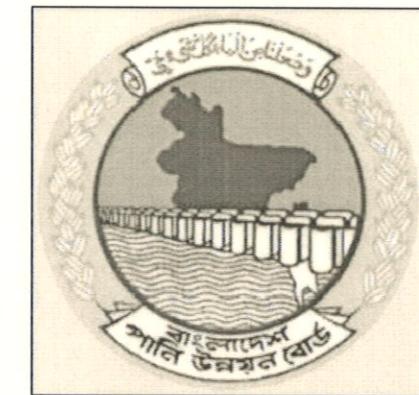


BANGLADESH WATER DEVELOPMENT BOARD

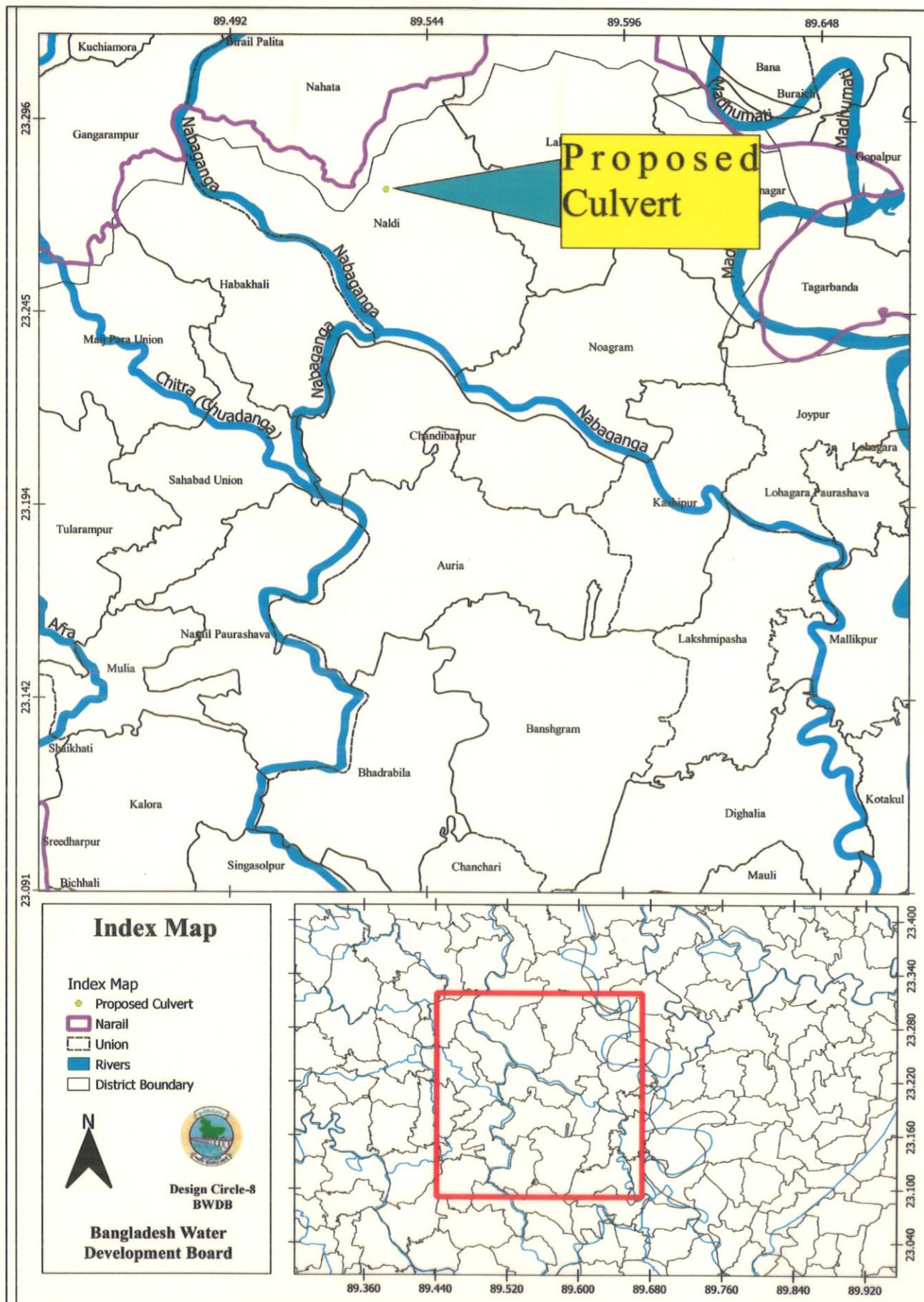


**"REHABILITATION OF MADHUMOTI-NABAGANGA SUB PROJECT AND
RE-EXCAVATION/DREDGING OF NABAGANGA RIVER TO REVIVAL AND CONSERVATION OF
ENVIRONMENTAL BALANCE"**

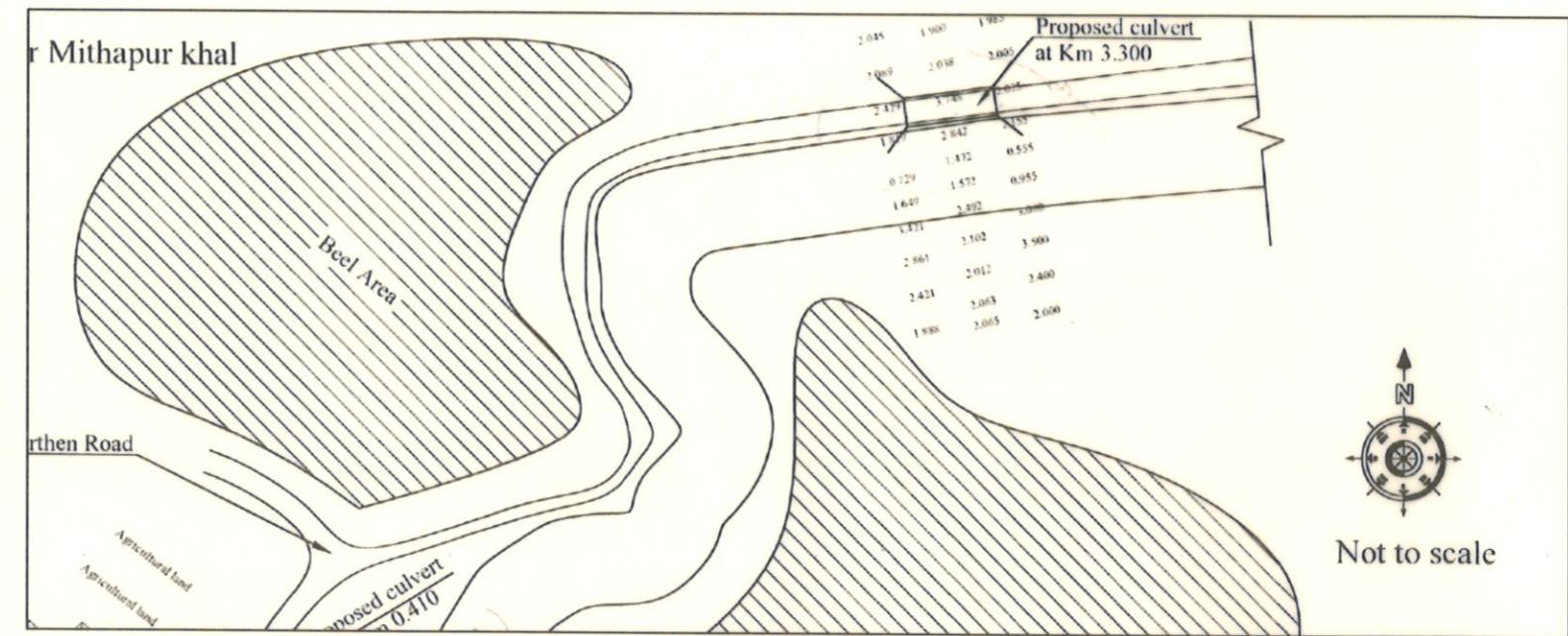
**DESIGN OF BOX CULVERT (2V- 3.00m X 3.85m), AT KM 3.300 OF MITHAPUR
KHAL UPAZILA-LOHAGARA, DISTRICT-NARAIL UNDER NARAIL O&M DIVISION,
BWDB, NARAIL.**

