

BANGLADESH WATER DEVELOPMENT BOARD

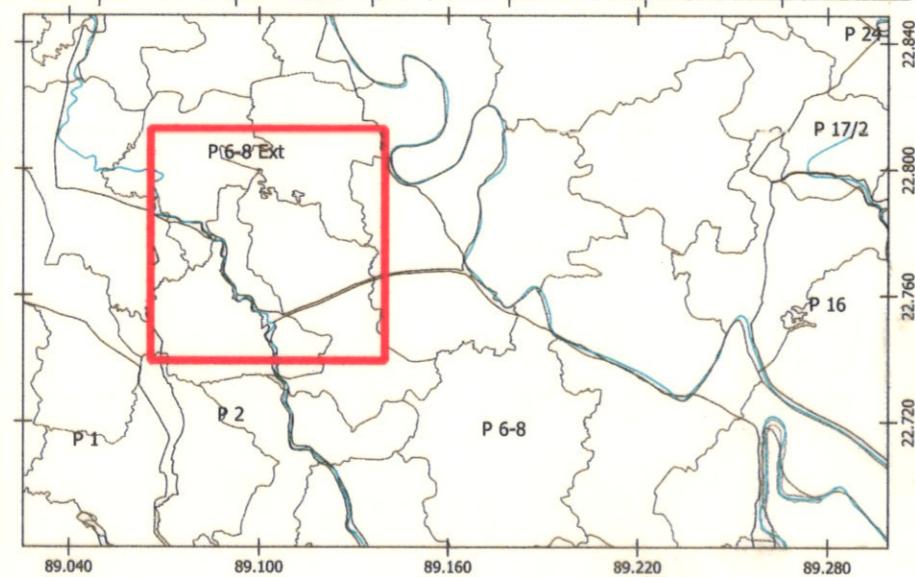
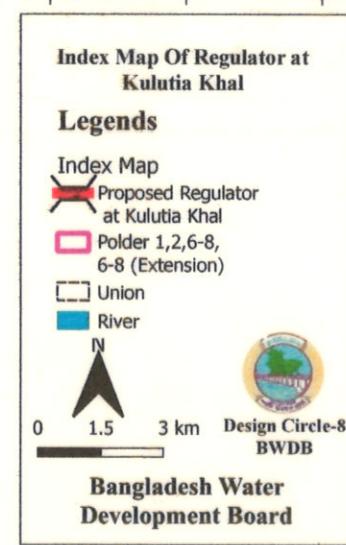
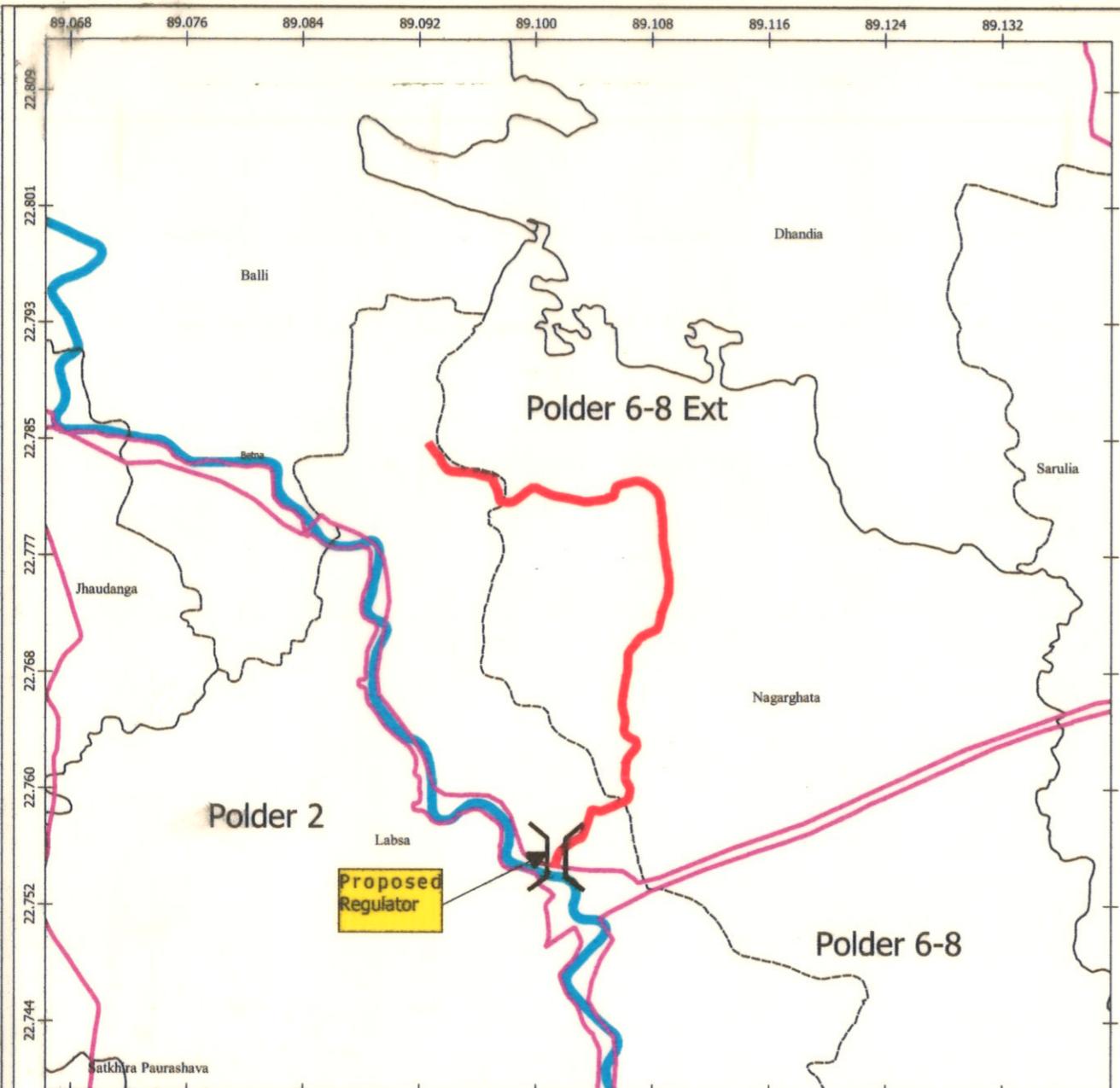


DRAINAGE IMPROVEMENT OF POLDER 1,2,6-8 AND 6-8(EXTENSION)

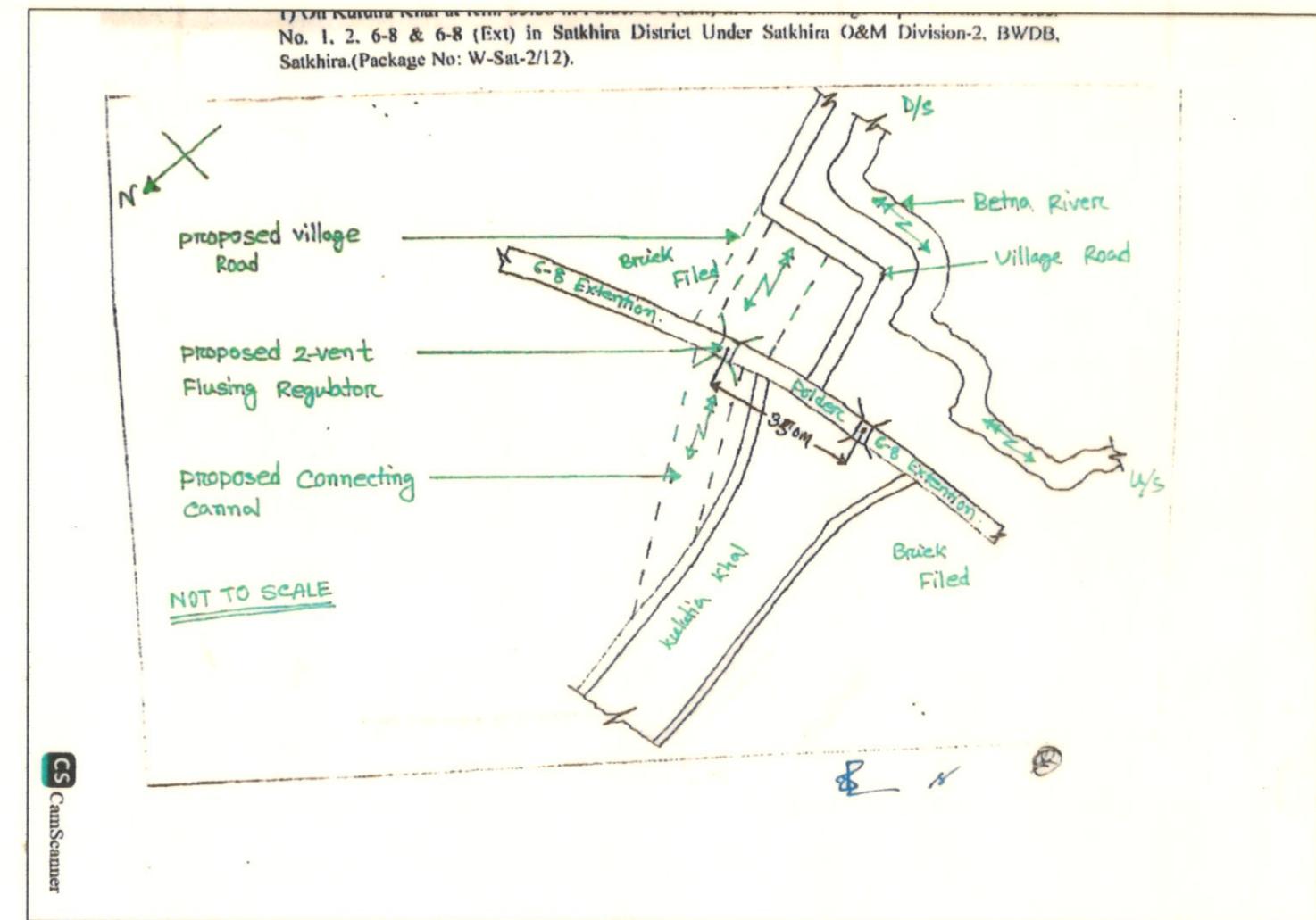
DESIGN OF DRAINAGE CUM FLUSHING REGULATOR
2-VENT(1.50mX1.80m) ON KULUTIA KHAL AT KM 35.00 IN POLDER NO-6-8(EXT) IN SATKHIRA
DISTRICT, UNDER SATKHIRA O&M DIVISION-2, BWDB, SATKHIRA.

SATKHIRA O&M DIVISION-2, BWDB, SATKHIRA

DESIGNED BY: DESIGN CIRCLE-8, BWDB, DHAKA.
NOVEMBER, 2022



INDEX MAP

SITE PLAN**Bangladesh Water Development Board**Office of the Superintending Engineer
Design Circle-8

DRAINAGE IMPROVEMENT OF POLDER 1,2,6-8 AND 6-8(EXTENSION)

DESIGN OF DRAINAGE CUM FLUSHING REGULATOR
2-VENT(1.50mX1.80m) ON KULUTIA KHAL AT KM 35.00 IN POLDER NO-6-8(EXT)
IN SATKHIRA DISTRICT, UNDER SATKHIRA O&M DIVISION-2, BWDB,
SATKHIRA.**INDEX MAP & SITE PLAN**

DESIGNED BY :

(SAKIB BIN RAFI), AE

APPROVED BY :

CHECKED & RECOMMENDED BY :

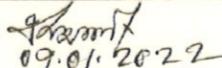
(JAKARIA PERVEZ), EE

(MOHAMMAD SAIF UDDIN), SE

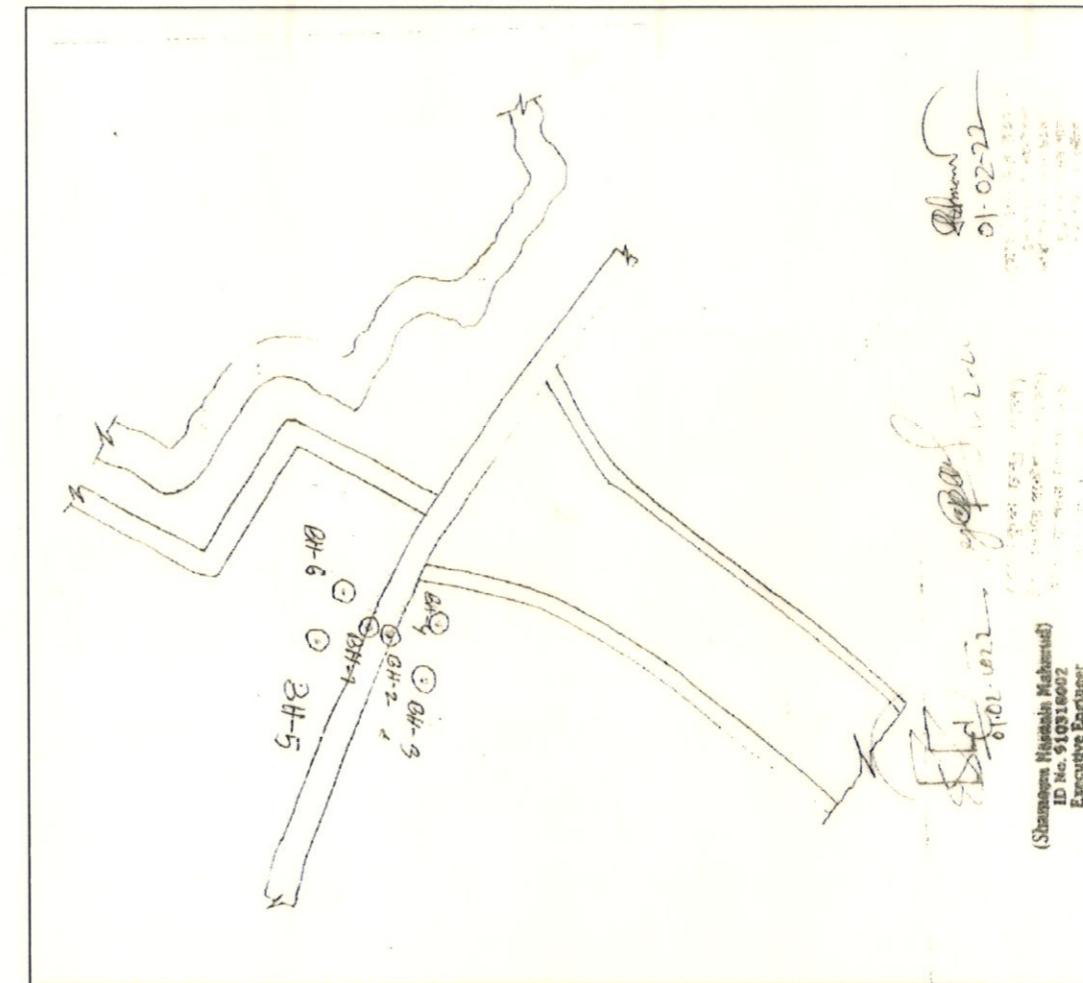
DATE:23/11/2022 DWG. NO.:DC-8-0317-01/22

FI/FORM-2

BANGLADESH WATER DEVELOPMENT BOARD											
GROUNDWATER HYDROLOGY											
GROUNDWATER HYDROLOGY DIVISION-II											
FIELD BORE LOG											
PROJECT-Soil Boring for the construction of four Sluices at Bainbasat, Kulutia, Chumrikhali, and Khajurdanga under Satkhira Sadar and Ashashuni Upazila of Satkhira O&M Division-2, BWDB, Satkhira.					SITE- Kulutia Binerpota Site.						
LOCATION-Kulutia Binerpota Site.					P.S-Satkhira Sadar.						
CLIENT-XEN, Satkhira O&M Division-2, BWDB, Satkhira.					HOLE NO-01 DIST. Satkhira.						
DATE STARTED-13.11.2021					DATE COMPLETED-13.11.2021 GROUND LEVEL (+)3.218 m.						
DRILLED BY GWHD-II					OF DATE-14.11.2021 AT 08 HRS						
UNIT Rig-21					TOTAL DEPTH 72 ft.						
No of Sample	Type of Sample	Scale	LITHOLOGICAL DESCRIPTION		PHYSICAL		DISTURBED SAMPLES		PENETRATION TEST		INDEX
					DENSITY	COLOR	MOISTURE	DILATANCY	BLOWS ON SPOON	BLOWS ON CASING	
D1	5		Clay		Very Soft		Plastic		0 / 6 / 12 / 18 / 0 / 12 / 24 /	10 / 20 / 30 / 40 / 50 / 60 / 70 / 80 / 90 / 100 /	Disturb
D2	10				Soft	M.S.T.			6 / 12 / 18 / 24 /		Undisturb
D3	15		Clay Some Silt		Medium		Semi Plastic		1 / 1 / 1 / 1 /		
D4	20				Stiff				0 / 1 / 1 / 1 /		
D5	25				Hard				2 / 2 / 3 / 5 /		
D6	30				Very Soft	M.S.T.			1 / 1 / 3 / 5 /		
D7	35		Very Fine Sand Some Silt		Medium		Non Plastic		4 / 8 / 9 / 9 /		
D8	40				Dense				6 / 8 / 9 / 10 /		
D9	45								6 / 9 / 10 / 11 /		
D10	50		Very Fine Sand Some Silt Little Mica						5 / 9 / 10 / 10 /		
D11	55								5 / 10 / 10 / 11 /		
D12	60								6 / 11 / 17 / 20 /		
D13	65		Fine Sand Some Very Fine Sand Little Mica						6 / 9 / 10 / 10 /		
D14	70								6 / 9 / 10 / 11 /		
									7 / 12 / 15 / 17 /		
									9 / 15 / 17 / 22 /		


 09.01.2022
 Md. Mostak Ali
 Geologist
 Ground Water Hydrology Division-2
 BWDB, 72, Green Road, Dhaka-1205

BORE LOG BH-01

**LOCATION SKETCH**

(Not to Scale)

Bangladesh Water Development BoardOffice of the Superintending Engineer
Design Circle-8

DRAINAGE IMPROVEMENT OF POLDER 1,2,6-8 AND 6-8(EXTENSION)

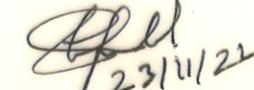
DESIGN OF DRAINAGE CUM FLUSHING REGULATOR
2-VENT(1.50mX1.80m) ON KULUTIA KHAL AT KM 35.00 IN POLDER NO-6-8(EXT)
IN SATKHIRA DISTRICT, UNDER SATKHIRA O&M DIVISION-2, BWDB,
SATKHIRA.**BORE LOG & LOCATION SKETCH**

DESIGNED BY :



(SAKIB BIN RAFI), AE

APPROVED BY :



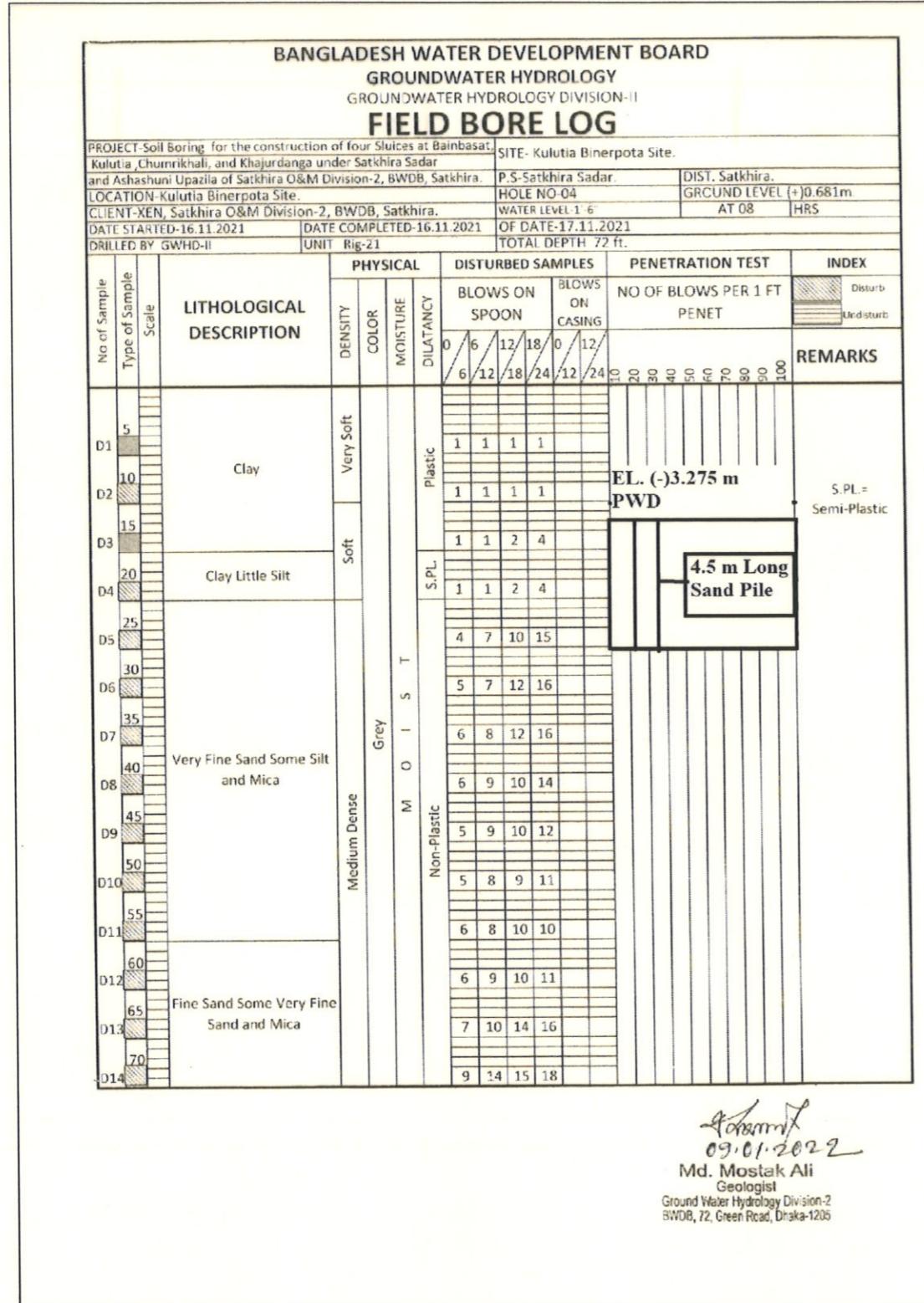
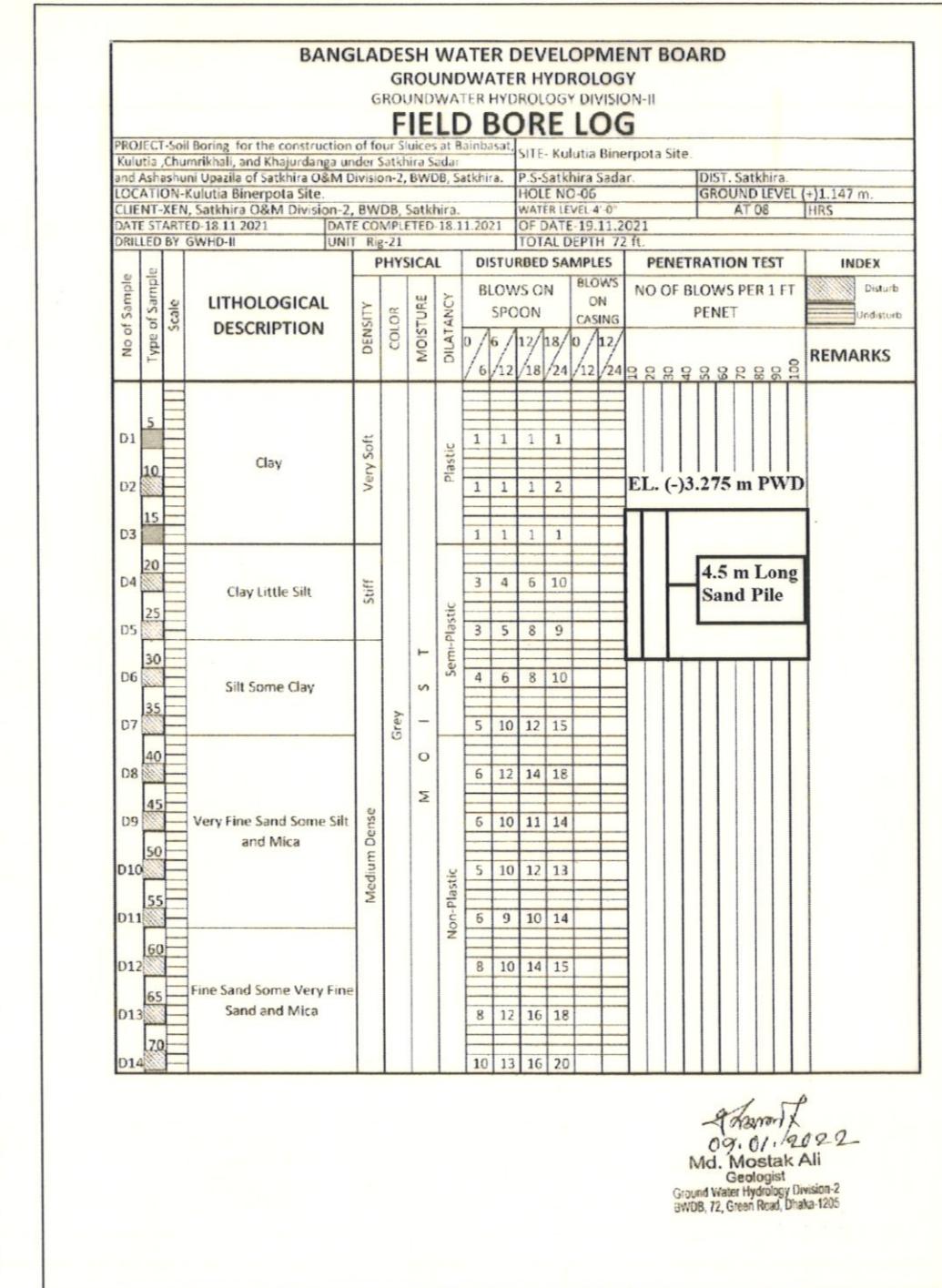
(MOHAMMAD SAIF UDDIN), SE

CHECKED & RECOMMENDED BY :



(JAKARIA PERVEZ), EE

DATE:23/11/2022 DWG. NO.:DC-8-0317-02/22

**BORE LOG BH-04****BORE LOG BH-06**

Bangladesh Water Development Board
Office of the Superintending Engineer
Design Circle-8

DESIGN OF DRAINAGE CUM FLUSHING REGULATOR
2-VENT(1.50mX1.80m) ON KULUTIA KHAL AT KM 35.00 IN POLDER NO-6-8(EXT)
IN SATKHIRA DISTRICT, UNDER SATKHIRA O&M DIVISION-2, BWDB,
SATKHIRA.

