESH WATER DEVELOPMENT BOARD
CONSULTANCY SERVICES FOR FEASIBILITY STUDIES AND PREPARATION OF DETAILED DESIGN FOR THE COASTAL LIVELIHOOD IMPROVEMENT AND ADAPTATION ENHANCEMENT PROJECT (CLIMATE) (CONTRACT NO: CEIP-1/D3/S23)

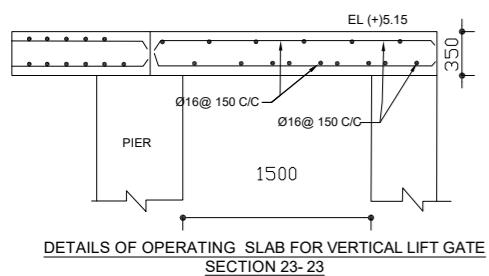
DETAILED DESIGN OF PROPOSED NEW DRAINAGE SLUICE DS- 2 (2V-1.50m x 1.80m) AT Km 12+140 IN POLDER 7/1 UNDER CLIMATE PROJECT, BWDB, DISTRICT-SATKHIRA

SECTION DETAILS OF SAND PILE

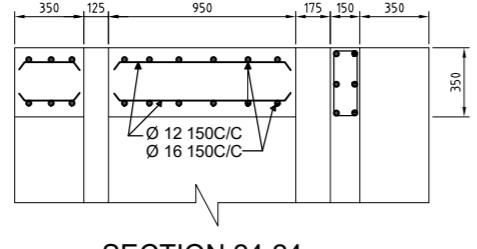
BANGLADESH WATER DEVELOPMENT BOARD			SECTION DETAILS OF SAND PILE			
DESIGN CIRCLE-8						
CHECKED BY:	REVIEWED BY:	APPROVED BY:	DESIGNED BY:	CHECKED BY:	REVIEWED BY:	CHECKED & RECOMMENDED BY:
ASSISTANT ENGINEER	EXECUTIVE ENGINEER	SUPERINTENDING ENGINEER	MD. NAZMUL HAQUE DESIGN ENGINEER	K M HUMAYUN KABIR Sr. DESIGN ENGINEER	MD. MOHAMMAD ALI DEPUTY TEAM LEADER	JEAN HENRY LABOYRIE TEAM LEADER
			DRG NO: 23 OF 25	DRAWN BY: ASADUZZAMAN RAHAT		DATE: 16-04-2023
			CONSULTANT:	Royal HaskoningDHV nmc SJMCS C2GIS	development consultants limited	cc Working for safe living