NARAIL O&M DIVISION, BWDB, NARAIL

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



**INDEX MAP
(Not to Scale)**

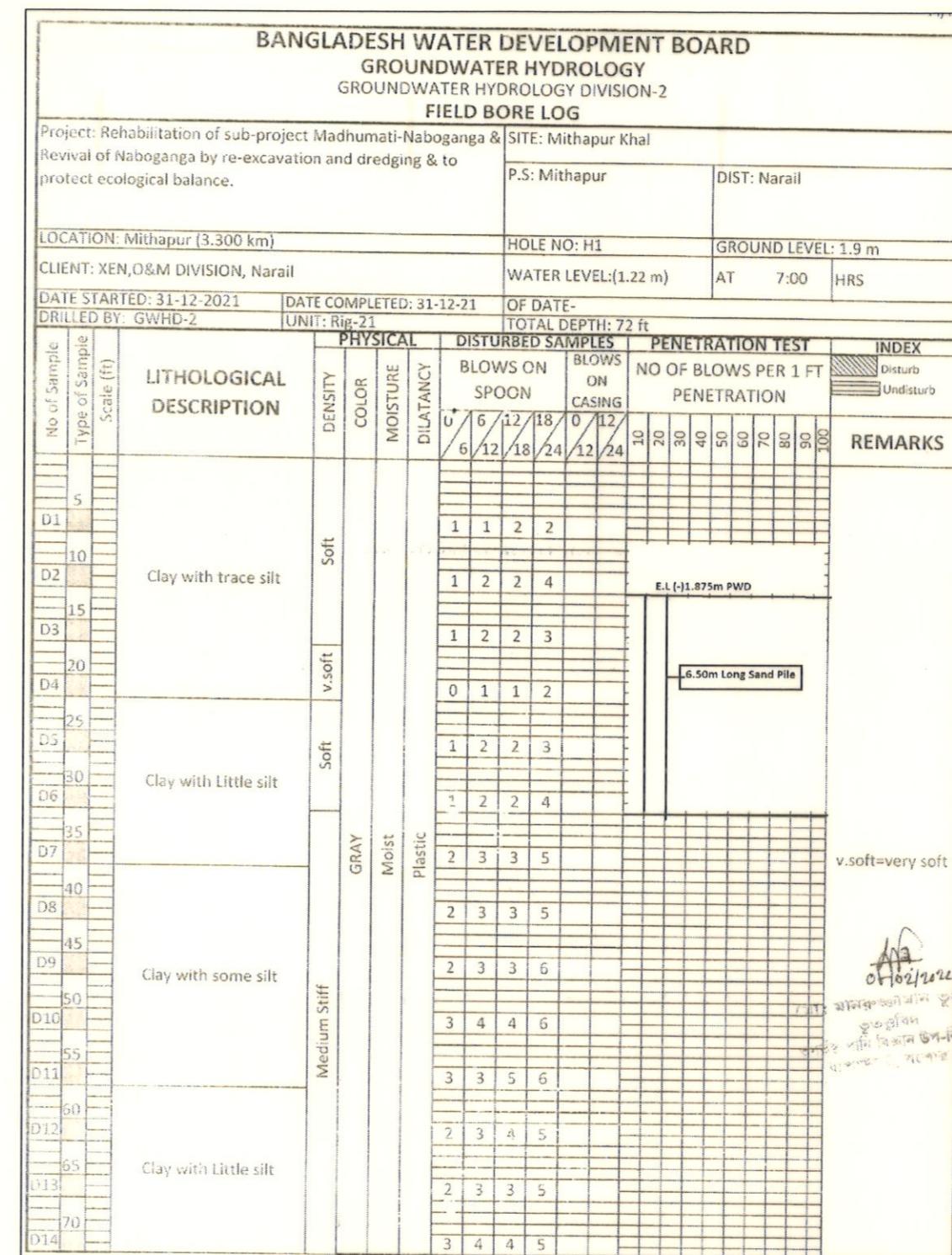


**SITE PLAN
(Not to Scale)**

BANGLADESH WATER DEVELOPMENT BOARD	
OFFICE OF THE SUPERINTENDING ENGINEER	
DESIGN CIRCLE-8	
REHABILITATION OF MADHUMATI- NABAGONGA SUB- PROJECT & RE-EXCAVATION/ DREDGING OF NABAGONGA RIVER REVIVAL AND CONSERVATION OF ENVIRONMENTAL BALANCE	
DESIGNED BY:	APPROVED BY:
ZAYED BIN SAIF, AE	
CHECKED & RECOMMENDED BY :	
JAKARIA PERVEZ, EE	MOHAMMAD SAIF UDDIN, SE
DATE: 19-4-2022	DWG NO : DC-8-0263-01/09

BANGLADESH WATER DEVELOPMENT BOARD GROUNDWATER HYDROLOGY DIVISION-2 72 GREEN ROAD, DHAKA-1205.		
FIELD BORE LOG		
Project: Rehabilitation of sub-project Madhumati-Naboganga & Revival of Naboganga by re-excavation and dredging & to protect ecological balance.		SITE: Mithapur Khal
		P.S: Mithapur DIST: Narail
LOCATION: Mithapur (3.300 km)	HOLE NO: H1-H4	GROUND LEVEL:
CLIENT: XEN,O&M DIVISION, Narail	WATER LEVEL:	AT 7:00 HRS
DATE STARTED: 31-12-2021	DATE COMPLETED: 3-1-2022	OF DATE-
DRILLED BY: GWHD-2	UNIT: Rig-21	TOTAL DEPTH: 72 ft
SOIL SAMPLING		
A) UNDISTURB		
SAMPLE NOS:	DIMENSIONS:	NO TAKEN:
TYPE:	DRILLER: Md. Abu Jaher	GEOLOGIST: Md.Maniruzzaman Bhuiyan
B) DISTURB		
SAMPLE NOS: D1-D14	DIMENSIONS: 1 3/4 ID X 24 Inch	NO TAKEN: 14 Nos
TYPE: Split Spoon	WEIGHT OF HAMMER: 140 lb	AVG. DROP: 30 Inces
HOW SAMPLED: WOODEN/BOX/JARS/CANS/BAGS	DESPATCHED ON:	
CASING		
SIZE:	LENGTH USED:	WT OF HAMMER:
AVG. DROP:		
REMARKS		LOCATION SKETCH
Drilling was advanced by Chopping method.		<p>মোঃ মনিরজ্জামান ভুইয়া ডুতপ্রিয় ভূগর্ভস্থ পানি বিভাগ উপ-বিভাগ বালাইগাঁও, বলের।</p> <p>০৬/০২/২০২২</p> <p>১৩/০২/২০২২</p> <p>(মোঃ শফি উদ্দাক) উপ-বিভাগীয় একোনোমী (ভার্জিন) লোহাগড়া, পূর্ব উপ-বিভাগ বালাইগাঁও, লোহাগড়া, বাড়ি।</p> <p>১৩/০২/২০২২</p> <p>(মোঃ মাসেন মুসলিম) স্ট্রেচ প্রক্রিয়া প্রকৌশলী লোহাগড়া, পূর্ব উপ-বিভাগ বালাইগাঁও, লোহাগড়া, বাড়ি।</p> <p>Not drawn to scale</p>

SITE PLAN
(bore hole)
(Not to Scale)



Bore Log

BANGLADESH WATER DEVELOPMENT BOARD

OFFICE OF THE SUPERINTENDING ENGINEER DESIGN CIRCLE-8

REHABILITATION OF MADHUMATI- NABOGANGA SUB- PROJECT & RE-EXCAVATION/
DREDGING OF NABOGANGA RIVER REVIVAL AND CONSERVATION OF ENVIRONMENTAL
BALANCE

DESIGN OF BOX CULVERT (2V- 3.00m X 3.85m), AT KM 3.300 OF MITHAPUR KHAL
UPAZILA-LOHAGARA, DISTRICT-NARAIL UNDER NARAIL O&M DIVISION,
BWDB, NARAIL.

TITLE: BORE LOG

DESIGNED BY: 	APPROVED BY:
CHECKED & RECOMMENDED BY: 	
JAKARIA PERVEZ, EE	MOHAMMAD SAIF UDDIN, SE
DATE: 19-4-2022	DWG NO : DC-8-0263-02/09

NOTES & SPECIFICATIONS:

1. ALL DIMENSIONS ARE IN MILLIMETRE AND ALL ELEVATIONS ARE IN METRE PWD UNLESS OTHERWISE MENTIONED IN THE DRAWING.
2. THE SPECIFICATION OF MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE STANDARD TECHNICAL SPECIFICATION OF BWDB IN GENERAL.
3. THE FOLLOWING SPECIFICATION OF MATERIALS AND WORKS SHALL BE FOLLOWED FOR THIS PARTICULAR STRUCTURE.

a) CONCRETE STRENGTH (CYLINDER TEST):

RCC WORKS: 25 N/mm²

BLINDING LAYER CONCRETE: 1:3:6

b) YIELD STRENGTH OF REINFORCING BAR:

DEFORMED BAR (FROM BILLET) : 400 N/ mm² (ITEM NO 76-120-10).