DESIGNED BY :	APPROVED BY :
<i>SAKIB BIN RAFI</i> (SAKIB BIN RAFI), AE	<i>Mohammad Saif Uddin</i> (MOHAMMAD SAIF UDDIN), SE
CHECKED & RECOMMENDED BY :	
<i>JAKARIA PERVEZ</i> (JAKARIA PERVEZ), EE	
DATE:23/11/2022 DWG. NO.:DC-8-0317-03/22	

GENERAL NOTES

1. THE SPECIFICATION OF MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE STANDARD TECHNICAL SPECIFICATION OF BWDB, IN GENERAL.
2. ALL DIMENSIONS ARE IN MILLIMETERS AND ALL ELEVATIONS ARE IN mPWD UNLESS OTHERWISE MENTIONED IN THE DRAWINGS.
3. COMPRESSIVE STRENGTH OF REINFORCED CEMENT CONCRETE SHALL HAVE MINIMUM 28 DAYS CYLINDER STRENGTH, $f_c \geq 25.00 \text{ N/mm}^2$ (ITEM CODE: 28-230-10) AND SHALL BE CHECKED BY COLLECTING SAMPLES AND TESTING DURING CONSTRUCTION.
4. REINFORCING BAR SHALL BE DEFORMED MILD STEEL HAVING YIELD STRENGTH, $f_y \geq 400.00 \text{ N/mm}^2$. (ITEM CODE-76-120-10), (MADE FROM BILLET) IN R.C.C. WORK.
5. CONCRETE FOR CC BLOCKS SHALL HAVE MINIMUM STRENGTH, $f_c \geq 10.50 \text{ N/mm}^2$ AT 28 DAYS.
6. CURING OF CONCRETE SHALL BE CONTINUED FOR MINIMUM 21 DAYS AFTER CASTING.
7. CONCRETE SHALL BE POURED IN DRY BED CONDITION.
8. THE SURFACE OF CONSTRUCTION JOINTS SHALL BE WASHED THOROUGHLY WITH WATER JET & SHALL BE CLEAN ENOUGH 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 IN FOUNDATION SHOULD BE DONE WITH SAND OF $F.M \geq 1.50$ IN LAYERS OF 150 mm THICK LAYER BY LAYER 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 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 EMBEDDED PARTS OF GATE TO BE INSTALLED DURING CONSTRUCTION OF BARREL PART AND IT SHALL BE DONE IN ACCORDANCE WITH APPROVED MECHANICAL DRAWING.
21. THE GATE SHALL BE INSTALLED BEFORE THE OPERATION OF THE STRUCTURE.
22. ANY ERROR/OMISSION IF DETECTED SHALL BE REFERRED TO THE CONCERNED DESIGN OFFICE TAKING NECESSARY ACTION.
23. ALL BORE HOLES SHALL BE SEALED BEFORE CONSTRUCTION OF REGULATOR.
24. POST GUARD IN BOTH SIDE OF APPROACH ROAD IS NEEDED.
25. PAINT OF POST GUARD AND RAILING IS NEEDED.

SPECIAL NOTES:

1. THIS DRAWING IS PREPARED AS PER PROPOSAL AND DESIGN DATA SUBMITTED BY SE, KHULNA O&M CIRCLE, BWDB, KHULNA VIDE HIS OFFICE MEMO NO: 813, DATE:02/02/2022 AND ADDITIONAL DATA RECEIVED FROM EE, SATKHIRA O&M DIVISION-2 BWDB SATKHIRA TROUGH EMAIL ON 09-11-2022.
2. THE WORK SHALL BE EXECUTED WITH PRIOR ADMINISTRATIVE AND FINANCIAL APPROVAL FROM THE COMPETENT AUTHORITY & WITHIN THE DPP / BUDGET PROVISION .
3. EXISTING KHAL/LINK KHAL AT THE U/S & D/S OF THIS PROPOSED REGULATOR TO BE RE-EXCAVATED UPTO THE REQUIRED LENGTH AND LEVEL IF NECESSARY.

NOTES FOR SHEET PILES:

1. HOT ROLLED U-SHAPE STEEL 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 ($\pm 0.50\text{mm}$) (ITEMCODE: 44-240-10).
4. CONCERNED EXECUTIVE ENGINEER MUST ENSURE SHEET PILE INTERLOCKING, LENGTH, & DRIVING.
5. TOP LEVEL OF EVERY CONNECTED SHEET PILES MUST HAVE SAME LEVEL.

NOTES FOR EMBEDDED PARTS, GROOVE AND GATE:

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).

Bangladesh Water Development Board

Office of the Superintending Engineer
Design Circle-8

DRAINAGE IMPROVEMENT OF POLDER 1,2,6-8 AND 6-8(EXTENSION)

DESIGN OF DRAINAGE CUM FLUSHING REGULATOR
2-VENT(1.50mX1.80m) ON KULUTIA KHAL AT KM 35.00 IN POLDER NO-6-8(EXT)
IN SATKHIRA DISTRICT, UNDER SATKHIRA O&M DIVISION-2, BWDB,
SATKHIRA.

NOTES

DESIGNED BY :

(SAKIB BIN RAFI), AE

APPROVED BY :

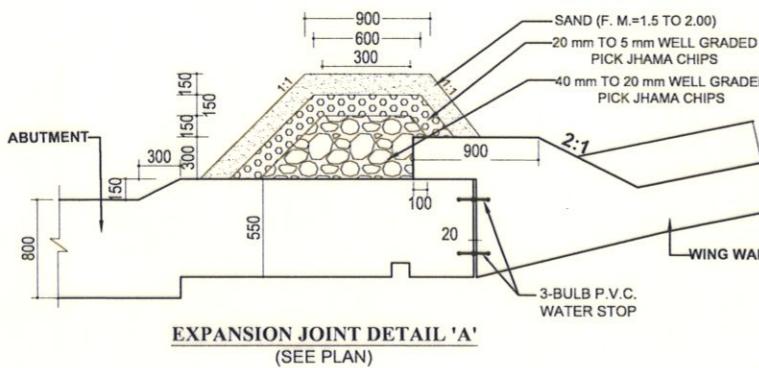
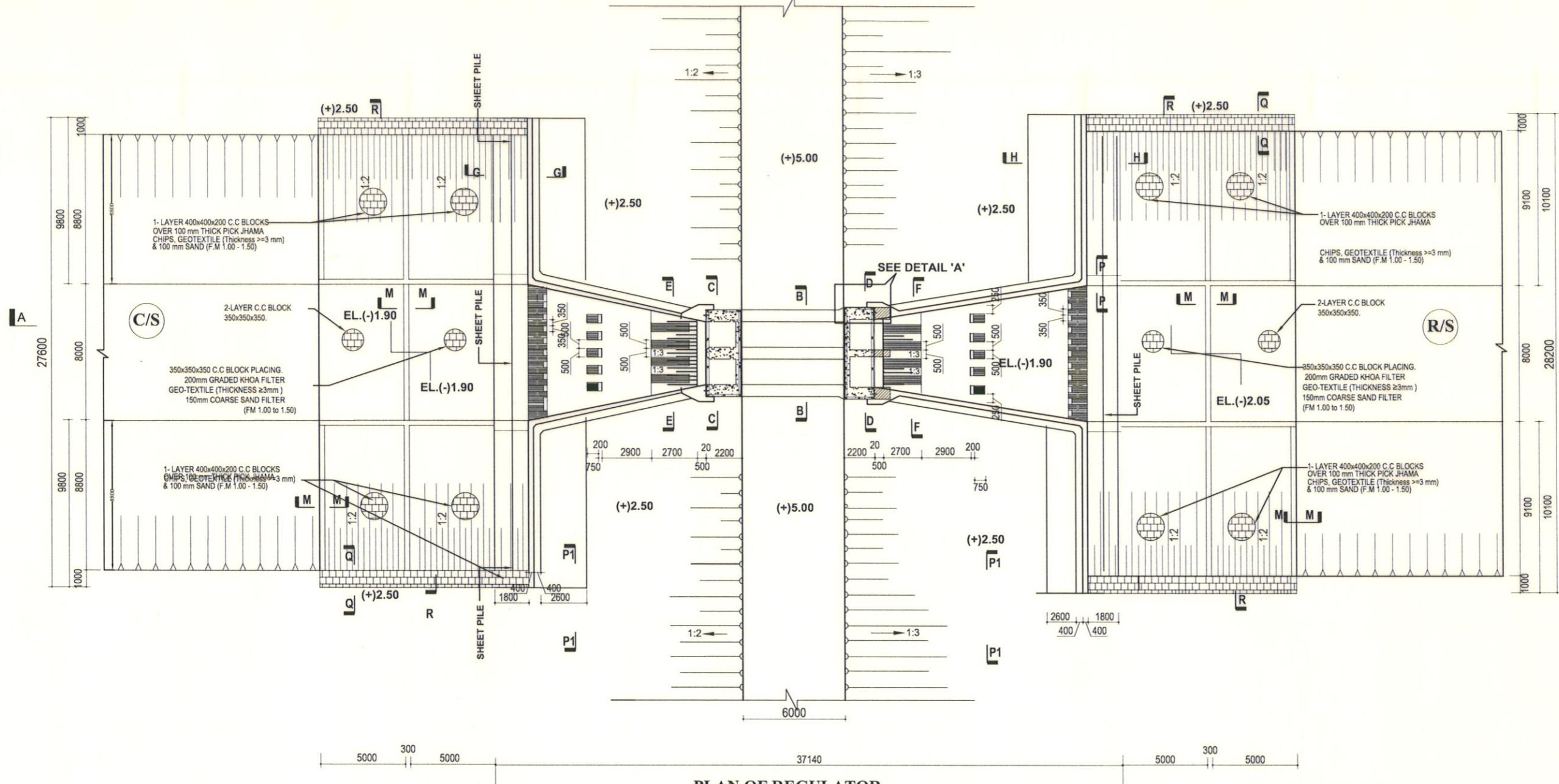
23/11/22

CHECKED & RECOMMENDED BY :

(JAKARIA PERVEZ), EE

(MOHAMMAD SAIF UDDIN), SE

DATE:23/11/2022 DWG. NO.:DC-8-0317-04/22



Scale : Not To Scale

Bangladesh Water Development BoardOffice of the Superintending Engineer
Design Circle-8DESIGN OF DRAINAGE CUM FLUSHING REGULATOR
2-VENT(1.50mX1.80m) ON KULUTIA KHAL AT KM 35.00 IN POLDER
NO-6-8(EXT) IN SATKHIRA DISTRICT, UNDER SATKHIRA O&M
DIVISION-2, BWDB, SATKHIRA.**PLAN OF REGULATOR**

DESIGNED BY :

(SAKIB BIN RAFI), AE

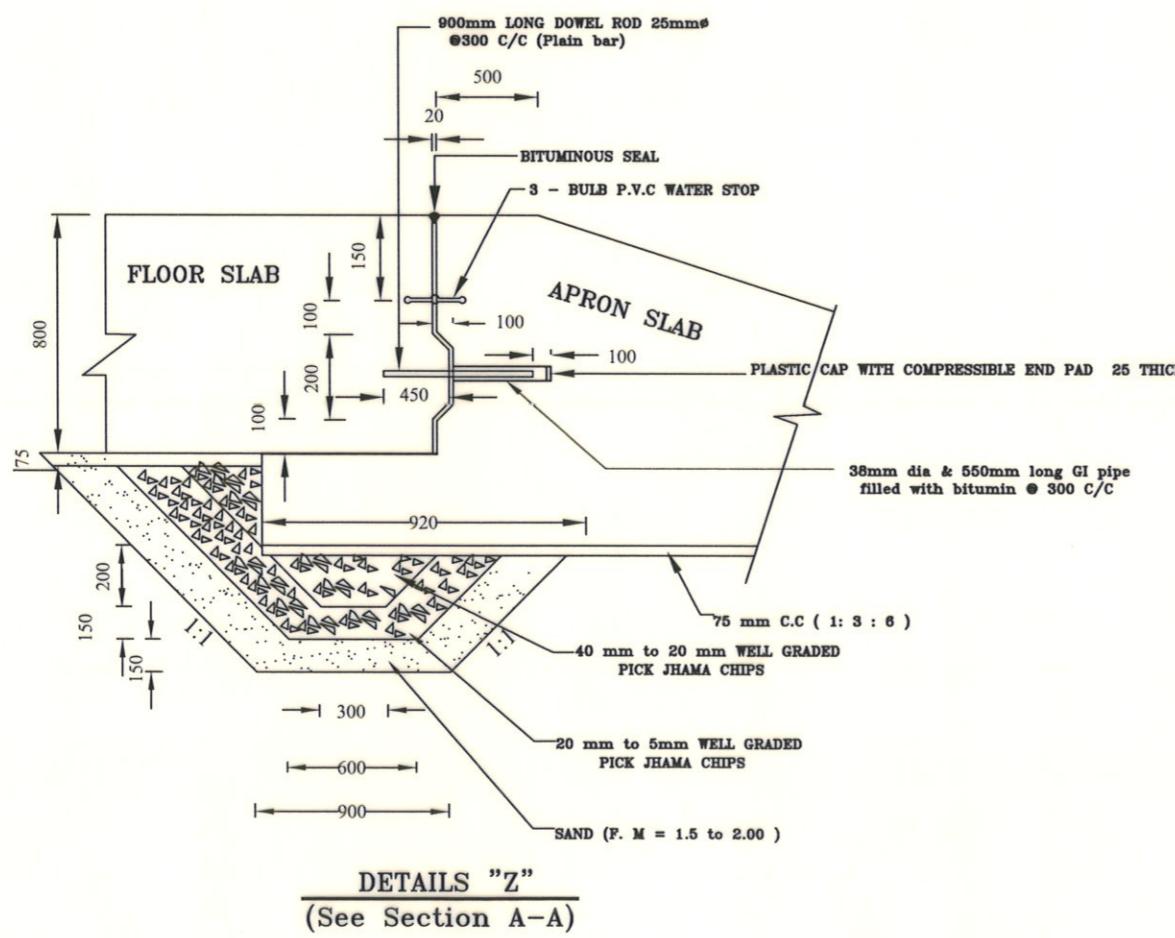
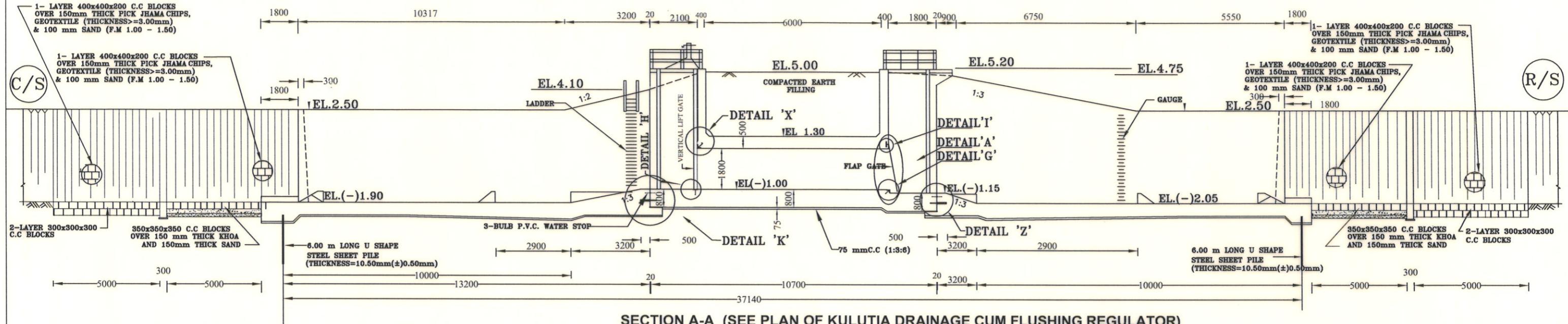
CHECKED & RECOMMENDED BY :

(JAKARIA PERVEZ), EE

APPROVED BY :

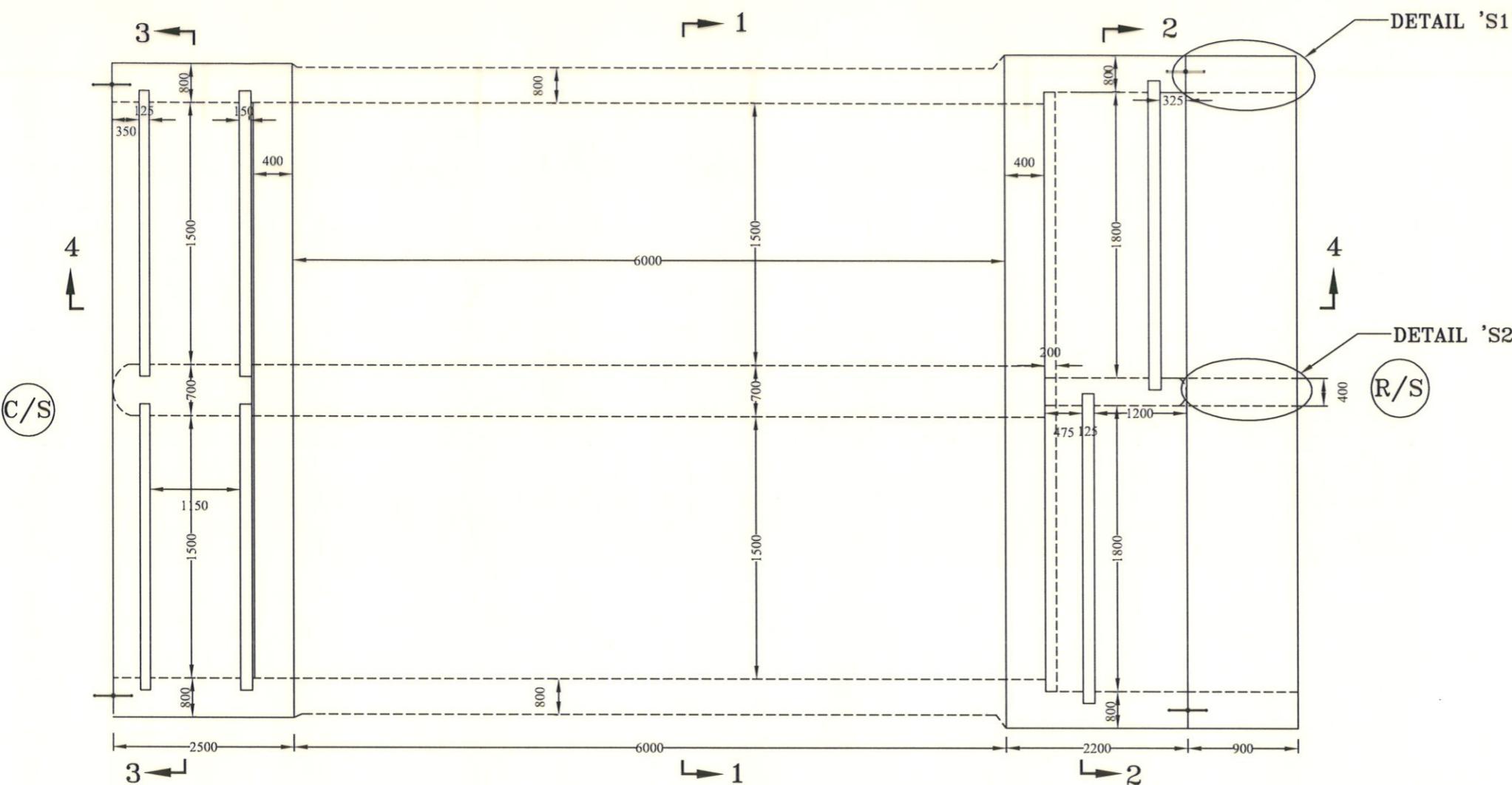
(MOHAMMAD SAIF UDDIN), SE

DATE:23/11/2022 DWG. NO.:DC-8-0317-05/22

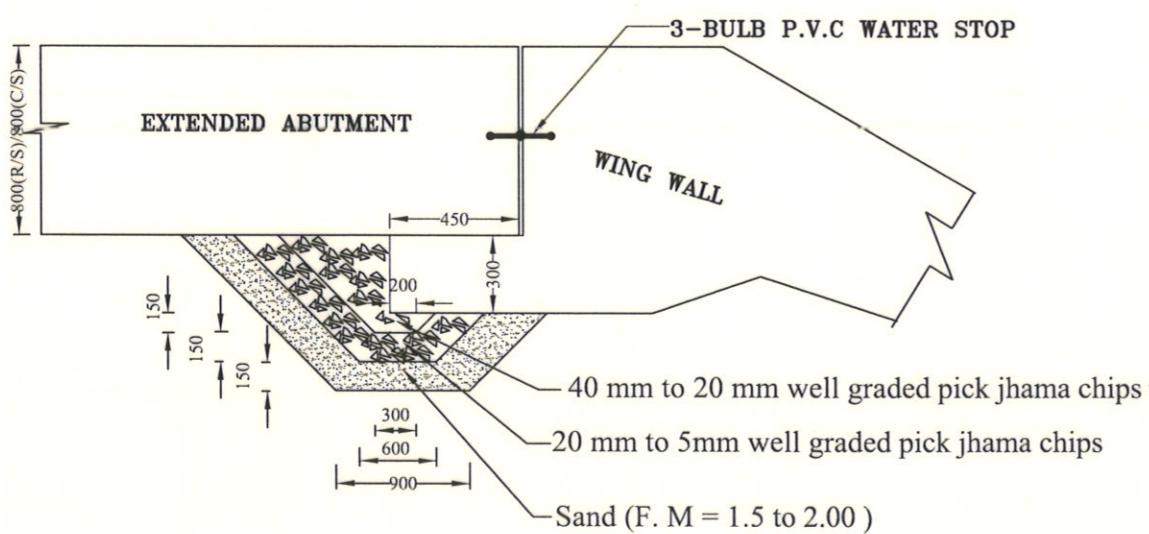


(NOT TO SCALE)

Bangladesh Water Development Board	
Office of the Superintending Engineer Design Circle-8	
DRAINAGE IMPROVEMENT OF POLDER 1,2,6-8 AND 6-8(EXTENSION)	
DESIGN OF DRAINAGE CUM FLUSHING REGULATOR 2-VENT(1.50mX1.80m) ON KULUTIA KHAL AT KM 35.00 IN POLDER NO-6-8(EXT) IN SATKHIRA DISTRICT, UNDER SATKHIRA O&M DIVISION-2, BWDB, SATKHIRA.	
SECTIONAL ELEVATION & DETAIL	
DESIGNED BY : (SAKIB BIN RAFI), AE	APPROVED BY : (MOHAMMAD SAIF UDDIN), SE
CHECKED & RECOMMENDED BY : (JAKARIA PERVEZ), EE	
DATE:23/11/2022 DWG. NO.:DC-8-0317-06/22	



