

Serial-2

DRAFT

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

CEIP-1

1651

(25-11-2021)

received on 28/11/2021.

(without calculation and
without design data)
Km 2.



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
OCTOBER, 2021



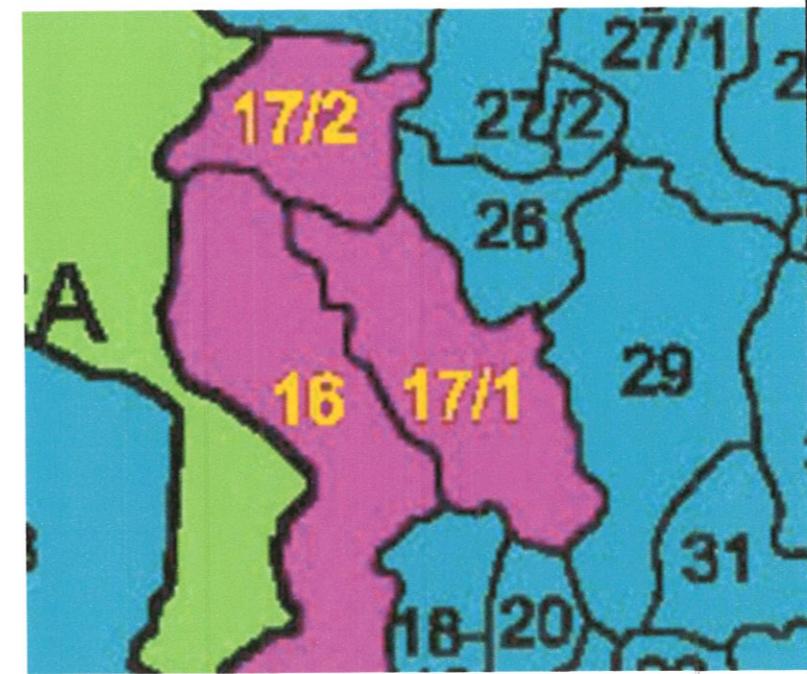
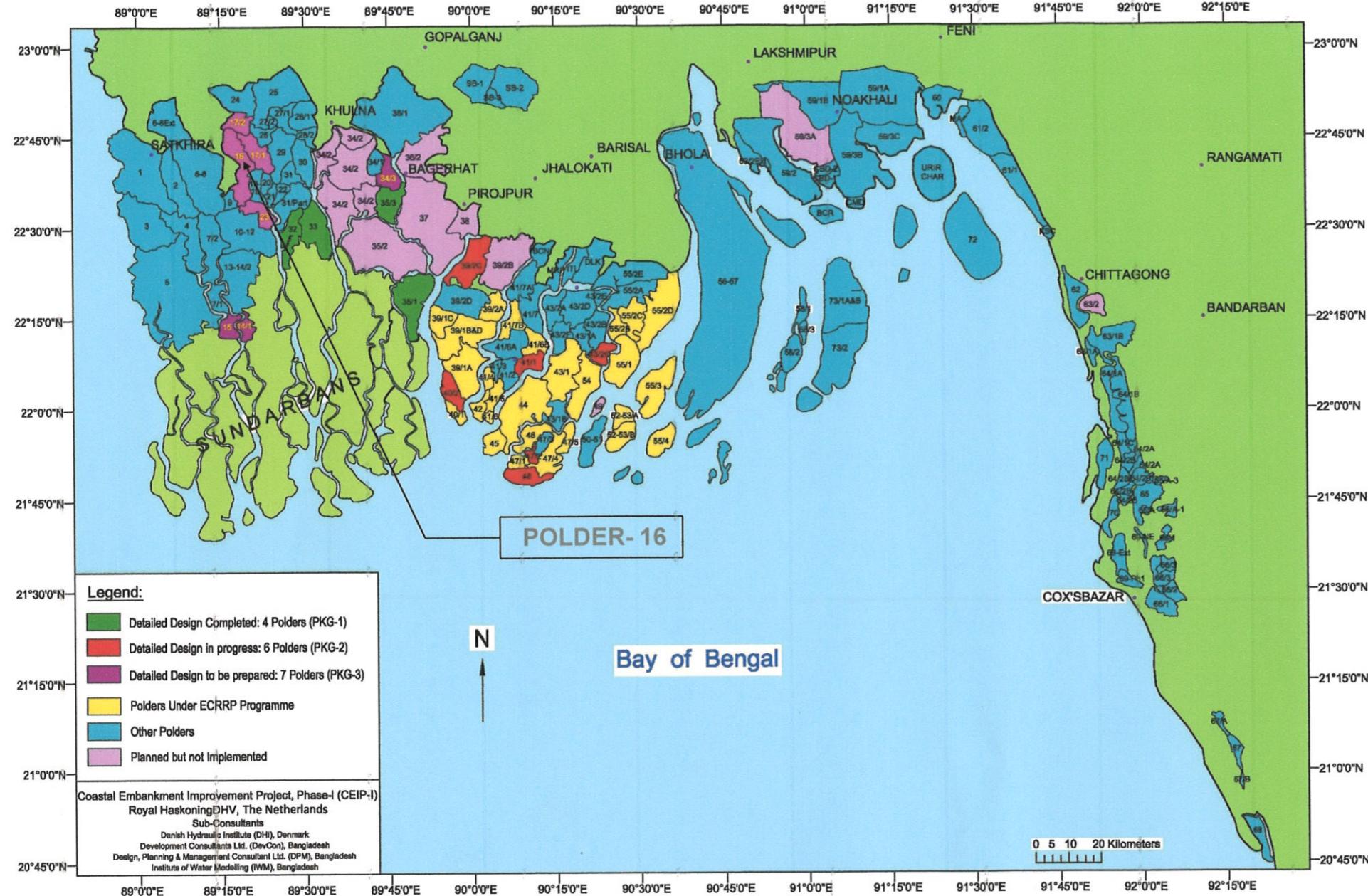
DevCon
Leading Today for Tomorrow



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

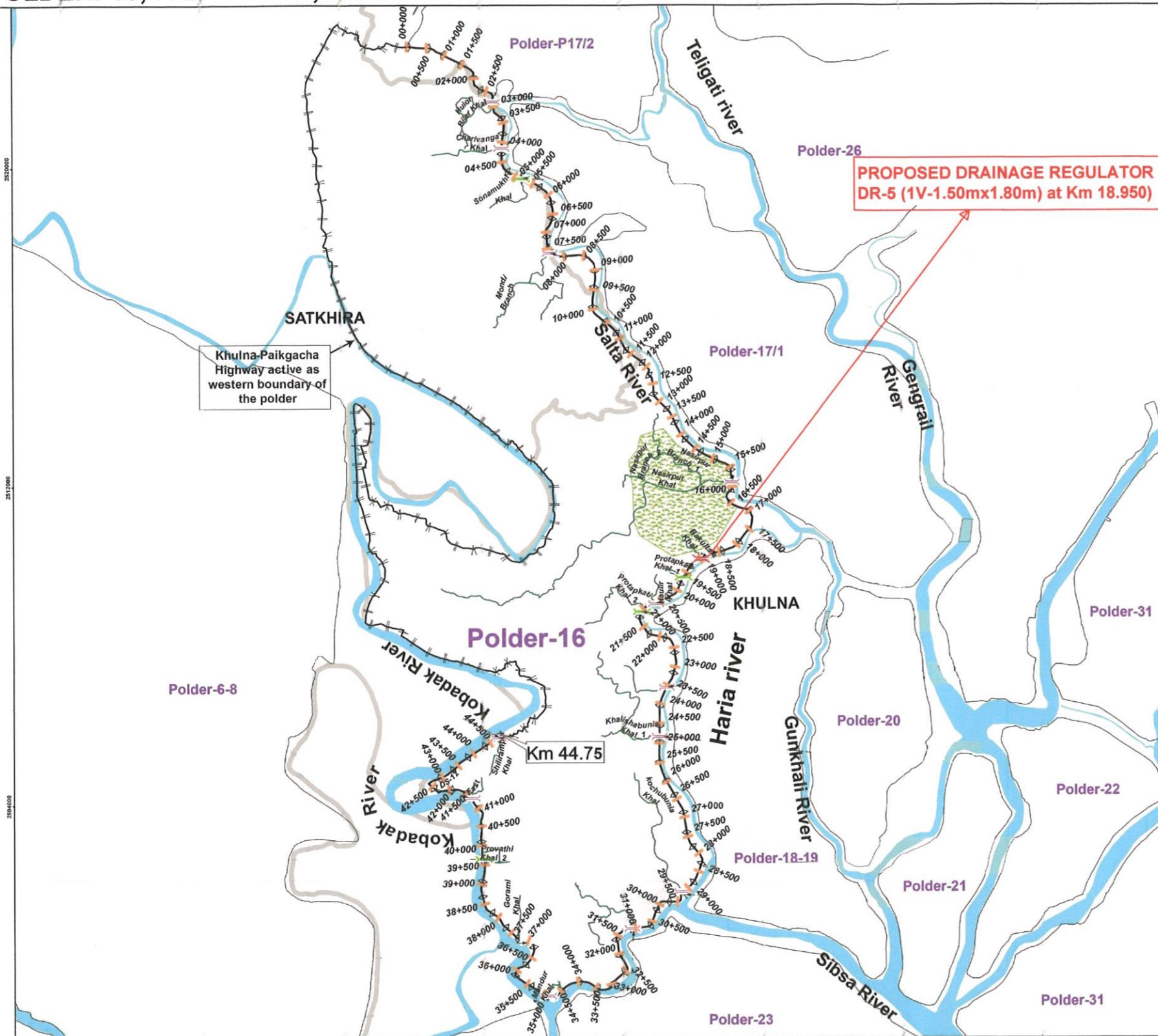
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LOCATION MAP

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.			
LOCATION MAP			
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			
DRAWN BY - CAD OPERATOR - MST. MOUSUMI KHATUN			

NOT TO SCALE



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

Legend:

Embankment	
Retired Embk.	
Bank Revetment	
Slope Protection	
Afforestation	
Khal	
Road	
River	
Drainage Regulator (DR)	
Flushing Regulator (FR)	



0 1.25 2.5 5 Km

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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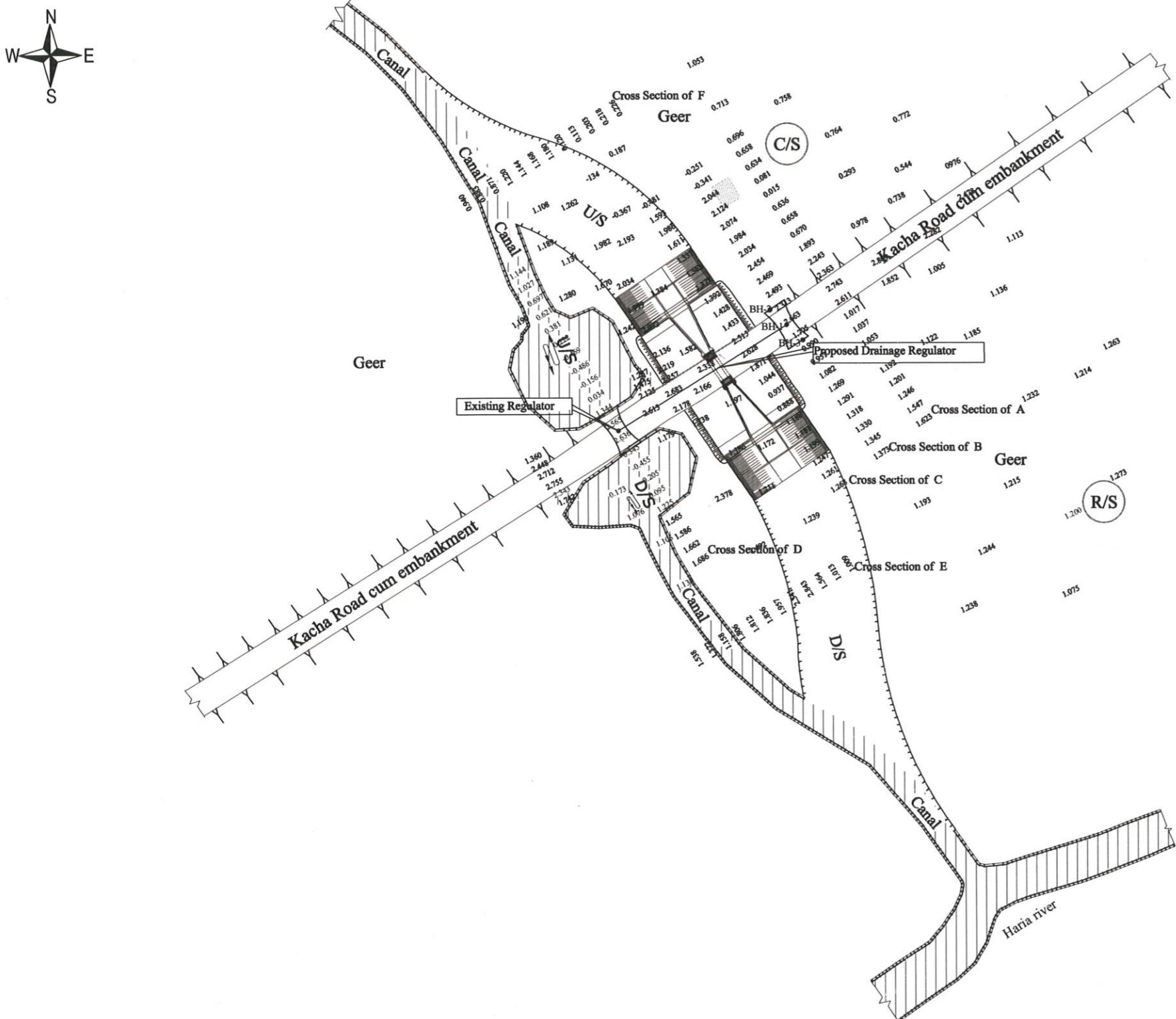
POLDER MAP

BANGLADESH WATER DEVELOPMENT BOARD			APPROVED BY
DESIGN CIRCLE -8	REVIEWED BY	RECOMMENDED BY	
CHECKED BY	REVIEWED BY	RECOMMENDED BY	
RAHUL BISWAS ASSISTANT ENGINEER	ABU-SAYEED MD. MASUM 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			
MD. MAHBUBUR RAHMAN DESIGN ENGINEER			MD. HABIBUR RAHMAN DEPUTY TEAM LEADER
JEAN HENRY LABOYRIE 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

Zayed Bin Saif JAKARIA PERVEZ



SITE PLAN FOR DR-5

NOTE:

1. SITE PLAN HAS BEEN PREPARED BASED ON RECENT SURVEY REPORT
2. ALL ELEVATIONS SHOWN IN THIS SITE PLAN ARE IN CORRECTED m PWD.
3. EXISTING REGULATOR AS SHOWN IN SITE PLAN MUST BE DEMOLISHED AND EMBANKMENT MUST BE CONSTRUCTED OVER IT AS PER DESIGN AND SPECIFICATION.
4. APPROACH ROAD TO BE CONSTRUCTED AS SHOWN IN THE DWG. WITH TOP WIDTH 4.30m, CREST LEVEL (+)2.00 CORRECTED m PWD & SIDE SLOPE 1:2

NOT TO SCALE

BANGLADESH WATER DEVELOPMENT BOARD

DESIGN CIRCLE -8			APPROVED BY	SITE PLAN		
CHECKED BY	REVIEWED BY	RECOMMENDED BY		DESIGNED & CHECKED BY	REVIEWED BY	RECOMMENDED BY
RAHUL BISWAS ASSISTANT ENGINEER	ABU-SAYEED MD. MASUM 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)-0000-03/31			DRAWN BY- CAD OPERATOR - MST. MOUSUMI KHATUN		

RECORD OF BORING AND TESTING										
M / S. TAZIM SOIL ENGINEER'S										
CONSTRUCTION OF SLUICE GATE ON BAKULTOLA CANAL AT VLL. - DHANAR DHOYANIA, UNION - 02 NO. KOPIL MUNI, UPAZILA - PAIKGACHA, DIST. - KHULNA, BANGLADESH.										
Borehole No. 01(One) Existing Ground Level (EGL.) : 7.663 Depth of Boring : 81.0ft. Boring Dia : 10.16cm Method of Boring : WASH Date of Starting:01.09.2021 Time : 8 : 00 A.M. Date of Completion:01.09.2021 Time : 12 : 30 P.M. Weather : Sunny/Rainy										
Soil strata legend Sand Silt Clay Sampling spoon sample Undisturb sample (UD)										
STRATIFICATION										
Type of Sample	Depth in m.	Depth in ft.	Thickness in ft.	Graphics	BLOWS ON SPOON PER 15cm PENETRATION	GRAPHICAL PENETRATION OF N-VALUES	Sample No.	STNDARAD PENETRATION TEST (SPT)		
					15cm 15cm 15cm	N - Value		D-1	D-2	D-3
								D-4	D-5	D-6
								D-7	D-8	D-9
								D-10	D-11	D-12
								D-13	D-14	D-15
								D-16	D-17	D-18
								D-19	D-20	D-21
								D-22	D-23	D-24
								D-25	D-26	D-27
								D-28	D-29	D-30
								D-31	D-32	D-33
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GENERAL NOTES

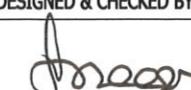
1. TECHNICAL SPECIFICATION PREPARED BY CEIP-1 AND APPROVED BY BWDB SHOULD BE FOLLOWED.
2. ALL DIMENSIONS ARE IN MILLIMETERS AND ALL ELEVATIONS ARE IN CORRECTED m PWD UNLESS OTHERWISE MENTIONED IN THE DRAWINGS.
3. COMPRESSIVE STRENGTH OF REINFORCED CEMENT CONCRETE SHALL HAVE MINIMUM 37 DAYS CYLINDER STRENGTH, $f_c \geq 22.00 \text{ N/mm}^2$ 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 LAPED 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. ≥ 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. ≥ 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 .

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..

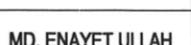
NOTES FOR SHEET PILES:

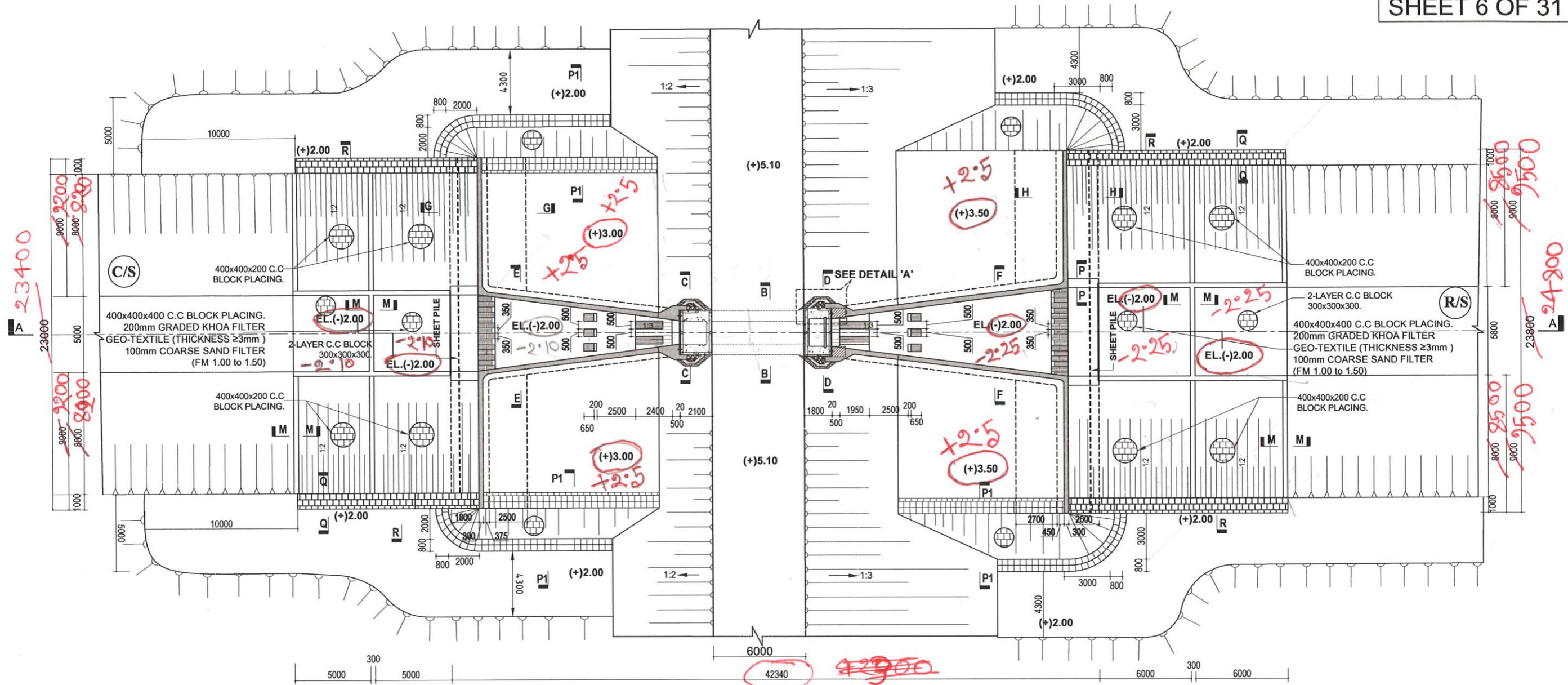
1. HOT ROLLED SHEET PILE SHALL BE USED. COLD ROLLED SHEET PILE SHALL NEVER BE USED.
2. COATING SHALL BE PROVIDED OVER SHEET PILE IN THE FOLLOWING WAY:-
 - i) CLEAN THE SHEET PILE SURFACE PREFERABLY WITH SAND BLASTING.
 - ii) PROVIDE 1 (ONE) COAT OF ZINK PHOSPHATE AS PRIMARY COAT,
 - iii) PROVIDE 2 (TWO) 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.

(Consultant should submit all bending moment diagram and shear force diagram where structural analysis have been done.) This BMD and SFD shall be annexure with diagram shall be Loading pattern submitted.

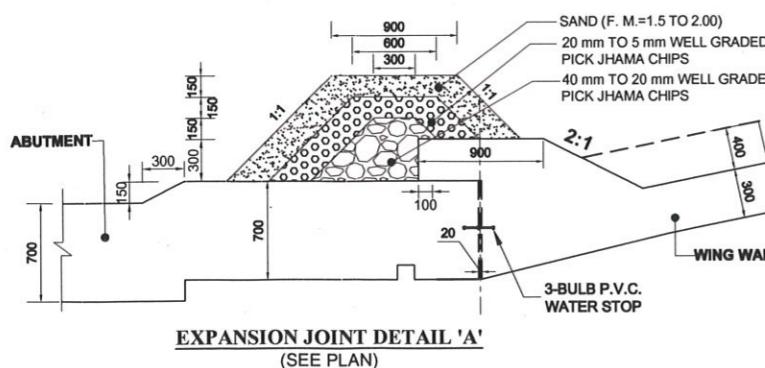
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BANGLADESH WATER DEVELOPMENT BOARD			
COASTAL EMBANKMENT IMPROVEMENT PROJECT, PHASE-1 (CEIP-1)			
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DRAWN BY- CAD OPERATOR - MST. MOUSUMI KHATUN		TEAM LEADER	

NOT TO SCALE

BANGLADESH WATER DEVELOPMENT BOARD			
DESIGN CIRCLE -8			APPROVED BY
CHECKED BY	REVIEWED BY	RECOMMENDED BY	
 RAHUL BISWAS ASSISTANT ENGINEER	 ABU SAYEED MD. MASUM 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		

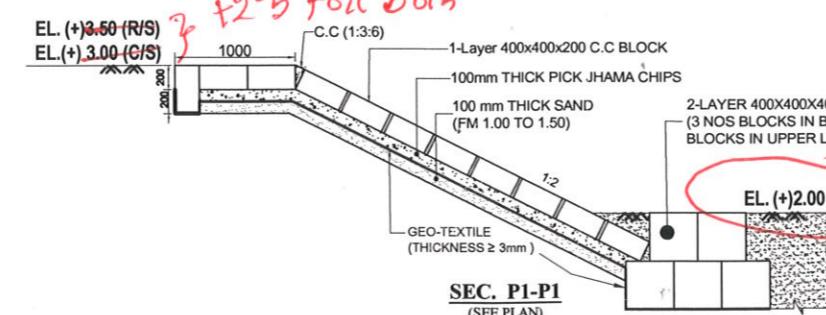


PLAN 46140



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

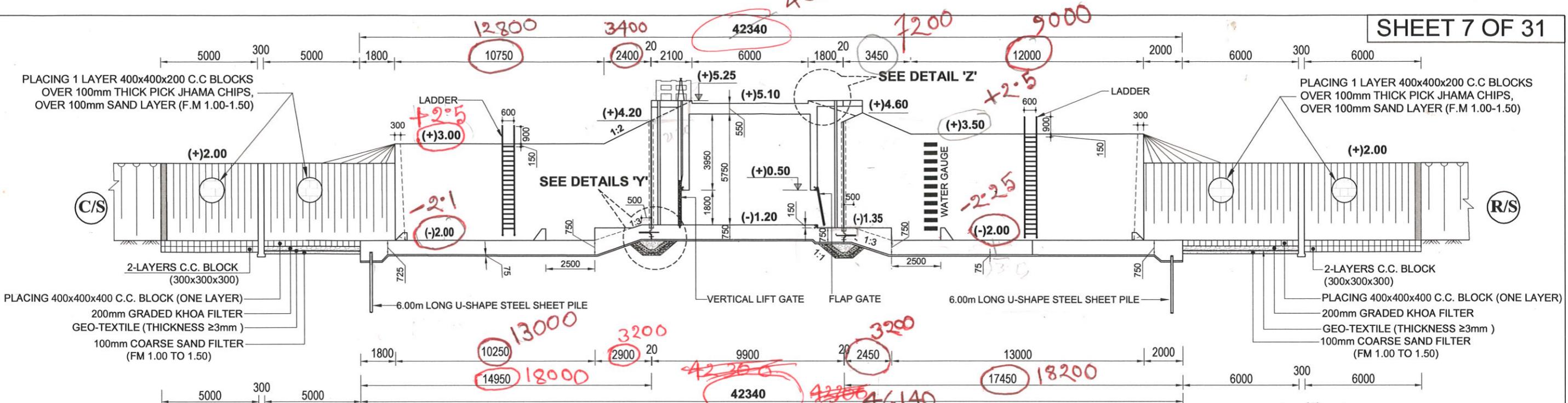
BANGLADESH WATER DEVELOPMENT BOARD

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
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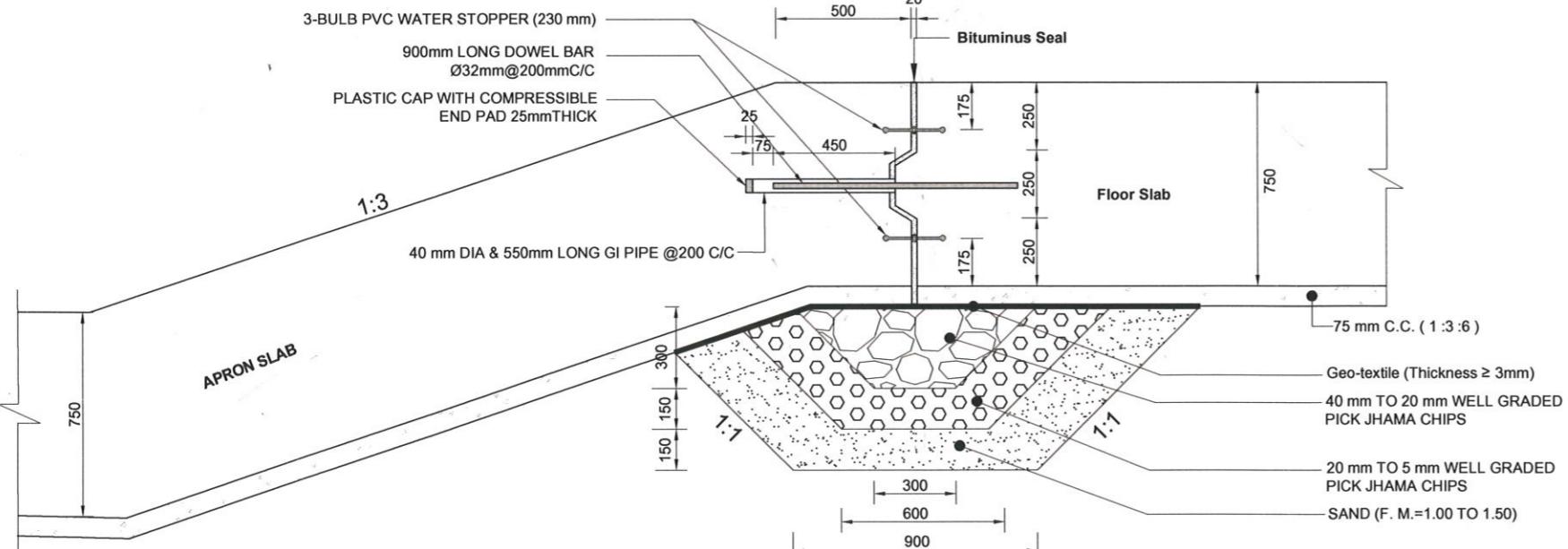
PLAN & SECTION

