

H. INCIDENTAL WORKS

THE STUDY ON CONSTRUCTION OF THE BRIDGE
OVER THE RIVER RUPSA IN KHULNA (PHASE 2)

DRAINAGE DETAILS
4 @ 1200 PIPE CULVERT

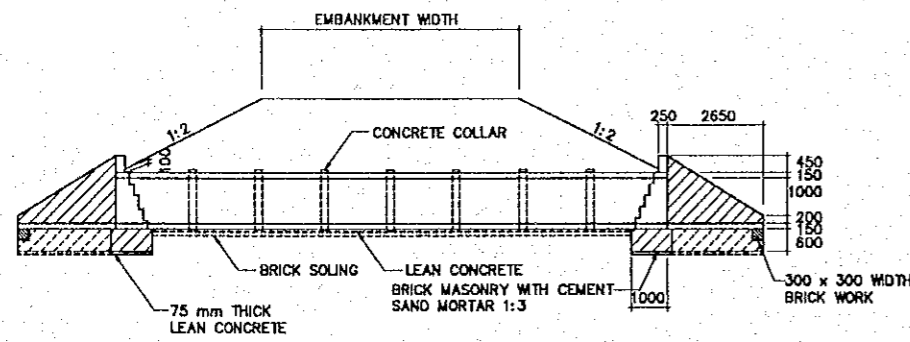
SCALE AS SHOWN
SHEET NO. H-01

NOTES :

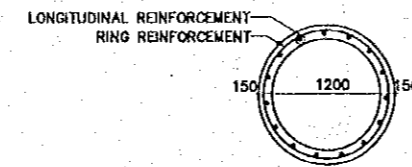
- 1 ALL DIMENSIONS ARE IN MILLIMETER UNLESS OTHERWISE SPECIFIED.
- 2 COARSE AGGREGATE FOR CONCRETE SHALL BE 20mm DOWN GRADED STONE CHIPS CONFORMING TO ASTM C33
- 3 28 DAYS CYLINDER STRENGTH OF CONCRETE SHALL BE 21 MPa.
- 4 REINFORCEMENT SHALL BE STRUCTURAL GRADE DEFORMED BARS WITH MINIMUM YIELD STRENGTH OF 276 MPa.
- 5 BED LEVEL SHOULD BE FIXED AT A LEVEL AFTER REMOVING ORGANIC SOIL.
- 6 CRADLE BED SHALL BE MADE WITH SAND HAVING F.M NOT LESS THAN 1.5
- 7 COMPACTION OF SAND BED SHALL BE DONE AFTER FULL SATURATION.
- 8 BRICK SHALL BE OF STANDARD SIZE AND REGULAR SHOPE WITH SHARP CORNERS.
- 9 MASONRY WORK SHALL HAVE MIXING RATIO OF MORTAR : CEMENT = 1:3
- 10 FINNESS MODULUS (F.M) OF SAND SHALL BE GREATER THAN 1.5
- 11 OPTIMUM WATER CONTENT IN MORTAR SHALL BE 50% OF THE WEIGHT OF A CEMENT BAG.
- 12 CURING SHALL BE DONE AT LEAST FOR 15 DAYS

TABLE

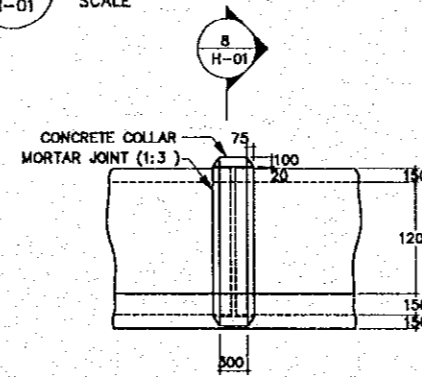
INTERNAL DIA D (mm)	HEIGHT OF FILL H (mm)	THICKNESS T (mm)	RING REINFORCEMENT		LONGITUDINAL REINFORCEMENT		D-LOAD CAPACITY REQUIRED (KN/m/m)
			DIA (mm)	SPACING (mm)	DIA (mm)	SPACING (mm)	
1200	1153	150	10	150	6	75	29.32



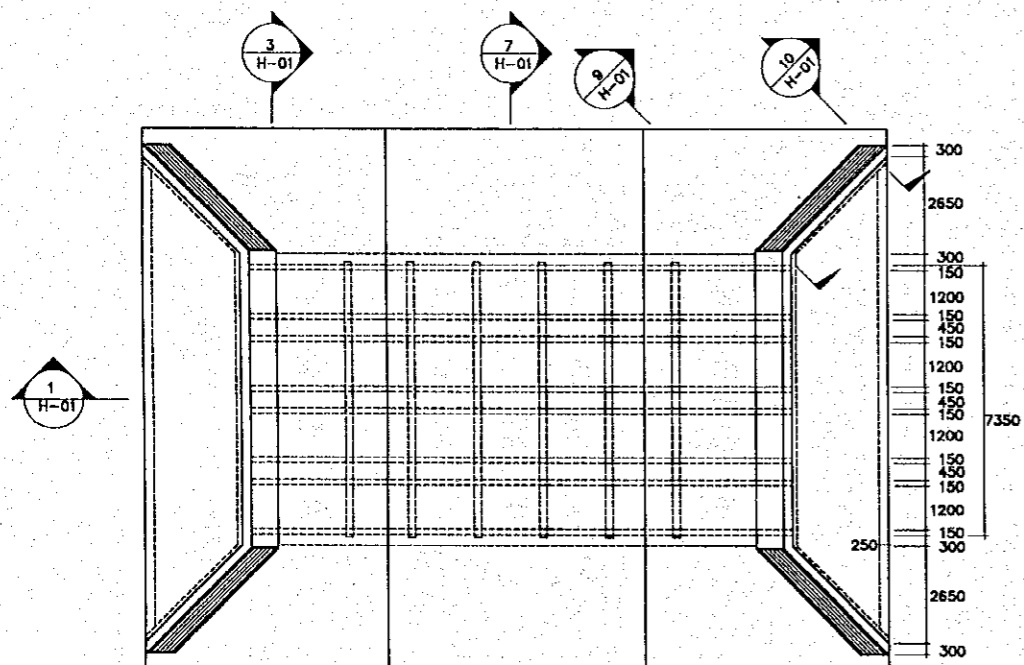
1 SECTION AT 1-1
SCALE 1:100



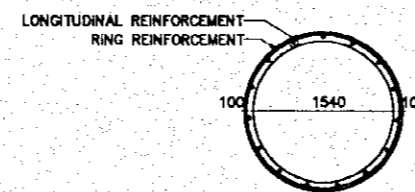
4 REINFORCEMENT DETAILS OF PIPE
SCALE 1:40



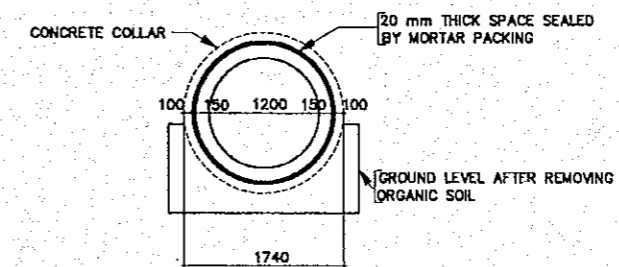
5 DETAILS OF CONCRETE COLLAR JOINT
SCALE 1:40



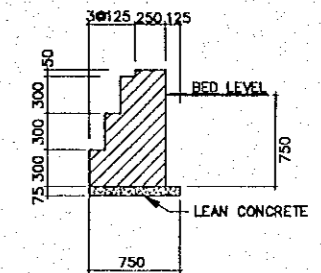
2 PLAN
SCALE 1:100



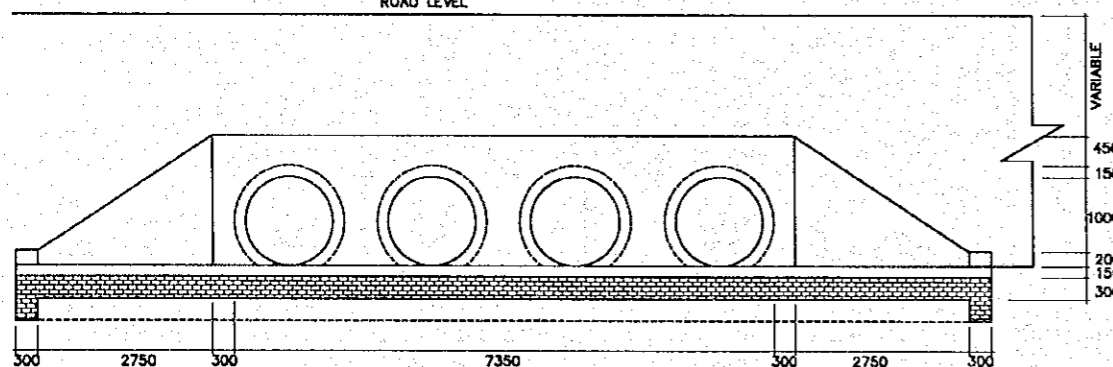
6 DETAILS OF CONCRETE COLLAR
SCALE 1:40



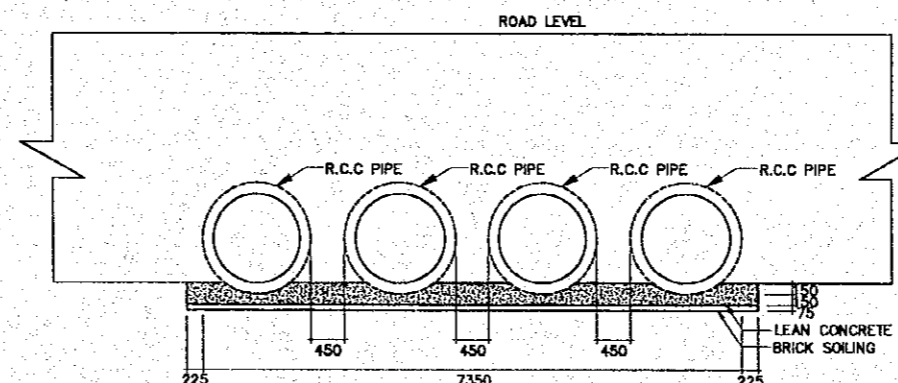
8 SECTION 8-8
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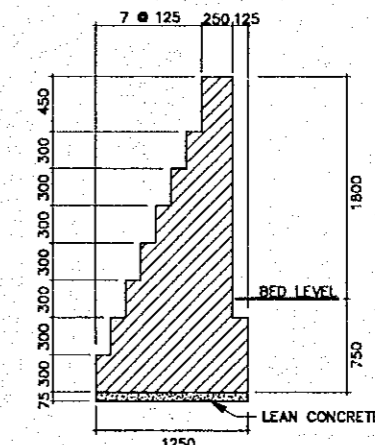
10 SECTION 10-10
SCALE 1:30



3 ELEVATION OF HEAD WALL
SCALE 1:50



7 SECTION 7-7
SCALE 1:50



9 SECTION 9-9
SCALE 1:30

THE STUDY ON CONSTRUCTION OF THE BRIDGE
OVER THE RIVER RUPSA IN KHULNA (PHASE 2)

DRAINAGE DETAILS
3 @ 1200 PIPE CULVERT

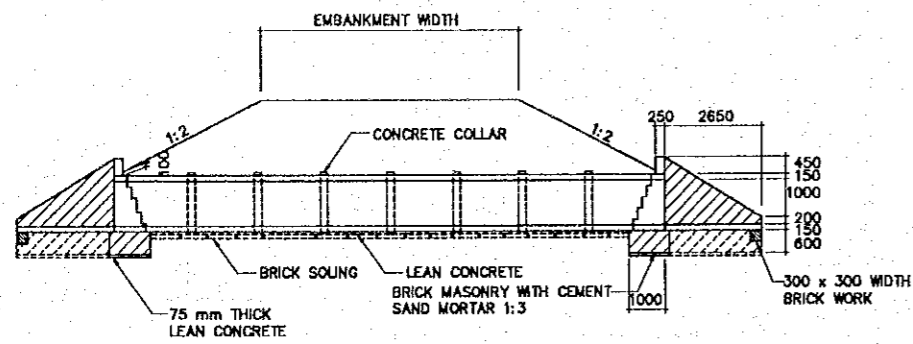
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NOTES :

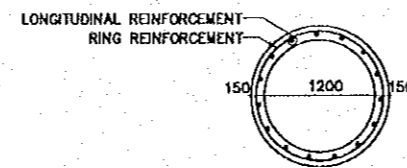
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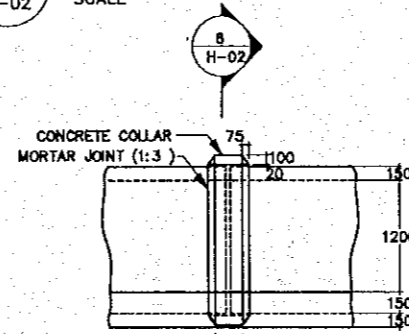
INTERNAL DIA D (mm)	HEIGHT OF FILL H (mm)	THICKNESS T (mm)	RING REINFORCEMENT		LANGTUDINAL REINFORCEMENT		D-LOAD CAPACITY REQUIRED (KN/m/m)
			DIA (mm)	SPACING (mm)	DIA (mm)	SPACING (mm)	
1200	912	150	10	150	6	75	31.27



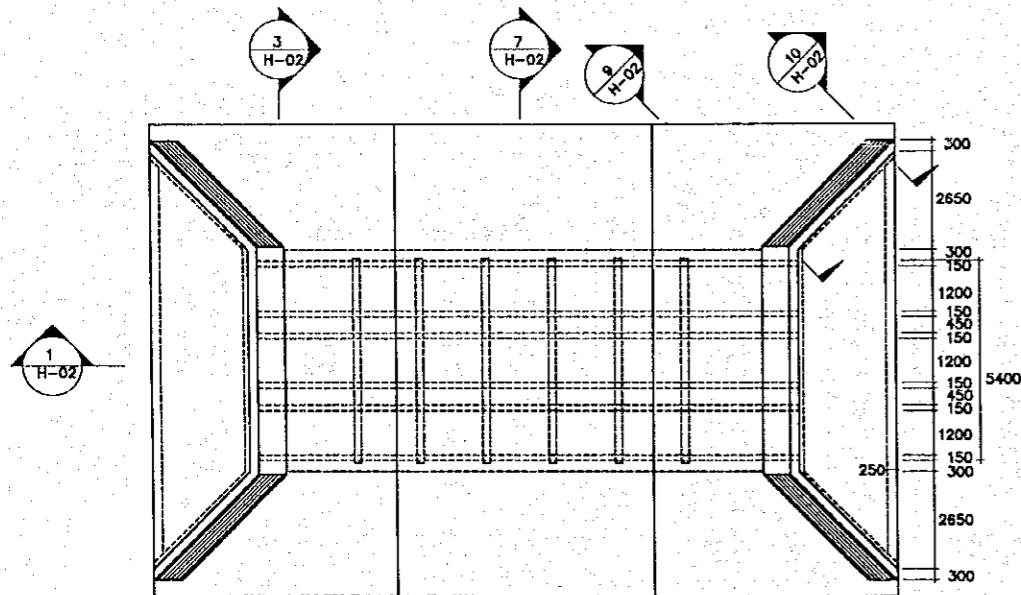
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SCALE 1:100



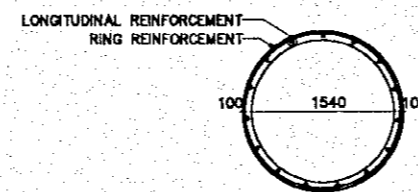
4 REINFORCEMENT DETAILS OF PIPE
SCALE 1:40



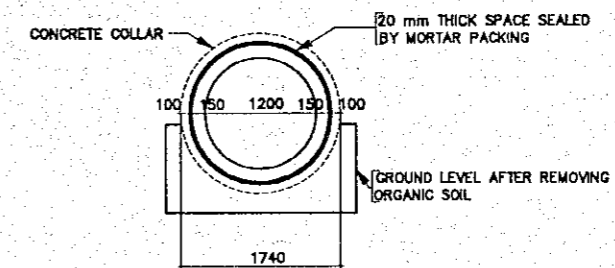
5 DETAILS OF CONCRETE COLLAR JOINT
SCALE 1:40



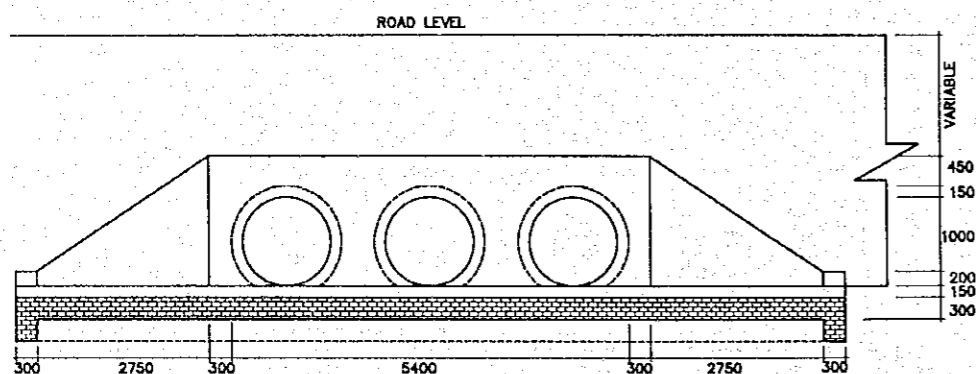
2 PLAN
SCALE 1:100



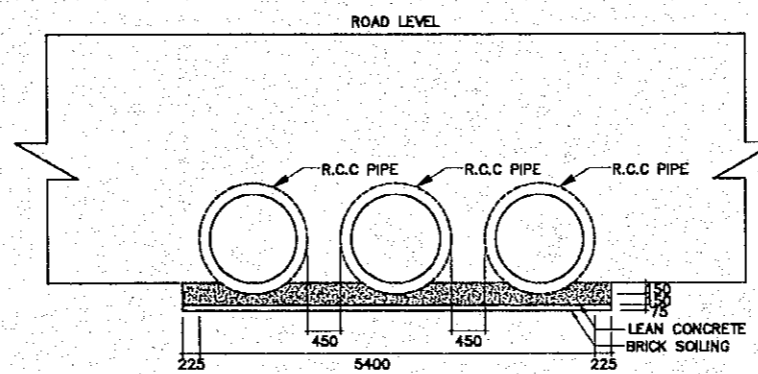
6 DETAILS OF CONCRETE COLLAR
SCALE 1:40



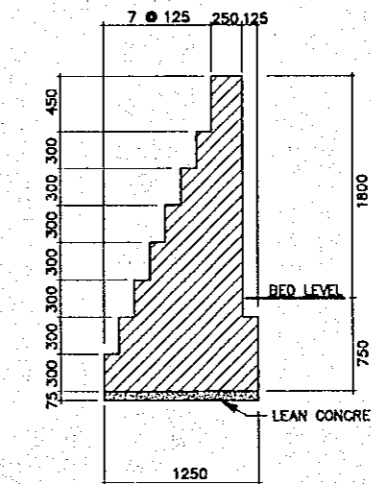
8 SECTION 8-8
SCALE 1:40



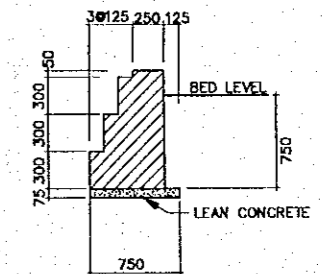
3 ELEVATION OF HEAD WALL
SCALE 1:50



7 SECTION 7-7
SCALE 1:50



9 SECTION 9-9
SCALE 1:30



10 SECTION 10-10
SCALE 1:30

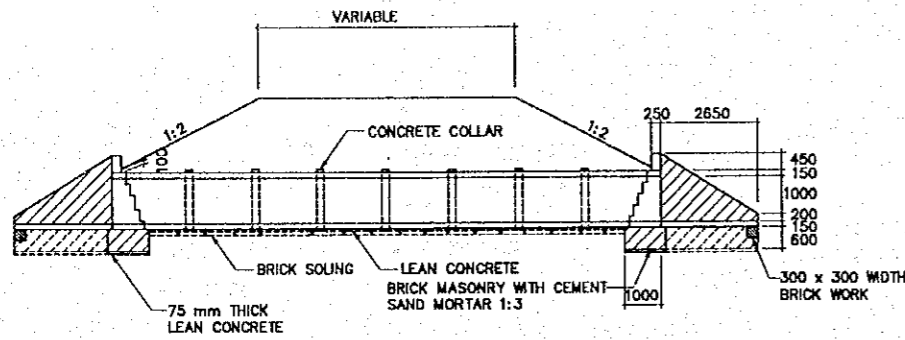
THE STUDY ON CONSTRUCTION OF THE BRIDGE
OVER THE RIVER RUPSA IN KHULNA (PHASE 2)

DRAINAGE DETAILS
1 @ 1200 PIPE CULVERT

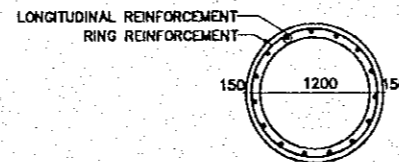
SCALE AS SHOWN
SHEET NO. H-03

STANDARD DESIGNS OF REINFORCED CONCRETE PIPES
FOR H-20 LOADING

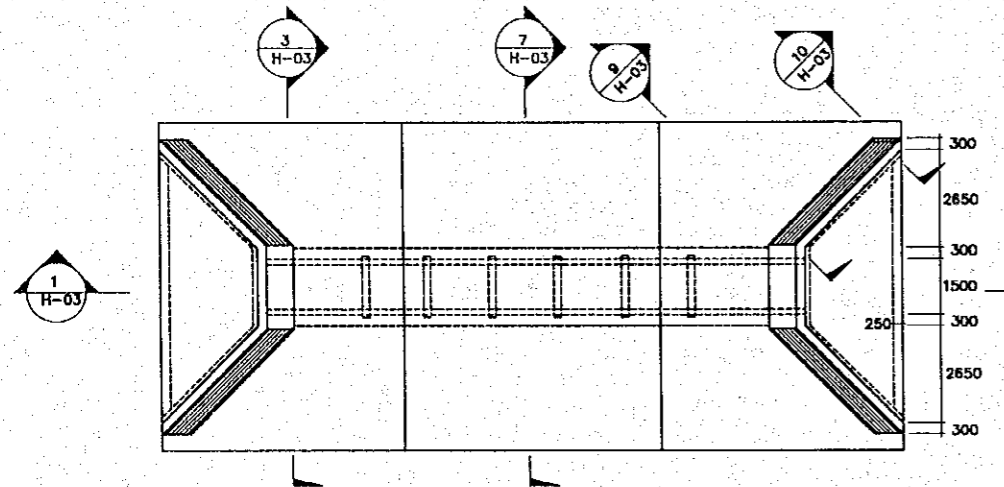
INTERNAL DIA D (mm)	HEIGHT OF FILL H (mm)	THICKNESS T (mm)	RING REINFORCEMENT		LONGITUDINAL REINFORCEMENT		D-LOAD CAPACITY REQUIRED (KN/m/m)
			DIA (mm)	SPACING (mm)	DIA (mm)	SPACING (mm)	
1200	800	150	12	250	8	75	43.86
	1000	150	10	175	8	75	28.73
	2000	150	10	150	6	75	34.53
	3000	150	12	250	8	75	42.97
	4000	150	10	75	8	75	60.64
5000	150	12	100	8	75	77.25	