**c) SPLICE LENGTH OF REINFORCING BARS SHALL BE 36 BAR DIAMETER.
(FOR TENTION AND COMPRESSION ZONE)**

d) 150mm THICK SAND FILTER FM 1.00 TO 1.50 (ITEM NO 40-650-30).

e) GRADING OF KHOA FILTER :

BOTTOM LAYER (100mm): 5mm TO 20mm (40-610-30)

TOP LAYER (100mm) : 20mm TO 40mm (40-610-20)

f) BACK-FILLING MATERIAL: SAND OF FM 0.80. BACK FILLING FOR U-SHAPED WALL SHALL BE DONE SIMULTANEOUSLY ON BOTH WALLS (ITEM NO 16-540-20).

4. CLEAR COVER OF CONCRETE FOR REINFORCEMENT:

a) FOUNDATION SLAB : 75mm

b) ALL WALLS (RETURN WALL, WING WALL, PIER, TOP SLAB, BARREL ETC) : 75mm

c) RAILING : 40mm

5. WORK SHOULD BE EXECUTED WITH THE PRIOR ADMINISTRATIVE AND FINANCIAL APPROVAL FROM THE COMPETENT AUTHORITY AND WITHIN DPP/BUDGET PROVISION.

6. FOR ANY ERROR, OMISSION OR CONFUSION, PLEASE REFER TO THE CONCERNED DESIGN OFFICE FOR NECESSARY ACTION.

7. THIS DRAWING HAS BEEN PREPARED AS PER PROPOSAL AND DESIGN DATA SUBMITTED BY SE, JASHORE O & M CIRCLE, BWDB, KHULNA VIDE HIS OFFICE MEMO NO-543
DATED: 25-10-2021 AND 1395 DATED 24-02-2022

NOTE FOR SAND PILE:

1. SAND PILE OF 6.5m 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 1.95 CUBIC METER RESPECTIVELY.
4. AFTER EXECUTION OF ALL SAND PILE, SPT VALUES SHALL HAVE TO BE DETERMINED BY THE FIELD TESTS. SPT VALUES ATTAINED AT 1.50 METER INTERVALS SHALL BE DETERMINED.
5. AFTER PILING SPT VALUE IN BETWEEN SAND PILES AT FOUNDATION LEVEL SHALL BE MINIMUM 12 TO 14 .
6. FOR ANY ERROR, OMISSION OR CONFUSION PLEASE REFER TO CONCERNED DESIGN OFFICE THROUGH CONSULTANTS FOR NECESSARY ACTION.

BANGLADESH WATER DEVELOPMENT BOARD

OFFICE OF THE SUPERINTENDING ENGINEER DESIGN CIRCLE-8

REHABILITATION OF MADHUMATI- NABAGONGA SUB- PROJECT & RE-EXCAVATION/ DREDGING OF NABAGONGA RIVER REVIVAL AND CONSERVATION OF ENVIRONMENTAL BALANCE

DESIGN OF BOX CULVERT (2V- 3.00m X 3.85m), AT KM 3.300 OF MITHAPUR KHAL UPAZILA-LOHAGARA, DISTRICT-NARAIL UNDER NARAIL O&M DIVISION, BWDB, NARAIL.

TITLE: NOTES

DESIGNED BY:

ZAYED BIN SAIF, AE

CHECKED & RECOMMENDED BY :

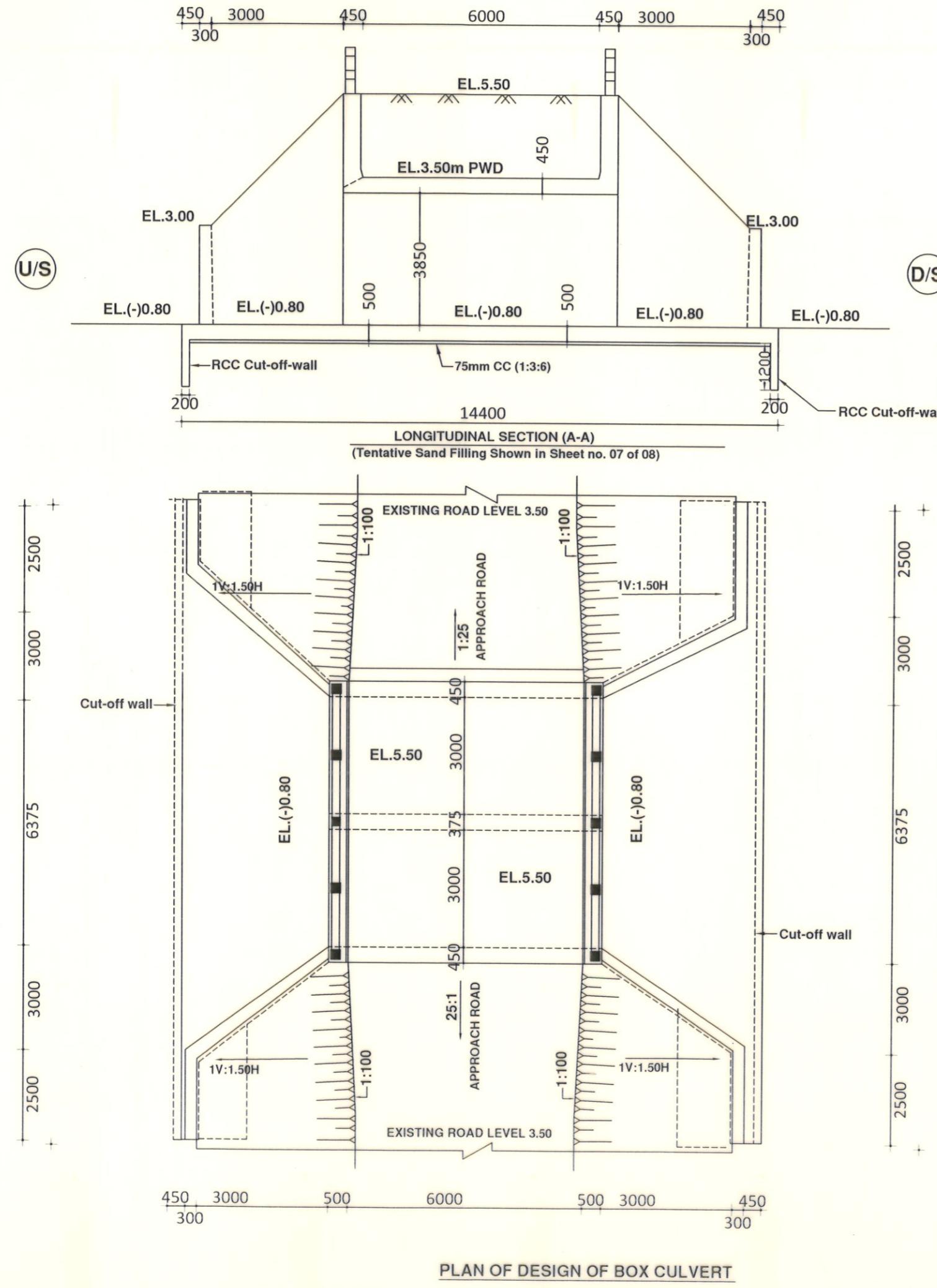
JAKARIA PERVEZ, EE

APPROVED BY:

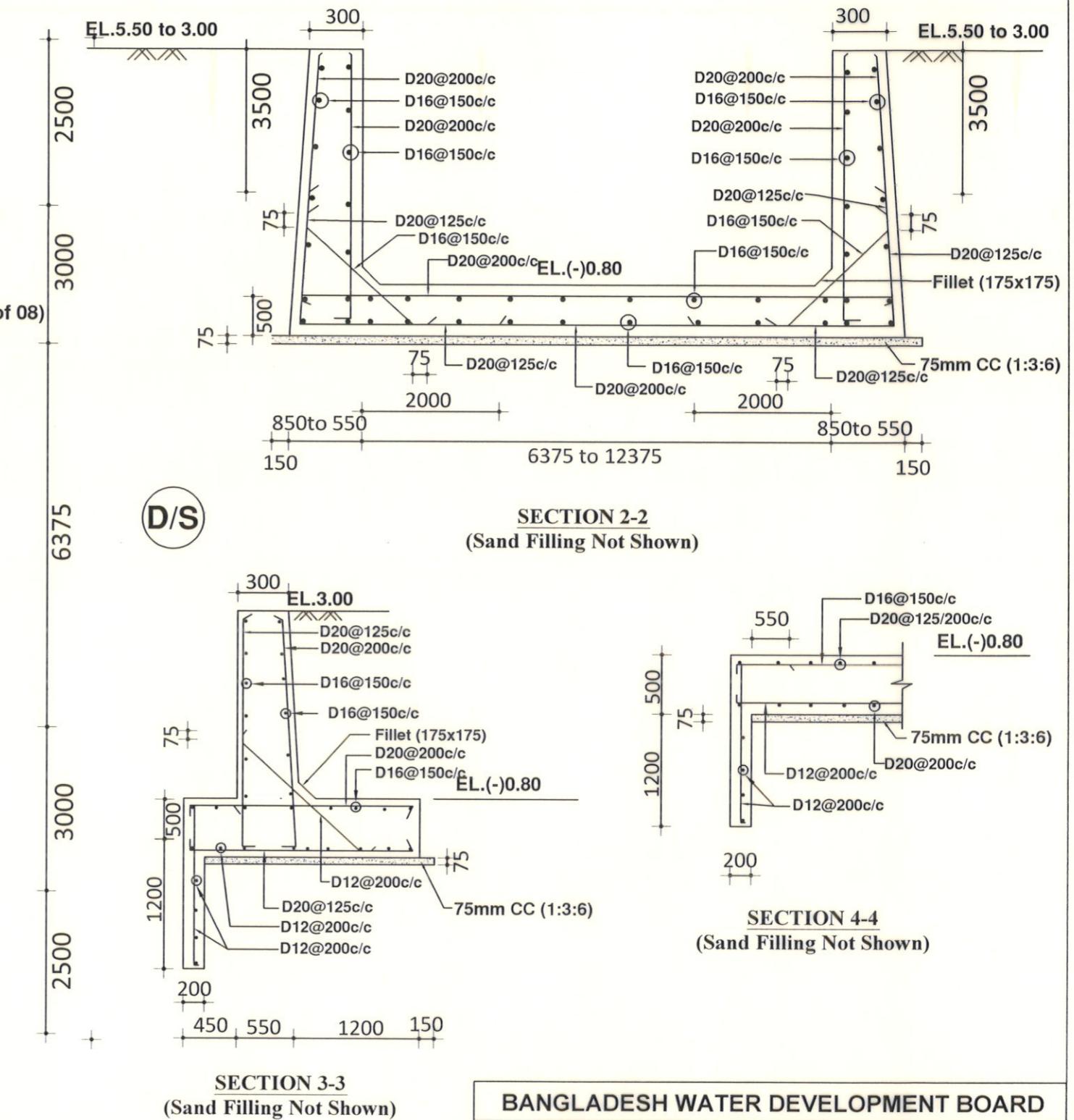
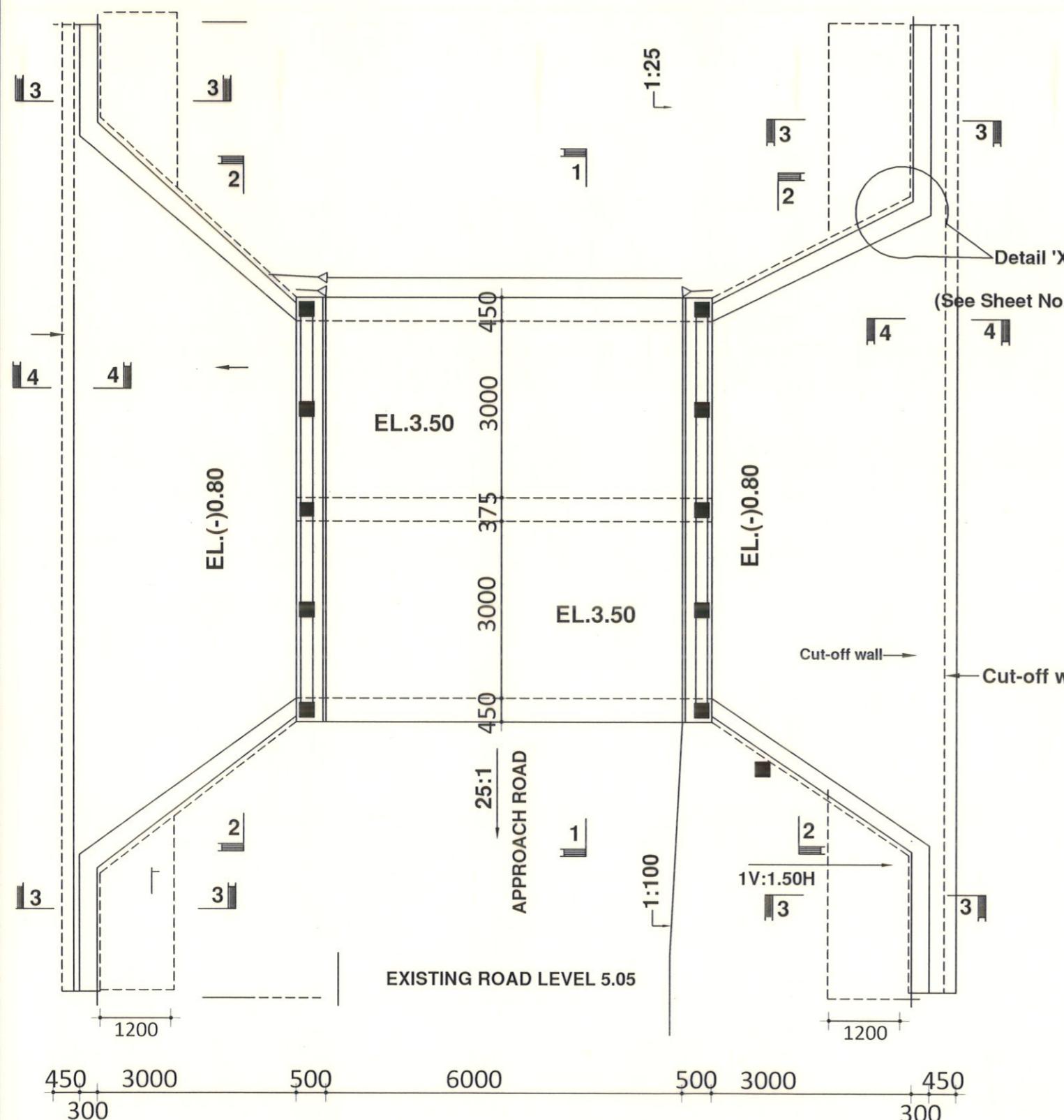
MOHAMMAD SAIF UDDIN, SE

DATE: 19-4-2022

DWG NO : DC-8-0263-03/09



BANGLADESH WATER DEVELOPMENT BOARD	
OFFICE OF THE SUPERINTENDING ENGINEER	
DESIGN CIRCLE-8	
REHABILITATION OF MADHUMATI- NABAGONGA SUB- PROJECT & RE-EXCAVATION/ DREDGING OF NABAGONGA RIVER REVIVAL AND CONSERVATION OF ENVIRONMENTAL BALANCE	
DESIGN OF BOX CULVERT (2V- 3.00m X 3.85m), AT KM 3.300 OF MITHAPUR KHAL UPAZILA-LOHAGARA, DISTRICT-NARAIL UNDER NARAIL O&M DIVISION, BWDB, NARAIL.	
TITLE: PLAN AND SECTION	
DESIGNED BY:	APPROVED BY:
ZAYED BIN SAIF, AE 	
CHECKED & RECOMMENDED BY :	
JAKARIA PERVEZ, EE 	MOHAMMAD SAIF UDDIN, SE
DATE: 19-4-2022	DWG NO : DC-8-0263-04/09



BANGLADESH WATER DEVELOPMENT BOARD

OFFICE OF THE SUPERINTENDING ENGINEER
DESIGN CIRCLE-8

REHABILITATION OF MADHUMATI-NABAGONGA SUB-PROJECT & RE-EXCAVATION/
DREDGING OF NABAGONGA RIVER REVIVAL AND CONSERVATION OF ENVIRONMENTAL
BALANCE

DESIGN OF BOX CULVERT (2V- 3.00m X 3.85m), AT KM 3.300 OF MITHAPUR KHAL
UPAZILA-LOHAGARA, DISTRICT-NARAIL UNDER NARAIL O&M DIVISION,
BWDB, NARAIL.