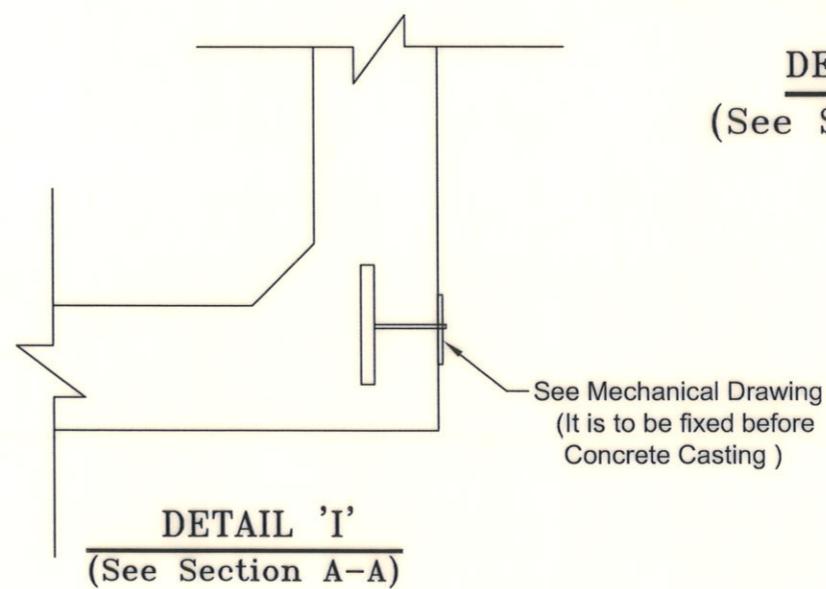
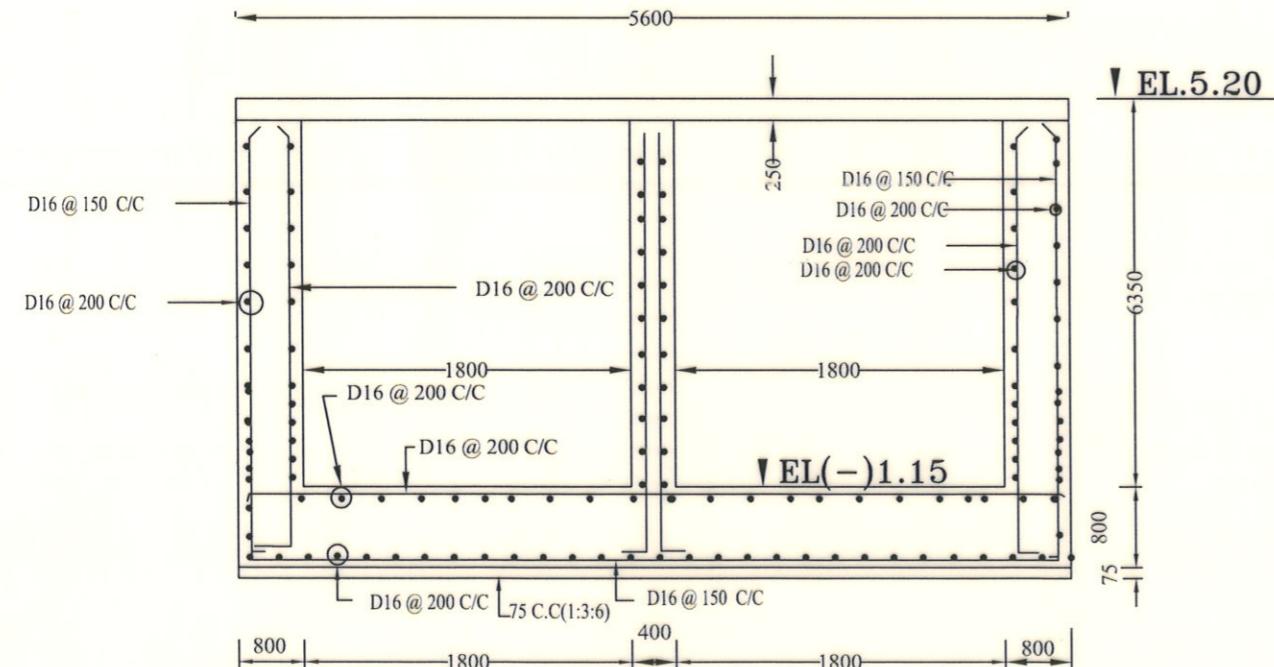
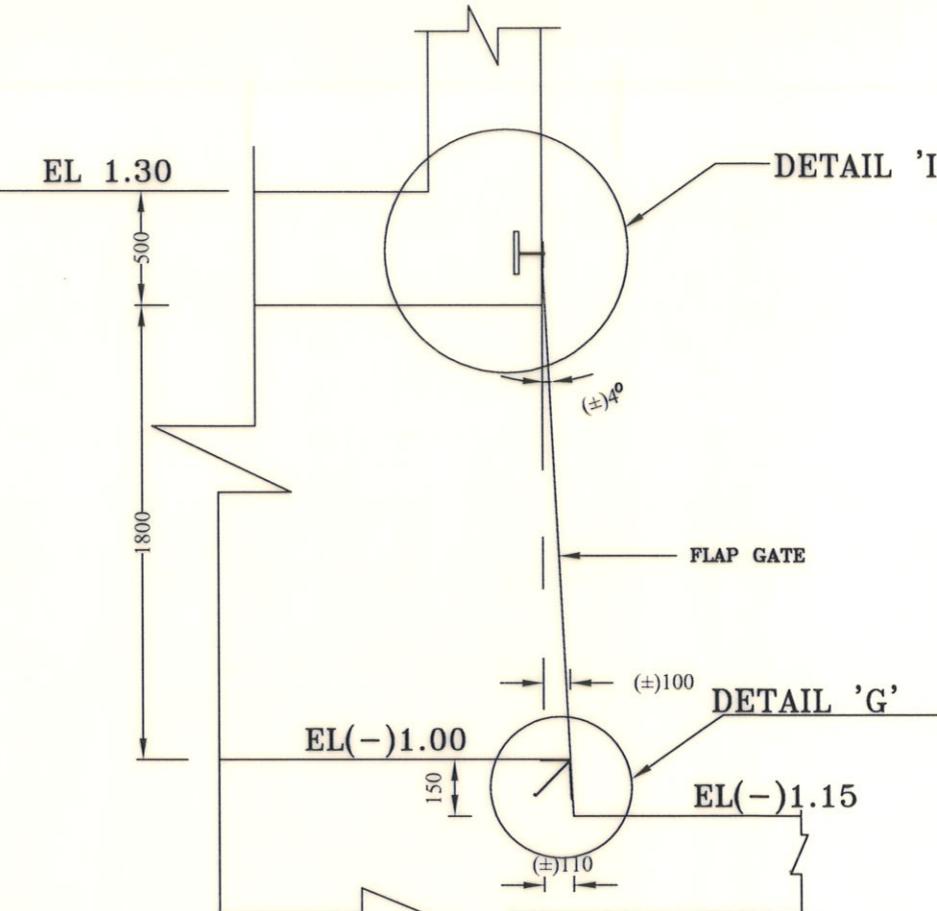
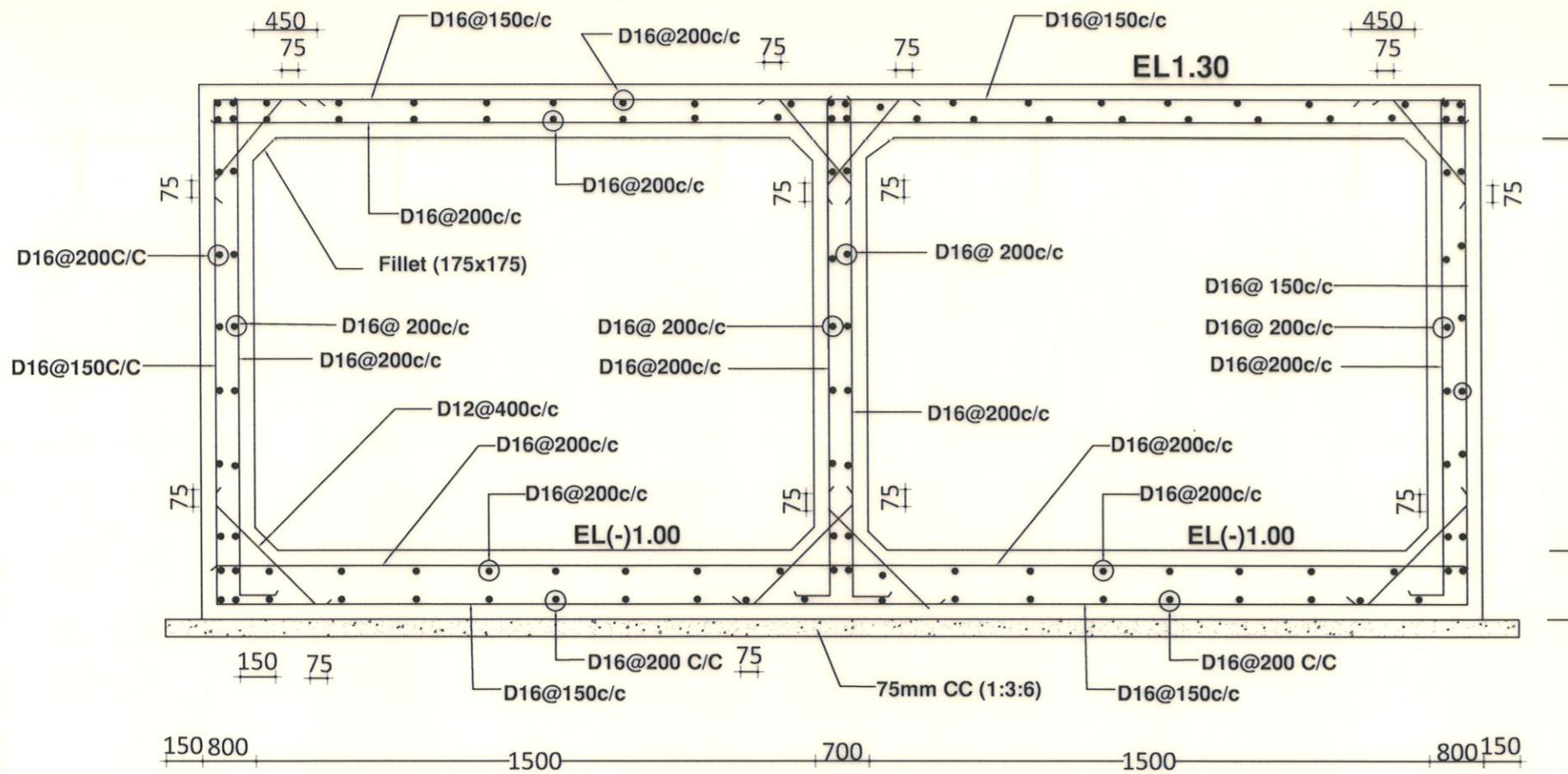
PLAN OF ABUTMENT AND PIER



EXPANSION JOINT DETAIL 'Y'(SEE PLAN)

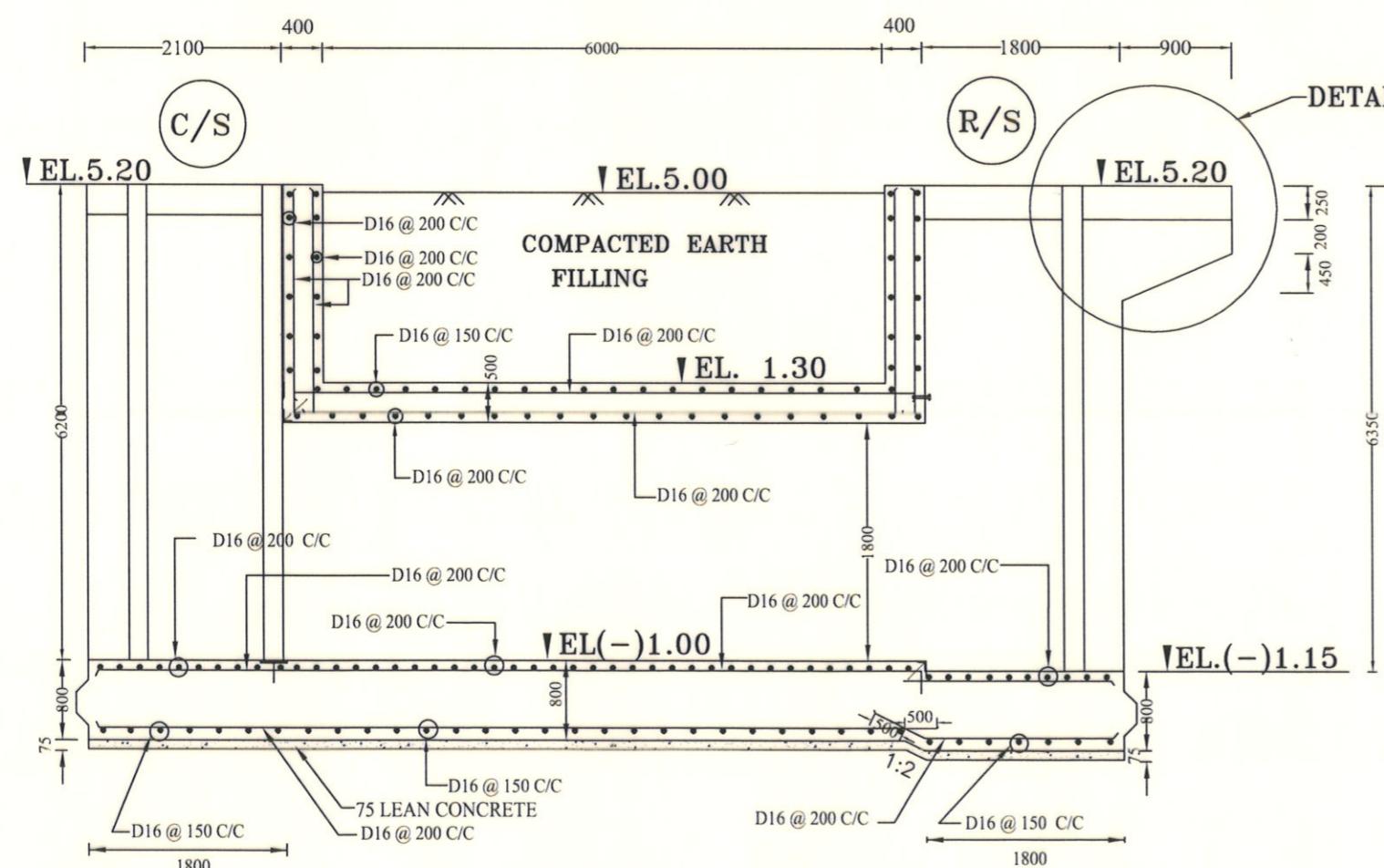
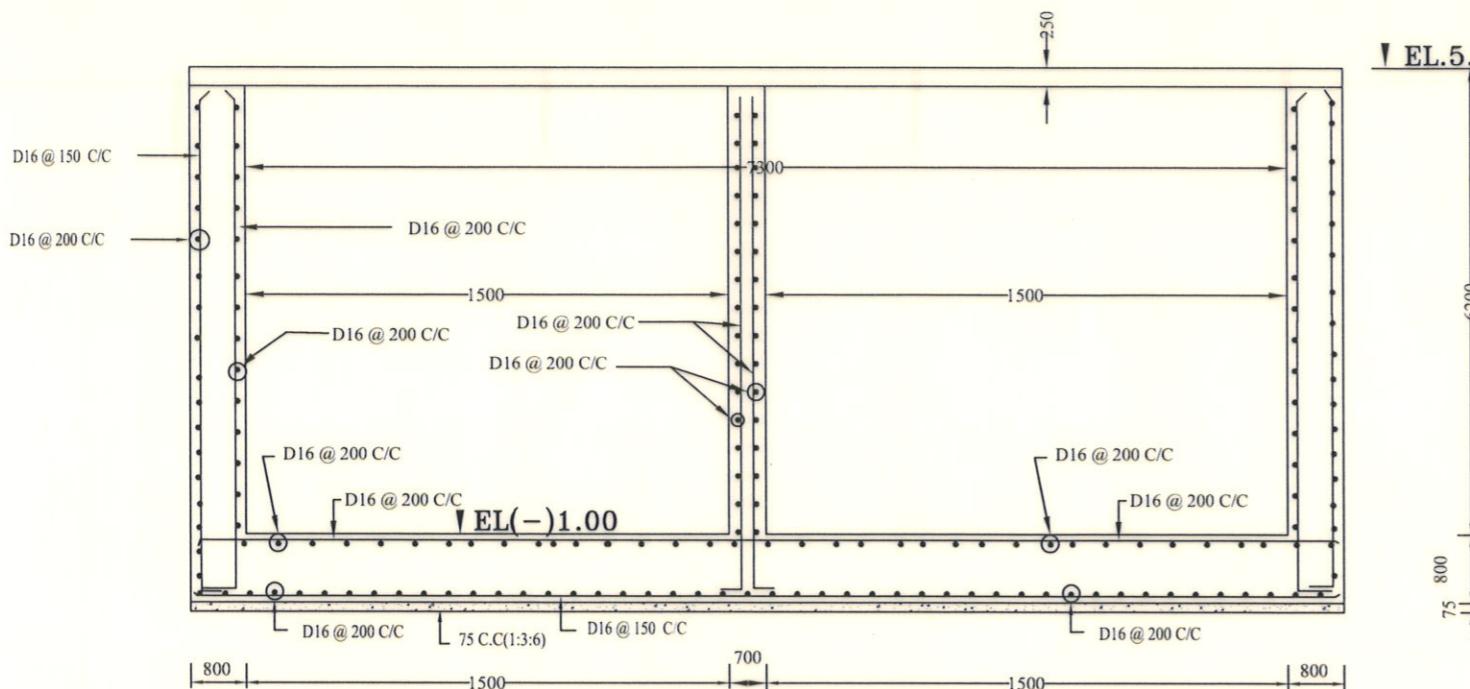
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Office of the Superintending Engineer Design Circle-8	
DRAINAGE IMPROVEMENT OF POLDER 1,2,6-8 AND 6-8(EXTENSION)	
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PLAN OF DRAINAGE CUM FLUSHING REGULATOR	
DESIGNED BY : (SAKIB BIN RAFI), AE	APPROVED BY : (MOHAMMAD SAIF UDDIN), SE
CHECKED & RECOMMENDED BY : (JAKARIA PERVEZ), EE	
DATE:23/11/2022 DWG. NO.:DC-8-0317-07/22	

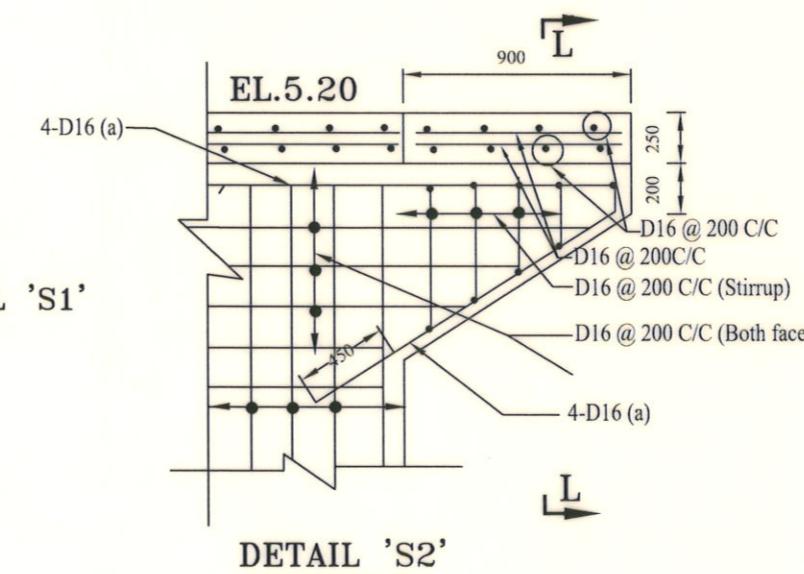
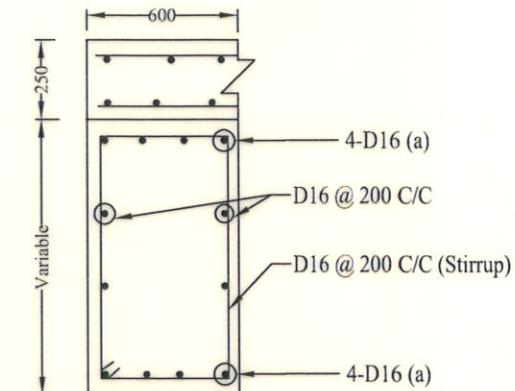
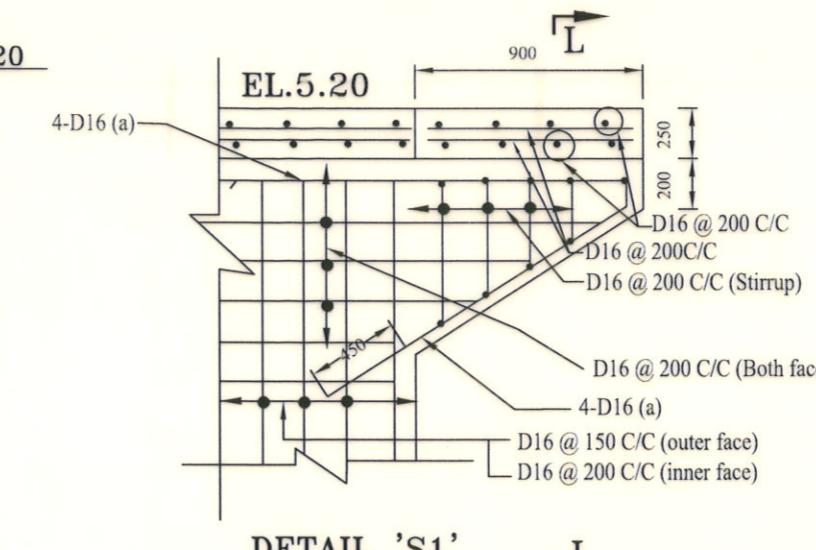