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
RAHUL BISWAS ASSISTANT ENGINEER	ABU SAYEED MD. MASUM 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)-0000-6/31	DRAWN BY - CAD OPERATOR - MST. MOUSUMI KATHUN				



SECTIONAL ELEVATION (SECTION A-A)

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

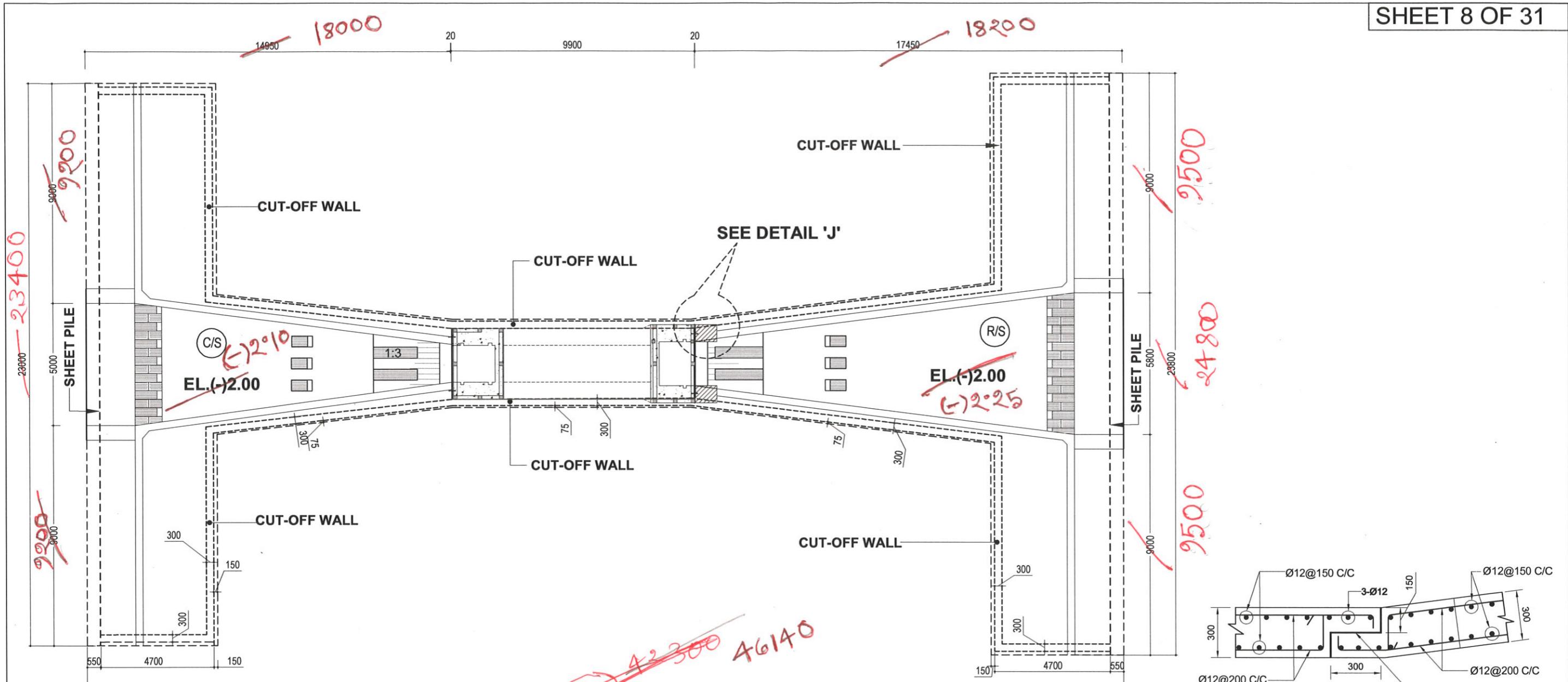


DETAILS "Y" [Reinforcement not shown]

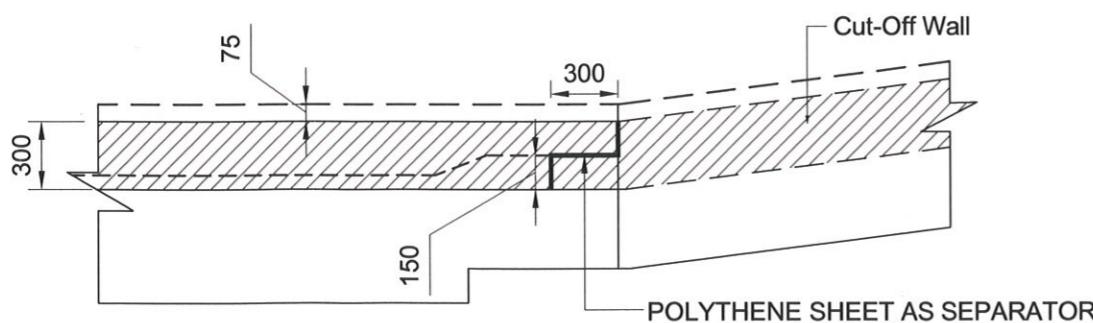
(SEE SECTION A-A)

BANGLADESH WATER DEVELOPMENT BOARD				SECTIONAL ELEVATION & 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	
<u>RAHUL BISWAS</u> ASSISTANT ENGINEER	<u>ABU SAYEED MD. MASUM</u> EXECUTIVE ENGINEER	<u>MOHAMMAD SAIF UDDIN</u> SUPERINTENDING ENGINEER		 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)-0000-7/31	DRAWN BY- CAD OPERATOR - MST. MOUSUMI KHATUN					

NOT TO SCALE

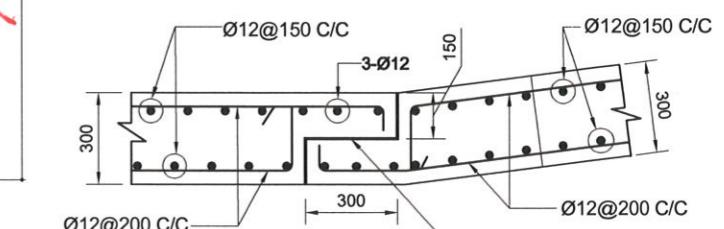


PLAN OF CUT-OFF WALL



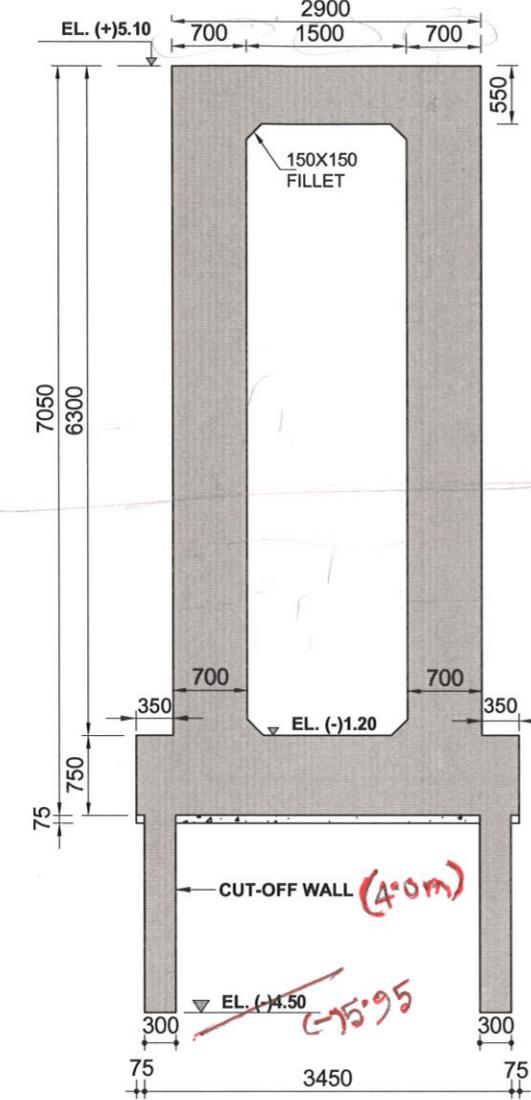
DETAIL OF CUT-OFF WALL AT JOINT

NOT TO SCALE

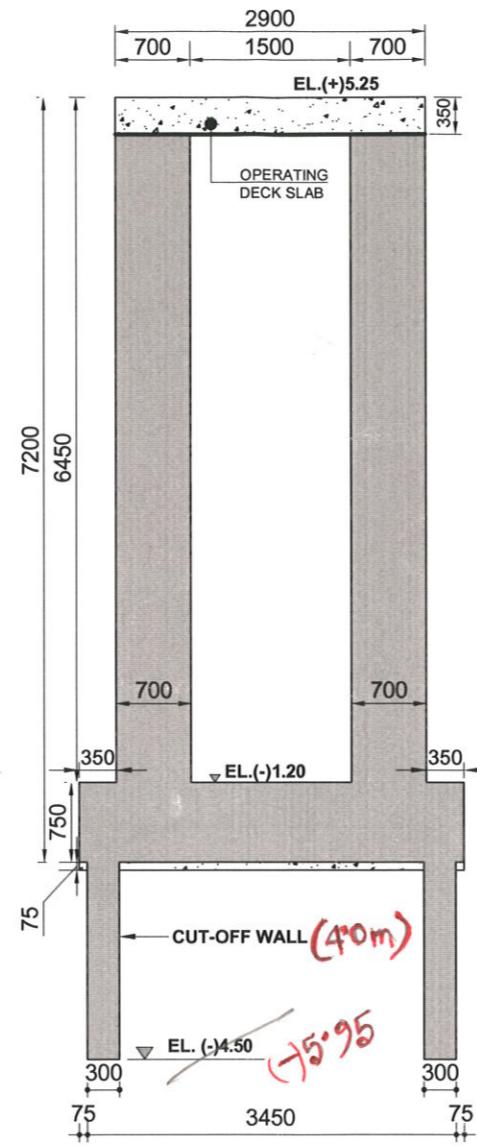


DETAIL - 'J'
(ONLY FOR CUT-OFF WALL)
[PLAN VIEW]

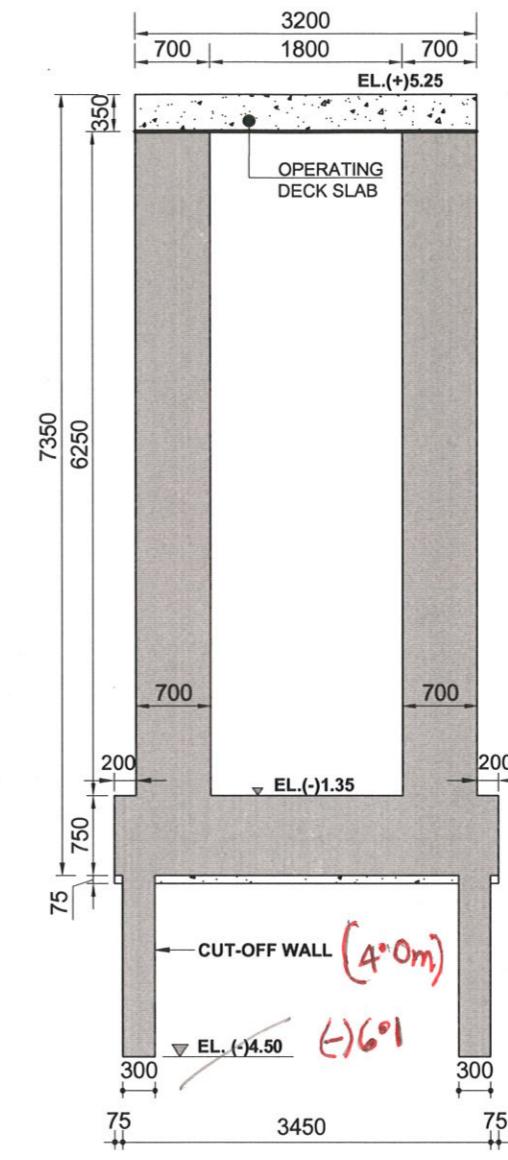
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH MINISTRY OF WATER RESOURCES BANGLADESH WATER DEVELOPMENT BOARD COASTAL EMBANKMENT IMPROVEMENT PROJECT, PHASE-1 (CEIP-1)			
DETAILED DESIGN OF DRAINAGE REGULATOR DR-5, AT Km 18.950 (1V-1.50m X 1.80m) UNDER POLDER -16, PACKAGE - 3, CEIP - 1, BWDB, UPAZILA - PAIKGACHA, DISTRICT - KHULNA.			
BANGLADESH WATER DEVELOPMENT BOARD			
DESIGN CIRCLE -8	APPROVED BY		PLAN OF CUT-OFF WALL & DETAILS
CHECKED BY	REVIEWED BY	RECOMMENDED BY	CONSULTANT : Royal HaskoningDHV Sub Consultants DEVCON, DPM, IWM & DHI
RAHUL BISWAS ASSISTANT ENGINEER	ABU SAYEED MD. MASUM EXECUTIVE ENGINEER	MOHAMMAD SAIF UDDIN SUPERINTENDING ENGINEER	DESIGNED & CHECKED BY
MD. MAHBUBUR RAHMAN	MD. HABIBUR RAHMAN	JEAN HENRY LABOYRIE	REVIEWED BY
DESIGN ENGINEER	DEPUTY TEAM LEADER	TEAM LEADER	RECOMMENDED BY
DATED: 00-00-0000	DWG NO.: DC-8-CEIP-1(P-16)-0000-8/31	DRAWN BY - CAD OPERATOR - MST. MOUSUMI KHATUN	



SECTION B-B (In Barrel)



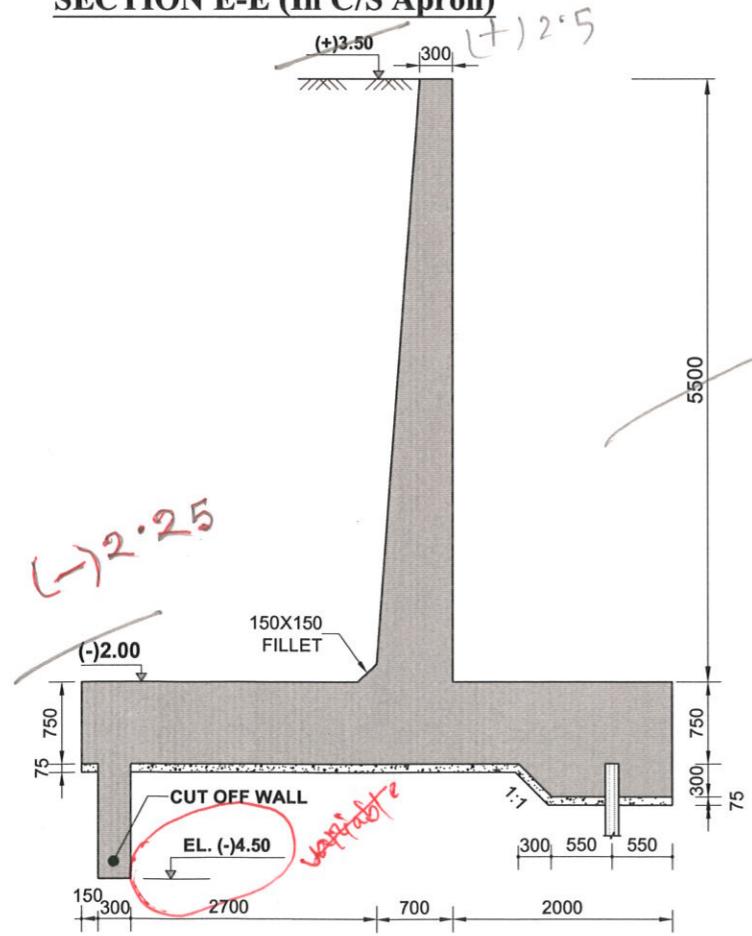
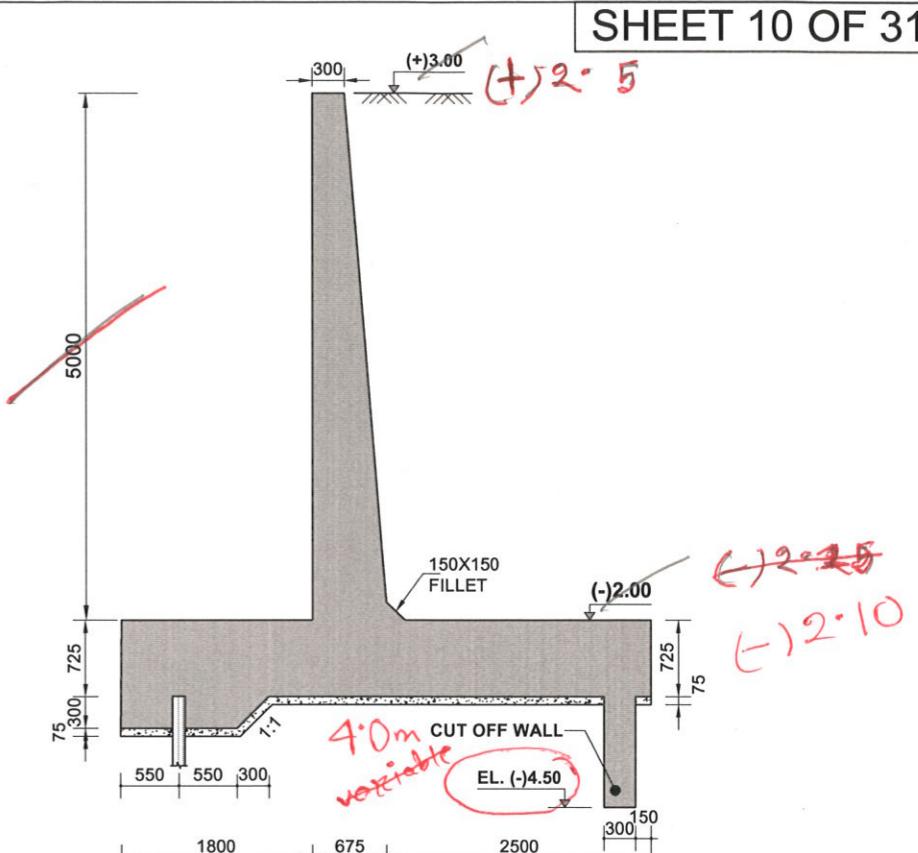
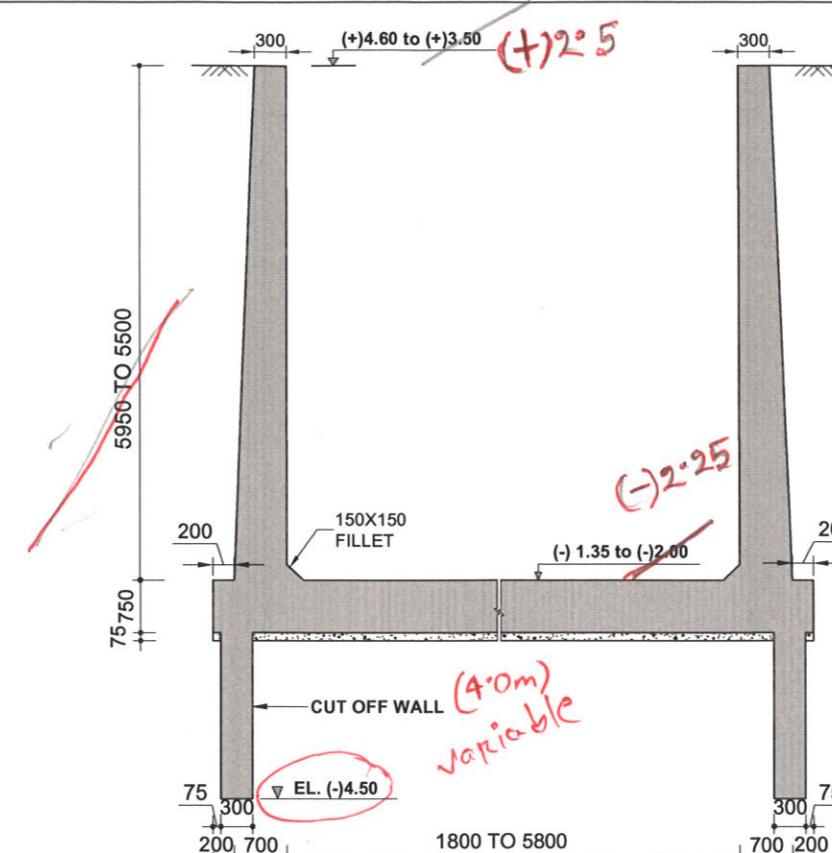
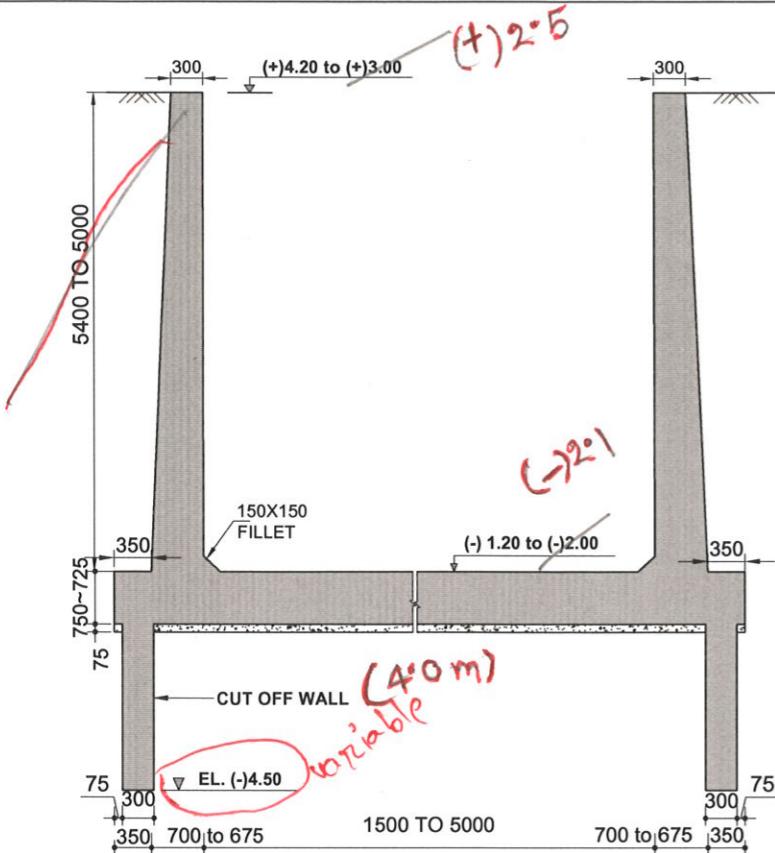
SECTION C-C (In C/S Extd. Part)



SECTION D-D (In R/S Extd. Part)

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

NOT TO SCALE

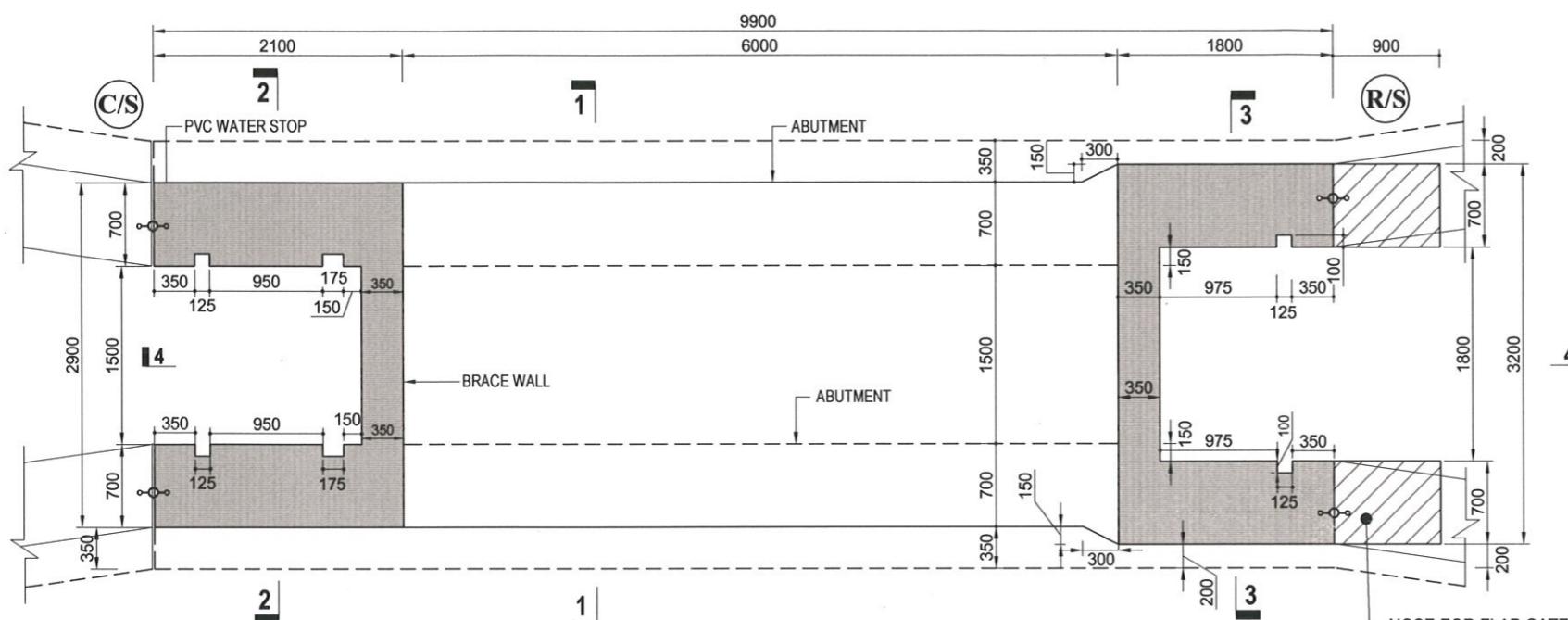


NOT TO SCALE

BANGLADESH WATER DEVELOPMENT BOARD		
DESIGN CIRCLE -8		
CHECKED BY	REVIEWED BY	RECOMMENDED BY
RAHUL BISWAS ASSISTANT ENGINEER	ABU SAYEED MD. MASUM 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)-0009-10/31	