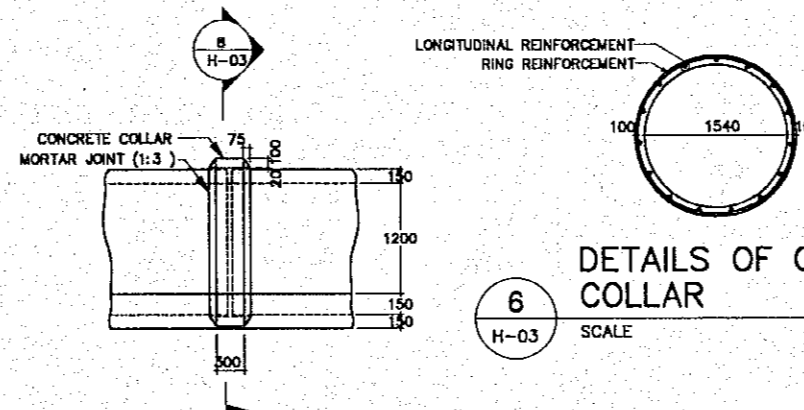
1 SECTION AT 1-1
H-03 SCALE 1:100



4 REINFORCEMENT DETAILS OF PIPE
H-03 SCALE 1:40



2 PLAN
H-03 SCALE 1:100

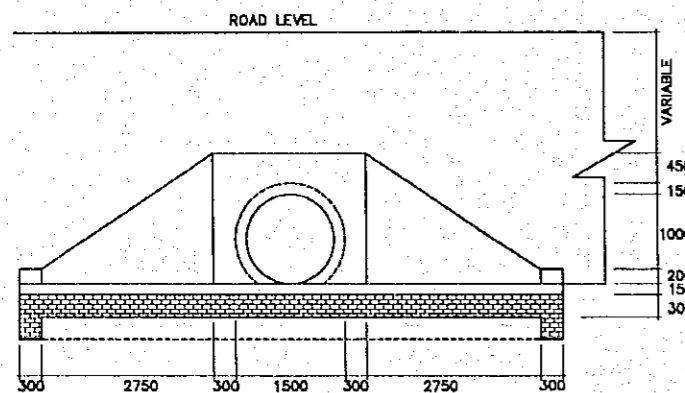


6 DETAILS OF CONCRETE COLLAR
H-03 SCALE 1:40

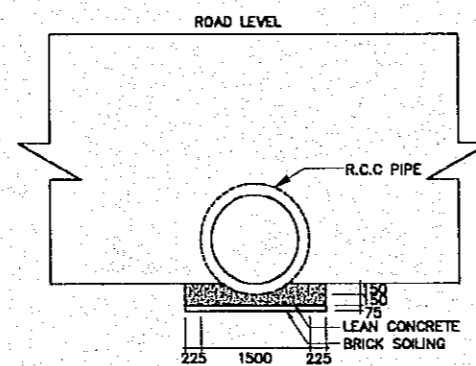
5 DETAILS OF CONCRETE COLLAR JOINT
H-03 SCALE 1:40

NOTES :

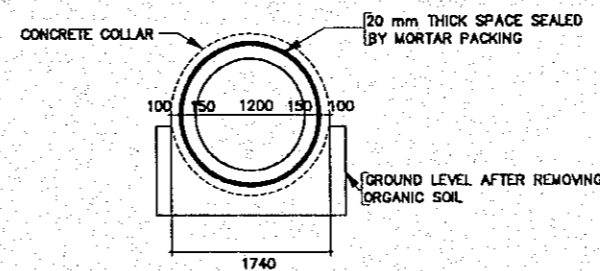
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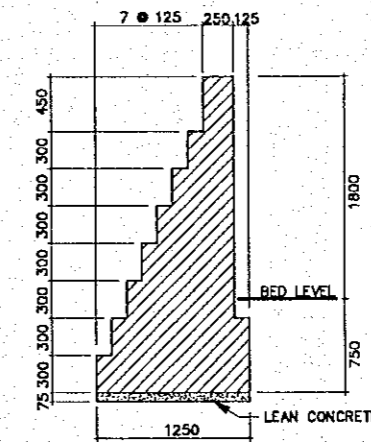
3 ELEVATION OF HEAD WALL
H-03 SCALE 1:50



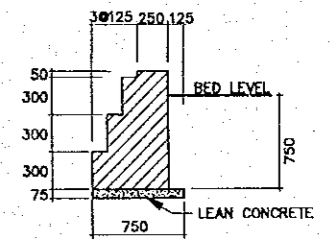
7 SECTION 7-7
H-03 SCALE 1:50



8 SECTION 8-8
H-03 SCALE 1:40



9 SECTION 9-9
H-03 SCALE 1:30



10 SECTION 10-10
H-04 SCALE 1:30

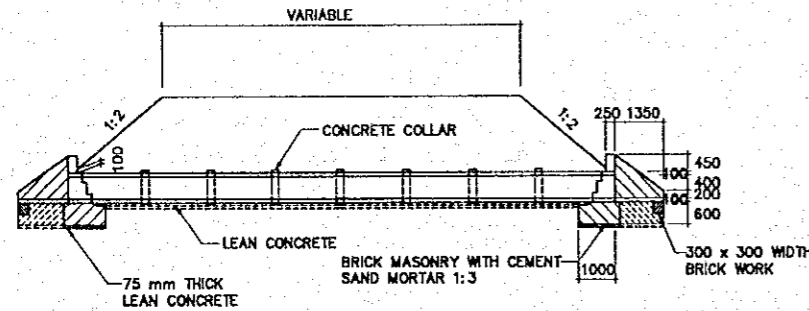
THE STUDY ON CONSTRUCTION OF THE BRIDGE
OVER THE RIVER RUPSA IN KHULNA (PHASE 2)

DRAINAGE DETAILS
1 @ 600 PIPE CULVERT

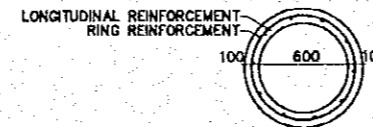
SCALE AS SHOWN SHEET NO. H-04

STANDARD DESIGNS OF REINFORCED CONCRETE PIPES
FOR H-20 LOADING

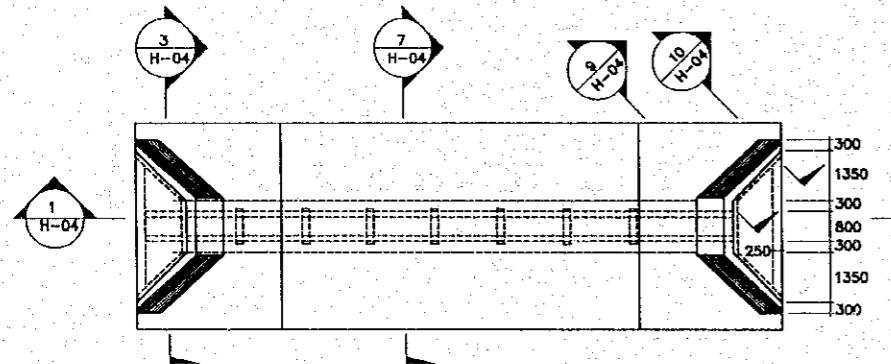
INTERNAL DIA D (mm)	HEIGHT OF FILL H (mm)	T (mm)	RING REINFORCEMENT		LONGITUDINAL REINFORCEMENT		D-LOAD CAPACITY REQUIRED (KN/m/m)
			DIA (mm)	SPACING (mm)	DIA (mm)	SPACING (mm)	
600	600	100	6	100	6	125	62.36
	1000	100	6	150	6	125	39.37
	2000	100	6	150	6	125	42.86
	3000	100	6	125	6	125	47.13
	4000	100	10	200	6	125	64.37
5000	100	10	150	6	125	81.60	



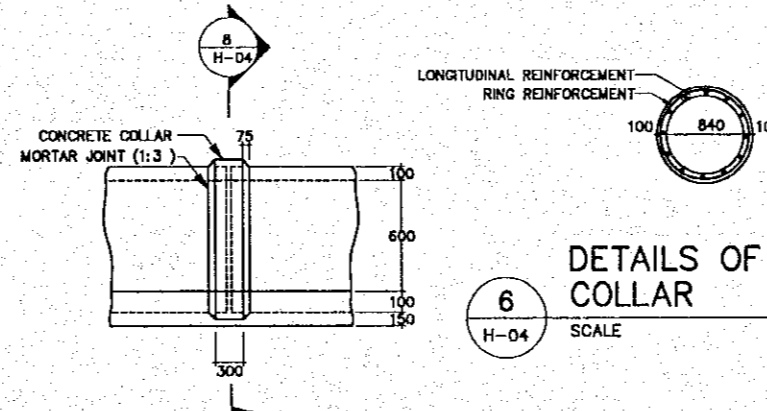
1 SECTION AT 1-1
H-04 SCALE 1:100



4 REINFORCEMENT DETAILS OF PIPE
H-04 SCALE 1:25



2 PLAN
H-04 SCALE 1:100



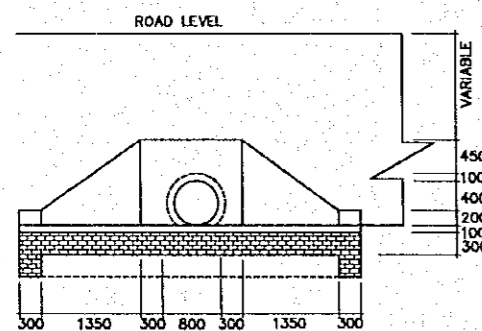
5 DETAILS OF CONCRETE COLLAR JOINT
H-04 SCALE 1:40

DETAILS OF CONCRETE COLLAR

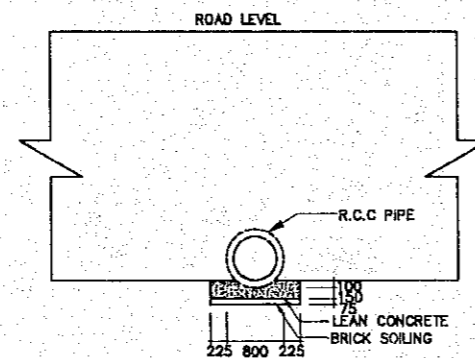
6 SCALE 1:40

NOTES :

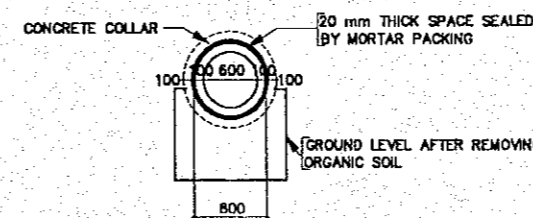
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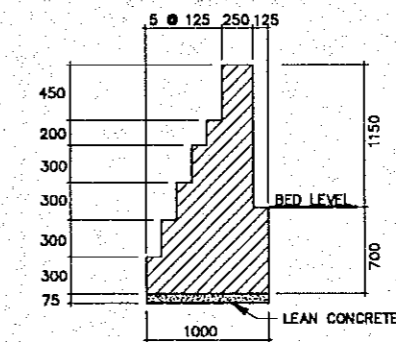
3 ELEVATION OF HEAD WALL
H-04 SCALE 1:50



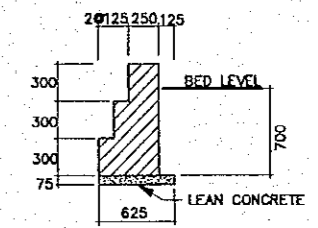
7 SECTION 7-7
H-04 SCALE 1:50



8 SECTION 8-8
H-04 SCALE 1:40



9 SECTION 9-9
H-04 SCALE 1:30



10 SECTION 10-10
H-04 SCALE 1:30

THE STUDY ON CONSTRUCTION OF THE BRIDGE
OVER THE RIVER RUPSA IN KHULNA (PHASE 2)

DRAINAGE DETAILS
DIA.600,400 & 300 PIPE CULVERTS

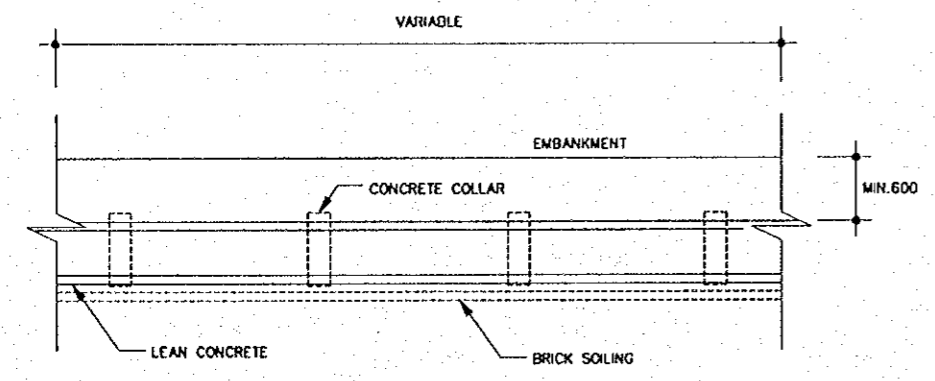
SCALE AS SHOWN
SHEET NO. H-05

STANDARD DESIGNS OF REINFORCED CONCRETE PIPES
FOR H-20 LOADING

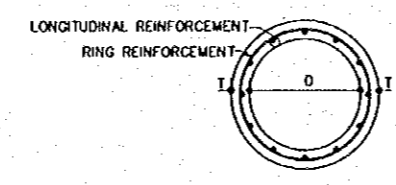
INTERNAL DIA D (mm)	HEIGHT OF FILL H (mm)	T (mm)	RING REINFORCEMENT		LONGITUDINAL REINFORCEMENT		D-LOAD CAPACITY REQUIRED (KN/m/m)	THICKNESS OF CONCRETE COLLAR TC
			DIA (mm)	SPACING (mm)	DIA (mm)	SPACING (mm)		
600	600	100	6	100	6	125	62.36	100
	1000	100	6	150	6	125	39.37	
	2000	100	6	150	6	125	42.86	
400	600	75	6	175	6	150	70.81	75
	1000	75	6	200	6	150	44.47	
	2000	75	6	200	6	150	45.78	
300	600	75	6	200	6	150	78.78	75
	1000	75	6	200	6	150	48.56	
	2000	75	6	200	6	150	57.54	

NOTES :

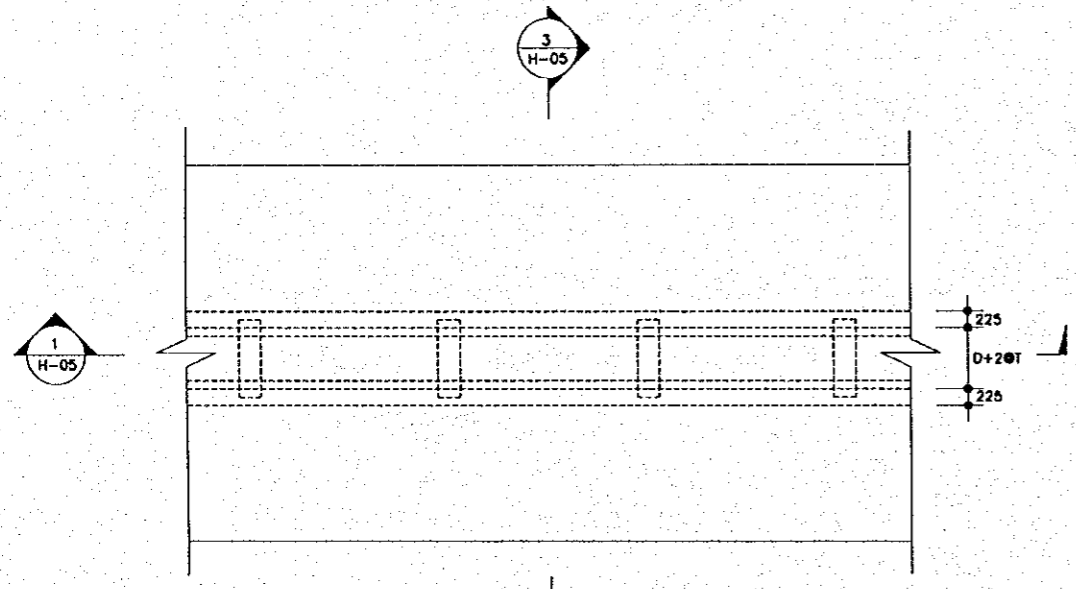
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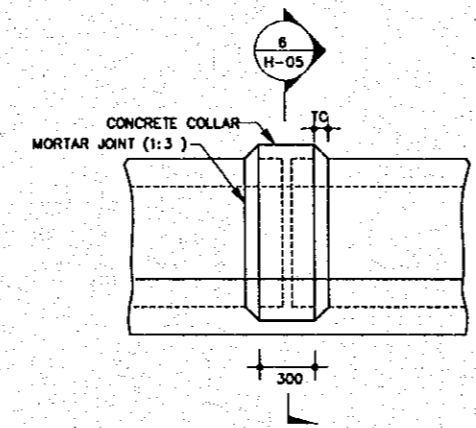
1 SECTION AT A-A
SCALE 1:50



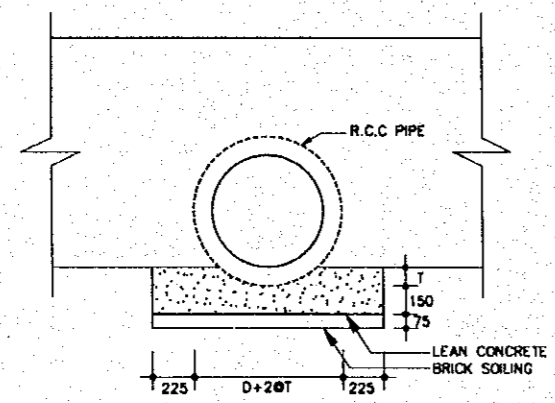
4 REINFORCEMENT
DETAILS OF PIPE
SCALE 1:20



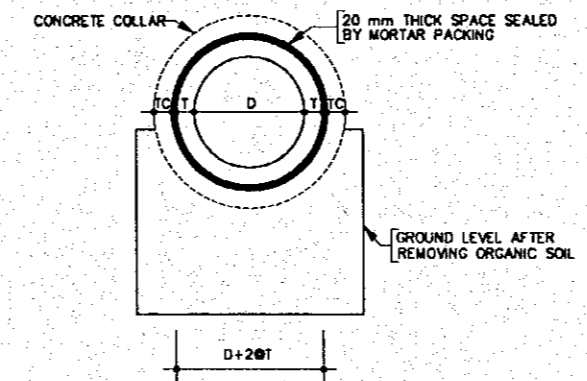
2 PLAN
SCALE 1:50



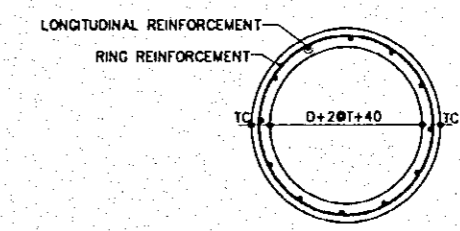
5 DETAILS OF CONCRETE COLLAR JOINT
SCALE 1:20



3 SECTION B-B
SCALE 1:20



6 SECTION C-C
SCALE 1:20

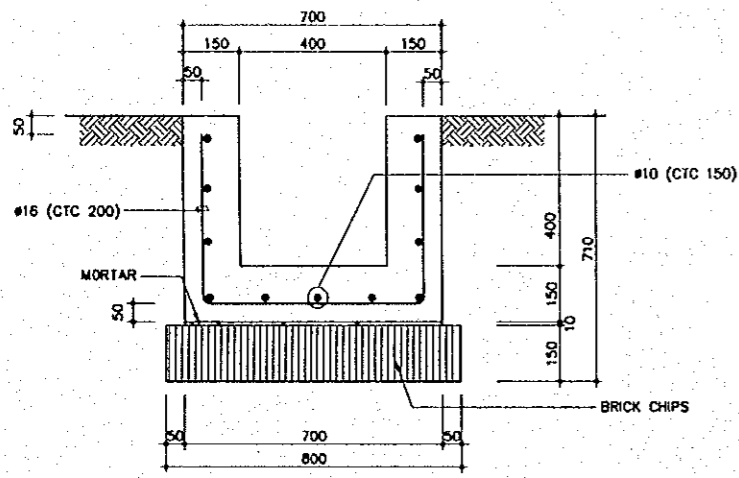


7 DETAILS OF
CONCRETE COLLAR
SCALE 1:20

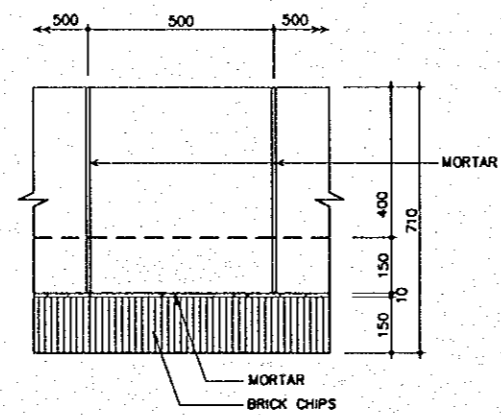
THE STUDY ON CONSTRUCTION OF THE BRIDGE
OVER THE RIVER RUPSA IN KHULNA (PHASE 2)

