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**DRAFT**

**GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH  
MINISTRY OF WATER RESOURCES**



**BANGLADESH WATER DEVELOPMENT BOARD (BWDB)**

**Consultancy Services for Detailed Design, Construction Supervision and Project Management Support under**

**COASTAL EMBANKMENT IMPROVEMENT PROJECT, PHASE-1, (CEIP-1)**

**DETAILED DESIGN OF DRAINAGE REGULATOR DR-5, AT Km 18.950 (1V-1.50m X 1.80m) UNDER  
POLDER - 16, PACKAGE -3, CEIP - 1, BWDB, UPAZILA - PAIKGACHA, DISTRICT - KHULNA.**

**POLDER: 16**

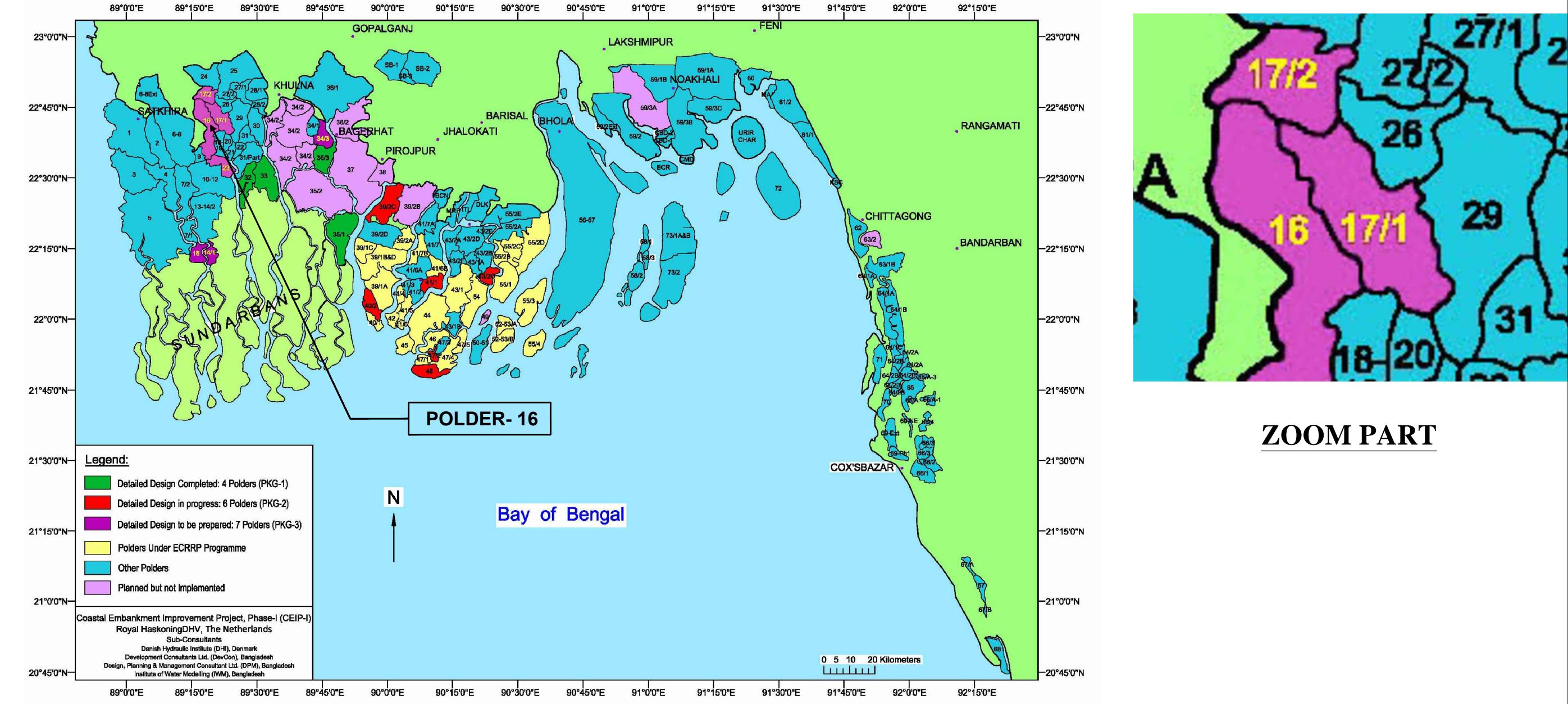
**APRIL, 2022**



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DRAINAGE REGULATOR DR-5 (1V-1.50m x1.80m) UNDER POLDER 16

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3	SITE PLAN (DR -5 Km-18.950)	DR/SHEET 3 OF 31
4	BORE LOGS (BH-1, BH-2 & BH-3)	DR/SHEET 4 OF 31
5	GENERAL NOTES	DR/SHEET 5 OF 31
6	PLAN & SECTION	DR/SHEET 6 OF 31
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30	PLAN, ELEVATION AND DETAILS OF NAME PLATE	DR/SHEET 30 OF 31
31	DETAILS OF DIVERSION CHANNEL	DR/SHEET 31 OF 31



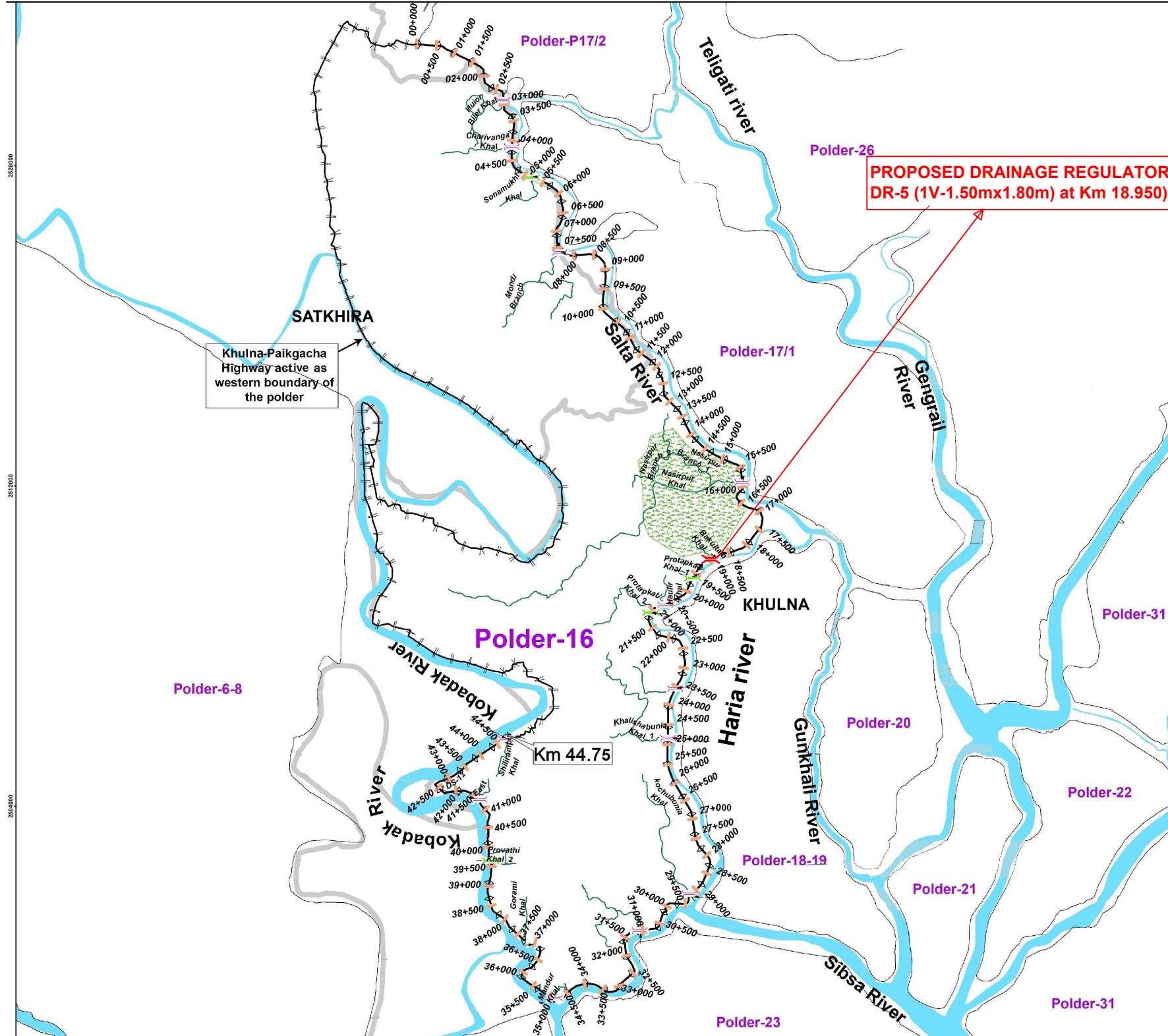
## LOCATION MAP

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH			
MINISTRY OF WATER RESOURCES			
BANGLADESH WATER DEVELOPMENT BOARD			
COASTAL EMBANKMENT IMPROVEMENT PROJECT, PHASE-1 (CEIP-1)			
DETAILED DESIGN OF DRAINAGE REGULATOR DR-5, AT Km 18.950 (1V-1.50m X 1.80m) UNDER POLDER -16, PACKAGE - 3, CEIP - 1, BWDB, UPAZILA - PAIKGACHA, DISTRICT - KHULNA.			
<b>LOCATION MAP</b>			
CONSULTANT : Royal HaskoningDHV Sub Consultants DEVCON, DPM, IWM & DHI			
DESIGNED & CHECKED BY		REVIEWED BY	RECOMMENDED BY
MD. MAHBUBUR RAHMAN		MD. HABIBUR RAHMAN	JEAN HENRY LABOYRIE
DESIGN ENGINEER		DEPUTY TEAM LEADER	TEAM LEADER
DRAWN BY- CAD OPERATOR - MST. MOUSUMI KHATUN			

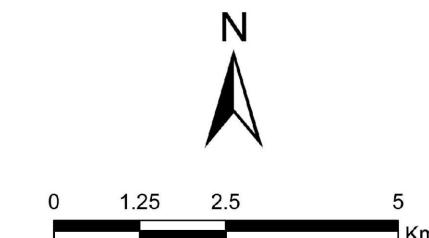
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### BANGLADESH WATER DEVELOPMENT BOARD

DESIGN CIRCLE -8			APPROVED BY
CHECKED BY	REVIEWED BY	RECOMMENDED BY	
ZAYED BIN SAIF ASSISTANT ENGINEER	ZAKARIA PERVEZ EXECUTIVE ENGINEER	MOHAMMAD SAIF UDDIN SUPERINTENDING ENGINEER	MD. ENAYET ULLAH CHIEF ENGINEER, DESIGN
DATED: 00-00-0000	DWG NO.: DC-8-CEIP-1(P-16)-0000-01/31		

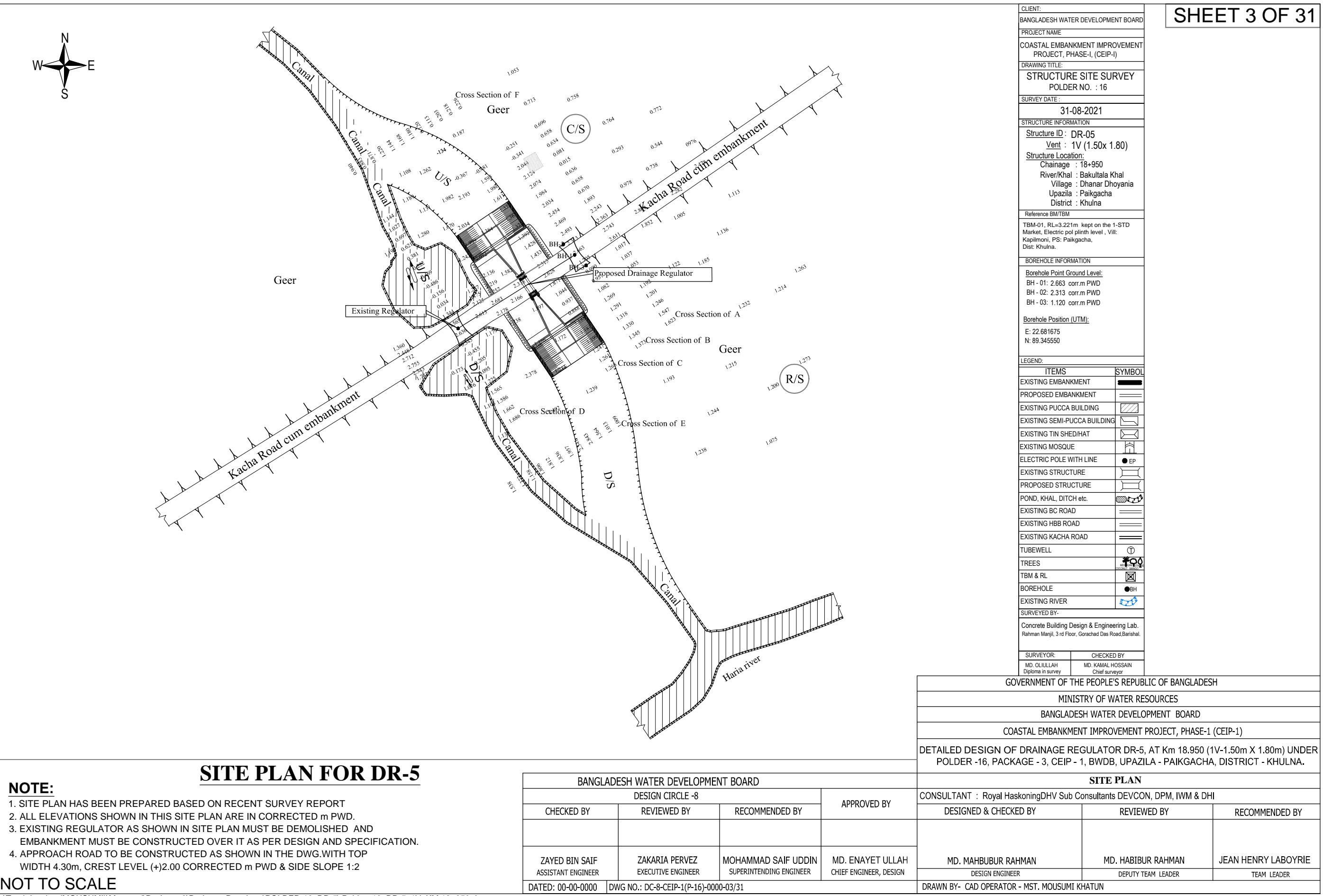


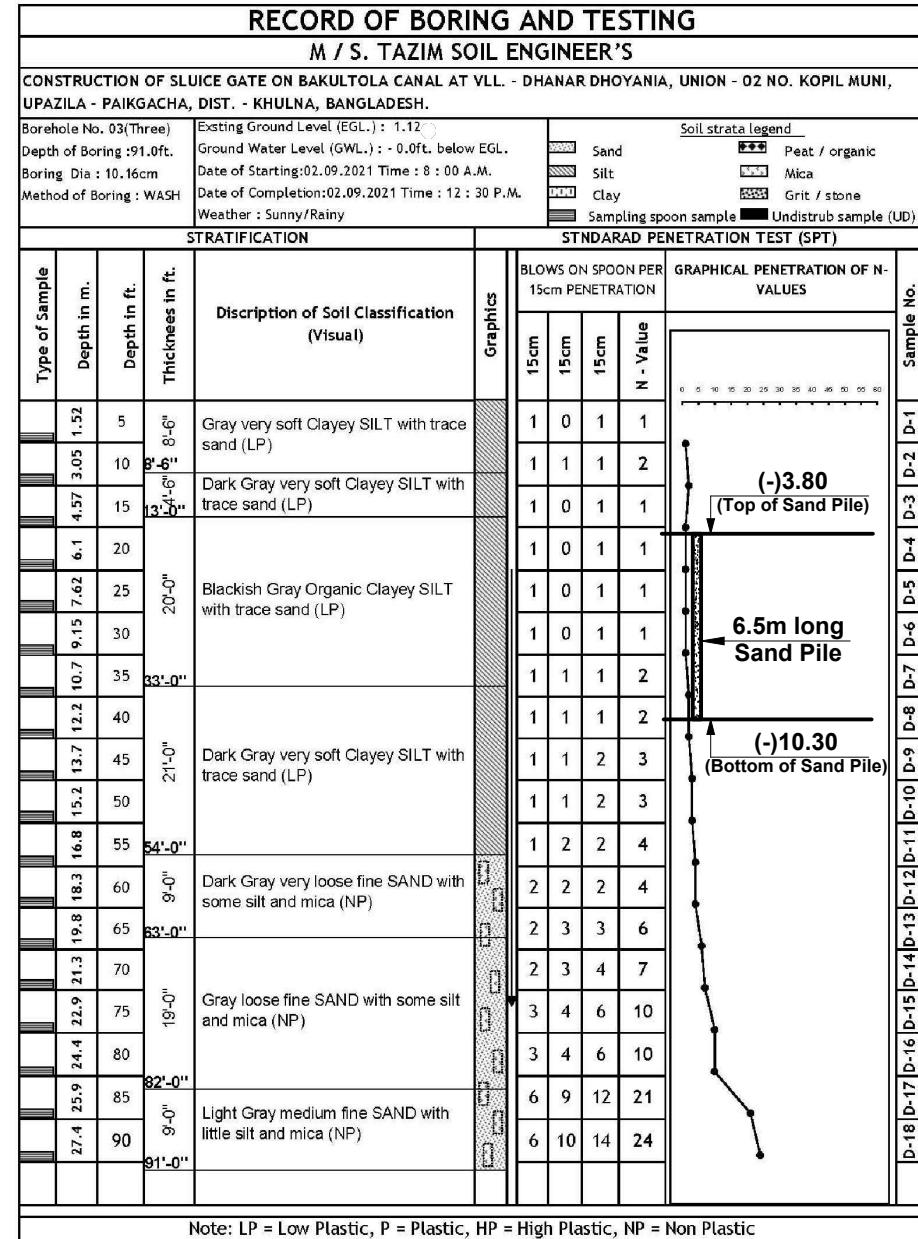
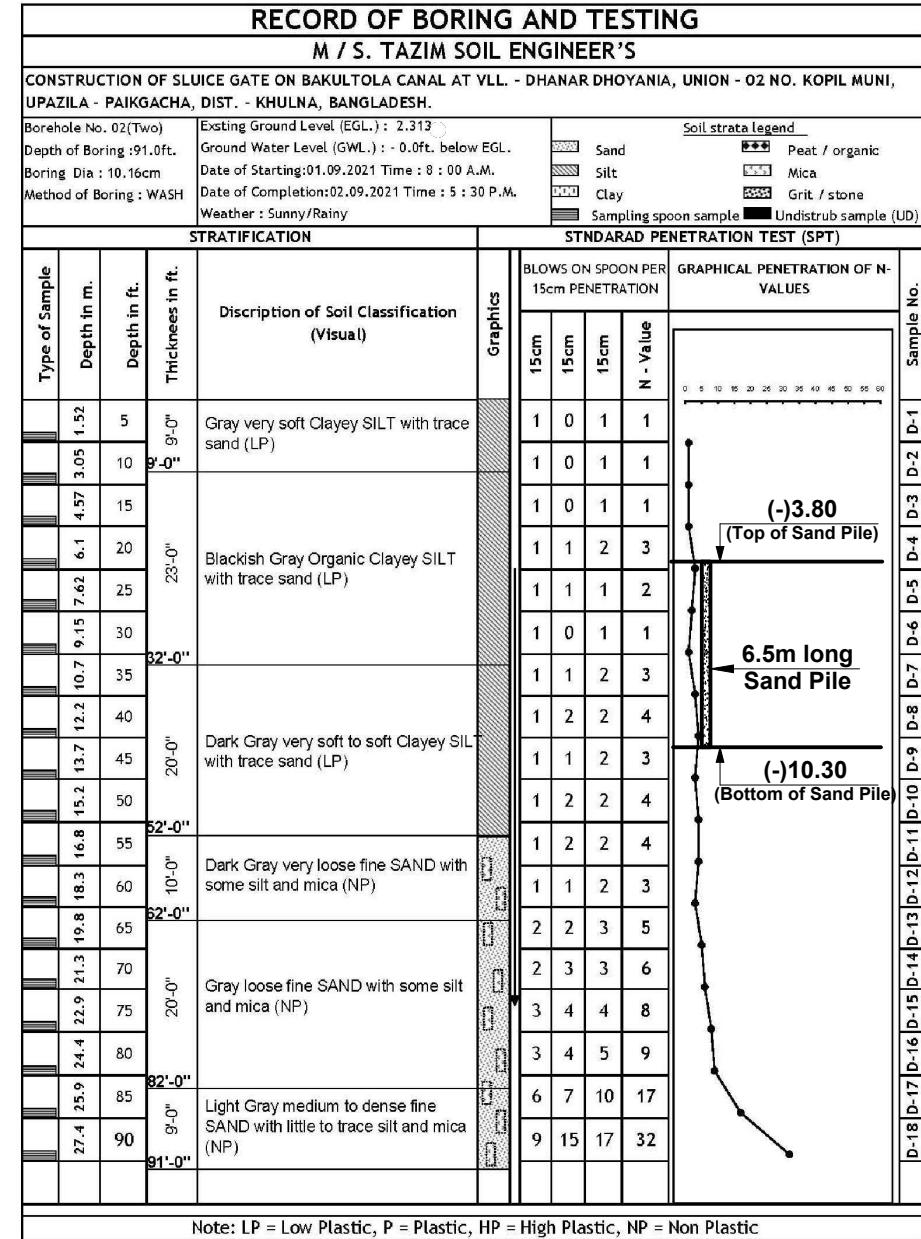
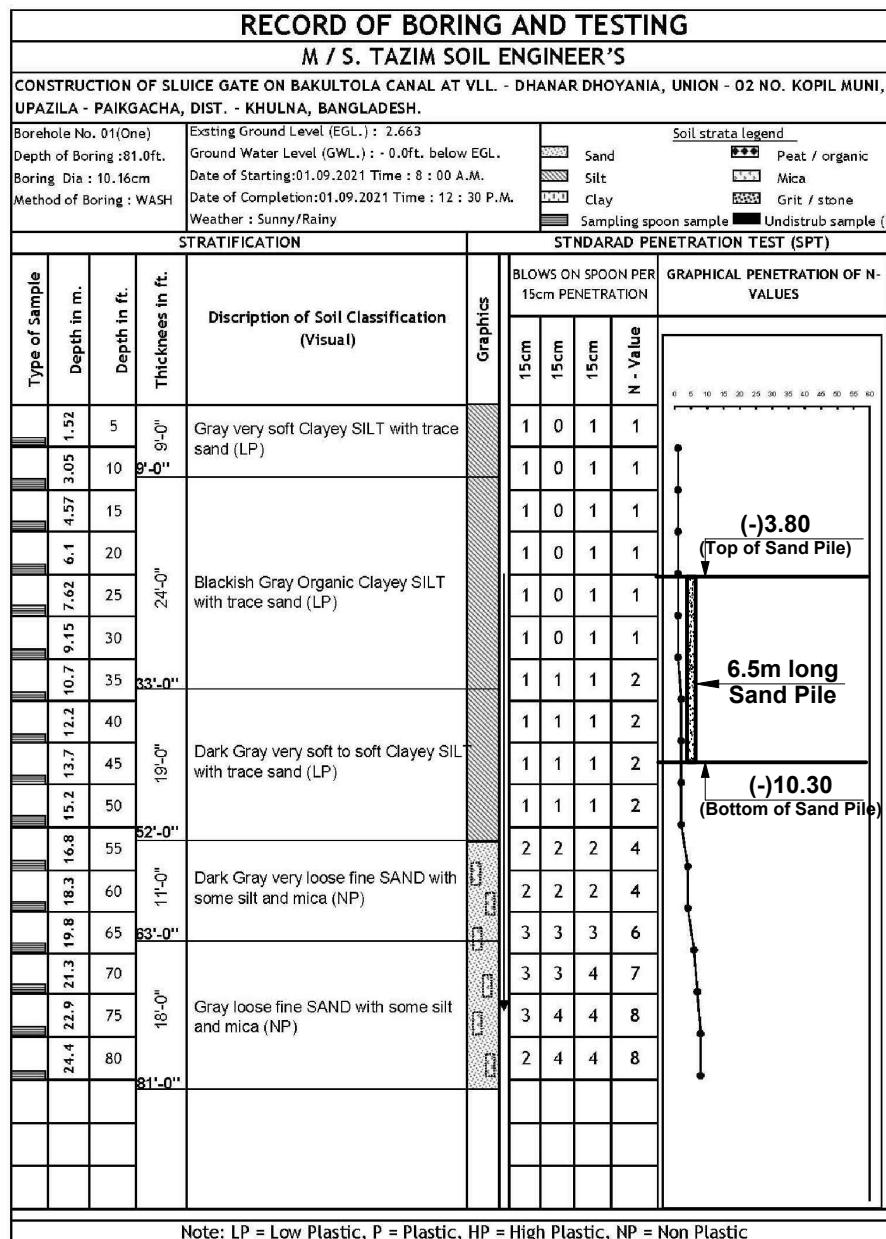
## Coastal Embankment Improvement Project, Phase-1 (CEIP-1)



GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
MINISTRY OF WATER RESOURCES
BANGLADESH WATER DEVELOPMENT BOARD
COASTAL EMBANKMENT IMPROVEMENT PROJECT, PHASE-1 (CEIP-1)
DETAILED DESIGN OF DRAINAGE REGULATOR DR-5, AT Km 18.950 (1V-1.50m X 1.80m) UNDER POLDER -16, PACKAGE - 3, CEIP - 1, BWDB, UPAZILA - PAIKGACHA, DISTRICT - KHULNA.

POLDER MAP			
DESIGN CIRCLE -8			APPROVED BY
CHECKED BY	REVIEWED BY	RECOMMENDED BY	
ZAYED BIN SAIF ASSISTANT ENGINEER	ZAKARIA PERVEZ EXECUTIVE ENGINEER	MOHAMMAD SAIF UDDIN SUPERINTENDING ENGINEER	MD. ENAYET ULLAH CHIEF ENGINEER, DESIGN
DATED: 00-00-0000	DWG NO.: DC-8-CEIP-1(P-16)-0000-02/31		DRAWN BY- CAD OPERATOR - MST. MOUSUMI KHATUN





### BORE LOG BH-1 (FOR DR-5) (BARREL SIDE)

### BORE LOG BH-2 (FOR DR-5) (COUNTRY SIDE)

### BORE LOG BH-3 (FOR DR-5) (RIVER SIDE)

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MINISTRY OF WATER RESOURCES

BANGLADESH WATER DEVELOPMENT BOARD

COASTAL EMBANKMENT IMPROVEMENT PROJECT, PHASE-1 (CEIP-1)

DETAILED DESIGN OF DRAINAGE REGULATOR DR-5, AT Km 18.950 (1V-1.50m X 1.80m) UNDER POLDER -16, PACKAGE - 3, CEIP - 1, BWDB, UPAZILA - PAIKGACHA, DISTRICT - KHULNA.

BORE LOGS (BH-1, BH-2 &amp; BH-3)

CONSULTANT : Royal HaskoningDHV Sub Consultants DEVCON, DPM, IWM &amp; DHI

DESIGNED &amp; CHECKED BY      REVIEWED BY      RECOMMENDED BY

MD. MAHBUBUR RAHMAN      MD. HABIBUR RAHMAN      JEAN HENRY LABOYRIE

DESIGN ENGINEER      DEPUTY TEAM LEADER      TEAM LEADER

DRAWN BY- CAD OPERATOR - MST. MOUSUMI KHATUN

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## GENERAL NOTES

1. TECHNICAL SPECIFICATION PREPARED BY CEIP-1 AND APPROVED BY BWDB SHOULD BE FOLLOWED.
2. ALL DIMENSIONS ARE IN MILLIMETERS AND ALL ELEVATIONS ARE IN CORRECTED m PWD UNLESS OTHERWISE MENTIONED IN THE DRAWINGS.
3. COMPRESSIVE STRENGTH OF REINFORCED CEMENT CONCRETE SHALL HAVE MINIMUM 37 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,  $f_y \geq 414.00 \text{ N/mm}^2$ . (MADE FROM BILLET) IN R.C.C. WORK.
5. CONCRETE FOR CC BLOCKS SHALL HAVE MINIMUM STRENGTH,  $f_c \geq 18.00 \text{ N/mm}^2$  AT 37 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 AFTER THAT, SURFACE SHALL BE DRY PRIOR TO PLACEMENT OF ADJOINING CONCRETE.
9. CONCRETE MIXTURE SHALL BE POURED AS QUICK AS POSSIBLE BUT NOT LATER THAN 45 MINUTES AFTER MIXING.
10. 75 mm LEAN CONCRETE AT BASE SHALL BE IN 1:3:6.
11. THE LEAN CONCRETE AT FOUNDATION OF THE PROPOSED REGULATOR SHALL BE PLACED AFTER PROPERLY PREPARING & COMPACTING EXCAVATED BASE.
12. CLEAR COVER FOR REINFORCEMENT SHALL BE AS FOLLOWS:
  - a) Operating deck & Railing : 25mm
  - b) Concrete adjacent to earth at foundation: 75mm
  - c) Concrete adjacent to earth: 75mm
  - d) Concrete exposed to weather and water or others: 75mm
  - e) Beam: 40mm
13. MINIMUM LAP LENGTH SHALL BE 40 TIMES THE BAR DIAMETER.
14. LAP SHALL BE STAGGERED SO THAT NOT MORE THAN 50% OF BARS ARE LAPPED IN ANY ONE CROSS SECTION. WHERE BARS MUST LAPPED IN ONE CROSS SECTION, THEN LAP LENGTH SHALL NOT BE LESS THEN 1.30 TIMES MINIMUM LAP LENGTH.
15. REINFORCING BAR MUST BE SUPPORTED IN ITS PROPER POSITION BY USE OF MORTAR BLOCK, SUPPORTS OR BY OTHERS APPROVED MEANS.
16. 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.
17. UNLESS OTHERWISE SPECIFIED, BACK FILLING SHALL BE DONE WITH SAND (F.M  $\geq 0.80$ ) FREE FROM VEGETABLE ROOTS AND ORGANIC MATTER, BACK FILLING FOR U-SHAPED WALL SHALL BE DONE SIMULTANEOUSLY ON BOTH WALLS.
18. DESIGN OF GATE AND HOISTING SYSTEM WILL BE PREPARED BY CONSULTANT & SHALL BE VETTED BY DESIGN CIRCLE-III, BWDB, DHAKA.
19. GATE TO BE OPERATED IN CONTROLLED WAY TO AVOID ANY SCOUR WHEN HEAD DIFFERENCE IS BEYOND 0.60m.
20. THE WORK SHALL BE EXECUTED AFTER ADMINISTRATIVE AND FINANCIAL APPROVAL FROM THE COMPETENT AUTHORITY AND WITHIN THE DPP/BUDGET PROVISION.
21. BM ESTABLISHED BY IWM (APRIL, 2015) SHOULD BE USED AS REFERENCE FOR SURVEY DURING EXECUTION OF WORK.
22. THE EMBEDDED PARTS OF GATE TO BE INSTALLED DURING CONSTRUCTION OF BARREL PART AND IT SHALL BE DONE IN ACCORDANCE WITH APPROVED MECHANICAL DRAWING .