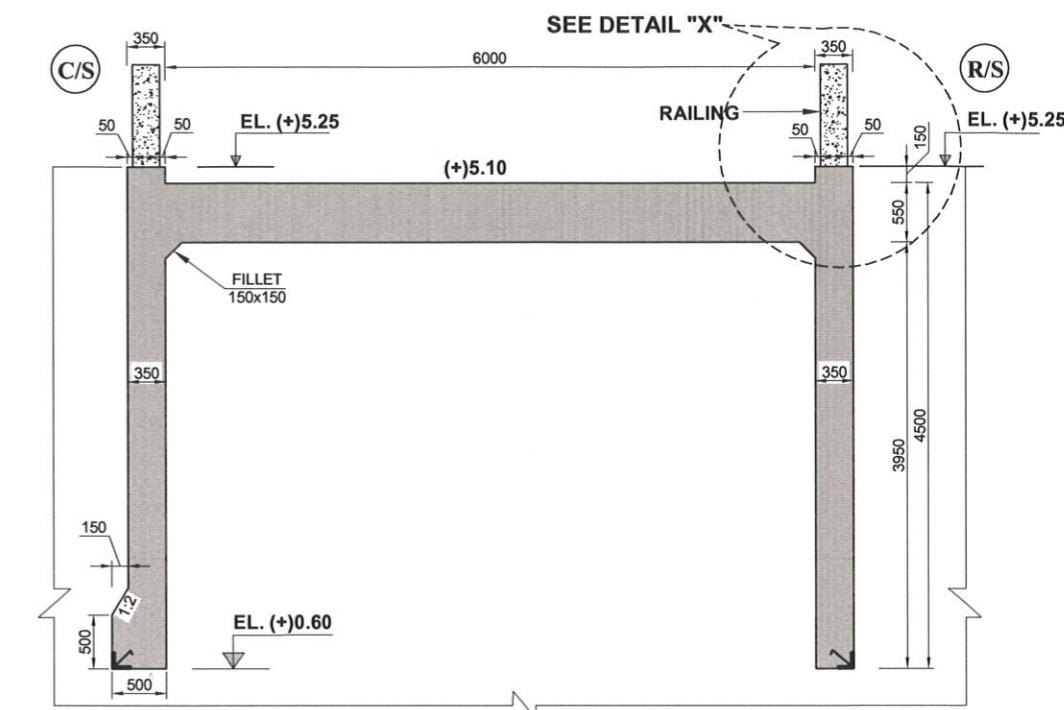
CONCRETE OUTLINE OF WING WALL & RETURN WALL		
CONSULTANT : Royal HaskoningDHV Sub Consultants DEVCON, DPM, IWM & DHI	DESIGNED & CHECKED BY	REVIEWED BY
RECOMMENDED BY		
	MD. MAHBUBUR RAHMAN DESIGN ENGINEER	MD. HABIBUR RAHMAN DEPUTY TEAM LEADER
		Jean Henry Laboyrie TEAM LEADER
	DRAWN BY- CAD OPERATOR - MST. MOUSUMI KHATUN	

* New length should be calculated according to the given height indicated

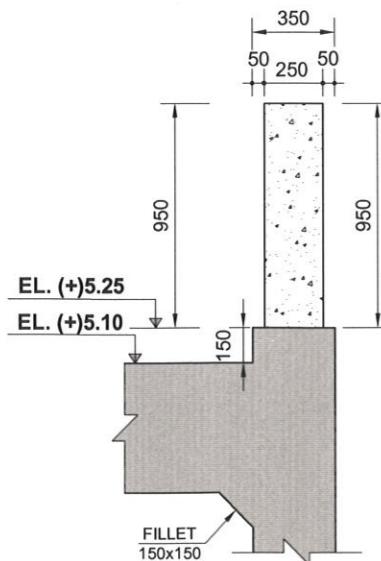


CONCRETE OUTLINE OF BARREL, EXTENDED PART & BRACE WALL

SCALE = 1:40



CONCRETE OUTLINE OF BRACE WALL & BOX TOP SLAB

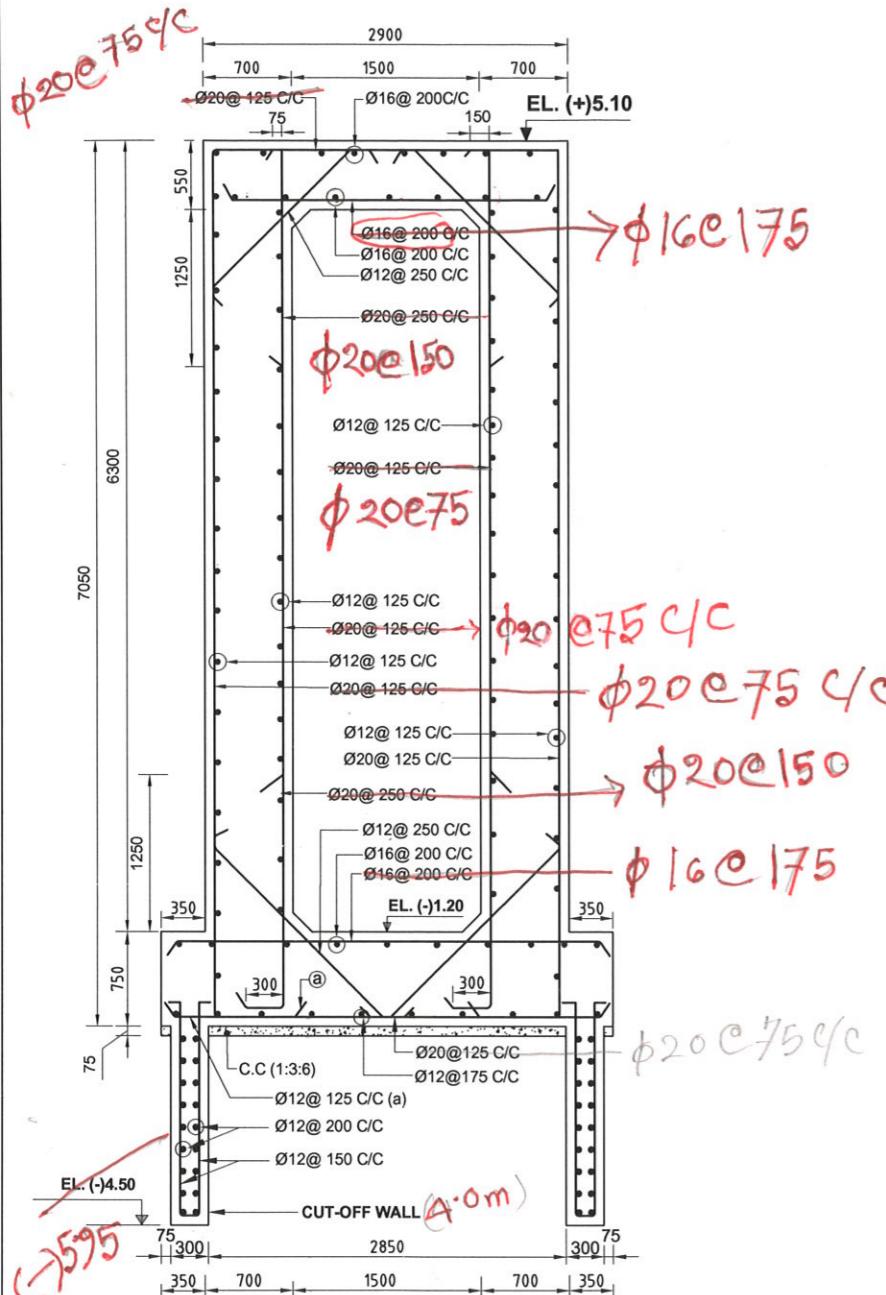


DETAIL "X"

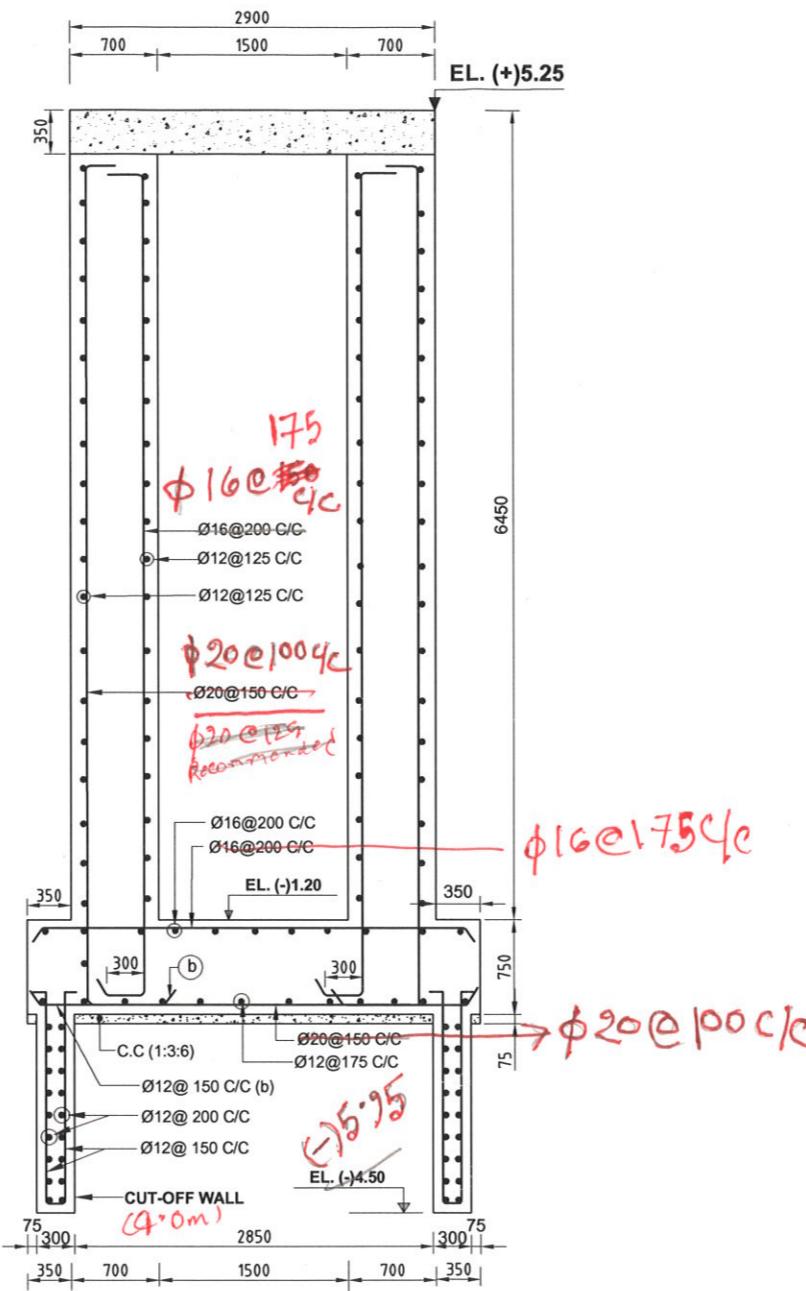
NOT TO SCALE

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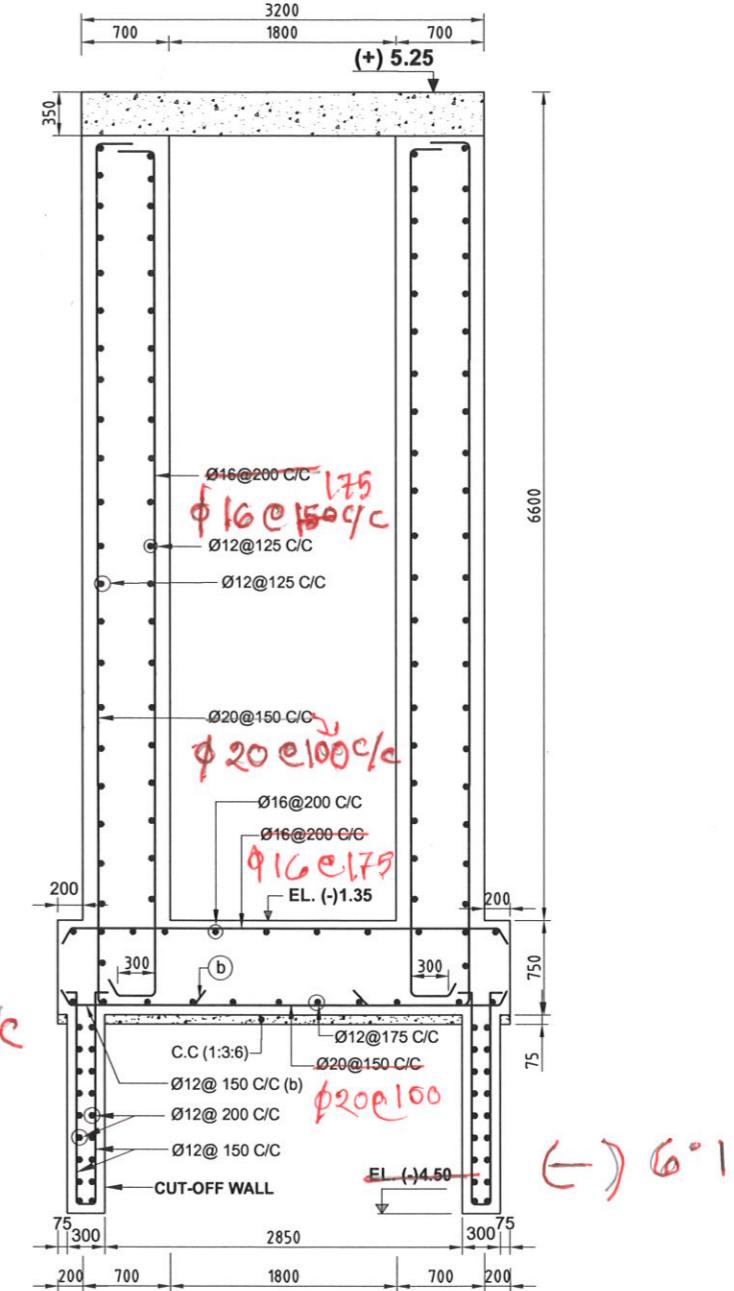
BANGLADESH WATER DEVELOPMENT BOARD			CONCRETE OUTLINE OF ABUTMENT, HEADWALL & BOX		
DESIGN CIRCLE -8			APPROVED BY	CONSULTANT : Royal HaskoningDHV Sub Consultants DEVCON, DPM, IWM & DHI	
CHECKED BY	REVIEWED BY	RECOMMENDED BY		DESIGNED & CHECKED BY	REVIEWED BY
RAHUL BISWAS ASSISTANT ENGINEER	ABU SAYEED MD. MASUM EXECUTIVE ENGINEER	MOHAMMAD SAIF UDDIN SUPERINTENDING ENGINEER	MD. ENAYET ULLAH CHIEF ENGINEER, DESIGN	MD. MAHBUBUR RAHMAN DESIGN ENGINEER	MD. HABIBUR RAHMAN DEPUTY 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)

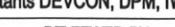


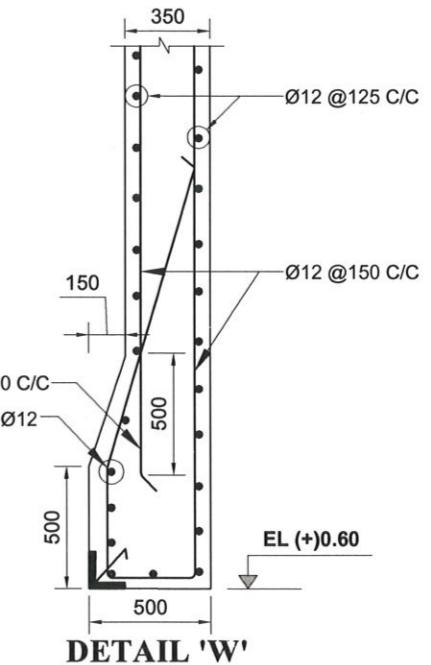
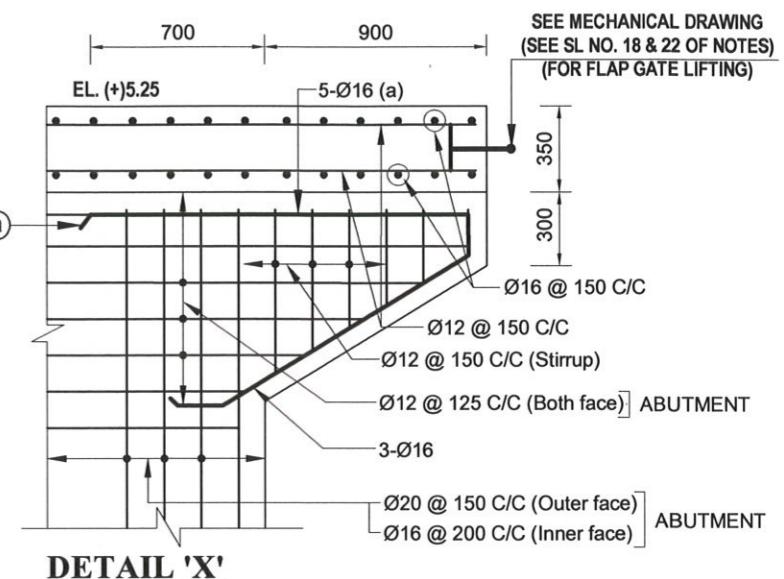
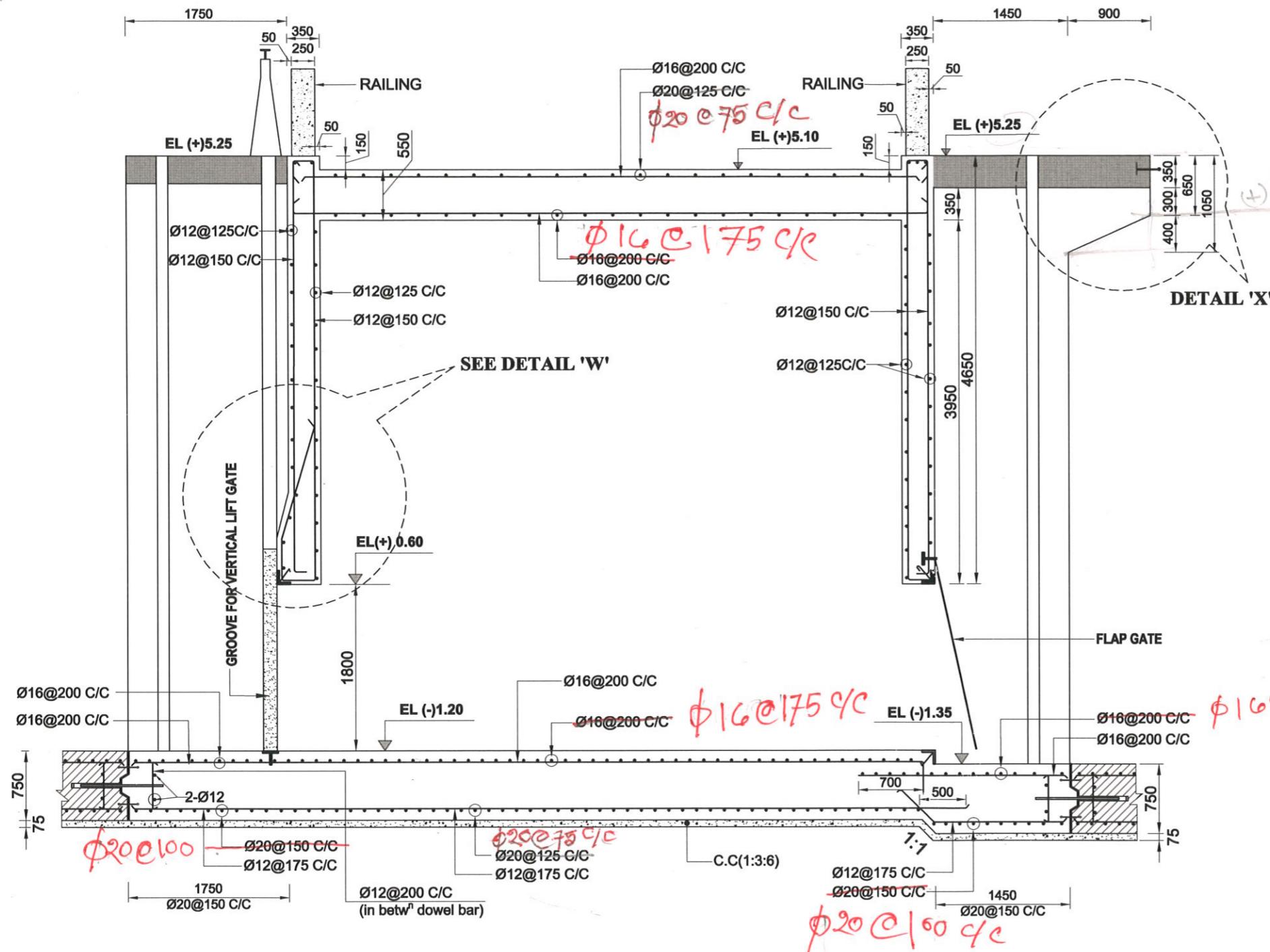
EXTENDED PART (C/S) (SECTION 2-2)
(FOUNDATION TREATMENT SHOWN IN SHEET NO 26, 27 & 28 OF 3
(SEE SHEET NO 11 OF 31)



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

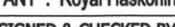
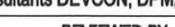
BANGLADESH WATER DEVELOPMENT BOARD				REINFORCEMENT DETAILS OF BARREL & EXTENDED PART C/S & R/S		
DESIGN CIRCLE -8			APPROVED BY	CONSULTANT : Royal HaskoningDHV Sub Consultants DEVCON, DPM, IWM & DHI		
CHECKED BY	REVIEWED BY	RECOMMENDED BY		DESIGNED & CHECKED BY	REVIEWED BY	RECOMMENDED BY
RAHUL BISWAS ASSISTANT ENGINEER	ABU SAYEED MD. MASUM 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)-0000-12/31		DRAWN BY- CAD OPERATOR - MST. MOUSUMI KHATUN			



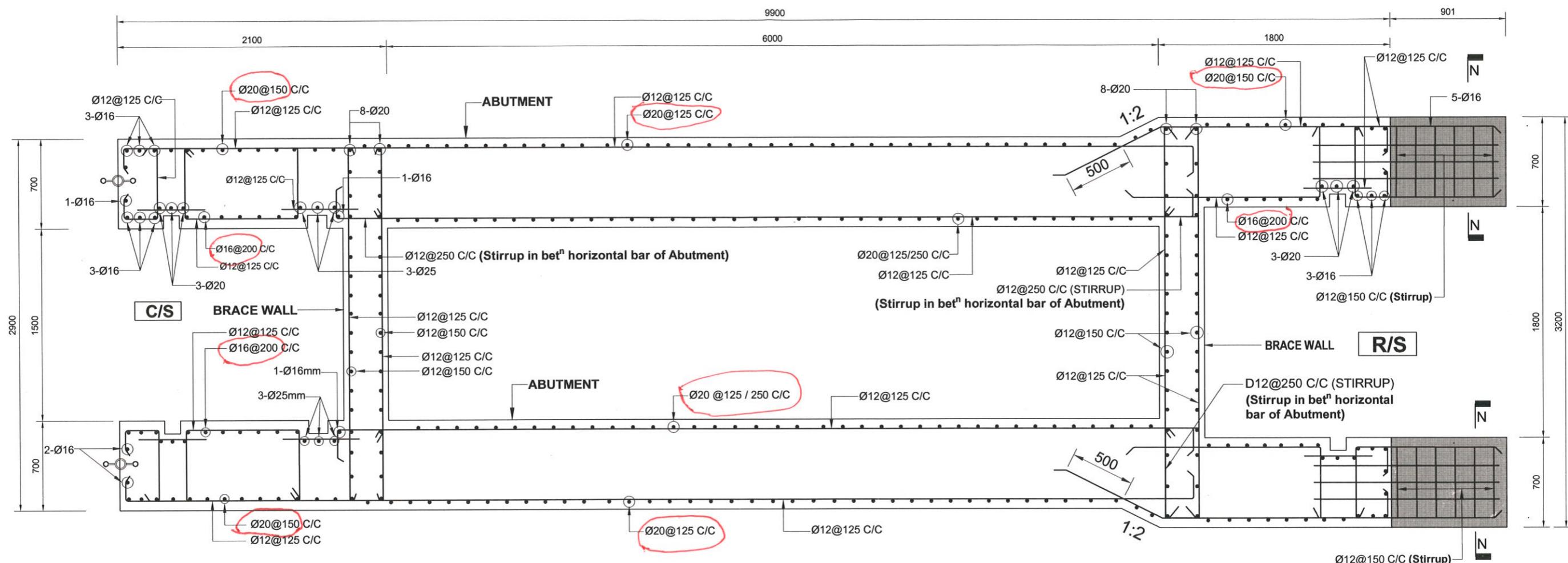
SECTION 4-4

[SEE SHEET NO 11 OF 31]

**LONGITUDINAL SECTION OF BARREL FLOOR WITH BRACE WALL REINFORCEMENT
(FOUNDATION TREATMENT SHOWN IN SHEET NO 26, 27 & 28 OF 31)**

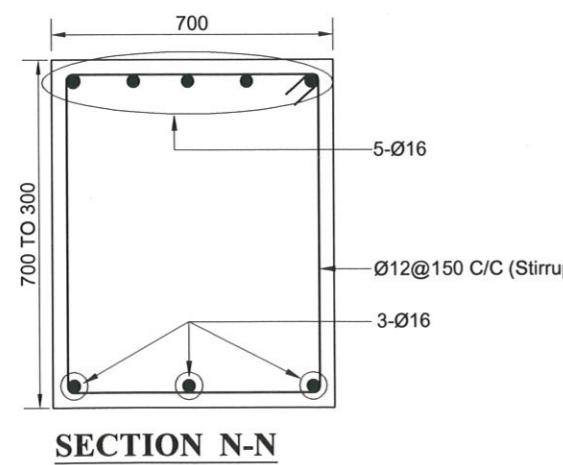
BANGLADESH WATER DEVELOPMENT BOARD			REINFORCEMENT DETAILS OF BARREL FLOOR WITH BRACE WALL			
DESIGN CIRCLE -8			APPROVED BY	CONSULTANT : Royal HaskoningDHV Sub Consultants DEVCN, DPM, IWM & DHI		
CHECKED BY	REVIEWED BY	RECOMMENDED BY		DESIGNED & CHECKED BY	REVIEWED BY	RECOMMENDED BY
RAHUL BISWAS ASSISTANT ENGINEER	ABU SAYEED MD. MASUM 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)-0000-13/31		DRAWN BY- CAD OPERATOR - MST. MOUSUMI KHATUN			