TITLE: PLAN AND SECTION

DESIGNED BY:
 ZAYED BIN SAIF, AE

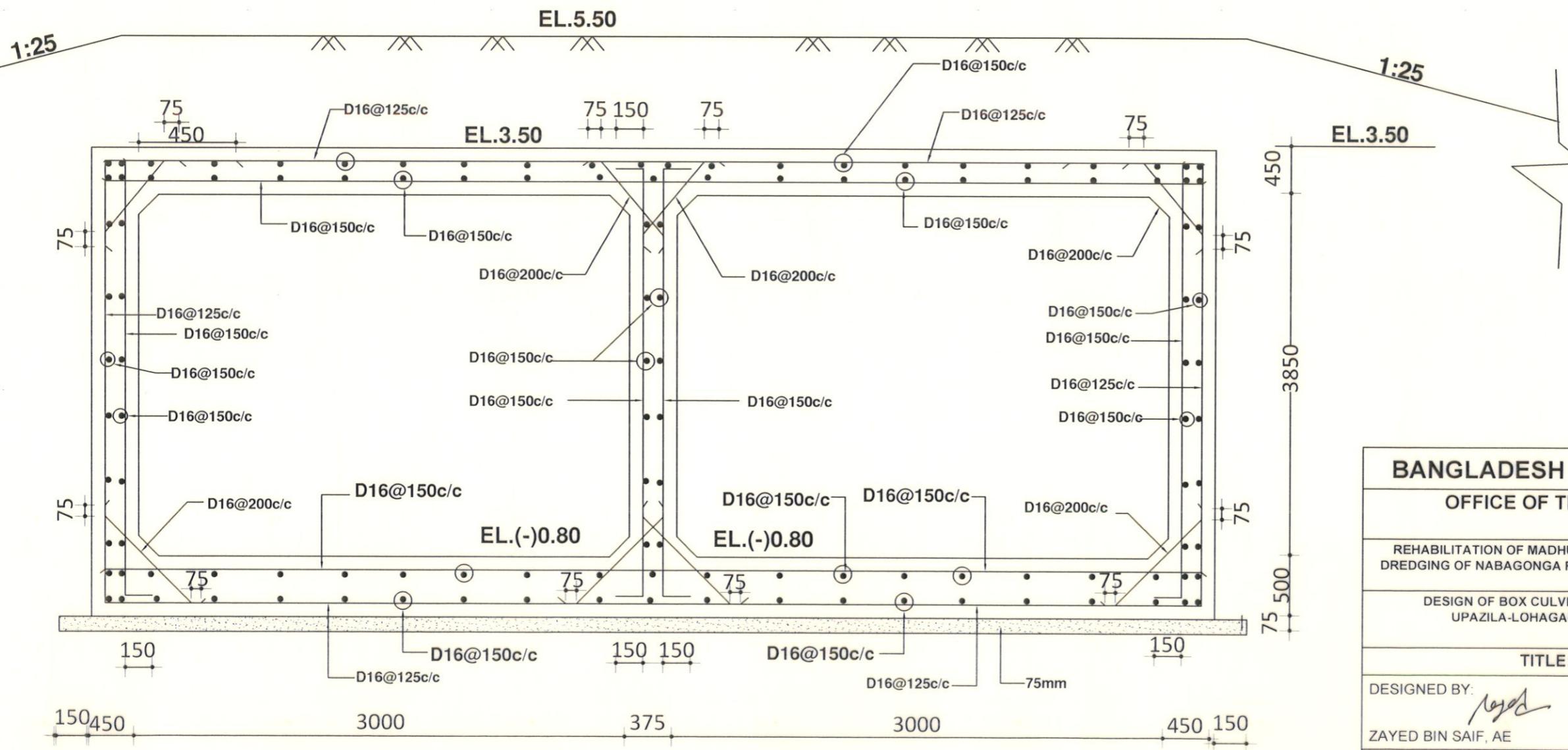
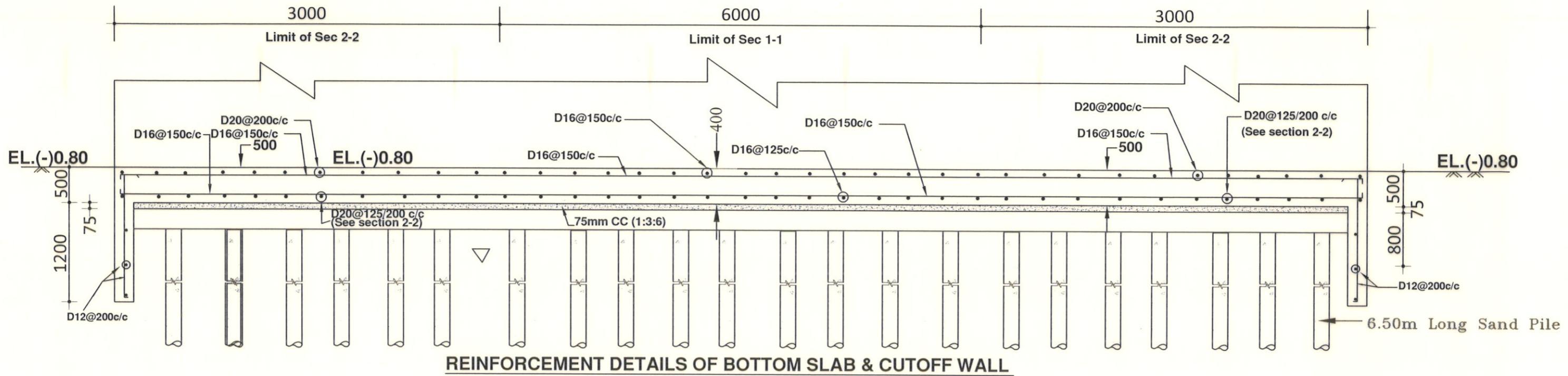
APPROVED BY:

MOHAMMAD SAIF UDDIN, SE

CHECKED & RECOMMENDED BY:
 JAKARIA PERVEZ, EE

DATE: 19-4-2022

DWG NO : DC-8-0263-05/09



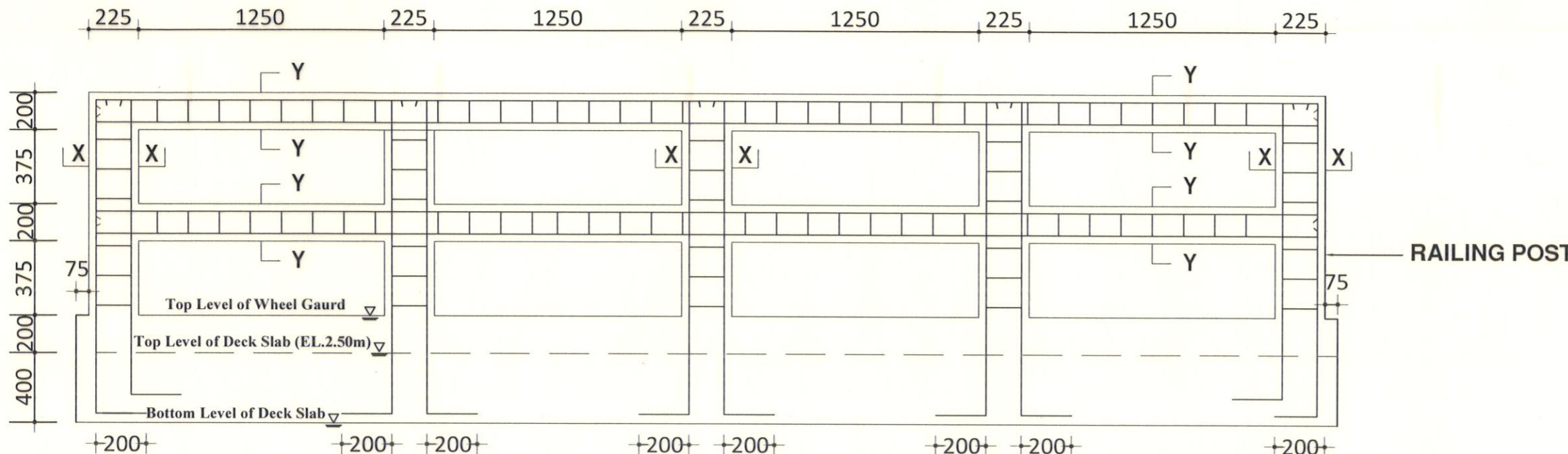
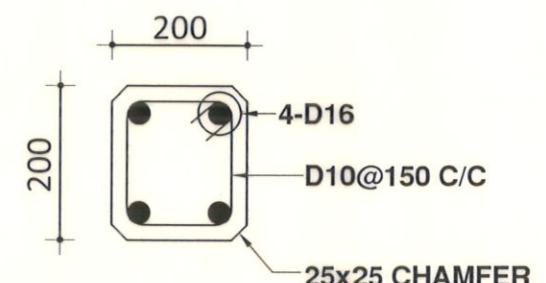
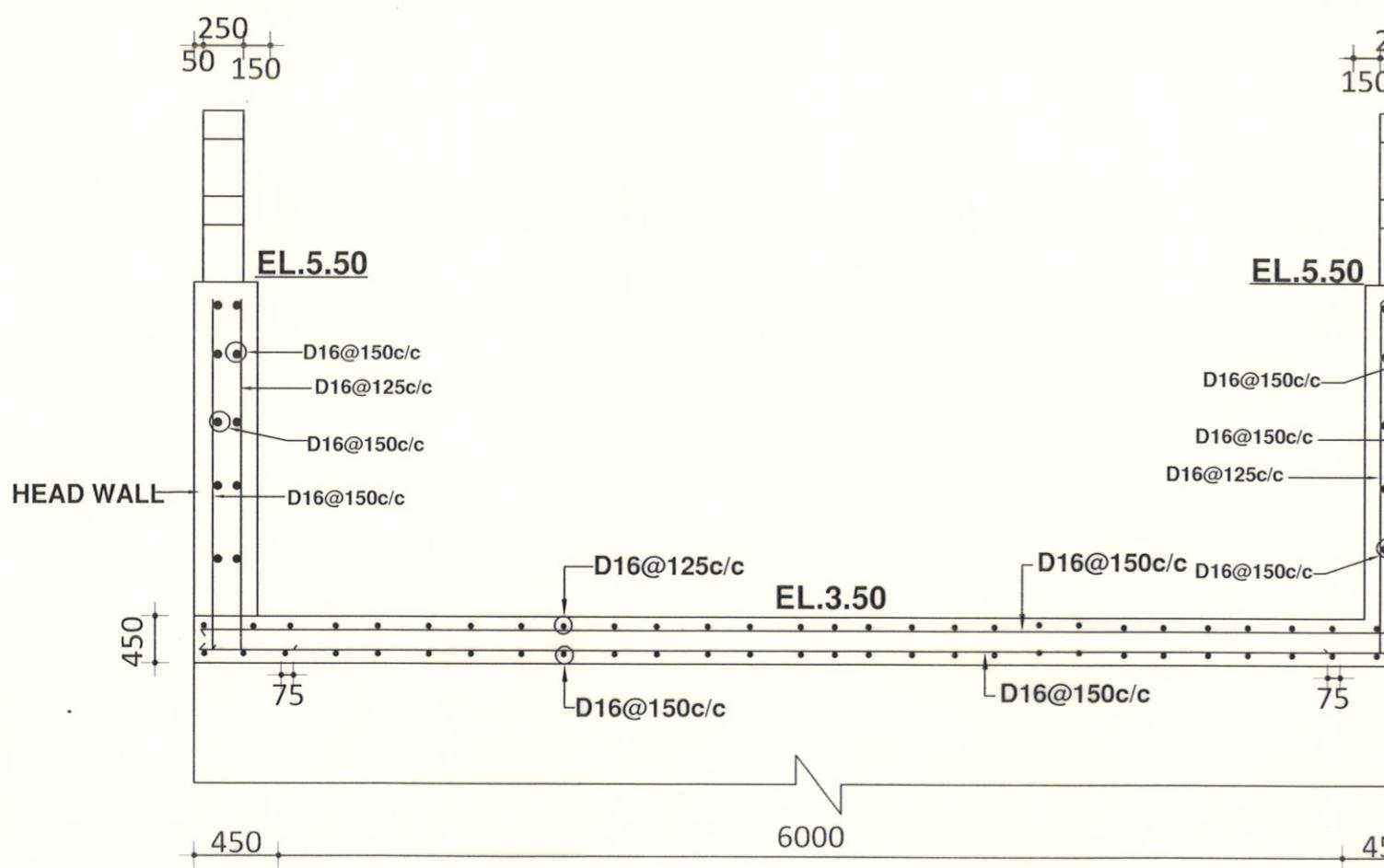
(NOT TO SCALE)

SECTION 1-1(See Sheet No. 05 of 09)
(Sand Filling & Railing Not Shown)

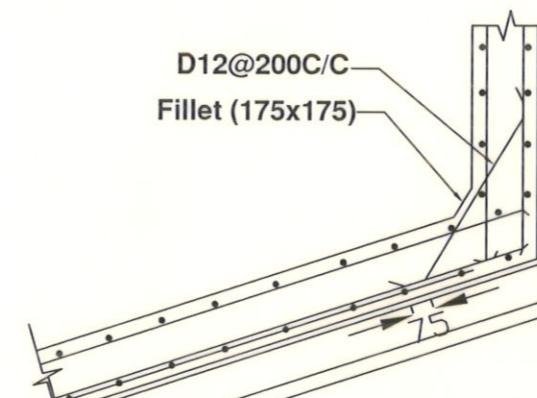
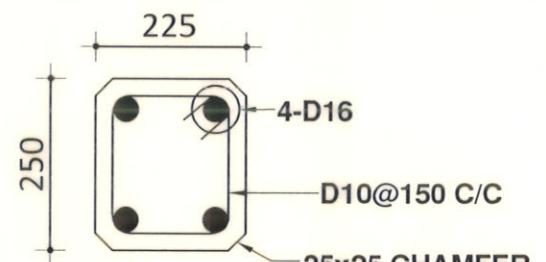
BANGLADESH WATER DEVELOPMENT BOARD	
OFFICE OF THE SUPERINTENDING ENGINEER	
DESIGN CIRCLE-8	
DESIGNED BY:	APPROVED BY:
ZAYED BIN SAIF, AE	
CHECKED & RECOMMENDED BY:	
JAKARIA PERVEZ, EE	MOHAMMAD SAIF UDDIN, SE
DATE: 19-4-2022	DWG NO : DC-8-0263-06/09

NOTES:

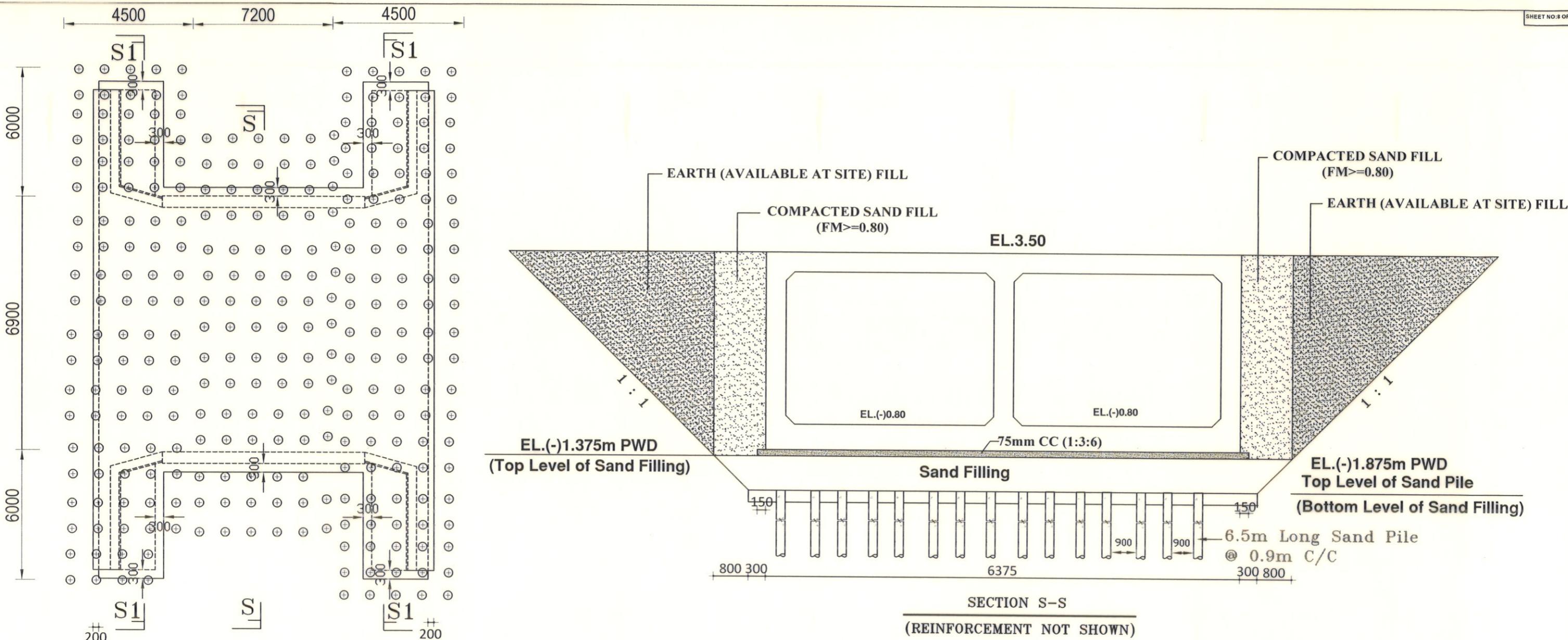
1. VERTICAL REINFORCEMENT OF RAILING POST SHALL BE EMBEDDED UPTO BOTTOM ROD OF TOP SLAB AS SHOWN IN FIGURE.