DRAINAGE DETAILS-DITCHES

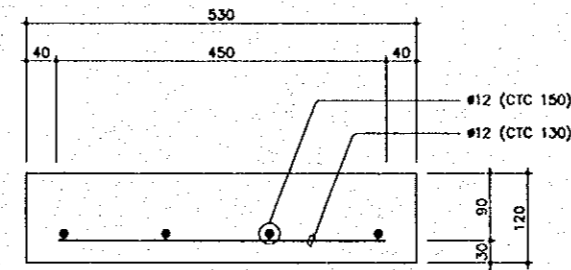
SCALE	SHEET NO.
1:10	H-06



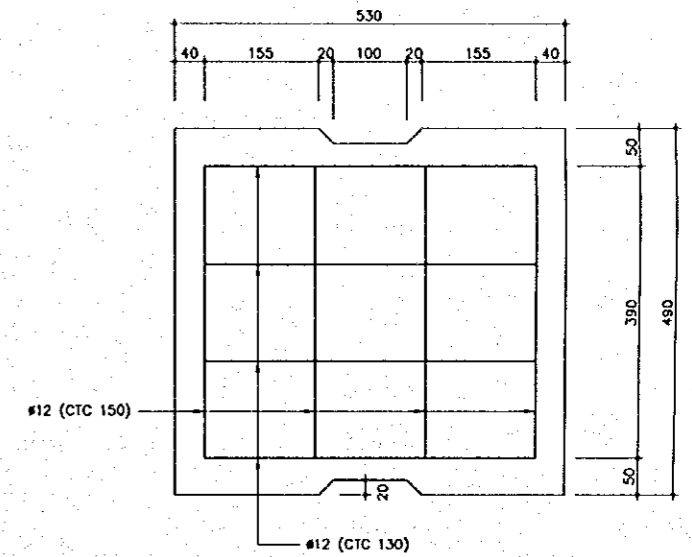
1 CROSS SECTION
SCALE 1:10



2 PROFILE
SCALE 1:10

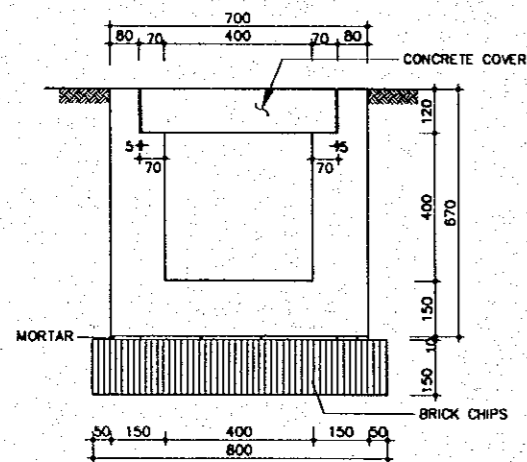


4 COVER CROSS SECTION
SCALE 1:10

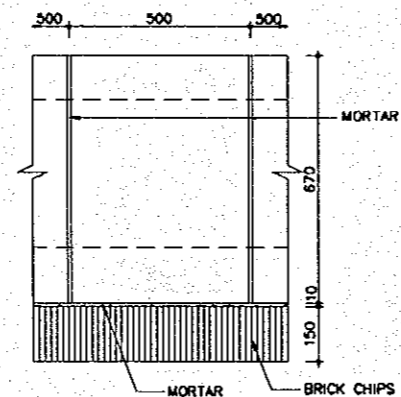


5 COVER PLAN
SCALE 1:10

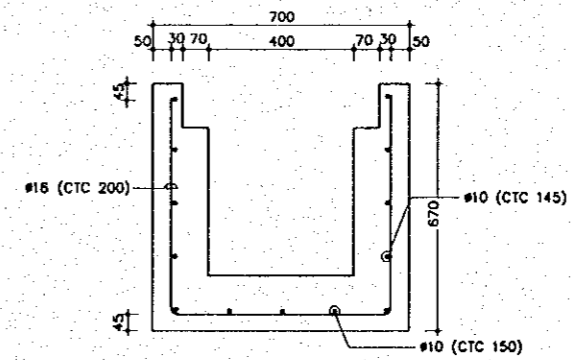
A DITCH(DS-1)
SCALE 1:10



1 CROSS SECTION
SCALE 1:10



2 PROFILE
SCALE 1:10



3 RE-BAR DETAIL
SCALE 1:10

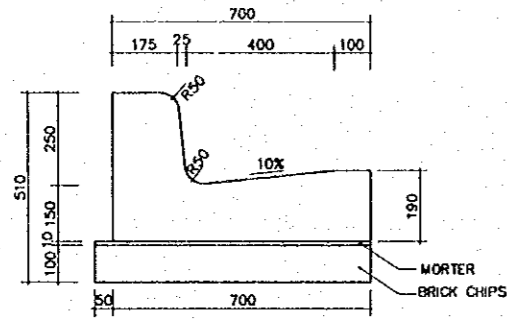
B DITCH(DS-2)
SCALE 1:10

NOTE:
ALL DIMENSIONS ARE IN MILLIMETERS
UNLESS OTHERWISE SHOWN.

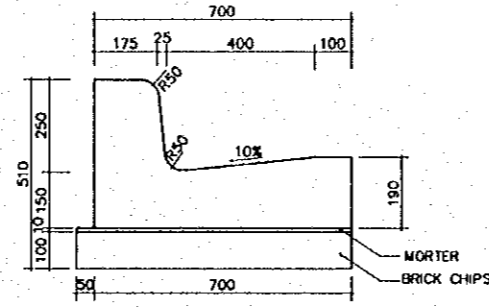
THE STUDY ON CONSTRUCTION OF THE BRIDGE
OVER THE RIVER RUPSA IN KHULNA (PHASE 2)

DRAINAGE DETAILS -- CONCRETE CURB

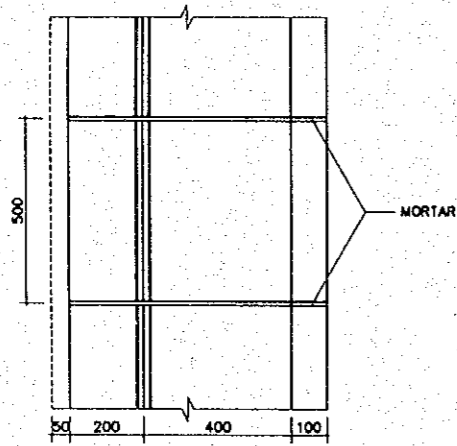
SCALE	SHEET NO.
1:10	H-07



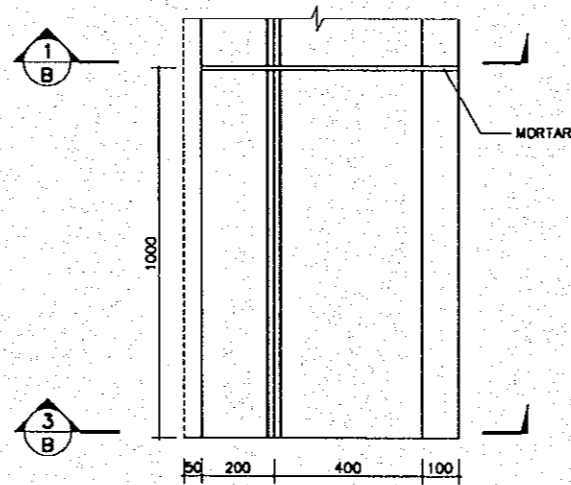
1 CROSS SECTION
A SCALE 1:10



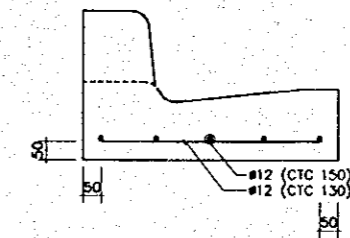
1 CROSS SECTION 1-1
B SCALE 1:10



2 PLAN
A SCALE 1:10

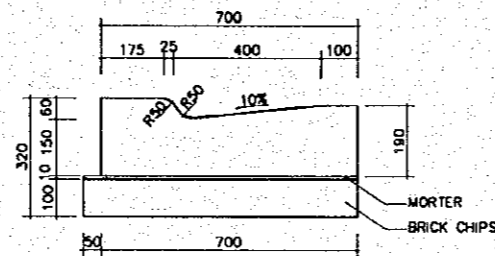


2 PLAN
B SCALE 1:10



1 RE-BAR DETAIL
A,B SCALE 1:10

A CONCRETE CURB(CC-1)
H-07 SCALE 1:10



3 CROSS SECTION 2-2
B SCALE 1:10

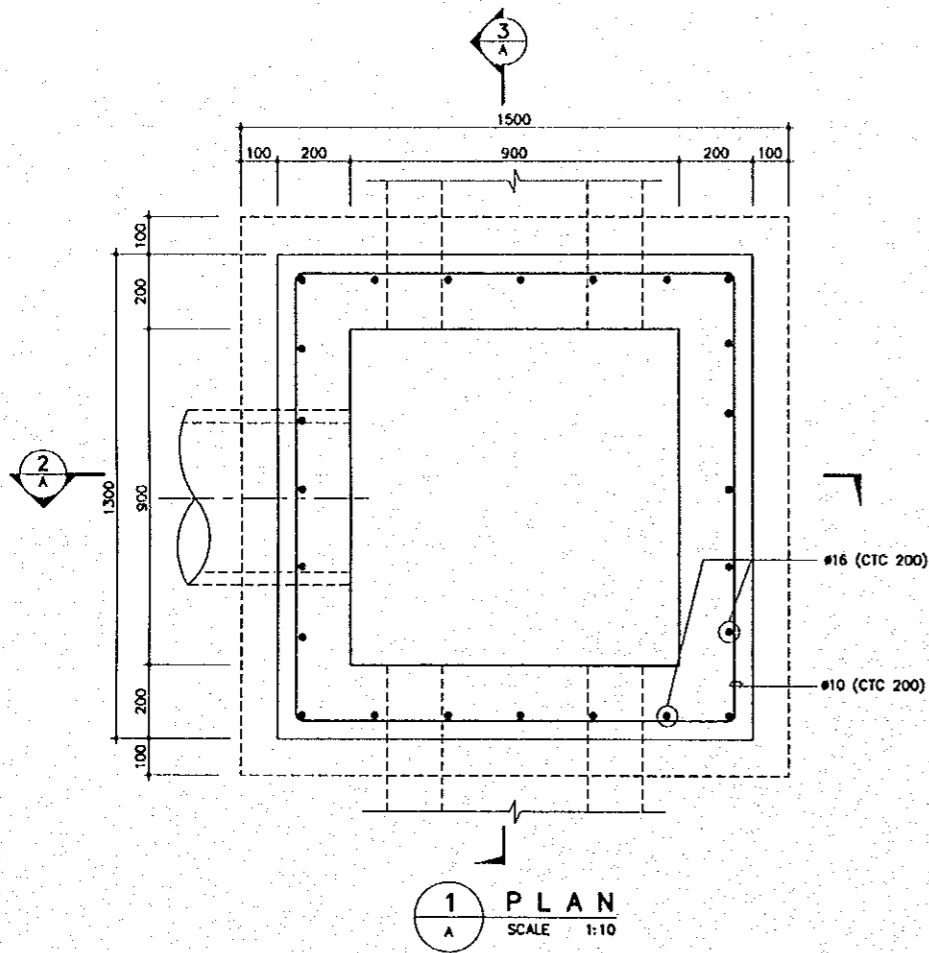
B CONCRETE CURB(CC-2)
H-07 SCALE 1:10

NOTE:
ALL DIMENSIONS ARE IN MILLIMETERS
UNLESS OTHERWISE SHOWN.

THE STUDY ON CONSTRUCTION OF THE BRIDGE
OVER THE RIVER RUPSA IN KHULNA (PHASE 2)

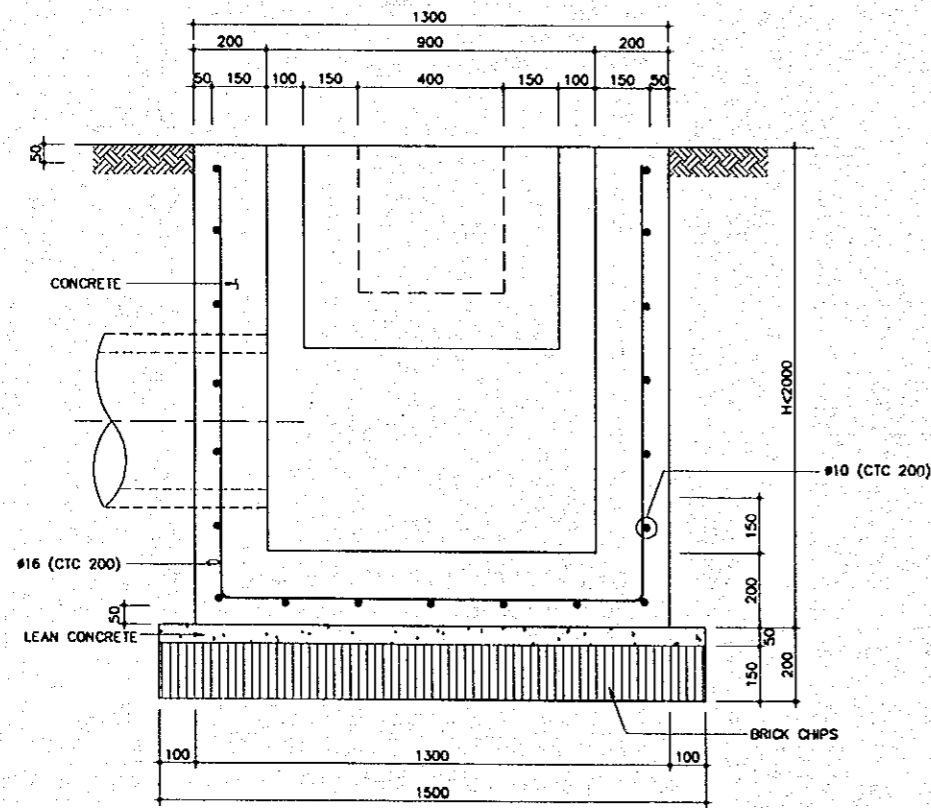
DRAINAGE DETAILS - CATCH BASIN (1)

SCALE	SHEET NO.
1:10	H-08

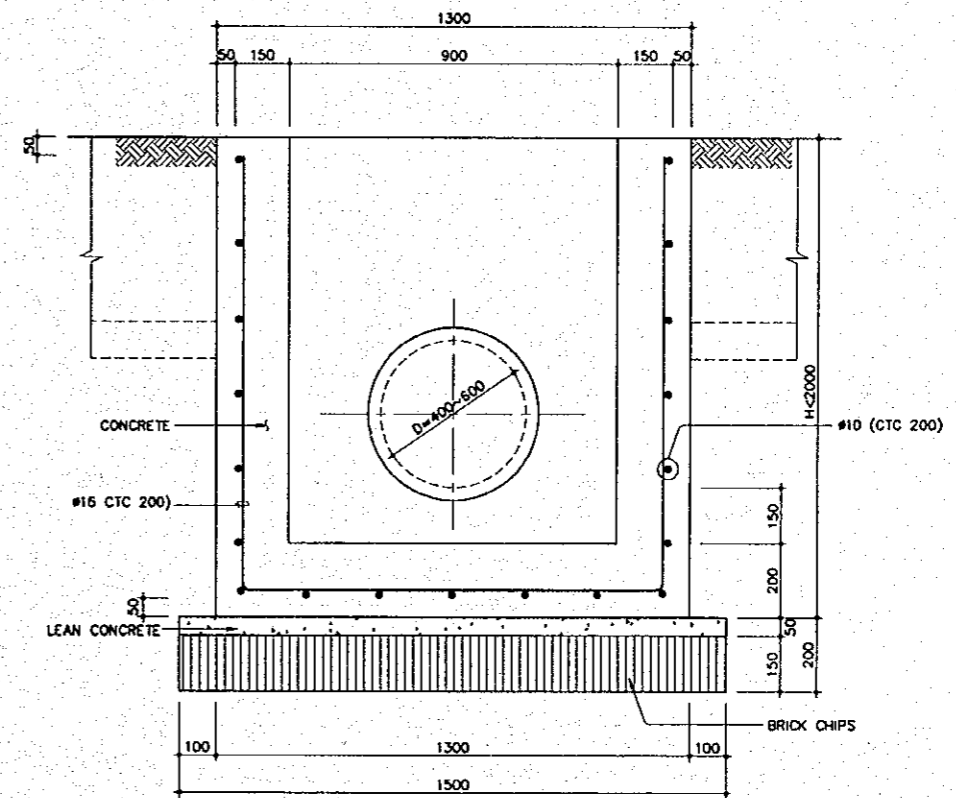


1 PLAN
SCALE 1:10

NOTE:
ALL DIMENSIONS ARE IN MILLIMETERS
UNLESS OTHERWISE SHOWN.



2 SECTION
SCALE 1:10



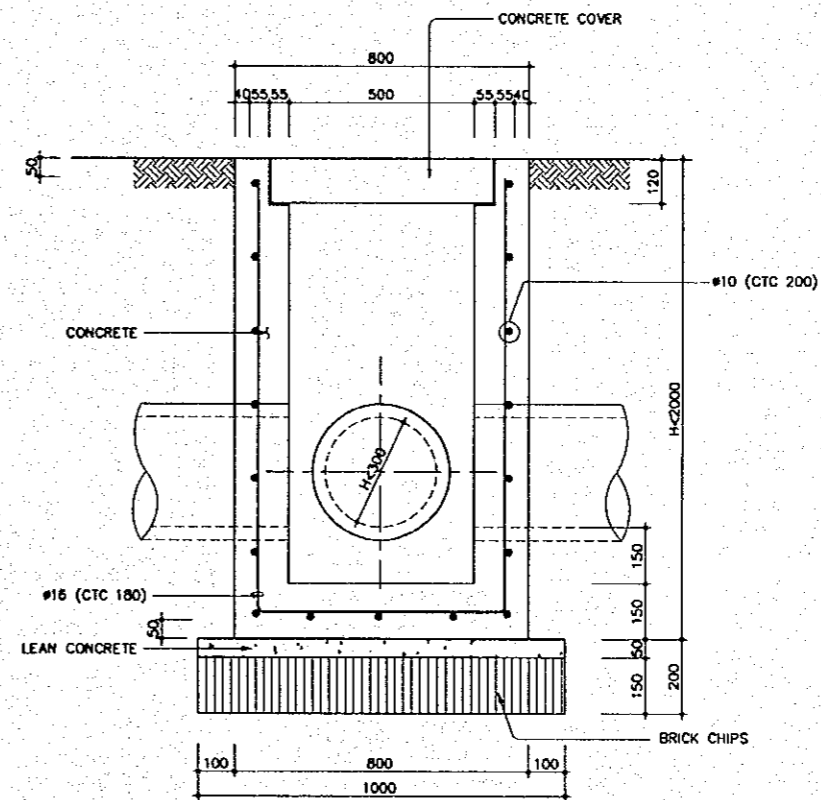
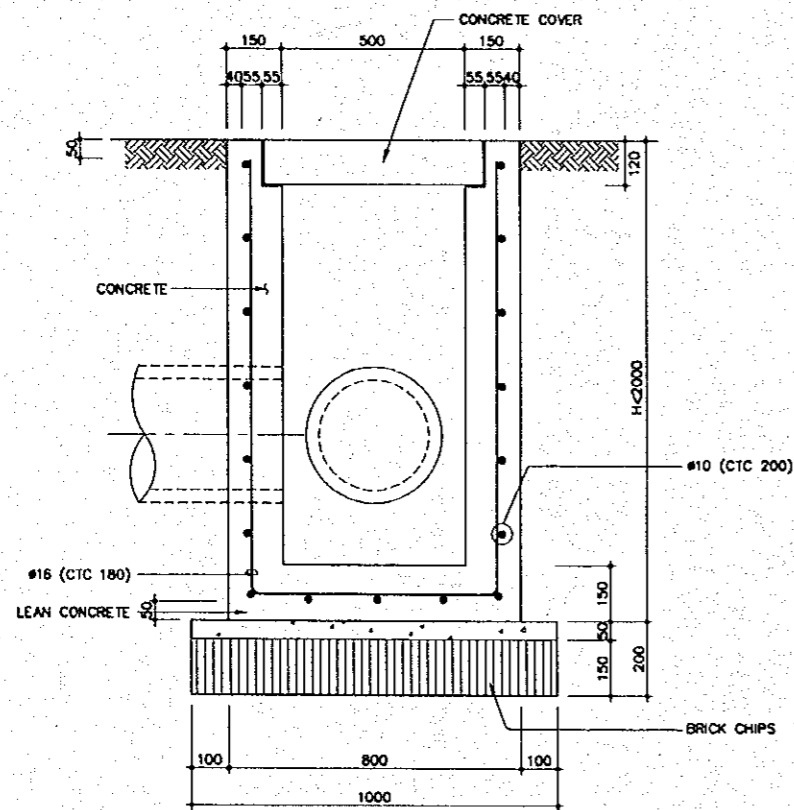
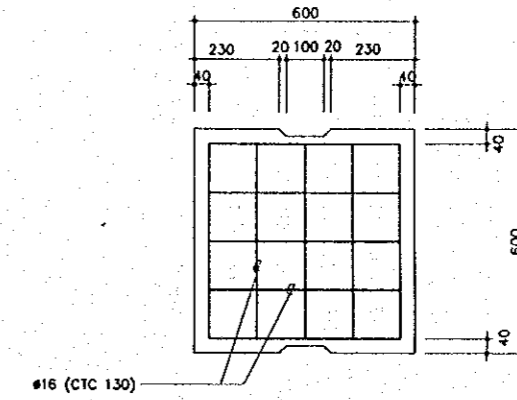
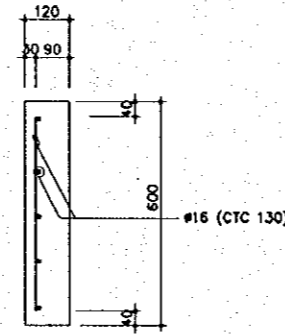
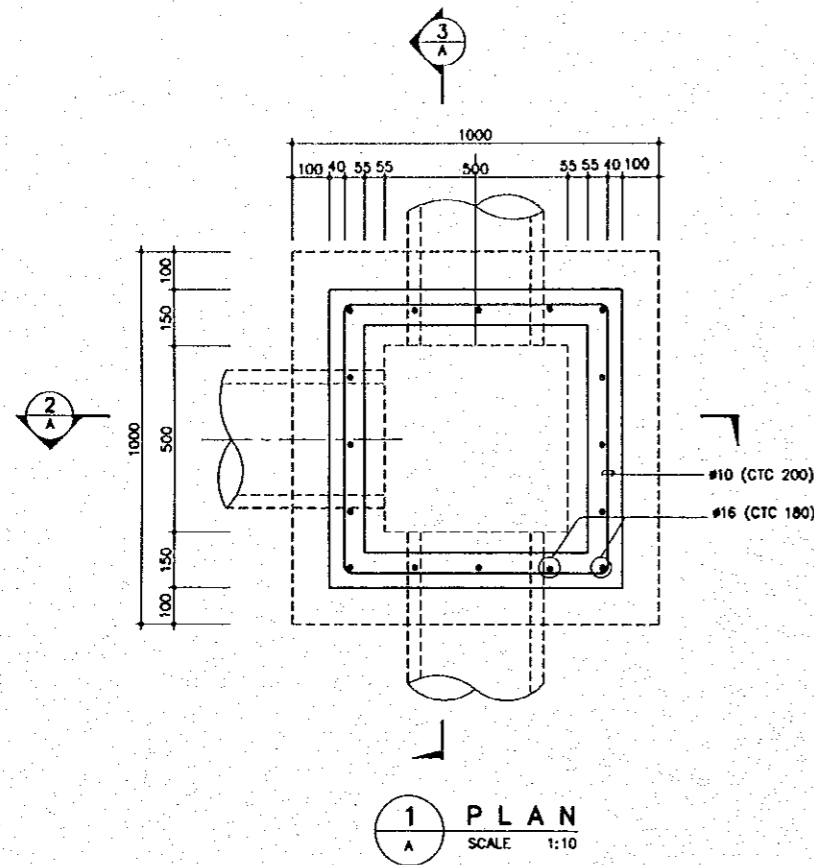
3 SECTION
SCALE 1:10