NOT TO SCALE



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

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

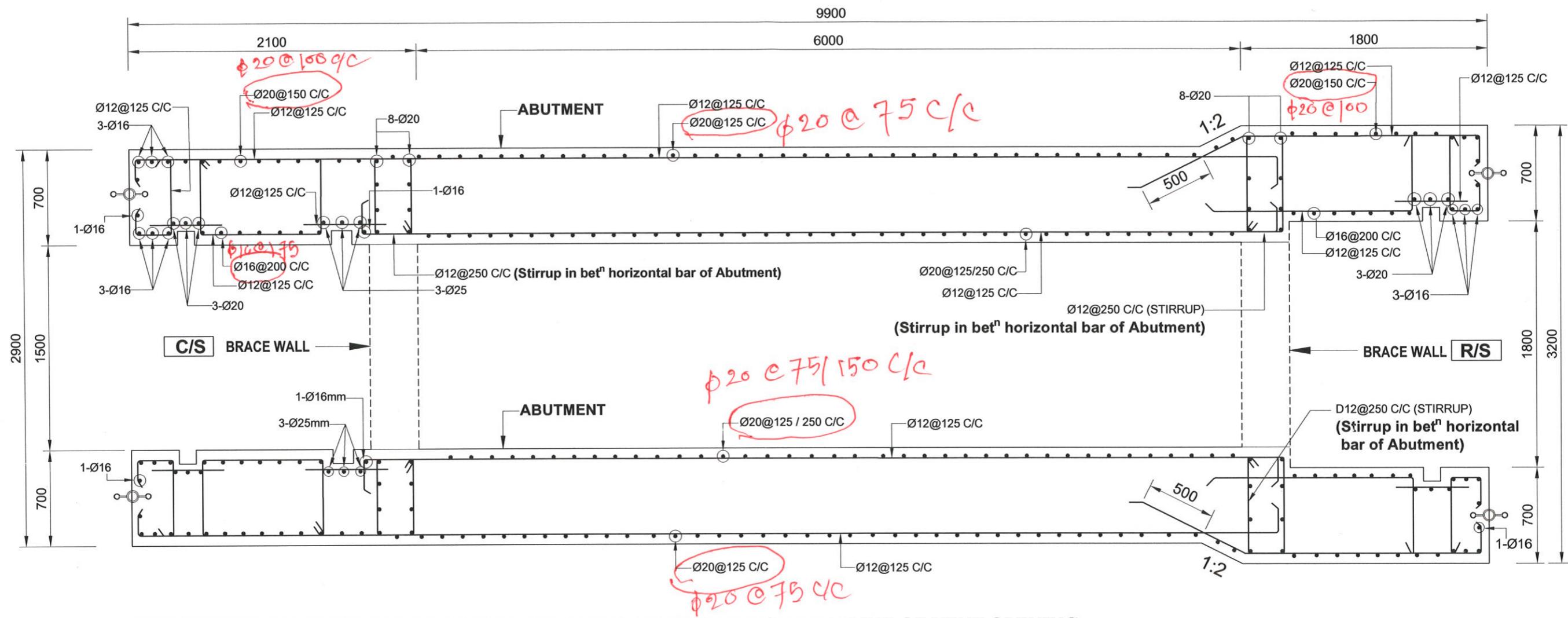


NOT TO SCALE

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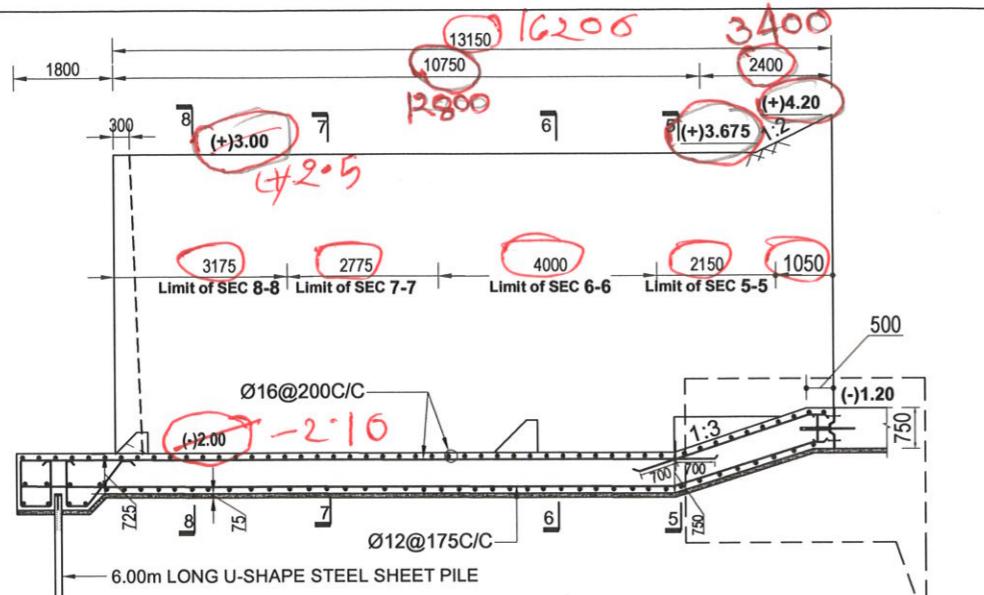
* Correct the reinforcement from previous page no 12 & 13

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 ABUTMENT & BRACE WALL ABOVE VENT OPENING	
DESIGN CIRCLE -8	
CHECKED BY	REVIEWED BY
RAHUL BISWAS ASSISTANT ENGINEER	ABU SAYEED MD. MASUM EXECUTIVE ENGINEER
MOHAMMAD SAIF UDDIN SUPERINTENDING ENGINEER	MD. ENAYET ULLAH CHIEF ENGINEER, DESIGN
APPROVED BY	
MD. MAHBUBUR RAHMAN DESIGN ENGINEER	MD. HABIBUR RAHMAN DEPUTY TEAM LEADER
	JEAN HENRY LABOIRIE TEAM LEADER
DRAWN BY- CAD OPERATOR - MST. MOUSUMI KHATUN	
DATED: 00-00-0000 DWG NO.: DC-8-CEIP-1(P-16)-0000-14/31	



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 ABUTMENT ACROSS CENTER OF VENT OPENING		
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

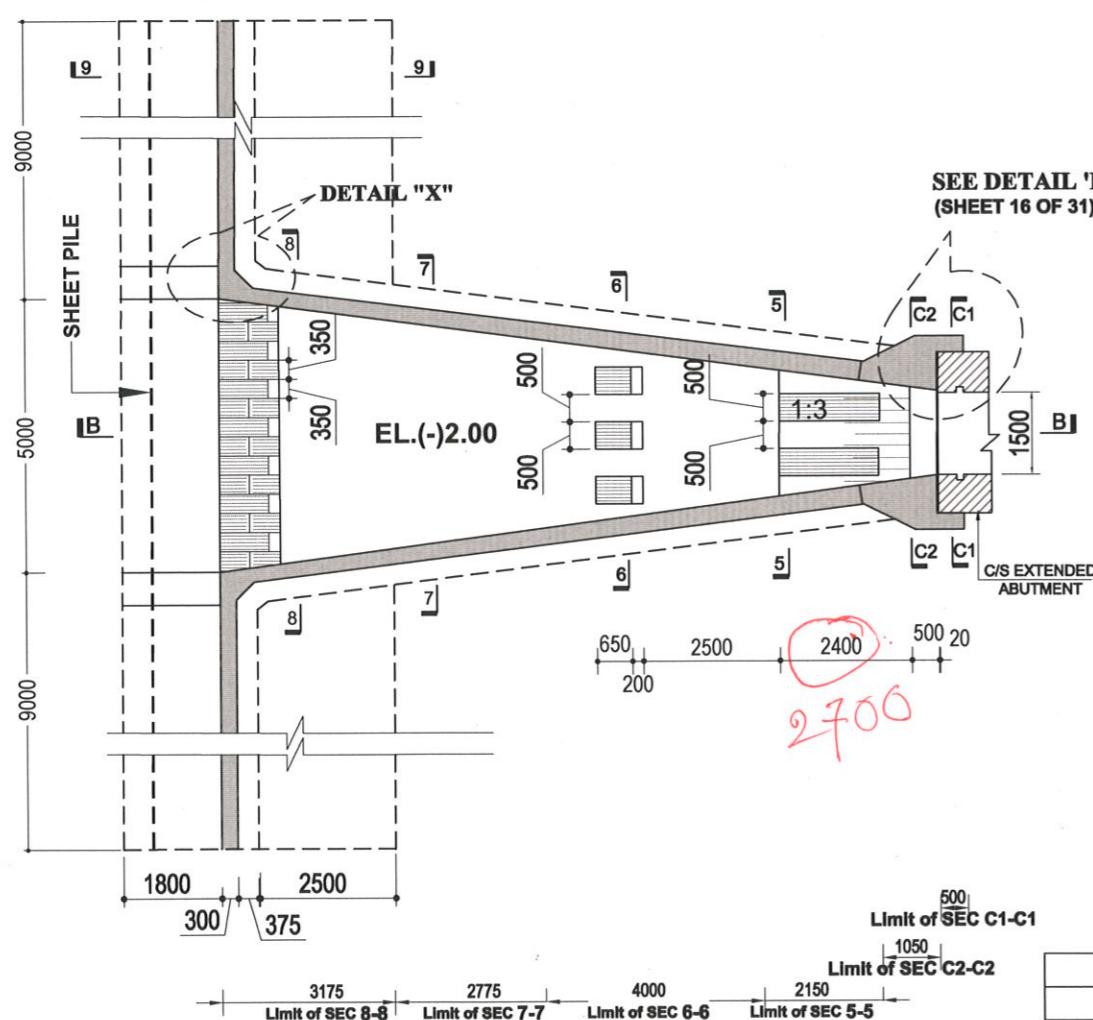
NOT TO SCALE



SECTIONAL ELEVATION OF C/S APRON

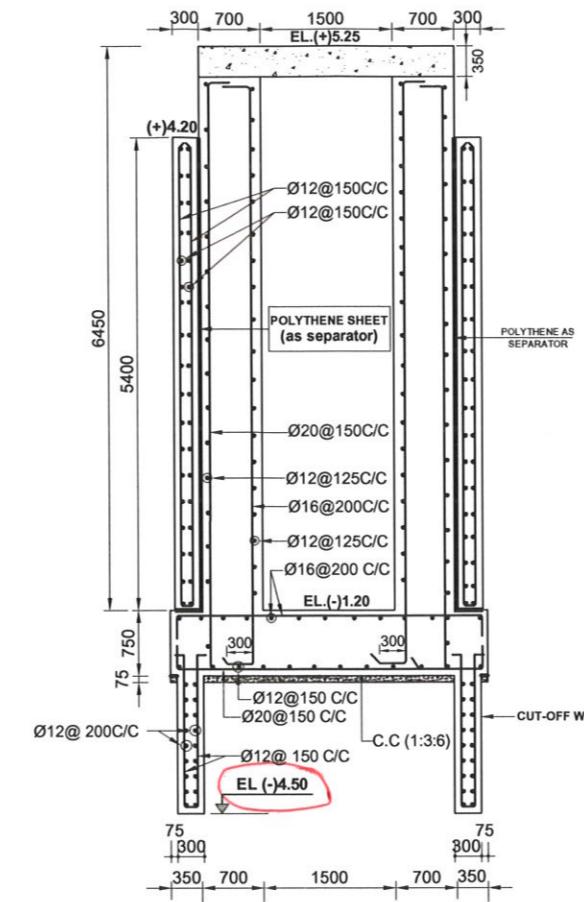
**(CUT-OFF WALL NOT SHOWN
(SECTION B-B)**

SEE DETAIL 'R'

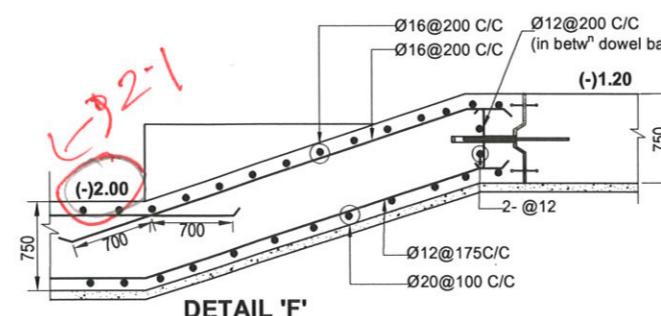


**PLAN OF C/S APRON & RETURN WALL
(CUT-OFF WALL NOT SHOWN)**

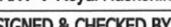
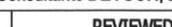
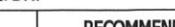
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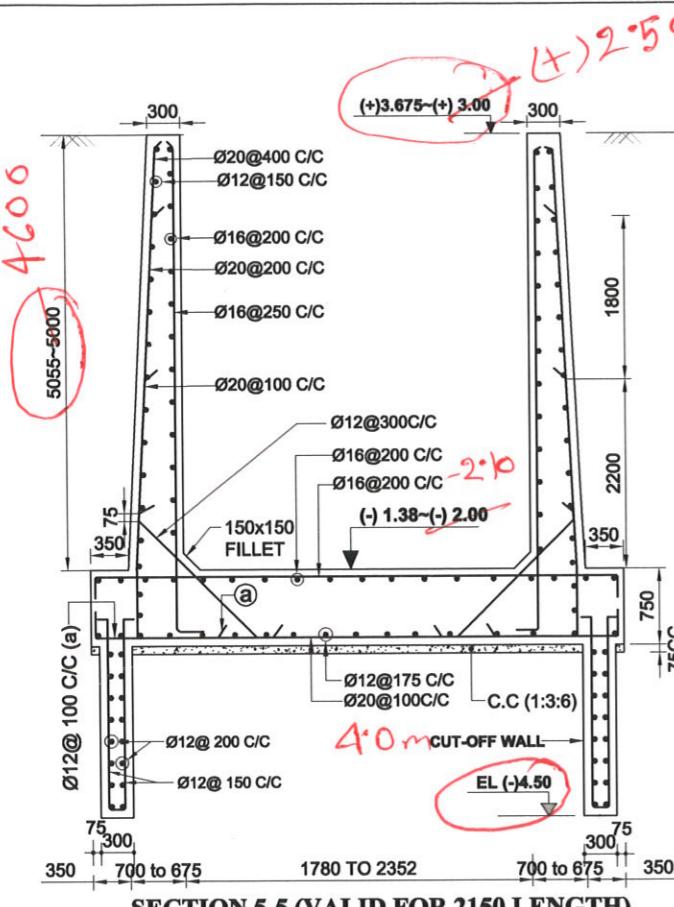


SECTION C₁-C₁ (VALID FOR 500 LENGTH IN BARREL PORTION)
(FOUNDATION TREATMENT SHOWN IN SHEET NO. 26, 27 & 28 OF 31)



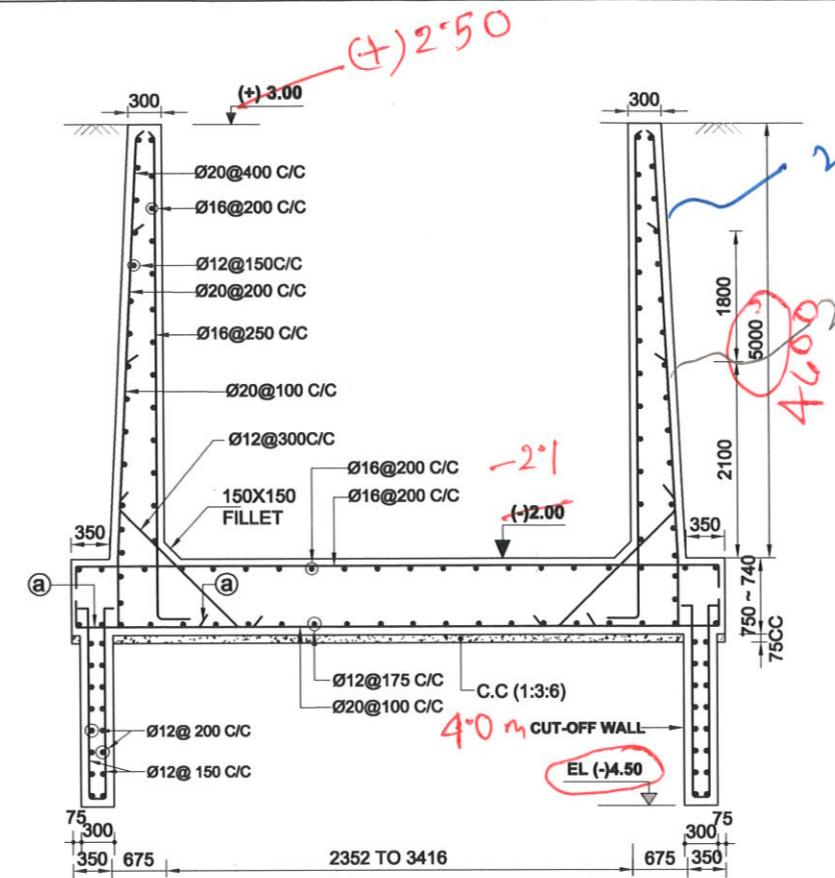
BANGLADESH WATER DEVELOPMENT BOARD

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



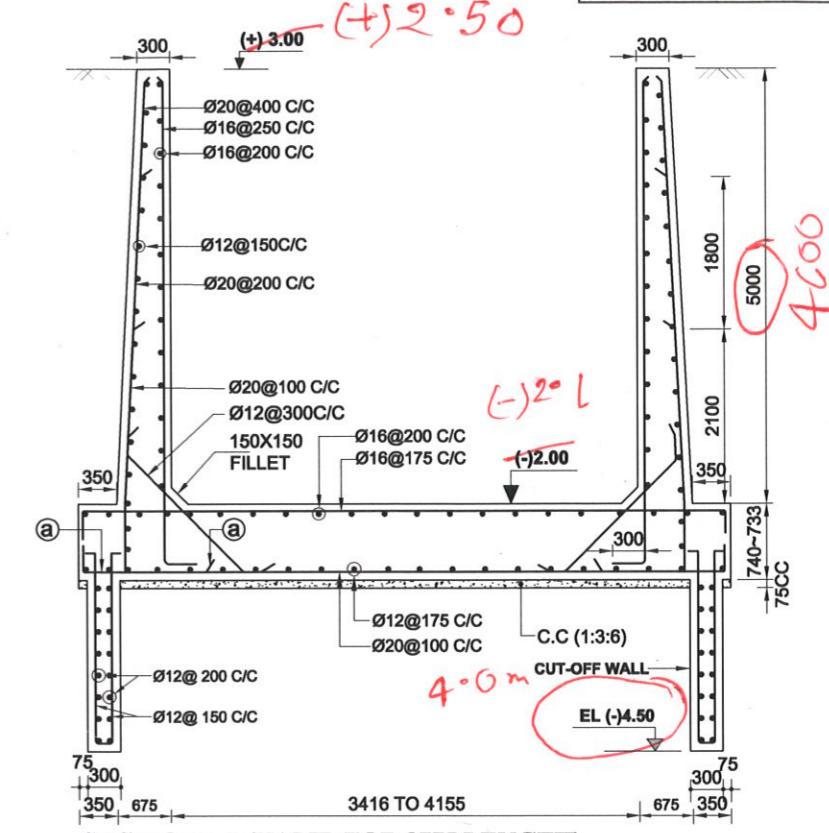
SECTION 5-5 (VALID FOR 2150 LENGTH)

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



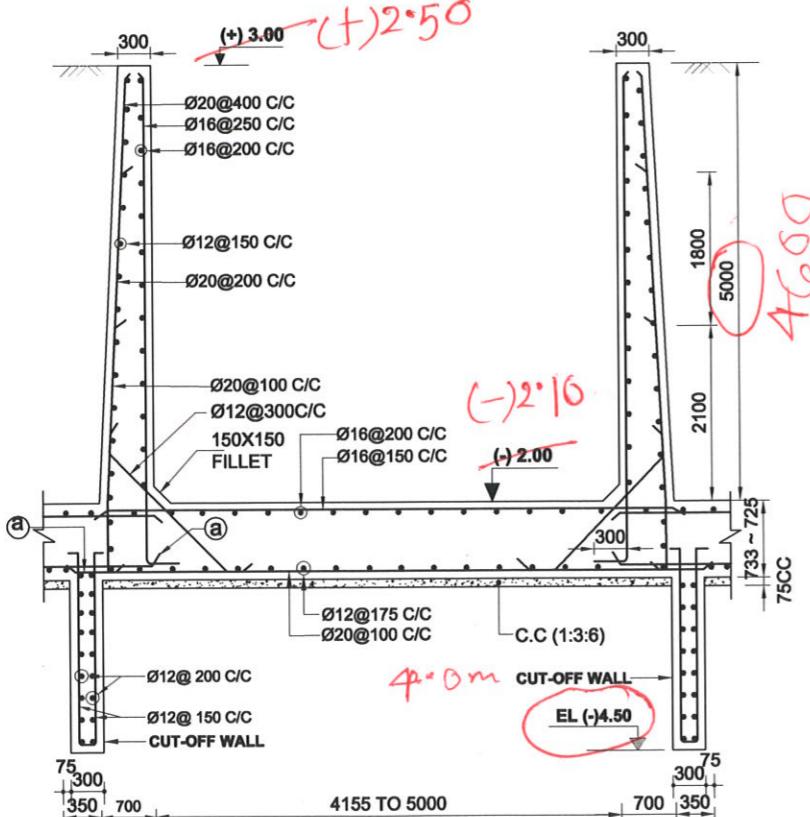
SECTION 6-6 (VALID FOR 4000 LENGTH)

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



SECTION 7-7 (VALID FOR 2775 LENGTH)

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

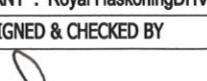
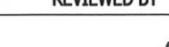


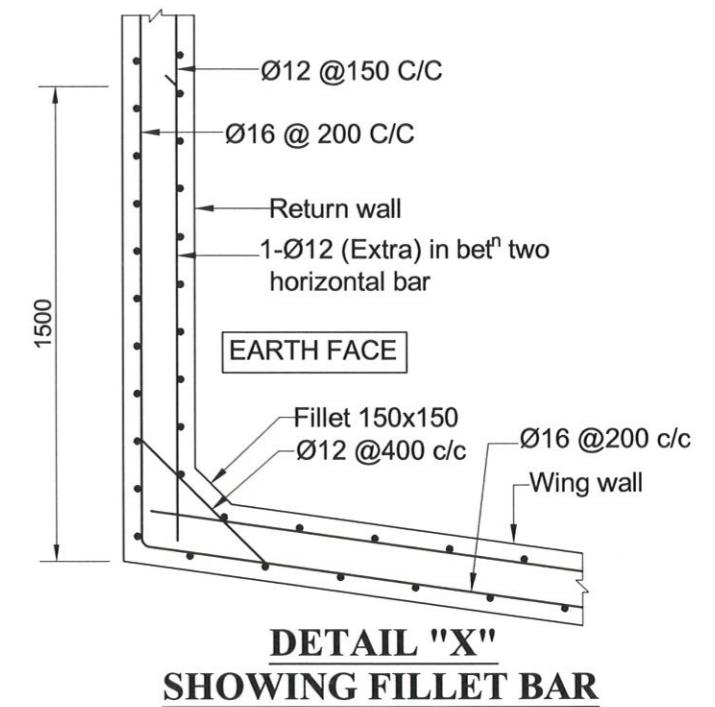
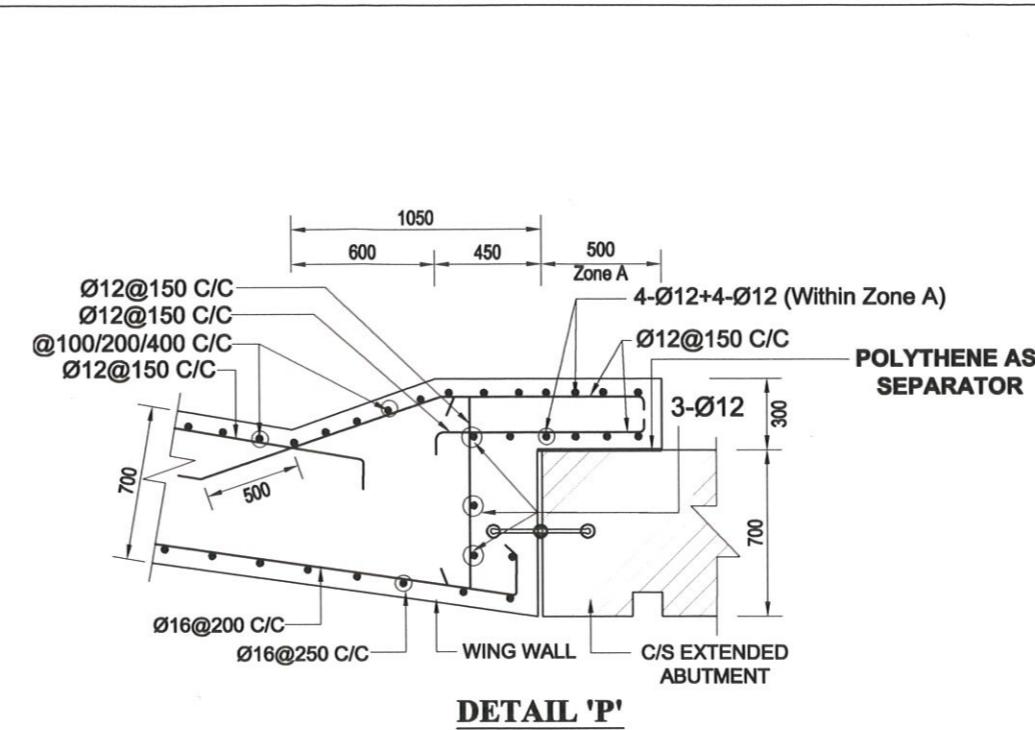
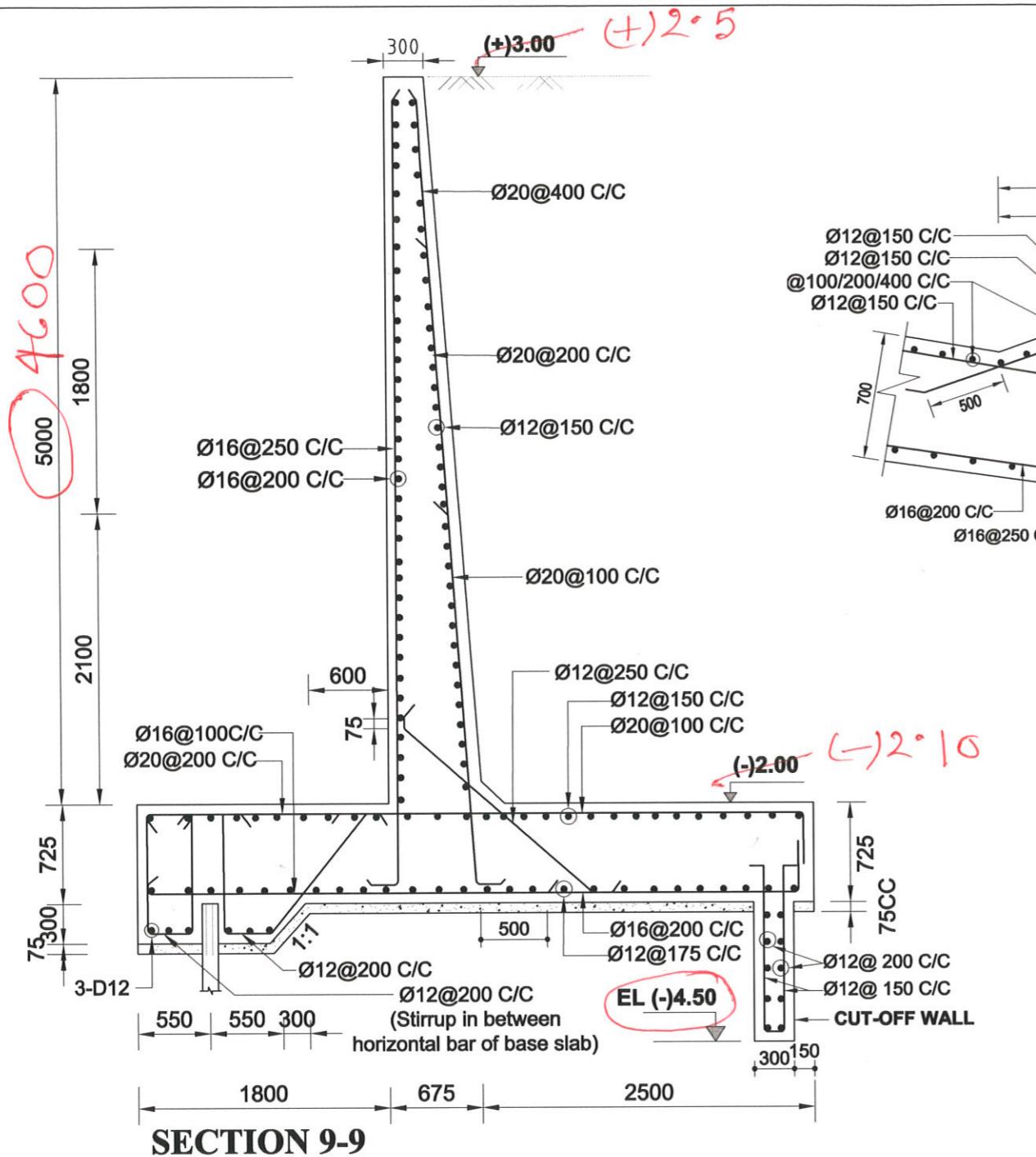
SECTION 8-8 (VALID FOR 3175 LENGTH)