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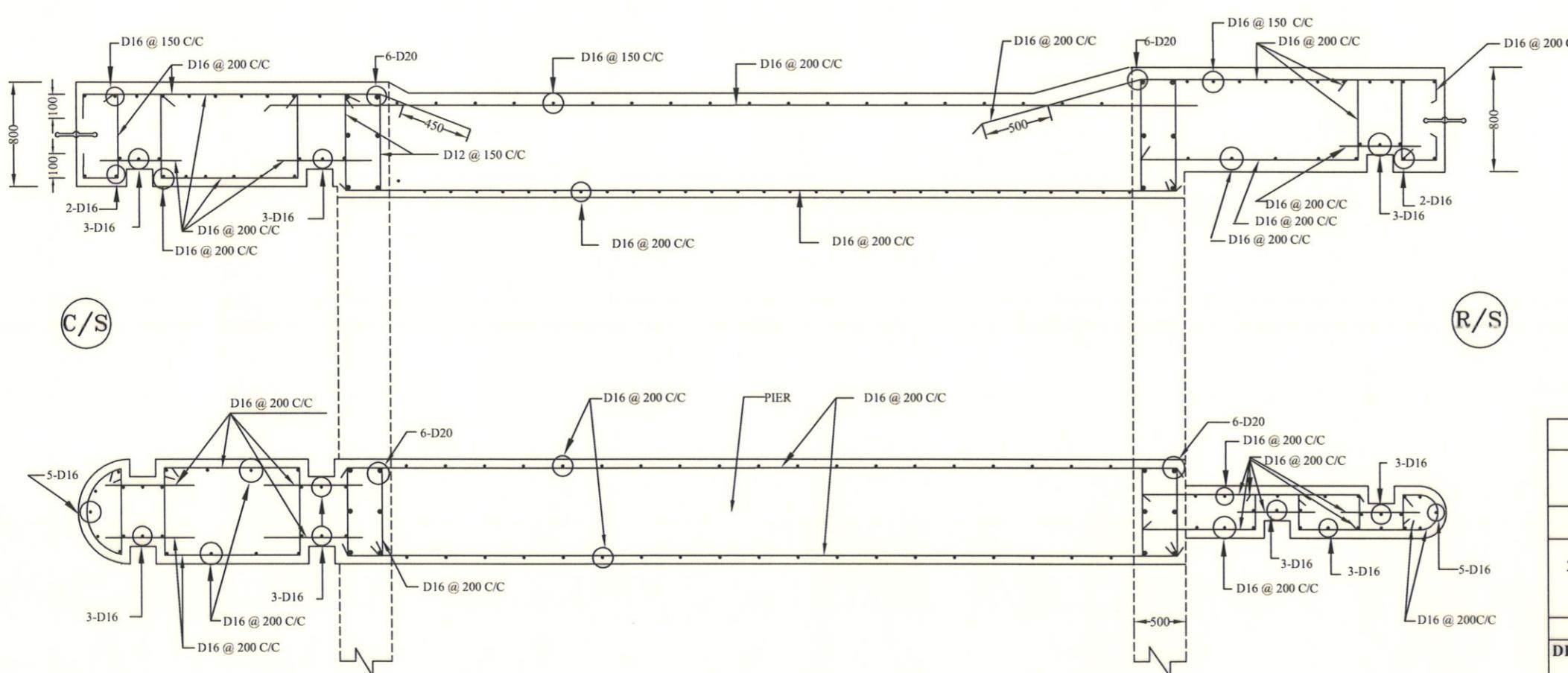
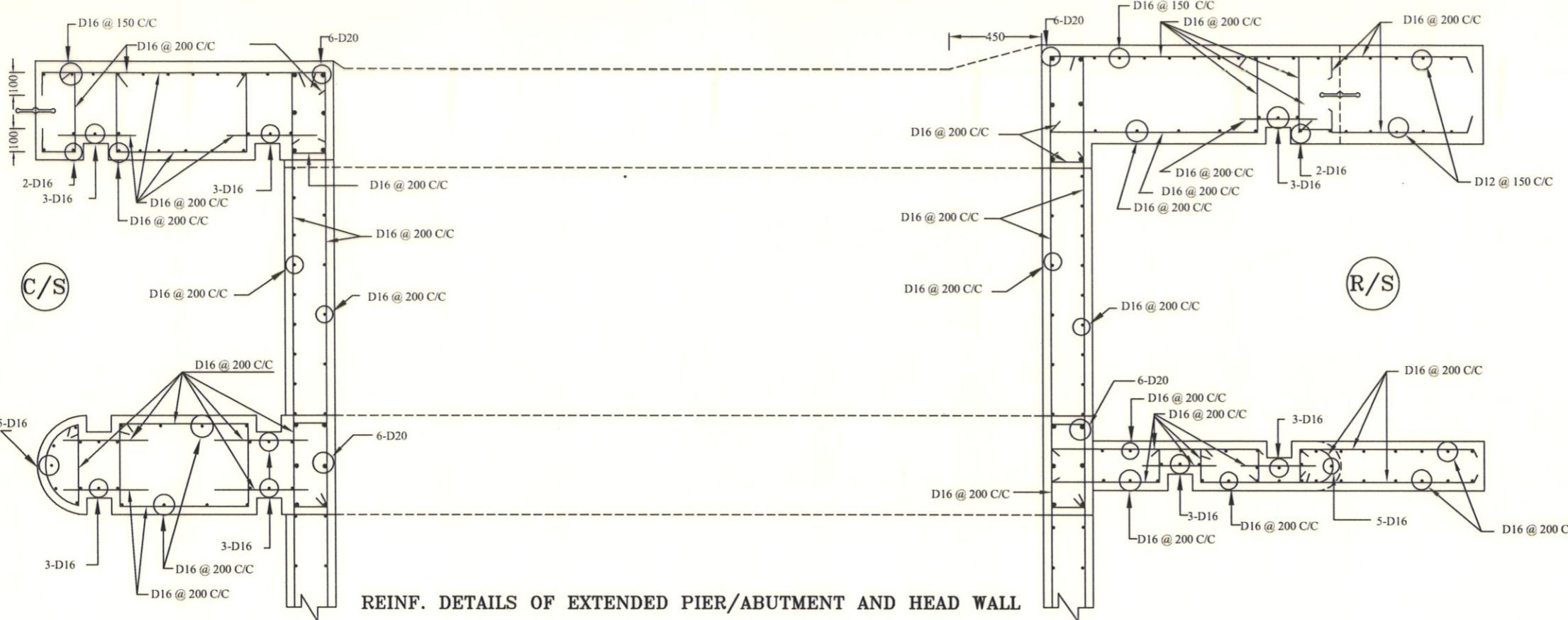
Bangladesh Water Development Board	
Office of the Superintending Engineer	Design Circle-8
DRAINAGE IMPROVEMENT OF POLDER 1,2,6-8 AND 6-8(EXTENSION)	
DESIGN OF DRAINAGE CUM FLUSHING REGULATOR	
2-VENT(1.50mX1.80m) ON KULUTIA KHAL AT KM 35.00 IN POLDER NO-6-8(EXT)	IN SATKHIRA DISTRICT, UNDER SATKHIRA O&M DIVISION-2, BWDB, SATKHIRA.
REINFORCEMENT DETAILS OF ABUTMENT & BARREL	
DESIGNED BY :	APPROVED BY :
(SAKIB BIN RAFI), AE	(MOHAMMAD SAIF UDDIN), SE
CHECKED & RECOMMENDED BY :	
JAKARIA PERVEZ), EE	(DATE:23/11/2022 DWG. NO.:DC-8-0317-08/22



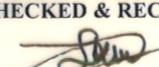
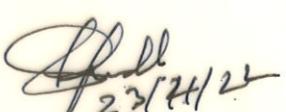
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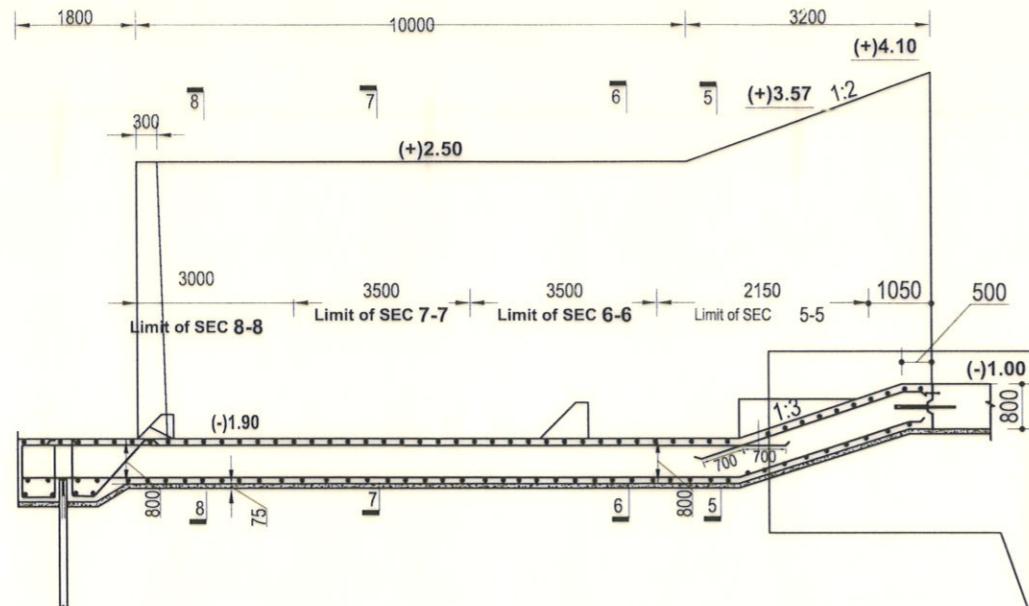


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Office of the Superintending Engineer	Design Circle-8
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REINFORCEMENT DETAILS OF ABUTMENT & BARREL	
DESIGNED BY :	APPROVED BY :
(SAKIB BIN RAFI), AE	(MOHAMMAD SAIF UDDIN), SE
CHECKED & RECOMMENDED BY :	
(JAKARIA PERVEZ), EE	
DATE:23/11/2022 DWG. NO.:DC-8-0317-09/22	

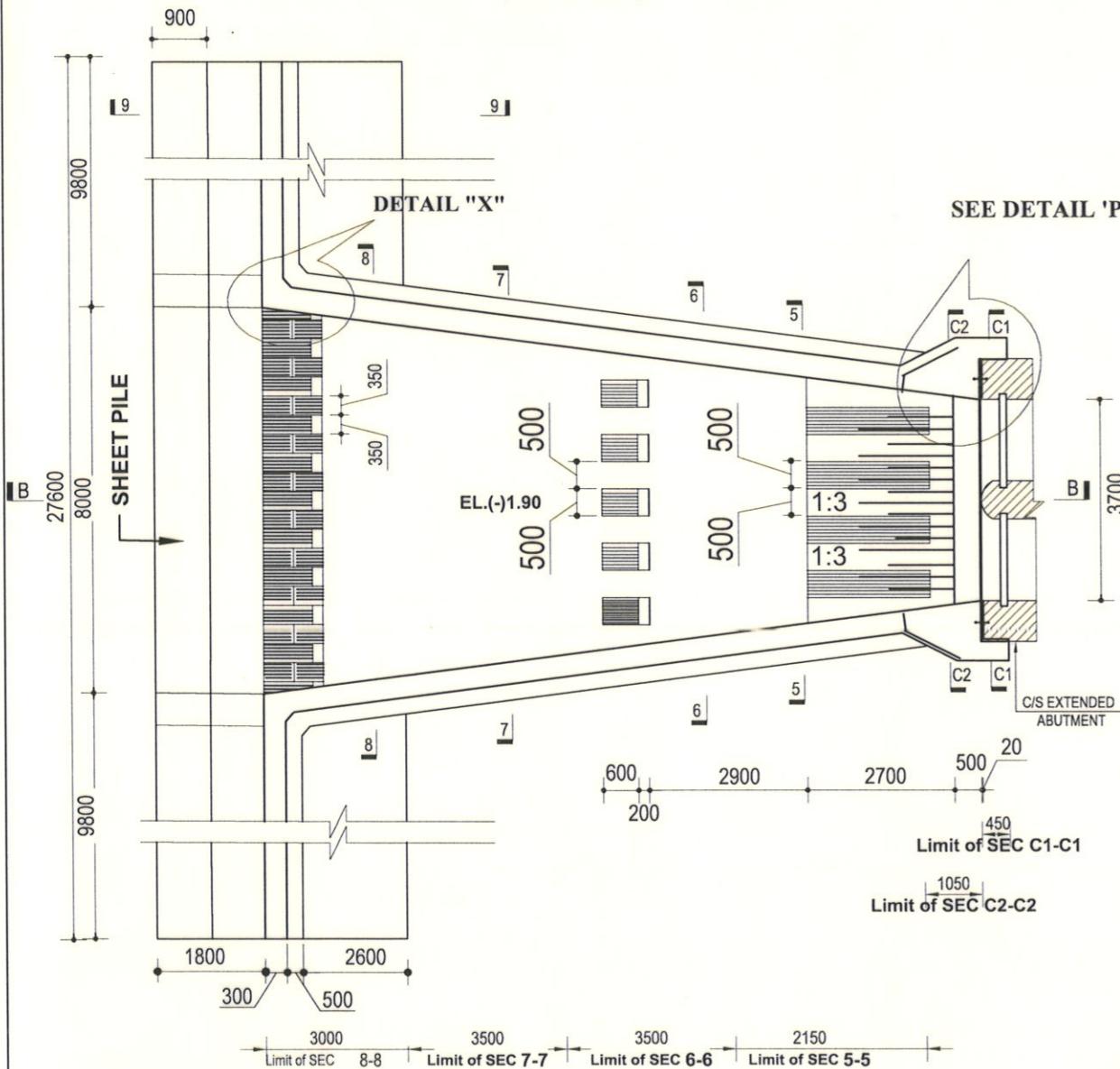


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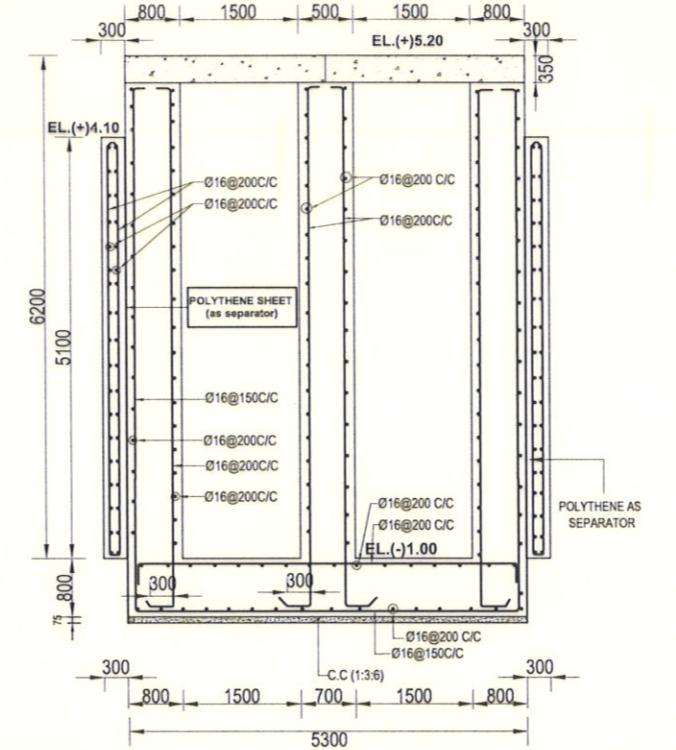
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IN SATKHIRA DISTRICT, UNDER SATKHIRA O&M DIVISION-2, BWDB, SATKHIRA.	
REINFORCEMENT DETAILS OF EXTENDED PART	
DESIGNED BY :	APPROVED BY :
 (SAKIB BIN RAFI), AE	
CHECKED & RECOMMENDED BY :	
 (JAKARIA PERVEZ), EE	
 (MOHAMMAD SAIF UDDIN), SE	
DATE:23/11/2022 DWG. NO.:DC-8-0317-10/22	



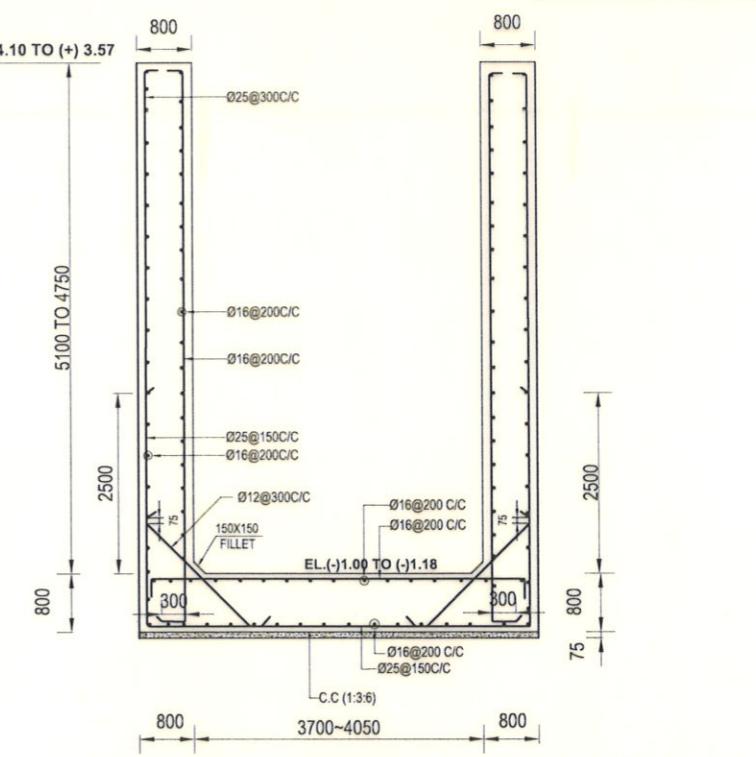
SECTIONAL ELEVATION OF C/S APRON AND WING WALL SEE DETAIL 'E'
(SECTION B-B)



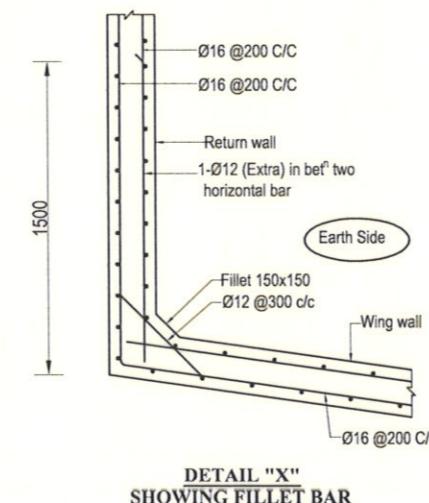
PLAN OF C/S APRON & RETURN WALL
(CUT-OFF WALL NOT SHOWN)



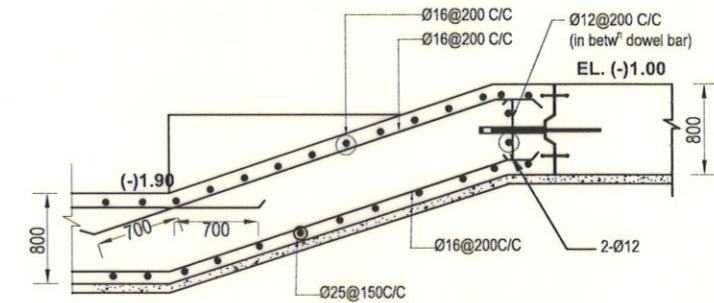
SECTION C₁-C₁ (VALID FOR 450 LENGTH IN EXTENDED PORTION OF BARREL)



SECTION C₂-C₂ (VALID FOR 1050 LENGTH IN WING WALL PORTION)



DETAIL "X"



DETAIL 'F'

Bangladesh Water Development Board

Office of the Superintending Engineer
Design Circle-8

**DESIGN OF DRAINAGE CUM FLUSHING REGULATOR
2-VENT(1.50mX1.80m) ON KULUTIA KHAL AT KM 35.00 IN POLDER
NO-6-8(EXT) IN SATKHIRA DISTRICT, UNDER SATKHIRA O&M DIVISION-2,
BWDB, SATKHIRA.**

REINFORCEMENT DETAILS OF C/S APRON AND WING WALL

DESIGNED BY :

APPROVED BY :

91

~~John~~

(SAKIB BIN RAED) AF

CHECKED & RECOMMENDED BY :

CHECKED & RECOMMENDED BY:

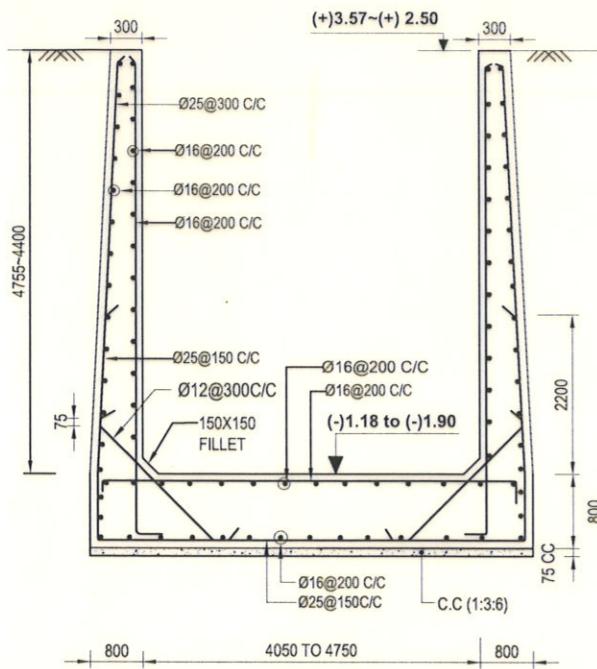
Leucania *luteola* (Hufnagel)

(JAKABIA PERVEZ) EE

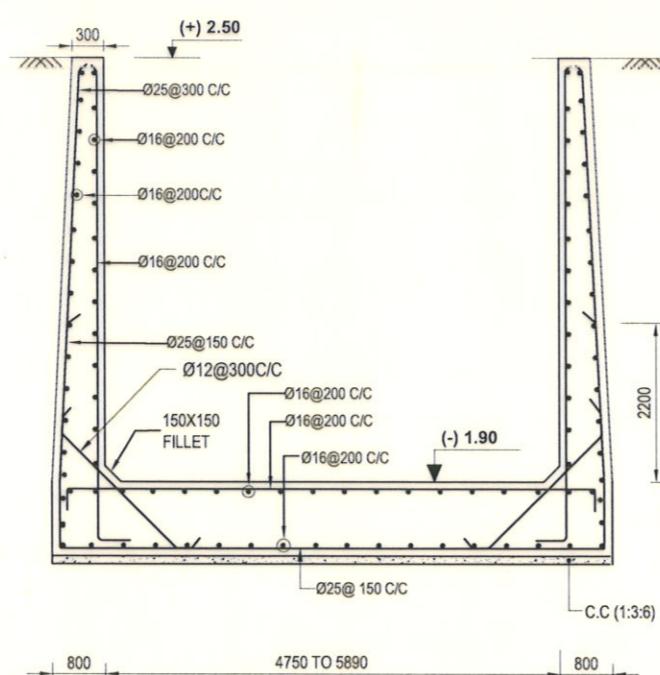
DATE:23/11/2023 DW

NO : DC 8 0317 11/23

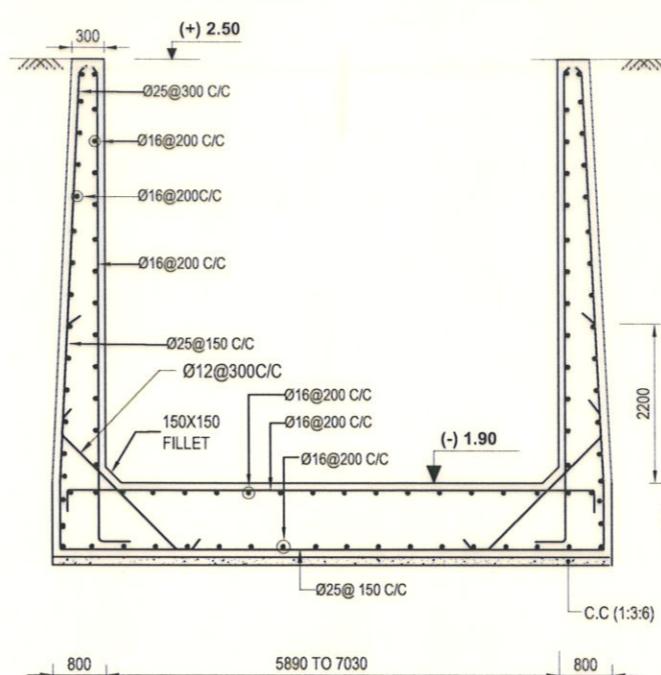
DATE:23/11/2022 DWG. NO.:DC-8-0317-11/22



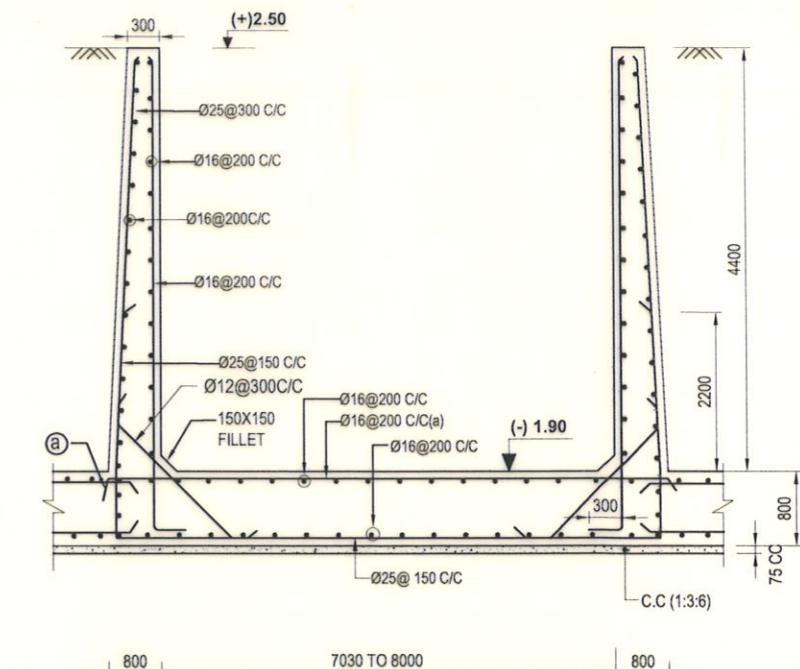
SECTION 5-5 (VALID FOR 2150 LENGTH)



SECTION 6-6 (VALID FOR 3500 LENGTH)

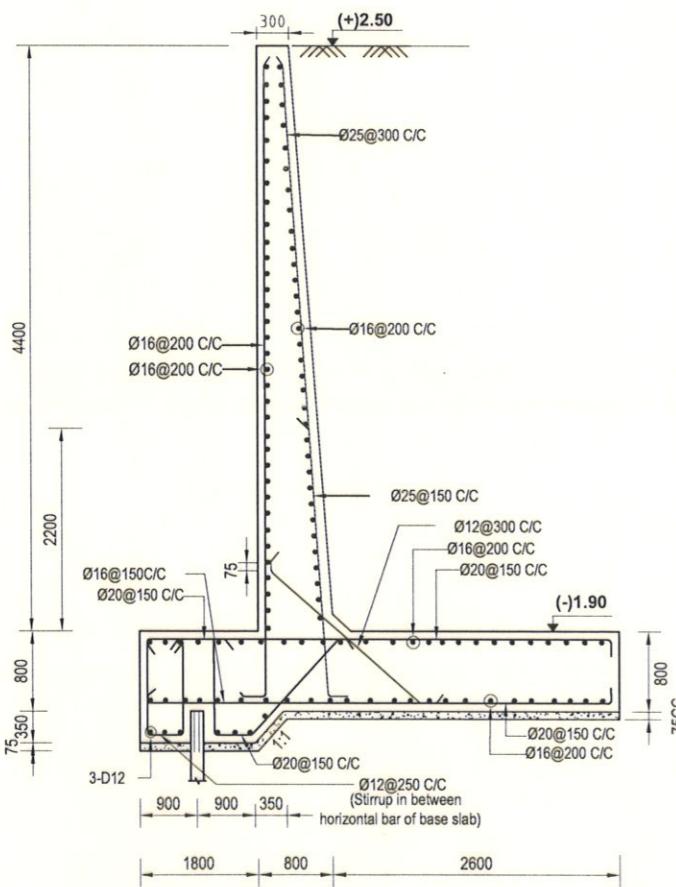


SECTION 7-7 (VALID FOR 3500 LENGTH)