A CATCH BASIN(CB-1)
SCALE 1:10

THE STUDY ON CONSTRUCTION OF THE BRIDGE
OVER THE RIVER RUPSA IN KHULNA (PHASE 2)

DRAINAGE DETAILS - CATCH BASIN (2)

SCALE	SHEET NO.
1:10	H-09

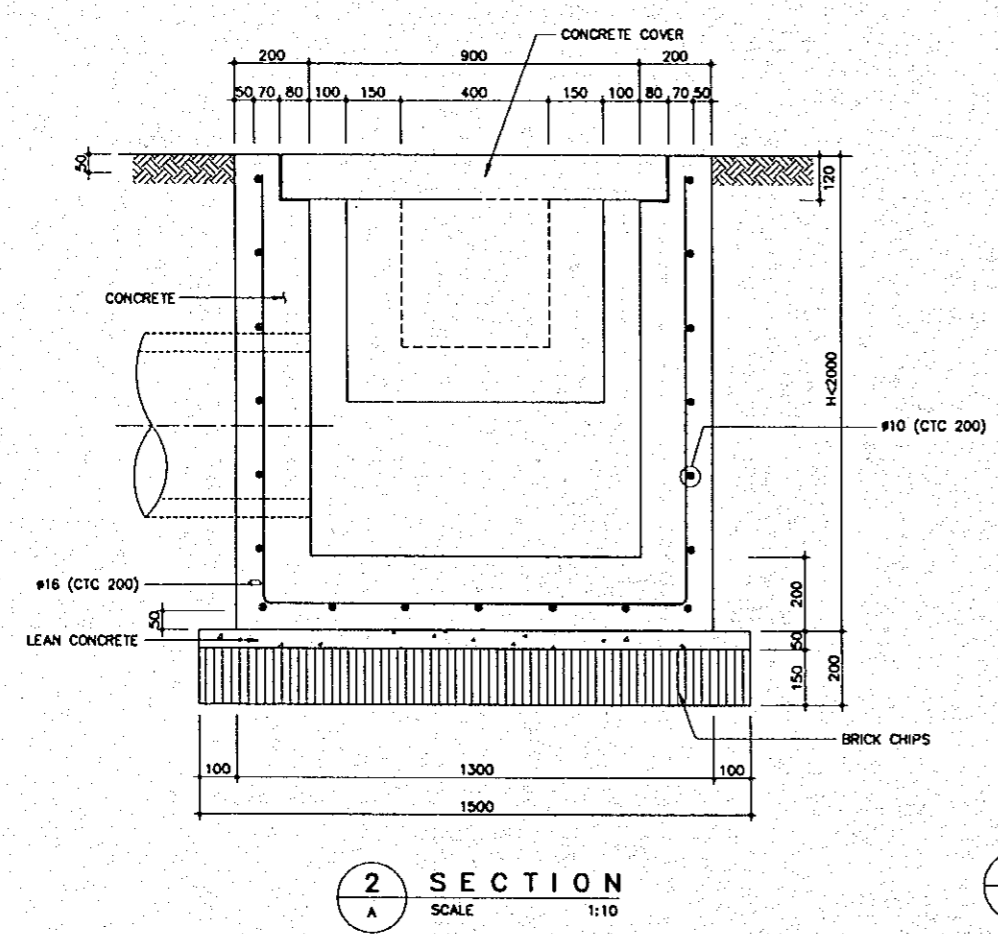
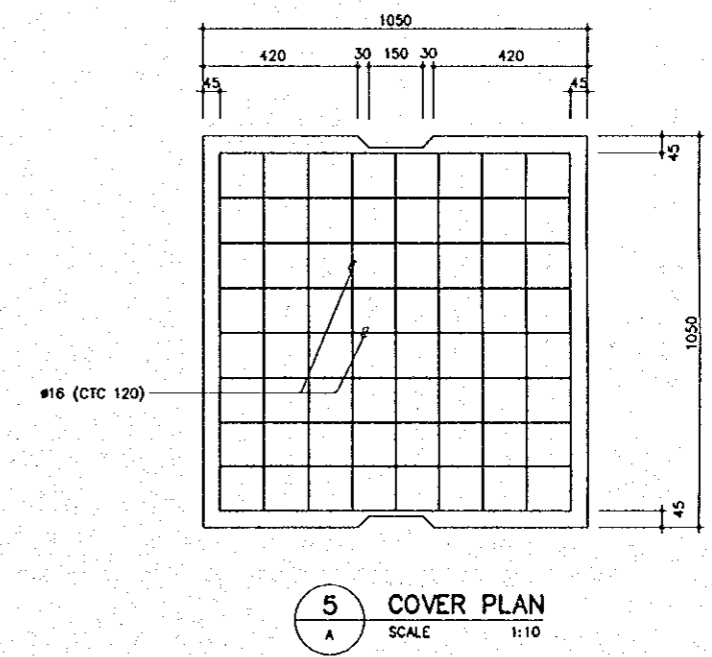
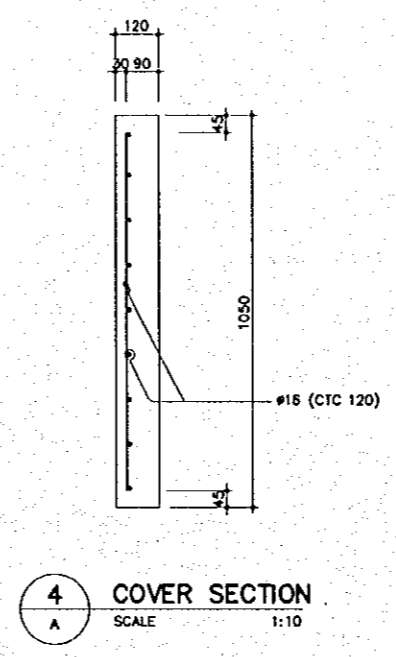
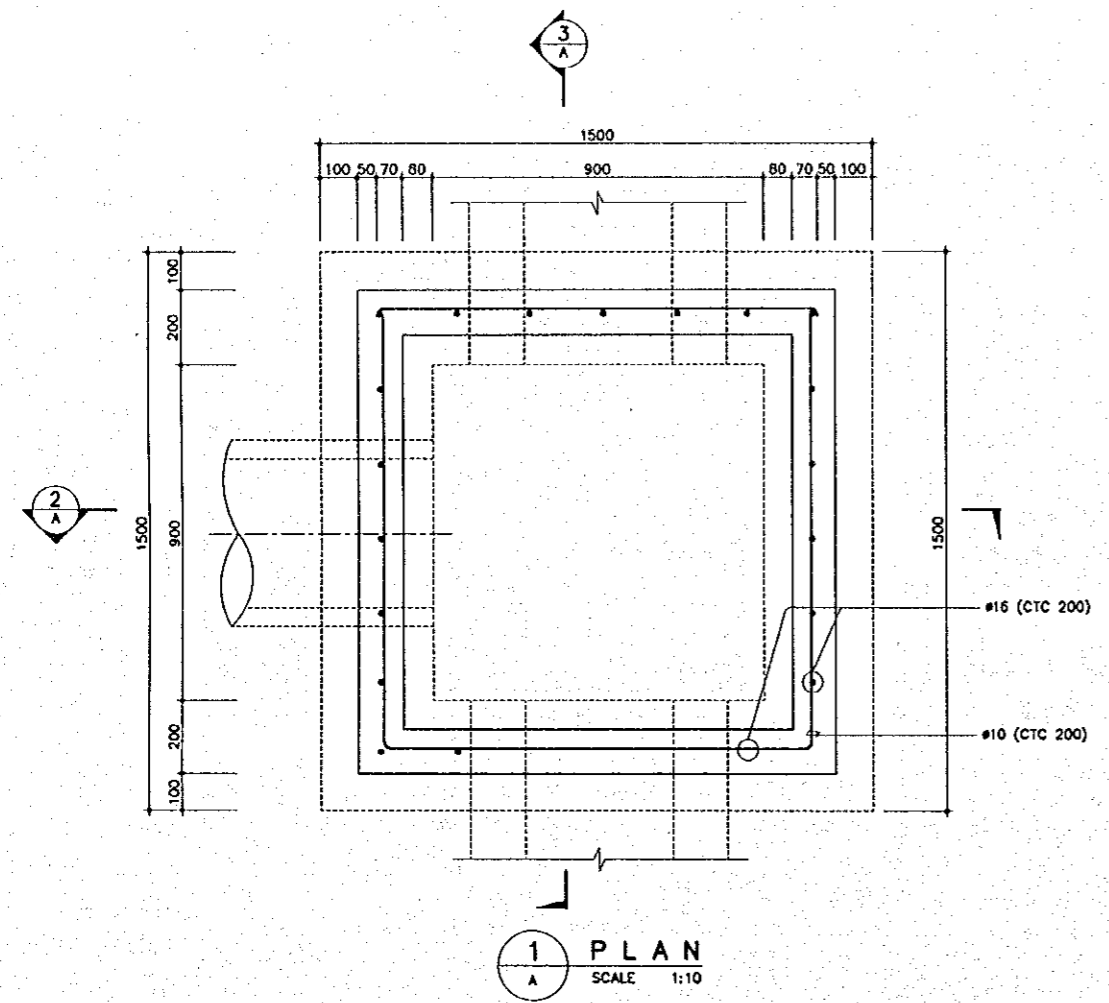


A CATCH BASIN(CB-2)
SCALE 1:10

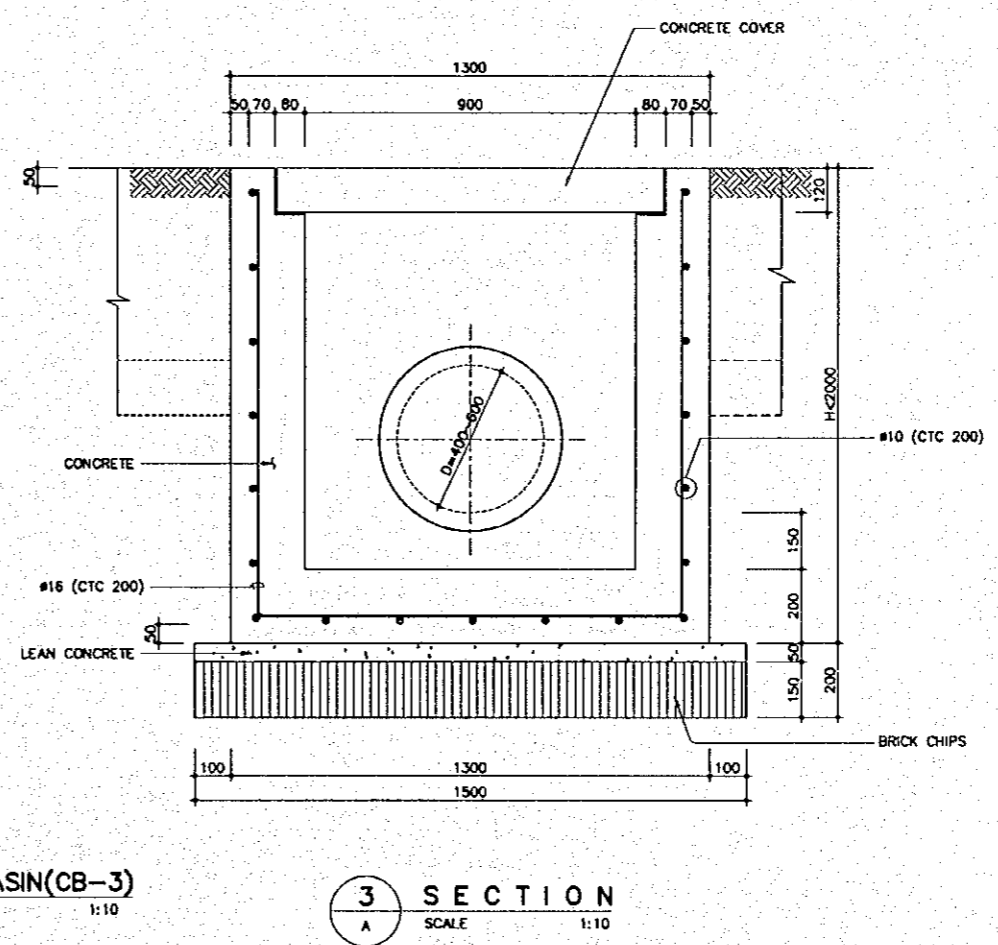
NOTE:
ALL DIMENSIONS ARE IN MILLIMETERS
UNLESS OTHERWISE SHOWN.

THE STUDY ON CONSTRUCTION OF THE BRIDGE
OVER THE RIVER RUPSA IN KHULNA (PHASE 2)

DRAINAGE DETAILS - CATCH BASIN (3)	SCALE	SHEET NO.
	1:10	H-10



A CATCH BASIN (CB-3)
SCALE 1:10

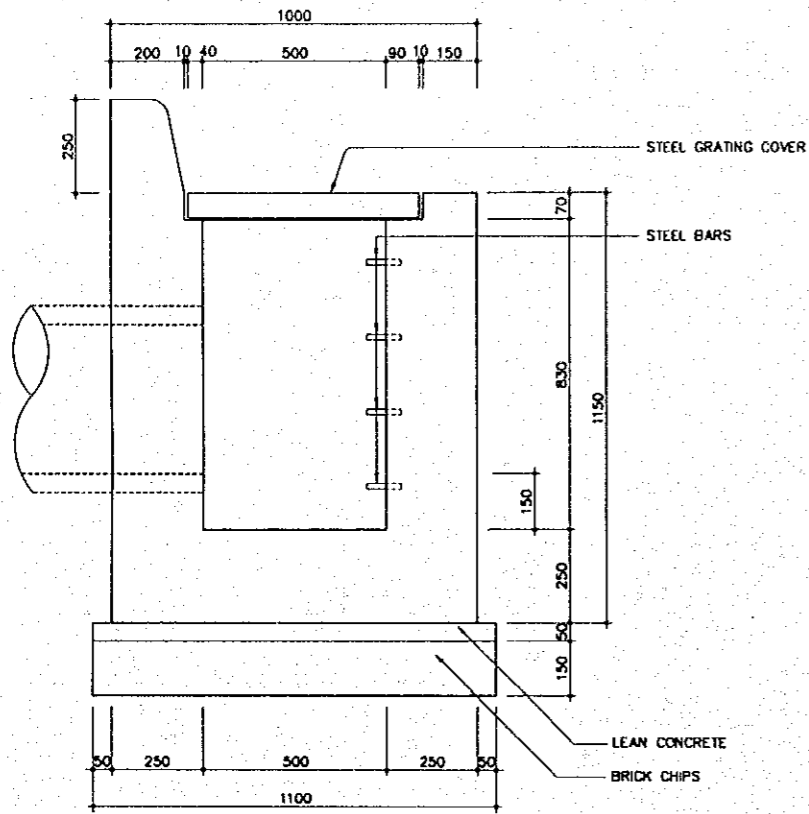


NOTE:
ALL DIMENSIONS ARE IN MILLIMETERS
UNLESS OTHERWISE SHOWN.

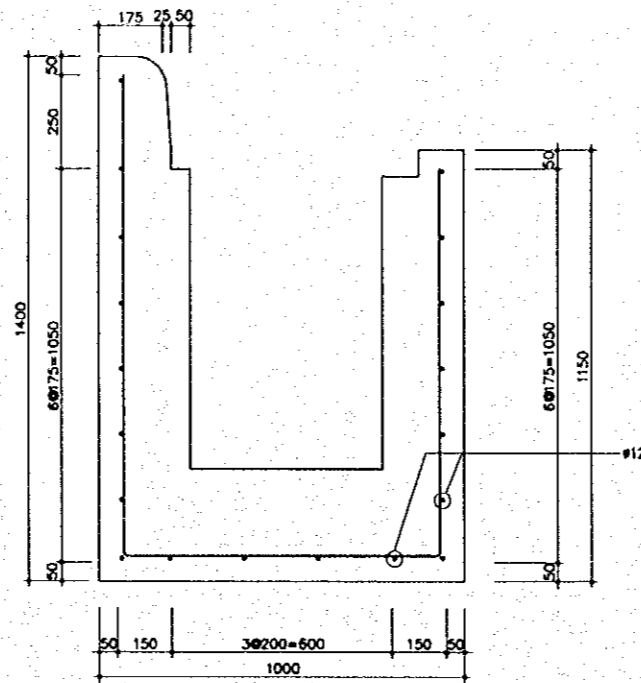
THE STUDY ON CONSTRUCTION OF THE BRIDGE
OVER THE RIVER RUPSA IN KHULNA (PHASE 2)

DRAINAGE DETAILS-CHATCH BASIN (4)

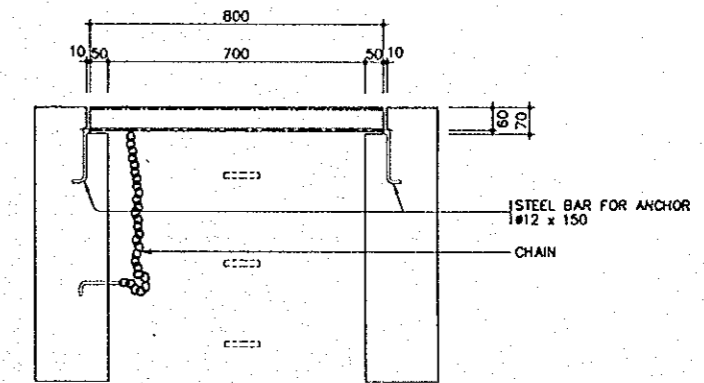
SCALE	SHEET NO.
1:10	H-11



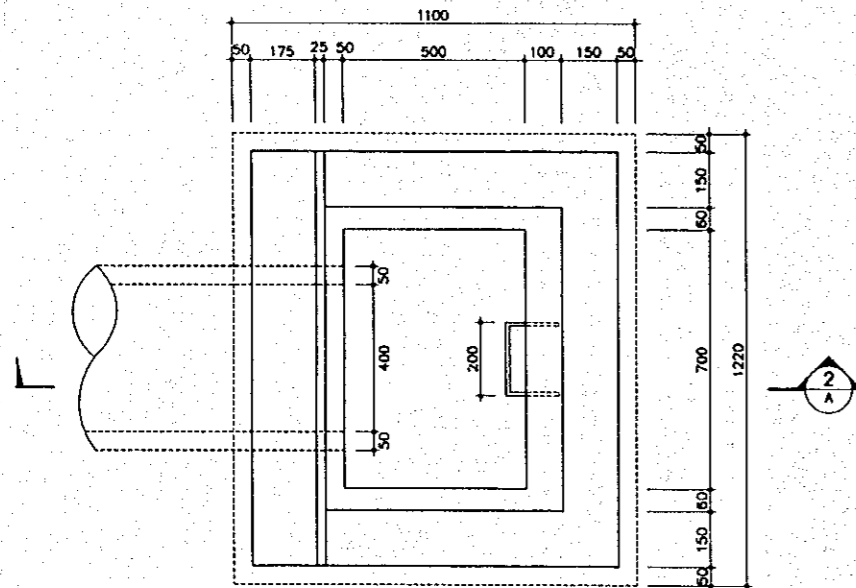
2 SECTION
SCALE 1:10



4 RE-BAR DETAIL SECTION
SCALE 1:10

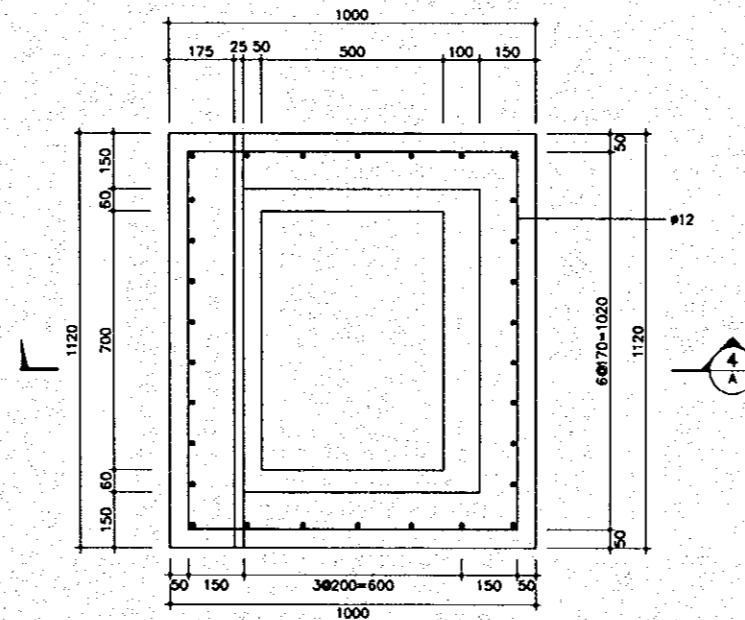


6 GRATING DETAIL-SECTION
SCALE 1:10

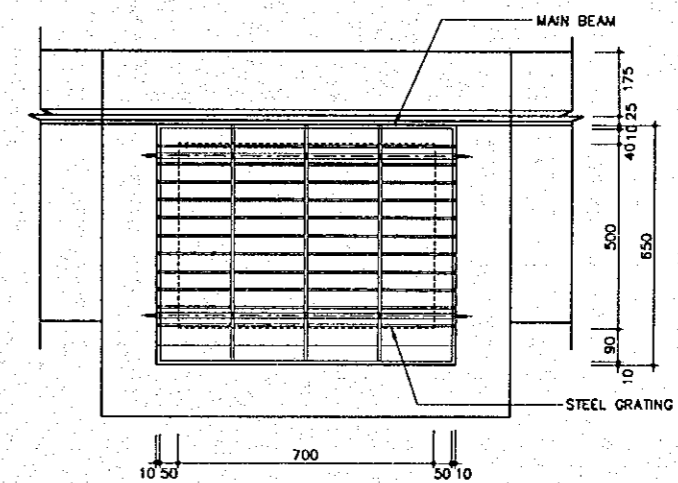


1 PLAN
SCALE 1:10

A CATCH BASIN(CB-4)
SCALE 1:10



3 RE-BAR DETAIL-PLAN
SCALE 1:10



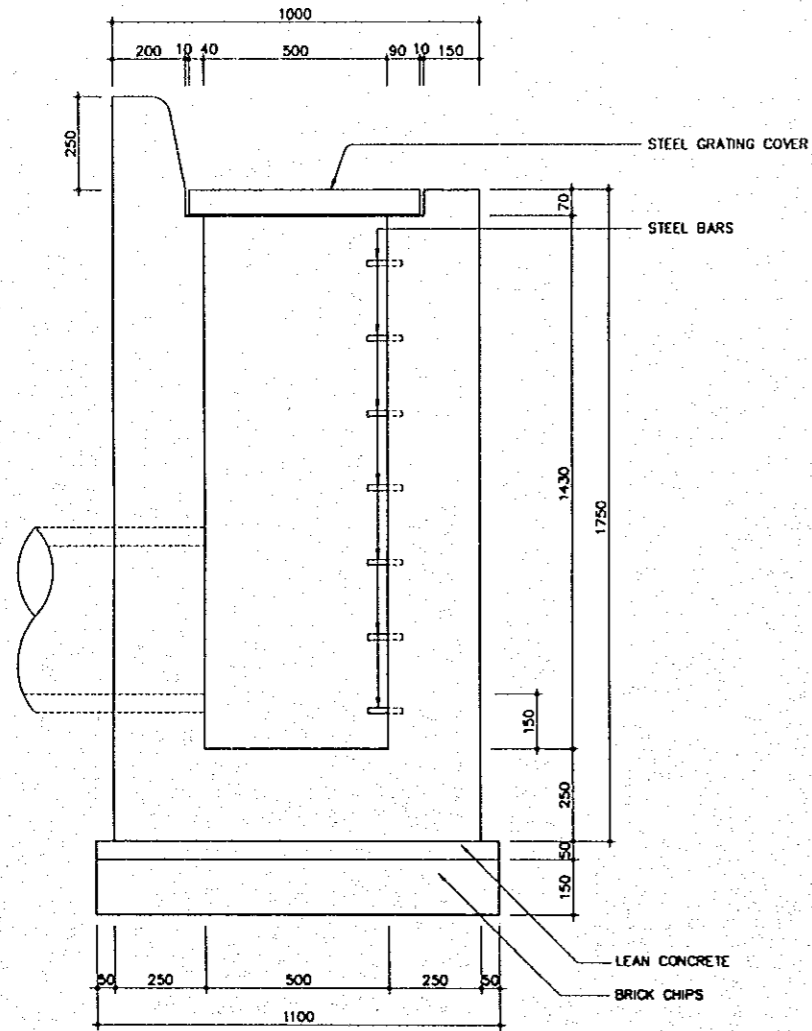
5 GRATING DETAIL-PLAN
SCALE 1:10

NOTE:
ALL DIMENSIONS ARE IN MILLIMETERS
UNLESS OTHERWISE SHOWN.