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

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.			
REINFORCEMENT DETAILS OF C/S WING WALL			
Y	CONSULTANT : Royal HaskoningDHV Sub Consultants DEVCON, DPM, IWM & DHI		
	DESIGNED & CHECKED BY	REVIEWED BY	RECOMMENDED BY
ULLAH DESIGN	 MD. MAHBUBUR RAHMAN	 MD. HABIBUR RAHMAN	 JEAN HENRY LABOYRIE
	DESIGN ENGINEER	DEPUTY TEAM LEADER	TEAM LEADER
DRAWN BY- CAD OPERATOR - MST. MOUSUMI KHATUN			

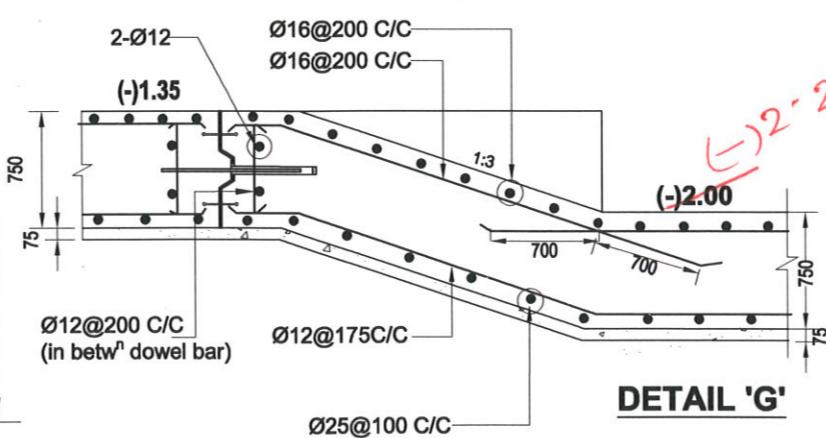
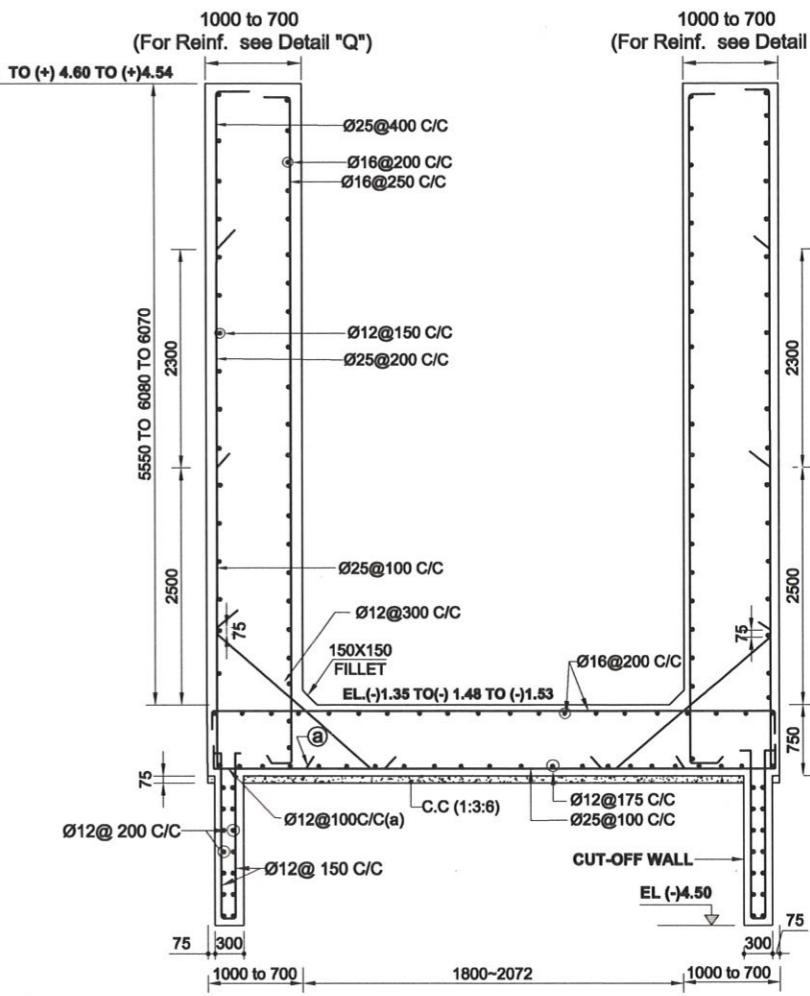
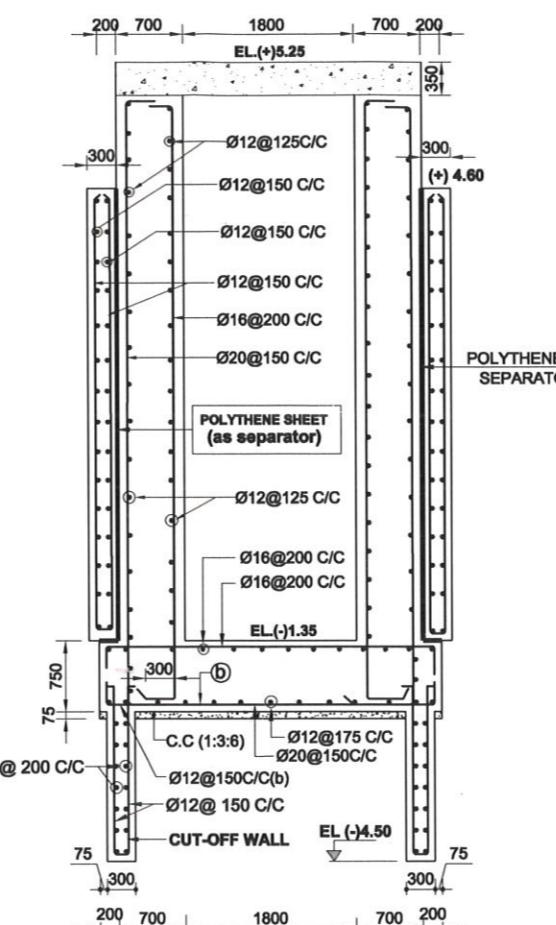
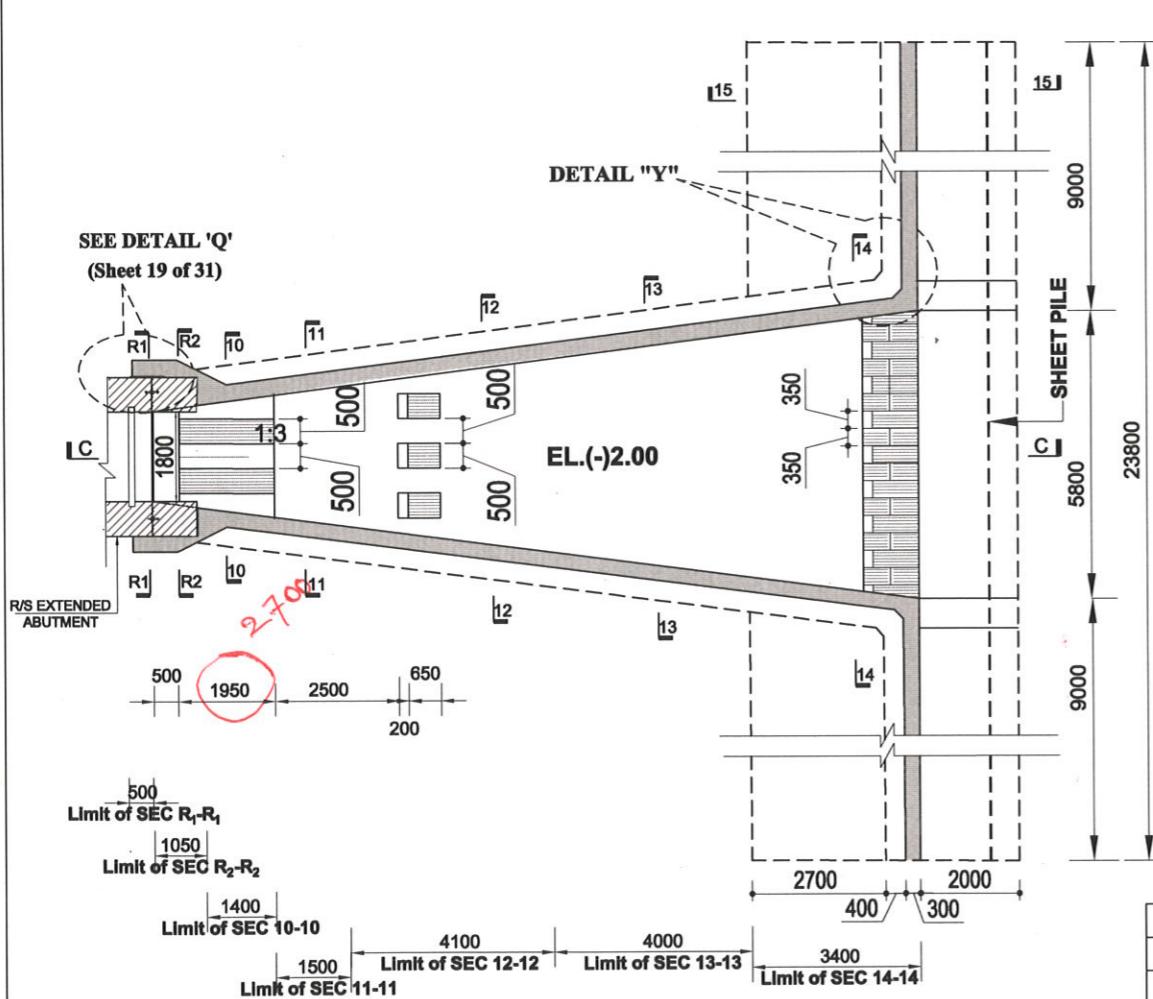
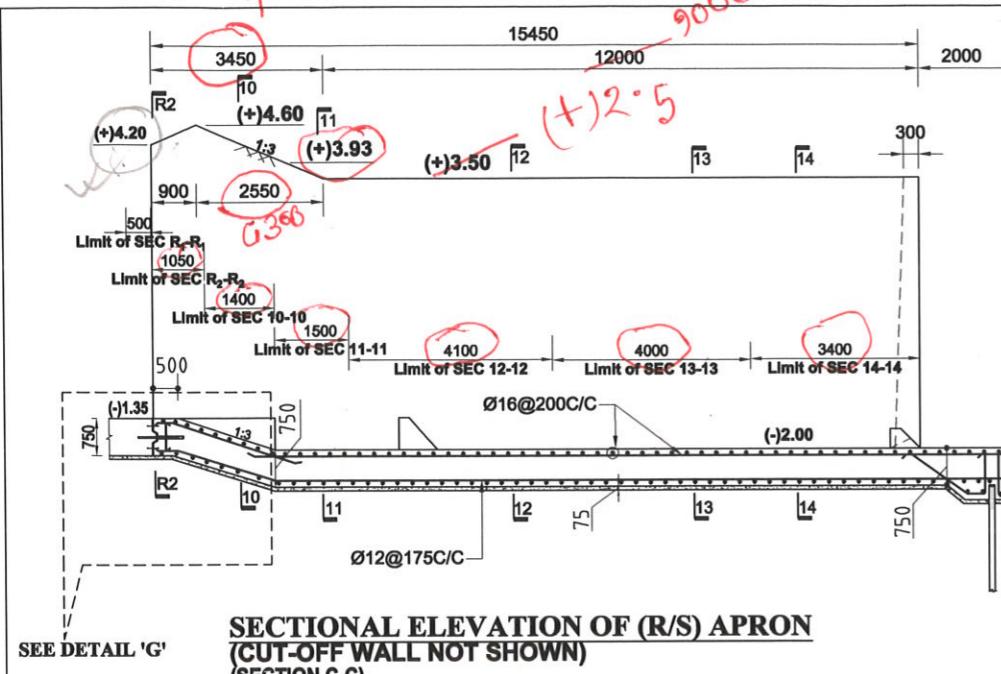


NOT TO SCALE

G:\Total drawing (MOUSUMI)\Mousumi\Package-3\Drainage Regulator\POLDER-16_DR-5\Polder -16_DR-5_1V_KM 18+950.dwg

* E.L. of bottom of cut off wall should be f

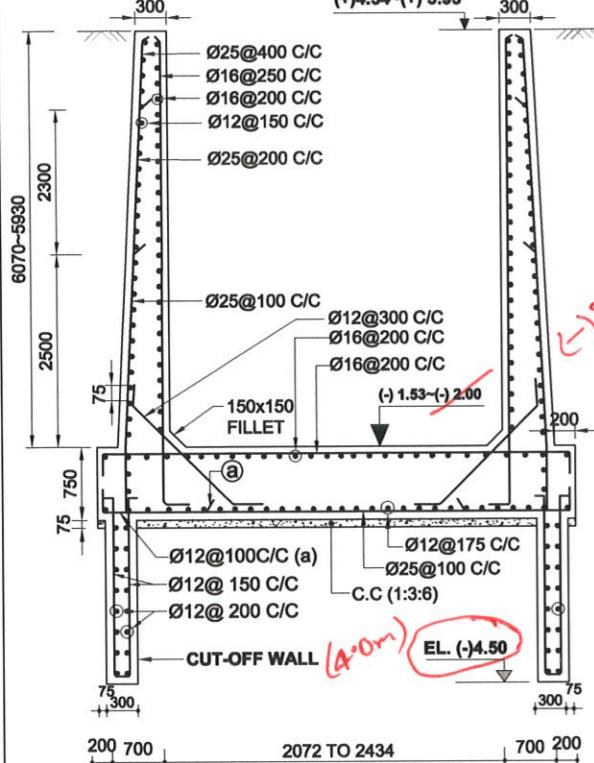
BANGLADESH WATER DEVELOPMENT BOARD				REINFORCEMENT DETAILS OF C/S RETURN WALL		
DESIGN CIRCLE -8		APPROVED BY		CONSULTANT : Royal HaskoningDHV Sub Consultants DEVCON, DPM, IWM & DHI	REINFORCEMENT DETAILS OF C/S RETURN WALL	
CHECKED BY	REVIEWED BY	RECOMMENDED BY		DESIGNED & CHECKED BY	REVIEWED BY	RECOMMENDED BY
				MD. MAHBUBUR RAHMAN	MD. HABIBUR RAHMAN	JEAN HENRY LABOYRIE
RAHUL BISWAS ASSISTANT ENGINEER	ABU SAYEED MD. MASUM 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)-0000-18/31	DRAWN BY- CAD OPERATOR - MST. MOUSUMI KHATUN				



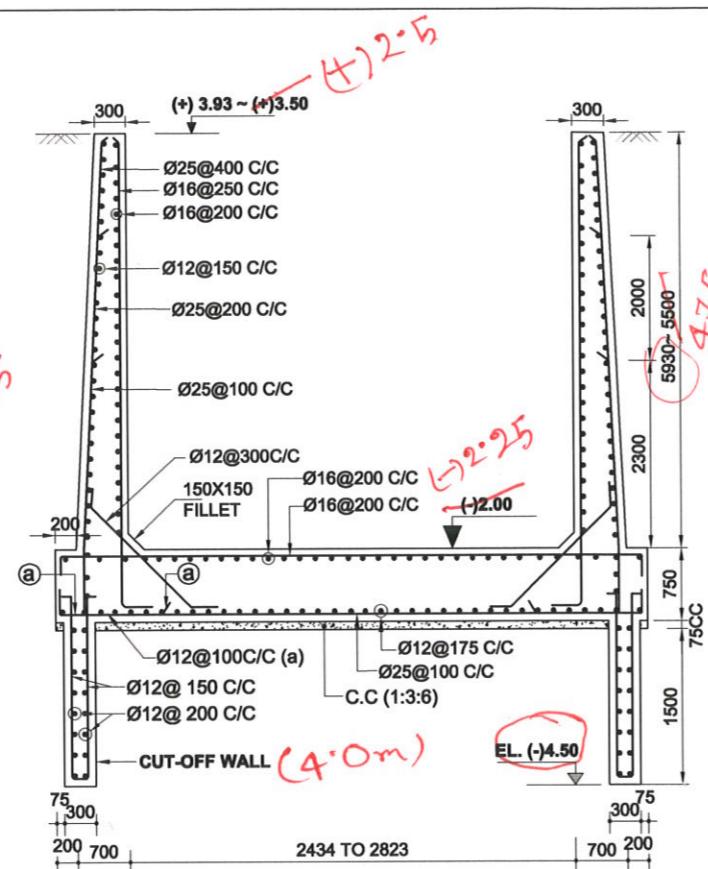
BANGLADESH WATER DEVELOPMENT BOARD			APPROVED BY
CHECKED BY	REVIEWED BY	RECOMMENDED BY	
RAHUL BISWAS ASSISTANT ENGINEER	ABU-SAYEED MD. MASUM EXECUTIVE ENGINEER	MOHAMMAD SAIF UDDIN SUPERINTENDING ENGINEER	MD. ENAYET ULLAH CHIEF ENGINEER, DESIGN
DATED: 00-00-0000	DWG NO.: DC-8-CEIP-1(P-16)-0000-19/31	MD. MAHBUBUR RAHMAN DESIGN ENGINEER	MD. HABIBUR RAHMAN DEPUTY TEAM LEADER

REINFORCEMENT DETAILS OF R/S APRON AND WING WALL		
CONSULTANT : Royal HaskoningDHV Sub Consultants DEVCON, DPM, IWM & DHI	DESIGNED & CHECKED BY	REVIEWED BY
MD. MAHBUBUR RAHMAN DESIGN ENGINEER	MD. HABIBUR RAHMAN DEPUTY TEAM LEADER	JEAN HENRY LABOYRIE TEAM LEADER
DRAWN BY- CAD OPERATOR - MST. MOUSUMI KHATUN		

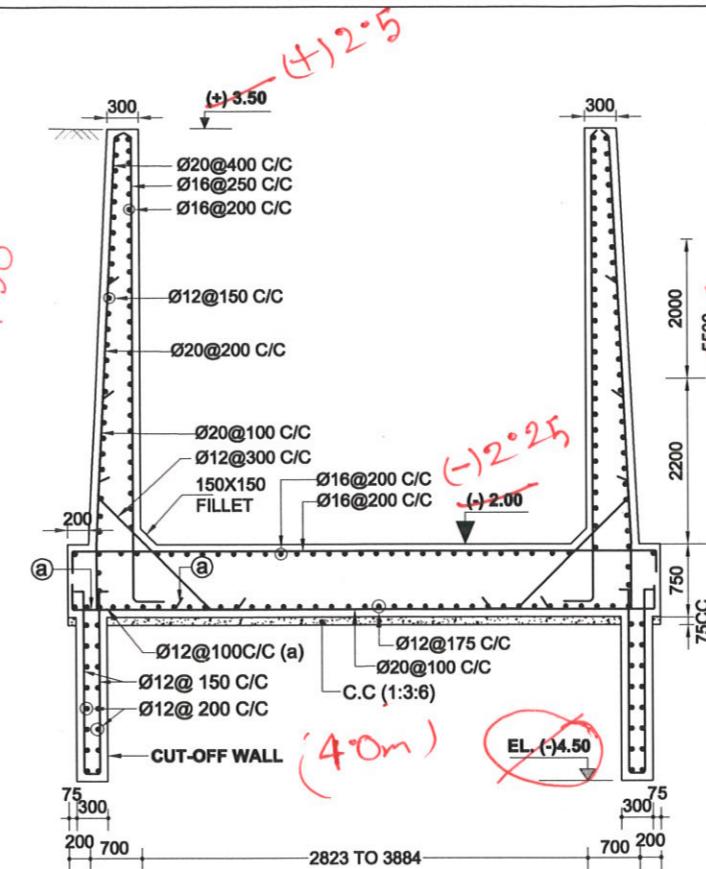
NOT TO SCALE



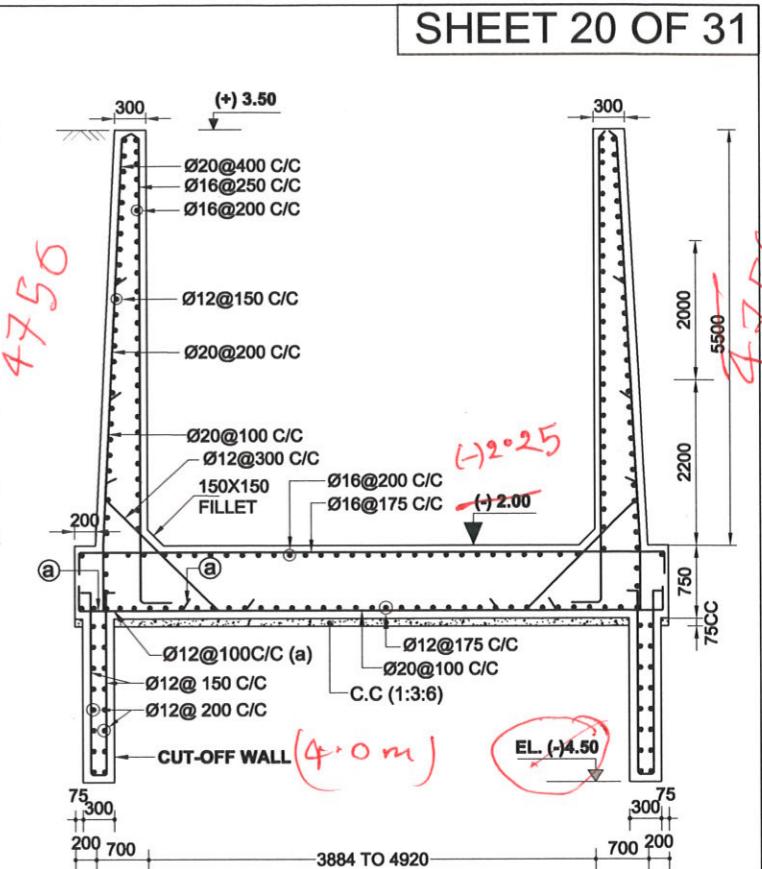
SECTION 10-10 (VALID FOR 1400 LENGTH)
(FOUNDATION TREATMENT SHOWN IN SHEET NO 26, 27 & 28 OF 31)



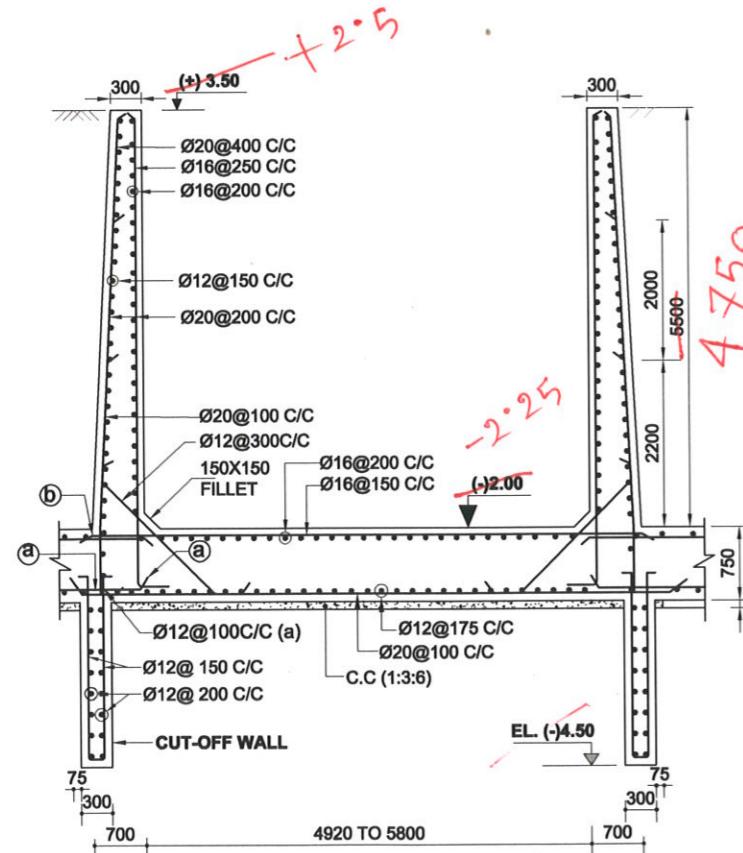
SECTION 11-11 (VALID FOR 1500 LENGTH)
(FOUNDATION TREATMENT SHOWN IN SHEET NO 26, 27 & 28 OF 31)



SECTION 12-12 (VALID FOR 4100 LENGTH)
(FOUNDATION TREATMENT SHOWN IN SHEET NO 26, 27 & 28 OF 31)



SECTION 13-13 (VALID FOR 4000 LENGTH)
(FOUNDATION TREATMENT SHOWN IN SHEET NO 26, 27 & 28 OF 31)