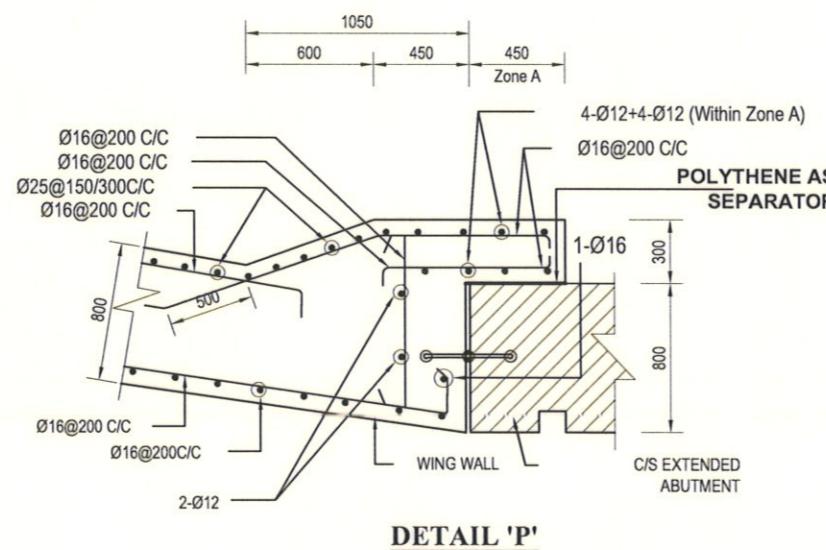


SECTION 8-8 (VALID FOR 3000 LENGTH)

[BASE OF RETURN WALL NOT SHOWN]



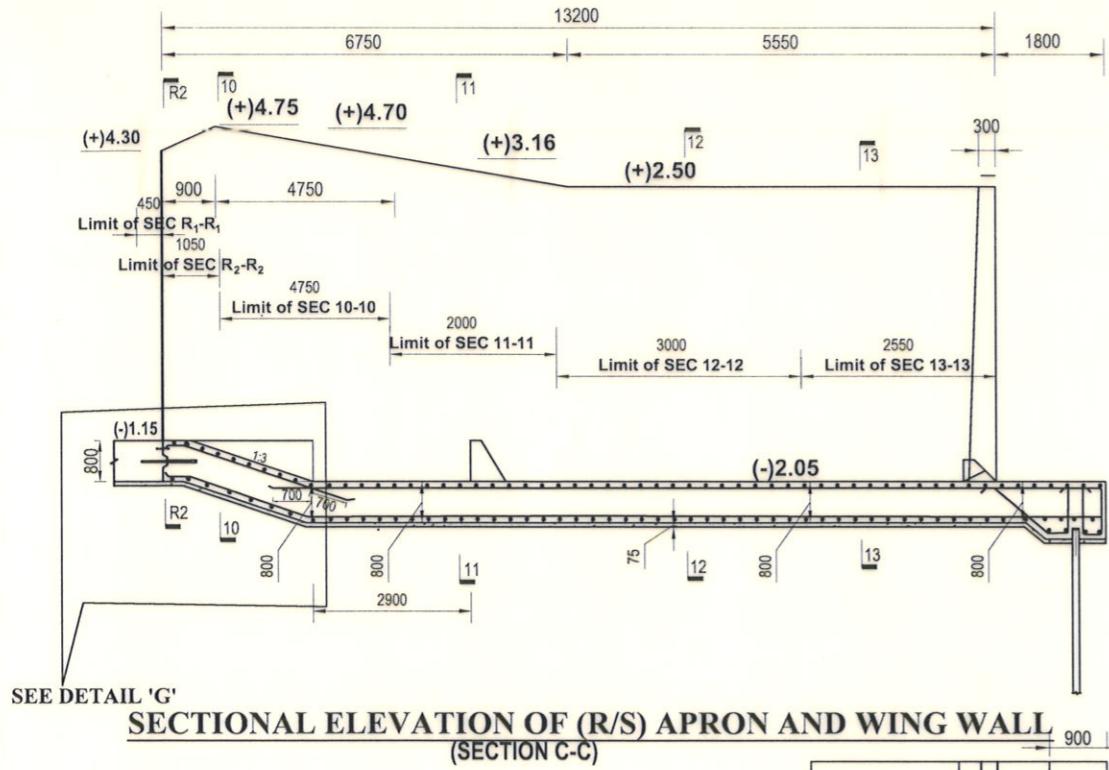
SECTION 9-9



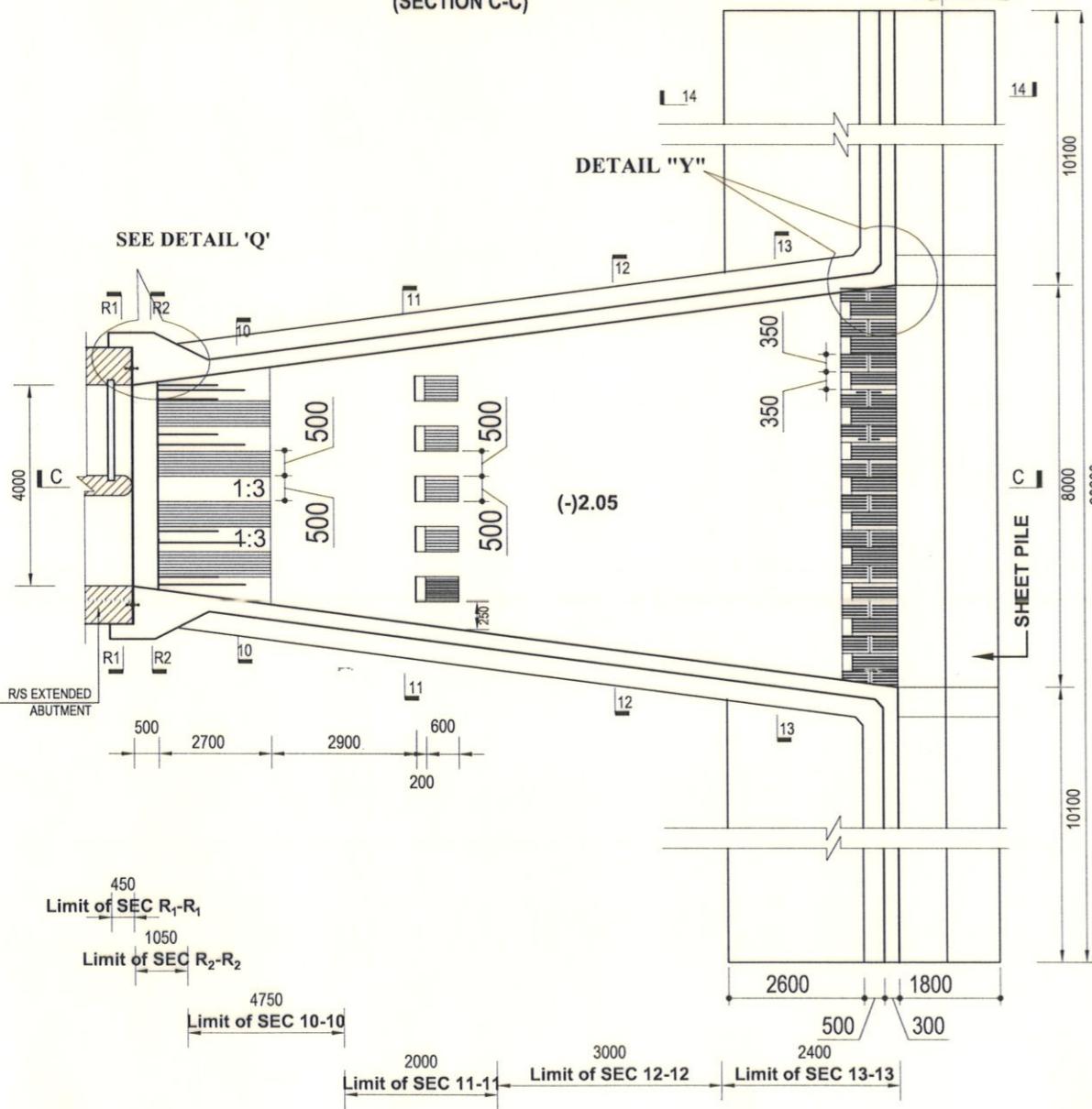
DETAIL 'P'

Scale : Not To Scale

Bangladesh Water Development Board	
Office of the Superintending Engineer	
Design Circle-8	
DESIGN OF DRAINAGE CUM FLUSHING REGULATOR	
2-VENT(1.50mX1.80m) ON KULUTIA KHAL AT KM 35.00 IN POLDER	
NO-6-8(EXT) IN SATKHIRA DISTRICT, UNDER SATKHIRA O&M	
DIVISION-2, BWDB, SATKHIRA.	
REINFORCEMENT DETAILS OF C/S APRON, WING WALL & RETURN WALL	
DESIGNED BY : 	APPROVED BY :
CHECKED & RECOMMENDED BY : 	DATE:23/11/2022 DWG. NO.:DC-8-0317-12/22
(SAKIB BIN RAFI), AE	
(JAKARIA PERVEZ), EE	
(MOHAMMAD SAIF UDDIN), SE	

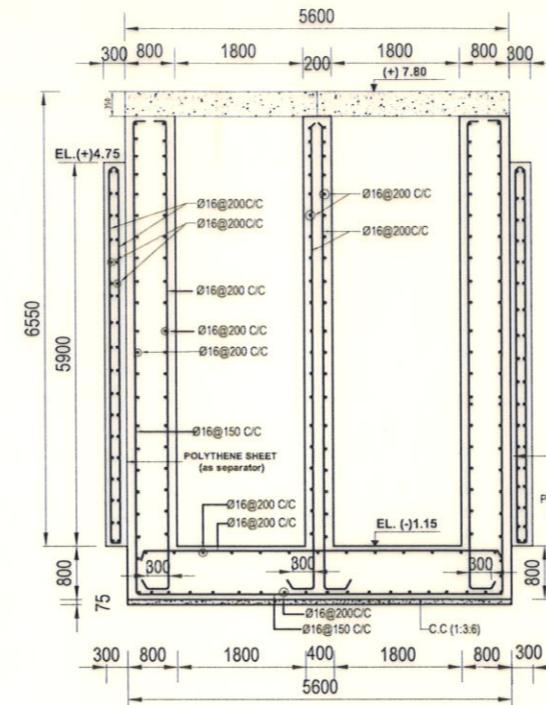


**SECTIONAL ELEVATION OF (R/S) APRON AND WING WALL
(SECTION C-C)**

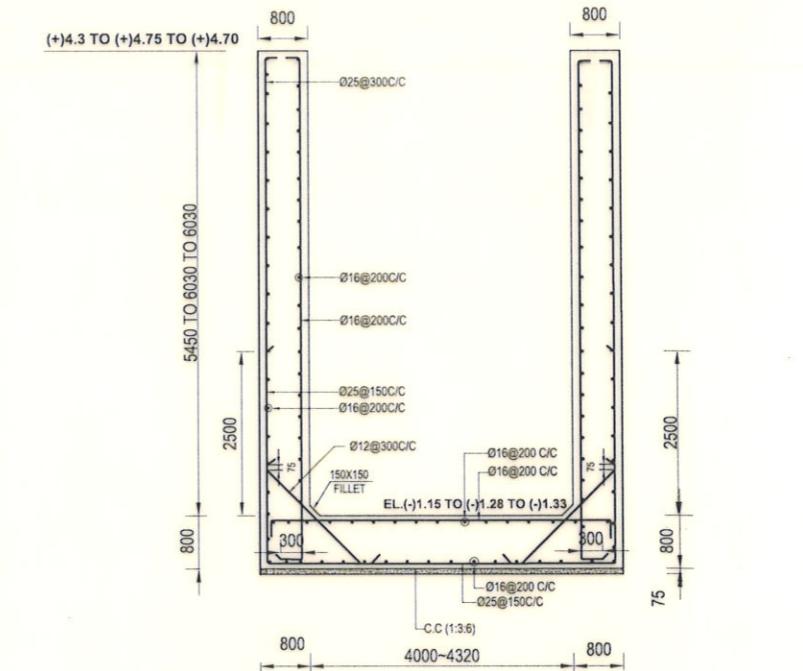


PLAN OF R/S APRON & RETURN WALL

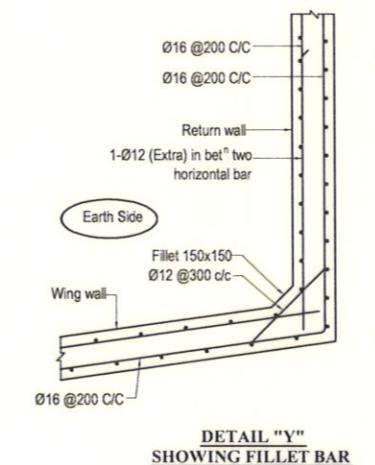
Scale : Not To Scale



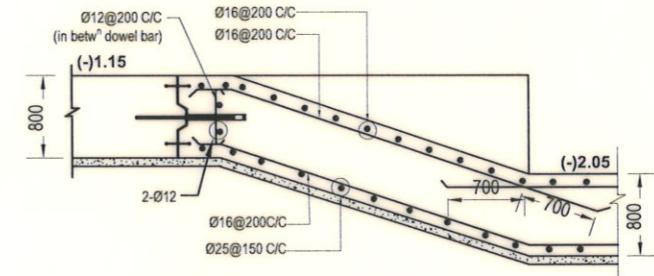
SECTION R₁-R₁ (VALID FOR 450 LENGTH IN EXTENDED PORTION OF BARREL)



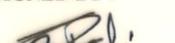
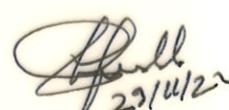
SECTION R₂-R₂ (VALID FOR 1050 LENGTH IN WING WALL PORTION)

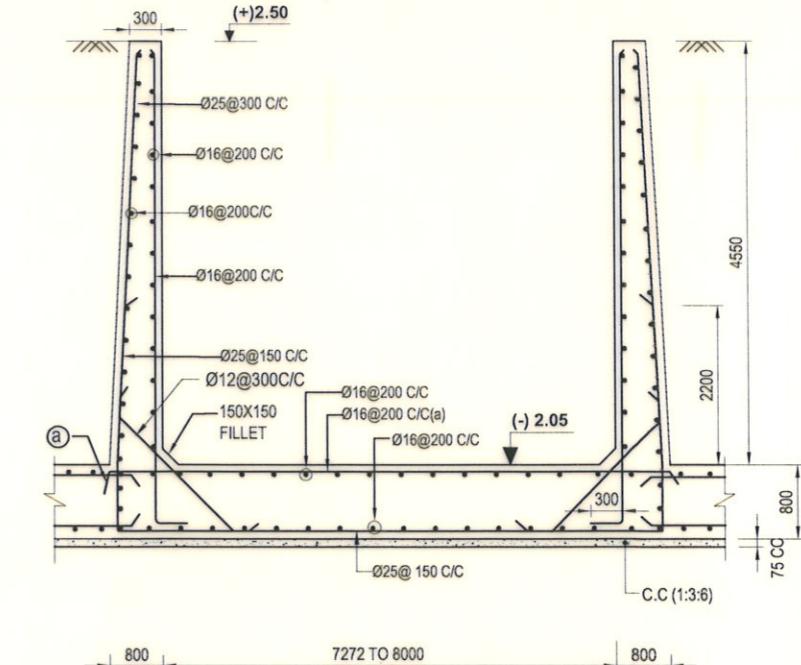
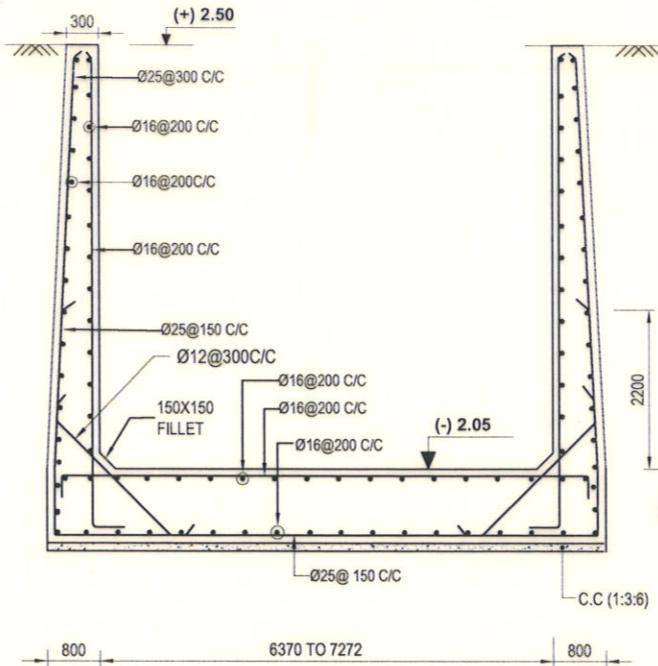
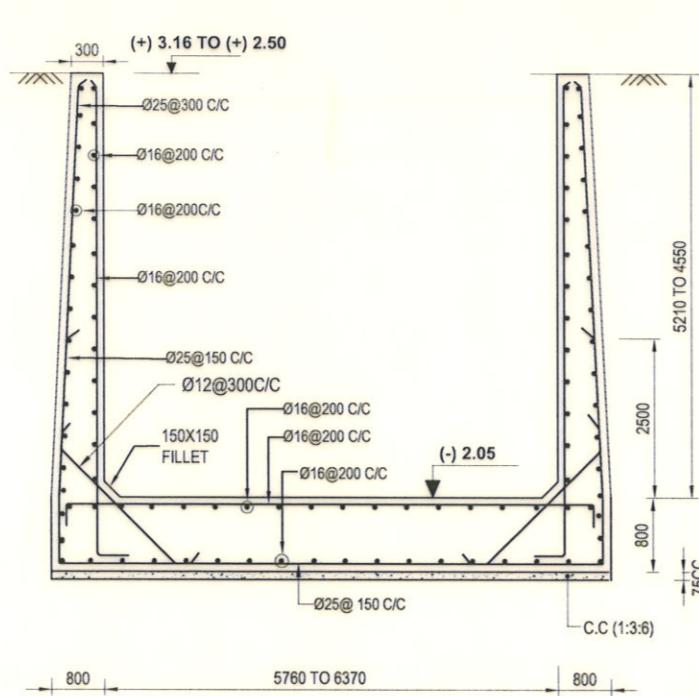
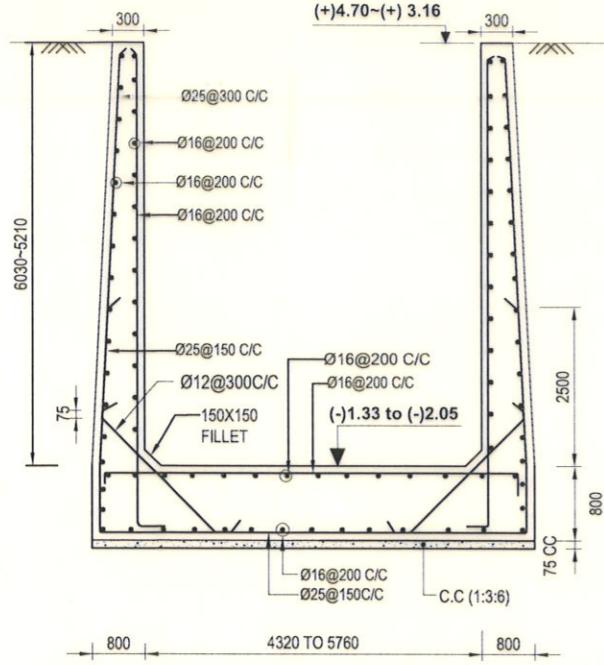


DETAIL "Y"
SHOWING FILLET BAR

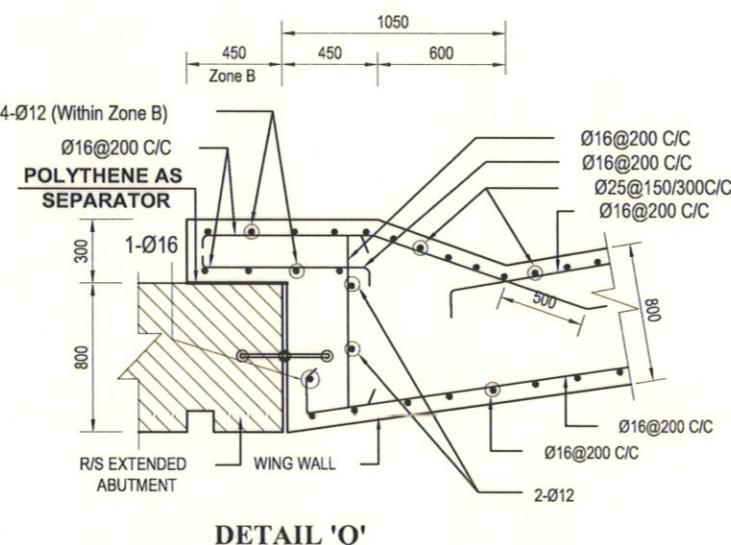
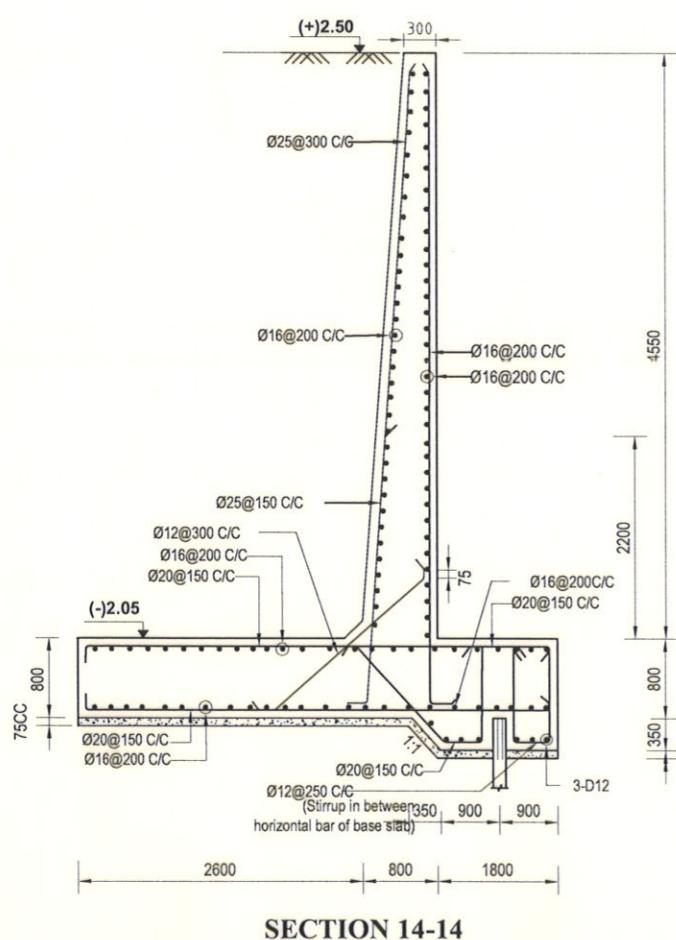


DETAIL 'C'

<p style="text-align: center;">Bangladesh Water Development Board</p> <p style="text-align: center;">Office of the Superintending Engineer</p> <p style="text-align: center;">Design Circle-8</p> <p style="text-align: center;">DESIGN OF DRAINAGE CUM FLUSHING REGULATOR 2-VENT(1.50mX1.80m) ON KULUTIA KHAL AT KM 35.00 IN POLDER NO-6-8(EXT) IN SATKHIRA DISTRICT, UNDER SATKHIRA O&M DIVISION-2, BWDB, SATKHIRA.</p> <p style="text-align: center;">REINFORCEMENT DETAILS OF R/S APRON AND WING WALL</p>	
<p>DESIGNED BY :</p>  (SAKIB BIN RAFI), AE	<p>APPROVED BY :</p>  23/11/22 (MOHAMMAD SAIF UDDIN), SE
<p>CHECKED & RECOMMENDED BY :</p>  (JAKARIA PERVEZ),EE	
DATE:23/11/2022 DWG. NO.:DC-8-0317-13/22	