**DETAILS OF RAILING AND RAILING POST****SECTION Y-Y
(Railing)****REINFORCEMENT DETAILS OF TOP SLAB AND HEAD WALL**

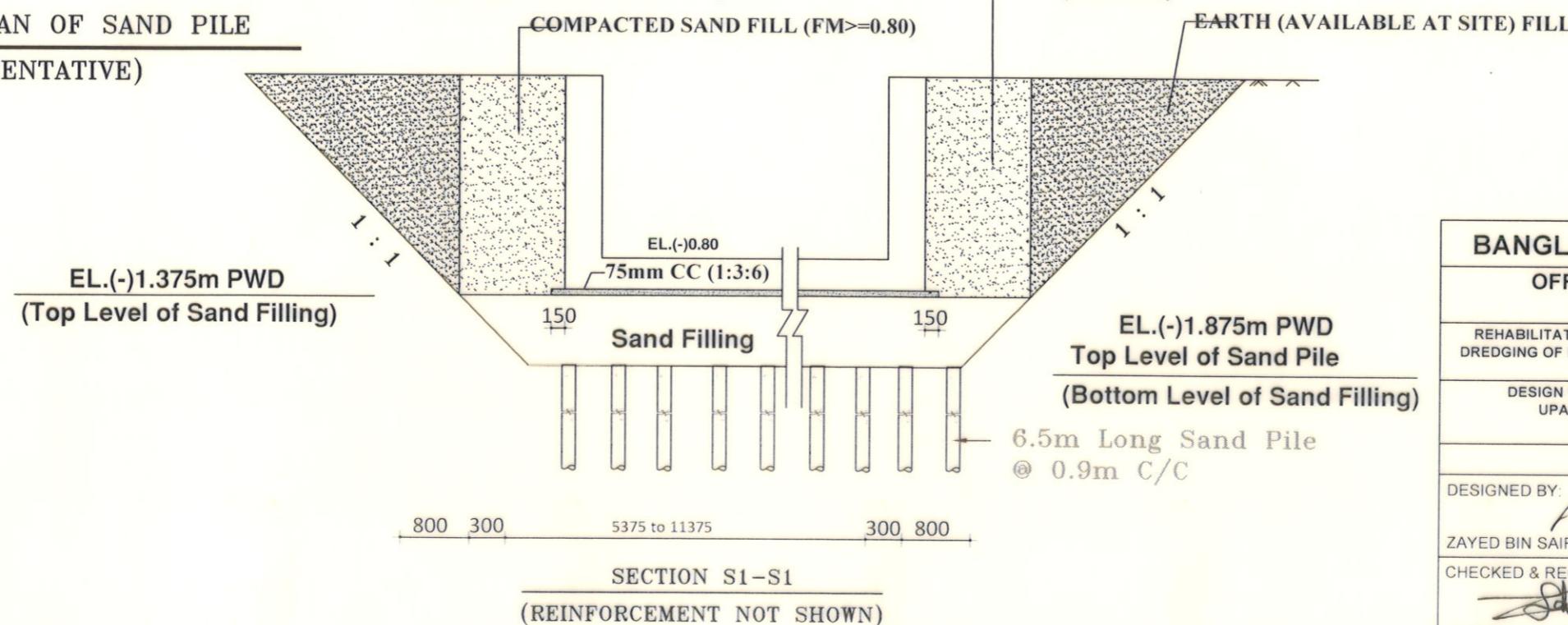
(NOT TO SCALE)
KHULNA O&M DIVISION-1

**Detail 'X' (See Sheet No. 04 of 08)****Detail 'X' (See Sheet No. 04 of 08)****SECTION X-X
(Railing Post)**

BANGLADESH WATER DEVELOPMENT BOARD	
OFFICE OF THE SUPERINTENDING ENGINEER	
DESIGN CIRCLE-8	
REHABILITATION OF MADHUMATI- NABAGONGA SUB- PROJECT & RE-EXCAVATION/ DREDGING OF NABAGONGA RIVER REVIVAL AND CONSERVATION OF ENVIRONMENTAL BALANCE	
DESIGNED BY:	APPROVED BY:
ZAYED BIN SAIF, AE	
CHECKED & RECOMMENDED BY :	
JAKARIA PERVEZ, EE	
DATE: 19-4-2022	DWG NO : DC-8-0263-07/09

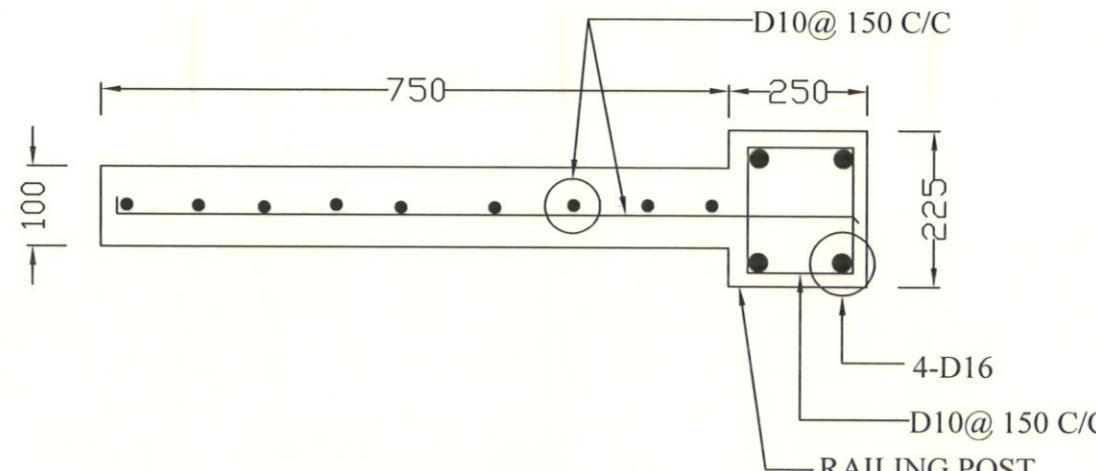
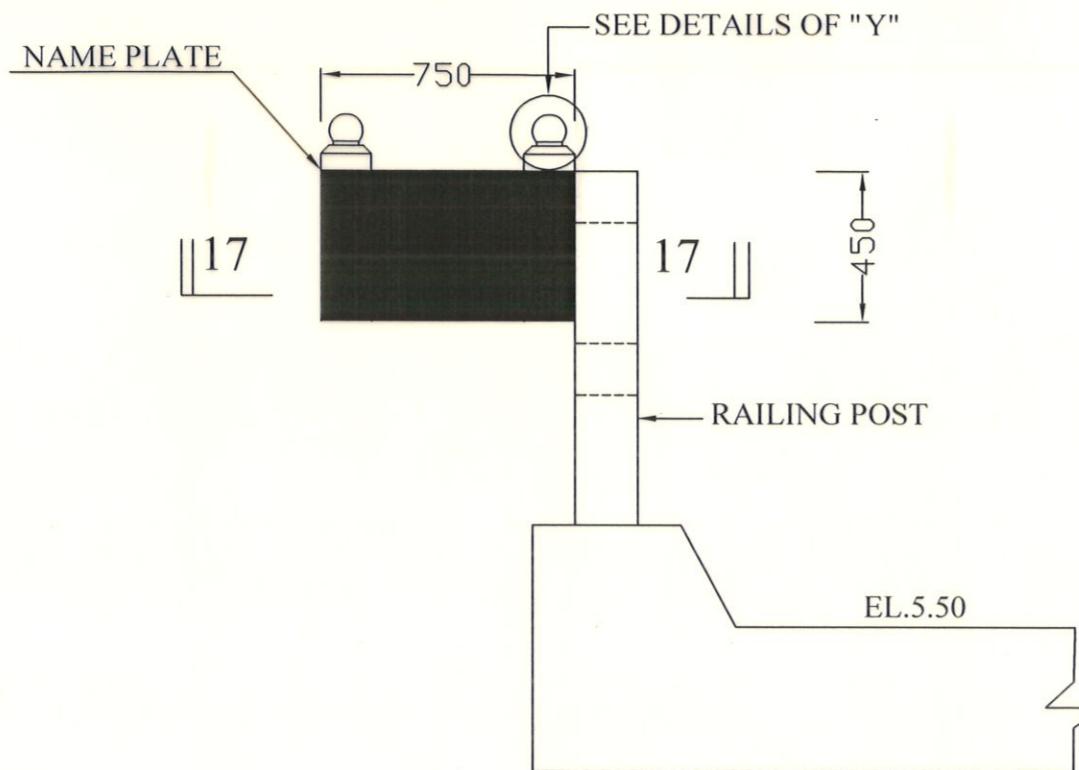