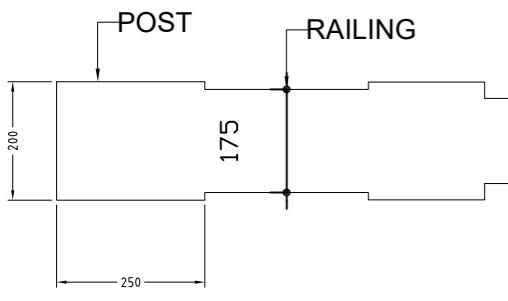
PLAN OF RAILING



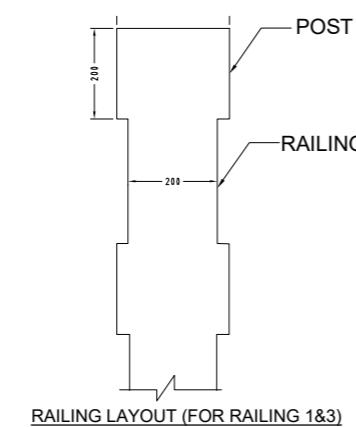
DETAILS OF OPERATING SLAB FOR VERTICAL LIFT GATE
SECTION 23-23



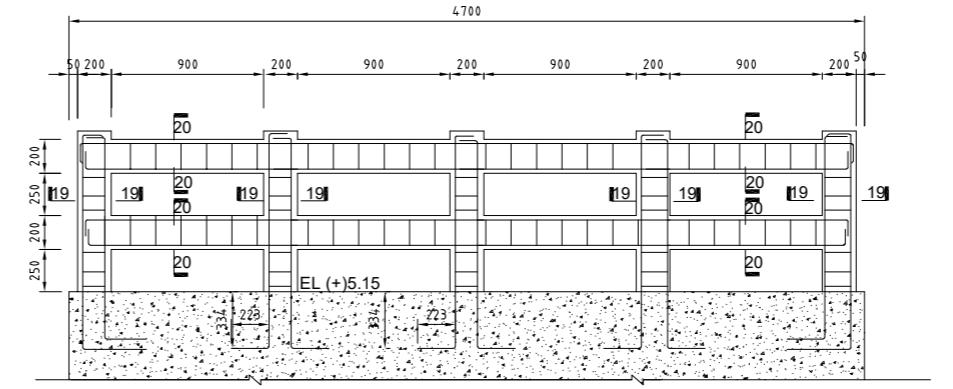
SECTION 24-24



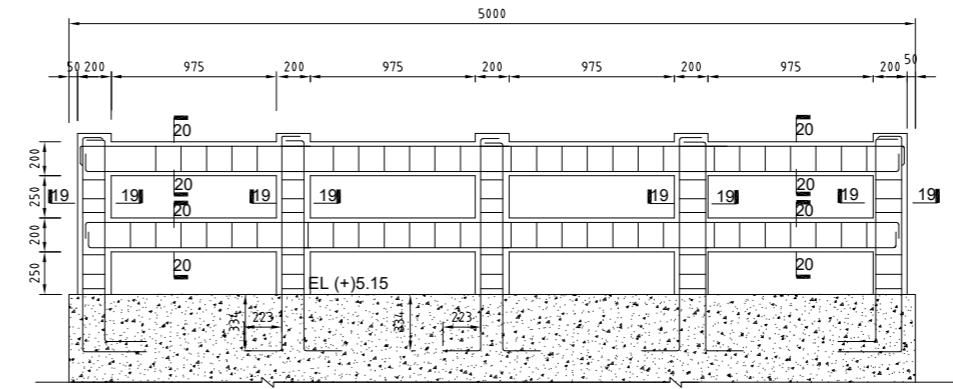
RAILING LAYOUT (FOR RAILING 2&4)



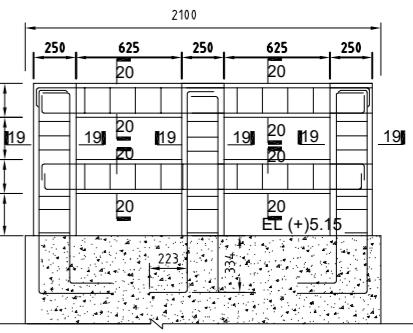
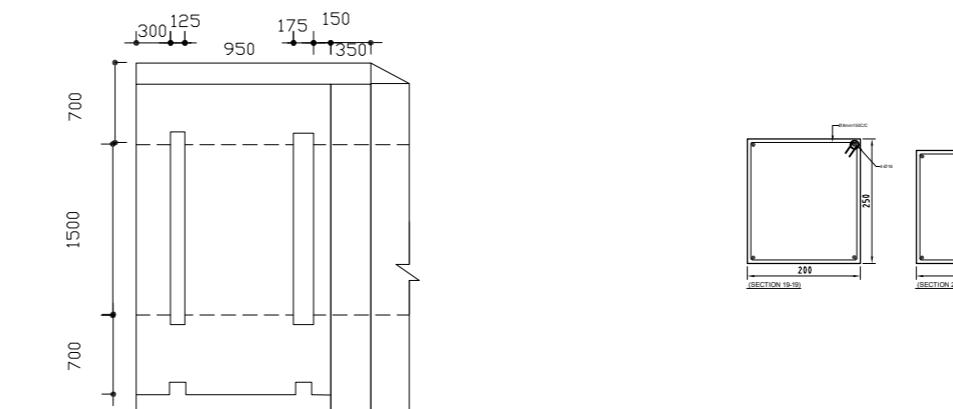
RAILING LAYOUT (FOR RAILING 1&3)