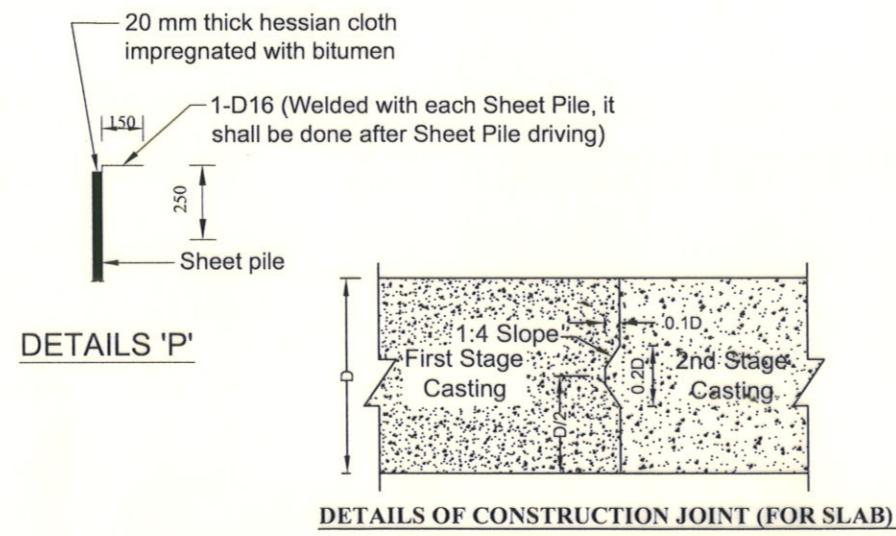
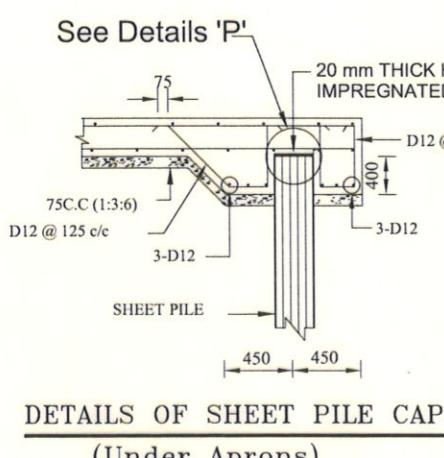
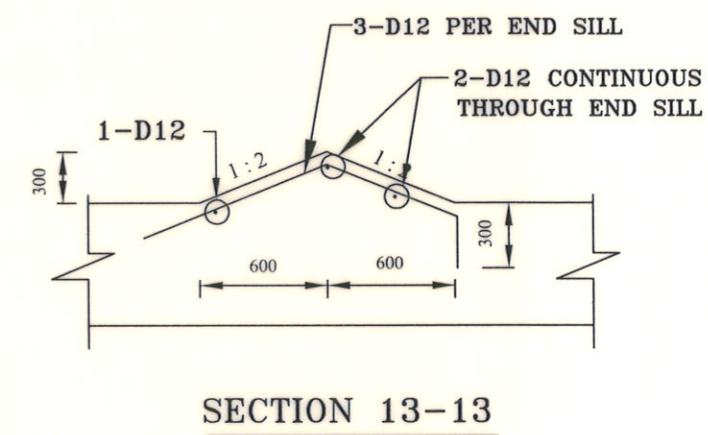
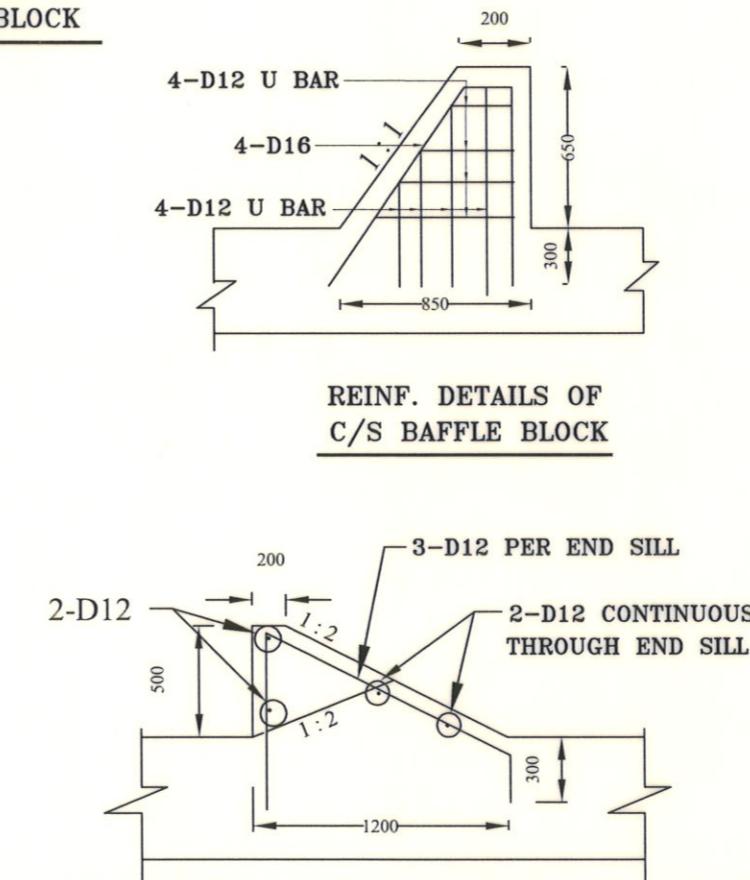
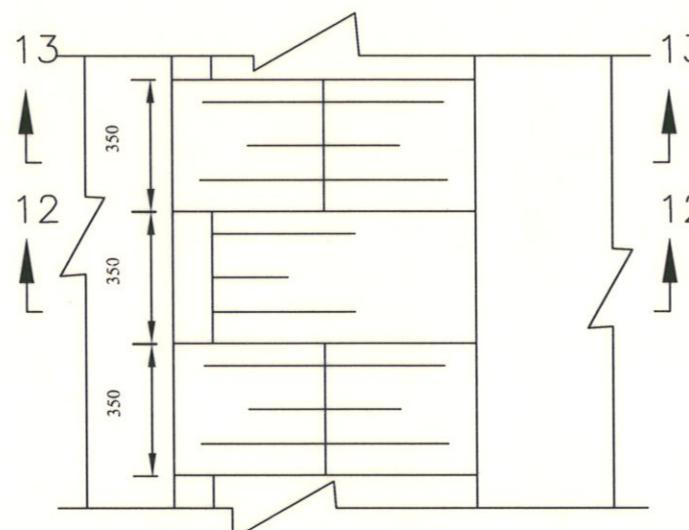
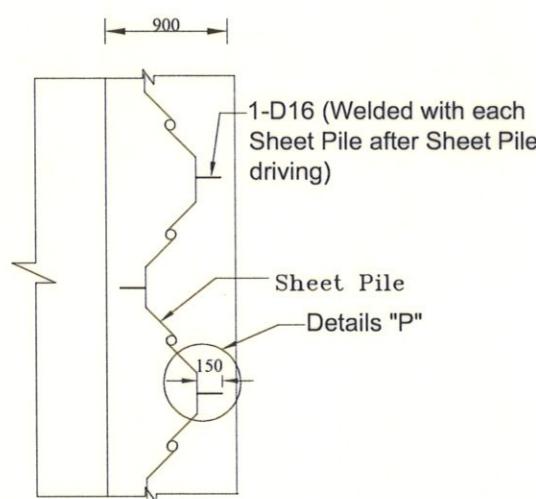
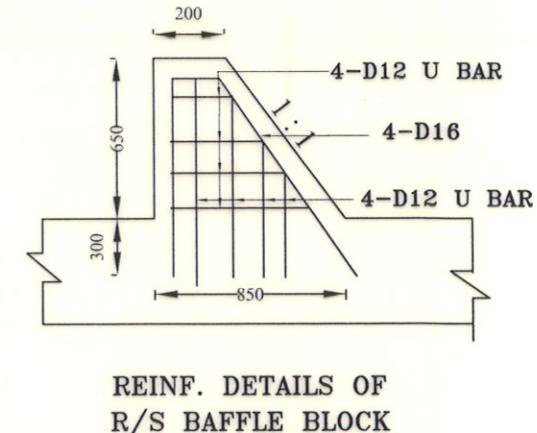
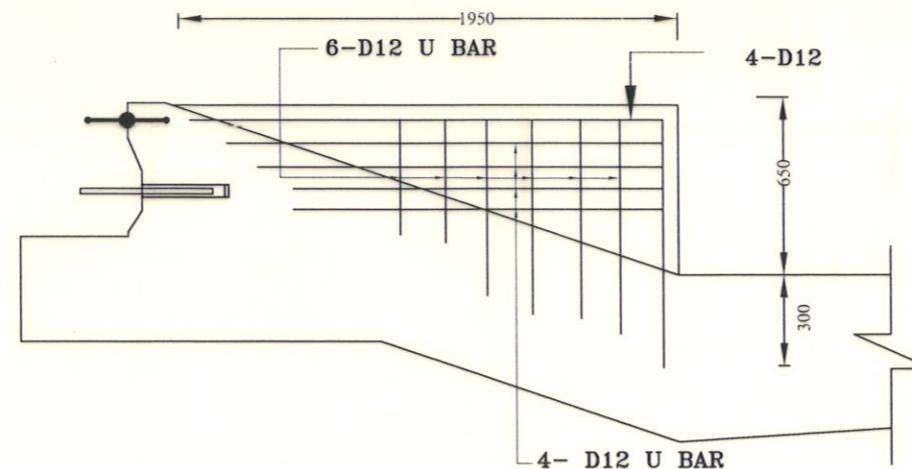
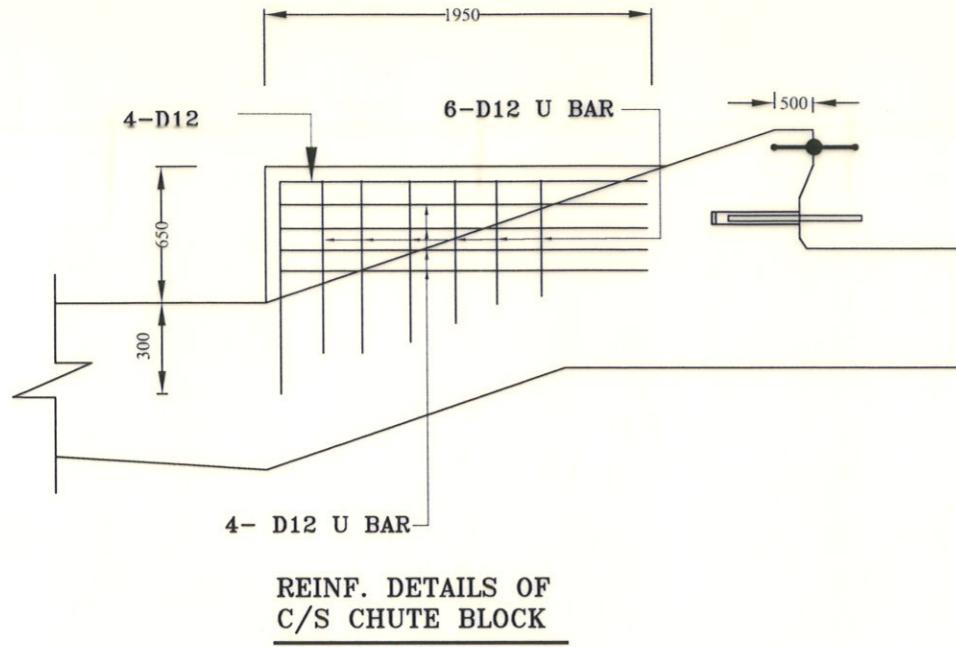


[BASE OF RETURN WALL NOT SHOWN]

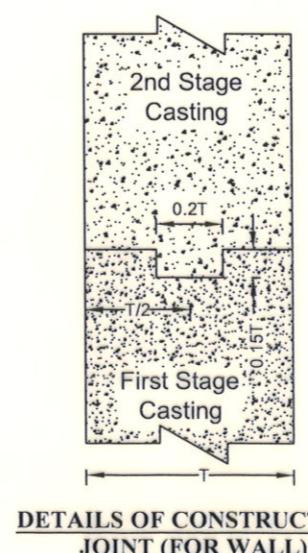


Scale : Not To Scale

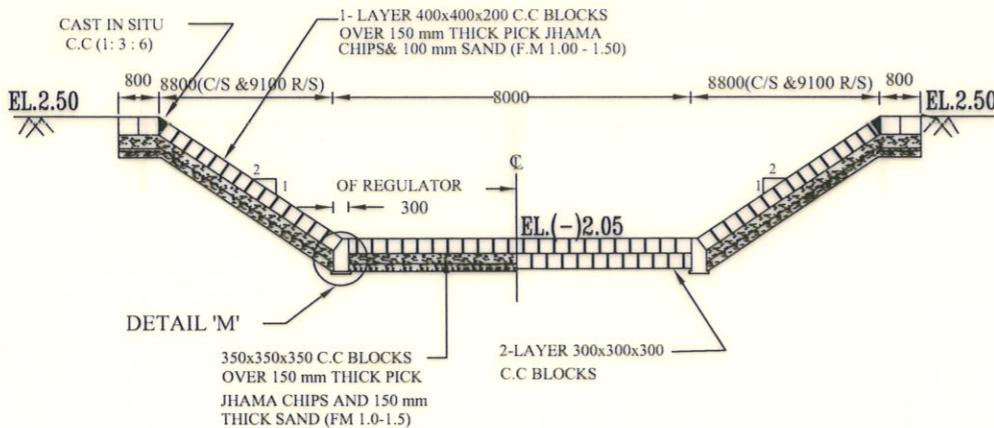
Bangladesh Water Development Board Office of the Superintending Engineer Design Circle-8	
DESIGN OF DRAINAGE CUM FLUSHING REGULATOR 2-VENT(1.50mX1.80m) ON KULUTIA KHAL AT KM 35.00 IN POLDER NO-6-8(EXT) IN SATKHIRA DISTRICT, UNDER SATKHIRA O&M DIVISION-2, BWDB, SATKHIRA.	
REINFORCEMENT DETAILS OF R/S APRON, WING WALL & RETURN WALL	
DESIGNED BY : (SAKIB BIN RAFI), AE	APPROVED BY : (MOHAMMAD SAIF UDDIN), SE
CHECKED & RECOMMENDED BY : (JAKARIA PERVEZ), EE	
DATE:23/11/2022 DWG. NO.:DC-8-0317-14/22	



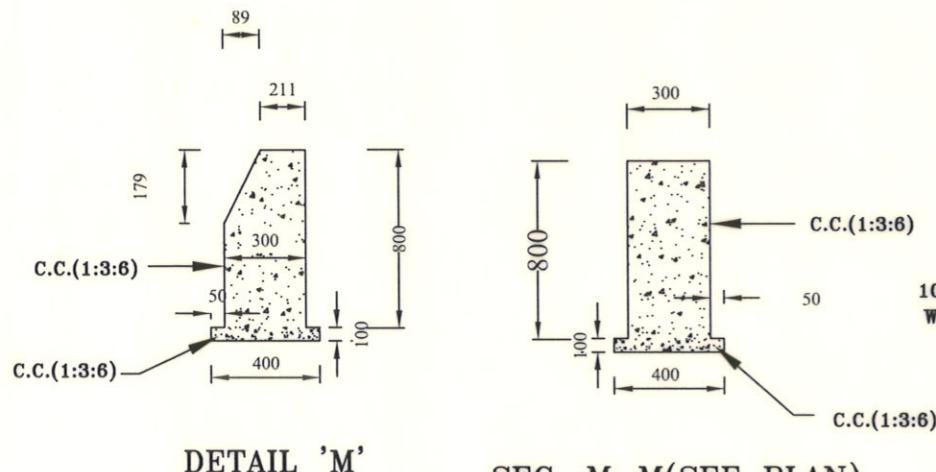
(NOT TO SCALE)



Bangladesh Water Development Board	
Office of the Superintending Engineer Design Circle-8	
DRAINAGE IMPROVEMENT OF POLDER 1,2,6-8 AND 6-8(EXTENSION)	
DESIGN OF DRAINAGE CUM FLUSHING REGULATOR 2-VENT(1.50mX1.80m) ON KULUTIA KHAL AT KM 35.00 IN POLDER NO-6-8(EXT) IN SATKHIRA DISTRICT, UNDER SATKHIRA O&M DIVISION-2, BWDB, SATKHIRA.	
MISCELLANEOUS DETAILS	
DESIGNED BY: (SAKIB BIN RAFI), AE	APPROVED BY: (MOHAMMAD SAIF UDDIN), SE
CHECKED & RECOMMENDED BY: (JAKARIA PERVEZ), EE	
DATE:23/11/2022 DWG. NO.:DC-8-0317-15/22	

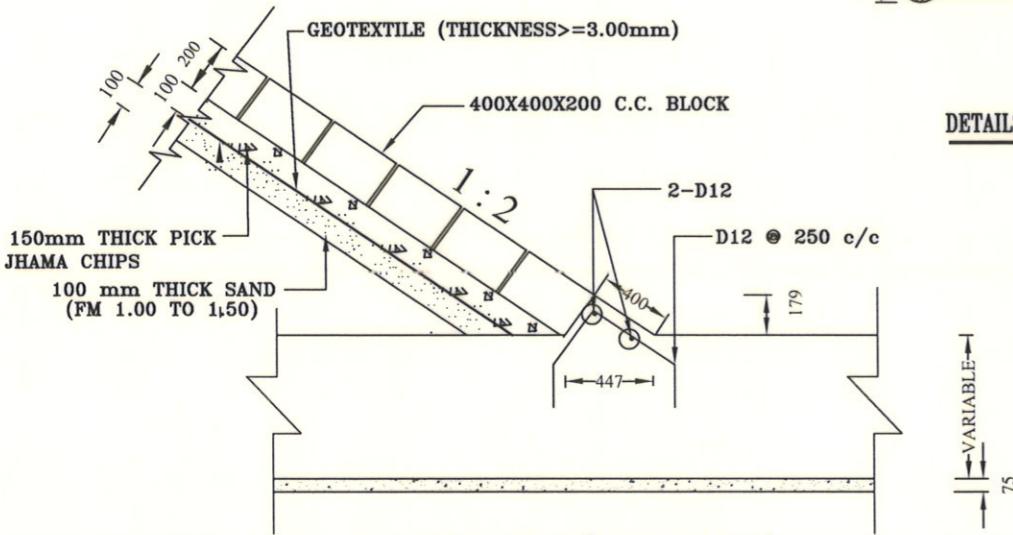


SECTION B-B(SEE PLAN)



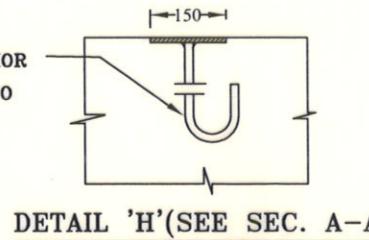
DETAIL 'M'

SEC. M-M(SEE PLAN)



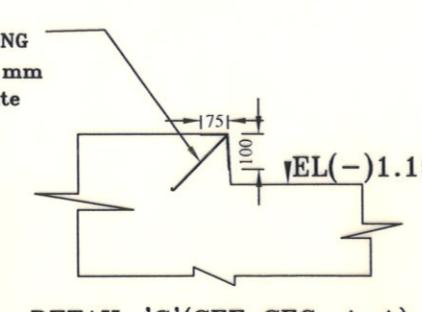
SEC. P-P(SEE PLAN)

16 mm Ø 250 mm LONG ANCHOR BOLT WITH HEX NUT WELDED TO 150 X 10 mm FLAT PLATE @300 C/C

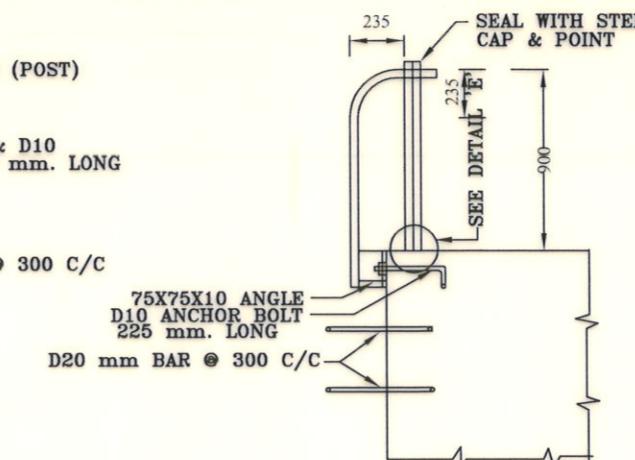
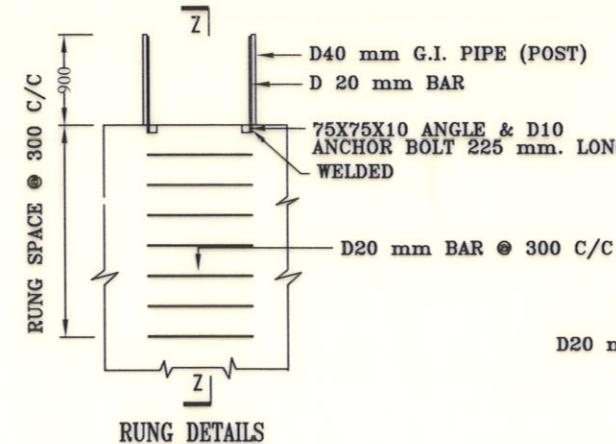


16 mm Ø 250 mm LONG Bar Welded To 75x10 mm & 100x10mm flat plate

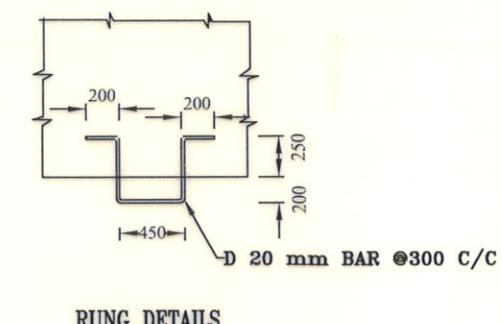
DETAIL 'H'(SEE SEC. A-A)



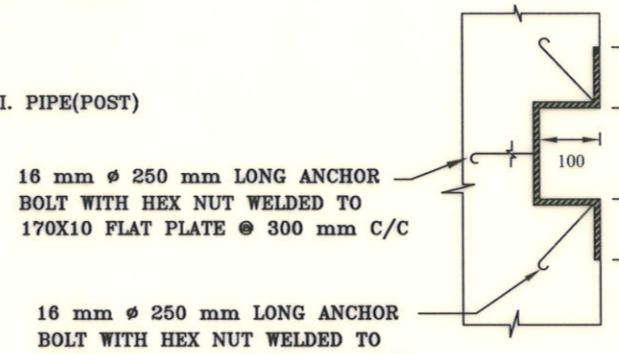
DETAIL 'G'(SEE SEC. A-A)



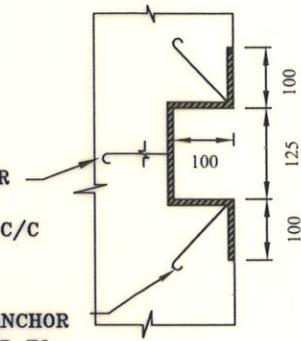
SECTION Z-Z



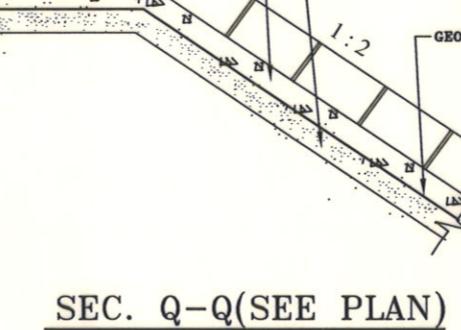
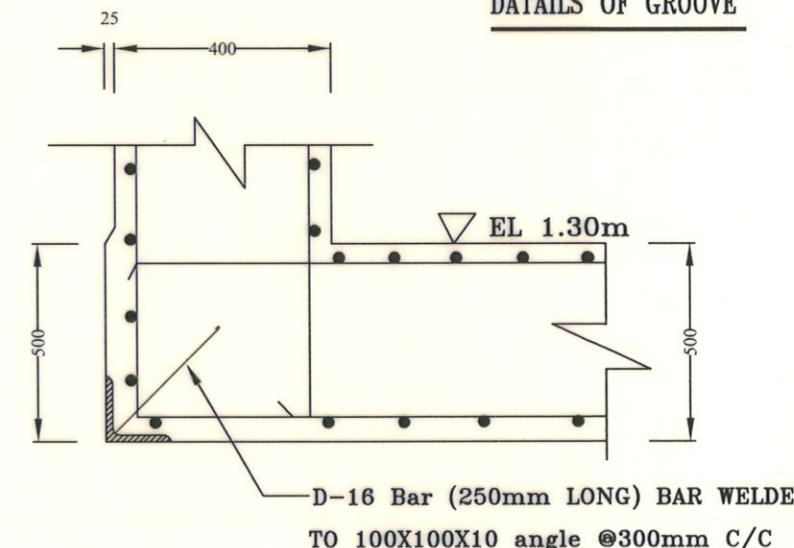
RUNG DETAILS



DETAILS OF LIFT GATE GROOVE FOR NORMAL VENT



DETAILS OF GROOVE



SEC. Q-Q(SEE PLAN)

(NOT TO SCALE)

Bangladesh Water Development BoardOffice of the Superintending Engineer
Design Circle-8

DRAINAGE IMPROVEMENT OF POLDER 1,2,6-8 AND 6-8(EXTENSION)

DESIGN OF DRAINAGE CUM FLUSHING REGULATOR
2-VENT(1.50mX1.80m) ON KULUTIA KHAL AT KM 35.00 IN POLDER NO-6-8(EXT)
IN SATKHIRA DISTRICT, UNDER SATKHIRA O&M DIVISION-2, BWDB,
SATKHIRA.