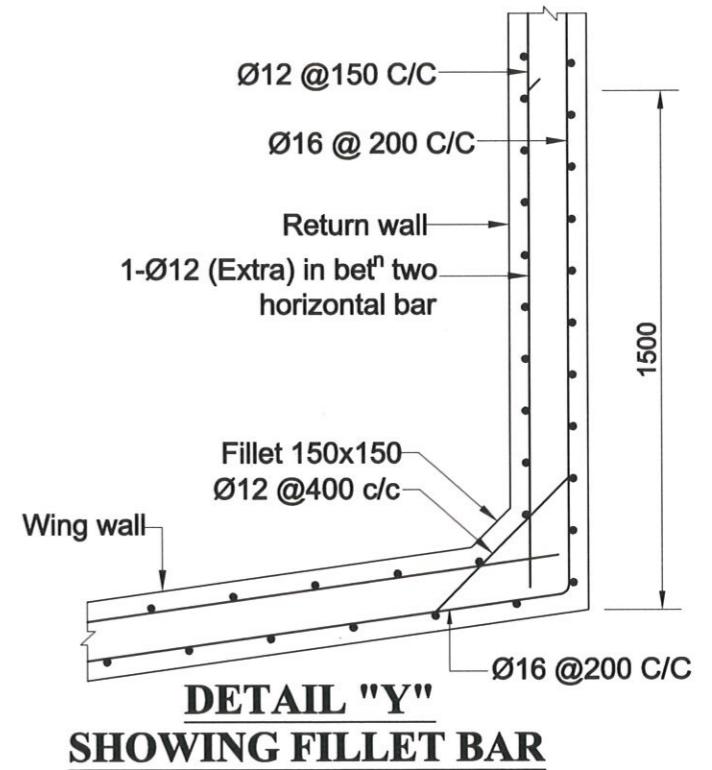
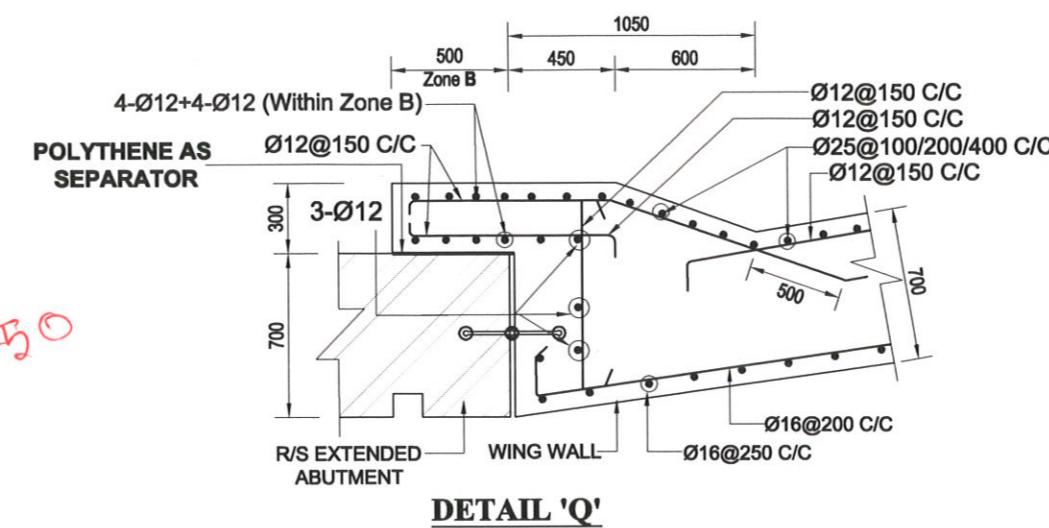
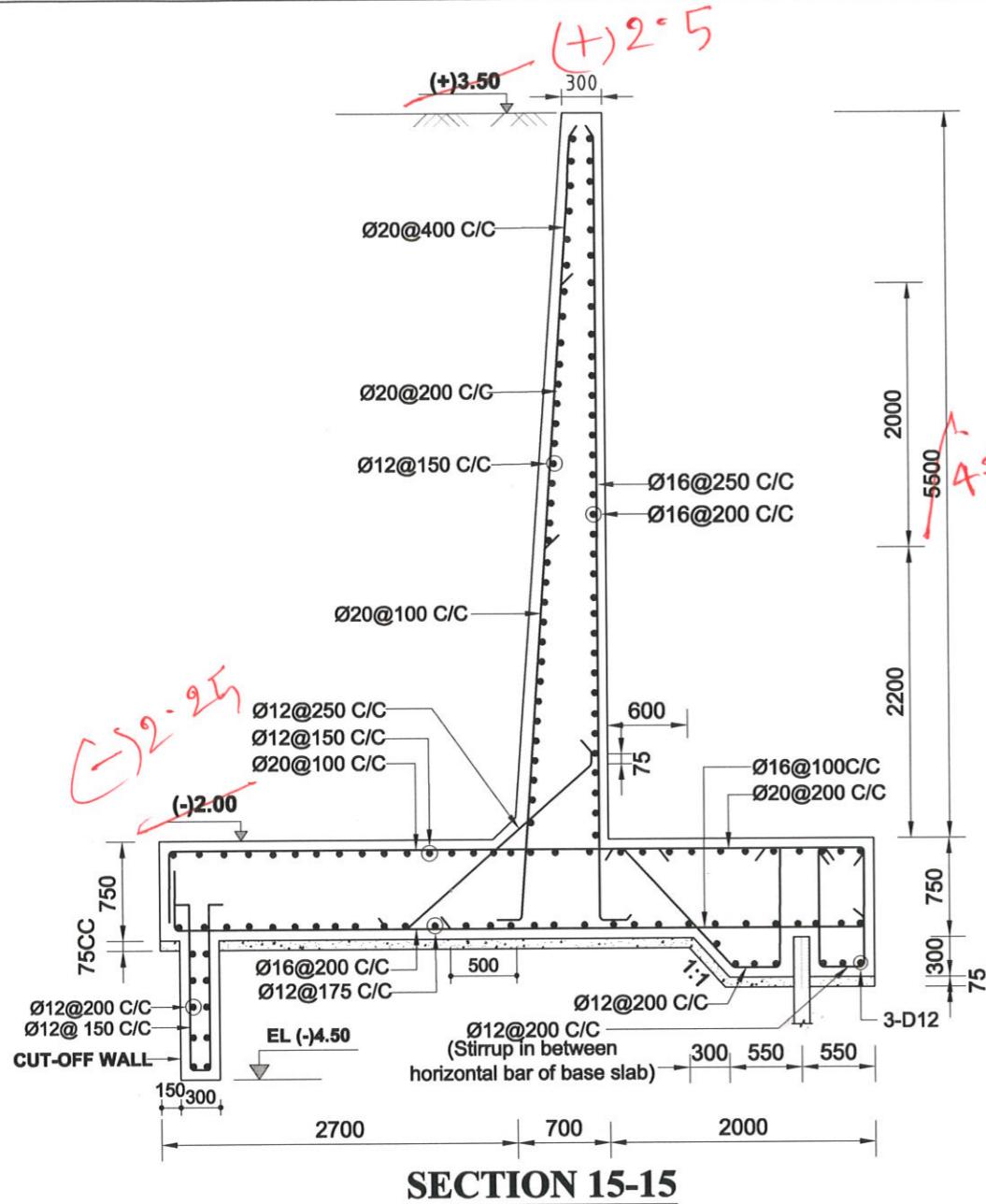
SECTION 14-14 (VALID FOR 3400 LENGTH)
(FOUNDATION TREATMENT SHOWN IN SHEET NO 26, 27 & 28 OF 31)

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

*10 marked dimension should be changed according to the new calculation following the given elevation.

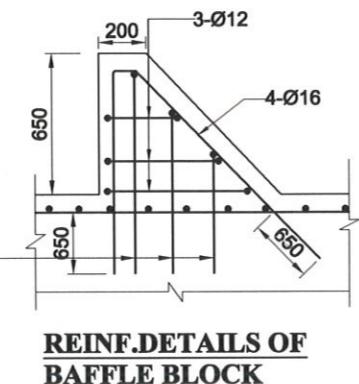
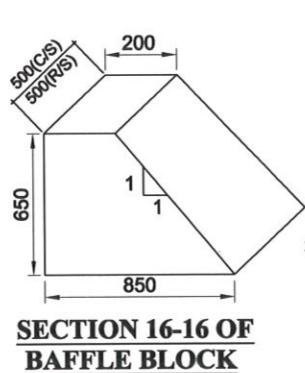
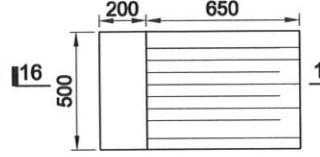
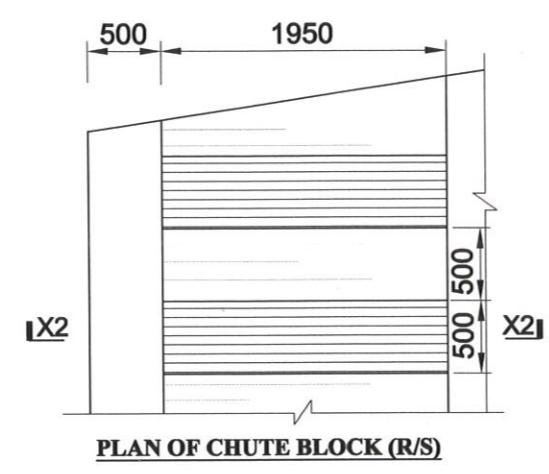
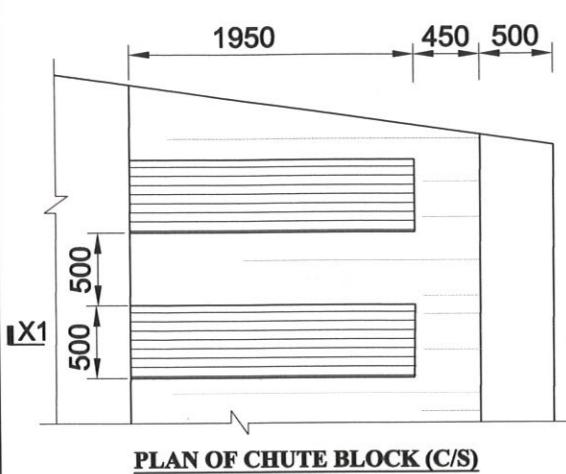
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH			
MINISTRY OF WATER RESOURCES			
BANGLADESH WATER DEVELOPMENT BOARD			
COASTAL EMBANKMENT IMPROVEMENT PROJECT, PHASE-1 (CEIP-1)			
DETAILED DESIGN OF DRAINAGE REGULATOR DR-5, AT Km 18.950 (1V-1.50m X 1.80m) UNDER POLDER -16, PACKAGE - 3, CEIP - 1, BWDB, UPAZILA - PAIKGACHA, DISTRICT - KHULNA.			
REINFORCEMENT DETAILS OF R/S WING WALL			
DESIGN CIRCLE-8		APPROVED BY	
CHECKED BY	REVIEWED BY	RECOMMENDED BY	
RAHUL BISWAS ASSISTANT ENGINEER	ABU SAYEED MD. MASUM 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)-0000-20/31		DRAWN BY- CAD OPERATOR - MST. MOUSUMI KHATUN	
CONTRACTOR : Royal HaskoningDHV Sub Consultants DEVCON, DPM, IWM & DHI		DESIGNED & CHECKED BY	REVIEWED BY
MD. MAHBUBUR RAHMAN		MD. HABIBUR RAHMAN	JEAN HENRY LABOYRIE
DESIGN ENGINEER		DEPUTY TEAM LEADER	TEAM LEADER



NOT TO SCALE

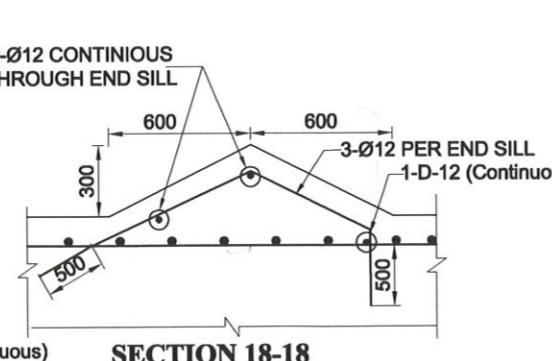
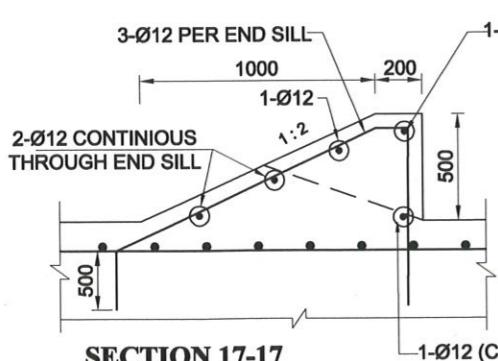
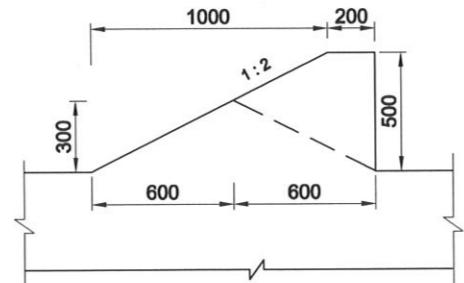
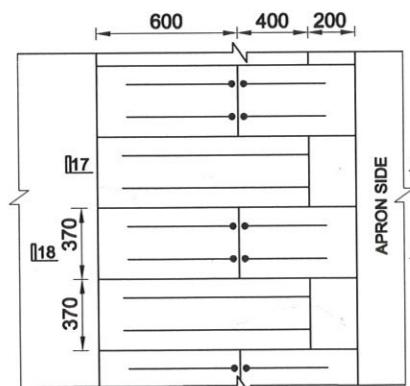
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BANGLADESH WATER DEVELOPMENT BOARD			REINFORCEMENT DETAILS OF R/S RETURN WALL		
DESIGN CIRCLE -8			APPROVED BY	CONSULTANT : Royal HaskoningDHV Sub Consultants DEVCON, DPM, IWM & DHI	
CHECKED BY	REVIEWED BY	RECOMMENDED BY		DESIGNED & CHECKED BY	REVIEWED BY
RAHUL BISWAS ASSISTANT ENGINEER	ABU SAYEED MD. MASUM 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)-0000-21/31			DRAWN BY- CAD OPERATOR - MST. MOUSUMI KHATUN	

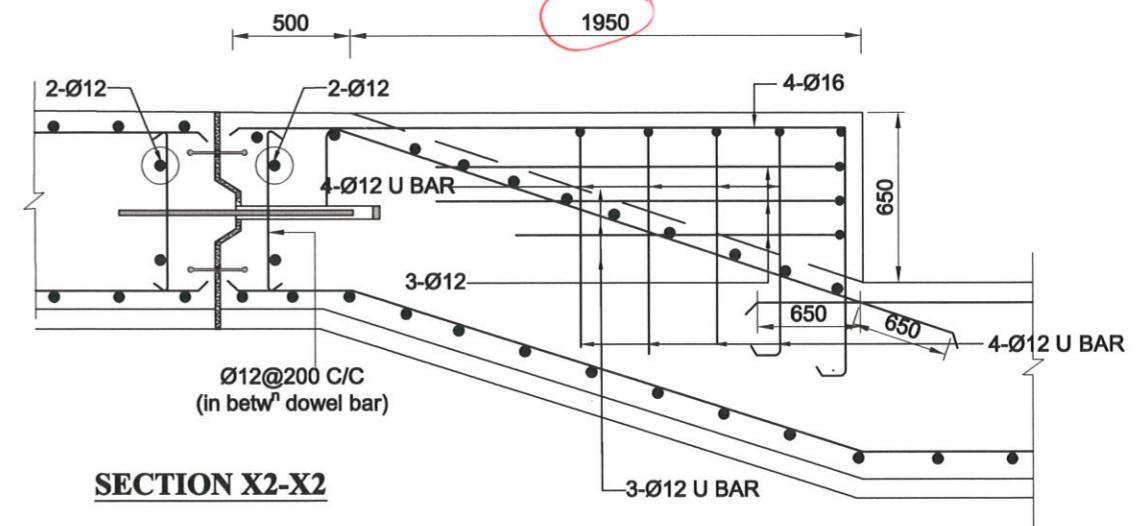
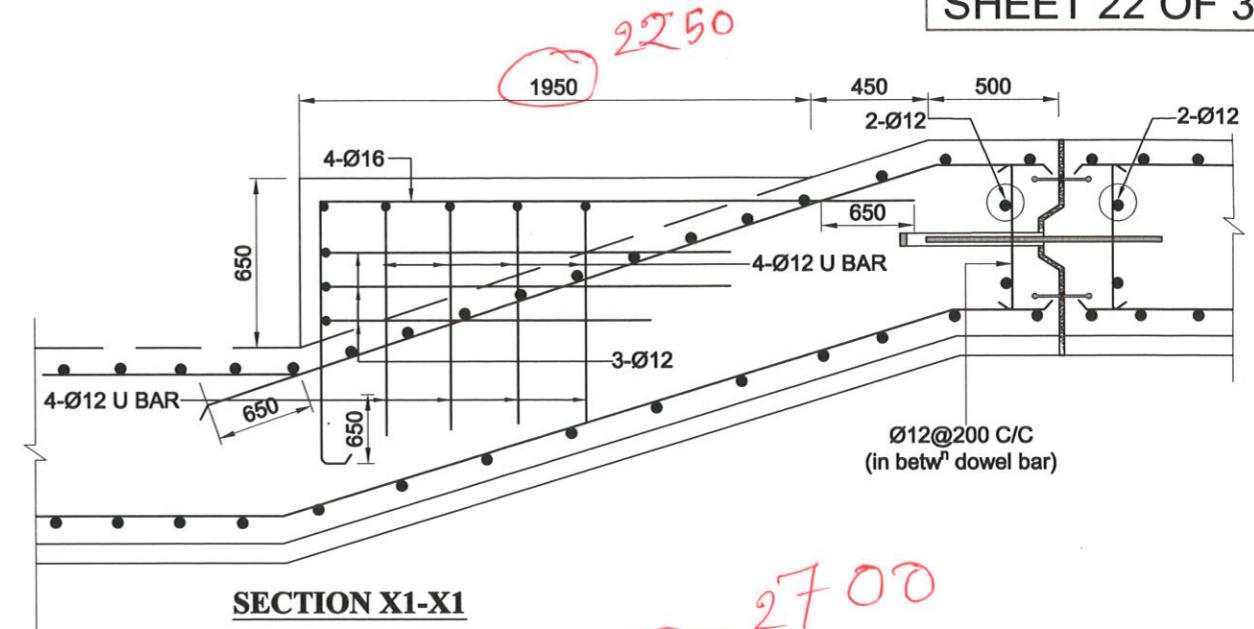


BAFFLE BLOCK DETAILS

(Concrete Outline & Reinforcement)



NOT TO SCALE



GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH

MINISTRY OF WATER RESOURCES

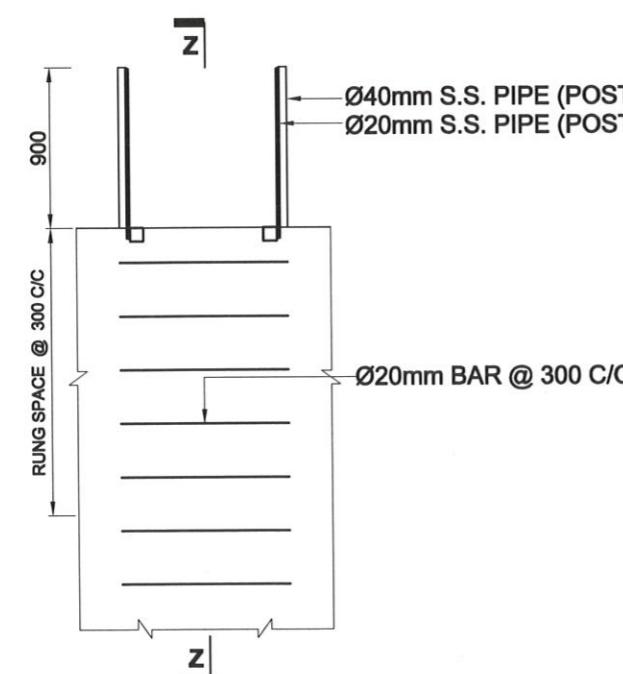
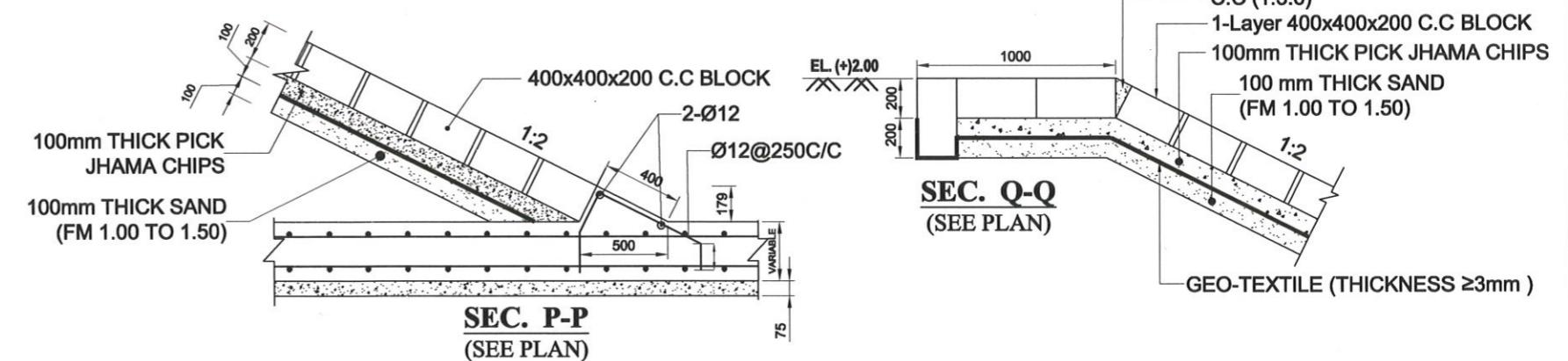
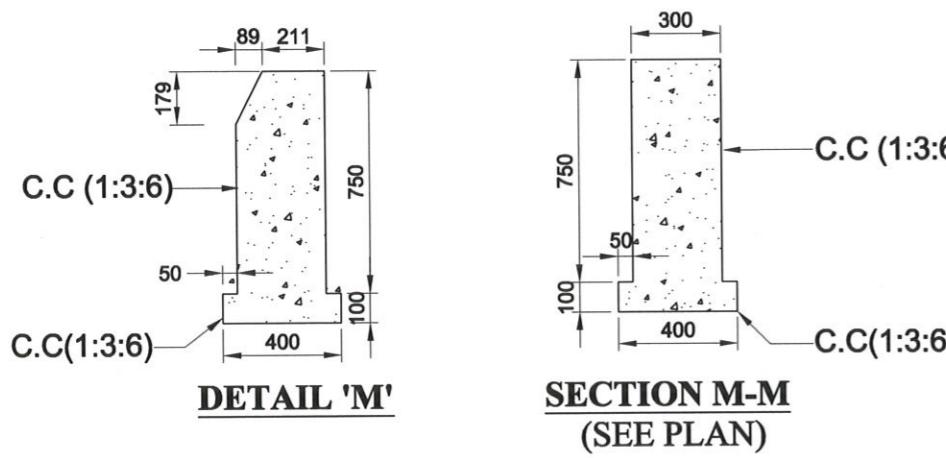
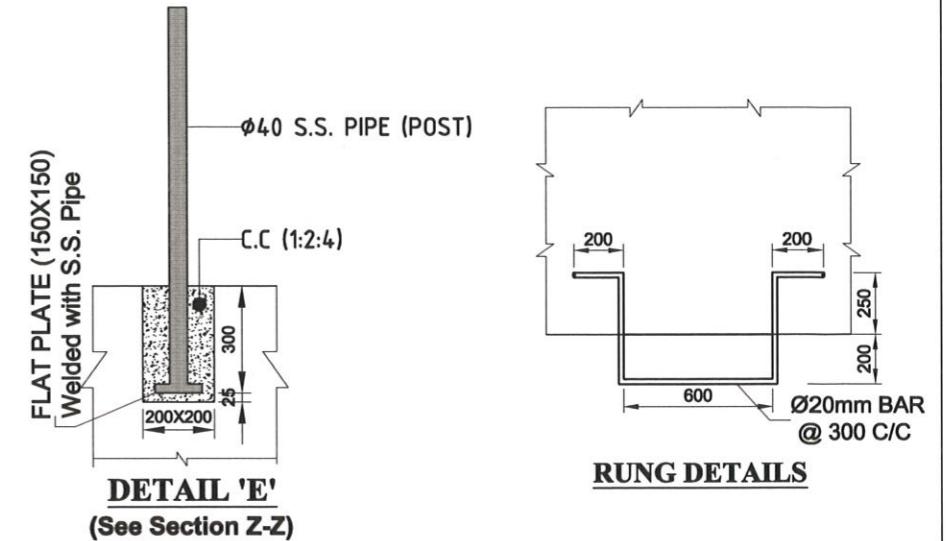
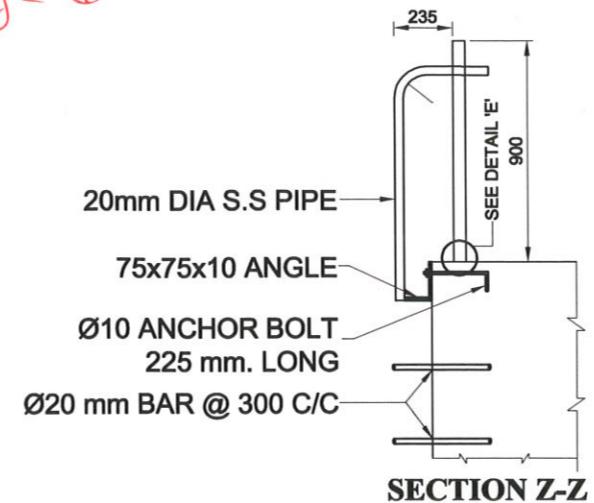
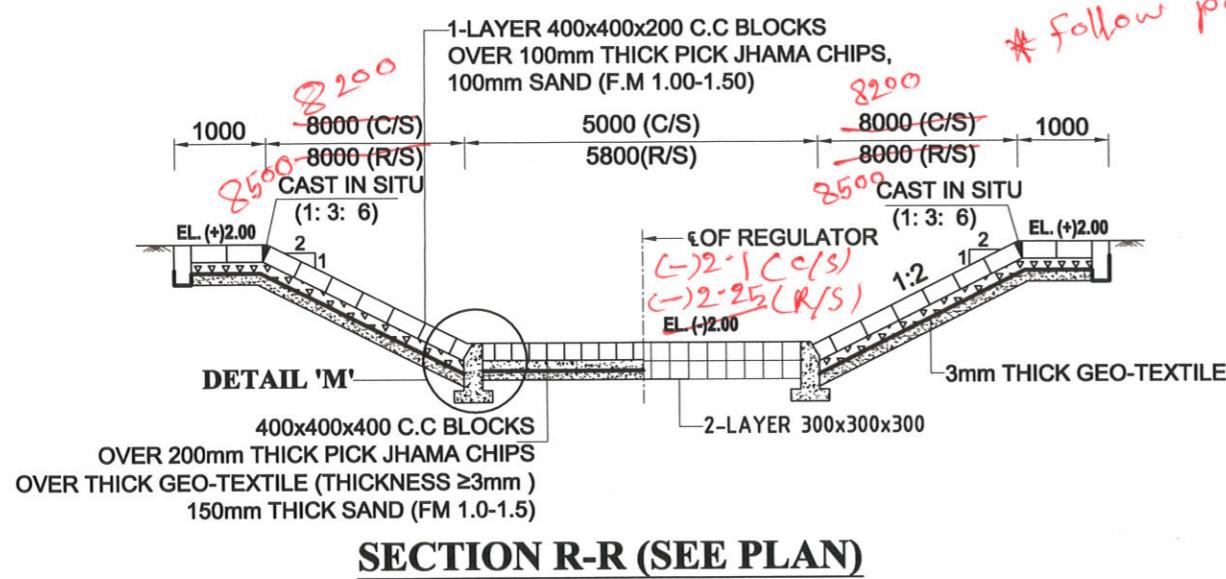
BANGLADESH WATER DEVELOPMENT BOARD

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.