**NOT TO SCALE**

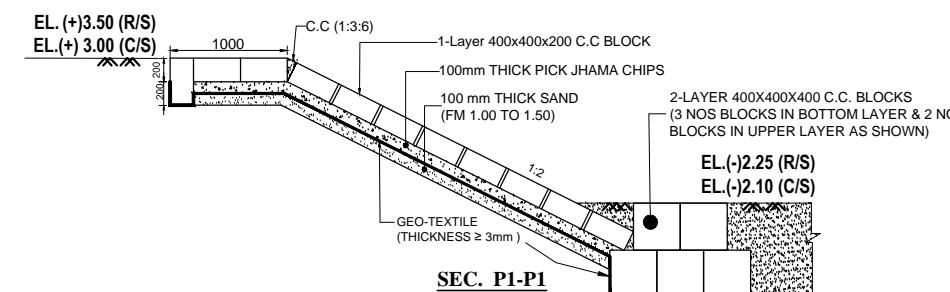
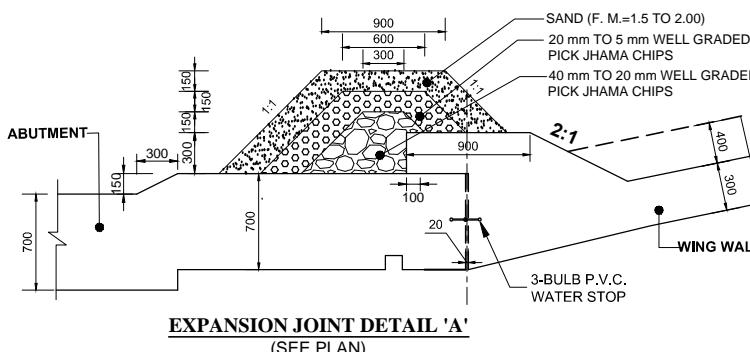
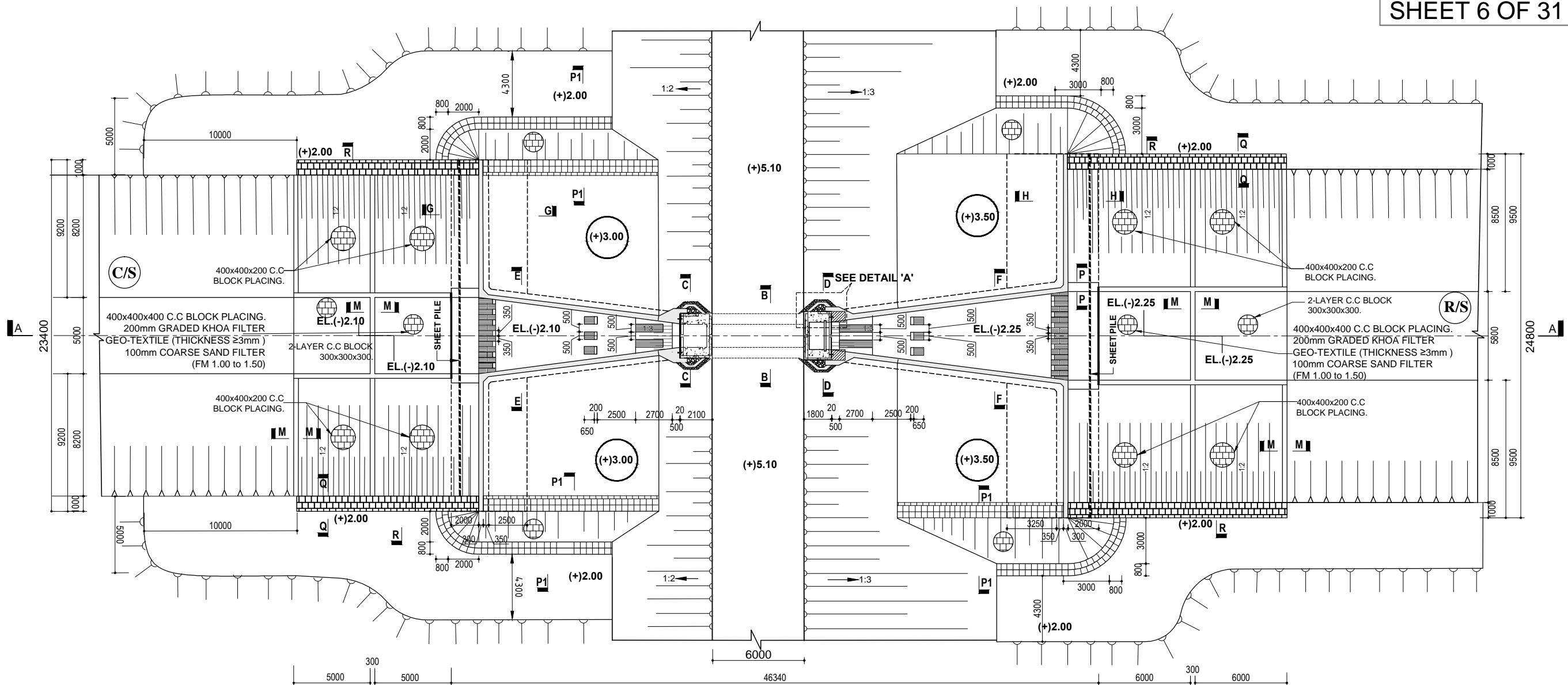
23. THE GATE SHALL BE INSTALLED BEFORE THE OPERATION OF THE STRUCTURE.
24. ANY ERROR/OMISSION IF DETECTED SHALL BE REFERRED TO THE CONCERNED DESIGN OFFICE THROUGH CEIP-1 CONSULTANTS FOR TAKING NECESSARY ACTION.
25. DIVERSION CHANNEL MUST BE EXCAVATED AS PER DRAWING ENCLOSED.
26. ALL BORE HOLES SHALL BE SEALED BEFORE CONSTRUCTION OF REGULATOR.
27. VENT SIZE & NUMBER AND INVERT LEVEL OF THIS REGULATOR HAVE BEEN FIXED AS PER MODEL STUDY BY IWM..

## NOTES FOR SHEET PILES:

1. HOT ROLLED SHEET PILE SHALL BE USED. COLD ROLLED SHEET PILE SHALL NEVER BE USED.
2. COATING SHALL BE PROVIDED OVER SHEET PILE IN THE FOLLOWING WAY:-
  - i) CLEAN THE SHEET PILE SURFACE PREFERABLY WITH SAND BLASTING.
  - ii) PROVIDE 1 (ONE) COAT OF ZINK PHOSPHATE AS PRIMARY COAT,
  - iii) PROVIDE 2 (TWO) COAT OF COALTAR EPOXY COAT OVER PRIMARY COAT.
3. THICKNESS OF SHEET PILE SHALL BE 10.50mm ( $\pm 0.50\text{mm}$ )
4. CONCERNED CONSULTANT & EXECUTIVE ENGINEER MUST ENSURE SHEET PILE LOCKING & LENGTH.
5. TOP LEVEL OF EVERY CONNECTED SHEET PILES MUST HAVE SAME LEVEL.

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NOTES			
CONSULTANT : Royal HaskoningDHV Sub Consultants DEVCON, DPM, IWM & DHI			
DESIGNED & CHECKED BY		REVIEWED BY	
MD. MAHBUBUR RAHMAN		MD. HABIBUR RAHMAN	
DESIGN ENGINEER		DEPUTY TEAM LEADER	
JEAN HENRY LABOYRIE		TEAM LEADER	
DRAWN BY- CAD OPERATOR - MST. MOUSUMI KHATUN			

BANGLADESH WATER DEVELOPMENT BOARD			
DESIGN CIRCLE -8			APPROVED BY
CHECKED BY	REVIEWED BY	RECOMMENDED BY	
ZAYED BIN SAIF ASSISTANT ENGINEER	ZAKARIA PERVEZ EXECUTIVE ENGINEER	MOHAMMAD SAIF UDDIN SUPERINTENDING ENGINEER	MD. ENAYET ULLAH CHIEF ENGINEER, DESIGN
DATED: 00-00-0000	DWG NO.: DC-8-CEIP-1(P-16)-0000-05/31		DRAWN BY- CAD OPERATOR - MST. MOUSUMI KHATUN



GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH  
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POLDER -16, PACKAGE - 3, CEIP - 1, BWDB, UPAZILA - PAIKGACHA, DISTRICT - KHULNA.

BANGLADESH WATER DEVELOPMENT BOARD

DESIGN CIRCLE -8

CHECKED BY      REVIEWED BY      RECOMMENDED BY

APPROVED BY

ZAYED BIN SAIF  
ASSISTANT ENGINEER

ZAKARIA PERVEZ  
EXECUTIVE ENGINEER

MOHAMMAD SAIF UDDIN  
SUPERINTENDING ENGINEER

MD. ENAYET ULLAH  
CHIEF ENGINEER, DESIGN

CONSULTANT : Royal HaskoningDHV Sub Consultants DEVCON, DPM, IWM & DHI

DESIGNED & CHECKED BY      REVIEWED BY      RECOMMENDED BY

MD. MAHBUBUR RAHMAN  
DESIGN ENGINEER

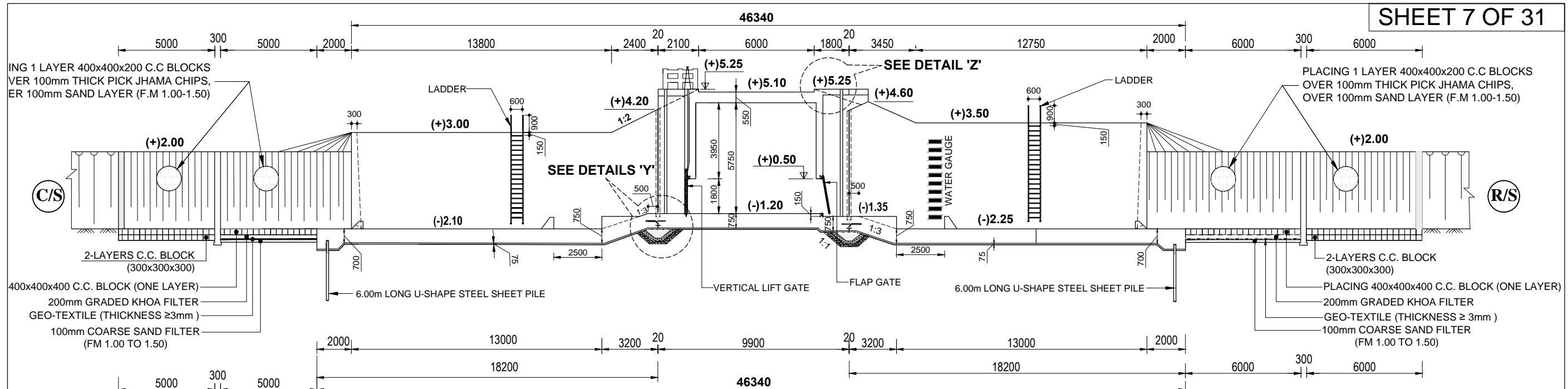
MD. HABIBUR RAHMAN  
DEPUTY TEAM LEADER

JEAN HENRY LABOYRIE  
TEAM LEADER

DATED: 00-00-0000 DWG NO.: DC-8-CEIP-1(P-16)-0000-6/31

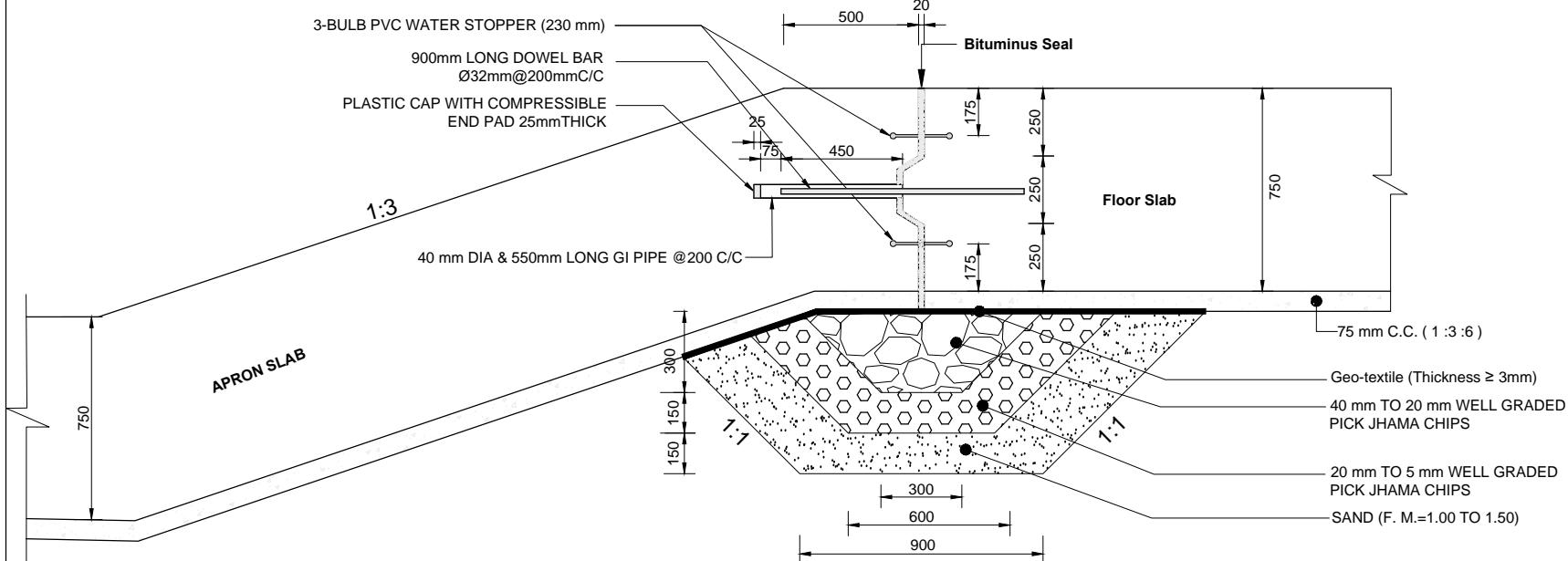
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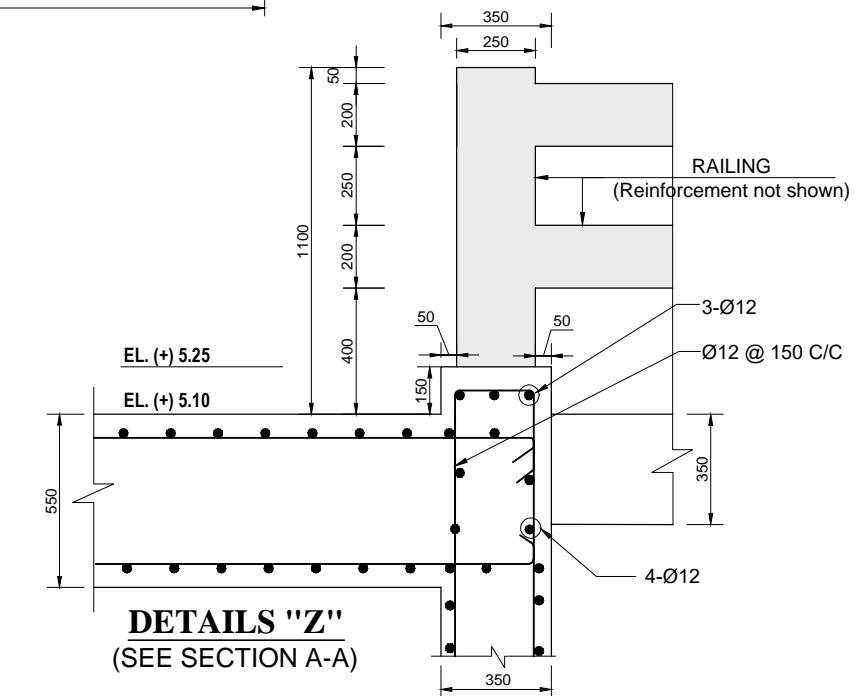
SECTIONAL ELEVATION (SECTION A-A)

(SAND PILE AND SAND FILLING UNDER BARREL, APRONS &amp; RETURN WALL ARE SHOWN IN SHEET NO 26, 27 &amp; 28 OF 31)



DETAILS "Y" [Reinforcement not shown]

(SEE SECTION A-A)



GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH

MINISTRY OF WATER RESOURCES

BANGLADESH WATER DEVELOPMENT BOARD

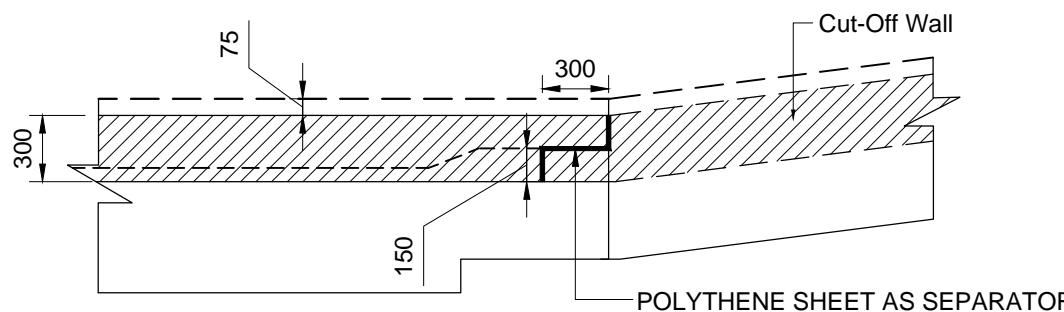
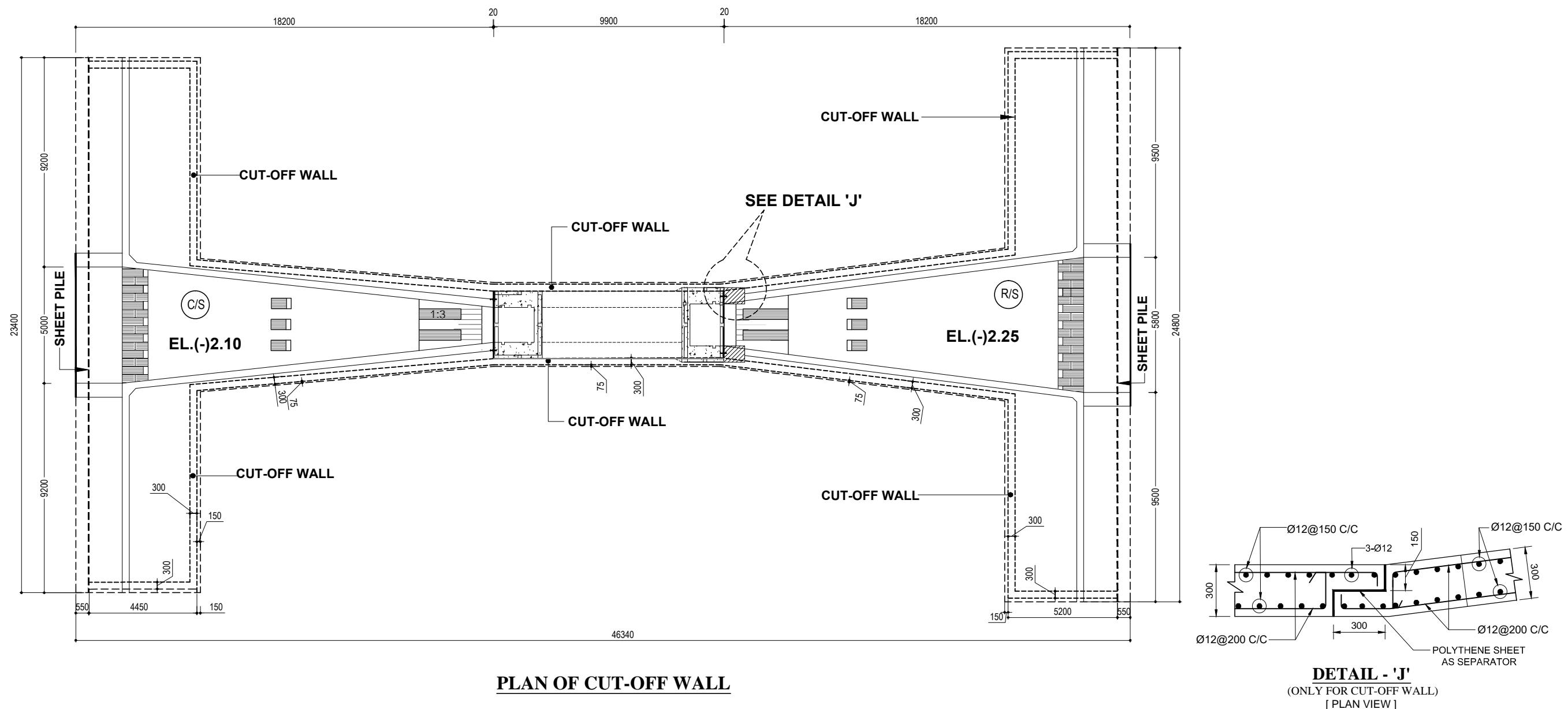
COASTAL EMBANKMENT IMPROVEMENT PROJECT, PHASE-1 (CEIP-1)

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## SECTIONAL ELEVATION &amp; DETAIL

BANGLADESH WATER DEVELOPMENT BOARD			APPROVED BY	SECTIONAL ELEVATION & DETAIL			SECTIONAL ELEVATION & DETAIL	
DESIGN CIRCLE -8		RECOMMENDED BY		CONSULTANT : Royal HaskoningDHV Sub Consultants DEVCON, DPM, IWM & DHI	DESIGNED & CHECKED BY	REVIEWED BY	RECOMMENDED BY	
CHECKED BY	REVIEWED BY	ZAYED BIN SAIF ASSISTANT ENGINEER	ZAKARIA PERVEZ EXECUTIVE ENGINEER	MOHAMMAD SAIF UDDIN SUPERINTENDING ENGINEER	MD. ENAYET ULLAH CHIEF ENGINEER, DESIGN	MD. MAHBUBUR RAHMAN	MD. HABIBUR RAHMAN	JEAN HENRY LABOYRIE
DATED: 00-00-0000	DWG NO.: DC-8-CEIP-1(P-16)-0000-7/31	DESIGN ENGINEER	DEPUTY TEAM LEADER	TEAM LEADER	DRAWN BY- CAD OPERATOR - MST. MOUSUMI KHATUN			

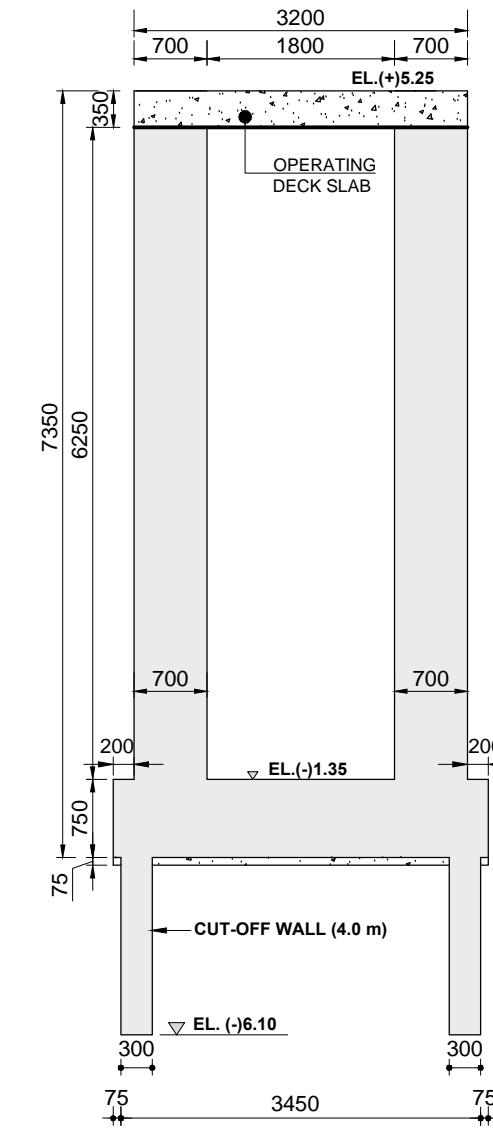
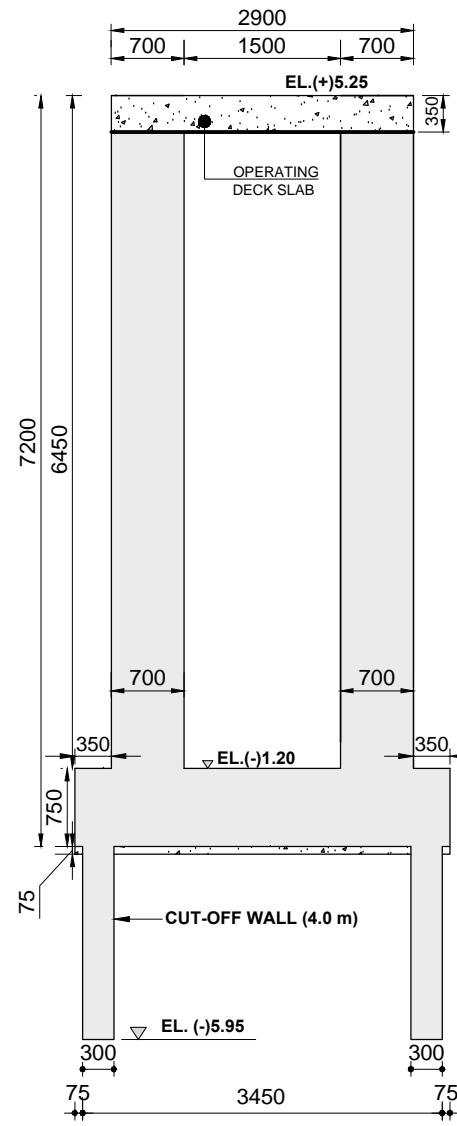
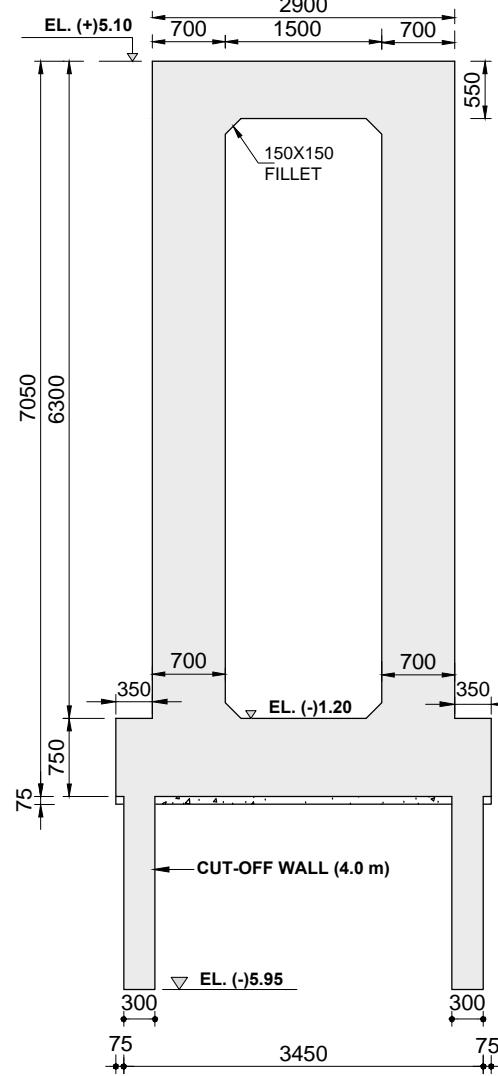
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## **DETAIL OF CUTT-OFF WALL AT JOINT**

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BANGLADESH WATER DEVELOPMENT BOARD			PLAN OF CUT-OFF WALL & DETAILS			
DESIGN CIRCLE -8			APPROVED BY	CONSULTANT : Royal HaskoningDHV Sub Consultants DEVCON, DPM, IWM & DHI		
CHECKED BY	REVIEWED BY	RECOMMENDED BY		DESIGNED & CHECKED BY	REVIEWED BY	RECOMMENDED BY
ZAYED BIN SAIF ASSISTANT ENGINEER	ZAKARIA PERVEZ EXECUTIVE ENGINEER	MOHAMMAD SAIF UDDIN SUPERINTENDING ENGINEER	MD. ENAYET ULLAH CHIEF ENGINEER, DESIGN	MD. MAHBUBUR RAHMAN	MD. HABIBUR RAHMAN	JEAN HENRY LABOYRIE
DATED: 00-00-0000	DWG NO.: DC-8-CEIP-1(P-16)-0000-8/31	DRAWN BY- CAD OPERATOR - MST, MOUSUMI KHATUN				