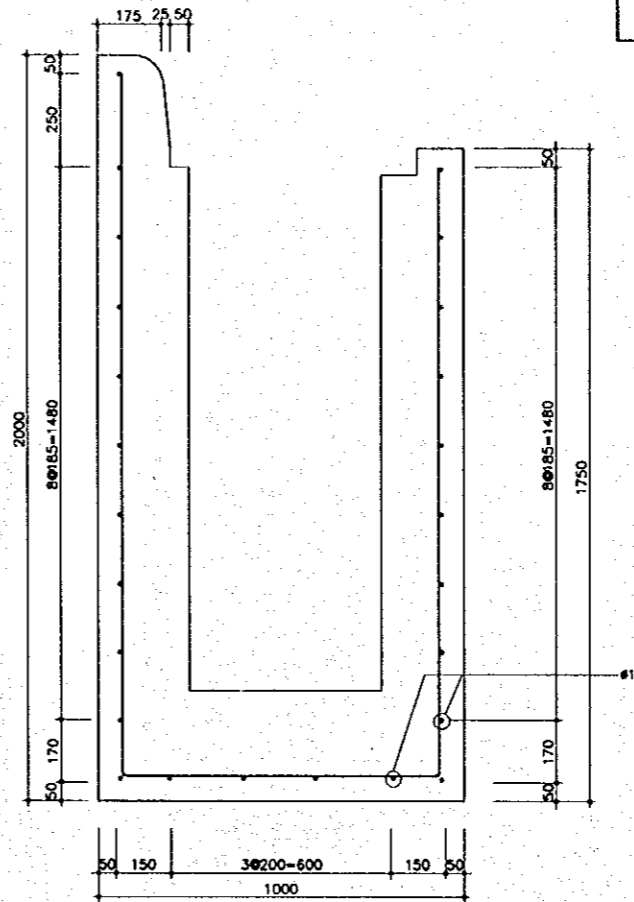
THE STUDY ON CONSTRUCTION OF THE BRIDGE
OVER THE RIVER RUPSA IN KHULNA (PHASE 2)

DRAINAGE DETAILS-CHATCH BASIN (5)

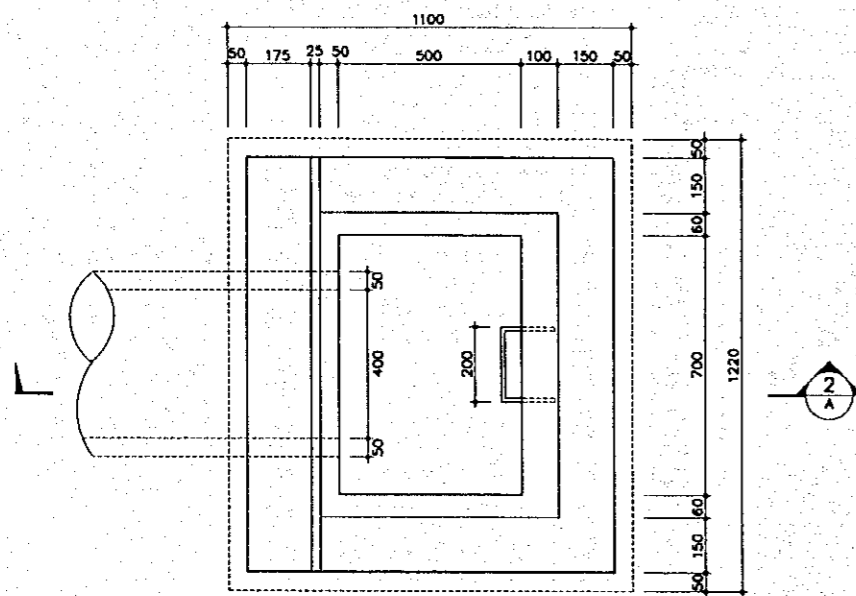
SCALE	SHEET NO.
1:10	H-12



2 SECTION
SCALE 1:10

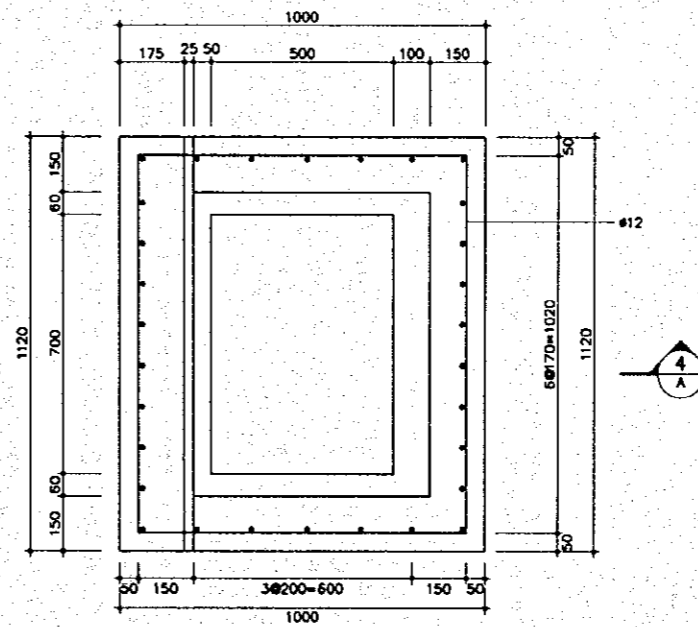


4 SECTION
SCALE 1:10



1 PLAN
SCALE 1:10

A CATCH BASIN (CB-5)
SCALE 1:10



3 RE-BAR DETAIL
SCALE 1:10

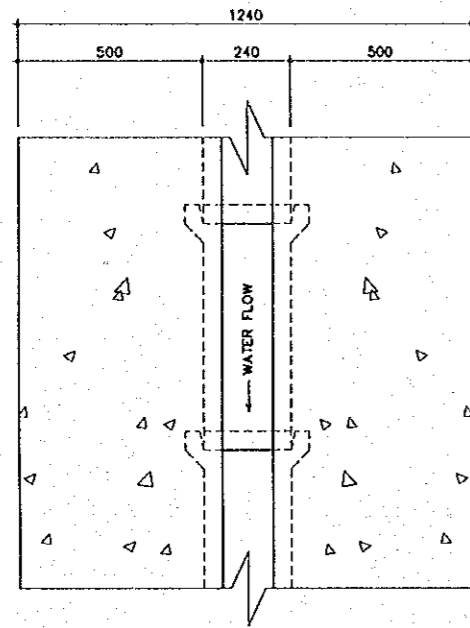
NOTE:

1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN.
2. DETAILS OF STEEL GRATING COVER TO BE AS SHOWN ON H-11.

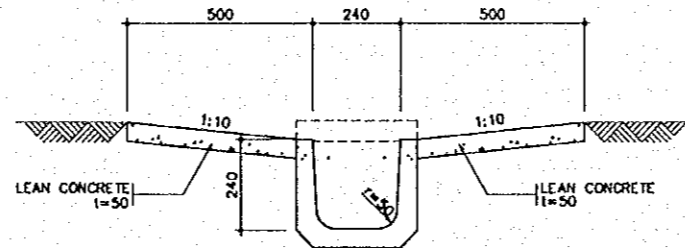
THE STUDY ON CONSTRUCTION OF THE BRIDGE
OVER THE RIVER RUPSA IN KHULNA (PHASE 2)

DRAINAGE DETAILS – VERTICAL DRAIN

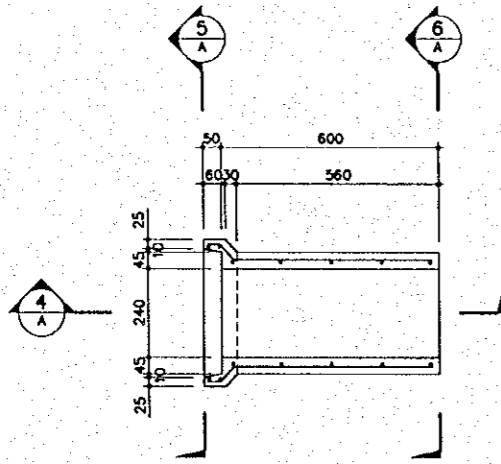
SCALE	SHEET NO.
AS SHOWN	H-13



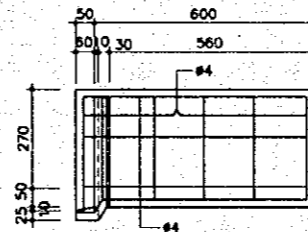
1 PLAN
SCALE 1:10



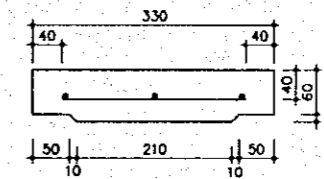
2 CROSS-SECTION
SCALE 1:10



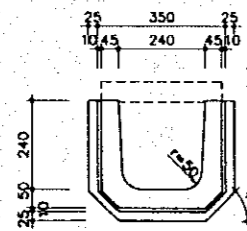
3 SECTION
SCALE 1:10



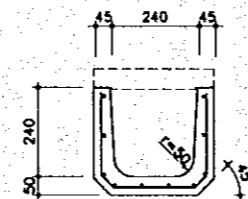
4 SECTION
SCALE 1:10



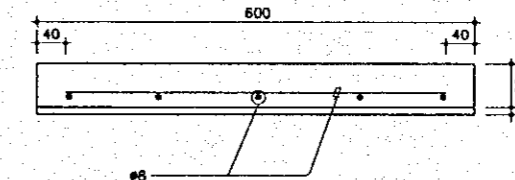
7 COVER CROSS SECTION
SCALE 1:5



5 SECTION
SCALE 1:10



6 SECTION
SCALE 1:10



8 COVER PROFILE
SCALE 1:5

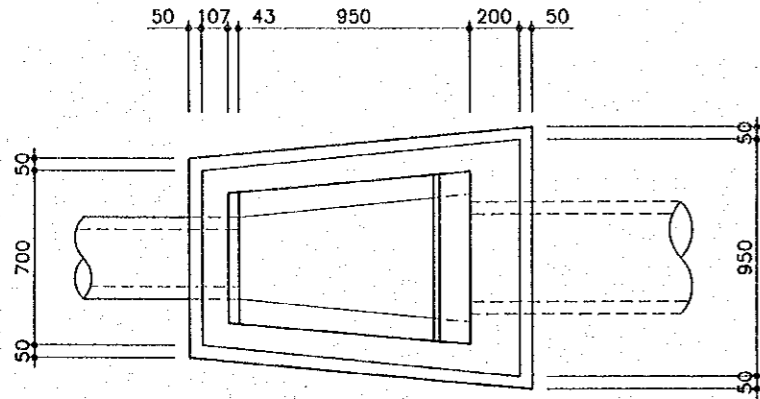
A VERTICAL DRAIN (VD-1)
SCALE 1:10

NOTE:
ALL DIMENSIONS ARE IN MILLIMETERS
UNLESS OTHERWISE SHOWN.

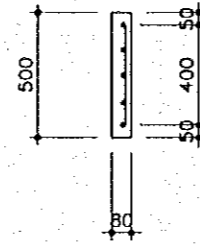
THE STUDY ON CONSTRUCTION OF THE BRIDGE
OVER THE RIVER OF RUPSA IN KHULNA (PHASE 2)

DRAINAGE DETAILS - IN LET

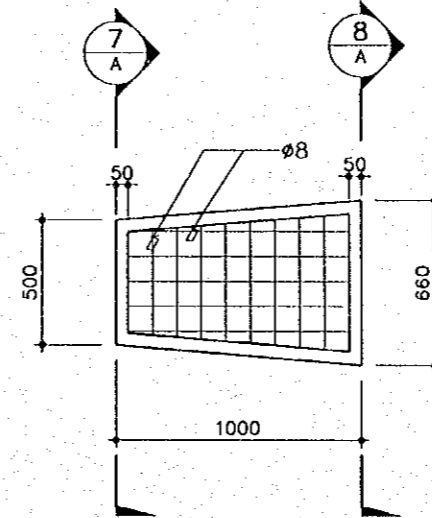
SCALE	SHEET NO.
1:15	H-14



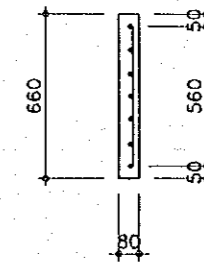
1 PLAN
A SCALE 1:15



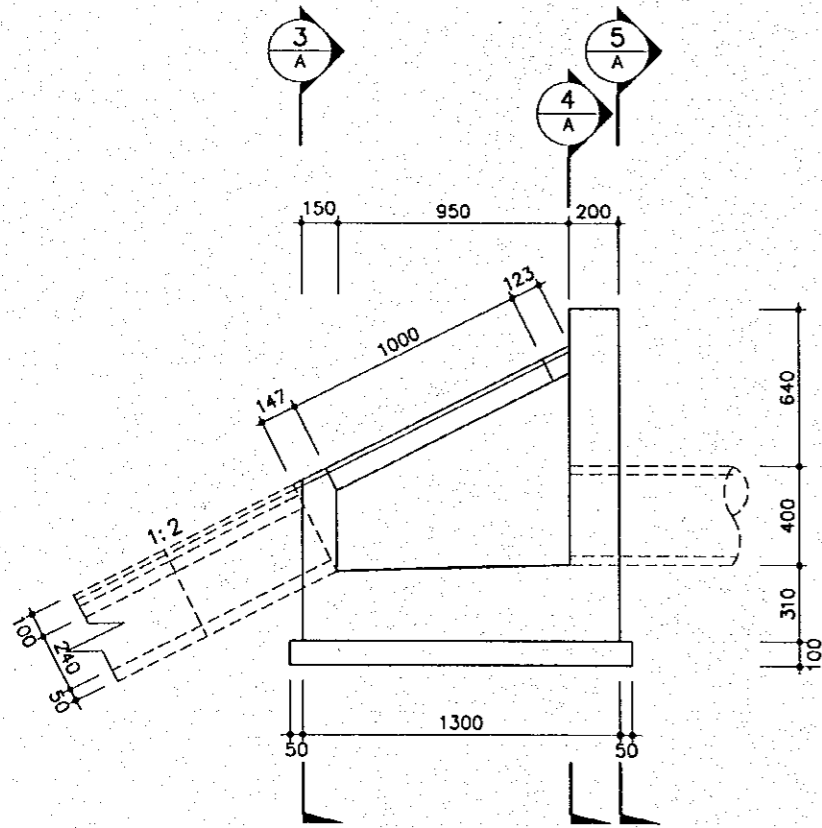
7 SECTION
A SCALE 1:15



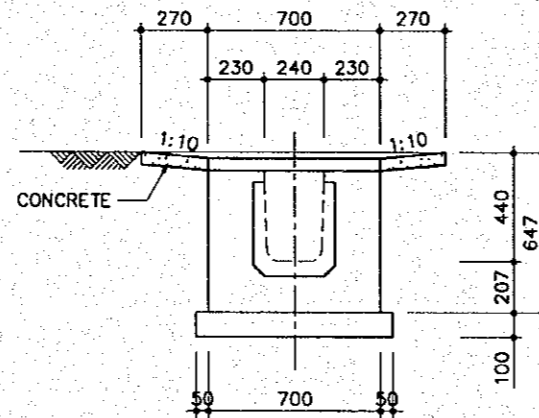
6 CONCRETE COVER PLAN
A SCALE 1:15



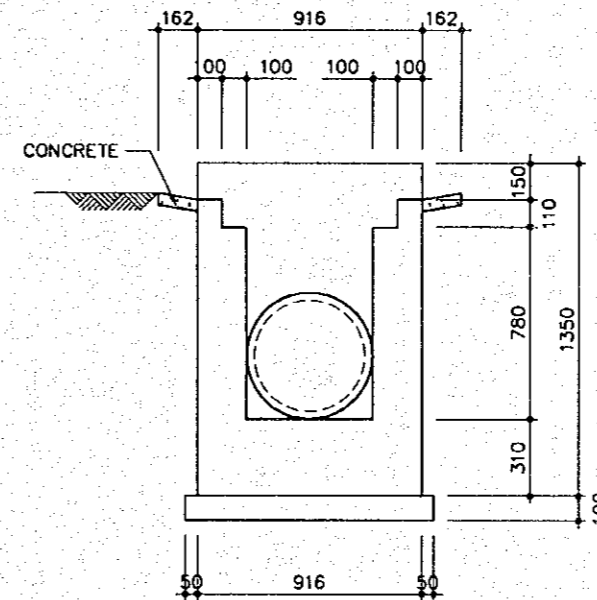
8 SECTION
A SCALE 1:15



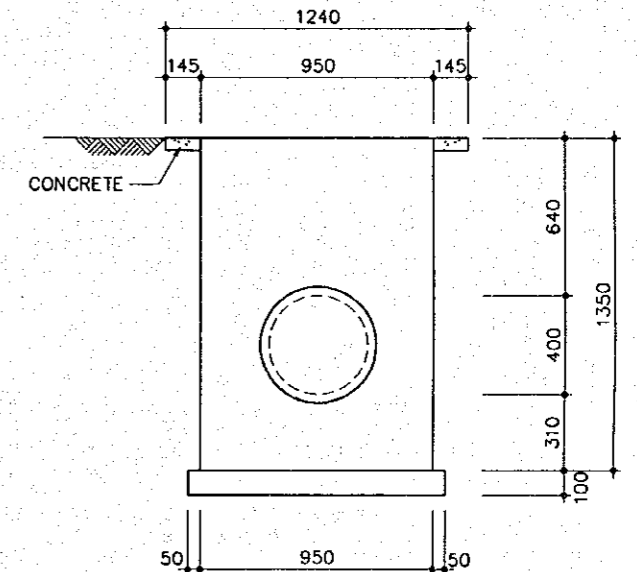
2 PROFILE
A SCALE 1:15



3 SECTION
A SCALE 1:15



4 SECTION
A SCALE 1:15



5 SECTION
A SCALE 1:15

A IN-LET (IL-1)
H-14 SCALE 1:15

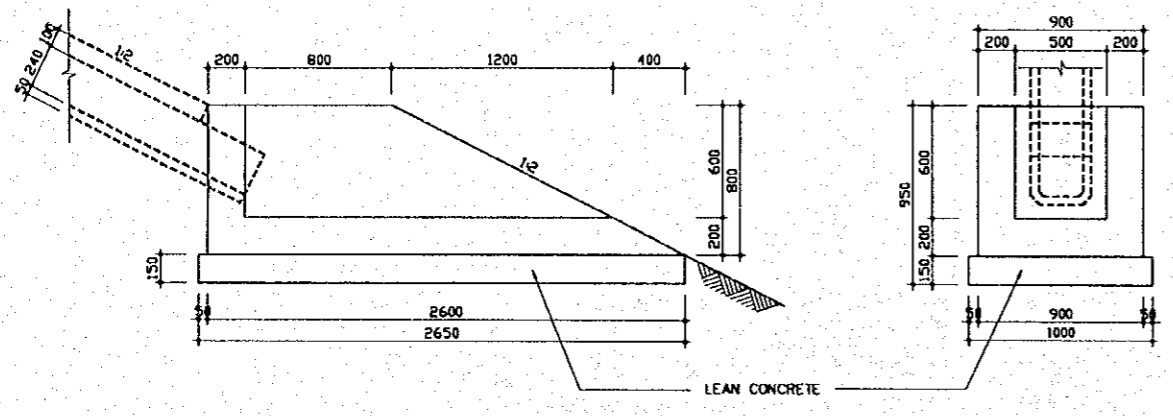
NOTE:

ALL DIMENSIONS ARE IN MILLIMETERS
UNLESS OTHERWISE SHOWN.