MISCELLANEOUS DETAILS

DESIGNED BY :

(SAKIB BIN RAFI), AE

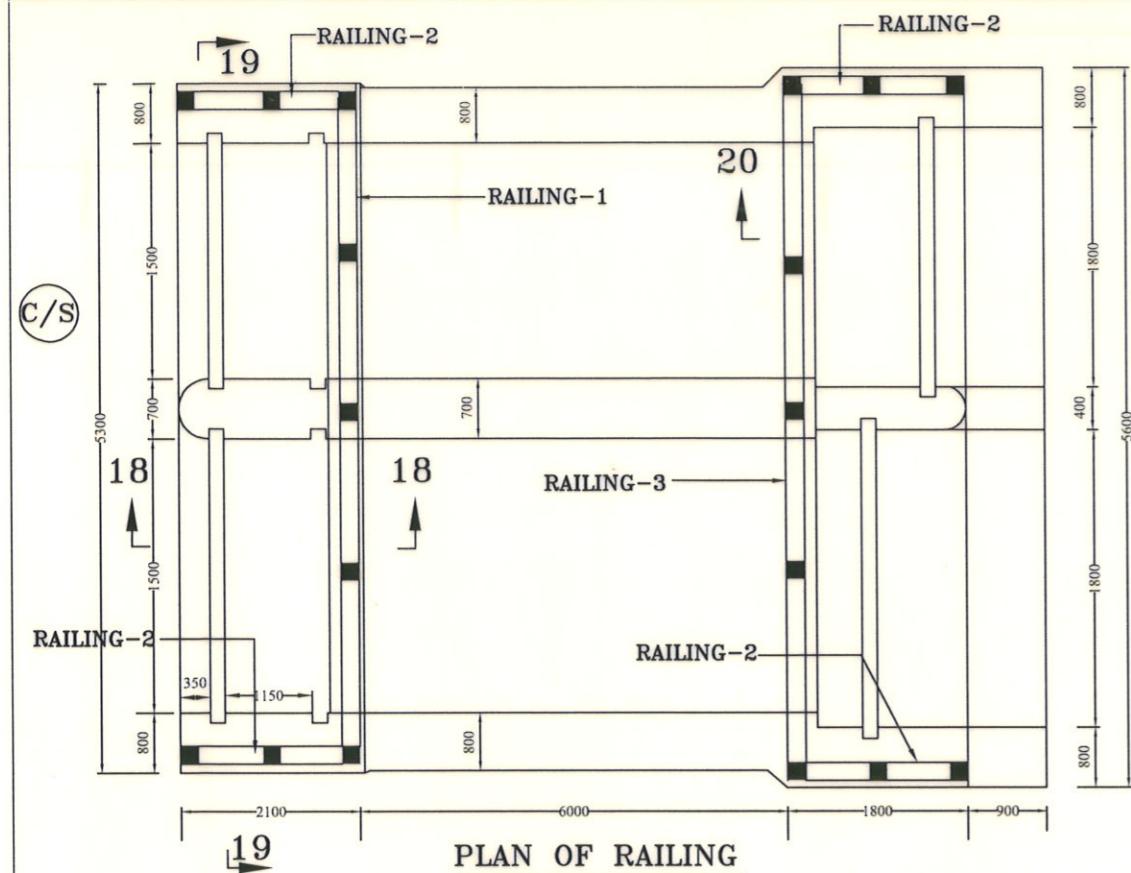
APPROVED BY :

(MOHAMMAD SAIF UDDIN), SE

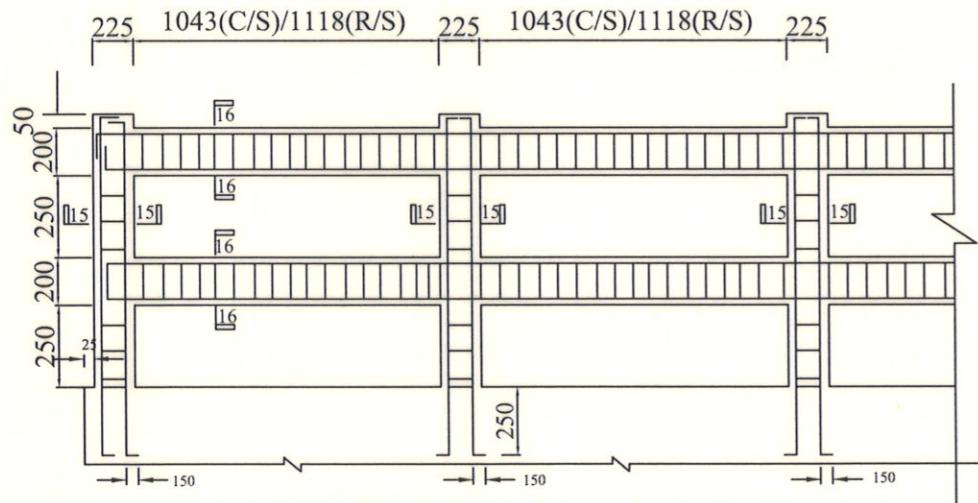
CHECKED & RECOMMENDED BY :

(JAKARIA PERVEZ), EE

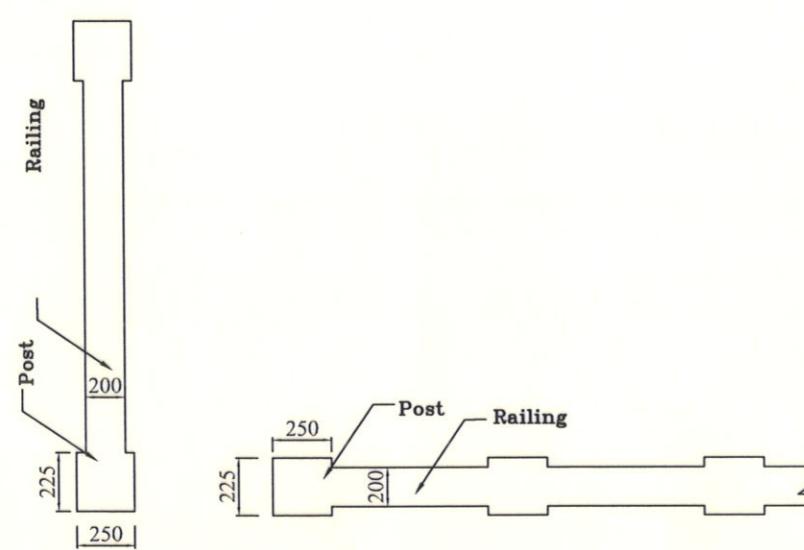
DATE:23/11/2022 DWG. NO.:DC-8-0317-16/22



PLAN OF RAILING

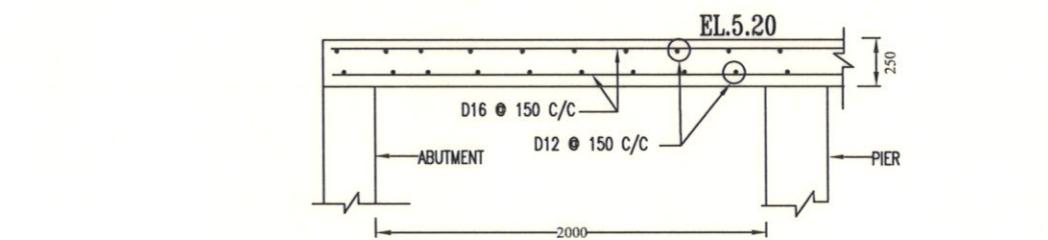


RAILING DETAIL NO-1 & 3

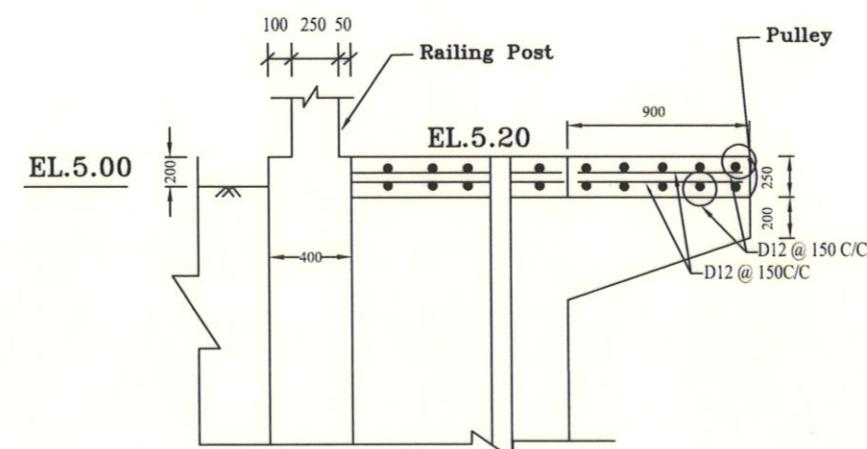


PLAN OF RAILING (REINFORCEMENT NOT SHOWN)

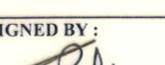
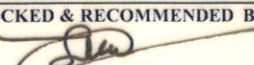
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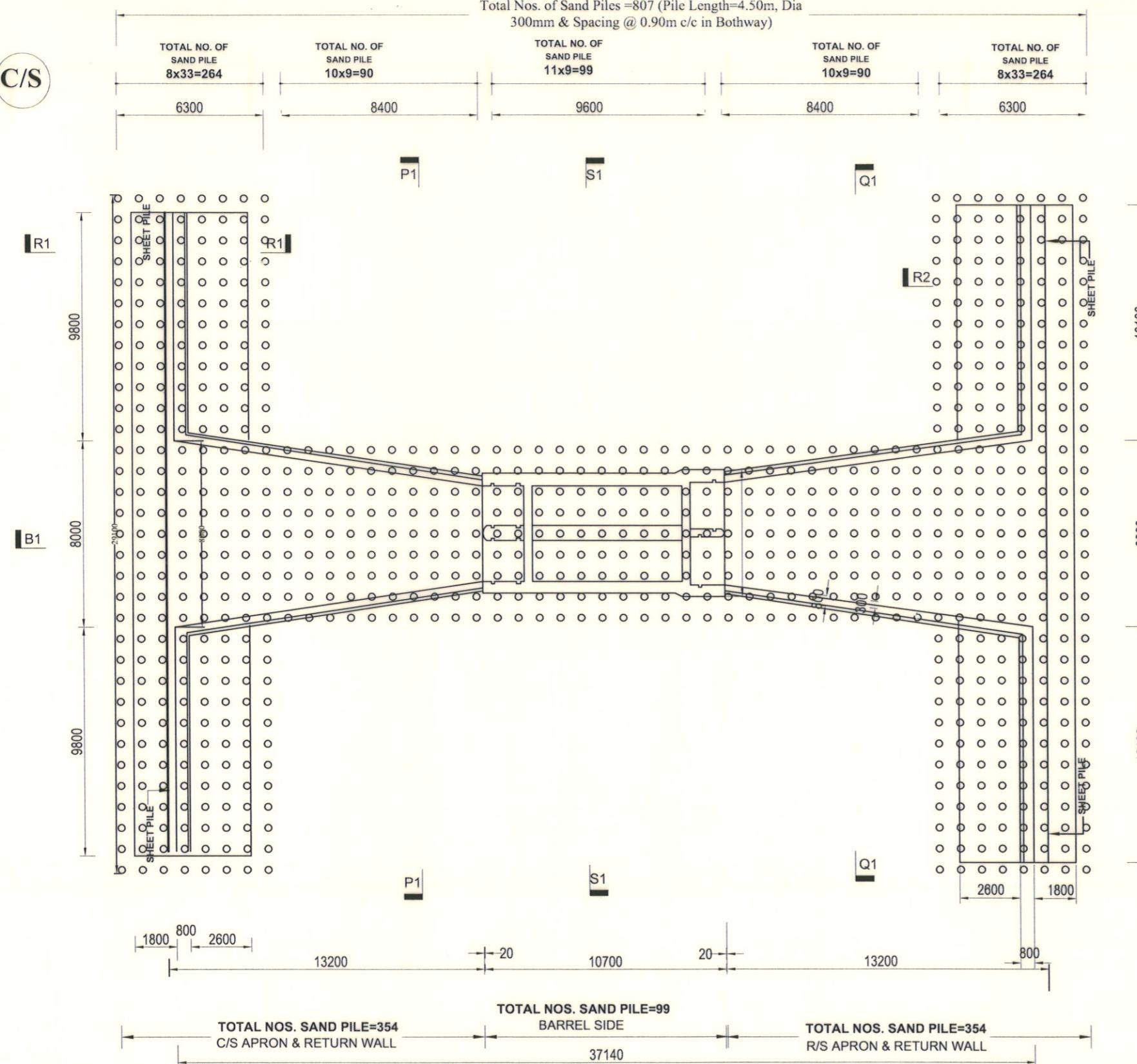


DETAILS OF OPERATING SLAB FOR VERTICAL LIFT GATE
SECTION 19-19



SECTION 20-20

Bangladesh Water Development Board	
Office of the Superintending Engineer	
Design Circle-8	
DRAINAGE IMPROVEMENT OF POLDER 1,2,6-8 AND 6-8(EXTENSION)	
DESIGN OF DRAINAGE CUM FLUSHING REGULATOR	
2-VENT(1.50mX1.80m) ON KULUTIA KHAL AT KM 35.00 IN POLDER NO-6-8(EXT)	
IN SATKHIRA DISTRICT, UNDER SATKHIRA O&M DIVISION-2, BWDB, SATKHIRA.	
DETAILS OF RAILING	
DESIGNED BY :	APPROVED BY :
 (SAKIB BIN RAFI), AE	 (MOHAMMAD SAIF UDDIN), SE
CHECKED & RECOMMENDED BY :	
 (JAKARIA PERVEZ), EE	
DATE:23/11/2022 DWG. NO.:DC-8-0317-17/22	



SAND PILE LAYOUT PLAN

NOTE FOR SAND PILE:

1. SAND PILE OF 4.50m 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≥2.00.
3. DIAMETER LENGTH CONTINUITY OF PILE SHALL HAVE TO BE CHECKED BY MEASURING SAND FORCE VOLUME FOR EACH EXECUTED PILE. THE SAND FORCE VOLUME PER METER AND PER PILE SHALL NOT BE LESS THAN 0.30 CUBIC METER AND 1.35 CUBIC METER RESPECTIVELY (ITEM CODE: 44-400-40).
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. ALL THE RECORDS OF SAND PILLING SHALL BE MAINTAINED IN DETAILS WITH CONSTANT SUPERVISION AND IT SHOULD BE SENT TO THE DESIGN OFFICE.

Bangladesh Water Development Board
Office of the Superintending Engineer
Design Circle-8

DESIGN OF DRAINAGE CUM FLUSHING REGULATOR 2-VENT(1.50mX1.80m)
ON KULUTIA KHAL AT KM 35.00 IN POLDER NO-6-8(EXT) IN SATKHIRA DISTRICT,
UNDER SATKHIRA O&M DIVISION-2, BWDB, SATKHIRA.

SAND PILE LAYOUT PLAN

DESIGNED BY :

(SAKIB BIN RAFI), AE

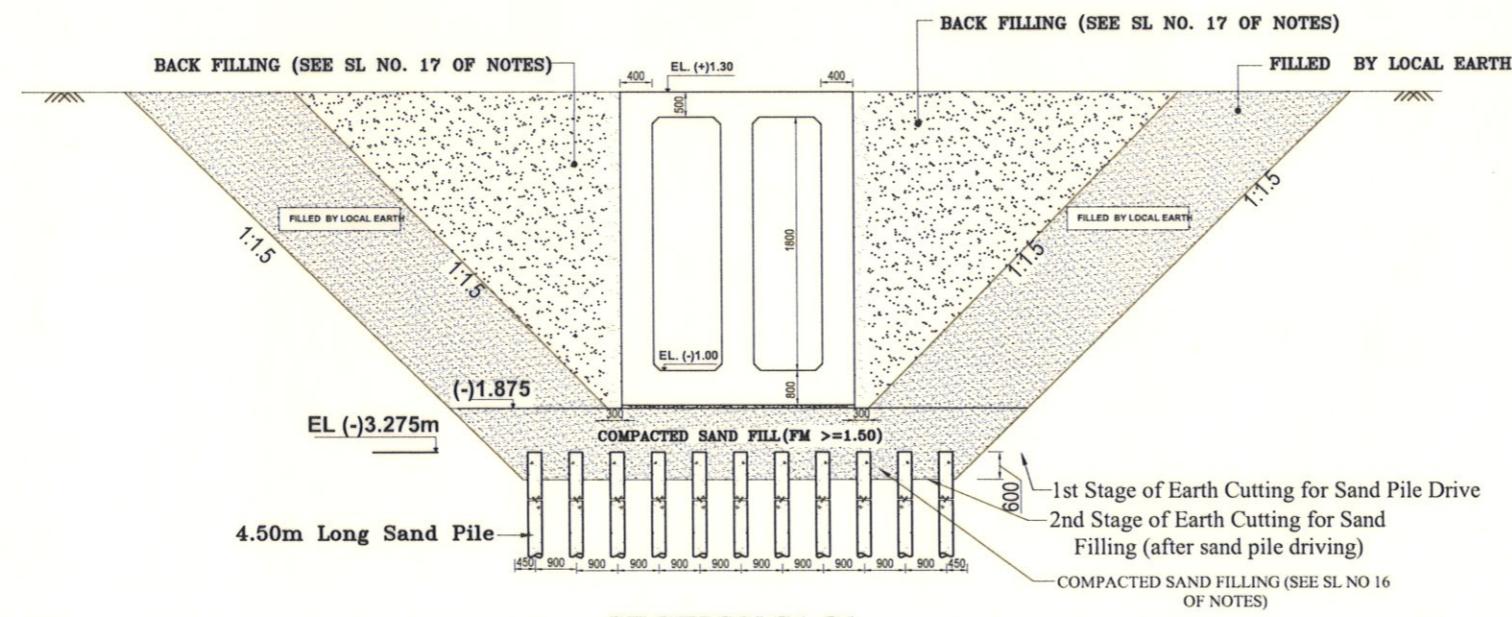
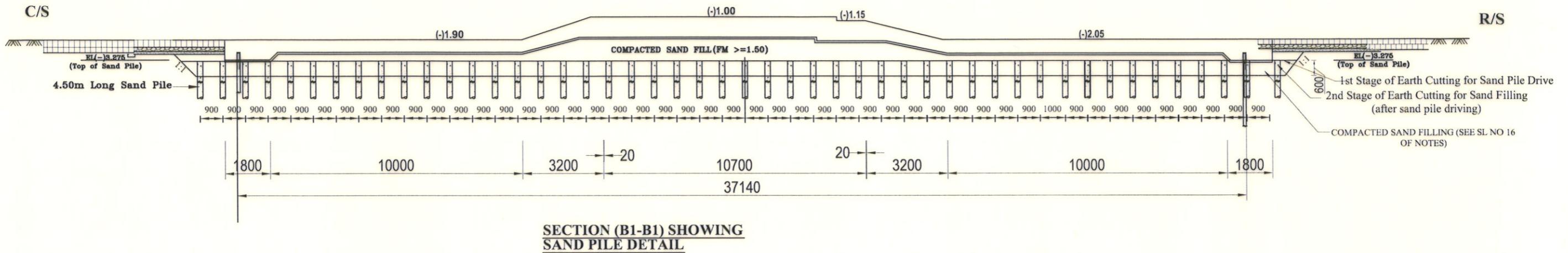
APPROVED BY :

(MOHAMMAD SAIF UDDIN), SE

CHECKED & RECOMMENDED BY :

(JAKARIA PERVEZ), EE

DATE:23/11/2022 DWG. NO.:DC-8-0317-18/22



SECTION S1-S1

Scale : Not To Scale

Bangladesh Water Development Board

**Office of the Superintending Engineer
Design Circle-8**

**DESIGN OF DRAINAGE CUM FLUSHING REGULATOR
2-VENT(1.50mX1.80m) ON KULUTIA KHAL AT KM 35.00 IN POLDER
NO-6-8(EXT) IN SATKHIRA DISTRICT, UNDER SATKHIRA O&M
DIVISION-2, BWDB, SATKHIRA.**