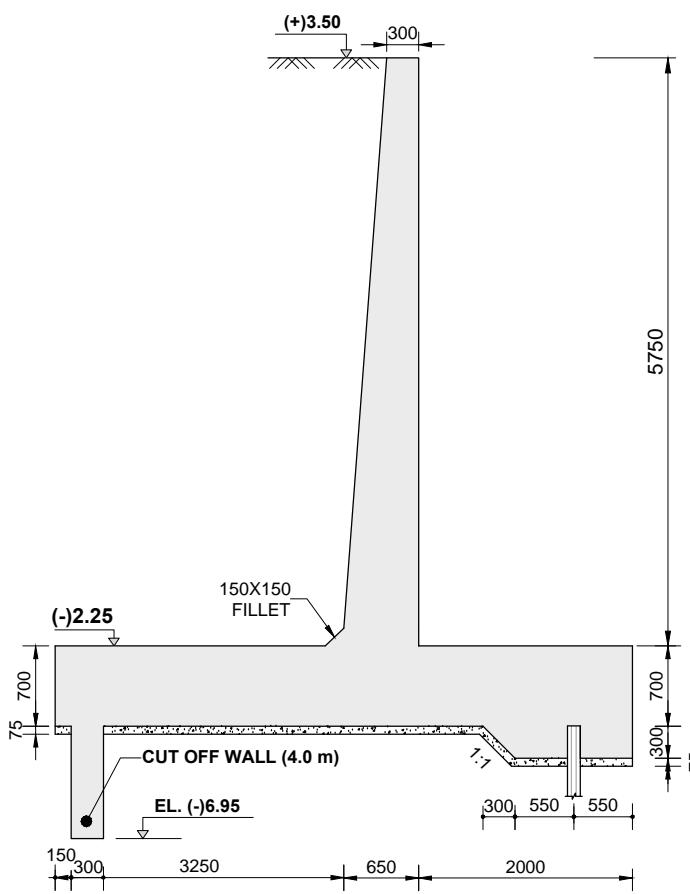
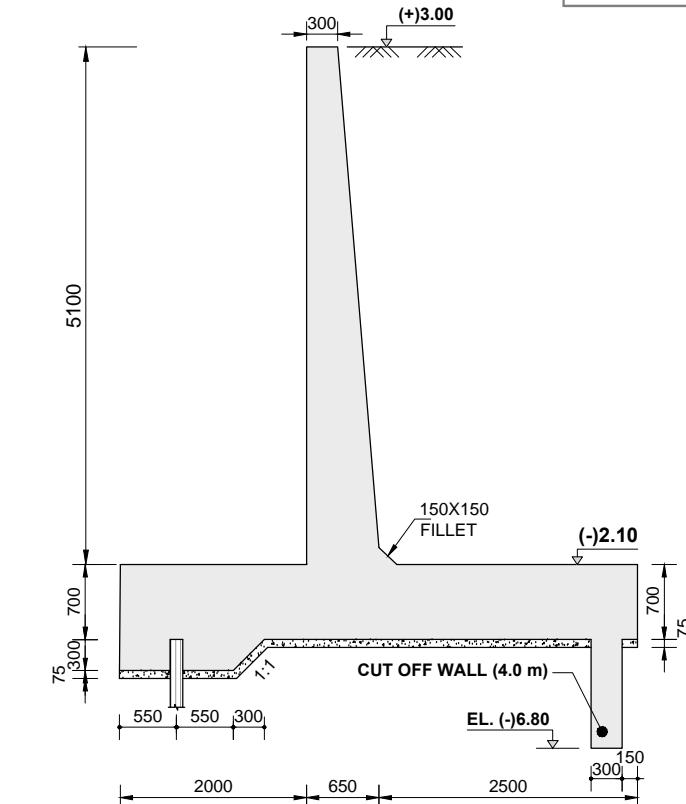
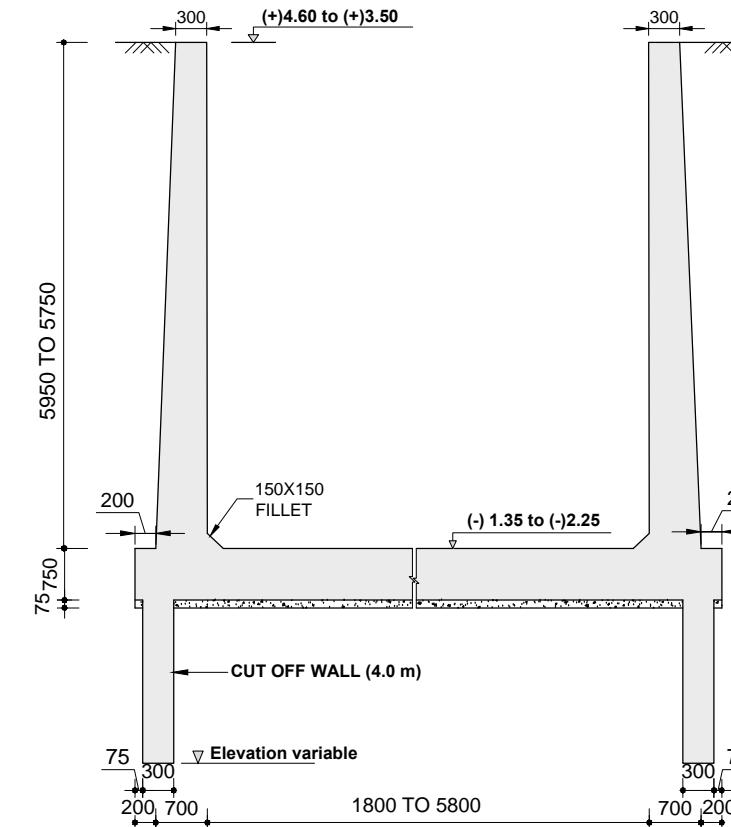
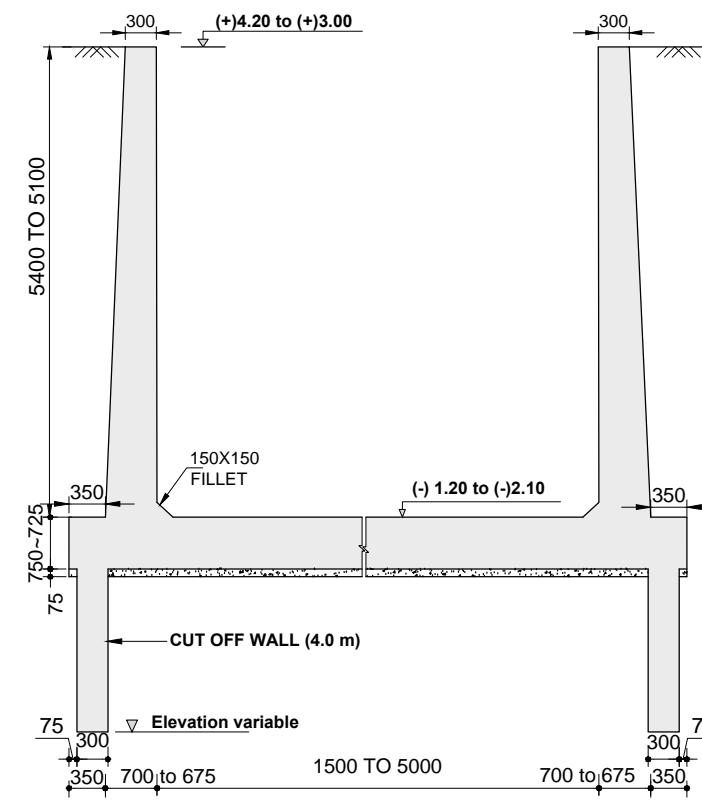
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GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH			
MINISTRY OF WATER RESOURCES			
BANGLADESH WATER DEVELOPMENT BOARD			
COASTAL EMBANKMENT IMPROVEMENT PROJECT, PHASE-1 (CEIP-1)			
DETAILED DESIGN OF DRAINAGE REGULATOR DR-5, AT Km 18.950 (1V-1.50m X 1.80m) UNDER POLDER -16, PACKAGE - 3, CEIP - 1, BWDB, UPAZILA - PAIKGACHA, DISTRICT - KHULNA.			
CONCRETE OUTLINE OF BARREL & EXTENDED PART			
DESIGN CIRCLE -8		APPROVED BY	CONSULTANT : Royal HaskoningDHV Sub Consultants DEVCON, DPM, IWM & DHI
CHECKED BY	REVIEWED BY		DESIGNED & CHECKED BY
ZAYED BIN SAIF ASSISTANT ENGINEER	ZAKARIA PERVEZ EXECUTIVE ENGINEER	MD. ENAYET ULLAH CHIEF ENGINEER, DESIGN	REVIEWED BY
MD. MAHBUBUR RAHMAN DESIGN ENGINEER	MD. HABIBUR RAHMAN DEPUTY TEAM LEADER	TEAM LEADER	
DRAWN BY- CAD OPERATOR - MST. MOUSUMI KHATUN			

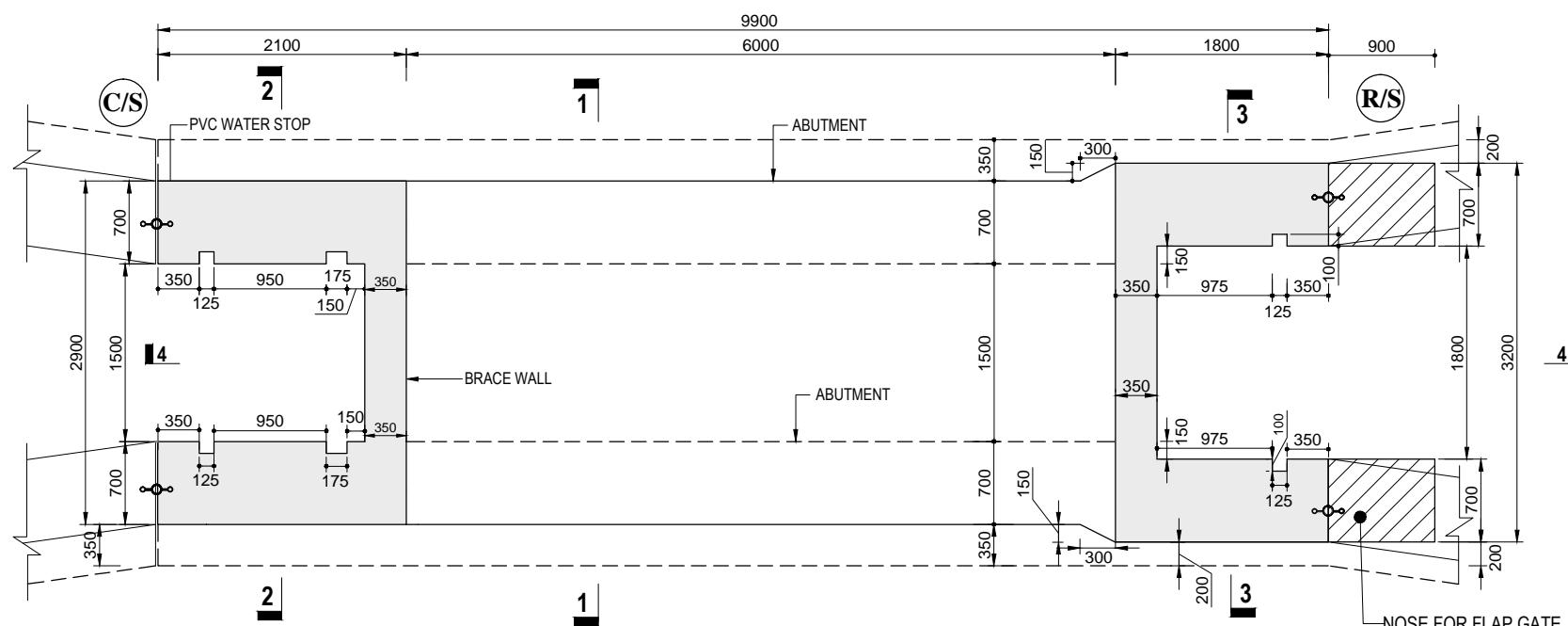
## BANGLADESH WATER DEVELOPMENT BOARD

DESIGN CIRCLE -8			APPROVED BY
CHECKED BY	REVIEWED BY	RECOMMENDED BY	
ZAYED BIN SAIF ASSISTANT ENGINEER	ZAKARIA PERVEZ EXECUTIVE ENGINEER	MOHAMMAD SAIF UDDIN SUPERINTENDING ENGINEER	MD. ENAYET ULLAH CHIEF ENGINEER, DESIGN
DATED: 00-00-0000	DWG NO.: DC-8-CEIP-1(P-16)-0000-9/31		



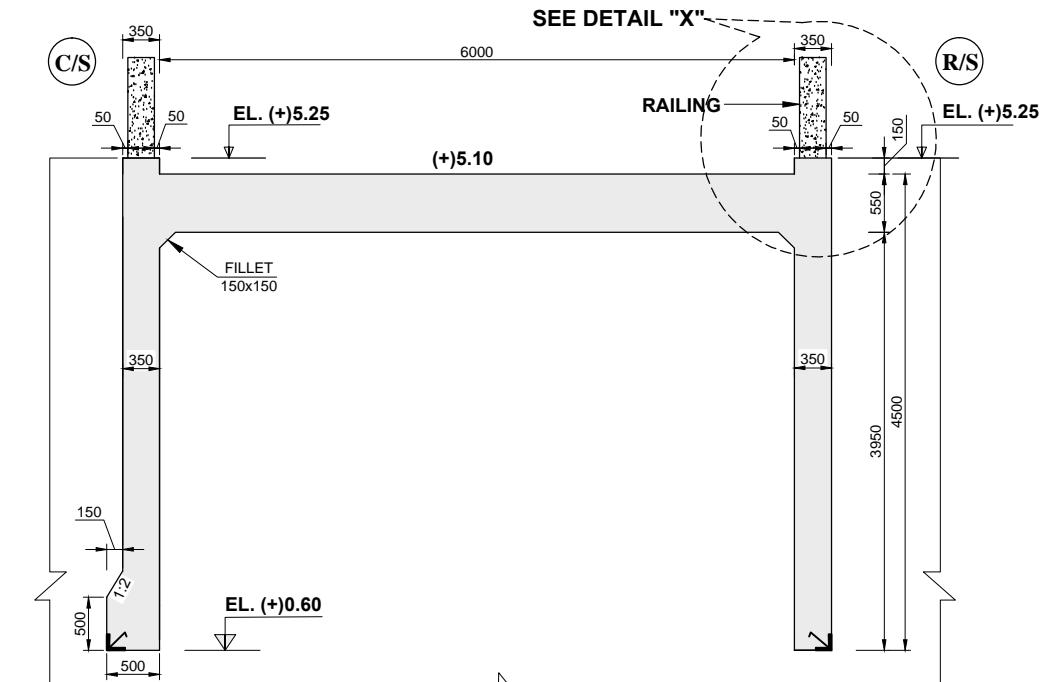
NOT TO SCALE

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH			
MINISTRY OF WATER RESOURCES			
BANGLADESH WATER DEVELOPMENT BOARD			
COASTAL EMBANKMENT IMPROVEMENT PROJECT, PHASE-1 (CEIP-1)			
DETAILED DESIGN OF DRAINAGE REGULATOR DR-5, AT Km 18.950 (1V-1.50m X 1.80m) UNDER POLDER -16, PACKAGE - 3, CEIP - 1, BWDB, UPAZILA - PAIKGACHA, DISTRICT - KHULNA.			
CONCRETE OUTLINE OF WING WALL & RETURN WALL			
BANGLADESH WATER DEVELOPMENT BOARD			
DESIGN CIRCLE -8			APPROVED BY
CHECKED BY	REVIEWED BY	RECOMMENDED BY	
ZAYED BIN SAIF ASSISTANT ENGINEER	ZAKARIA PERVEZ EXECUTIVE ENGINEER	MOHAMMAD SAIF UDDIN SUPERINTENDING ENGINEER	MD. ENAYET ULLAH CHIEF ENGINEER, DESIGN
DATE: 00-00-0000	DWG NO.: DC-8-CEIP-1(P-16)-0009-10/31	DRAWN BY- CAD OPERATOR - MST. MOUSUMI KHATUN	

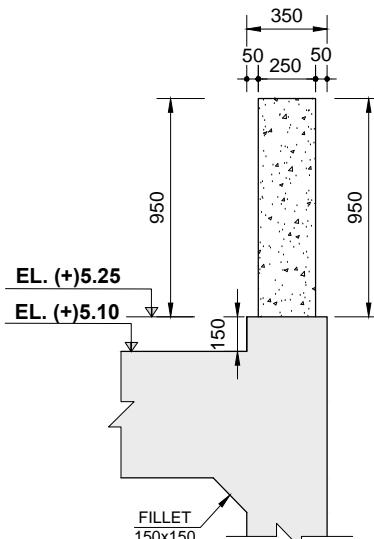


CONCRETE OUTLINE OF BARREL, EXTENDED PART &amp; BRACE WALL

SCALE = 1:40



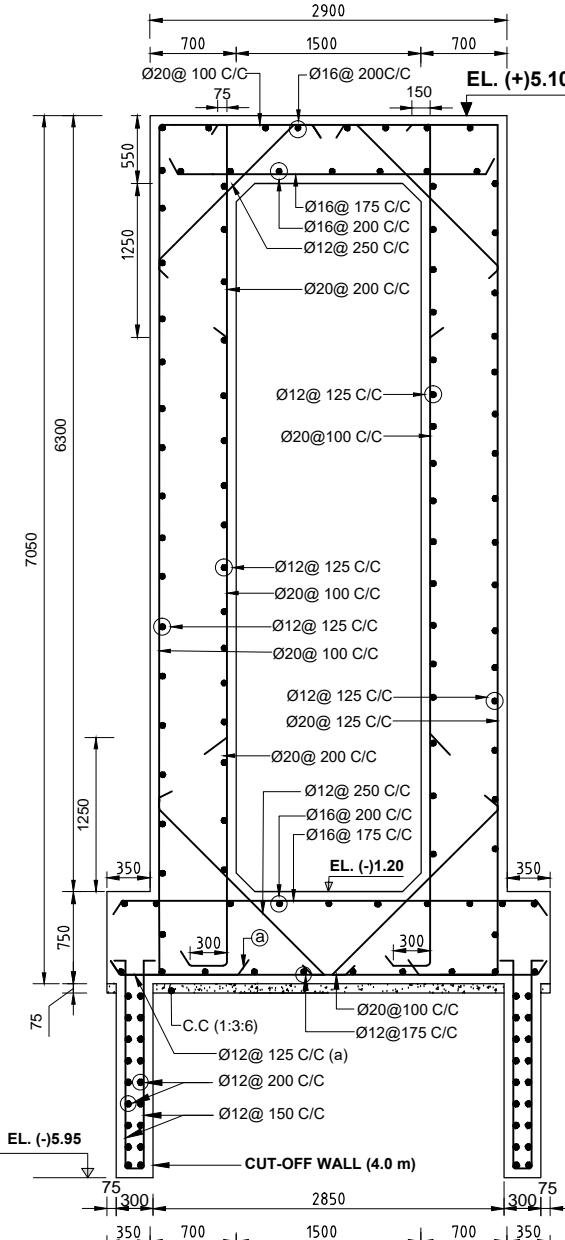
CONCRETE OUTLINE OF BRACE WALL &amp; BOX TOP SLAB



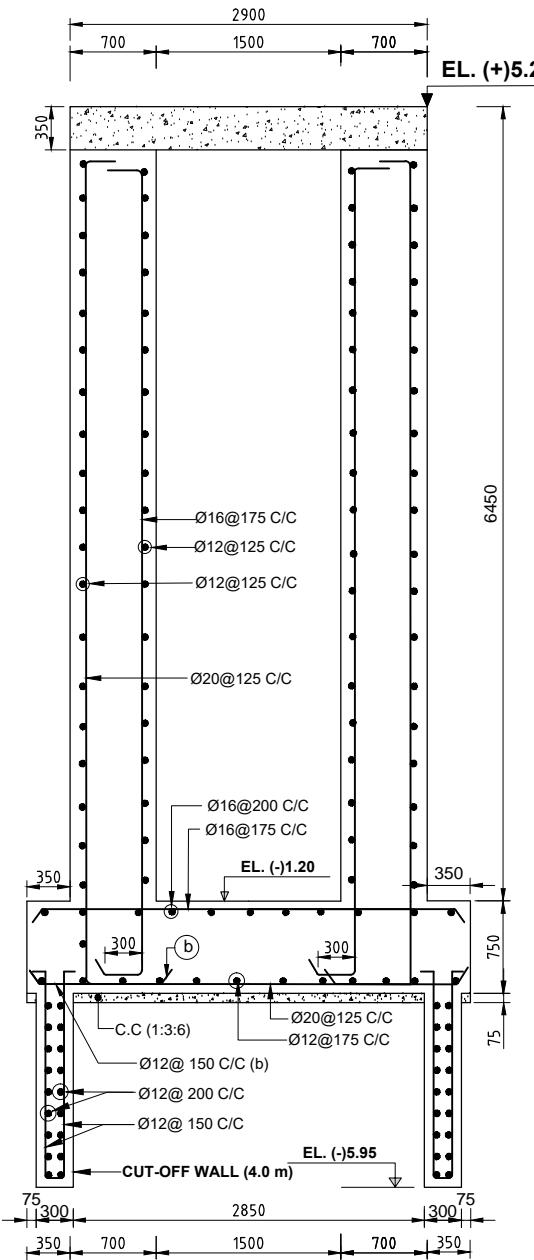
DETAIL "X"

NOT TO SCALE

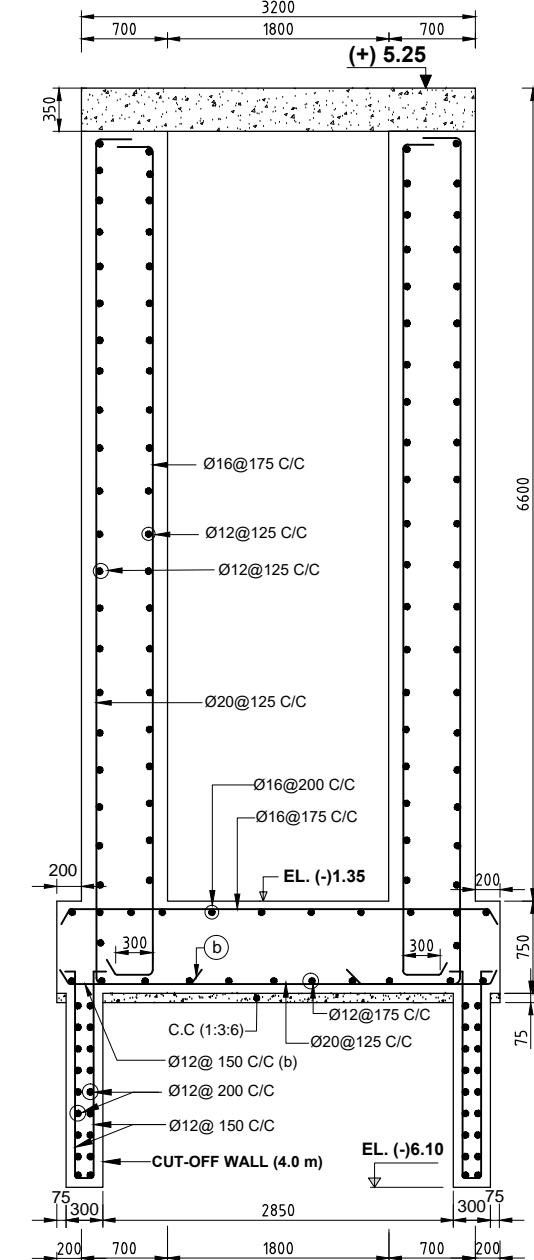
BANGLADESH WATER DEVELOPMENT BOARD				CONCRETE OUTLINE OF ABUTMENT, HEADWALL & BOX			
DESIGN CIRCLE -8			APPROVED BY	CONSULTANT : Royal HaskoningDHV Sub Consultants DEVCON, DPM, IWM & DHI			
CHECKED BY	REVIEWED BY	RECOMMENDED BY		DESIGNED & CHECKED BY	REVIEWED BY	RECOMMENDED BY	
ZAYED BIN SAIF ASSISTANT ENGINEER	ZAKARIA PERVEZ EXECUTIVE ENGINEER	MOHAMMAD SAIF UDDIN SUPERINTENDING ENGINEER	MD. ENAYET ULLAH CHIEF ENGINEER, DESIGN	MD. MAHBUBUR RAHMAN	MD. HABIBUR RAHMAN	JEAN HENRY LABOYRIE	
				DESIGN ENGINEER	DEPUTY TEAM LEADER	TEAM LEADER	
DATED: 00-00-0000   DWG NO.: DC-8-CEIP-1(P-16)-0000-11/31				DRAWN BY- CAD OPERATOR - MST. MOUSUMI KHATUN			



**REINFORCEMENT DETAILS OF BARREL (SECTION 1-1)**  
(FOUNDATION TREATMENT SHOWN IN SHEET NO 26, 27 & 28 OF 31)  
(SEE SHEET NO 11 OF 31)



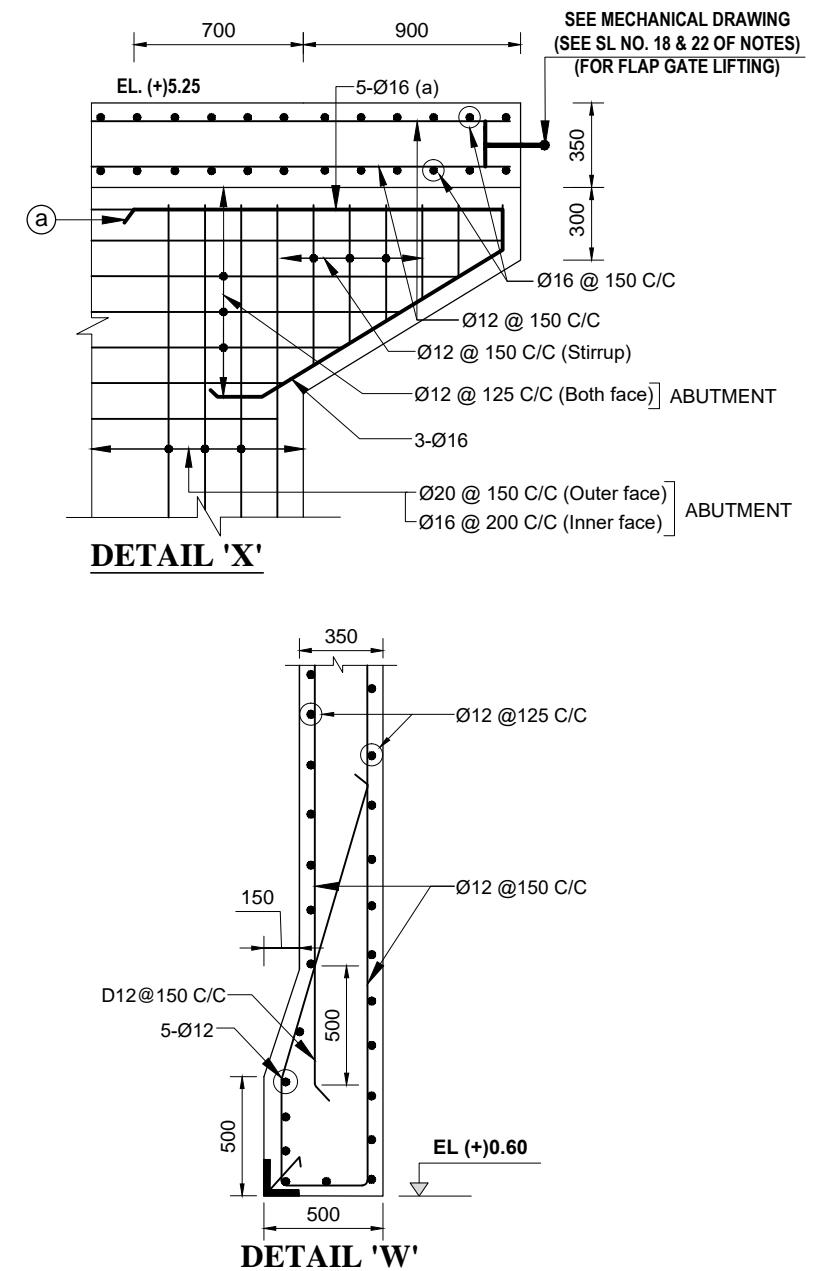
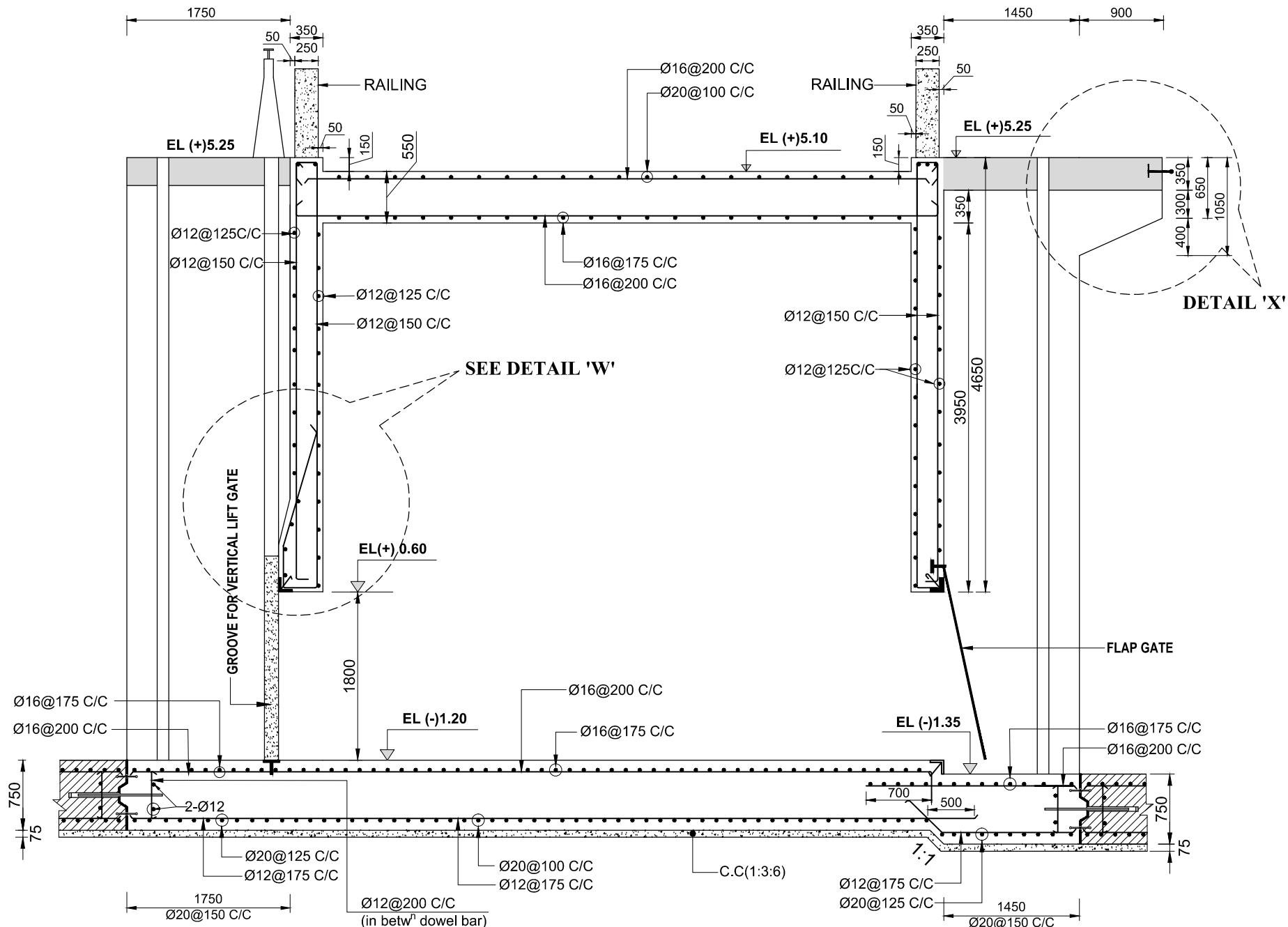
**EXTENDED PART (C/S) (SECTION 2-2)**  
(FOUNDATION TREATMENT SHOWN IN SHEET NO 26, 27 & 28 OF 31)  
(SEE SHEET NO 11 OF 31)