THE STUDY ON CONSTRUCTION OF THE BRIDGE
OVER THE RIVER RUPSA IN KHULNA (PHASE 2)

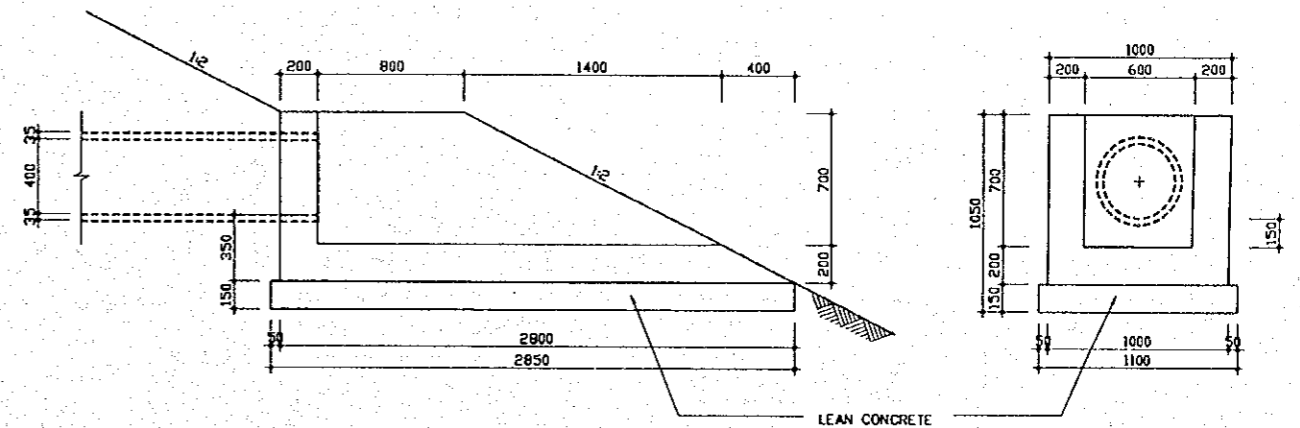
DRAINAGE DETAILS -- OUT LET

SCALE	SHEET NO.
1:20	H-15



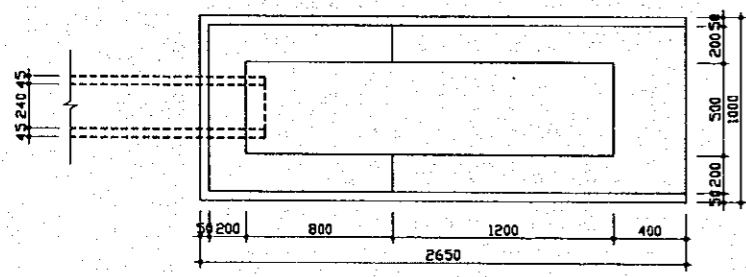
2 PROFILE
A SCALE 1:20

3 SECTION
A SCALE 1:20



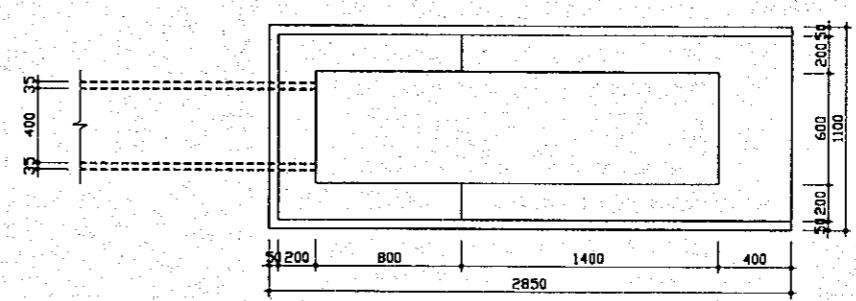
2 PROFILE
B SCALE 1:20

3 SECTION
B SCALE 1:20



1 PLAN
A SCALE 1:20

A OUT-LET (OL-1)
H-15 SCALE 1:20



1 PLAN
B SCALE 1:20

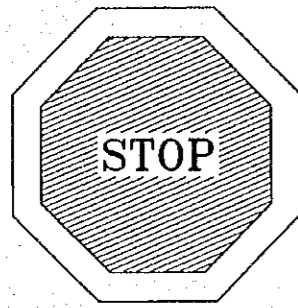
B OUT-LET (OL-2)
H-15 SCALE 1:20

NOTE:
ALL DIMENSIONS ARE IN MILLIMETERS
UNLESS OTHERWISE SHOWN.

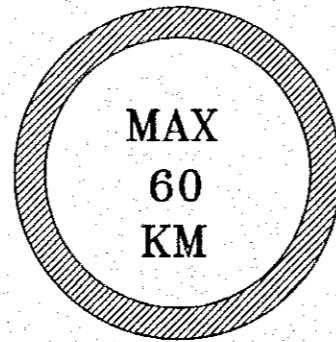
THE STUDY ON CONSTRUCTION OF THE BRIDGE
OVER THE RIVER RUPSA IN KHULNA (PHASE 2)

ROAD SIGN (REGULATORY, WARNING)

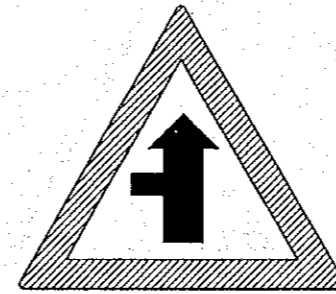
SCALE	SHEET NO.
—————	H-16



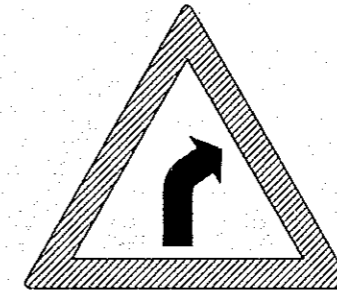
1
A STOP (RS-1)



2
A SPEED LIMIT (RS-2)

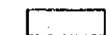



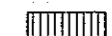


1
B SPEED LIMIT (WS-1)

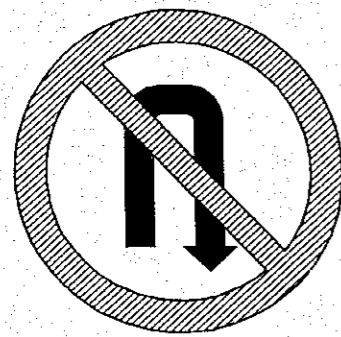


2
B CURVE (WS-2)

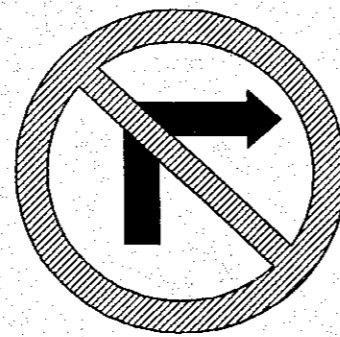
LEGEND.

-  White
-  Black
-  Red
-  Green
-  Blue

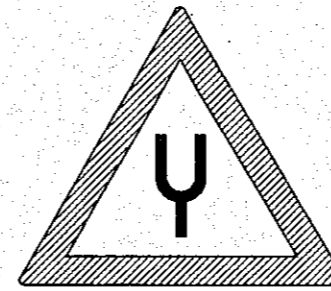
FOR NOTES SEE DRG. H-17



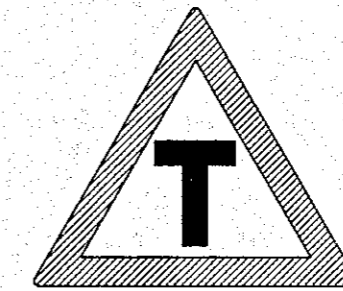
3
A NO U TURN (RS-3)



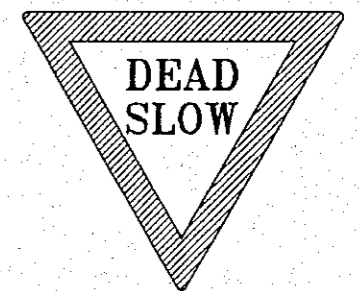
4
A NO RIGHT TURN (RS-4)



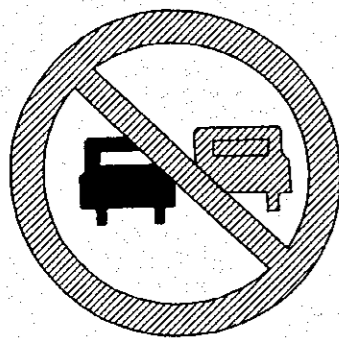
3
B DUAL CARRIAGEWAY ENDS (WS-3)



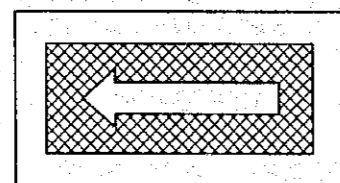
4
B T JUNCTION (WS-4)



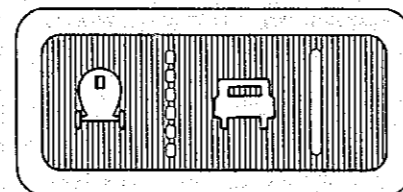
5
B DEAD SLOW (WS-5)



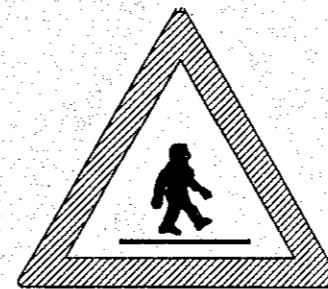
5
A NO OVERTAKING (RS-5)



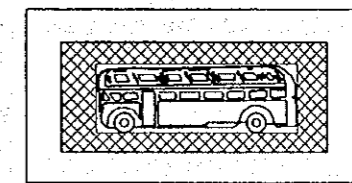
6
A ONE WAY (RS-6)



7
A LANE REGULATION (RS-7)



6
B PEDESTRIAN CROSSING (WS-6)



7
B BUS STOP (WS-7)

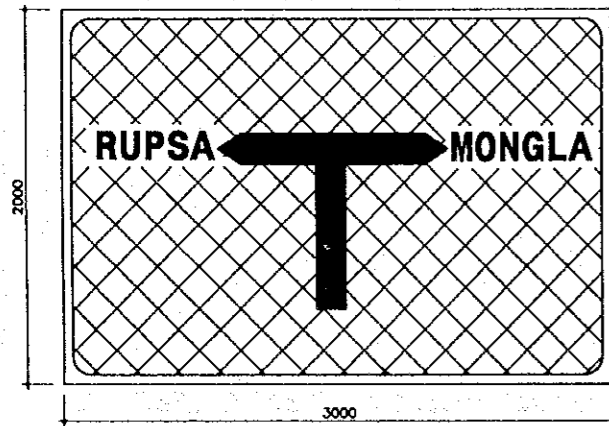
A ROAD SIGN (REGULATORY)
H-16 SCALE NOT TO SCALE

B ROAD SIGN (WARNING)
H-16 SCALE NOT TO SCALE

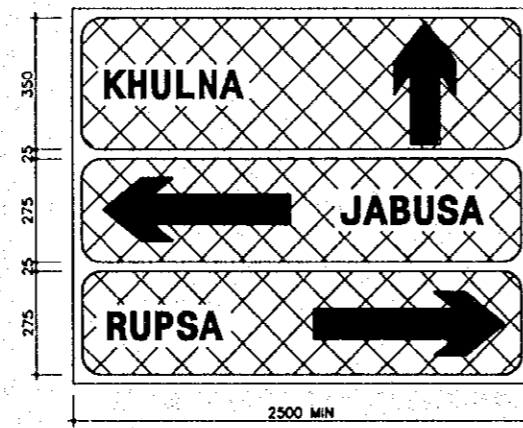
THE STUDY ON CONSTRUCTION OF THE BRIDGE
OVER THE RIVER RUPSA IN KHULNA (PHASE 2)

ROAD SIGN (GUIDE) AND SIGN POST

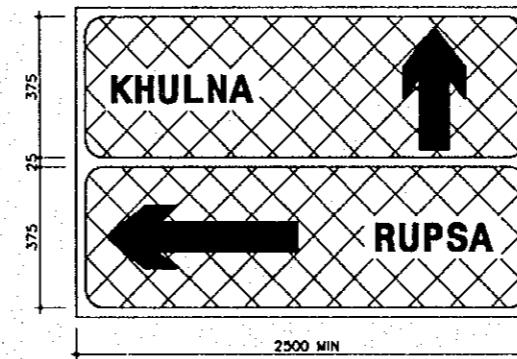
SCALE	SHEET NO.
AS SHOWN	H-17



1 TYPICAL GUIDE SIGN BOARD (GS-1)
A (X-HEIGHT=125) SCALE 1:20



2 TYPICAL GUIDE SIGN BOARD (GS-2)
A (X-HEIGHT=100) SCALE 1:10

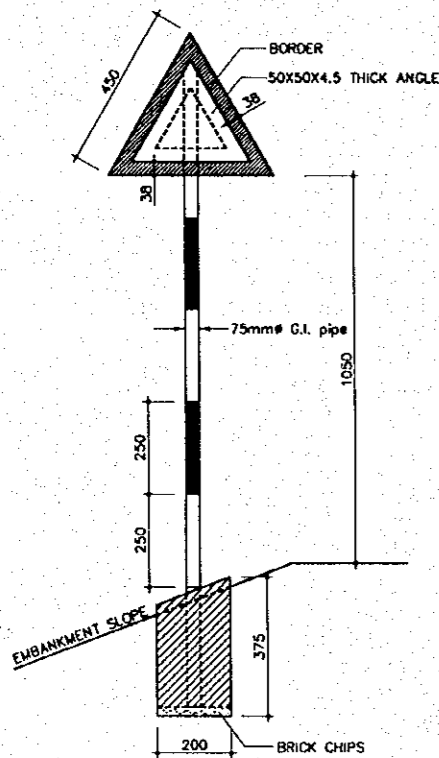


3 TYPICAL GUIDE SIGN BOARD (GS-3)
A (X-HEIGHT=100) SCALE 1:10

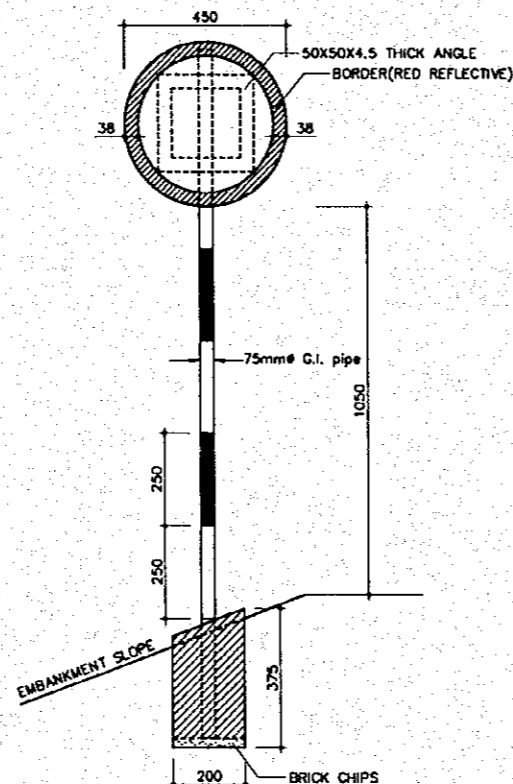
LEGEND.

- White
- Black
- Green

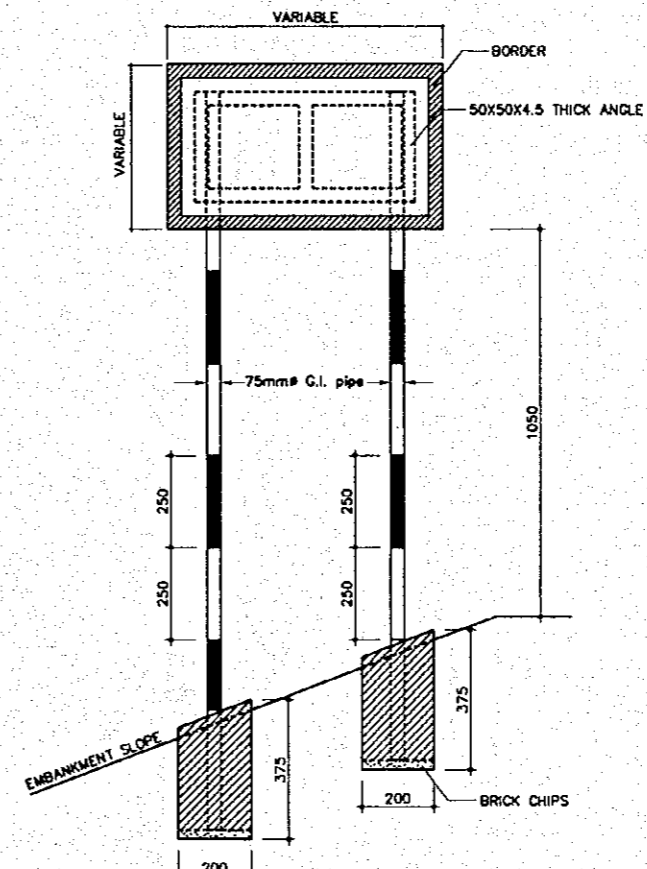
A ROAD SIGN (GUIDE)
H-17 SCALE AS SHOWN



1 SIGN POST (TYPE-1)
B SCALE 1:10



2 SIGN POST (TYPE-2)
B SCALE 1:10



3 SIGN POST (TYPE-3)
B SCALE 1:10

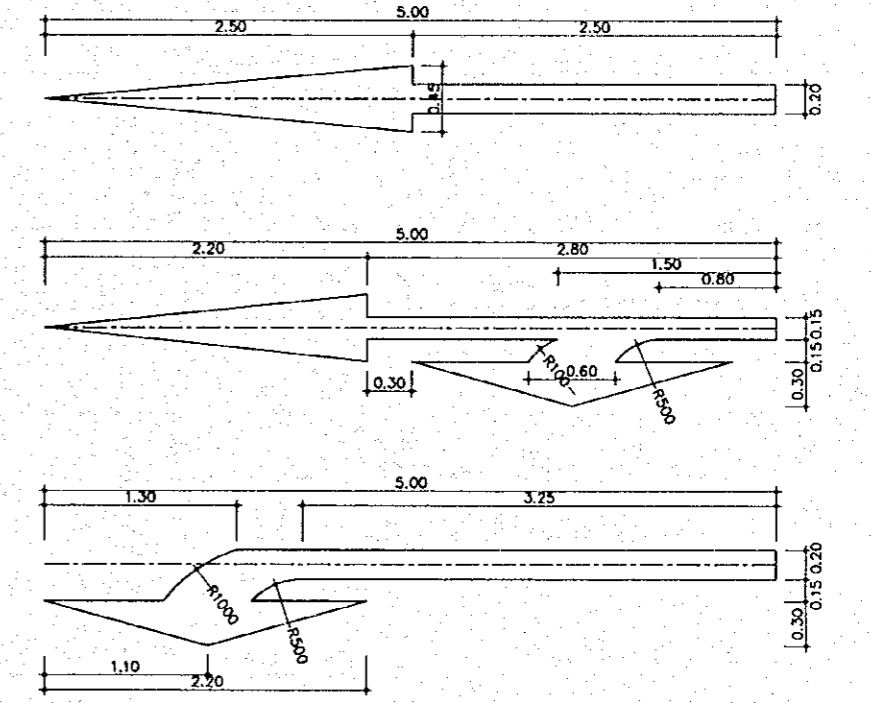
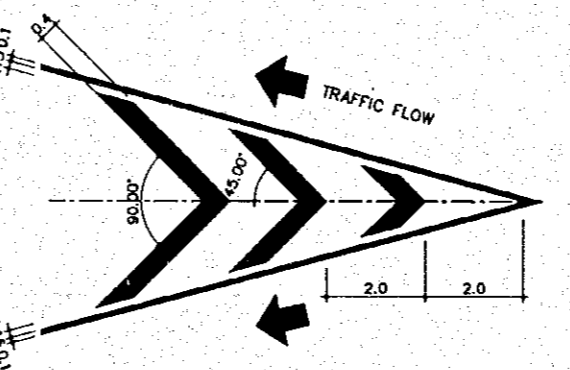
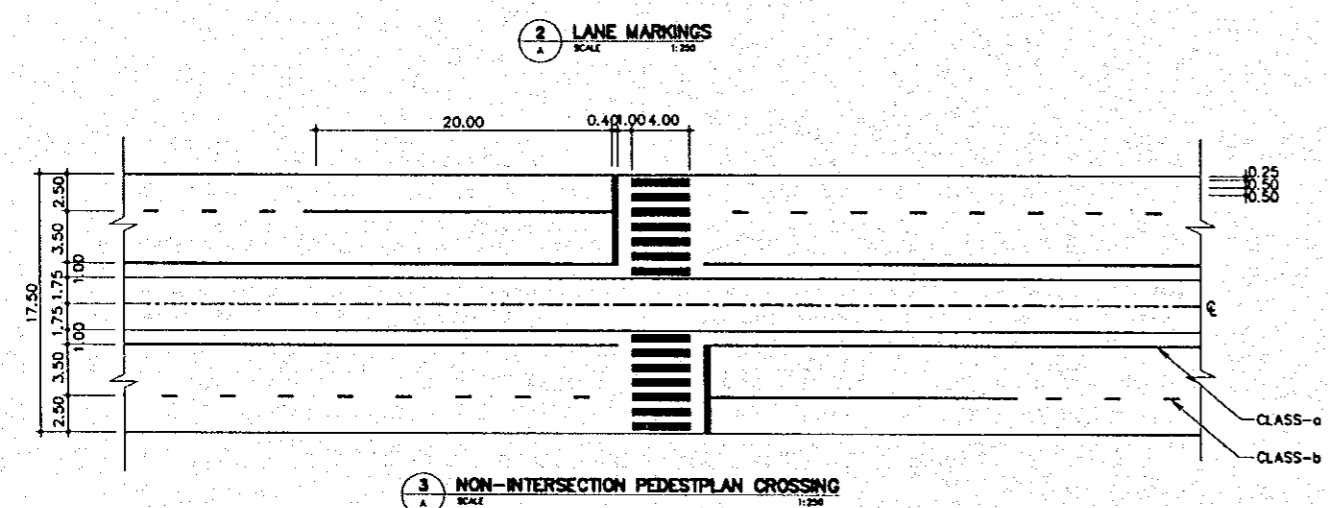
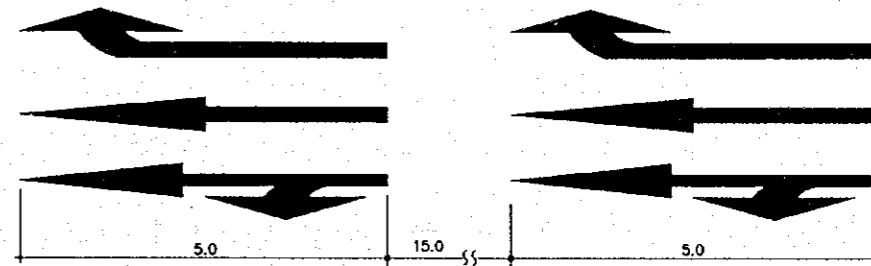
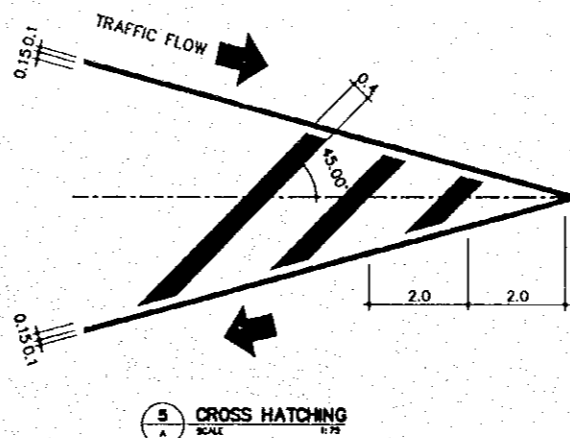
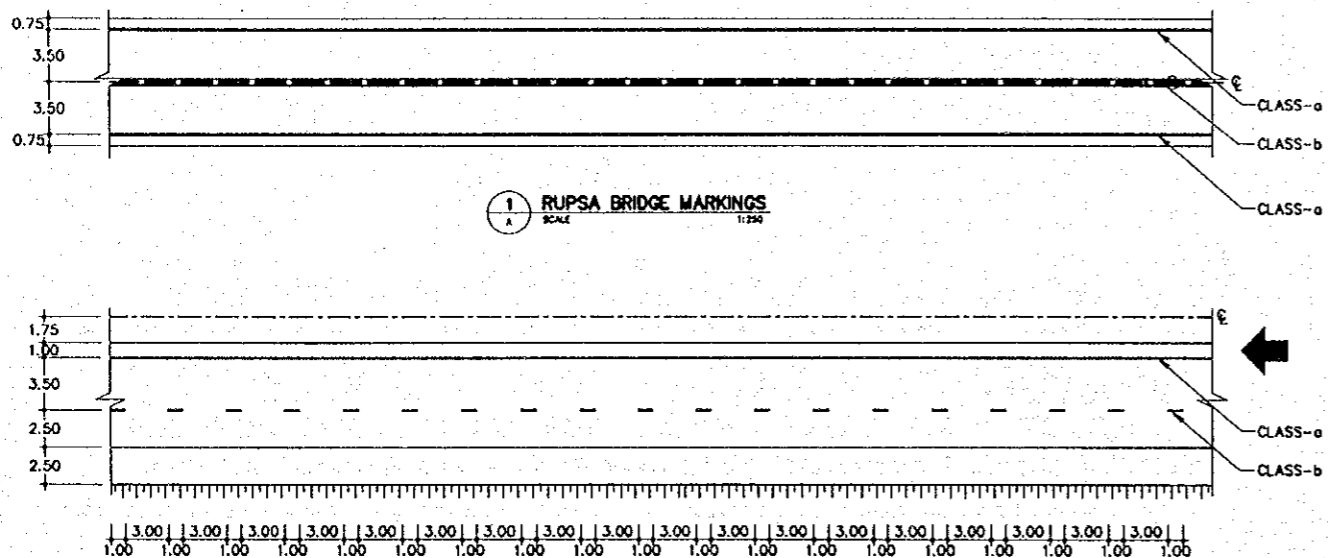
NOTES:

1. LANGUAGE OF SIGNS MAY BE MODIFIED AS PER DIRECTION OF ENGINEER.
 2. OVERALL DIMENSION OF THE SIGN PLATE FOR DIRECTION SIGNS SHALL BE VARIED TO SUIT MESSAGE AND NUMBER OF LETTERS.
 3. LETTERS OF SIGN GS1, GS2, GS3, SHALL BE WHITE REFLECTIVE.
 4. ALL PAINTS USED FOR ROAD SIGNS SHALL BE REFLECTIVE.
 5. DIRECTION OF ARROWS SHOWN ON THE SIGNS ARE INDICATIVE ONLY.
 6. THE REVERSE SIDE OF SINGLE SIDE SIGNS TO BE PAINTED GREY.
 7. THE TOP OF SIGN POSTS SHALL BE CAPPED TO PREVENT ENTRY OF WATER.
 8. ALL TRIANGULAR SIGNS ARE EQUILATERAL.
 9. ALL DIMENSIONS IN MILLIMETRES.
 10. CONCRETE 1:2:4.
- GS-1, LOCATED 350 METERS BEFORE THE T-TYPE INTERSECTION.
GS-2, LOCATED 350 METERS BEFORE THE 4-LEG INTERSECTION.
GS-3, LOCATED 350 METERS BEFORE THE ACCESS ROAD INTERSECTION AT SSKB.
RS-7, LOCATED AT START OF NON-MOTORIZED VEHICLE OTHERS LOCATED AT THE FEATURE.
RS-2, RS-7, STRIP AND AT 1000 METER INTERVALS THEREAFTER
WS-5, LOCATED AT 350 AND 100 METERS BEFORE TOLL GATE.
RS-2, RS-4, RS-6, WS-7, LOCATED AT THE FEATURE.
OTHER WS, RS LOCATED 50 METERS BEFORE FEATURE.