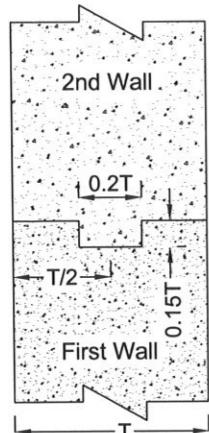
CHUTE , ENDSILL & BAFFLE REINFORCEMENT DETAILS

BANGLADESH WATER DEVELOPMENT BOARD			APPROVED BY
DESIGN CIRCLE -8	CHECKED BY	REVIEWED BY	
			CONSULTANT : Royal HaskoningDHV Sub Consultants DEVCON, DPM, IWM & DHI
			DESIGNED & CHECKED BY
	RAHUL BISWAS ASSISTANT ENGINEER	ABU SAYEED MD. MASUM EXECUTIVE ENGINEER	REVIEWED BY
	MOHAMMAD SAIF UDDIN SUPERINTENDING ENGINEER	MD. ENAYET ULLAH CHIEF ENGINEER, DESIGN	RECOMMENDED BY
	MD. MAHBUBUR RAHMAN DESIGN ENGINEER	MD. HABIBUR RAHMAN DEPUTY TEAM LEADER	Jean Henry Laboyrie TEAM LEADER

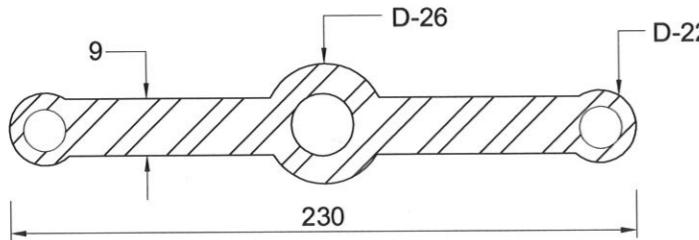


GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH			
MINISTRY OF WATER RESOURCES			
BANGLADESH WATER DEVELOPMENT BOARD			
COASTAL EMBANKMENT IMPROVEMENT PROJECT, PHASE-1 (CEIP-1)			
DETAILED DESIGN OF DRAINAGE REGULATOR DR-5, AT Km 18.950 (1V-1.50m X 1.80m) UNDER POLDER -16, PACKAGE - 3, CEIP - 1, BWDB, UPAZILA - PAIKGACHA, DISTRICT - KHULNA.			
BANGLADESH WATER DEVELOPMENT BOARD			
DESIGN CIRCLE -8		APPROVED BY	
CHECKED BY	REVIEWED BY	RECOMMENDED BY	
RAHUL BISWAS ASSISTANT ENGINEER	ABU SAYEED MD. MASUM 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)-0000-23/31	DRAWN BY- CAD OPERATOR - MST. MOUSUMI KHATUN	
CONSULTANT : Royal HaskoningDHV Sub Consultants DEVCON, DPM, IWM & DHI		DESIGNED & CHECKED BY	REVIEWED BY
MD. MAHBUBUR RAHMAN		MD. HABIBUR RAHMAN	JEAN HENRY LABOYRIE
DESIGN ENGINEER		DEPUTY TEAM LEADER	TEAM LEADER

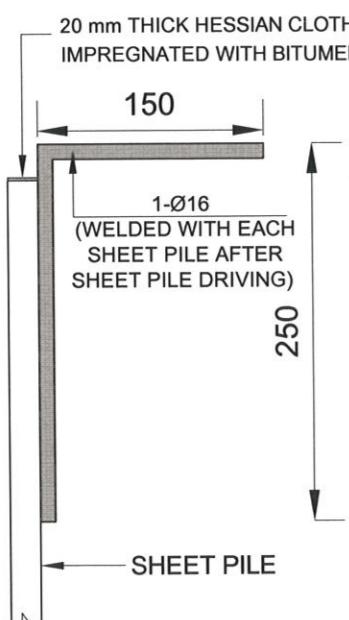
NOT TO SCALE



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



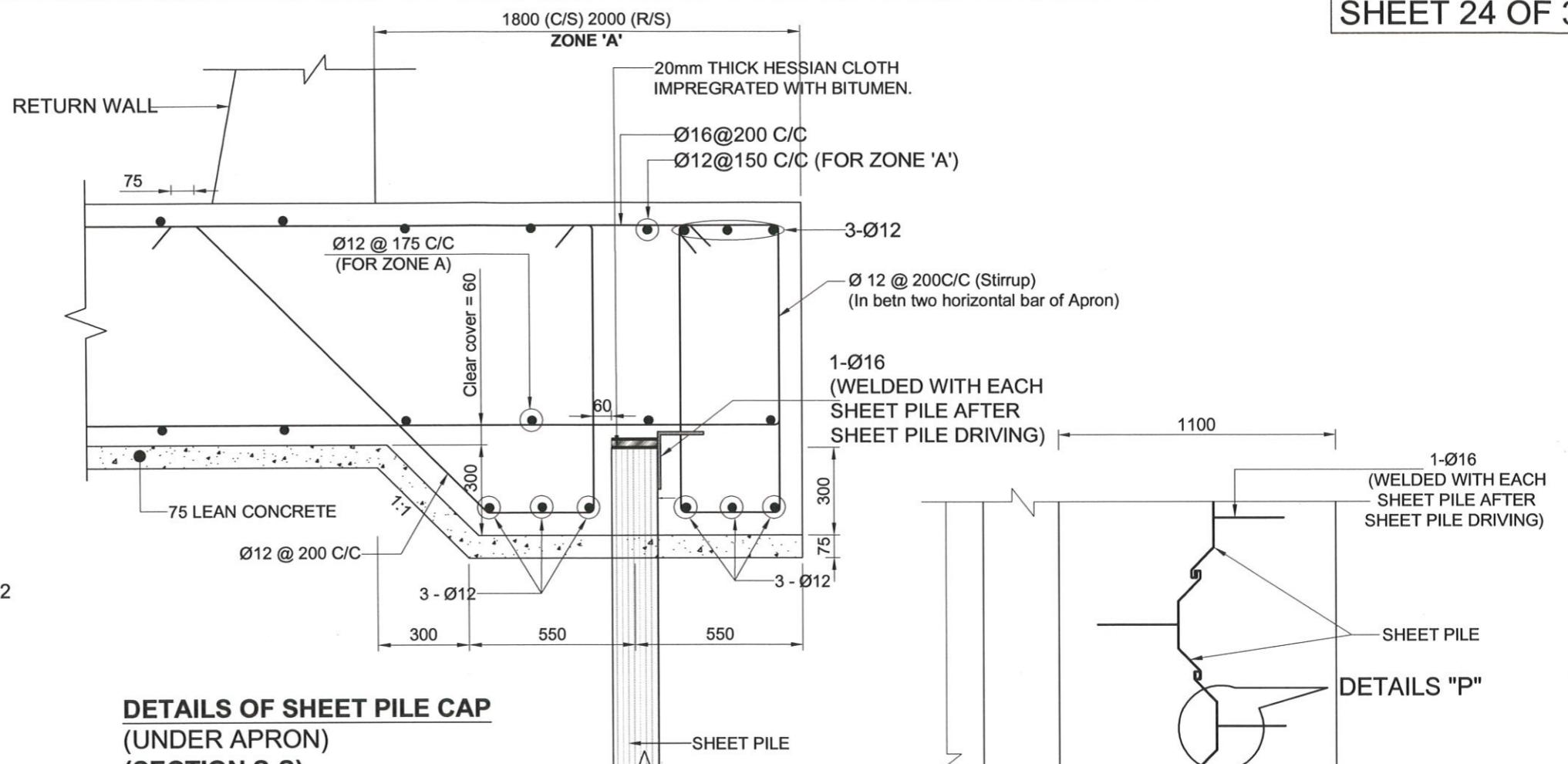
DETAILS OF P.V.C WATER STOPPER



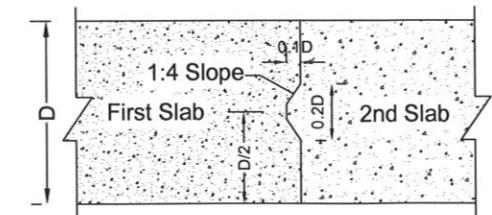
DETAILS 'P'

NOT TO SCALE

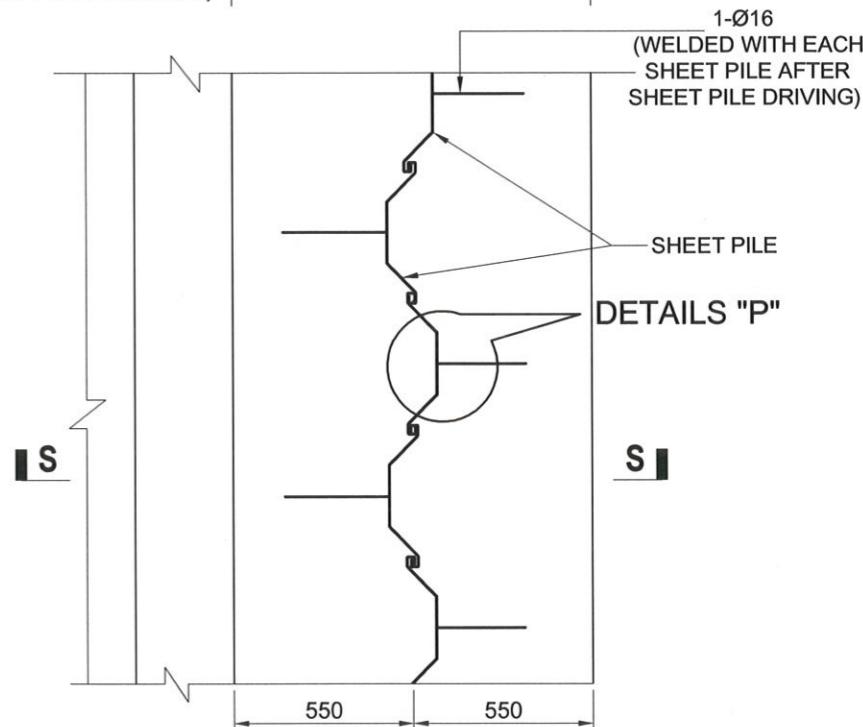
G:\Total drawing (MOUSUMI)\Mousumi\Package-3\Drainage Regulator\POLDER-16_DR-5\Polder -16_DR-5_1V_KM 18+950.dwg



**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.

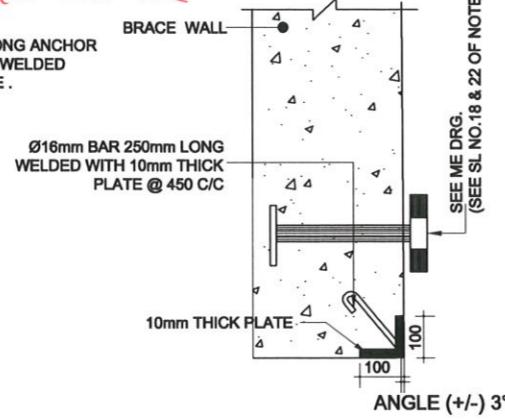
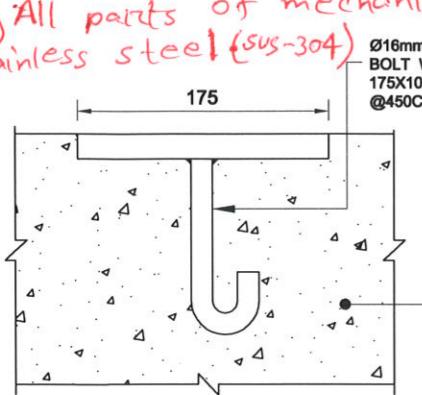
DETAILS OF CONSTRUCTION JOINTS, SHEET PILE CAP & WATER STOPPER

DESIGN CIRCLE -8			APPROVED BY
CHECKED BY	REVIEWED BY	RECOMMENDED BY	
RAHUL BISWAS ASSISTANT ENGINEER	ABU SAYEED MD. MASUM 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	

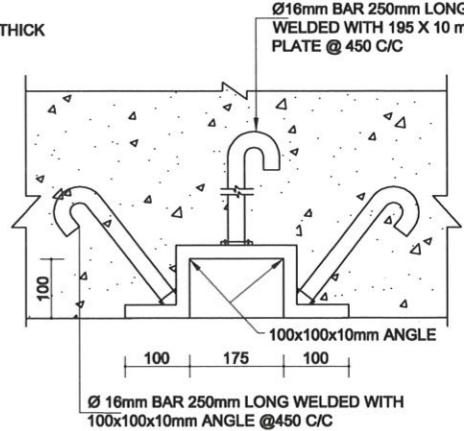
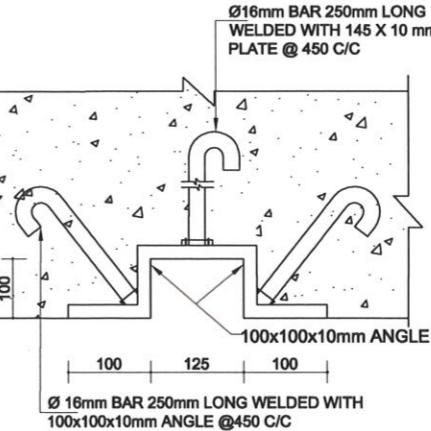
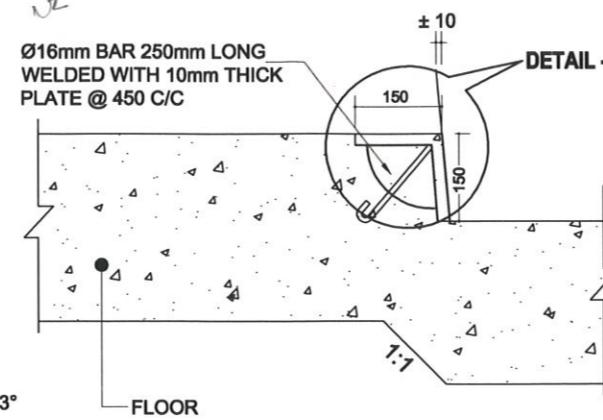
DATED: 00-00-0000 DWG NO.: DC-8-CEIP-1(P-16)-0000-24/31

DRAWN BY- CAD OPERATOR - MST. MOUSUMI KHATUN

*Note:-) 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)*



stainless steel (sus-304)



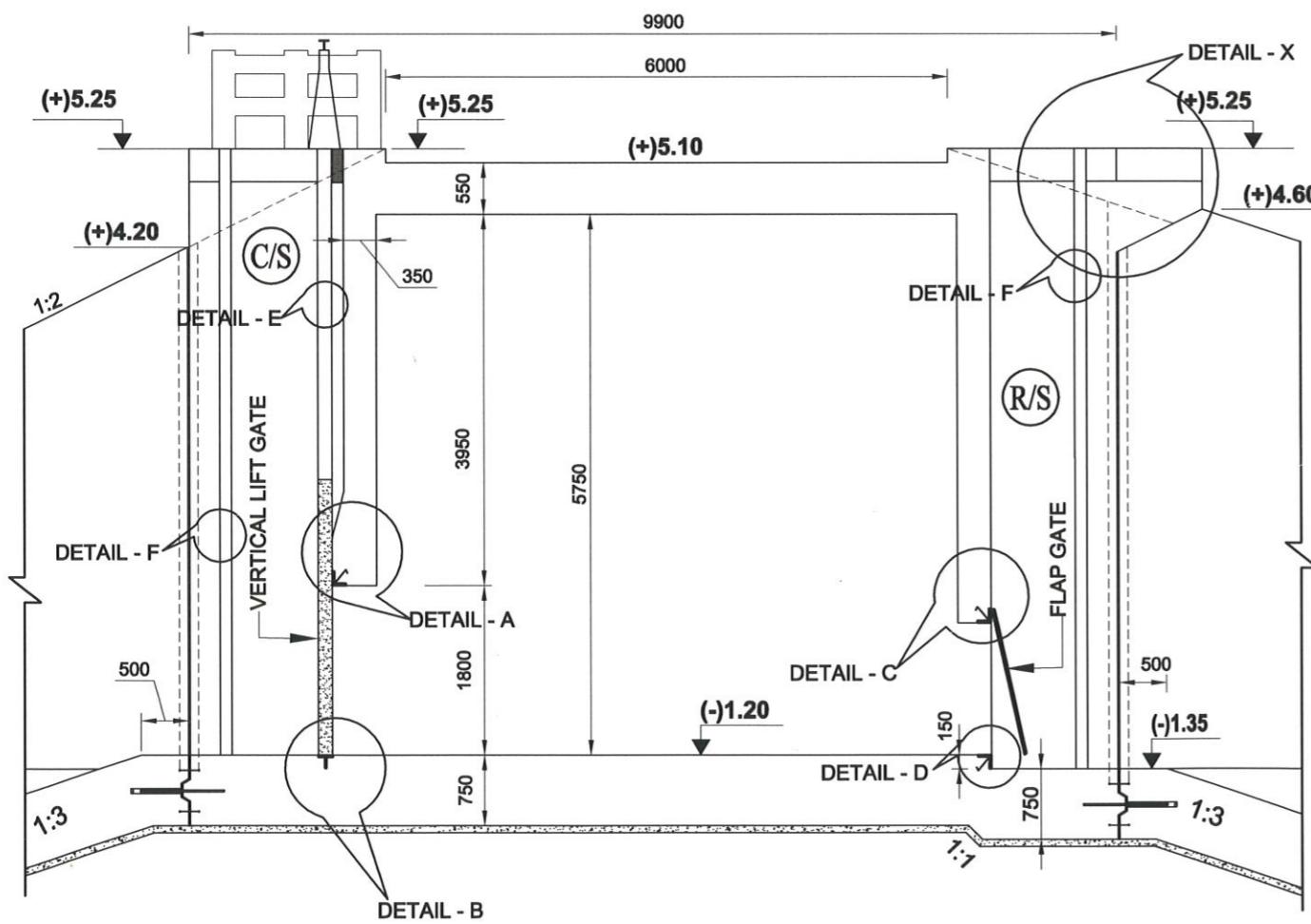
SEC.OF DETAIL -B

SEC.OF DETAIL -C

SEC.OF DETAIL -D

SEC.OF DETAIL -F

SEC.OF DETAIL -E



SECTION OF CENTRAL PART SHOWING EMBEDDED PARTS

NOTE:

GATE SHOULD BE CONTROLLED IF HEAD DIFFERENCE IS GREATER THAN 0.60m.

NOT TO SCALE

BANGLADESH WATER DEVELOPMENT BOARD

DESIGN CIRCLE -8

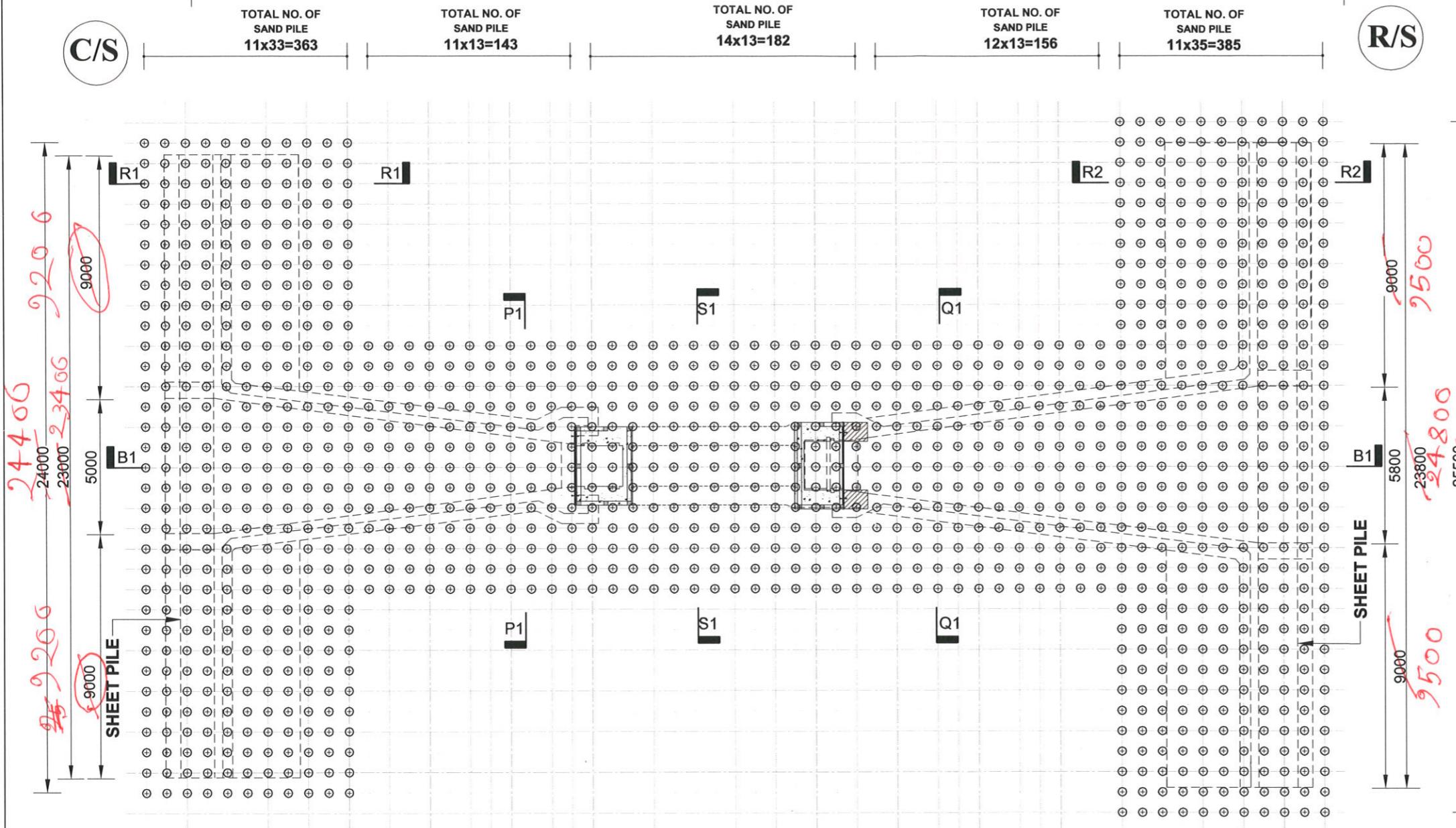
CHECKED BY REVIEWED BY RECOMMENDED BY

RAHUL BISWAS
ASSISTANT ENGINEER ABU SAYEED MD. MASUM
EXECUTIVE ENGINEER MOHAMMAD SAIF UDDIN
SUPERINTENDING ENGINEER MD. ENAYET ULLAH
CHIEF ENGINEER, DESIGN

APPROVED BY

CONSULTANT : Royal HaskoningDHV Sub Consultants DEVCON, DPM, IWM & DHI			MISCELLANEOUS METAL DETAIL		
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)-0000-25/31				

TOTAL NO. OF SAND PILE=1229

TOTAL NOS.SAND PILE=506
C/S APRON & RETURN WALLTOTAL NOS.SAND PILE=182
BARREL SIDETOTAL NOS. SAND PILE=541
R/S APRON & RETURN WALL**SAND PILE LAYOUT PLAN**

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.