**EXTENDED PART (R/S) (SECTION 3-3)**  
(FOUNDATION TREATMENT SHOWN IN SHEET NO 26, 27 & 28 OF 31)  
(SEE SHEET NO 11 OF 31)

NOT TO SCALE

BANGLADESH WATER DEVELOPMENT BOARD				REINFORCEMENT DETAILS OF BARREL & EXTENDED PART C/S & R/S			
DESIGN CIRCLE -8			APPROVED BY	CONSULTANT : Royal HaskoningDHV Sub Consultants DEVCON, DPM, IWM & DHI			
CHECKED BY	REVIEWED BY	RECOMMENDED BY		DESIGNED & CHECKED BY	REVIEWED BY	RECOMMENDED BY	
ZAYED BIN SAIF ASSISTANT ENGINEER	ZAKARIA PERVEZ EXECUTIVE ENGINEER	MOHAMMAD SAIF UDDIN SUPERINTENDING ENGINEER	MD. ENAYET ULLAH CHIEF ENGINEER, DESIGN	MD. MAHBUBUR RAHMAN DESIGN ENGINEER	MD. HABIBUR RAHMAN DEPUTY TEAM LEADER	JEAN HENRY LABOYRIE	
DATED: 00-00-0000	DWG NO.: DC-8-CEIP-1(P-16)-0000-12/31			DRAWN BY- CAD OPERATOR - MST, MOUSUMI KHATUN			



NOT TO SCALE

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH

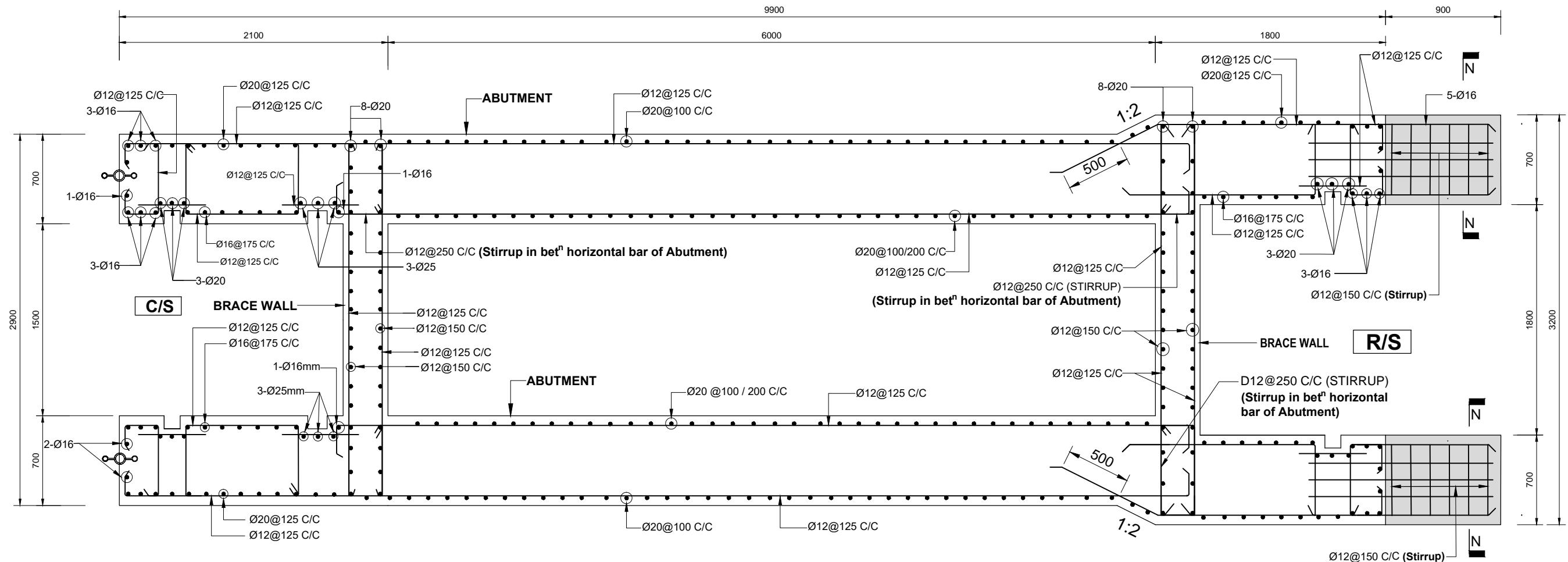
MINISTRY OF WATER RESOURCES

BANGLADESH WATER DEVELOPMENT BOARD

COASTAL EMBANKMENT IMPROVEMENT PROJECT, PHASE-1 (CEIP-1)

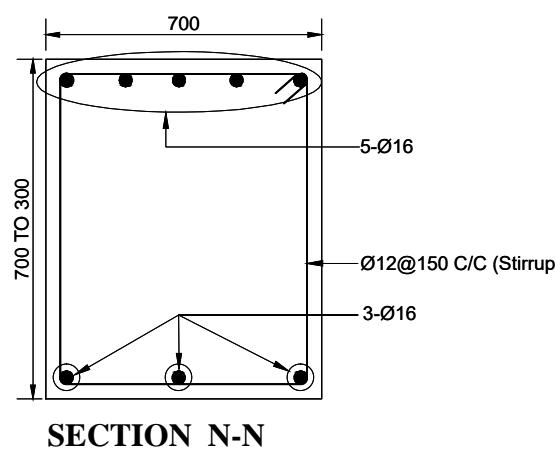
DETAILED DESIGN OF DRAINAGE REGULATOR DR-5, AT Km 18.950 (1V-1.50m X 1.80m) UNDER  
 POLDER -16, PACKAGE - 3, CEIP - 1, BWDB, UPAZILA - PAIKGACHA, DISTRICT - KHULNA.

BANGLADESH WATER DEVELOPMENT BOARD			
DESIGN CIRCLE -8			APPROVED BY
CHECKED BY	REVIEWED BY	RECOMMENDED BY	
ZAYED BIN SAIF ASSISTANT ENGINEER	ZAKARIA PERVEZ EXECUTIVE ENGINEER	MOHAMMAD SAIF UDDIN SUPERINTENDING ENGINEER	MD. ENAYET ULLAH CHIEF ENGINEER, DESIGN
DATED: 00-00-0000	DWG NO.: DC-8-CEIP-1(P-16)-0000-13/31	MD. MAHBUBUR RAHMAN DESIGN ENGINEER	MD. HABIBUR RAHMAN DEPUTY TEAM LEADER
			JEAN HENRY LABOYRIE TEAM LEADER
			DRAWN BY- CAD OPERATOR - MST. MOUSUMI KHATUN



**REINFORCEMENT DETAILS OF ABUTMENT, PIER & BRACE WALL ABOVE VENT OPENING**

**(FOUNDATION TREATMENT SHOWN IN SHEET NO 26, 27 & 28 OF 31)**

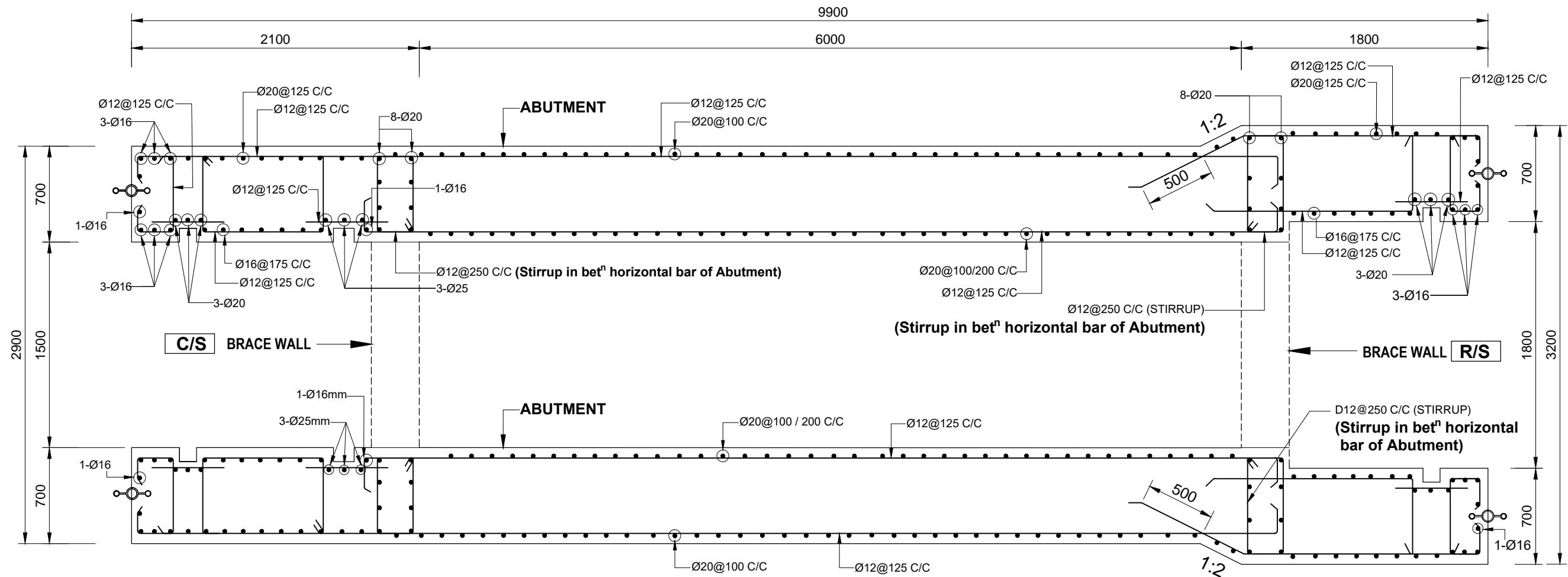


## **SECTION N-N**

NOT TO SCALE

G:\Total drawing (MOUSUMI)\Mousumi\Package-3\Drainage Regulator\POLDER-16\_DR-5\Polder -16\_DR-5\_1V\_KM 18+950.dwg

	MINISTRY OF WATER RESOURCES					
	BANGLADESH WATER DEVELOPMENT BOARD					
	COASTAL EMBANKMENT IMPROVEMENT PROJECT, PHASE-1 (CEIP-1)					
	DETAILED DESIGN OF DRAINAGE REGULATOR DR-5, AT Km 18.950 (1V-1.50m X 1.80m) UNDER POLDER -16, PACKAGE - 3, CEIP - 1, BWDB, UPAZILA - PAIKGACHA, DISTRICT - KHULNA.					
BANGLADESH WATER DEVELOPMENT BOARD		<b>REINFORCEMENT DETAILS OF ABUTMENT &amp; BRACE WALL ABOVE VENT OPENING</b>				
DESIGN CIRCLE -8		APPROVED BY	CONSULTANT : Royal HaskoningDHV Sub Consultants DEVCON, DPM, IWM & DHI			
CHECKED BY	REVIEWED BY		DESIGNED & CHECKED BY	REVIEWED BY	RECOMMENDED BY	
ZAYED BIN SAIF ASSISTANT ENGINEER	ZAKARIA PERVEZ EXECUTIVE ENGINEER	MOHAMMAD SAIF UDDIN SUPERINTENDING ENGINEER	MD. ENAYET ULLAH CHIEF ENGINEER, DESIGN	MD. MAHBUBUR RAHMAN DESIGN ENGINEER	MD. HABIBUR RAHMAN DEPUTY TEAM LEADER	JEAN HENRY LABOYRIE TEAM LEADER
DATED: 00-00-0000	DWG NO.: DC-8-CEIP-1(P-16)-0000-14/31	DRAWN BY- CAD OPERATOR - MST. MOUSUMI KHATUN				

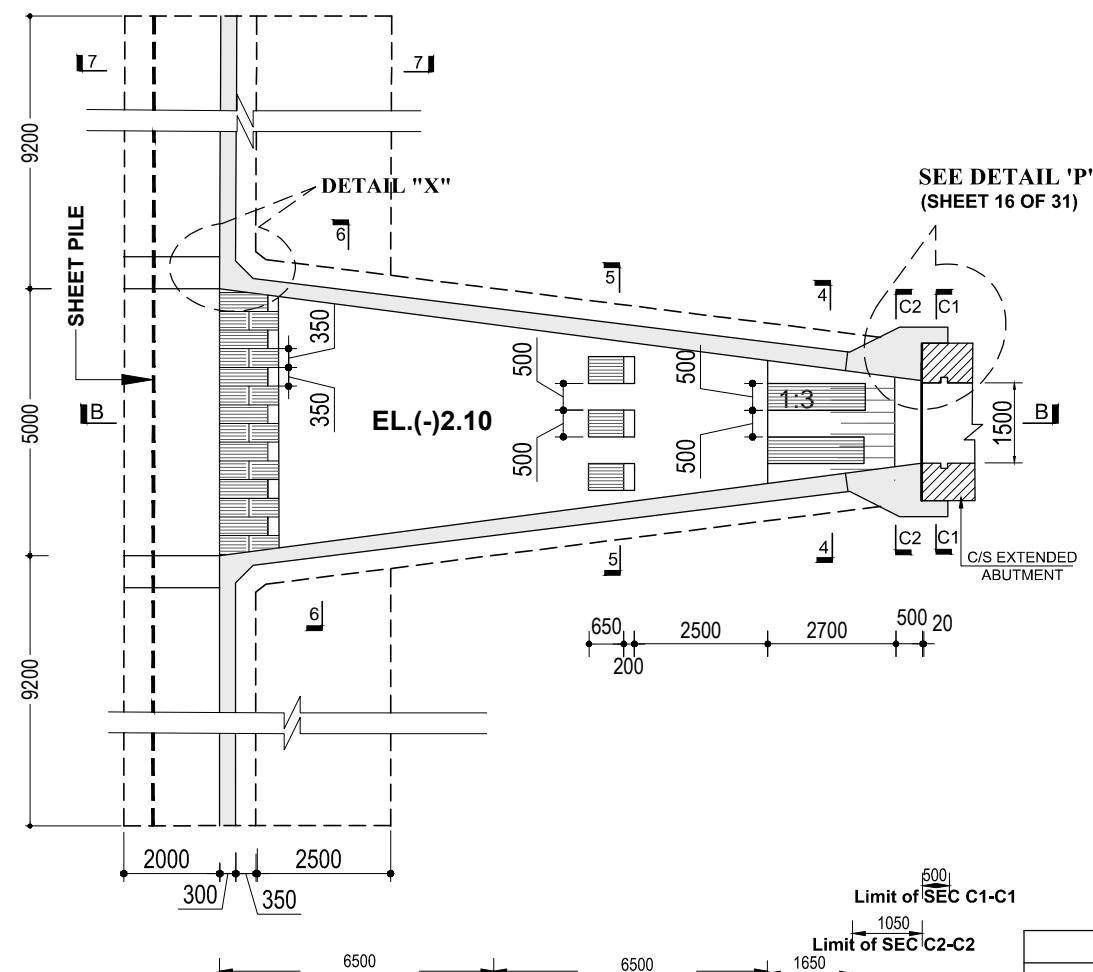
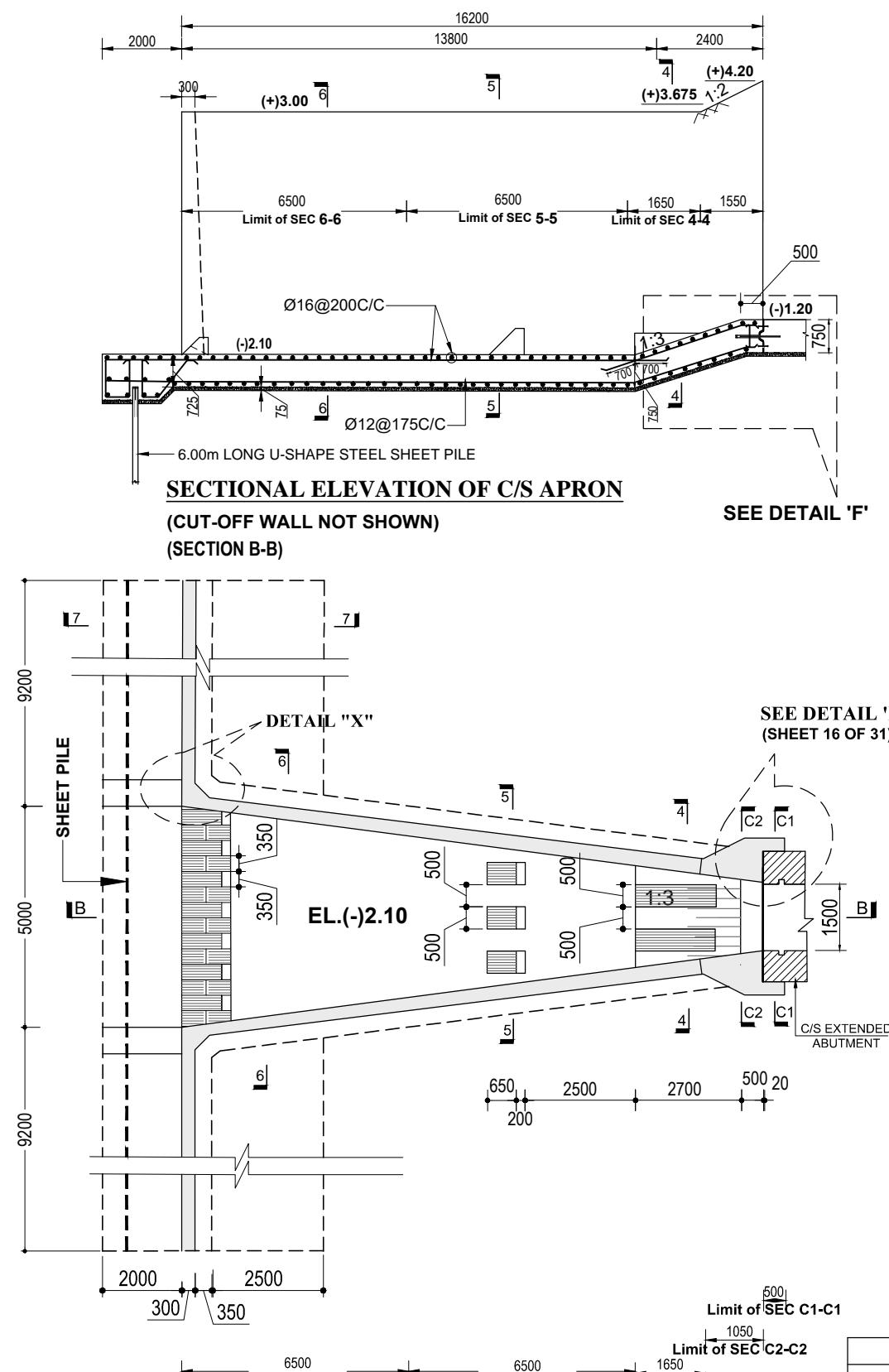


**REINFORCEMENT DETAILS OF ABUTMENT & PIER ACROSS THE CENTER LINE OF VENT OPENING**  
**(FOUNDATION TREATMENT SHOWN IN SHEET NO 26, 27 & 28 OF 31)**

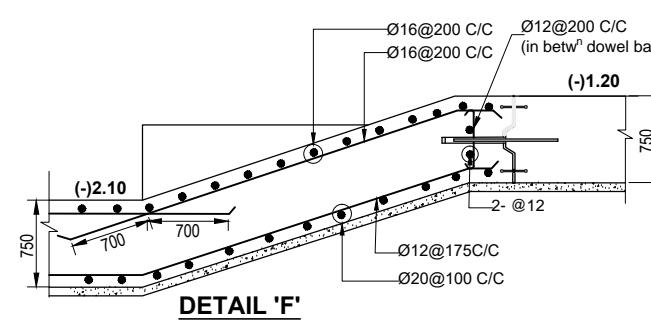
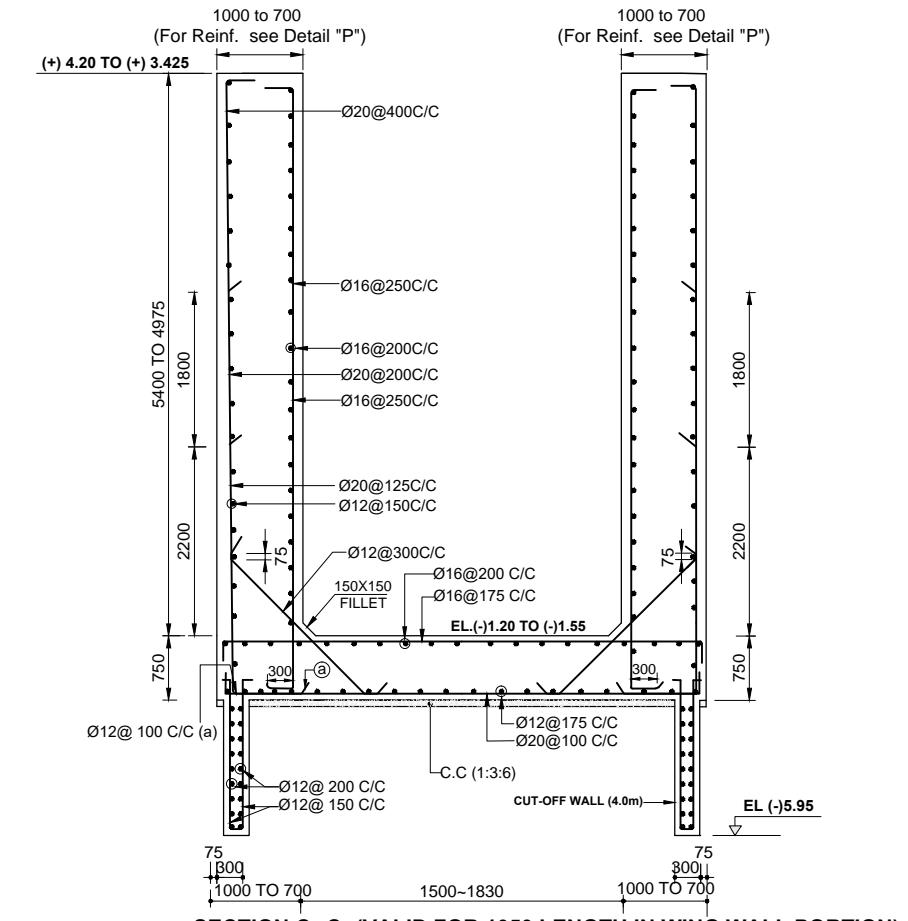
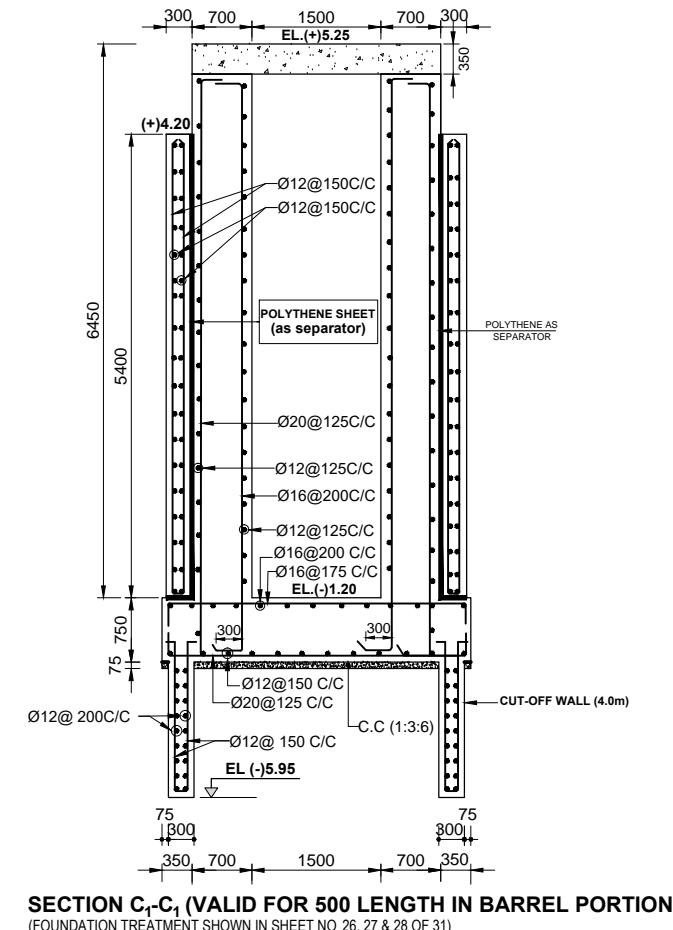
NOT TO SCALE

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				GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH		
				MINISTRY OF WATER RESOURCES		
				BANGLADESH WATER DEVELOPMENT BOARD		
				COASTAL EMBANKMENT IMPROVEMENT PROJECT, PHASE-1 (CEIP-1)		
				DETAILED DESIGN OF DRAINAGE REGULATOR DR-5, AT Km 18.950 (1V-1.50m X 1.80m) UNDER POLDER -16, PACKAGE - 3, CEIP - 1, BWDB, UPAZILA - PAIKGACHA, DISTRICT - KHULNA.		
BANGLADESH WATER DEVELOPMENT BOARD				<b>REINFORCEMENT DETAILS OF ABUTMENT ACROSS CENTER OF VENT OPENING</b>		
DESIGN CIRCLE -8			APPROVED BY	CONSULTANT : Royal HaskoningDHV Sub Consultants DEVCON, DPM, IWM & DHI		
CHECKED BY	REVIEWED BY	RECOMMENDED BY		DESIGNED & CHECKED BY	REVIEWED BY	RECOMMENDED BY
				MD. MAHBUBUR RAHMAN	MD. HABIBUR RAHMAN	JEAN HENRY LABOYRIE
ZAYED BIN SAIF ASSISTANT ENGINEER	ZAKARIA PERVEZ EXECUTIVE ENGINEER	MOHAMMAD SAIF UDDIN SUPERINTENDING ENGINEER	MD. ENAYET ULLAH CHIEF ENGINEER, DESIGN	DESIGN ENGINEER	DEPUTY TEAM LEADER	TEAM LEADER
DATED: 00-00-0000 DWG NO.: DC-8-CEIP-1(P-16)-0000-15/31				DRAWN BY- CAD OPERATOR - MST. MOUSUMI KHATUN		



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GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH			
MINISTRY OF WATER RESOURCES			
BANGLADESH WATER DEVELOPMENT BOARD			
COASTAL EMBANKMENT IMPROVEMENT PROJECT, PHASE-1 (CEIP-1)			
DETAILED DESIGN OF DRAINAGE REGULATOR DR-5, AT Km 18.950 (1V-1.50m X 1.80m) UNDER POLDER -16, PACKAGE - 3, CEIP - 1, BWDB, UPAZILA - PAIKGACHA, DISTRICT - KHULNA.			
REINFORCEMENT DETAILS OF C/S APRON AND WING WALL			
CONSULTANT : Royal HaskoningDHV Sub Consultants DEVCON, DPM, IWM & DHI		APPROVED BY	
DESIGNED & CHECKED BY		REVIEWED BY	
MD. MAHBUBUR RAHMAN		MD. HABIBUR RAHMAN	
DESIGN ENGINEER		DEPUTY TEAM LEADER	
JEAN HENRY LABOYRIE		TEAM LEADER	
DRAWN BY- CAD OPERATOR - MST. MOUSUMI KHATUN			