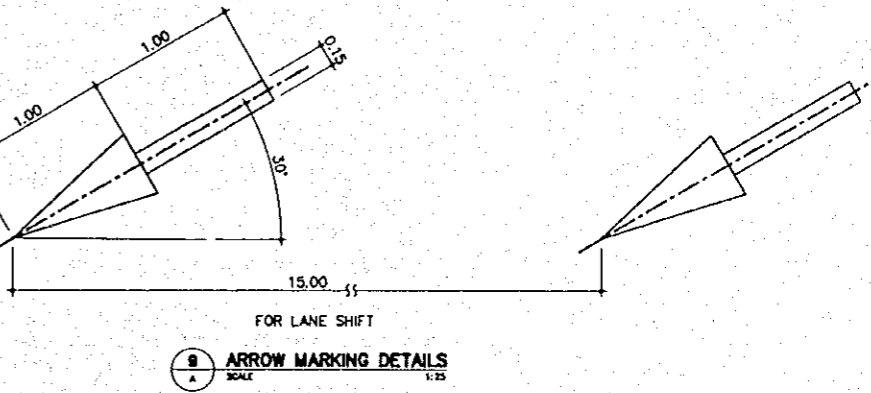
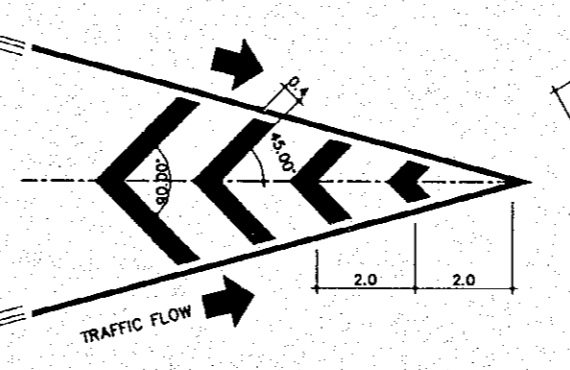
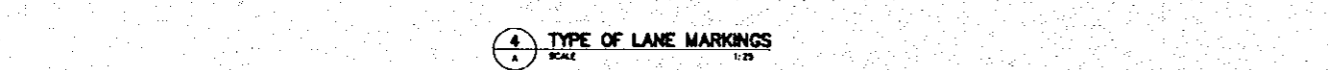
THE STUDY ON CONSTRUCTION OF THE BRIDGE
OVER THE RIVER RUPSA IN KHULNA (PHASE 2)

TRAFFIC MARKINGS

SCALE SHEET NO.
AS SHOWN H-18



CLASS	TYPE OF LANE MARKINGS
a	EDGE LINE
b	DELIMITATION LINE
c	BARRIE LINE (YELLOW)
d	ACCELERATION DECELERATION LINE
e	BUS BAY LINE



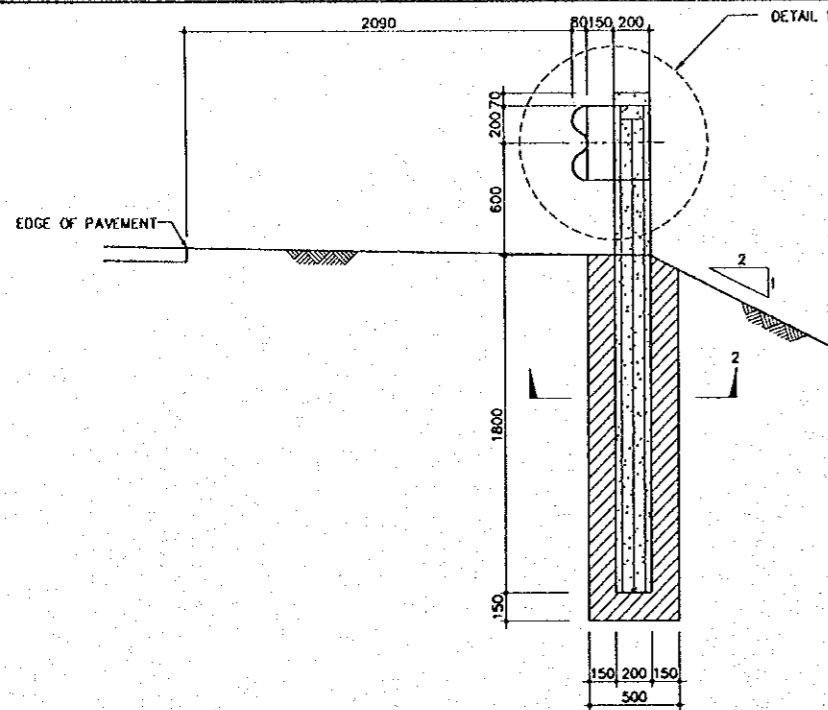
- NOTES
1. ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN
 2. ROAD MARKING IS SHOWN ON THE INTERSECTION PLAN DRAWINGS
 3. MARKINGS AT ALL TRAFFIC ISLANDS TO BE AS SHOWN ABOVE
 4. ALL MARKINGS DRAWING WHITE EXCEPT WHERE DETAILES OTHERWISE.

MARKINGS
SCALE AS SHOWN

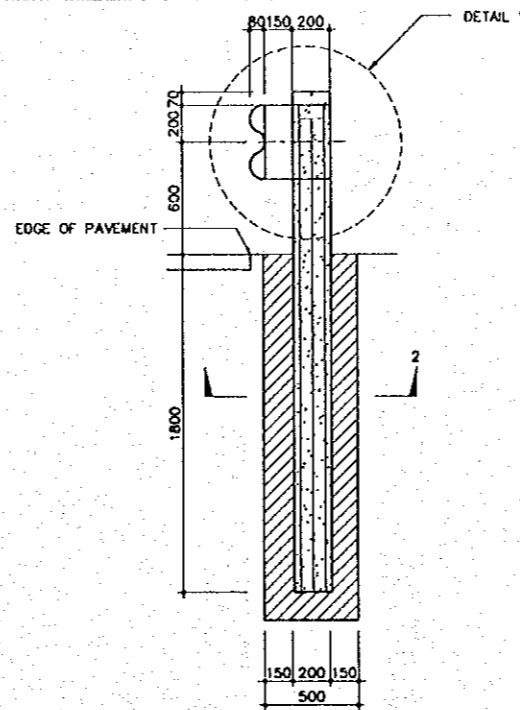
THE STUDY ON CONSTRUCTION OF THE BRIDGE
OVER THE RIVER RUPSA IN KHULNA (PHASE 2)

GUARD RAIL & DELINEATOR

SCALE AS SHOWN SHEET NO. H-19

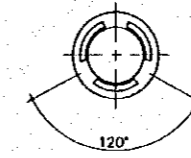


1 GUARD RAIL (GR-1)
SCALE 1:20



2 GUARD RAIL (GR-2)
SCALE 1:20

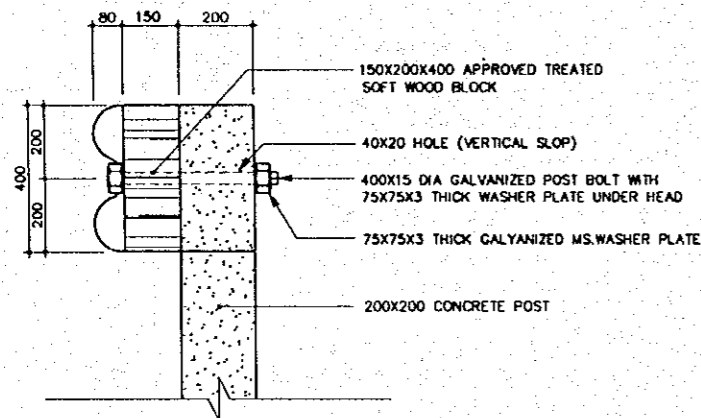
NOTE.
ALL DIMENSIONS ARE IN MILLIMETERS
UNLESS OTHERWISE SHOWN.



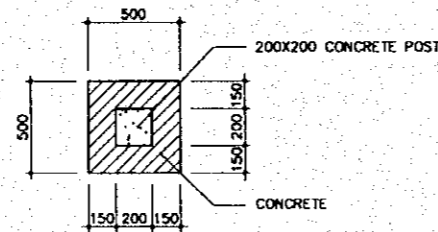
3 SECTION 1-1
SCALE 1:2

LIST OF LOCATION FOR DELINEATOR

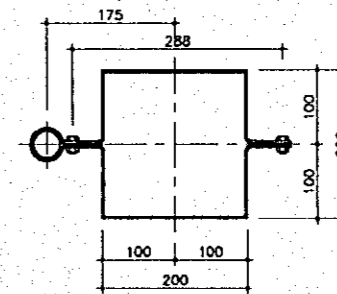
HORIZONTAL ALIGNMENT RADIUS	UNIT--METER
	INTERVAL
~50	5
51~80	7.5
81~125	10
126~180	12.5
181~245	15
246~320	17.5
321~405	20
406~500	22.5
500~650	25
651~900	30



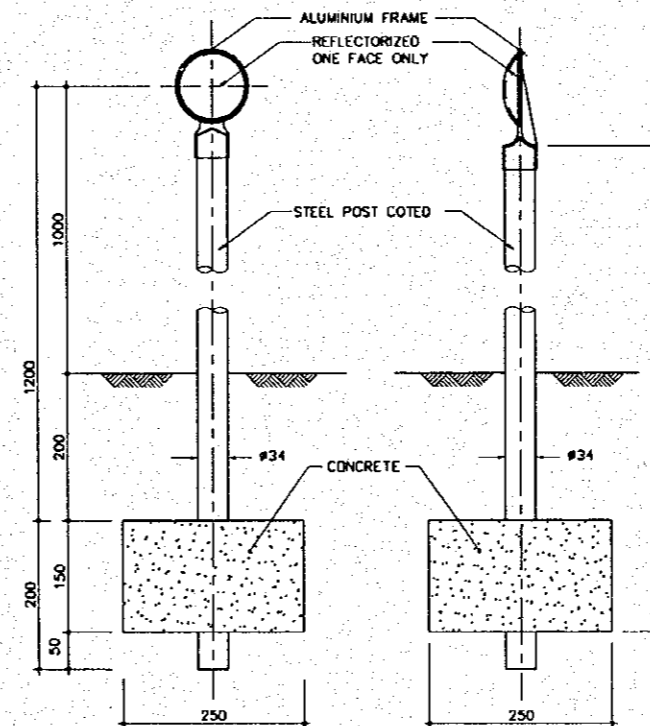
3 DETAIL-1
SCALE 1:10



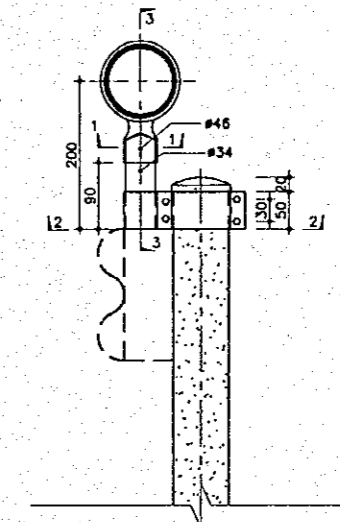
4 SECTION: 2-2
SCALE 1:20



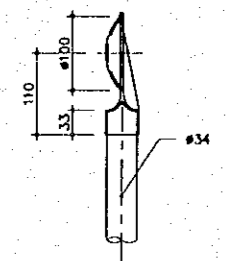
4 SECTION 2-2
SCALE 1:5



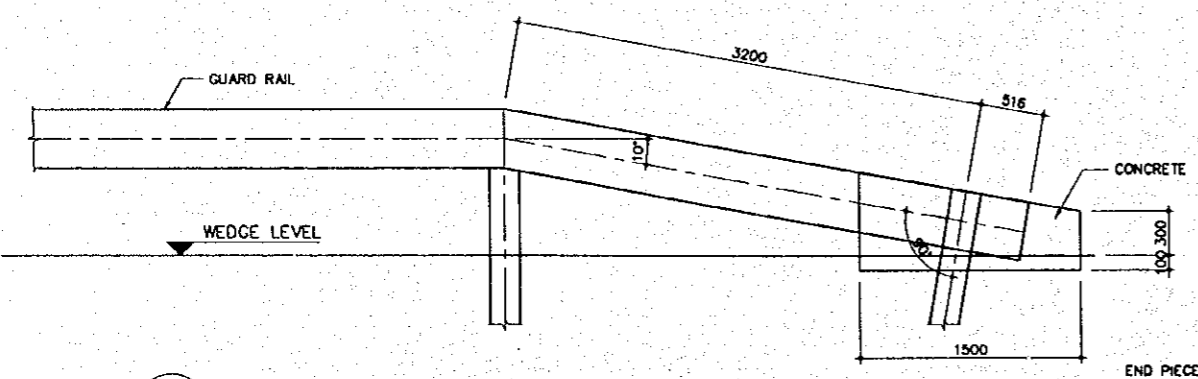
1 DELINEATOR (DE-1)
SCALE 1:5



2 DELINEATOR (DE-2)
SCALE 1:5



5 SECTION 3-3
SCALE 1:5



5 ELEVATION OF GUARD RAIL AT ENDS
SCALE 1:25

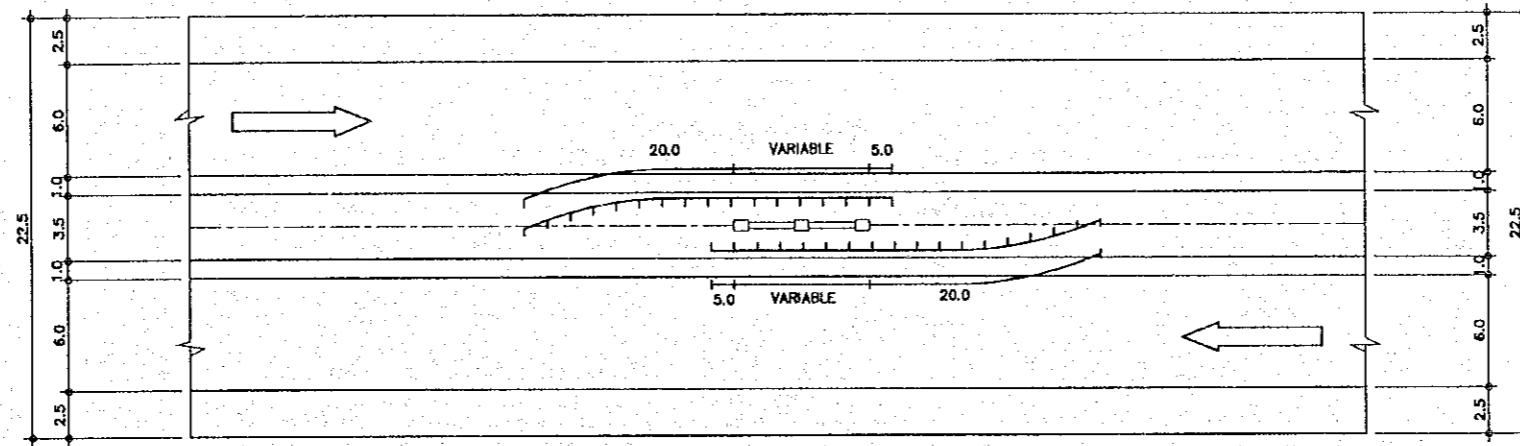
A GUARD RAIL
SCALE AS SHOWN

B DELINEATOR
SCALE AS SHOWN

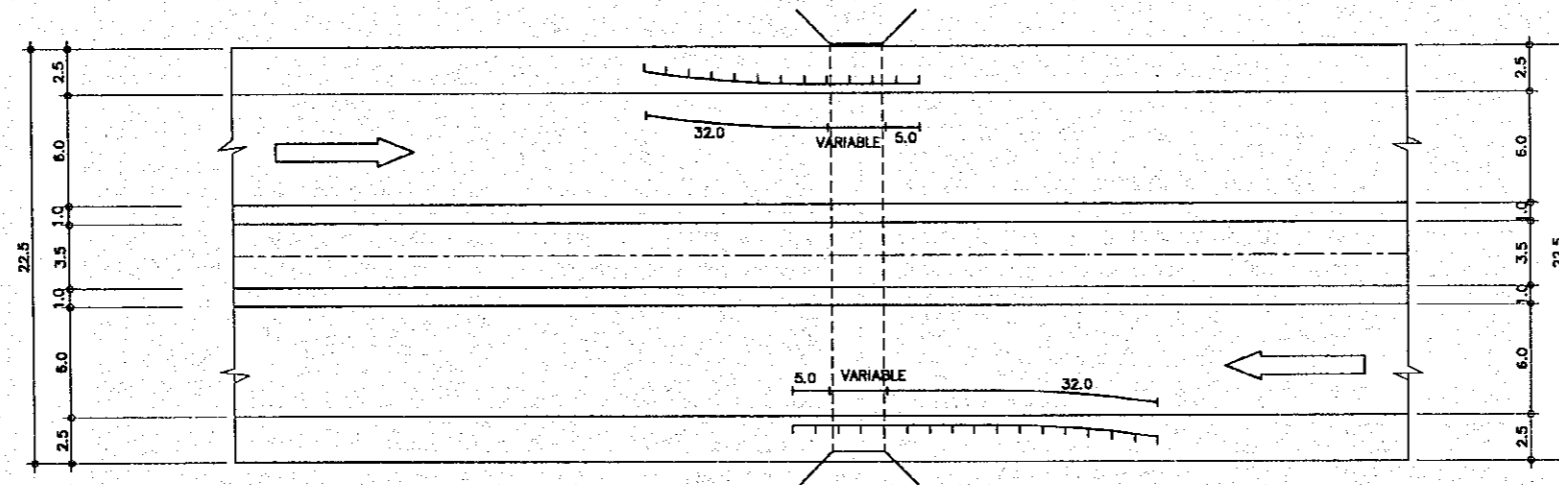
THE STUDY ON CONSTRUCTION OF THE BRIDGE
OVER THE RIVER RUPSA IN KHULNA (PHASE 2)

LAYOUT OF GUARD RAIL

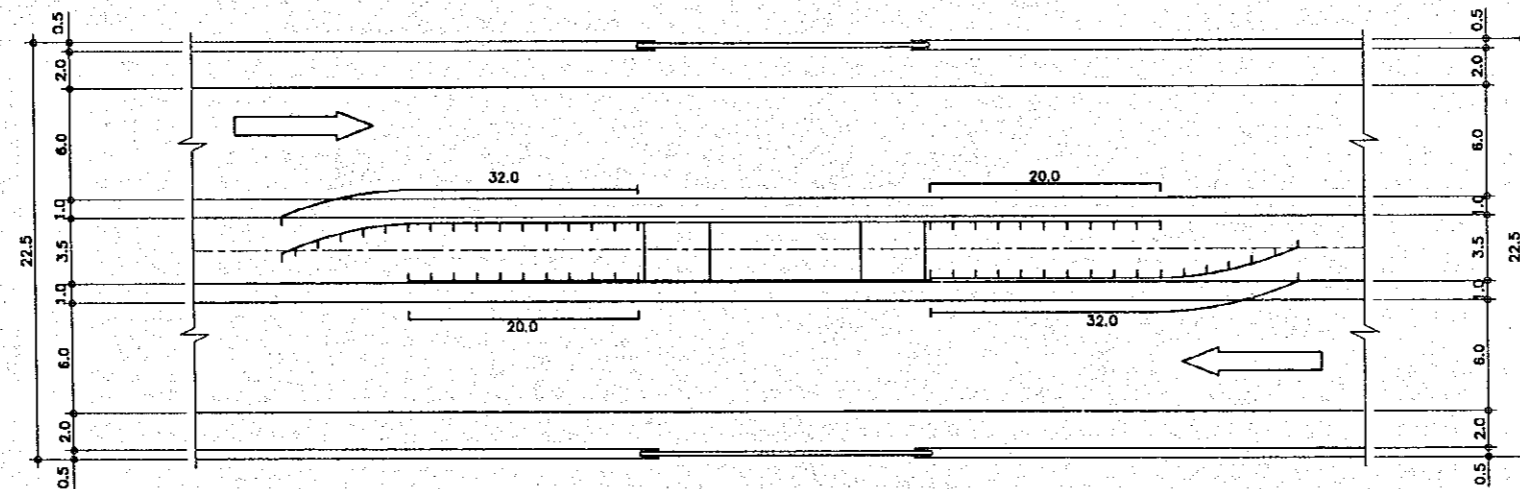
SCALE	SHEET NO.
1:200	H-20



1 FOR DITCH AND CATCH BASIN ON MIDEAN
SCALE 1:200



2 FOR BOX CULVERT
SCALE 1:200



3 FOR CANAL BRIDGE
SCALE 1:200
A LAYOUT OF GUARD RAIL
SCALE 1:200

NOTE:
ALL DIMENSIONS ARE IN METERS
UNLESS OTHERWISE SHOWN.