RAILING DETAIL NO-1



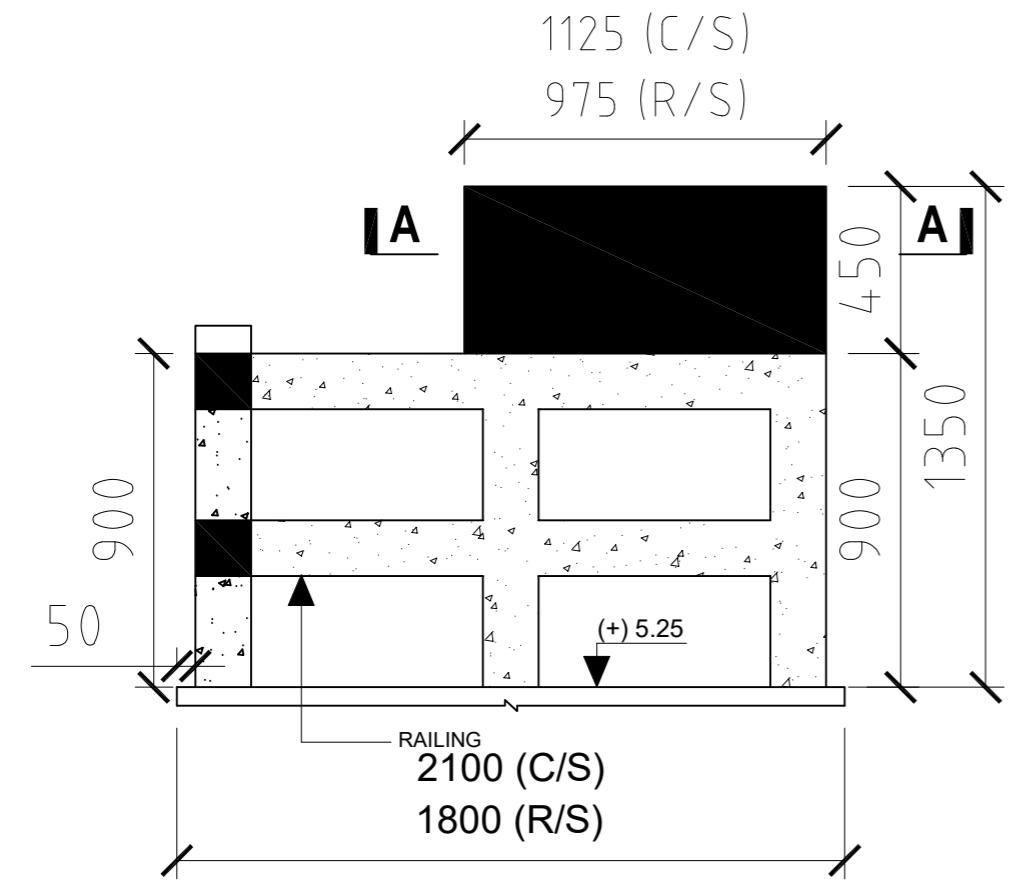
RAILING DETAIL NO-3



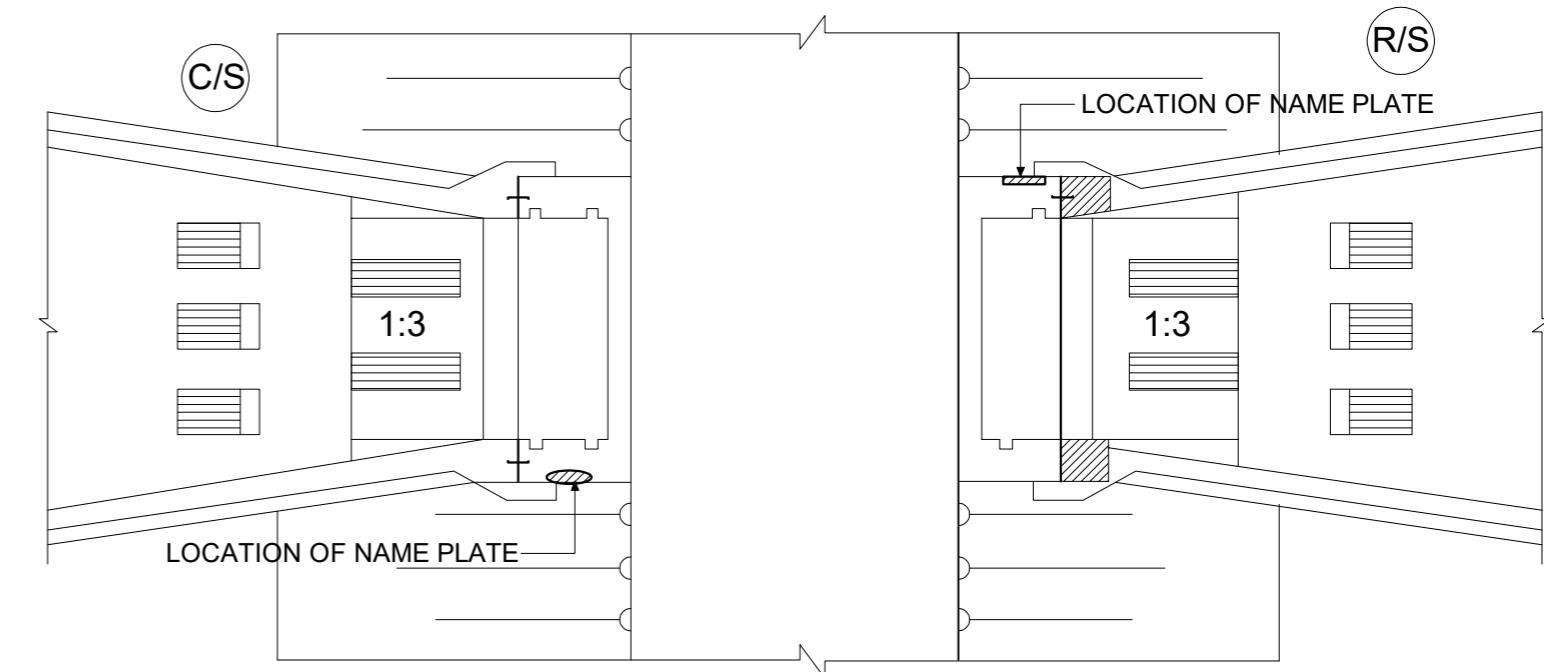
RAILING DETAIL NO-2 C/S

PLAN OF OPERATING SLAB FOR
VERTICAL LIFT GATE

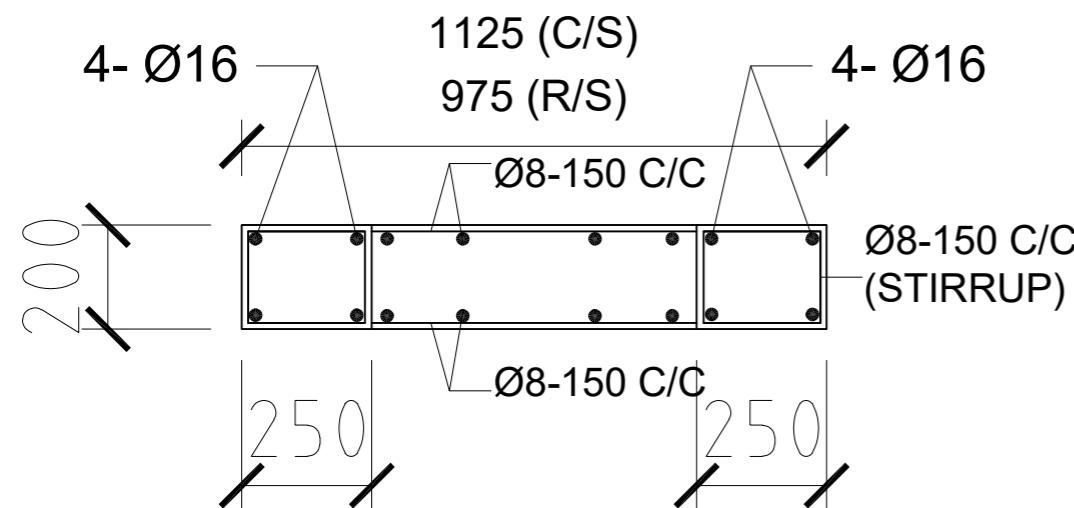
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH MINISTRY OF WATER RESOURCES BANGLADESH WATER DEVELOPMENT BOARD					
CONSULTANCY SERVICES FOR FEASIBILITY STUDIES AND PREPARATION OF DETAILED DESIGN FOR THE COASTAL LIVELIHOOD IMPROVEMENT AND ADAPTATION ENHANCEMENT PROJECT (CLIMATE) (CONTRACT NO: CEIP-1/D3/S23)					
BANGLADESH WATER DEVELOPMENT BOARD			DETAILED DESIGN OF PROPOSED NEW DRAINAGE SLUICE DS- 2 (2V-1.50m x 1.80m) AT Km 12+140 IN POLDER 7/1 UNDER CLIMATE PROJECT, BWDB, DISTRICT-SATKHIRA		
DESIGN CIRCLE-8			RAILING REINFORCEMENT DETAILS		
CHECKED BY:	REVIEWED BY:	APPROVED BY:	DESIGNED BY:	CHECKED BY:	REVIEWED BY:
ASSISTANT ENGINEER	EXECUTIVE ENGINEER	SUPERINTENDING ENGINEER	MD. NAZMUL HAQUE DESIGN ENGINEER	K M HUMAYUN KABIR Sr. DESIGN ENGINEER	MD. MOHAMMAD ALI DEPUTY TEAM LEADER
			DRG NO: 24 OF 25	DRAWN BY: ASADUZZAMAN RAHAT	DATE: 16-04-2023
			CONSULTANT:	Royal HaskoningDHV nmc SJMCS CGIS	development consultants limited EFCMC Working for safe living



ELEVATION



PLAN SHOWING NAME PLATE LOCATION ON REGULATOR



SECTION A-A'

BANGLADESH WATER DEVELOPMENT BOARD			NAMEPLATE DETAILS			
DESIGN CIRCLE-8						
CHECKED BY:	REVIEWED BY:	APPROVED BY:	DESIGNED BY:	CHECKED BY:	REVIEWED BY:	CHECKED & RECOMMENDED BY:
ASSISTANT ENGINEER	EXECUTIVE ENGINEER	SUPERINTENDING ENGINEER	MD. NAZMUL HAQUE DESIGN ENGINEER	K M HUMAYUN KABIR Sr. DESIGN ENGINEER	MD. MOHAMMAD ALI DEPUTY TEAM LEADER	JEAN HENRY LABOYRIE TEAM LEADER
			DRG NO: 1 OF 25	DRAWN BY: ASADUZZAMAN RAHAT		DATE: 16-04-2023
			CONSULTANT:	Royal HaskoningDHV	nmc	SLMC
				geogis	development consultants limited	FMCI