LAYOUT PLAN OF SAND PILE
(TENTATIVE)



(NOT TO SCALE)

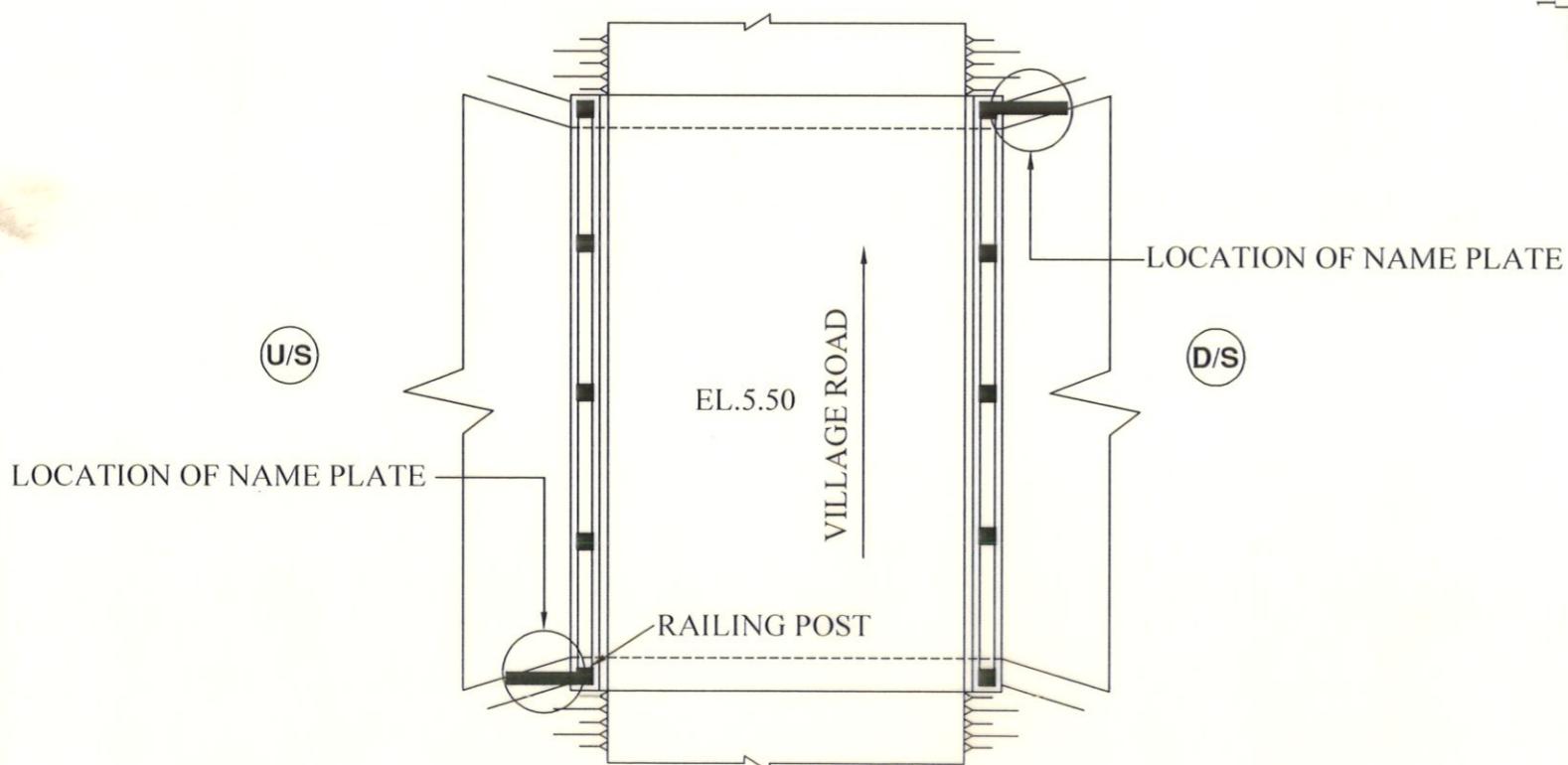
BANGLADESH WATER DEVELOPMENT BOARD	
OFFICE OF THE SUPERINTENDING ENGINEER	
DESIGN CIRCLE-8	
REHABILITATION OF MADHUMATI-NABAGONGA SUB-PROJECT & RE-EXCAVATION/DREDGING OF NABAGONGA RIVER REVIVAL AND CONSERVATION OF ENVIRONMENTAL BALANCE	
DESIGN OF BOX CULVERT (2V- 3.00m X 3.85m), AT KM 3.300 OF MITHAPUR KHAL UPAZILA-LOHAGARA, DISTRICT-NARAIL UNDER NARAIL O&M DIVISION, BWDB, NARAIL.	
TITLE: FOUNDATION	
DESIGNED BY: ZAYED BIN SAIF, AE	APPROVED BY:
CHECKED & RECOMMENDED BY: JAKARIA PERVEZ, EE	<i>[Signature]</i> MOHAMMAD SAIF UDDIN, SE
DATE: 19-4-2022	DWG NO : DC-8-0263-08/09



NOTES

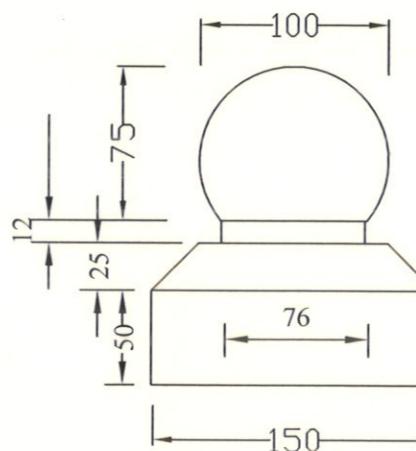
1. THE NAME PLATE SHALL BE PLACED AT THE LEFT SIDE OF BOTH APPROACHES.
2. THE SIZE OF LETTER SHOULD BE 30 mm TO 40 mm & IT SHOULD BE ENGRAVED IN THE PLATE.
3. THE COLOR OF THE LETTER SHOULD BE WHITE ON MEDIUM BLUE SURFACE.
4. THE NAME PLATE SHOULD BE CAST MONOLITHICALLY WITH THE POST AND THE WRITINGS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

DETAILS OF NAME PLATE



PLAN SHOWING NAME PLATE LOCATION ON CULVERT

(NOT TO SCALE)



DETAILS OF "Y"

TYPICAL NAME PLATE

BANGLADESH WATER DEVELOPMENT BOARD OFFICE OF THE SUPERINTENDING ENGINEER DESIGN CIRCLE-8	
REHABILITATION OF MADHUMATI- NABAGONGA SUB- PROJECT & RE-EXCAVATION/ DREDGING OF NABAGONGA RIVER REVIVAL AND CONSERVATION OF ENVIRONMENTAL BALANCE	
DESIGN OF BOX CULVERT (2V- 3.00m X 3.85m), AT KM 3.300 OF MITHAPUR KHAL UPAZILA-LOHAGARA, DISTRICT-NARAIL UNDER NARAIL O&M DIVISION, BWDB, NARAIL.	
TITLE: NAME PLATE DESIGNED BY: ZAYED BIN SAIF, AE CHECKED & RECOMMENDED BY: JAKARIA PERVEZ, EE	APPROVED BY: MOHAMMAD SAIF UDDIN, SE
DATE: 19-4-2022	DWG NO : DC-8-0263-09/09