## BANGLADESH WATER DEVELOPMENT BOARD

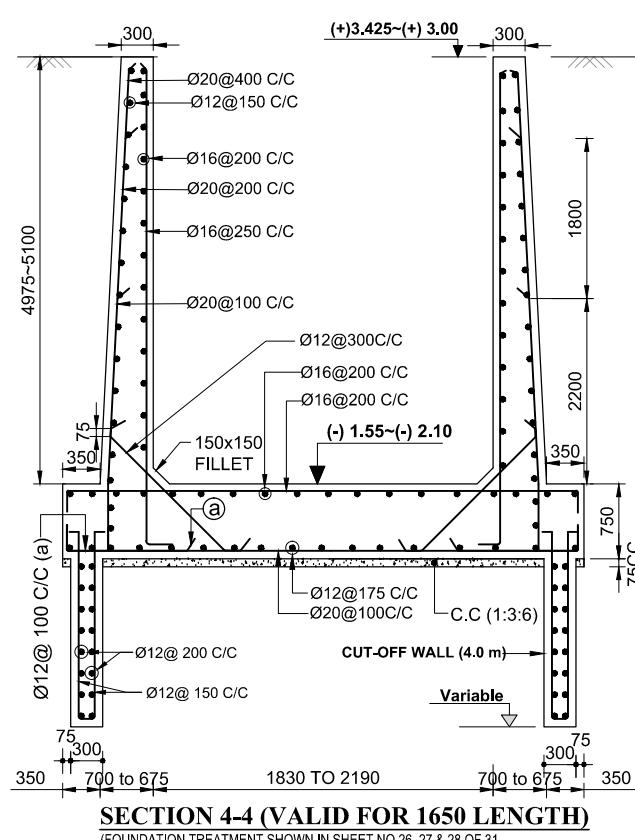
## DESIGN CIRCLE -8

CHECKED BY      REVIEWED BY      RECOMMENDED BY

ZAYED BIN SAIF  
ASSISTANT ENGINEER      ZAKARIA PERVEZ  
EXECUTIVE ENGINEER      MOHAMMAD SAIF UDDIN  
SUPERINTENDING ENGINEERMD. ENAYET ULLAH  
CHIEF ENGINEER, DESIGN

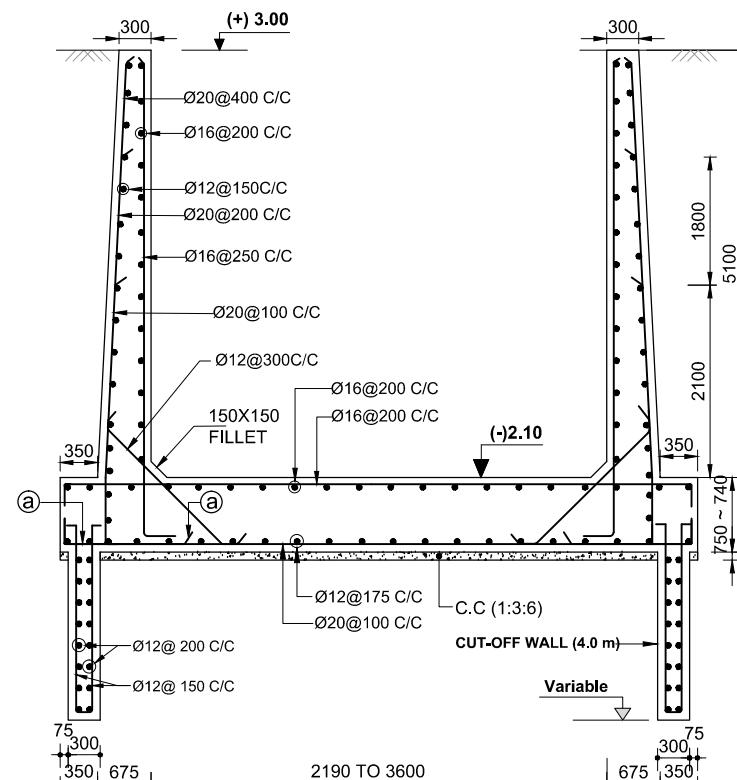
APPROVED BY

DATED: 00-00-0000 DWG NO.: DC-8-CEIP-1(P-16)-0000-16/31



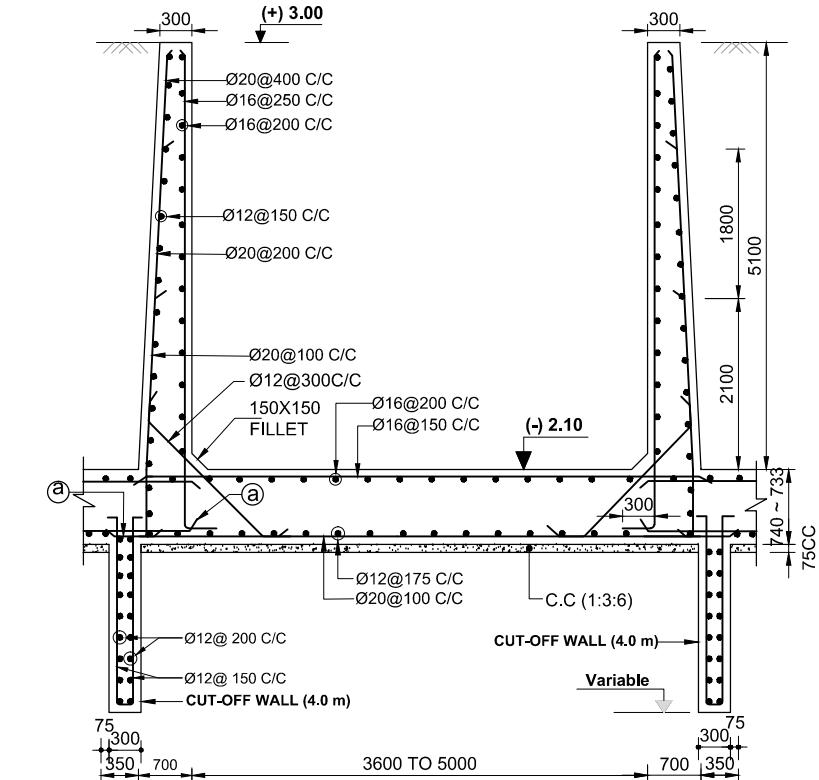
**SECTION 4-4 (VALID FOR 1650 LENGTH)**

(FOUNDATION TREATMENT SHOWN IN SHEET NO 26, 27 & 28 OF 3)



**SECTION 5-5 (VALID FOR 6500 LENGTH)**

(FOUNDATION TREATMENT SHOWN IN SHEET NO 26, 27 & 28 OF 3)



**SECTION 6-6 (VALID FOR 6500 LENGTH)**

(FOUNDATION TREATMENT SHOWN IN SHEET NO 26, 27 & 28 OF 31

**[BASE OF RETURN WALL NOT SHOWN]**

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH

MINISTRY OF WATER RESOURCES

BANGLADESH WATER DEVELOPMENT BOARD

COASTAL EMBANKMENT IMPROVEMENT PROJECT, PHASE-1 (CEIP-1)

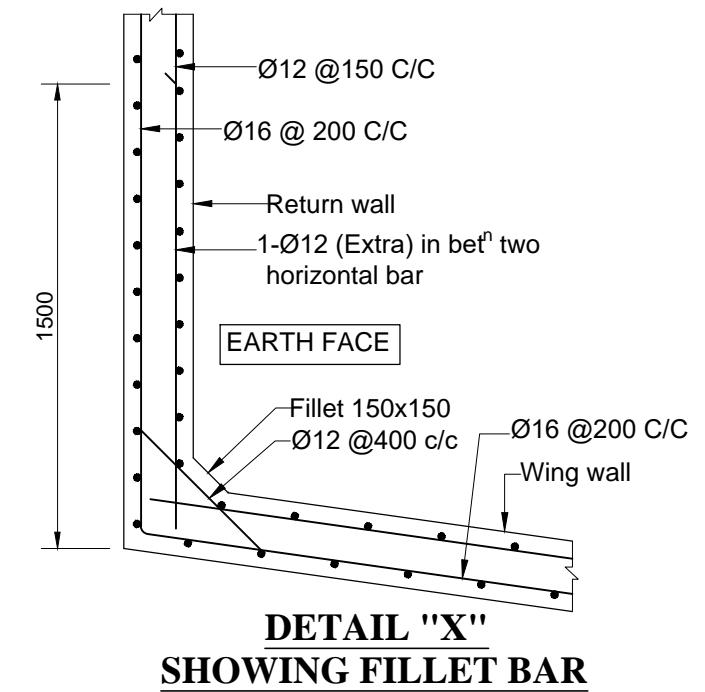
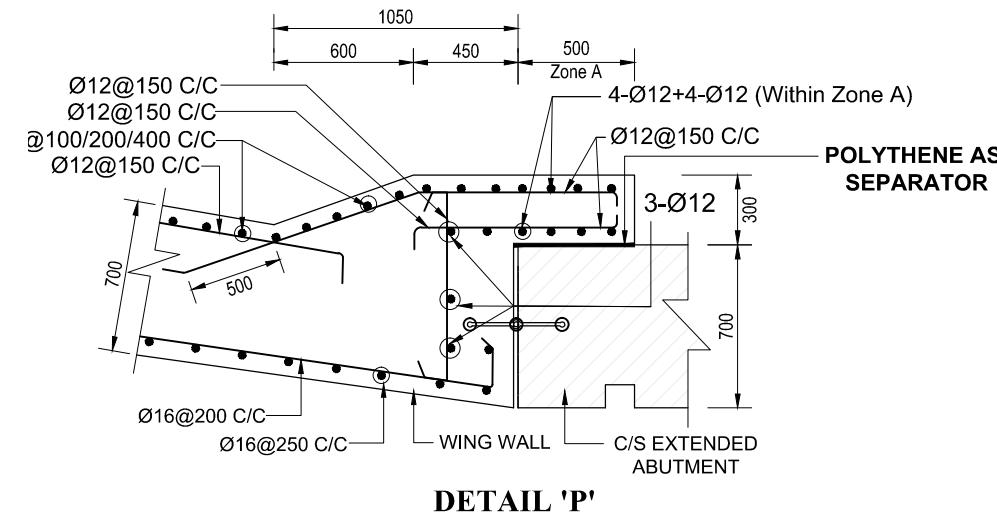
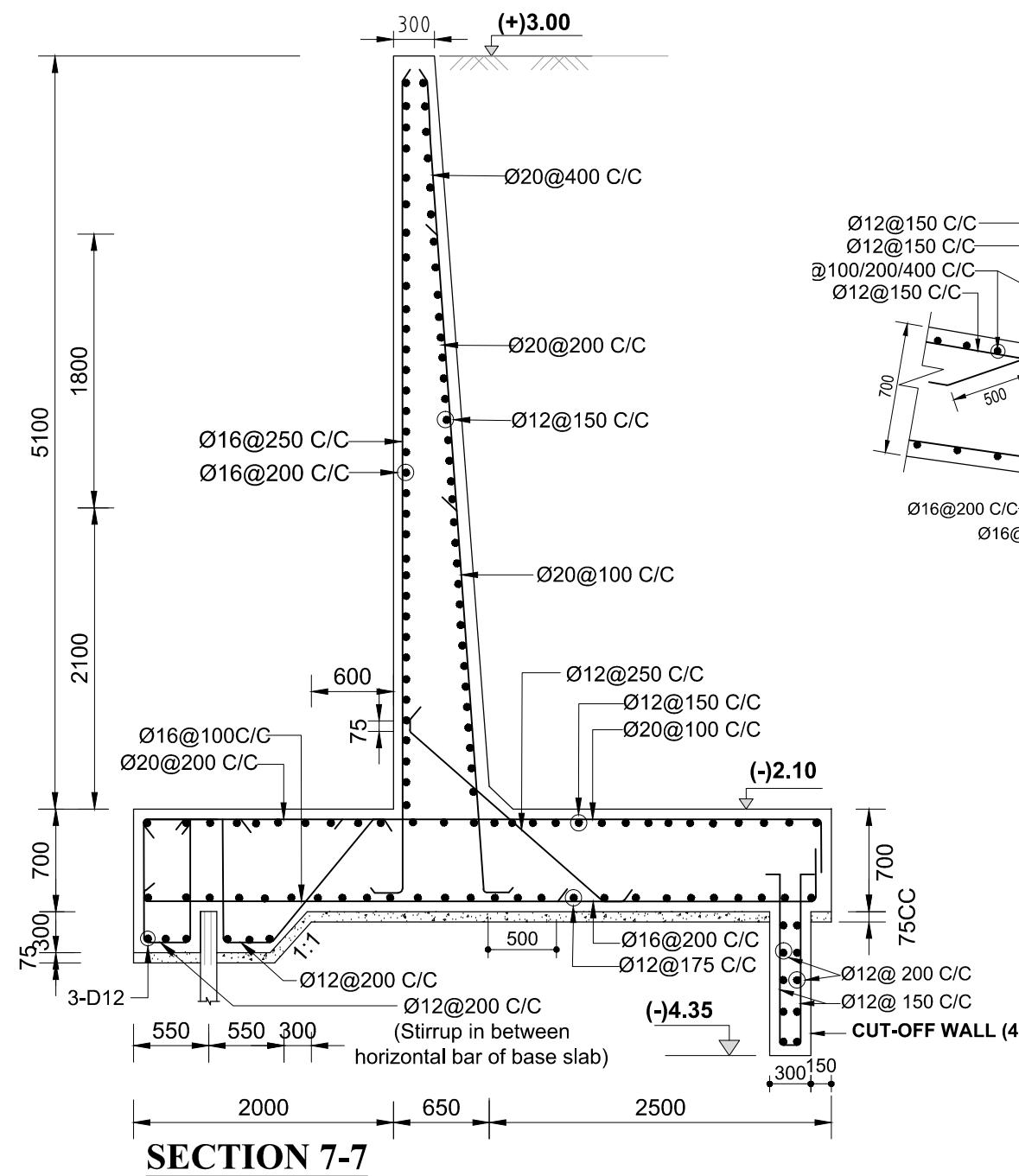
**DETAILED DESIGN OF DRAINAGE REGULATOR DR-5, AT Km 18.950 (1V-1.50m X 1.80m) UNDER  
POLDER -16, PACKAGE - 3, CEIP - 1, BWDB, UPAZILA - PAIKGACHA, DISTRICT - KHULNA.**

BANGLADESH WATER DEVELOPMENT BOARD

DESIGN CIRCLE -8

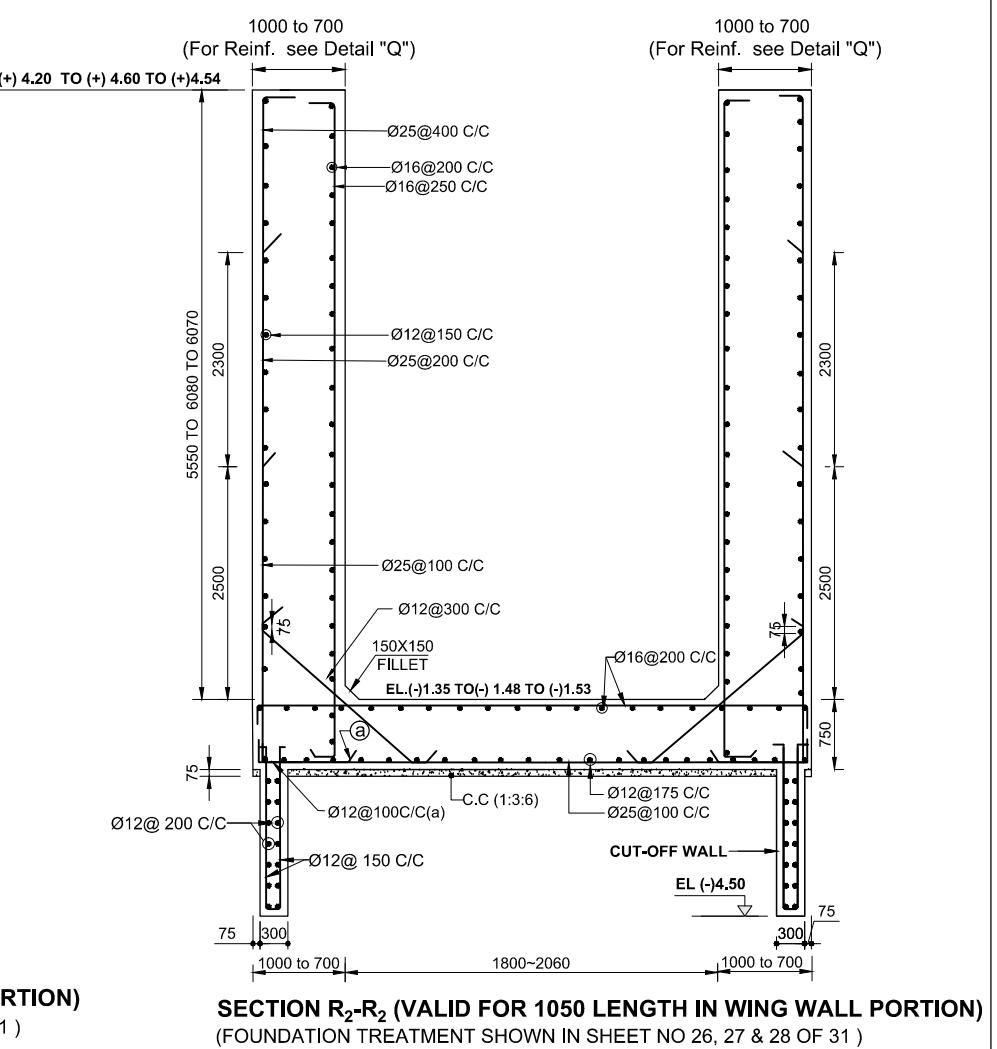
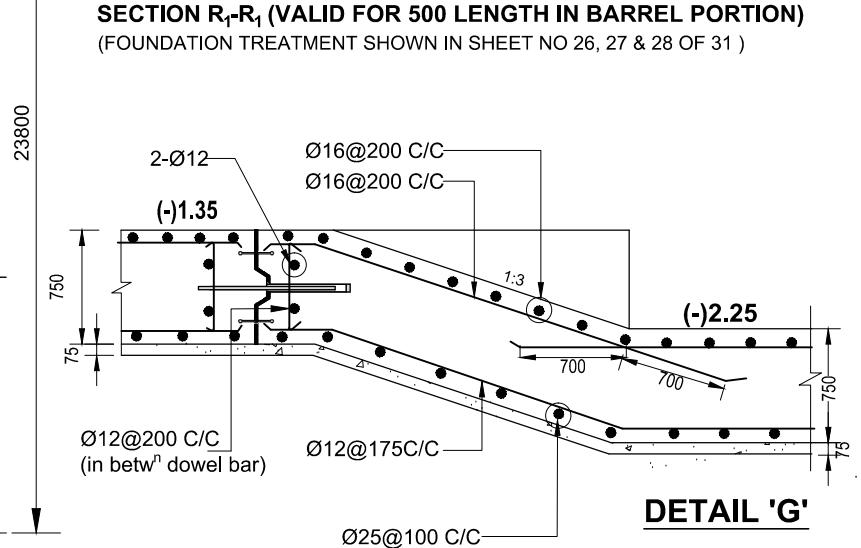
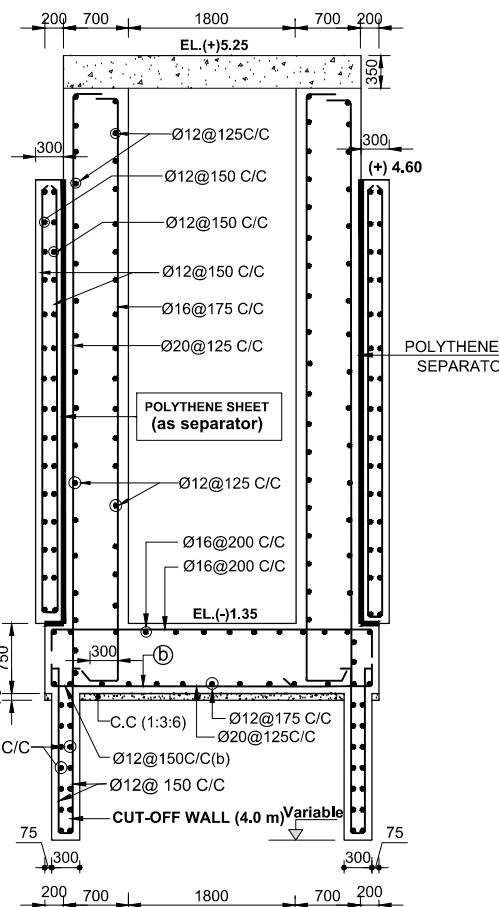
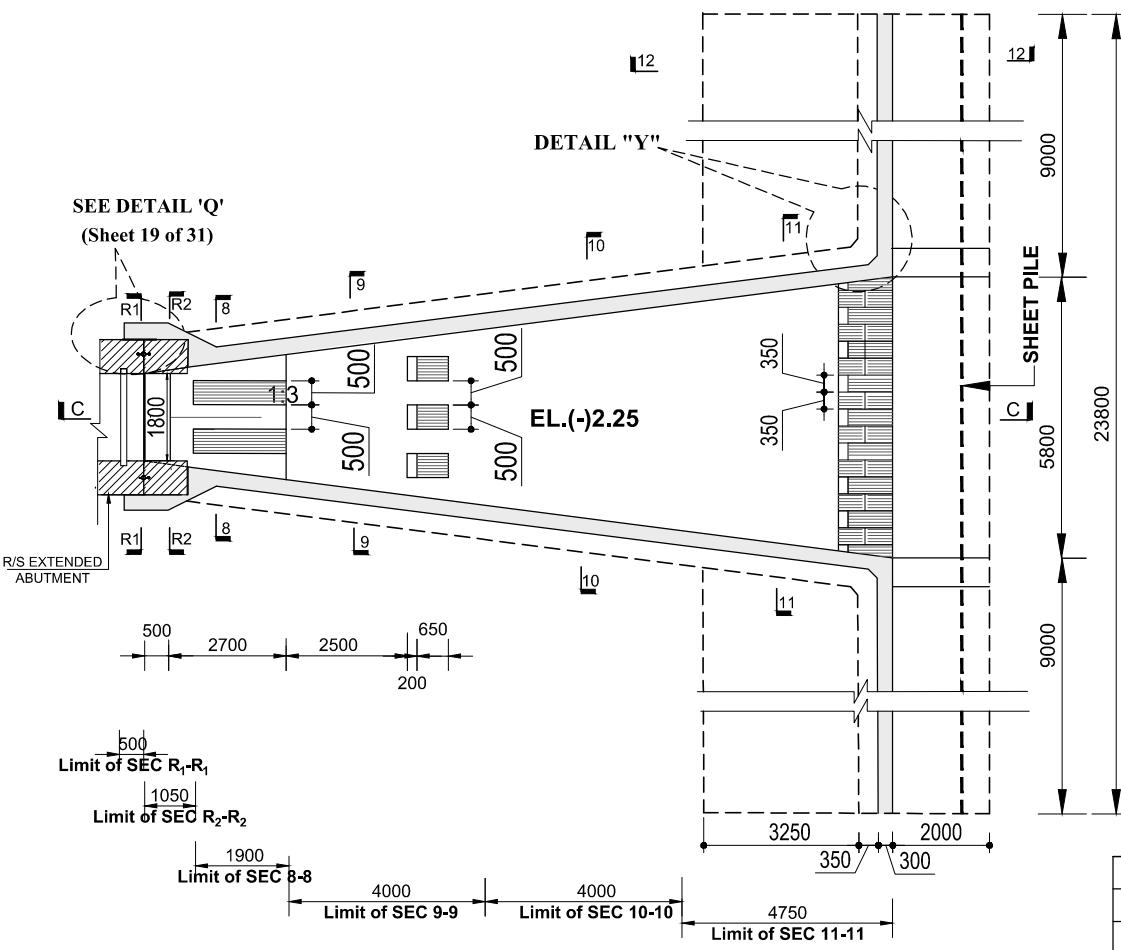
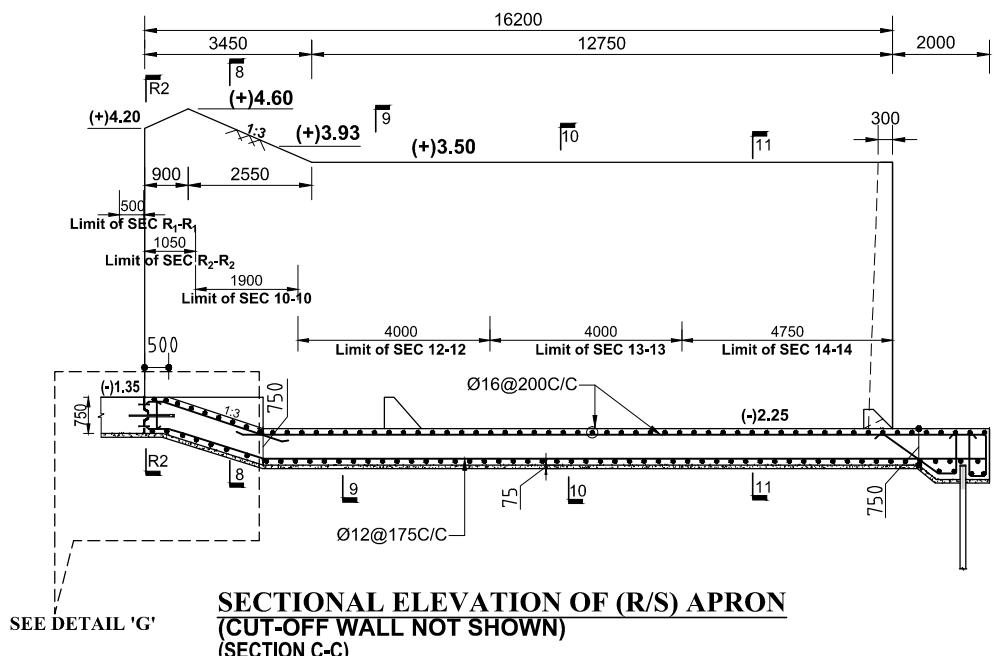
CHECKED BY	REVIEWED BY	RECOMMENDED BY	APPROVED BY	DESIGNED & CHECKED BY	REVIEWED BY	RECOMMENDED BY
ZAYED BIN SAIF ASSISTANT ENGINEER	ZAKARIA PERVEZ EXECUTIVE ENGINEER	MOHAMMAD SAIF UDDIN SUPERINTENDING ENGINEER	MD. ENAYET ULLAH CHIEF ENGINEER, DESIGN	MD. MAHBUBUR RAHMAN DESIGN ENGINEER	MD. HABIBUR RAHMAN DEPUTY TEAM LEADER	JEAN HENRY LABOYRIE TEAM LEADER
DATED: 00-00-0000	DWG NO.: DC-8-CEIP-1(P-16)-0000-17/31			DRAWN BY- CAD OPERATOR - MST. MOUSUMI KHATUN		