SAND PILE DETAILS OF LONGITUDINAL PROFILE & BOX

DESIGNED BY : _____ **APPROVED BY :** _____

ER

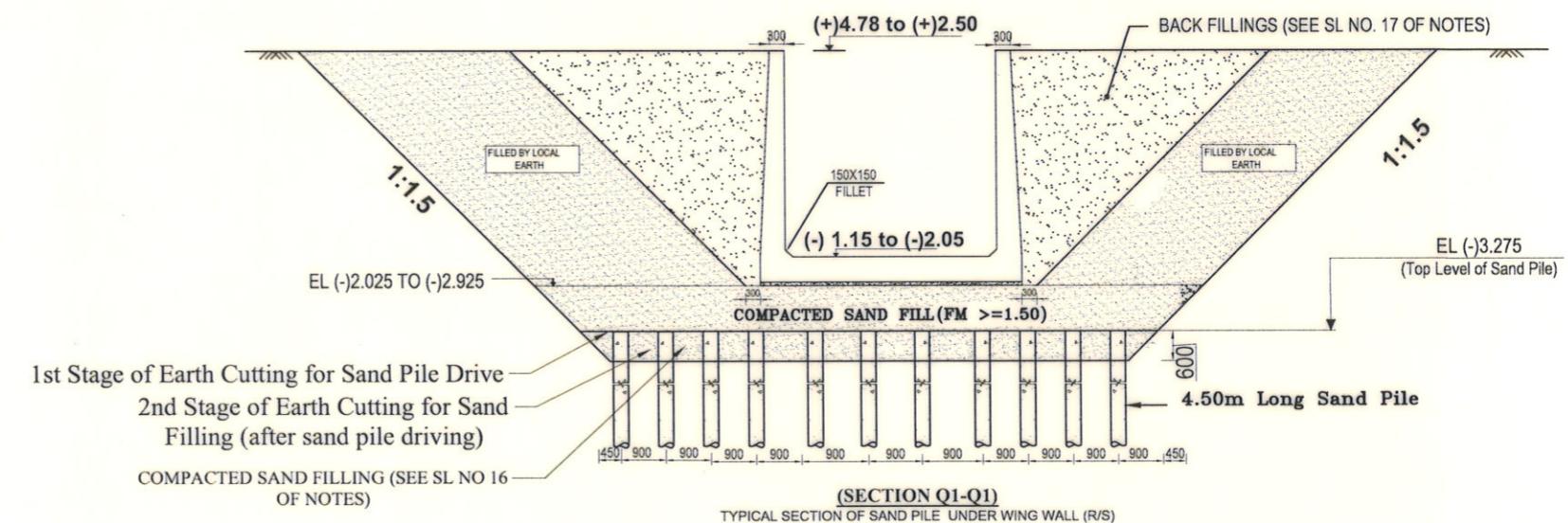
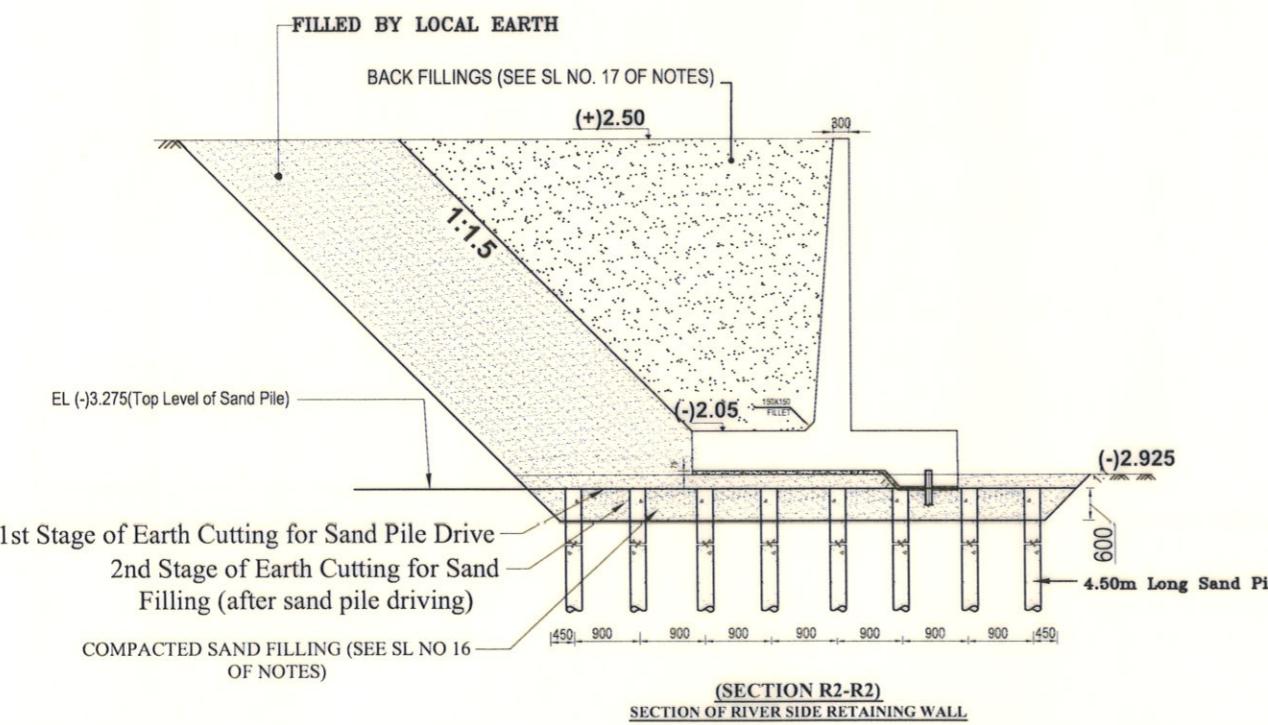
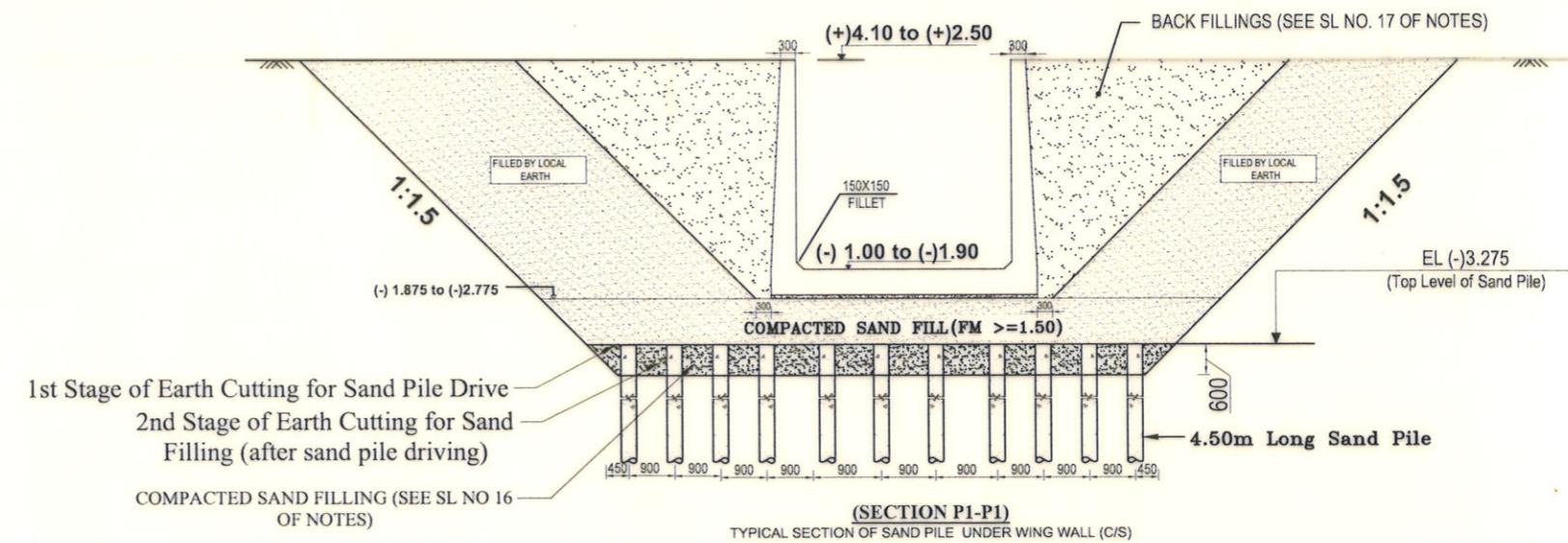
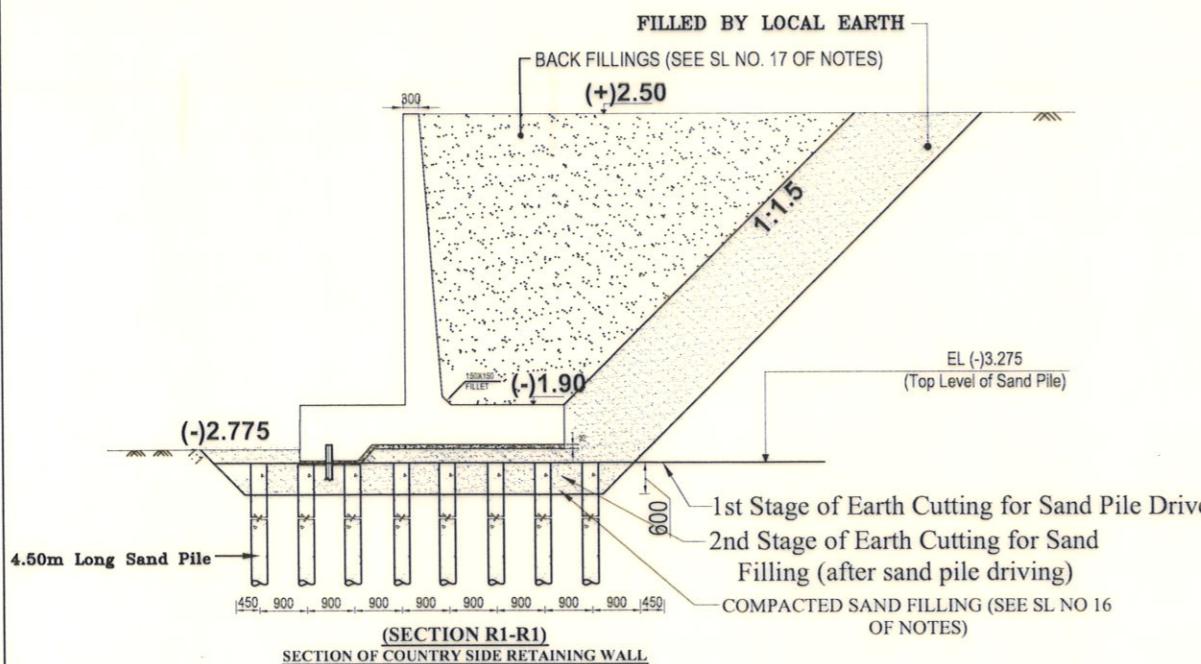
[Signature]

HEGNER & RECOMMENDED BY

HECKED & RECOMMENDED BY :

JAKARIA PEREZ/EE

AKARIA PERVEZ),EE (MOHAMMAD SAIF UDDIN), SE DATE:23/11/2023 DWG NO :DC 8 0317 10/23



Bangladesh Water Development Board

Office of the Superintending Engineer
Design Circle-8DESIGN OF DRAINAGE CUM FLUSHING REGULATOR
2-VENT(1.50mX1.80m) ON KULUTIA KHAL AT KM 35.00 IN POLDER
NO-6-8(EXT) IN SATKHIRA DISTRICT, UNDER SATKHIRA O&M
DIVISION-2, BWDB, SATKHIRA.**SECTIONS DETAILS OF SAND PILE**

DESIGNED BY :

 (SAKIB BIN RAFI), AE

APPROVED BY :

 (MOHAMMAD SAIF UDDIN), SE

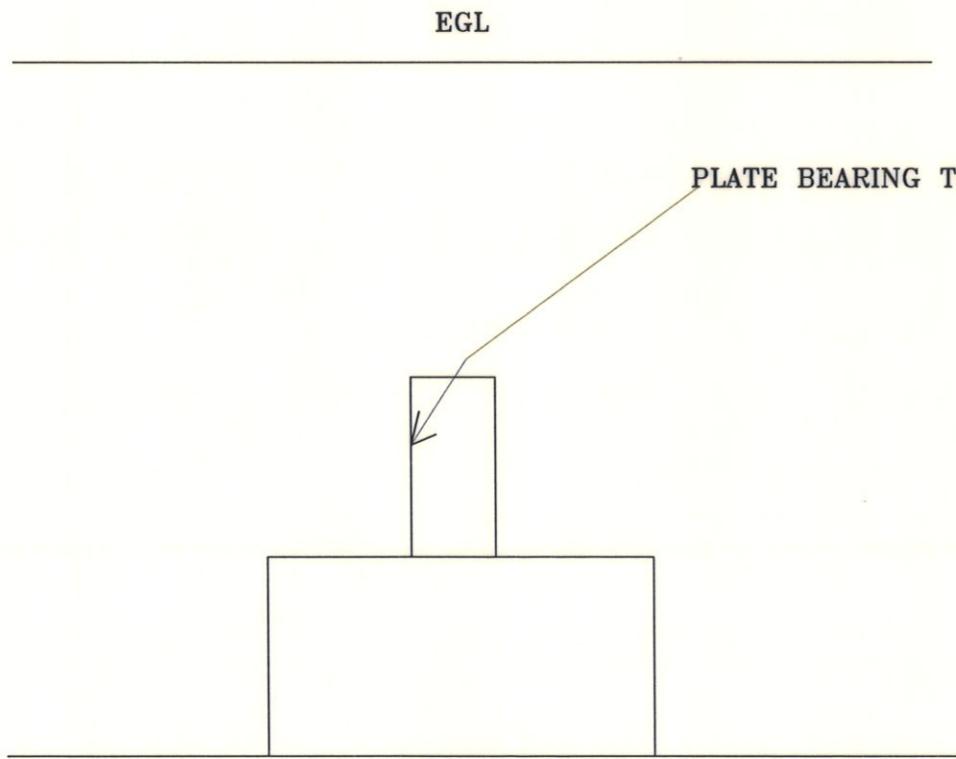
CHECKED & RECOMMENDED BY

 (JAKARIA PERVEZ), EE

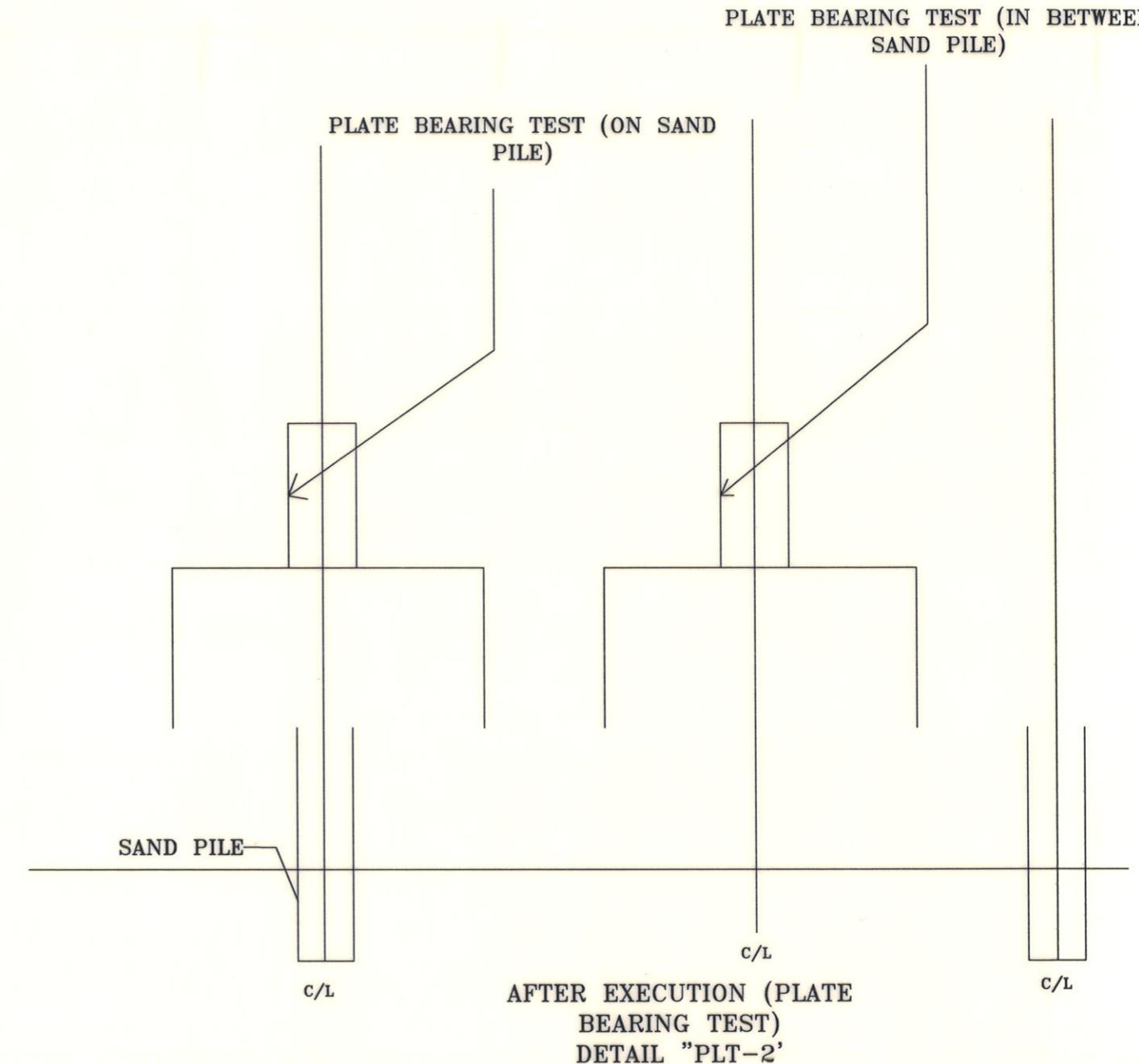
DATE:23/11/2022 DWG. NO.:DC-8-0317-20/22

NOTES FOR SAND PILE:

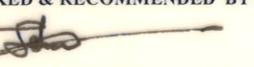
1. SAND PILE OF 4.5 M LENGTH WITH 300MM CASING DIA. AS SPECIFIED IN THE DRAWING SHALL HAVE TO BE CONSTRUCTED AS PER STANDARD DISPLACEMENT METHOD.
2. STAND TO BE USED IN PILING SHALL BE FREE FROM ALL ORGANIC AND FOREIGN MATERIALS AND SHALL HAVE FM \geq 2.50.
3. DIAMETER LENGTH CONTINUITY OF PILE SHALL 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 M 2 /M AND 2.275M 2 RESPECTIVELY (ITEM CODE: 44-400-40).
4. BEFORE EXECUTION AND AFTER EXECUTION OF SAND PILE PLATE BEARING TEST MUST BE CONDUCTED (DETAILS SHOWN IN PLT-1 & PLT-2).
5. FOR COHESIVE SOIL CONSOLIDATION TEST SHOULD BE DONE AS PER PWD SCHEDULE 31.10.5..
6. BEFORE THE CONSTRUCTION, PLATE BEARING TEST RESULT AND CONSOLIDATION TEST RESULT SHALL BE SENT TO THE CONCERNED DESIGN OFFICE (DESIGN CIRCLE-8) .
7. DATA OF PLATE BEARING TEST MUST BE SENT TO THE CONCERNED DESIGN OFFICE (DESIGN CIRCLE-8) FOR REVIEWAL OF FOUNDATION TREATMENT.

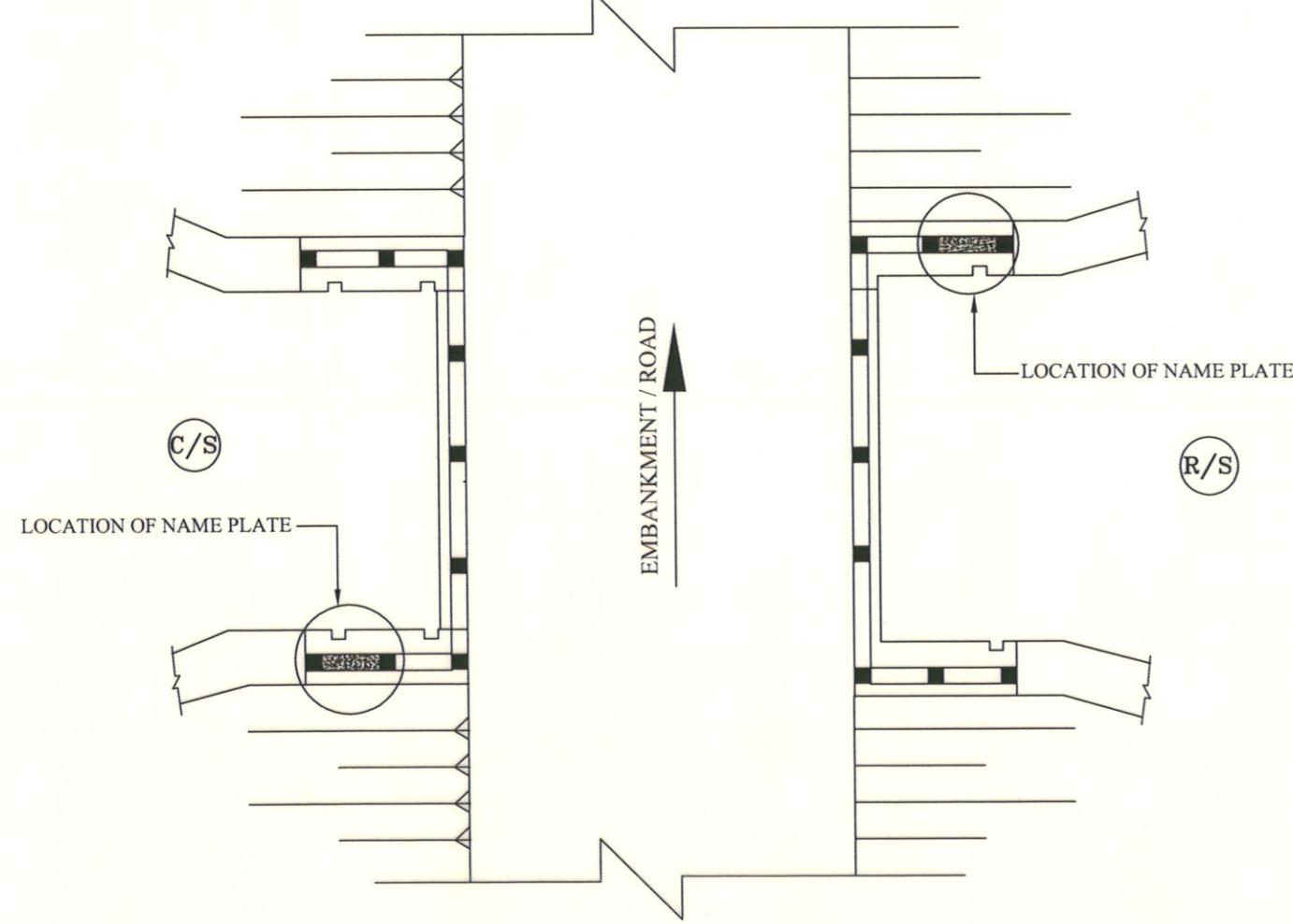
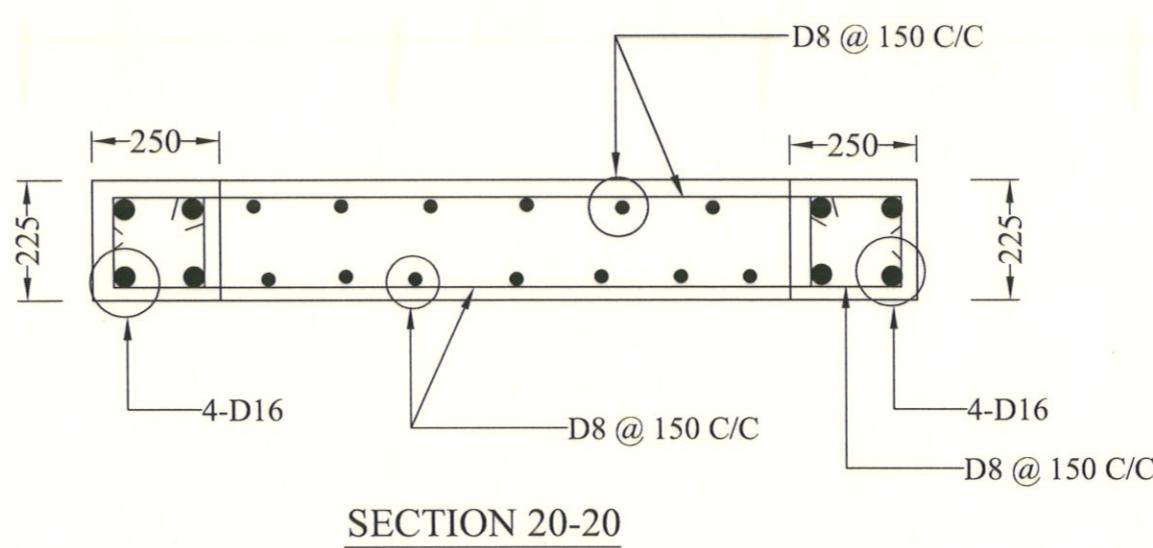
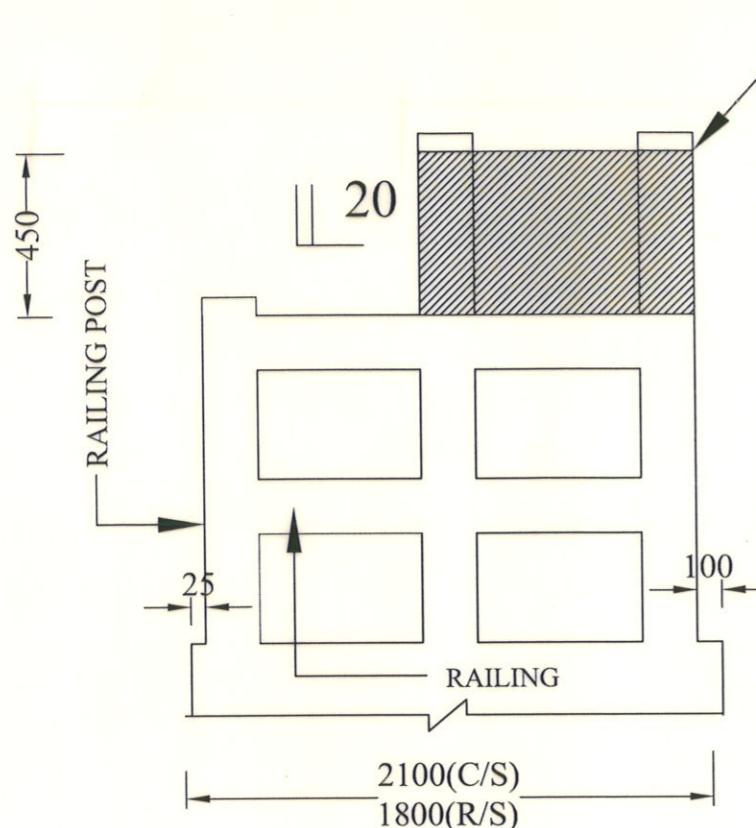


**BEFORE EXECUTION (PLATE BEARING TEST)
DETAIL "PLT-1"**



**AFTER EXECUTION (PLATE BEARING TEST)
DETAIL "PLT-2"**

Bangladesh Water Development Board	
Office of the Superintending Engineer Design Circle-8	
DESIGN OF DRAINAGE CUM FLUSHING REGULATOR 2-VENT(1.50mX1.80m) ON KULUTIA KHAL AT KM 35.00 IN POLDER NO-6-8(EXT) IN SATKHIRA DISTRICT, UNDER SATKHIRA O&M DIVISION-2, BWDB, SATKHIRA.	
NOTES FOR SAND PILE	
DESIGNED BY :  (SAKIB BIN RAFI), AE	APPROVED BY :  (MOHAMMAD SAIF UDDIN), SE
CHECKED & RECOMMENDED BY :  (JAKARIA PERVEZ), EE	
DATE:23/11/2022 DWG. NO.:DC-8-0317-21/22	



(NOT TO SCALE)

NOTES

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.

Bangladesh Water Development Board

Office of the Superintending Engineer
Design Circle-8

DRAINAGE IMPROVEMENT OF POLDER 1,2,6-8 AND 6-8(EXTENSION)

DESIGN OF DRAINAGE CUM FLUSHING REGULATOR
2-VENT(1.50mX1.80m) ON KULUTIA KHAL AT KM 35.00 IN POLDER NO-6-8(EXT)
IN SATKHIRA DISTRICT, UNDER SATKHIRA O&M DIVISION-2, BWDB,
SATKHIRA.

DETAILS OF NAME PLATE

DESIGNED BY :

(SAKIB BIN RAFI), AE

APPROVED BY :

23/11/22

CHECKED & RECOMMENDED BY :

(JAKARIA PERVEZ), EE

(MOHAMMAD SAIF UDDIN), SE

DATE:23/11/2022 DWG. NO.:DC-8-0317-22/22