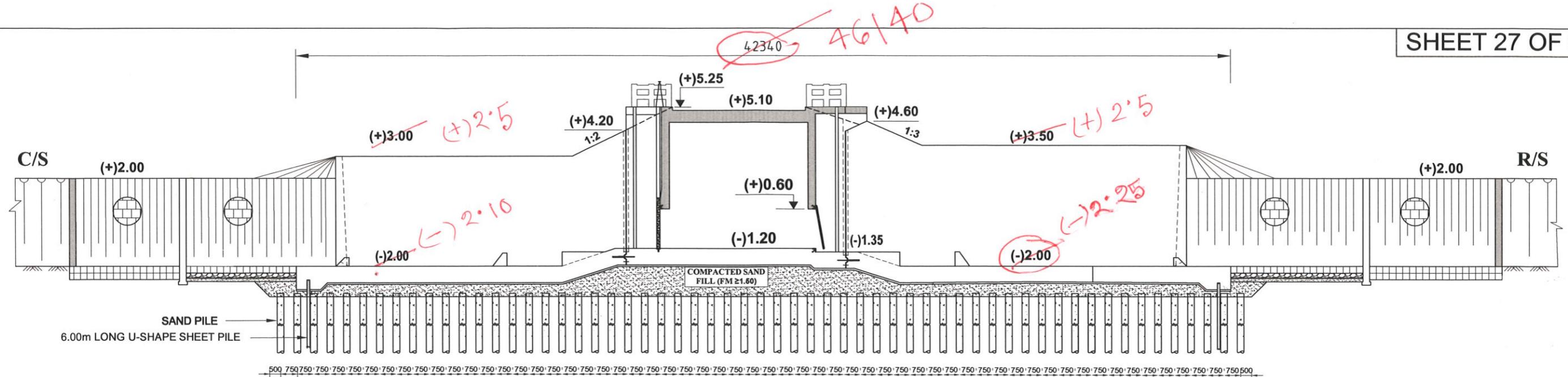
BANGLADESH WATER DEVELOPMENT BOARD

DESIGN CIRCLE -8			APPROVED BY
CHECKED BY	REVIEWED BY	RECOMMENDED BY	
RAHUL BISWAS ASSISTANT ENGINEER	ABU SAYEED MD. MASUM EXECUTIVE ENGINEER	MOHAMMAD SAIF UDDIN SUPERINTENDING ENGINEER	MD. ENAYET ULLAH CHIEF ENGINEER, DESIGN

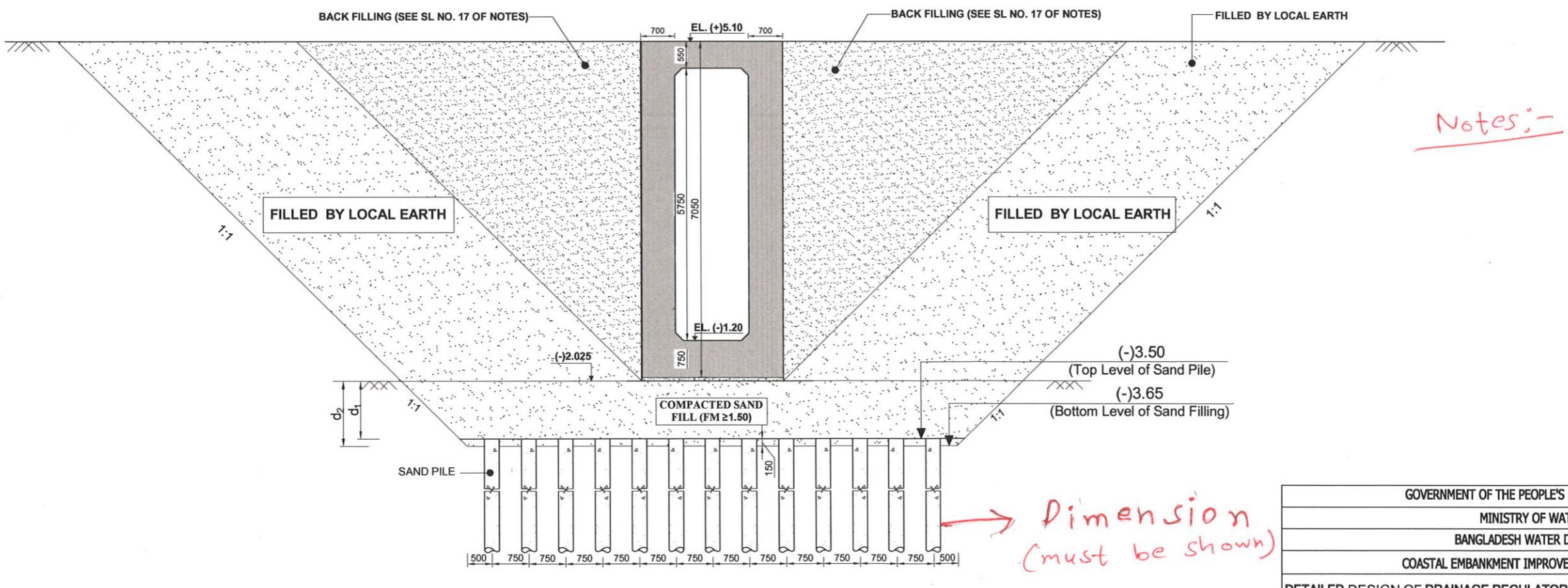
DATED: 00-00-0000 DWG NO.: DC-8-CEIP-1(P-16)-0000-26/31

CONSULTANT : Royal HaskoningDHV Sub Consultants DEVCON, DPM, IWM & DHI	SAND PILE LAYOUT PLAN		
DESIGNED & CHECKED BY	REVIEWED BY	RECOMMENDED BY	
M.D. MAHBUBUR RAHMAN DESIGN ENGINEER	M.D. HABIBUR RAHMAN DEPUTY TEAM LEADER	JEAN HENRY LABOYRIE TEAM LEADER	

DRAWN BY- CAD OPERATOR - MST. MOUSUMI KHATUN



SECTION ON (B1-B1) SHOWING SAND PILE DETAIL

SECTION S1-S1
SCALE 1:80

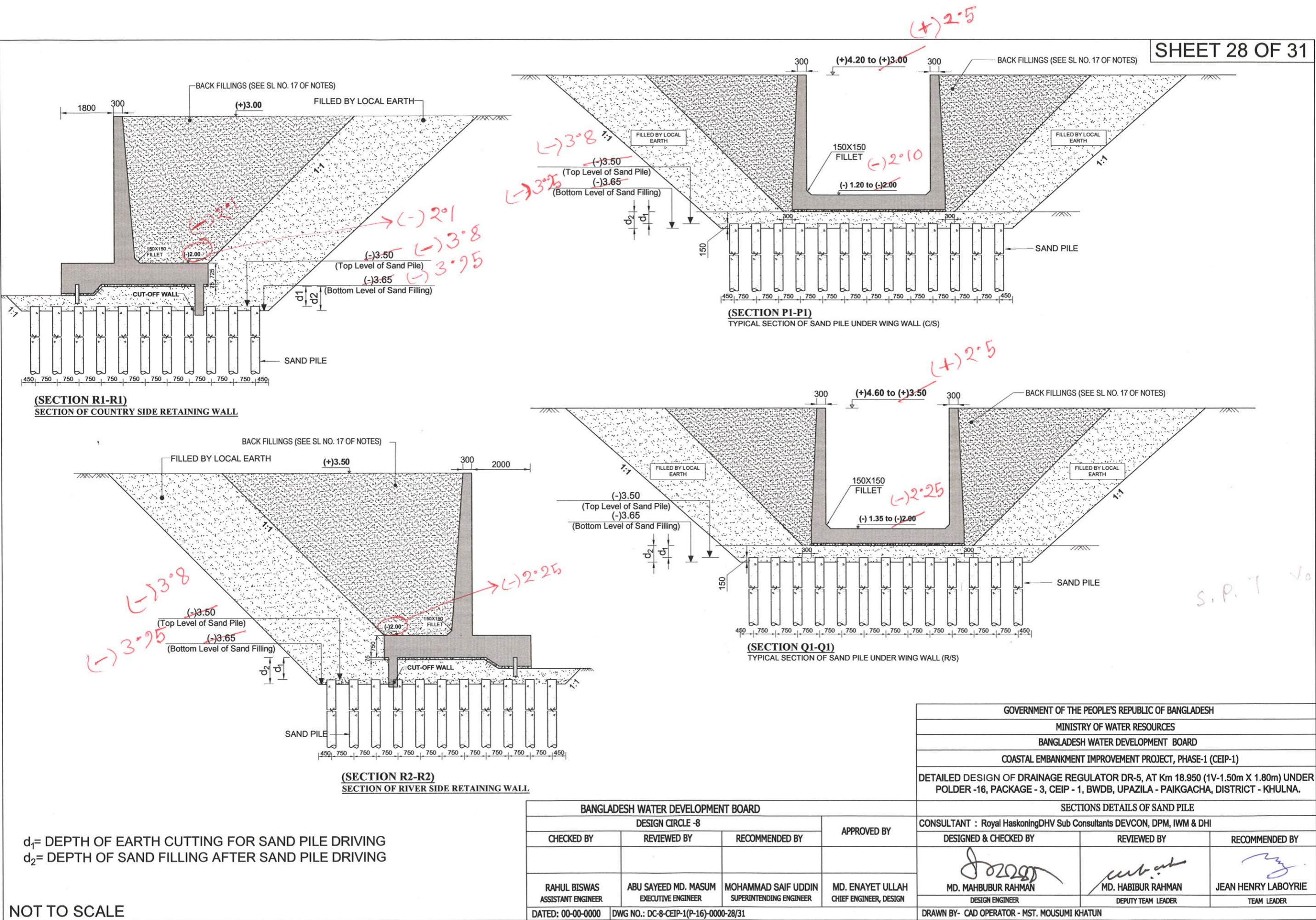
d_1 = DEPTH OF EARTH CUTTING FOR SAND PILE DRIVING
 d_2 = DEPTH OF SAND FILLING AFTER SAND PILE DRIVING

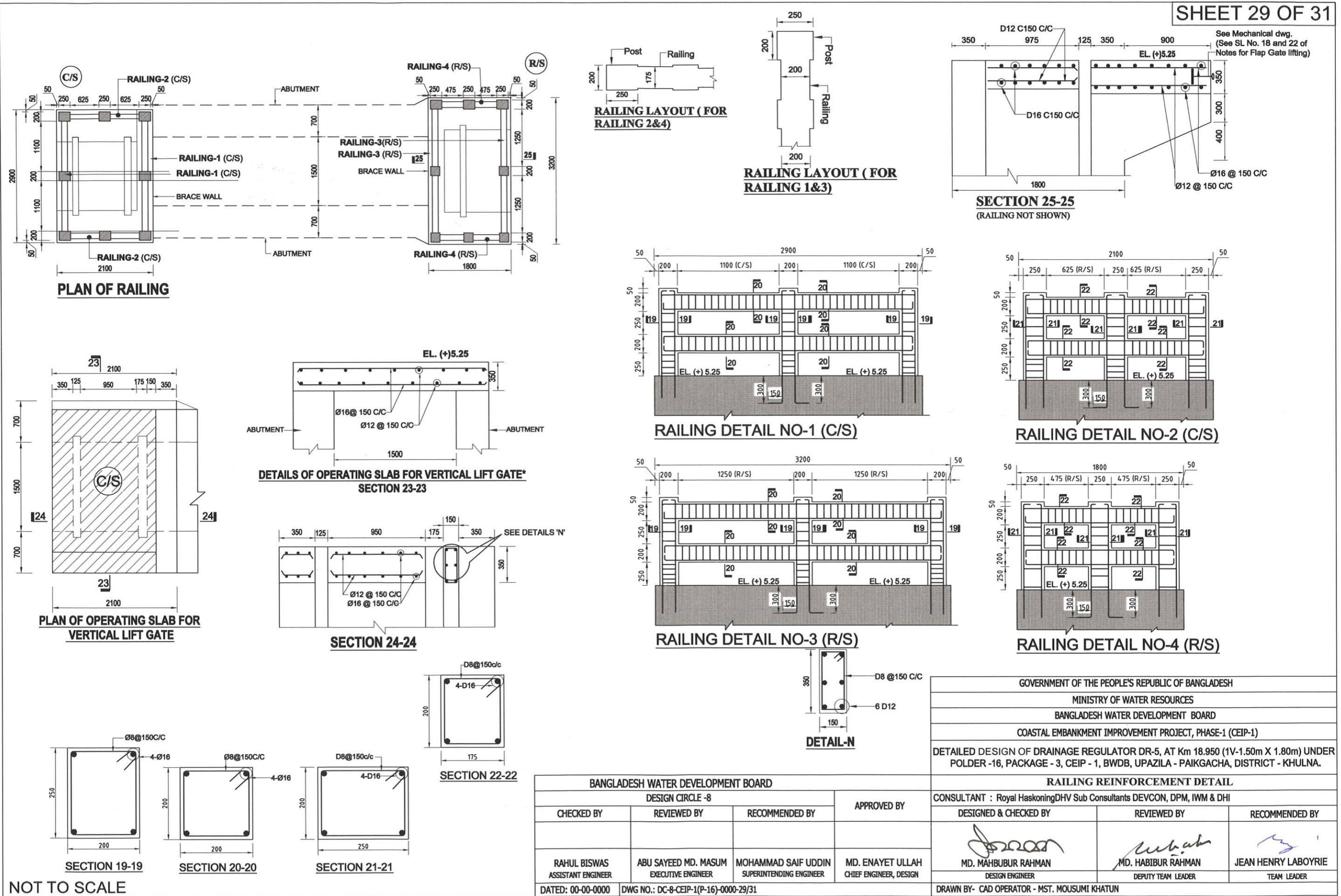
NOT TO SCALE

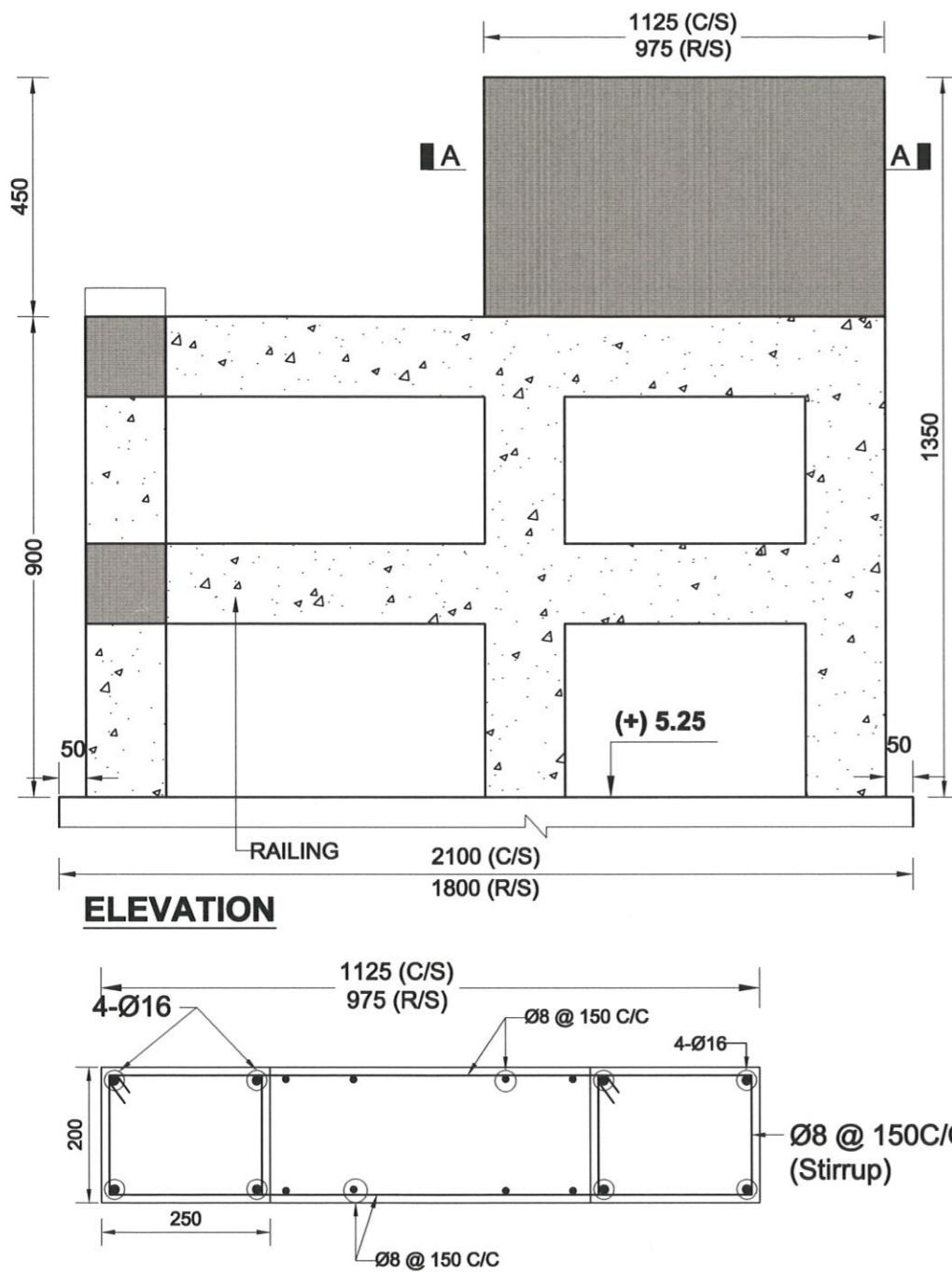
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BANGLADESH WATER DEVELOPMENT BOARD			SAND PILE DETAILS OF LONGITUDINAL PROFILE & BOX		
DESIGN CIRCLE -8			APPROVED BY	CONSULTANT : Royal HaskoningDHV Sub Consultants DEVCON, DPM, IWM & DHI	
CHECKED BY	REVIEWED BY	RECOMMENDED BY		DESIGNED & CHECKED BY	REVIEWED BY
RAHUL BISWAS ASSISTANT ENGINEER	ABU SAYEED MD. MASUM EXECUTIVE ENGINEER	MOHAMMAD SAIF UDDIN SUPERINTENDING ENGINEER	MD. ENAYET ULLAH CHIEF ENGINEER, DESIGN	MD. MAHBUBUR RAHMAN DESIGN ENGINEER	MD. HABIBUR RAHMAN DEPUTY TEAM LEADER
DATED: 00-00-0000	DWG NO.: DC-8-CEIP-1(P-16)-0000-27/31			JEAN HENRY LABOYRIE	TEAM LEADER
DRAWN BY- CAD OPERATOR - MST. MOUSUMI KHATUN					

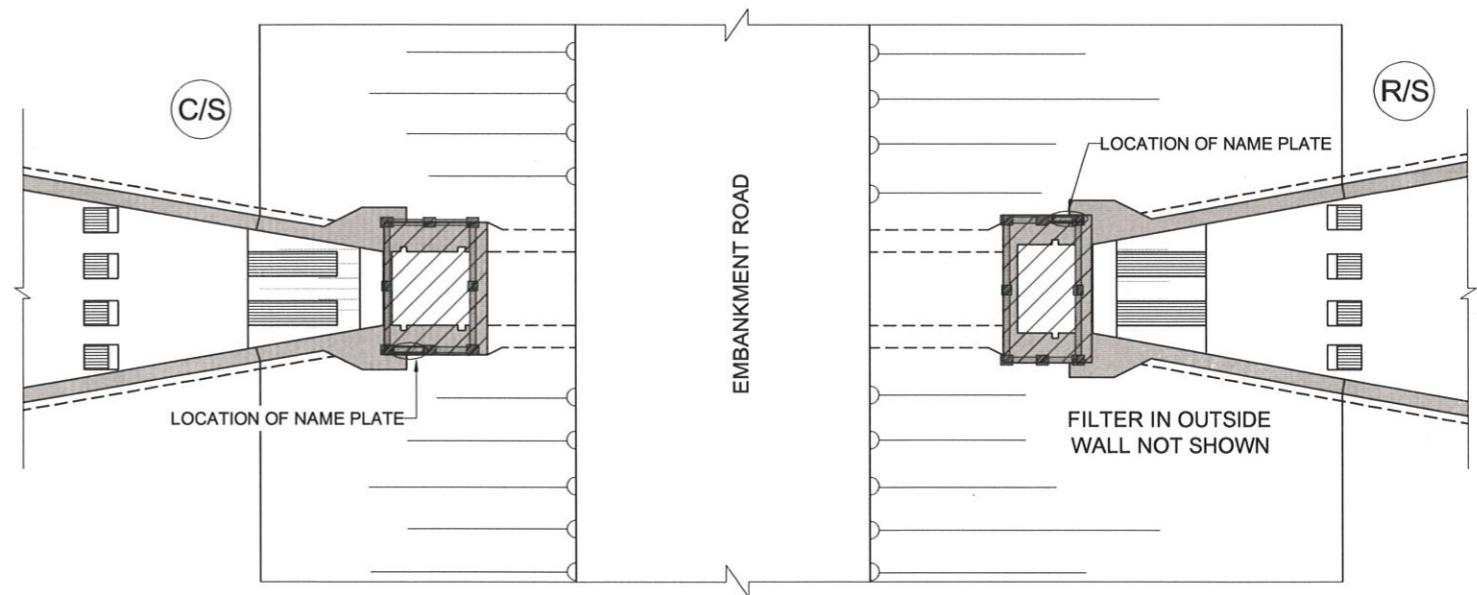
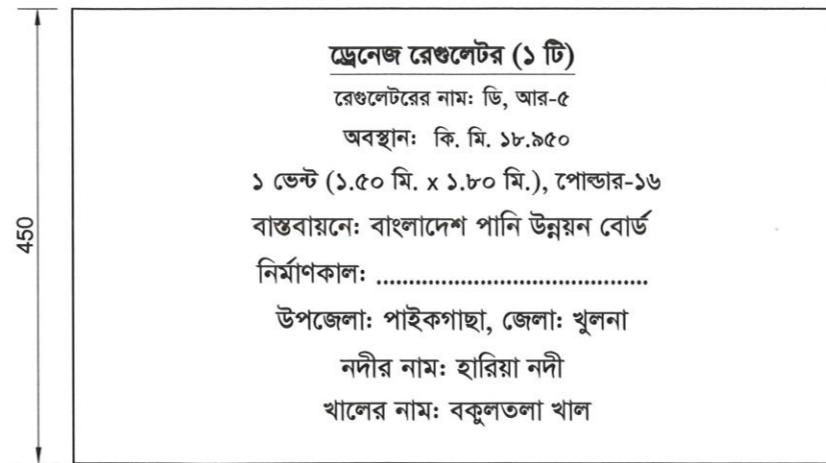
(+) 2°5





**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

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH

MINISTRY OF WATER RESOURCES

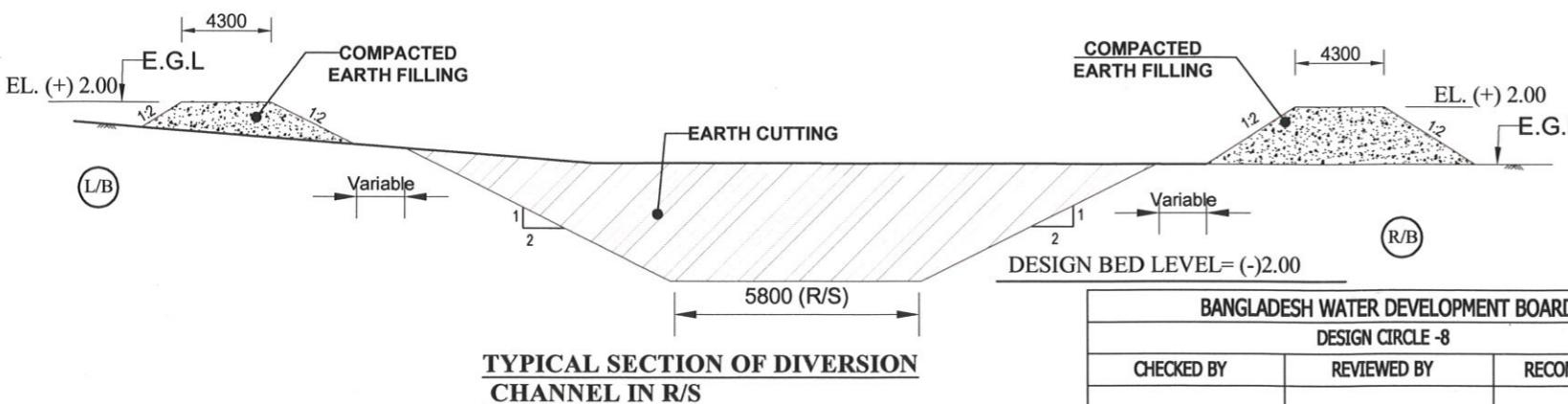
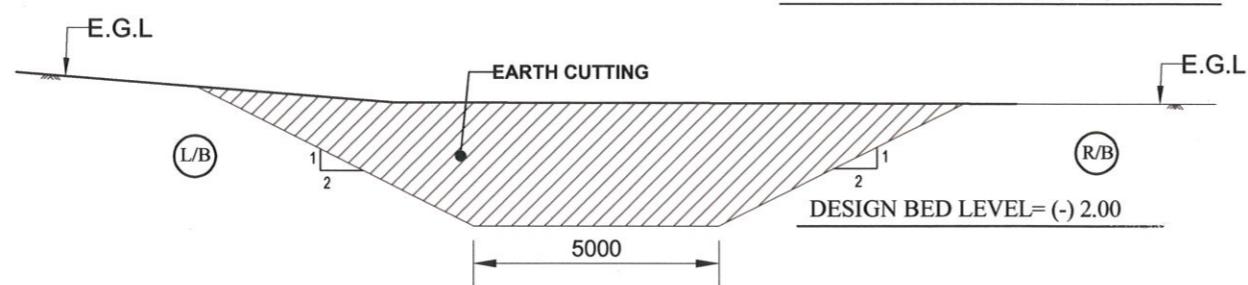
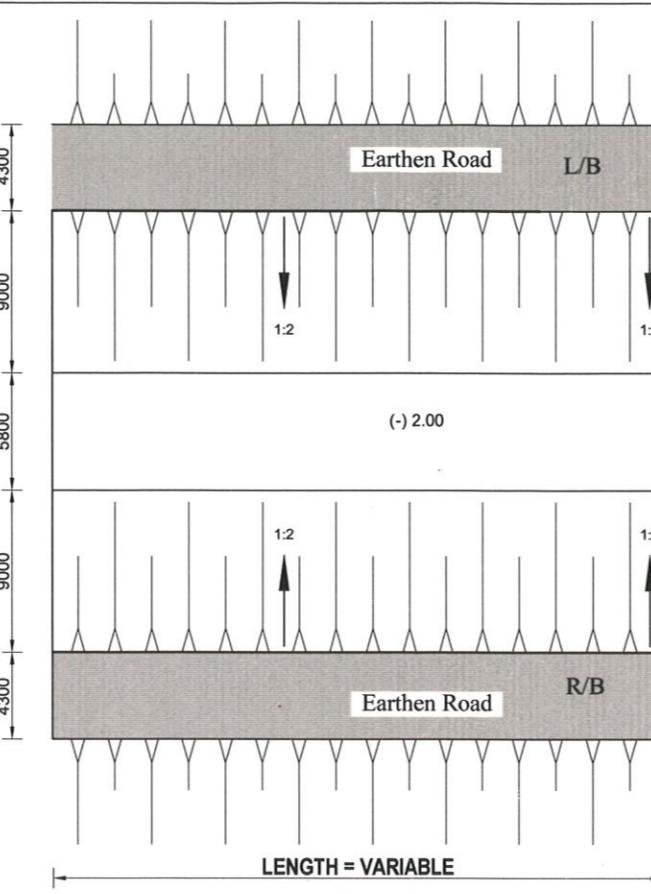
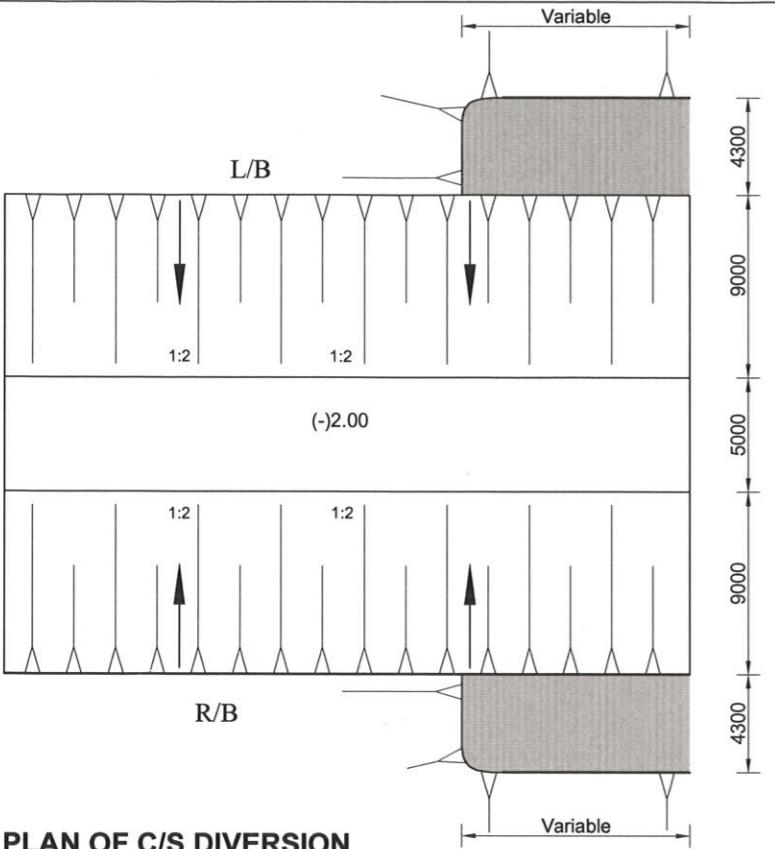
BANGLADESH WATER DEVELOPMENT BOARD

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.

PLAN, ELEVATION & DETAILS OF NAME PLATE

BANGLADESH WATER DEVELOPMENT BOARD			APPROVED BY	PLAN, ELEVATION & DETAILS OF NAME PLATE		
CHECKED BY	REVIEWED BY	RECOMMENDED BY		CONSULTANT : Royal HaskoningDHV Sub Consultants DEVCON, DPM, IWM & DHI	DESIGNED & CHECKED BY	REVIEWED BY
				MD. MAHBUBUR RAHMAN	MD. HABIBUR RAHMAN	JEAN HENRY LABOYRIE
RAHUL BISWAS ASSISTANT ENGINEER	ABU SAYEED MD. MASUM 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)-0000-30/31	DRAWN BY- CAD OPERATOR - MST. MOUSUMI KHATUN				



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.		
DETAILS OF DIVERSION CHANNEL		
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

BANGLADESH WATER DEVELOPMENT BOARD

DESIGN CIRCLE -8			APPROVED BY
CHECKED BY	REVIEWED BY	RECOMMENDED BY	
RAHUL BISWAS ASSISTANT ENGINEER	ABU SAYEED MD. MASUM 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)-0000-31/31		

DRAWN BY- CAD OPERATOR - MST. MOUSUMI KHATUN