NOT TO SCALE

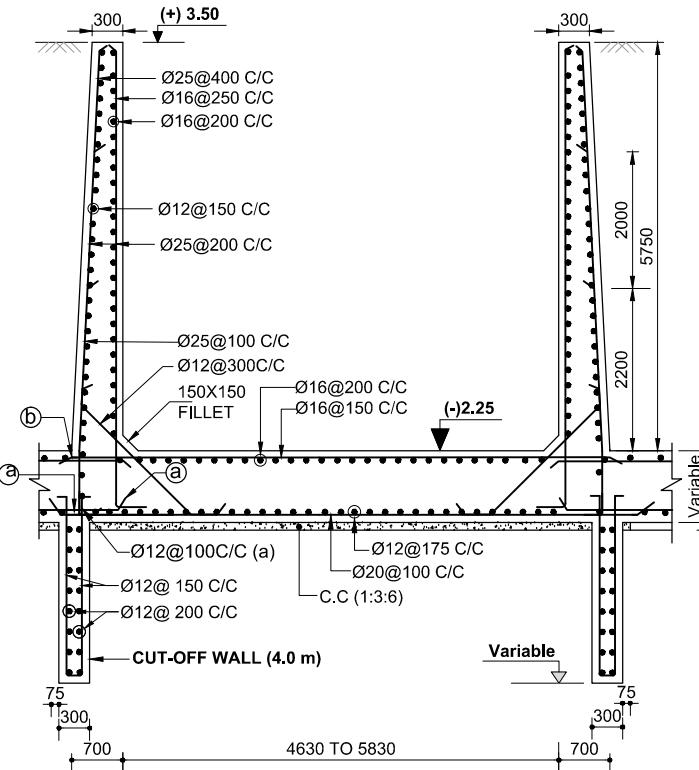
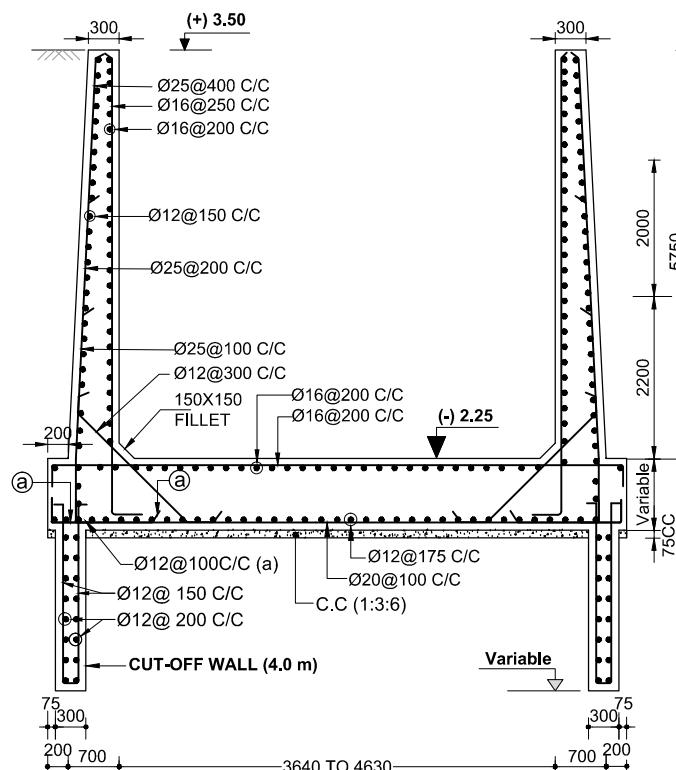
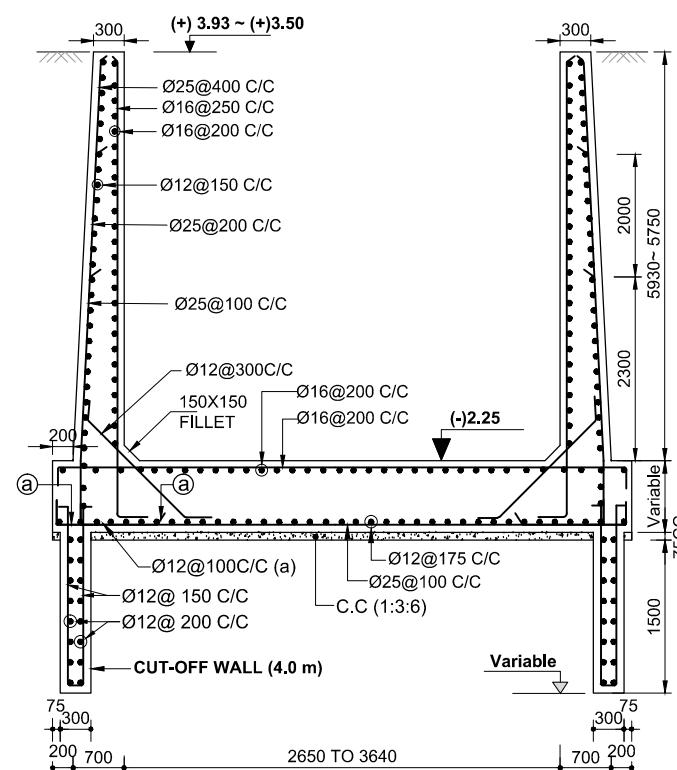
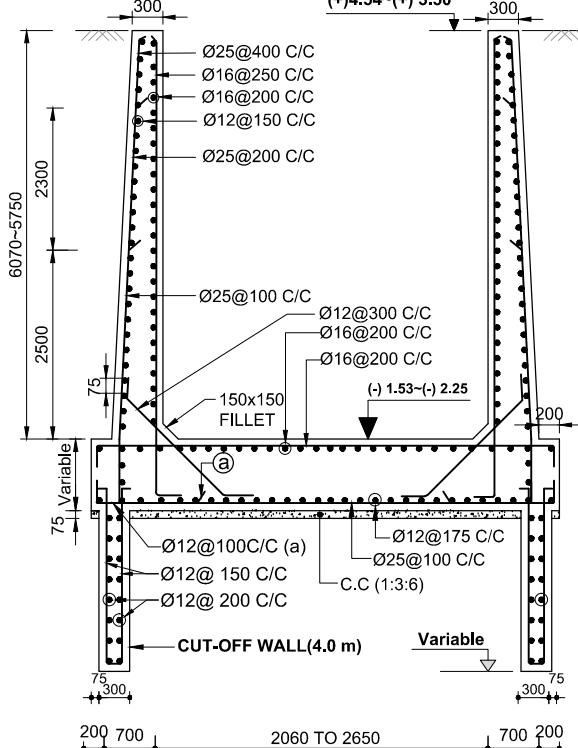


GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH			
MINISTRY OF WATER RESOURCES			
BANGLADESH WATER DEVELOPMENT BOARD			
COASTAL EMBANKMENT IMPROVEMENT PROJECT, PHASE-1 (CEIP-1)			
DETAILED DESIGN OF DRAINAGE REGULATOR DR-5, AT Km 18.950 (1V-1.50m X 1.80m) UNDER POLDER -16, PACKAGE - 3, CEIP - 1, BWDB, UPAZILA - PAIKGACHA, DISTRICT - KHULNA.			
REINFORCEMENT DETAILS OF C/S RETURN WALL			
DESIGN CIRCLE -8		APPROVED BY	
CHECKED BY	REVIEWED BY	RECOMMENDED BY	
ZAYED BIN SAIF ASSISTANT ENGINEER	ZAKARIA PERVEZ EXECUTIVE ENGINEER	MOHAMMAD SAIF UDDIN SUPERINTENDING ENGINEER	MD. ENAYET ULLAH CHIEF ENGINEER, DESIGN
DATED: 00-00-0000	DWG NO.: DC-8-CEIP-1(P-16)-0000-18/31	DRAWN BY- CAD OPERATOR - MST. MOUSUMI KHATUN	

NOT TO SCALE



BANGLADESH WATER DEVELOPMENT BOARD			
DESIGN CIRCLE -8			APPROVED BY
CHECKED BY	REVIEWED BY	RECOMMENDED BY	
ZAYED BIN SAIF ASSISTANT ENGINEER	ZAKARIA PERVEZ EXECUTIVE ENGINEER	MOHAMMAD SAIF UDDIN SUPERINTENDING ENGINEER	MD. ENAYET ULLAH CHIEF ENGINEER, DESIGN
DATED: 00-00-0000   DWG NO.: DC-8-CEIP-1(P-16)-0000-19/31			DRAWN BY- CAD OPERATOR - MST. MOUSUMI KHATUN
REINFORCEMENT DETAILS OF R/S APRON AND WING WALL			
CONSULTANT : Royal HaskoningDHV Sub Consultants DEVCON, DPM, IWM & DHI	DESIGNED & CHECKED BY	REVIEWED BY	RECOMMENDED BY
MD. MAHBUBUR RAHMAN	MD. HABIBUR RAHMAN	Jean Henry LABOYRIE	
DESIGN ENGINEER	DEPUTY TEAM LEADER	TEAM LEADER	



NOT TO SCALE

G:\Total drawing (MOUSUMI)\Mousumi\Package-3\Drainage Regulator\POLDER-16\_DR-5\Polder -16\_DR-5\_1V\_KM 18+950.dwg

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH

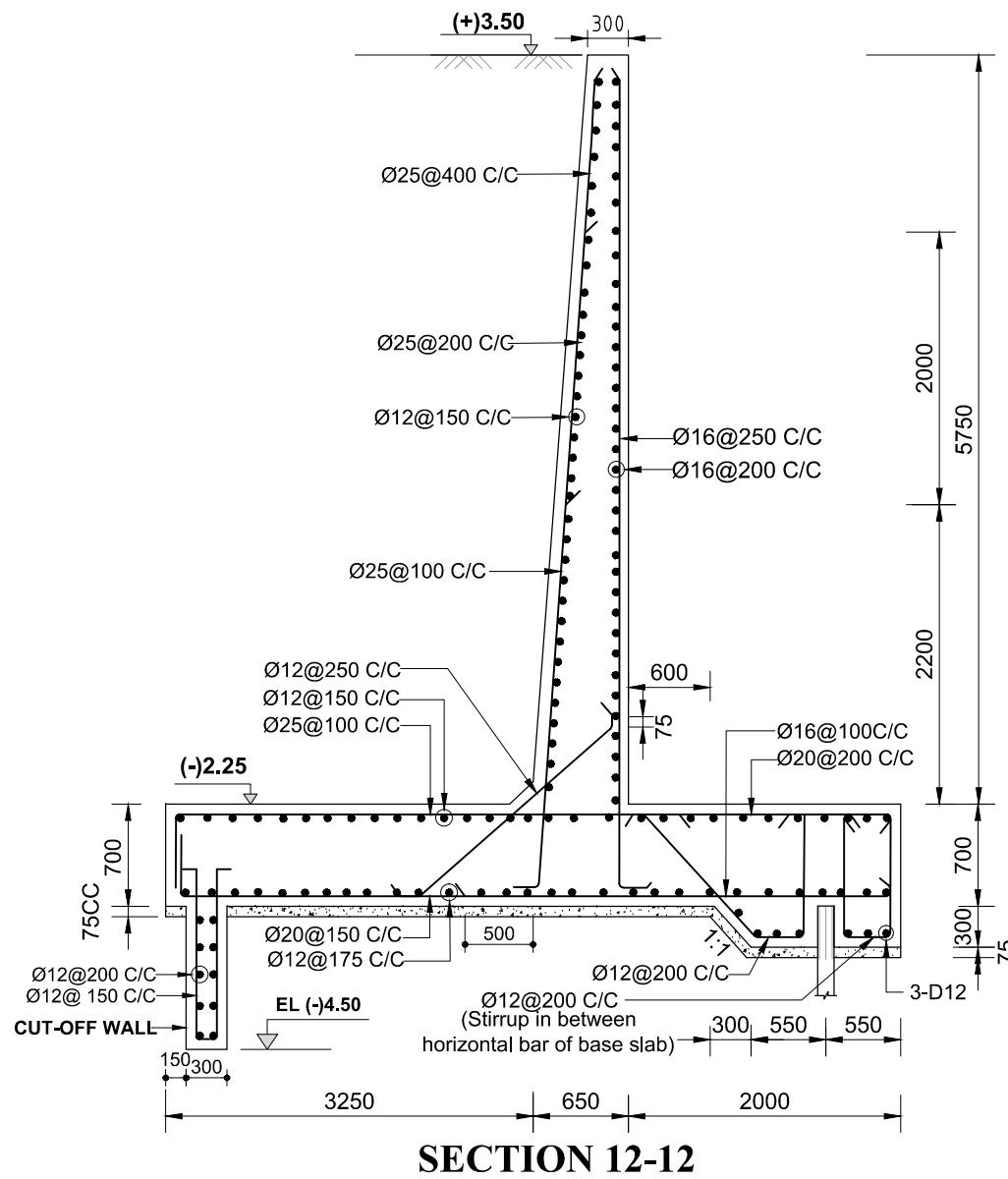
MINISTRY OF WATER RESOURCES

BANGLADESH WATER DEVELOPMENT BOARD

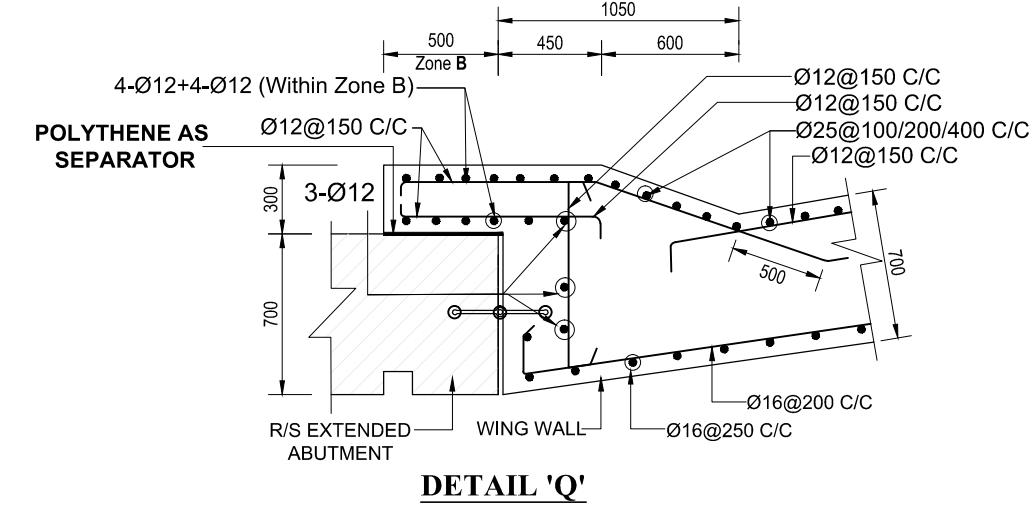
COASTAL EMBANKMENT IMPROVEMENT PROJECT, PHASE-1 (CEIP-1)

DETAILED DESIGN OF DRAINAGE REGULATOR DR-5, AT Km 18.950 (1V-1.50m X 1.80m) UNDER  
POLDER -16, PACKAGE - 3, CEIP - 1, BWDB, UPAZILA - PAIKGACHA, DISTRICT - KHULNA.

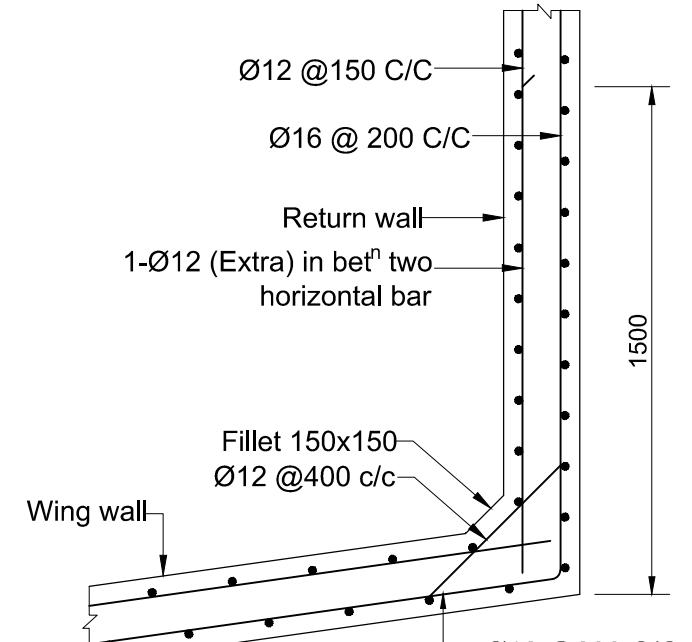
BANGLADESH WATER DEVELOPMENT BOARD			REINFORCEMENT DETAILS OF R/S WING WALL		
DESIGN CIRCLE -8		APPROVED BY			
CHECKED BY	REVIEWED BY		DESIGNED & CHECKED BY	REVIEWED BY	RECOMMENDED BY
ZAYED BIN SAIF ASSISTANT ENGINEER	ZAKARIA PERVEZ EXECUTIVE ENGINEER	MOHAMMAD SAIF UDDIN SUPERINTENDING ENGINEER	MD. ENAYET ULLAH CHIEF ENGINEER, DESIGN	MD. MAHBUBUR RAHMAN	MD. HABIBUR RAHMAN
			DESIGN ENGINEER	DEPUTY TEAM LEADER	TEAM LEADER
DATED: 00-00-0000   DWG NO.: DC-8-CEIP-1(P-16)-0000-20/31			DRAWN BY- CAD OPERATOR - MST. MOUSUMI KHATUN		



SECTION 12-12



## DETAIL 'Q'

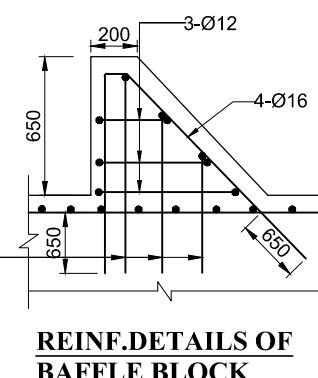
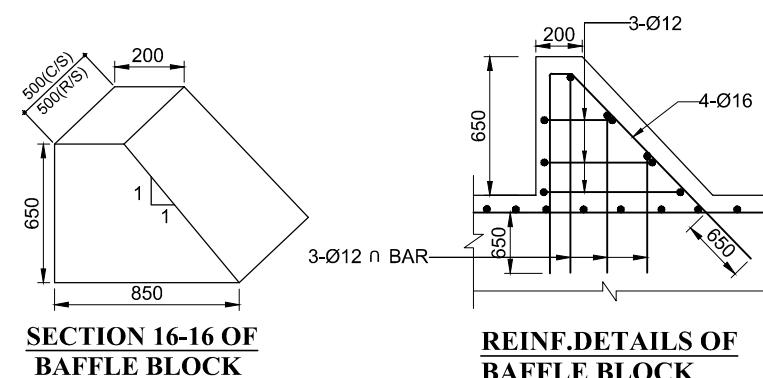
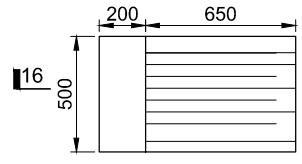
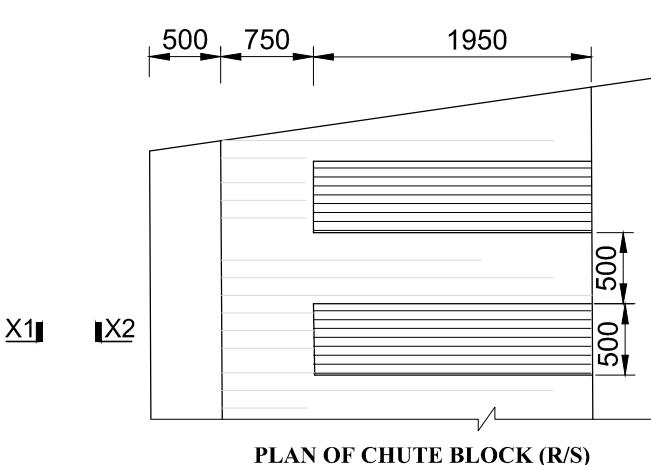
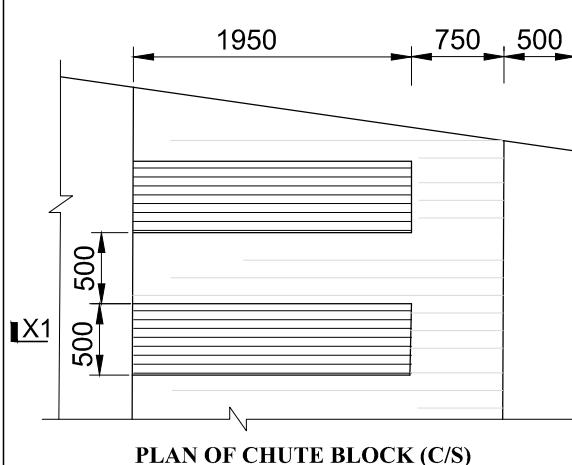


• Ø16

NOT TO SCALE

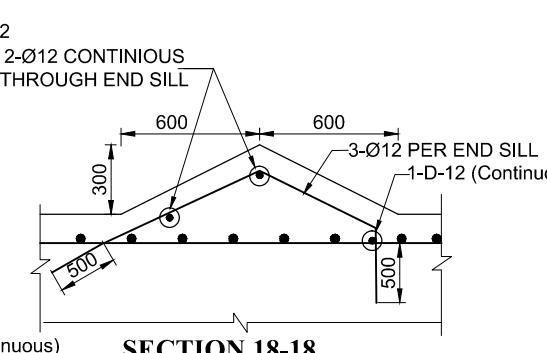
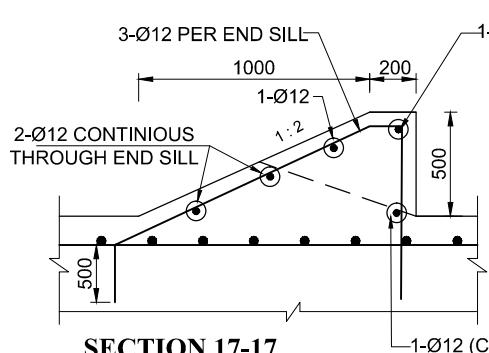
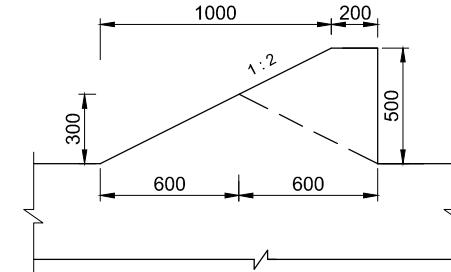
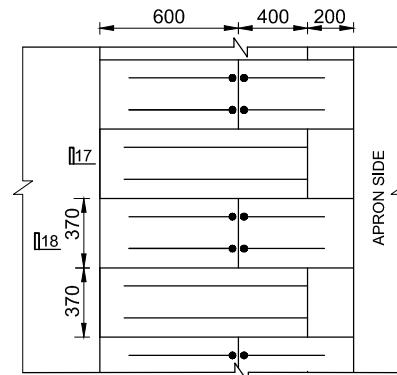
G:\Total drawing (MOUSUMI)\Mousumi\Package-3\Drainage Regulator\POLDER-16\_DR-5\Polder -16\_DR-5\_1V\_KM 18+950.dwg

BANGLADESH WATER DEVELOPMENT BOARD				REINFORCEMENT DETAILS OF R/S RETURN WALL			
DESIGN CIRCLE -8			APPROVED BY	CONSULTANT : Royal HaskoningDHV Sub Consultants DEVCON, DPM, IWM & DHI			
CHECKED BY	REVIEWED BY	RECOMMENDED BY		DESIGNED & CHECKED BY	REVIEWED BY	RECOMMENDED BY	
ZAYED BIN SAIF ASSISTANT ENGINEER	ZAKARIA PERVEZ EXECUTIVE ENGINEER	MOHAMMAD SAIF UDDIN SUPERINTENDING ENGINEER	MD. ENAYET ULLAH CHIEF ENGINEER, DESIGN	MD. MAHBUBUR RAHMAN DESIGN ENGINEER	MD. HABIBUR RAHMAN DEPUTY TEAM LEADER	JEAN HENRY LABOYRIE	
DATED: 00-00-0000	DWG NO.: DC-8-CEIP-1(P-16)-0000-21/31			DRAWN BY- CAD OPERATOR - MST. MOUSUMI KHATUN			

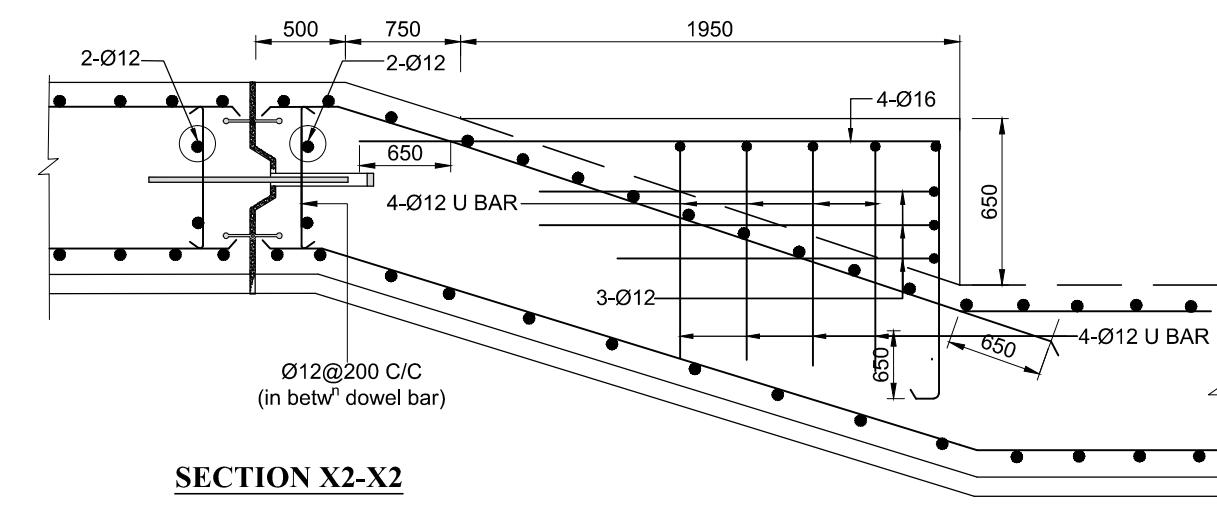
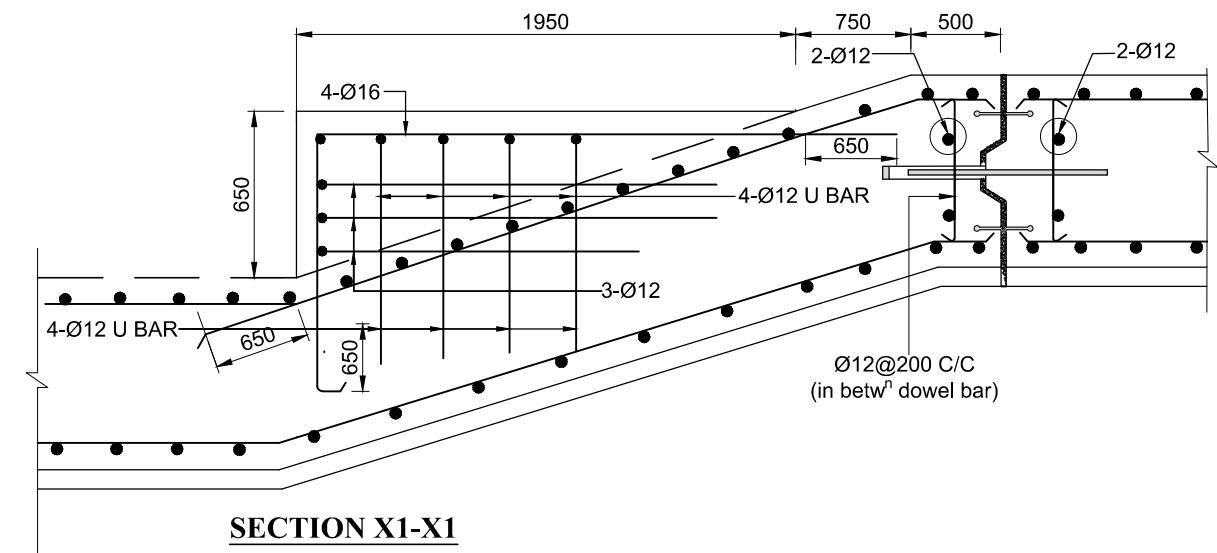


### BAFFLE BLOCK DETAILS

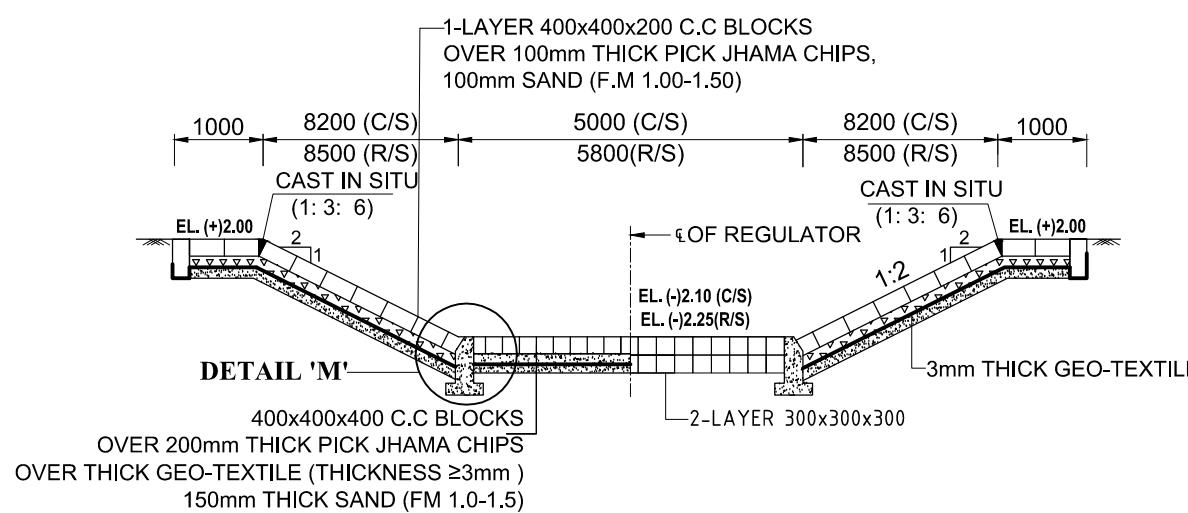
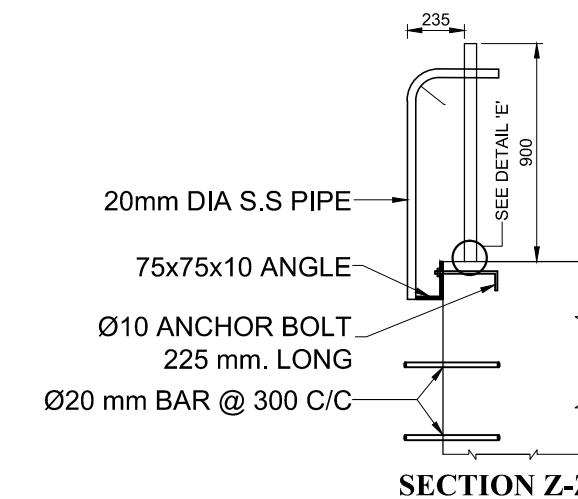
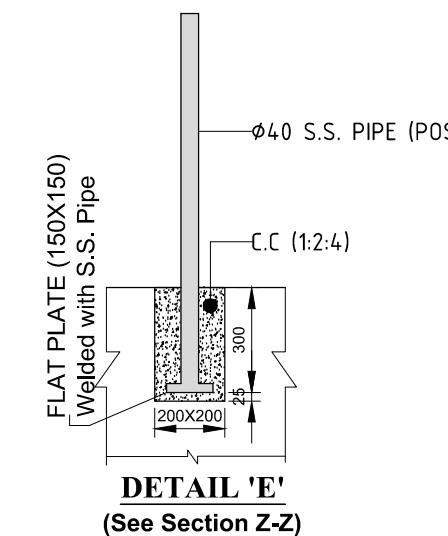
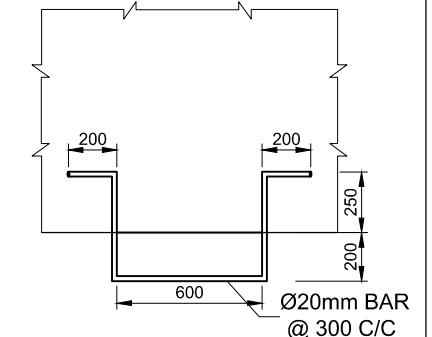
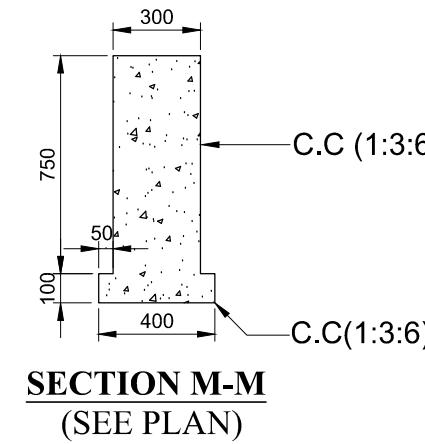
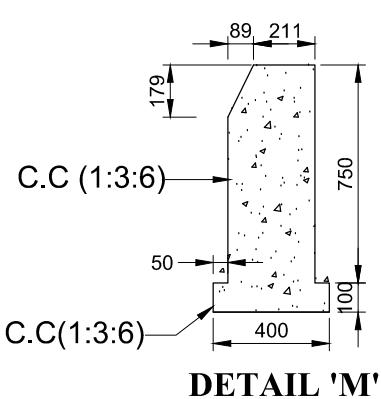
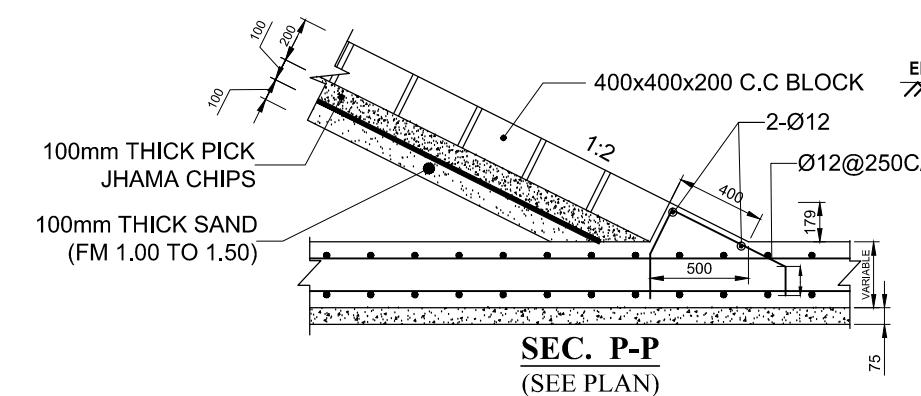
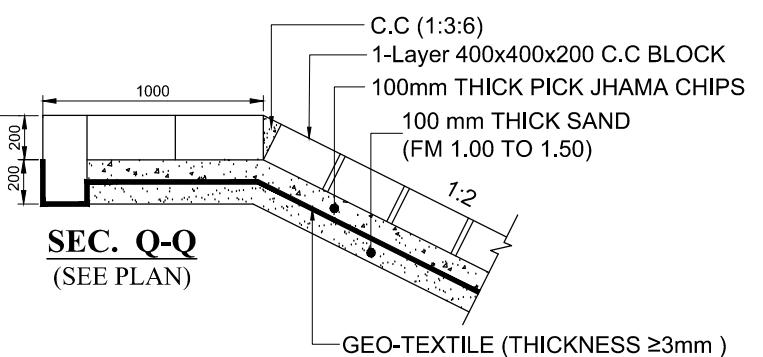
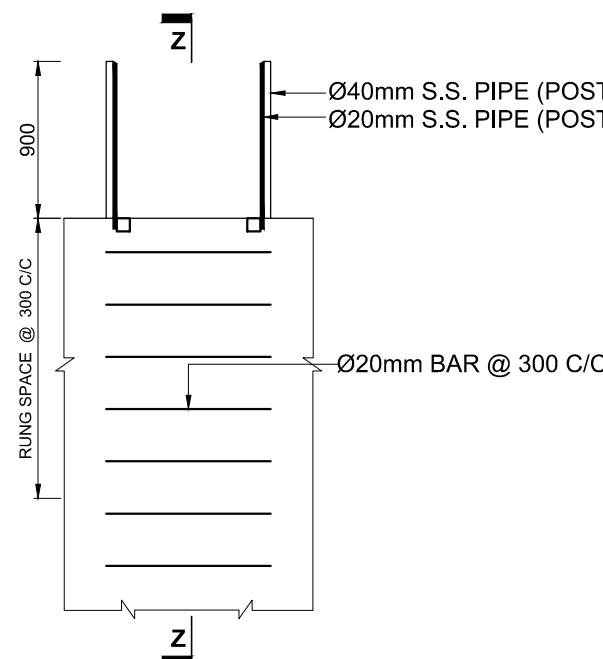
(Concrete Outline & Reinforcement )



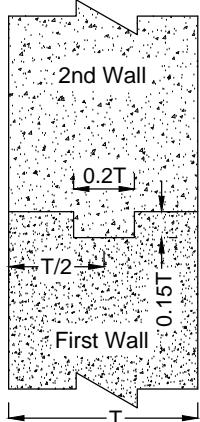
**NOT TO SCALE**



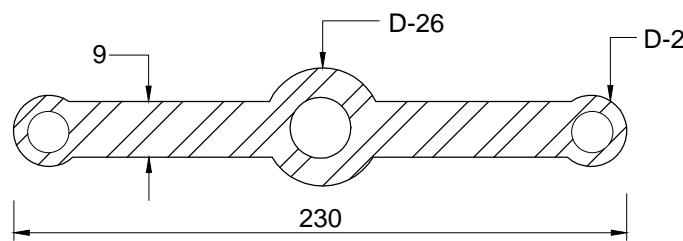
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH			
MINISTRY OF WATER RESOURCES			
BANGLADESH WATER DEVELOPMENT BOARD			
COASTAL EMBANKMENT IMPROVEMENT PROJECT, PHASE-1 (CEIP-1)			
DETAILED DESIGN OF DRAINAGE REGULATOR DR-5, AT Km 18.950 (1V-1.50m X 1.80m) UNDER POLDER -16, PACKAGE - 3, CEIP - 1, BWDB, UPAZILA - PAIKGACHA, DISTRICT - KHULNA.			
<b>CHUTE , ENDSILL &amp; BAFFLE REINFORCEMENT DETAILS</b>			
CONSULTANT : Royal HaskoningDHV Sub Consultants DEVCON, DPM, IWM & DHI		APPROVED BY	
DESIGNED & CHECKED BY		REVIEWED BY	
MD. MAHBUBUR RAHMAN		MD. HABIBUR RAHMAN	
DESIGN ENGINEER		DEPUTY TEAM LEADER	
ZAYED BIN SAIF ASSISTANT ENGINEER		TEAM LEADER	
ZAKARIA PERVEZ EXECUTIVE ENGINEER		DRAWN BY- CAD OPERATOR - MST. MOUSUMI KHATUN	
MOHAMMAD SAIF UDDIN SUPERINTENDING ENGINEER			
MD. ENAYET ULLAH CHIEF ENGINEER, DESIGN			
DATED: 00-00-0000   DWG NO.: DC-8-CEIP-1(P-16)-0000-22/31			

**SECTION R-R (SEE PLAN)****SECTION Z-Z****DETAIL 'E'**  
(See Section Z-Z)**RUNG DETAILS****SECTION M-M**  
(SEE PLAN)**SEC. P-P**  
(SEE PLAN)**SEC. Q-Q**  
(SEE PLAN)**RUNG DETAILS****NOT TO SCALE**

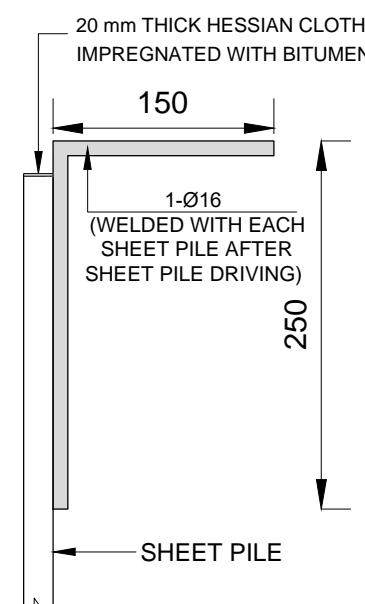
BANGLADESH WATER DEVELOPMENT BOARD				DETAIL OF PROTECTIVE WORKS & OTHERS			
DESIGN CIRCLE -8			APPROVED BY	CONSULTANT : Royal HaskoningDHV Sub Consultants DEVCON, DPM, IWM & DHI			
CHECKED BY	REVIEWED BY	RECOMMENDED BY		DESIGNED & CHECKED BY	REVIEWED BY	RECOMMENDED BY	
ZAYED BIN SAIF ASSISTANT ENGINEER	ZAKARIA PERVEZ EXECUTIVE ENGINEER	MOHAMMAD SAIF UDDIN SUPERINTENDING ENGINEER	MD. ENAYET ULLAH CHIEF ENGINEER, DESIGN	MD. MAHBUBUR RAHMAN	MD. HABIBUR RAHMAN	JEAN HENRY LABOYRIE	
				DESIGN ENGINEER	DEPUTY TEAM LEADER	TEAM LEADER	
				DRAWN BY- CAD OPERATOR - MST. MOUSUMI KHATUN			



**DETAILS OF CONSTRUCTION  
JOINT (FOR WALL)**

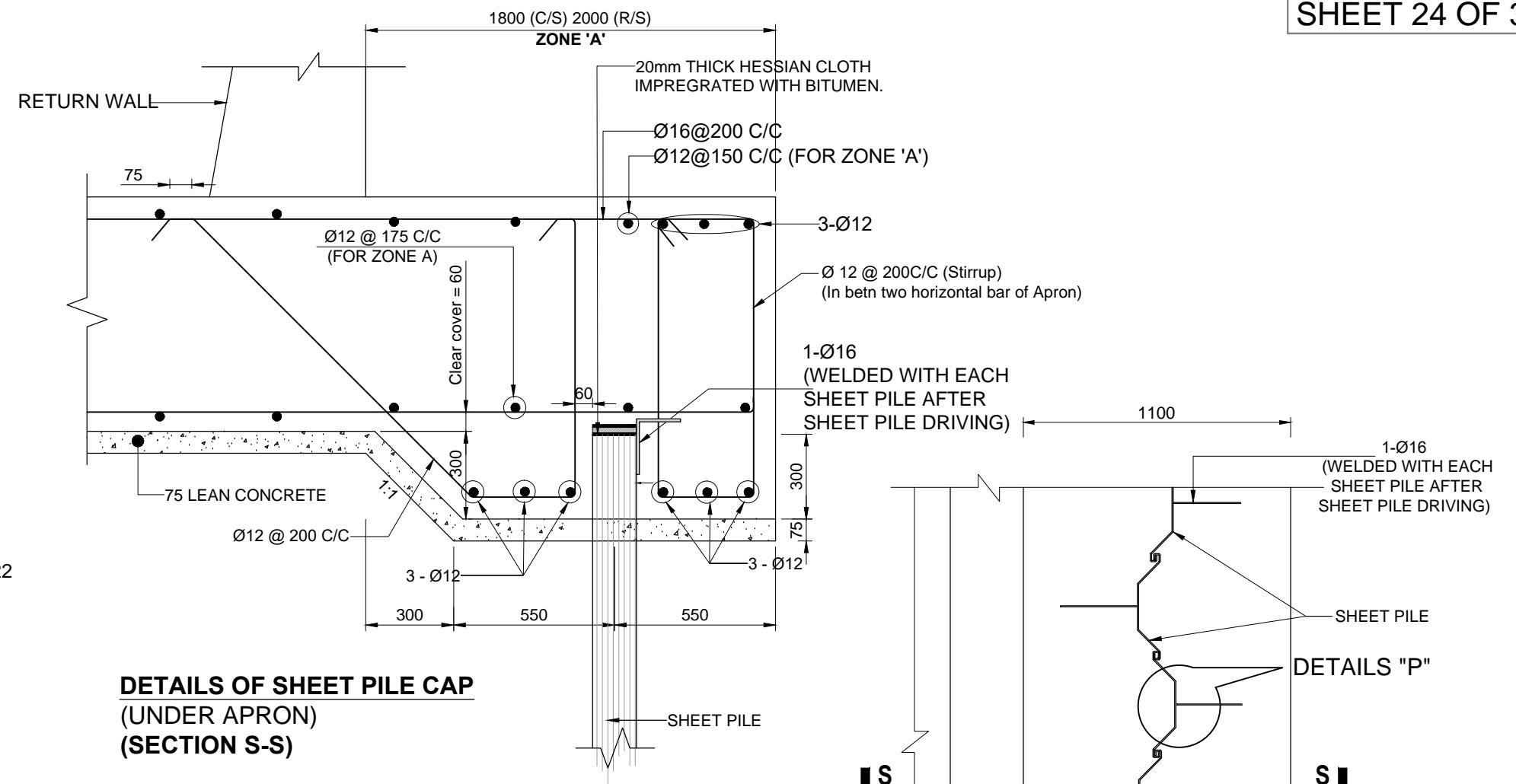


**DETAILS OF P.V.C WATER STOPPER**

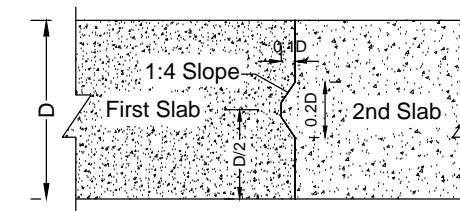


**DETAILS 'P'**

NOT TO SCALE



**DETAILS OF SHEET PILE CAP  
(UNDER APRON)  
(SECTION S-S)**



**DETAILS OF CONSTRUCTION  
JOINT (FOR SLAB)**

**LAYOUT PLAN OF SHEET PILE**

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH		
MINISTRY OF WATER RESOURCES		
BANGLADESH WATER DEVELOPMENT BOARD		
COASTAL EMBANKMENT IMPROVEMENT PROJECT, PHASE-1 (CEIP-1)		
DETAILED DESIGN OF DRAINAGE REGULATOR DR-5, AT Km 18.950 (1V-1.50m X 1.80m) UNDER POLDER -16, PACKAGE - 3, CEIP - 1, BWDB, UPAZILA - PAIKGACHA, DISTRICT - KHULNA.		
<b>DETAILS OF CONSTRUCTION JOINTS, SHEET PILE CAP &amp; WATER STOPPER</b>		
CONSULTANT : Royal HaskoningDHV Sub Consultants DEVCON, DPM, IWM & DHI		
DESIGNED & CHECKED BY	REVIEWED BY	RECOMMENDED BY
MD. MAHBUBUR RAHMAN	MD. HABIBUR RAHMAN	JEAN HENRY LABOYRIE
DESIGN ENGINEER	DEPUTY TEAM LEADER	TEAM LEADER
DRAWN BY- CAD OPERATOR - MST. MOUSUMI KHATUN		

**BANGLADESH WATER DEVELOPMENT BOARD**

**DESIGN CIRCLE -8**

CHECKED BY      REVIEWED BY      RECOMMENDED BY

APPROVED BY

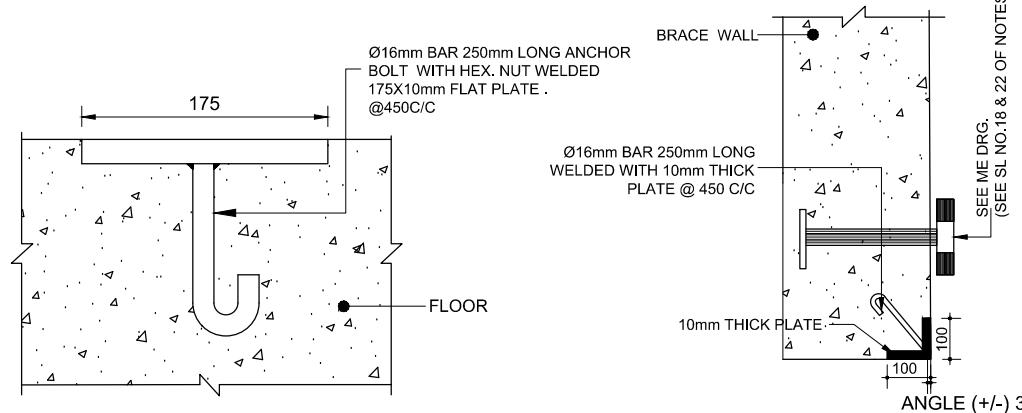
ZAYED BIN SAIF  
ASSISTANT ENGINEER

ZAKARIA PERVEZ  
EXECUTIVE ENGINEER

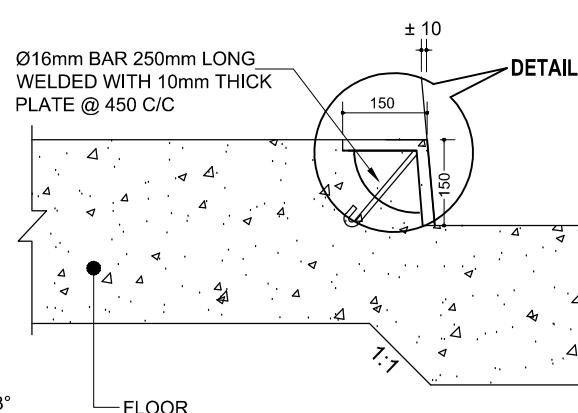
MOHAMMAD SAIF UDDIN  
SUPERINTENDING ENGINEER

MD. ENAYET ULLAH  
CHIEF ENGINEER, DESIGN

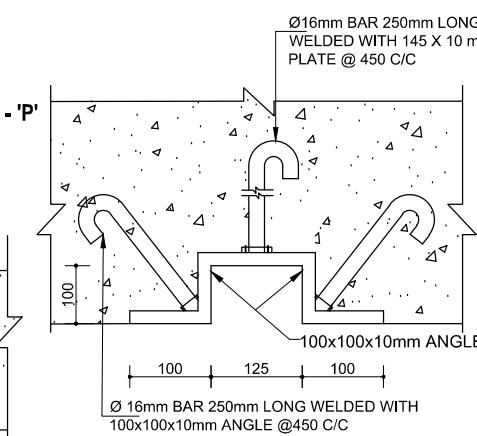
DATED: 00-00-0000 | DWG NO.: DC-8-CEIP-1(P-16)-0000-24/31



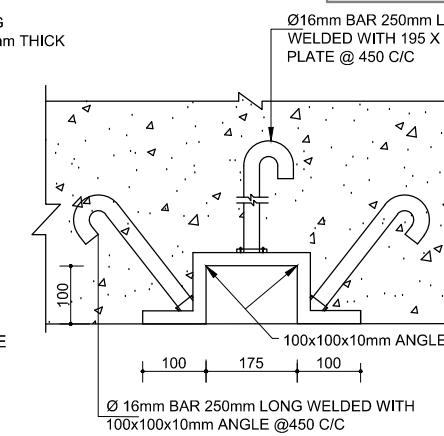
**SEC.OF DETAIL -B**



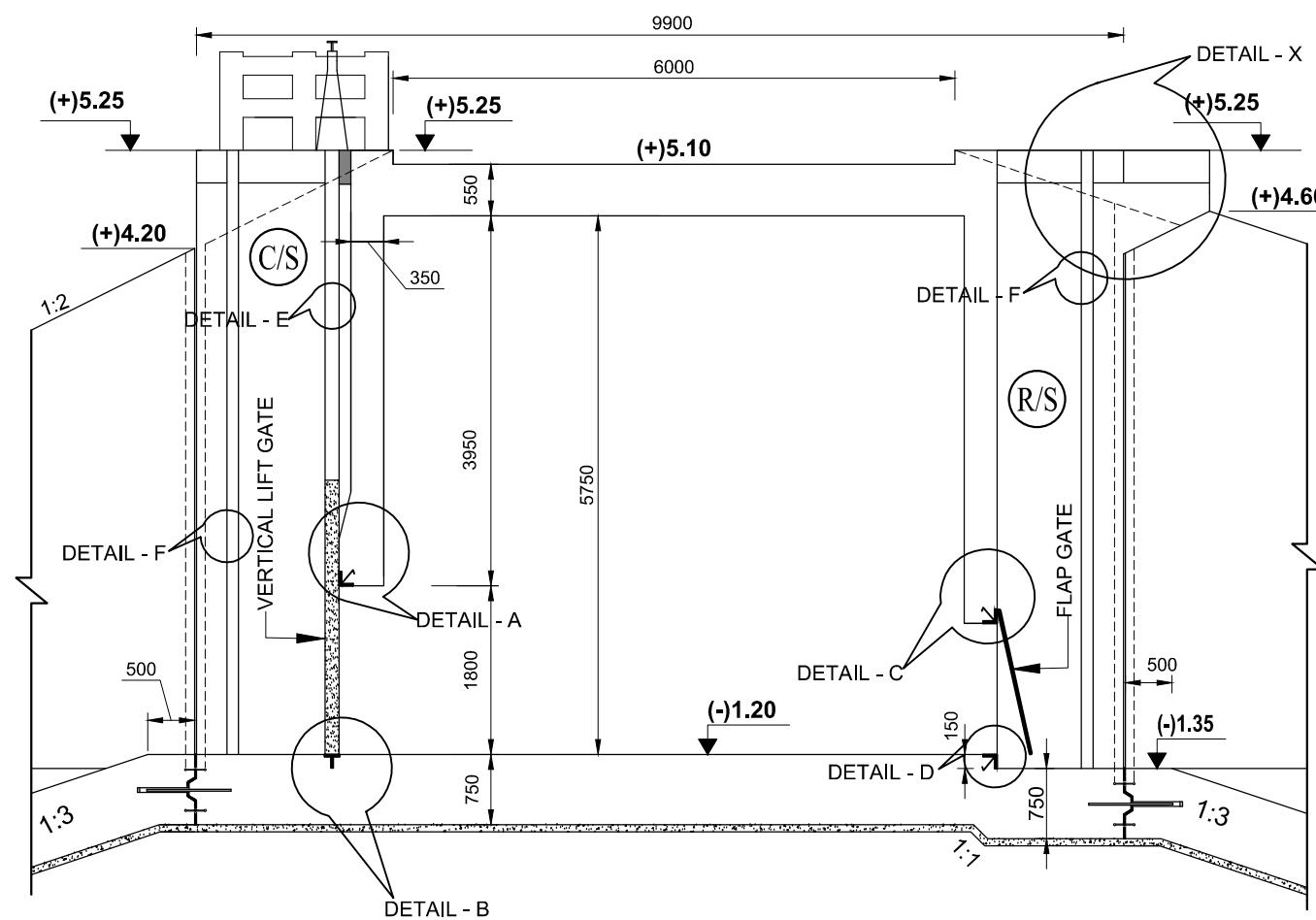
**SEC.OF DETAIL -C**



**SEC.OF DETAIL -D**



**SEC.OF DETAIL -E**



### **SECTION OF CENTRAL PART SHOWING EMBEDDED PARTS**

## **NOTE-1:**

GATE SHOULD BE CONTROLLED IF HEAD DIFFERENCE IS GREATER THEN 0.60m

## **NOTE-2:**

- NOTE-2:**  
1. ALL EMBEDDED PARTS OF GROOVE AND OTHERS WILL BE STAINLESS STEEL (SUS-304).  
2. ALL PARTS OF MECHANICAL GATE WILL BE STAINLESS STEEL (SUS-304).

NOT TO SCALE

BANGLADESH WATER DEVELOPMENT BOARD			MISCELLANEOUS METAL DETAIL			
DESIGN CIRCLE -8			APPROVED BY	CONSULTANT : Royal HaskoningDHV Sub Consultants DEVCON, DPM, IWM & DHI		
CHECKED BY	REVIEWED BY	RECOMMENDED BY		DESIGNED & CHECKED BY	REVIEWED BY	RECOMMENDED BY
ZAYED BIN SAIF ASSISTANT ENGINEER	ZAKARIA PERVEZ EXECUTIVE ENGINEER	MOHAMMAD SAIF UDDIN SUPERINTENDING ENGINEER	MD. ENAYET ULLAH CHIEF ENGINEER, DESIGN	MD. MAHBUBUR RAHMAN DESIGN ENGINEER	MD. HABIBUR RAHMAN DEPUTY TEAM LEADER	JEAN HENRY LABOYRIE TEAM LEADER
DATED: 00-00-0000	DWG NO.: DC-8-CEIP-1(P-16)-0000-25/31			DRAWN BY- CAD OPERATOR - MST. MOUSUMI KHATUN		

**TOTAL NO. OF  
SAND PILE  
 $9 \times 33 = 297$**

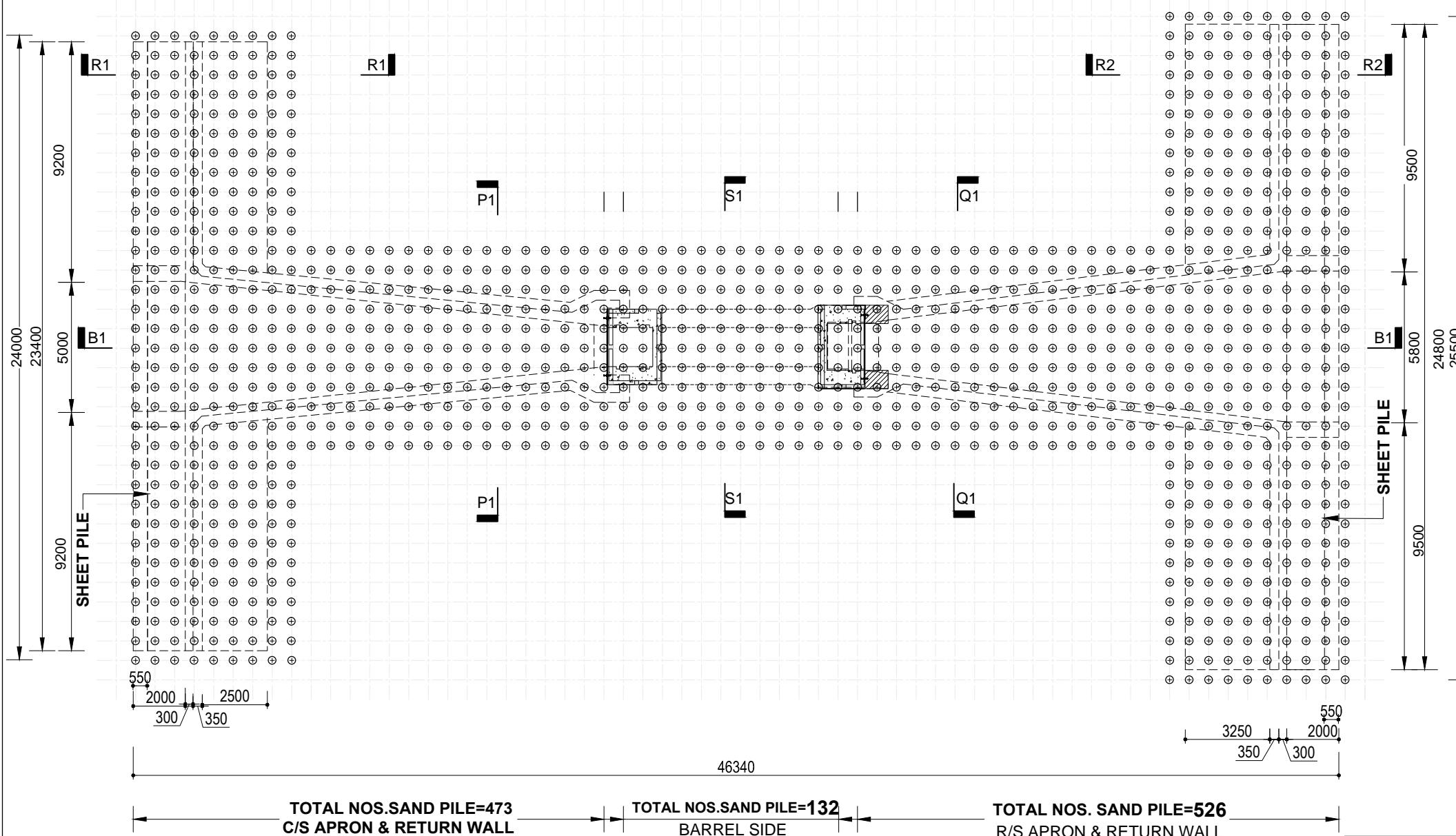
**TOTAL NO. OF  
SAND PILE**

**TOTAL NO. OF  
SAND PILE  
 $12 \times 11 = 132$**

**TOTAL NO. OF  
SAND PILE  
 $16 \times 11 = 176$**

**TOTAL NO. OF  
SAND PILE  
 $10 \times 35 = 350$**

(R/S)



## SAND PILE LAYOUT PLAN

NOT TO SCALE

- ## **NOTE FOR SAND PILE:**

1. SAND PILE OF 6.50m 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  $\geq$  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 0.35 CUBIC METER AND 2.275 m<sup>3</sup> 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-1 CONSULTANTS FOR NECESSARY ACTION

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GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH

MINISTRY OF WATER RESOURCES

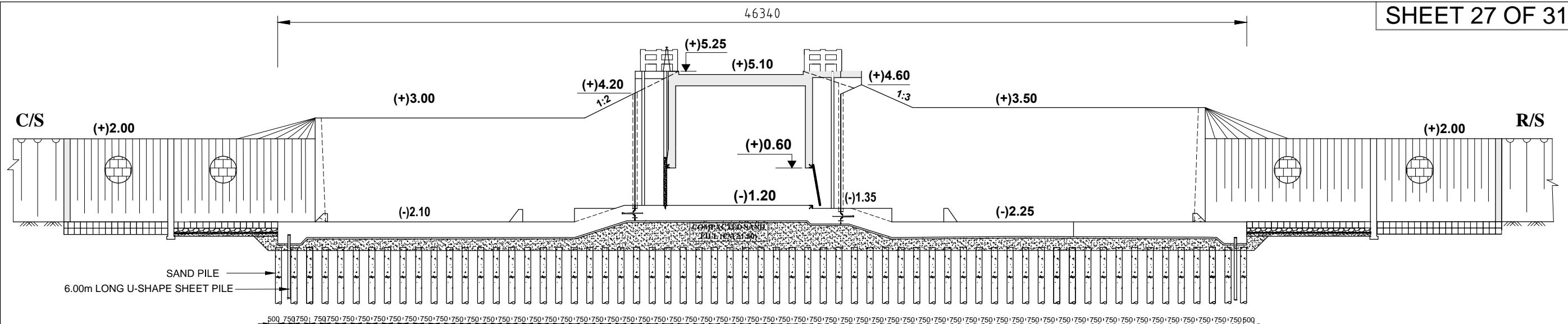
BANGLADESH WATER DEVELOPMENT BOARD

COASTAL EMBANKMENT IMPROVEMENT PROJECT, PHASE-1 (CEIP-1)

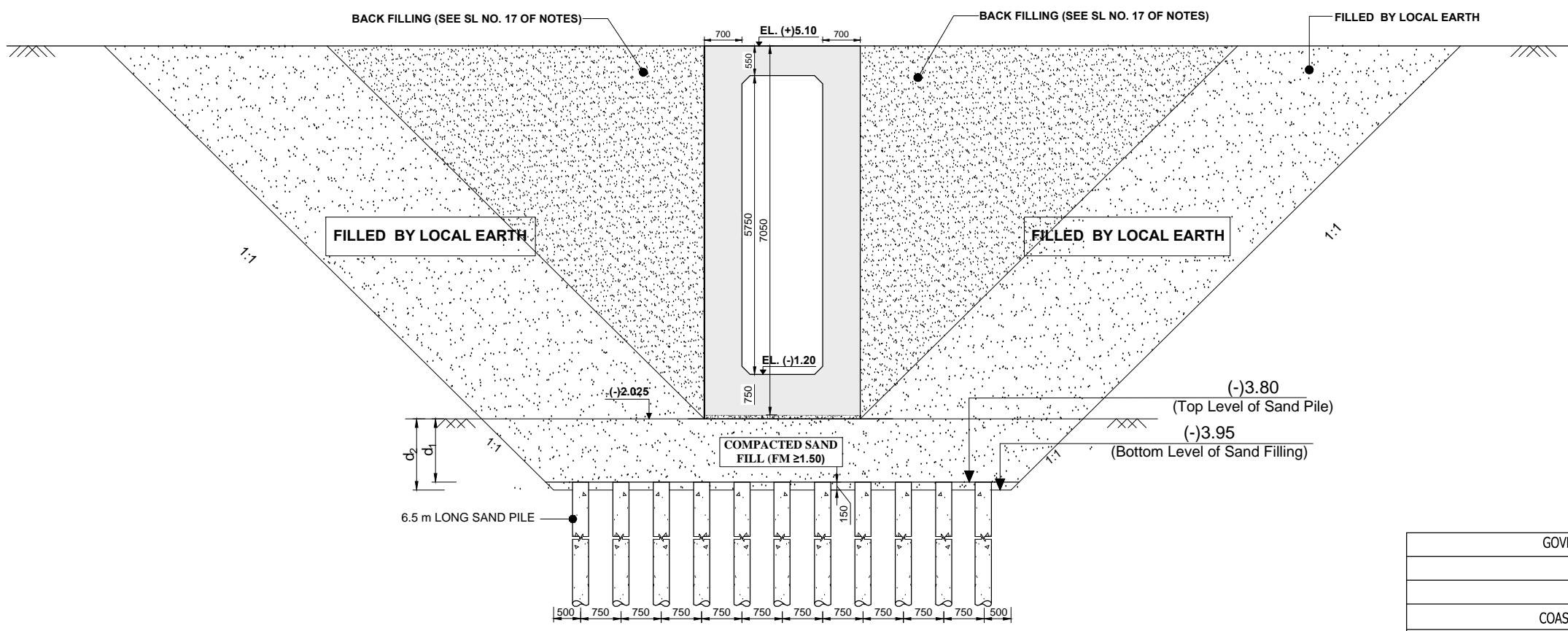
**DETAILED DESIGN OF DRAINAGE REGULATOR DR-5, AT Km 18.950 (1V-1.50m X 1.80m) UNDER  
POLDER -16, PACKAGE - 3, CEIP - 1, BWDB, UPAZILA - PAIGGACHA, DISTRICT - KHULNA.**

## SAND PILE LAYOUT PLAN

BANGLADESH WATER DEVELOPMENT BOARD			SAND PILE LAYOUT PLAN			
DESIGN CIRCLE -8			APPROVED BY	CONSULTANT : Royal HaskoningDHV Sub Consultants DEVCON, DPM, IWM & DHI		
CHECKED BY	REVIEWED BY	RECOMMENDED BY		DESIGNED & CHECKED BY	REVIEWED BY	RECOMMENDED BY
ZAYED BIN SAIF ASSISTANT ENGINEER	ZAKARIA PERVEZ EXECUTIVE ENGINEER	MOHAMMAD SAIF UDDIN SUPERINTENDING ENGINEER	MD. ENAYET ULLAH CHIEF ENGINEER, DESIGN	MD. MAHBUBUR RAHMAN DESIGN ENGINEER	MD. HABIBUR RAHMAN DEPUTY TEAM LEADER	JEAN HENRY LABOYRIE TEAM LEADER
DATED: 00-00-0000	DWG NO.: DC-8-CEIP-1(P-16)-0000-26/31	DRAWN BY- CAD OPERATOR - MST. MOUSUMI KHATUN				



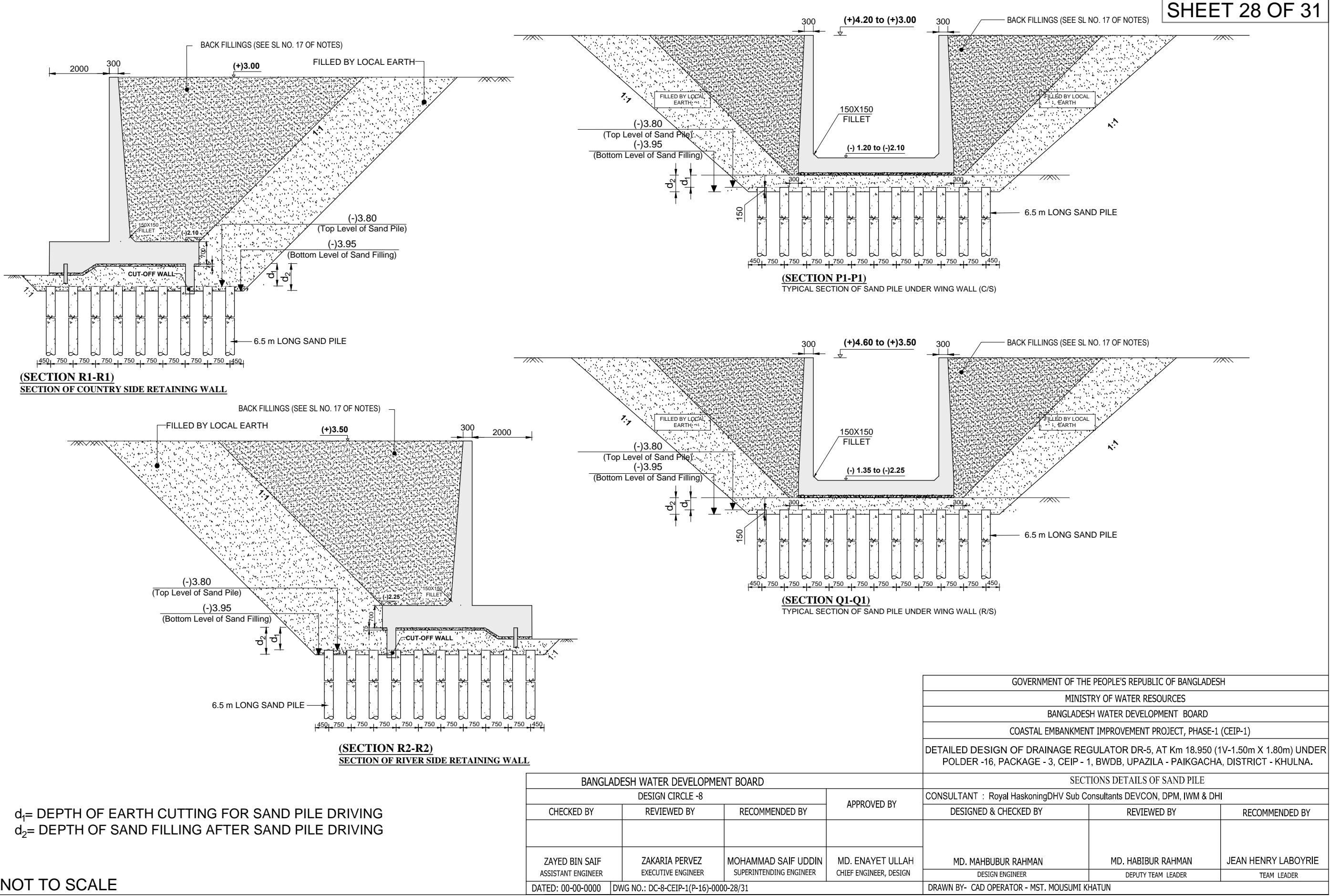
SECTION ON (B1-B1) SHOWING SAND PILE DETAIL

SECTION S1-S1  
SCALE 1:60

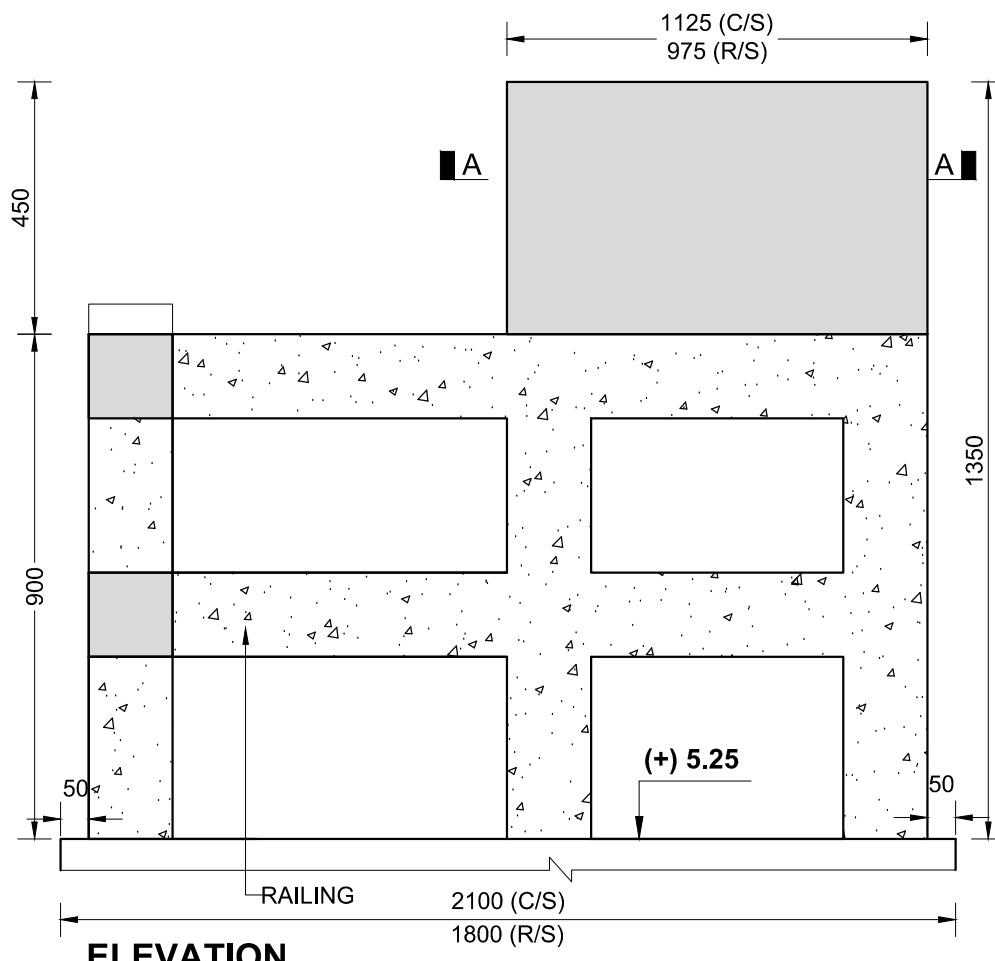
$d_1$ = DEPTH OF EARTH CUTTING FOR SAND PILE DRIVING  
 $d_2$ = DEPTH OF SAND FILLING AFTER SAND PILE DRIVING

NOT TO SCALE

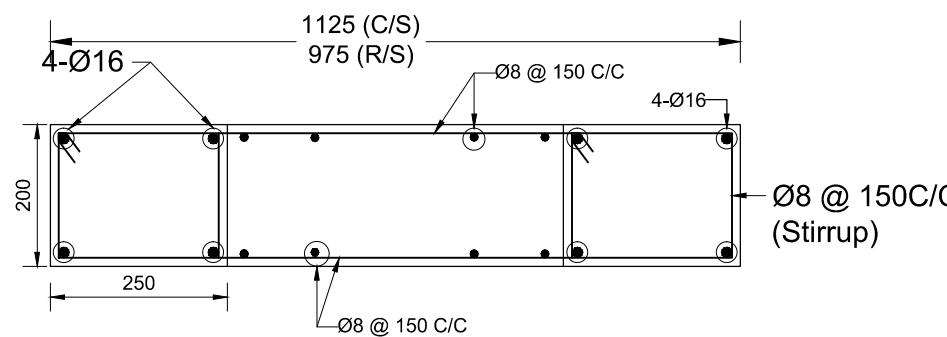
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH			
MINISTRY OF WATER RESOURCES			
BANGLADESH WATER DEVELOPMENT BOARD			
COASTAL EMBANKMENT IMPROVEMENT PROJECT, PHASE-1 (CEIP-1)			
DETAILED DESIGN OF DRAINAGE REGULATOR DR-5, AT Km 18.950 (1V-1.50m X 1.80m) UNDER POLDER -16, PACKAGE - 3, CEIP - 1, BWDB, UPAZILA - PAIKGACHA, DISTRICT - KHULNA.			
SAND PILE DETAILS OF LONGITUDINAL PROFILE & BOX			
DESIGN CIRCLE -8		APPROVED BY	CONSULTANT : Royal HaskoningDHV Sub Consultants DEVCON, DPM, IWM & DHI DESIGNED & CHECKED BY MD. HABIBUR RAHMAN REVIEWED BY MD. HABIBUR RAHMAN RECOMMENDED BY JEAN HENRY LABOYRIE
CHECKED BY	REVIEWED BY		
ZAYED BIN SAIF ASSISTANT ENGINEER	ZAKARIA PERVEZ EXECUTIVE ENGINEER	MOHAMMAD SAIF UDDIN SUPERINTENDING ENGINEER	MD. ENAYET ULLAH CHIEF ENGINEER, DESIGN
DATED: 00-00-0000   DWG NO.: DC-8-CEIP-1(P-16)-0000-27/31		DRAWN BY- CAD OPERATOR - MST. MOUSUMI KHATUN	







ELEVATION

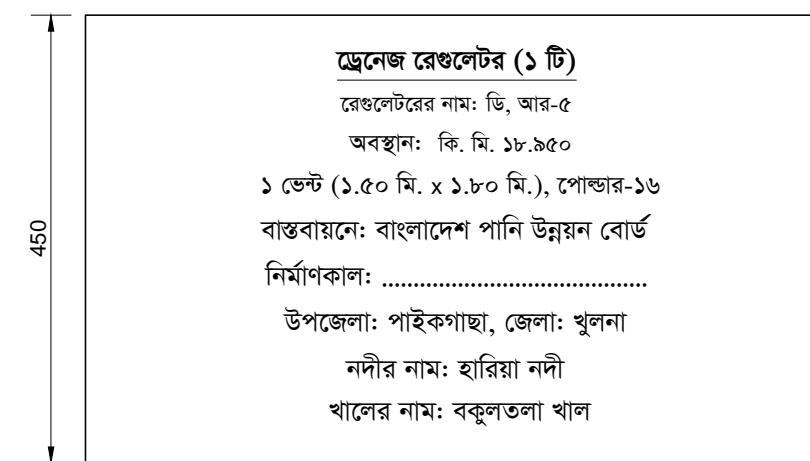


SECTION A-A

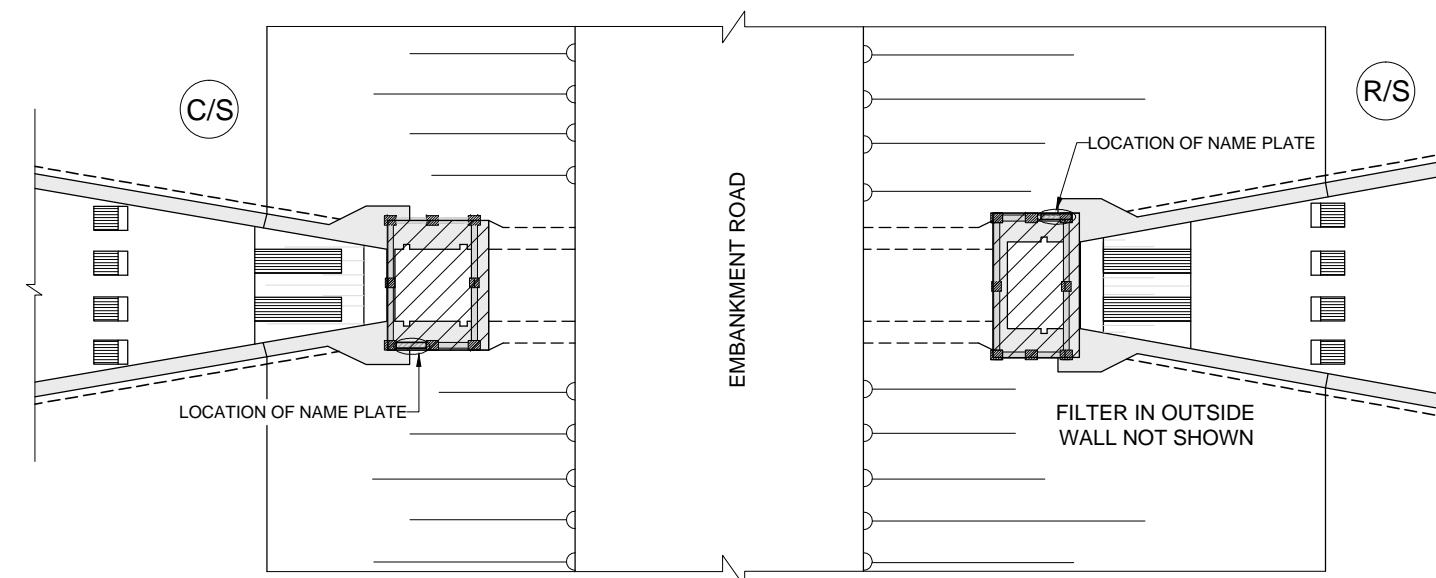
**NOTE:**

1. THE NAME PLATE SHALL BE PLACED AT THE LEFT SIDE OF BOTH APPROACHES.
2. THE SIZE OF LETTER SHOULD BE 30 mm TO 40 mm & IT SHOULD BE ENGRAVED IN THE PLATE.
3. THE COLOR OF THE LETTER SHOULD BE WHITE ON MEDIUM BLUE SURFACE.
4. THE NAME PLATE SHOULD BE CAST MONOLITHICALLY WITH THE POST AND THE WRITINGS SHOULD BE WRITTEN ON THE PLATE AFTER PLASTERING.

NOT TO SCALE



NAME PLATE

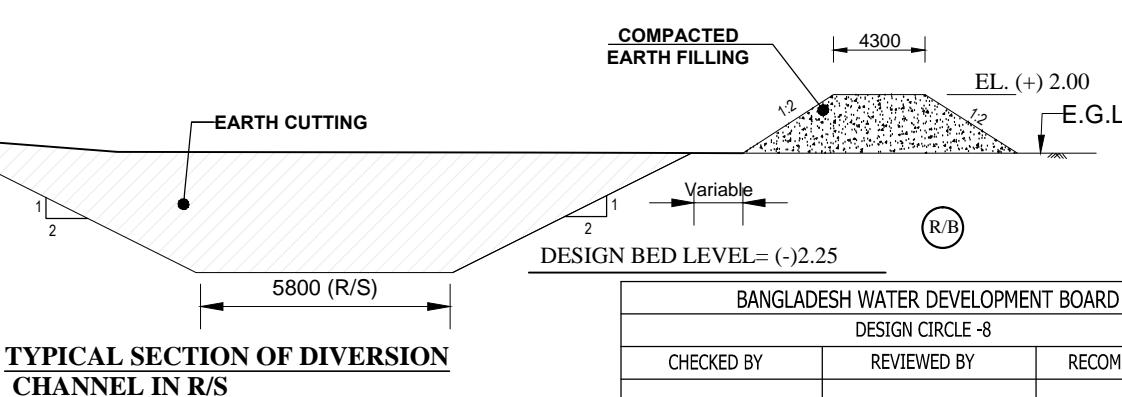
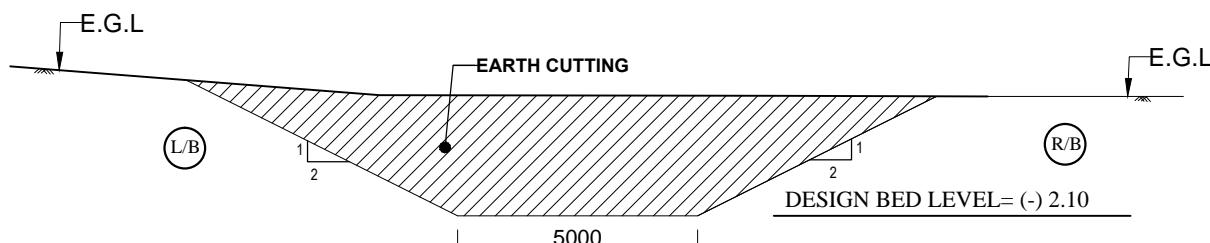
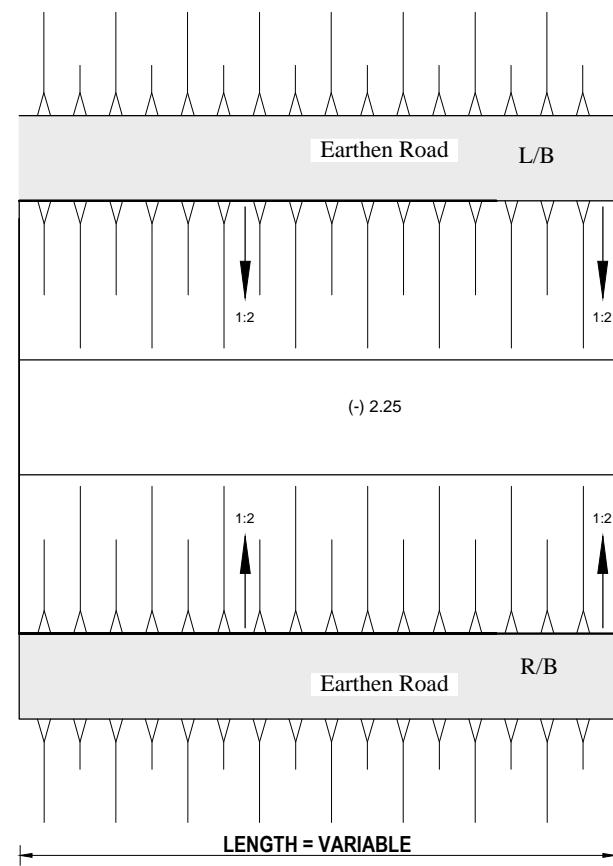
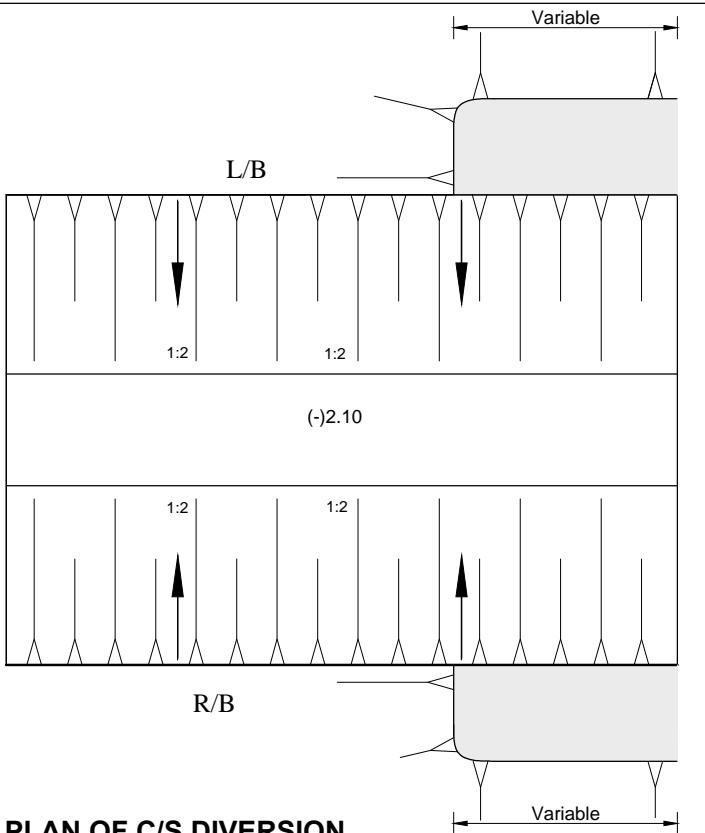


PLAN SHOWING NAME PLATE LOCATION ON SLUICE

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH		
MINISTRY OF WATER RESOURCES		
BANGLADESH WATER DEVELOPMENT BOARD		
COASTAL EMBANKMENT IMPROVEMENT PROJECT, PHASE-1 (CEIP-1)		
DETAILED DESIGN OF DRAINAGE REGULATOR DR-5, AT Km 18.950 (1V-1.50m X 1.80m) UNDER POLDER -16, PACKAGE - 3, CEIP - 1, BWDB, UPAZILA - PAIKGACHA, DISTRICT - KHULNA.		
<b>PLAN, ELEVATION &amp; DETAILS OF NAME PLATE</b>		
CONSULTANT : Royal HaskoningDHV Sub Consultants DEVCON, DPM, IWM & DHI		
DESIGNED & CHECKED BY	REVIEWED BY	RECOMMENDED BY
MD. MAHBUBUR RAHMAN	MD. HABIBUR RAHMAN	JEAN HENRY LABOYRIE
DESIGN ENGINEER	DEPUTY TEAM LEADER	TEAM LEADER
DRAWN BY- CAD OPERATOR - MST. MOUSUMI KHATUN		

## BANGLADESH WATER DEVELOPMENT BOARD

DESIGN CIRCLE -8			APPROVED BY
CHECKED BY	REVIEWED BY	RECOMMENDED BY	
ZAYED BIN SAIF ASSISTANT ENGINEER	ZAKARIA PERVEZ EXECUTIVE ENGINEER	MOHAMMAD SAIF UDDIN SUPERINTENDING ENGINEER	MD. ENAYET ULLAH CHIEF ENGINEER, DESIGN
DATED: 00-00-0000	DWG NO.: DC-8-CEIP-1(P-16)-0000-30/31		



**NOT TO SCALE**

#### NOTES FOR DIVERSION CHANNEL

- THE EXCAVATED EARTH IS TO BE SPREAD OVER THE BANKS AT LEAST 10.0M AWAY FROM BANK LINE.
- NO FILLING SHALL BE DONE, IF THERE IS ANY DEPRESSION IN THE EXISTING BED OF KHAL.
- EXCAVATION OF DIVERSION CHANNEL SHOULD BE STARTED FROM DOWN STREAM (OUT-FALL).
- THE WORK SHALL BE EXECUTED AFTER PROPER ADMINISTRATIVE AND FINANCIAL APPROVAL FROM THE COMPETENT AUTHORITY.
- IF THERE IS ANY DIFFERENCE BETWEEN DESIGN CANAL SECTION WITH THE EXISTING SECTION OF STRUCTURE, IT SHOULD BE ADJUSTED WITH A SLOPE OF 1:100.
- FOR ANY ERROR OR OMISSION, PLEASE REFER TO THE CONCERNED DESIGN OFFICE THROUGH CEIP-1 CONSULTANTS FOR TAKING NECESSARY ACTION.
- A 3m WIDE OPENING SHALL BE LEFT AT AN INTERVAL OF 100m OR LESS AS REQUIRED ON EITHER BANK TO PERMIT DRAINAGE OF THE ADJOINING LOW LYING AREAS.

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH			
MINISTRY OF WATER RESOURCES			
BANGLADESH WATER DEVELOPMENT BOARD			
COASTAL EMBANKMENT IMPROVEMENT PROJECT, PHASE-1 (CEIP-1)			
DETAILED DESIGN OF DRAINAGE REGULATOR DR-5, AT Km 18.950 (1V-1.50m X 1.80m) UNDER POLDER -16, PACKAGE - 3, CEIP - 1, BWDB, UPAZILA - PAIKGACHA, DISTRICT - KHULNA.			
<b>DETAILS OF DIVERSION CHANNEL</b>			
CONSULTANT : Royal HaskoningDHV Sub Consultants DEVCON, DPM, IWM & DHI			
DESIGNED & CHECKED BY		REVIEWED BY	
MD. MAHBUBUR RAHMAN		MD. HABIBUR RAHMAN	
DESIGN ENGINEER		DEPUTY TEAM LEADER	
JEAN HENRY LABOYRIE		TEAM LEADER	
DRAWN BY- CAD OPERATOR - MST. MOUSUMI KHATUN			