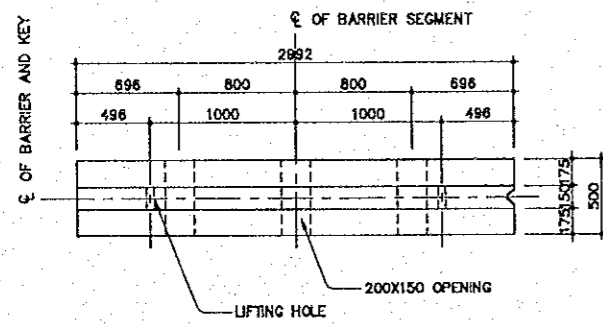
THE STUDY ON CONSTRUCTION OF THE BRIDGE
OVER THE RIVER RUPSA IN KHULNA (PHASE 2)

CONCRETE BARRIER

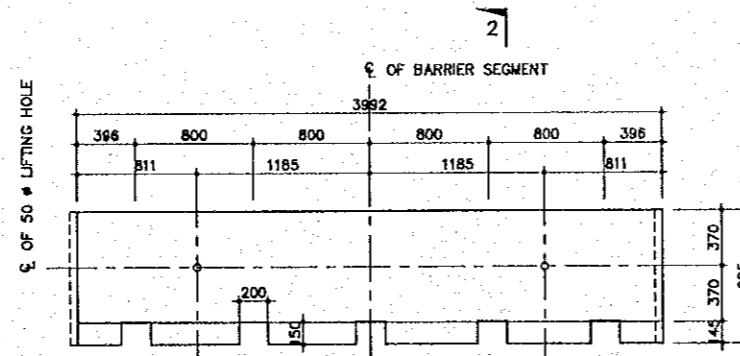
SCALE	SHEET NO.
AS SHOWN	H-21

NOTES:

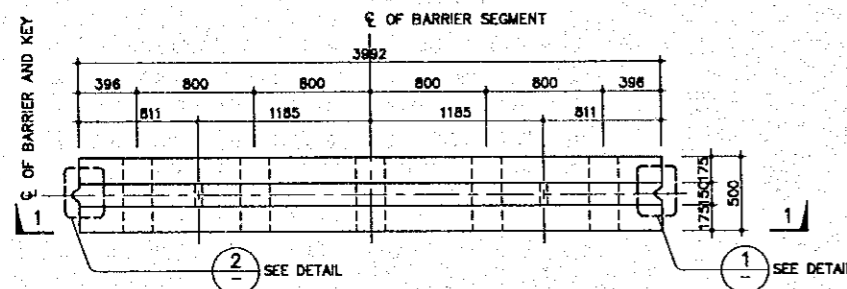
- GRADE OF CONCRETE TO BE CLASS 30/20.
- CONCRETE FINISH TO BE :
EXPOSED FORMED FACES F4
HIDDEN FORMED FACES F2
EXPOSED FORMED FACES U3
HIDDEN FORMED FACES U2
- ALL EXTERNAL EDGES TO HAVE 15x15 CHAMFER UNLESS NOTED OTHERWISE.
- REINFORCEMENT TO BE DEFORMED BAR TO AASTHO M31 (ASTM A615)
GRADE 40 OR GRADE 60 AS NOTED.
- MINIMUM CONCRETE COVER TO REINFORCEMENT TO BE 50mm.
- MINIMUM LAP LENGTH TO AS FOLLOWS UNLESS SHOWN OTHERWISE.
32 # = 1500mm 18 # = 550mm
25 # = 950mm 12 # = 400mm
20 # = 650mm 10 # = 350mm
LAP LENGTH BASED ON SMALLEST DIAMETER BAR AND CALCULATED IN ACCORDANCE WITH AASHTO ARTICLE 8.32, ASSUMING BAR TO BE FULLY STRESSED.
- REINFORCEMENT TO BE ANCHORED USING DEVELOPMENT LENGTHS CALCULATED IN ACCORDANCE WITH AASHTO ARTICLE 8.25, ASSUMING BAR TO BE FULLY STRESSED.
- KEY TO REINFORCEMENT NOMENCLATURE :
07 - 34 T16/150 NF
BAR MARK QUANTITY LOCATION BAR SPACING BAR DIAMETER BAR TYPE
T = GRADE 60 BARS
R = GRADE 40 BARS
ABBREVIATIONS : - NF = NEAR FACE ; FF = FOR FACE ;
EF = EACH FACE ; T = TOP ; B = BOTTOM ;
STAGG = STAGGERED ; ALT = ALTERNATE SPACING ;
ABR = ALTERNATE BARS REVERSED.
- JOINT BETWEEN BARRIER UNITS TO BE LEFT DRY.
NOMINAL GAP WIDTH TO BE 8mm.



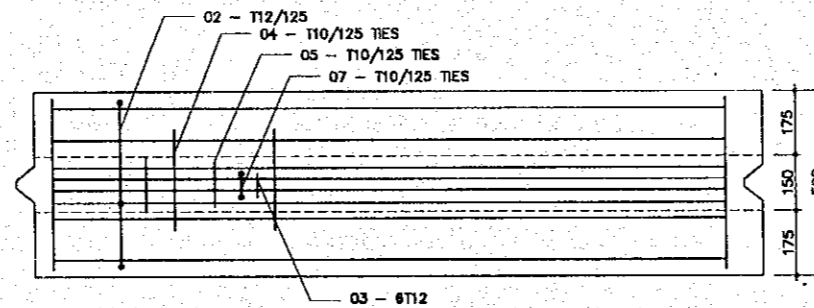
1 PLAN ON UNIT (BB-1)
SCALE 1:25



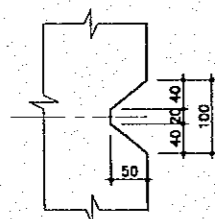
3 ELEVATION 1-1
SCALE 1:25



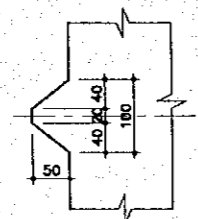
2 PLAN ON UNIT (BB-2)
SCALE 1:25



4 PLAN ON TYPICAL UNIT
SHOWING RC DETAILS
SCALE 1:10

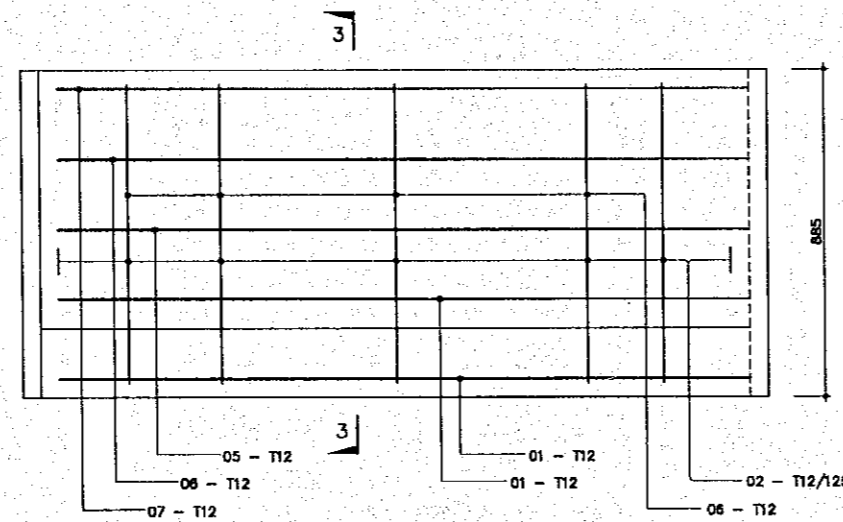


6 DETAIL - 1
SCALE 1:10

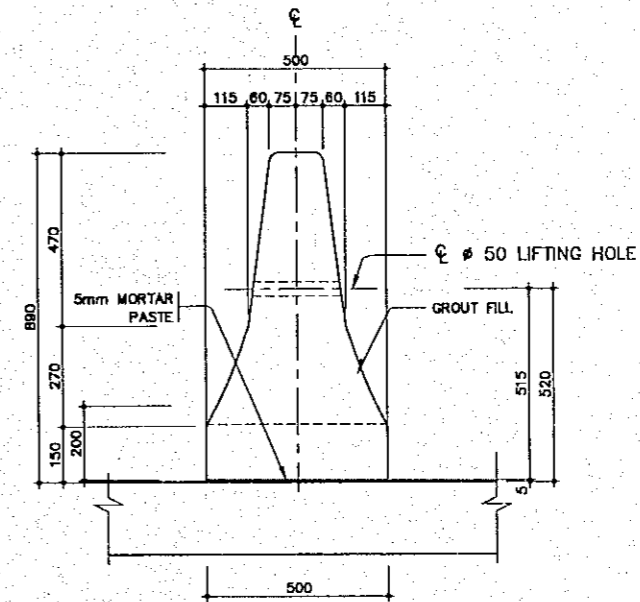


7 DETAIL - 2
SCALE 1:10

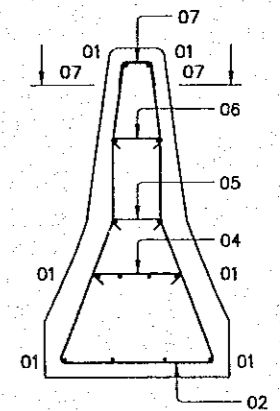
A CONCRETE BARRIER
SCALE AS SHOWN



5 ELEVATION ON TYPICAL UNIT
SHOWING RC DETAILS
SCALE 1:10



8 SECTION 2-2
SCALE 1:10

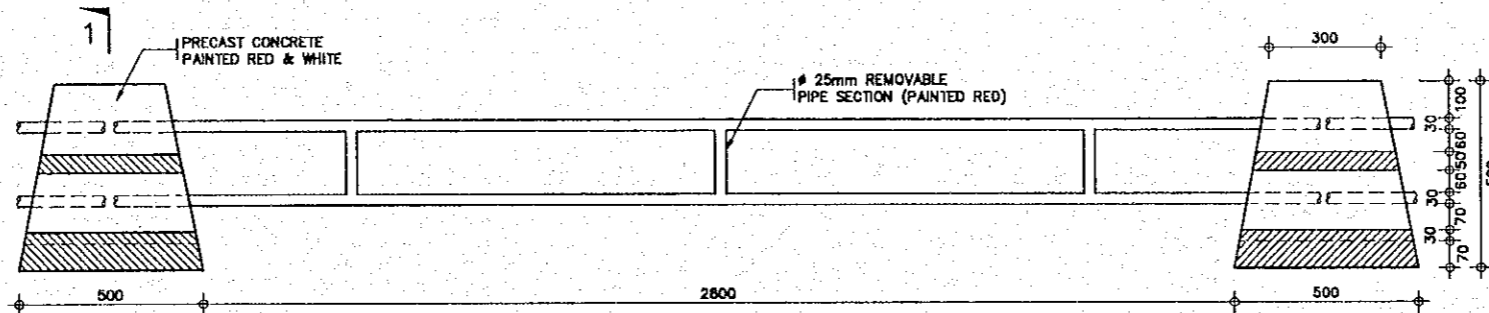


9 SECTION 3-3
SCALE 1:10

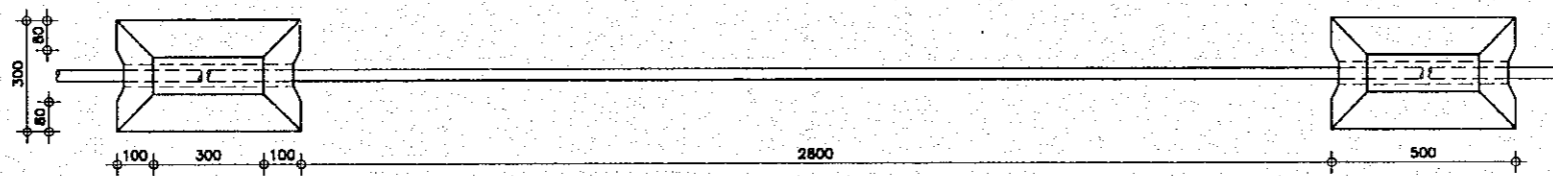
THE STUDY ON CONSTRUCTION OF THE BRIDGE
OVER THE RIVER RUPSA IN KHULNA (PHASE 2)

STEEL BARRIER

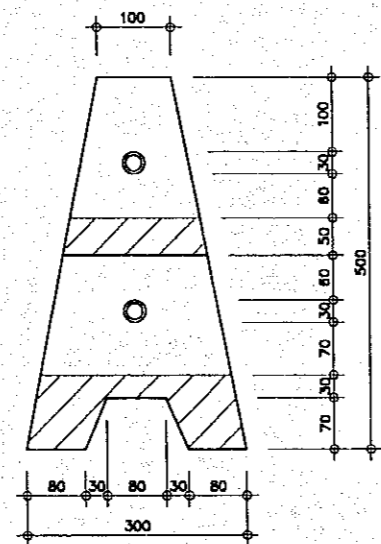
SCALE	SHEET NO.
AS SHOWN	H-22



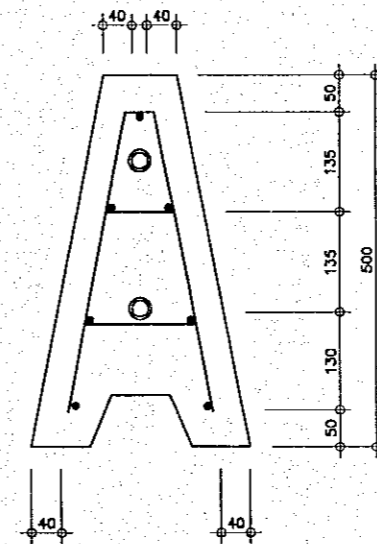
1 PROFILE
SCALE 1:10



2 PLAN
SCALE 1:10



3 SECTION 1-1
SCALE 1:5



4 RE-BAR DETAIL
SCALE 1:5

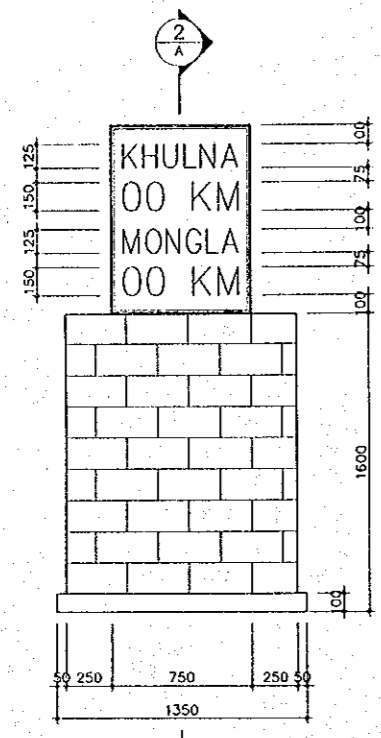
A STEEL BARRIER (SB-1)
SCALE AS SHOWN

NOTE:
ALL DIMENSIONS ARE IN MILLIMETERS
UNLESS OTHERWISE SHOWN.

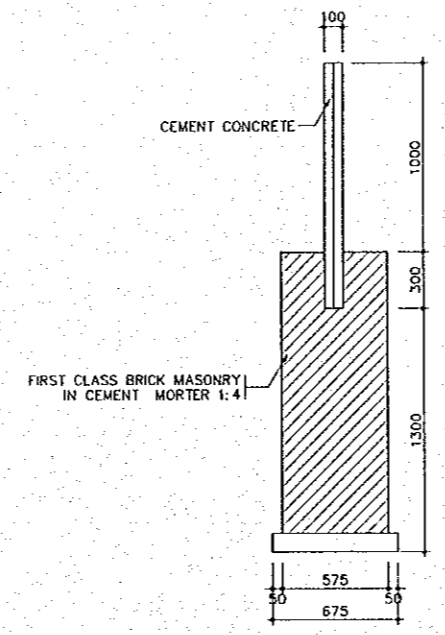
THE STUDY ON CONSTRUCTION OF THE BRIDGE
OVER THE RIVER RUPSA IN KHULNA (PHASE 2)

KILOMETER POST

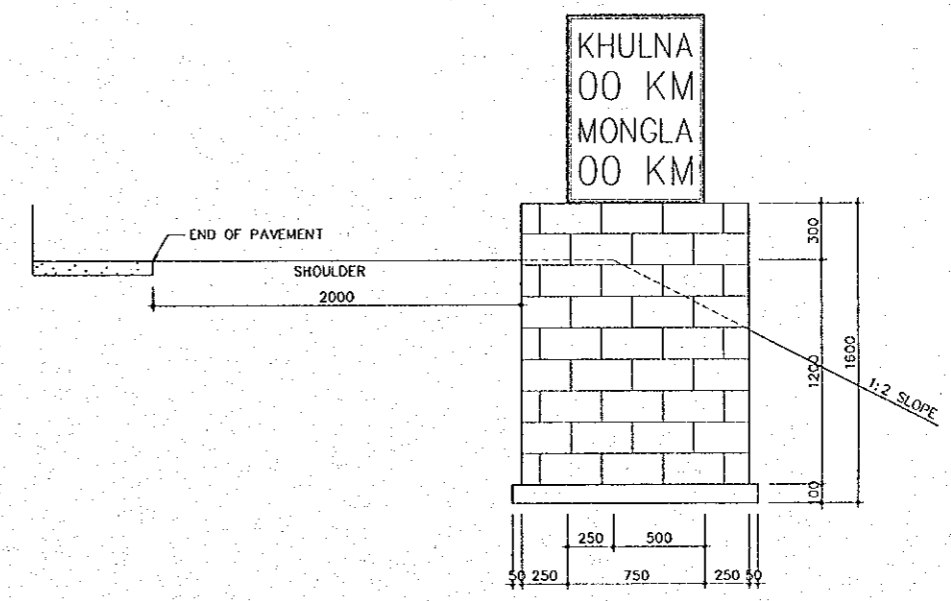
SCALE	SHEET NO.
AS SHOWN	H-23



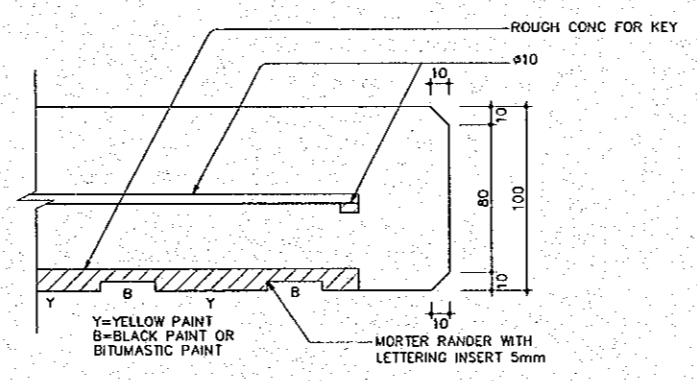
1 PROFILE
SCALE 1:20



2 SECTION 2-2
SCALE 1:20



3 PLACEMENT OF KILOMETER POST
SCALE 1:20



4 DETAIL
SCALE 1:2

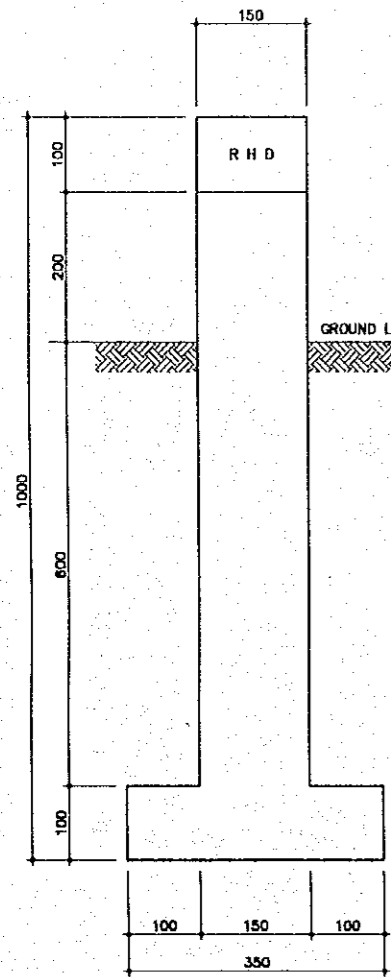
A KILOMETER POST (KP-1)
SCALE AS SHOWN

NOTE.
ALL DIMENSIONS ARE IN MILLIMETERS
UNLESS OTHERWISE SHOWN.

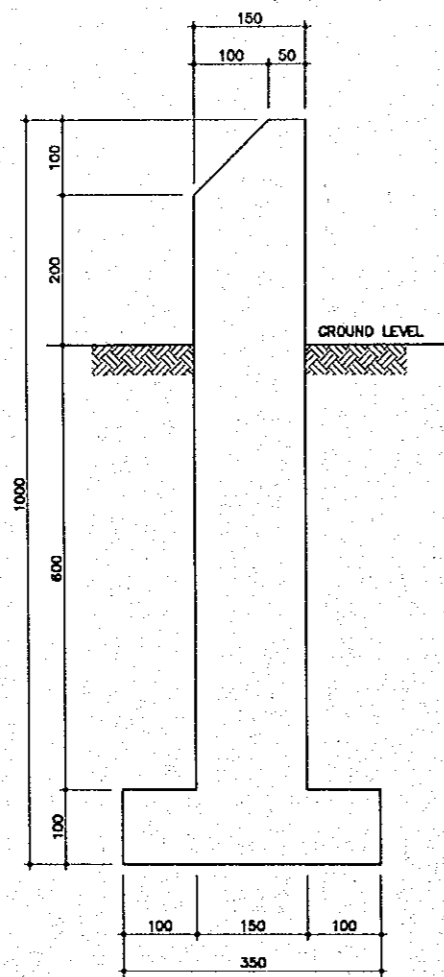
THE STUDY ON CONSTRUCTION OF THE BRIDGE
OVER THE RIVER RUPSA IN KHULNA (PHASE 2)

R.O.W. MARKER POST & EDGE BLOCK

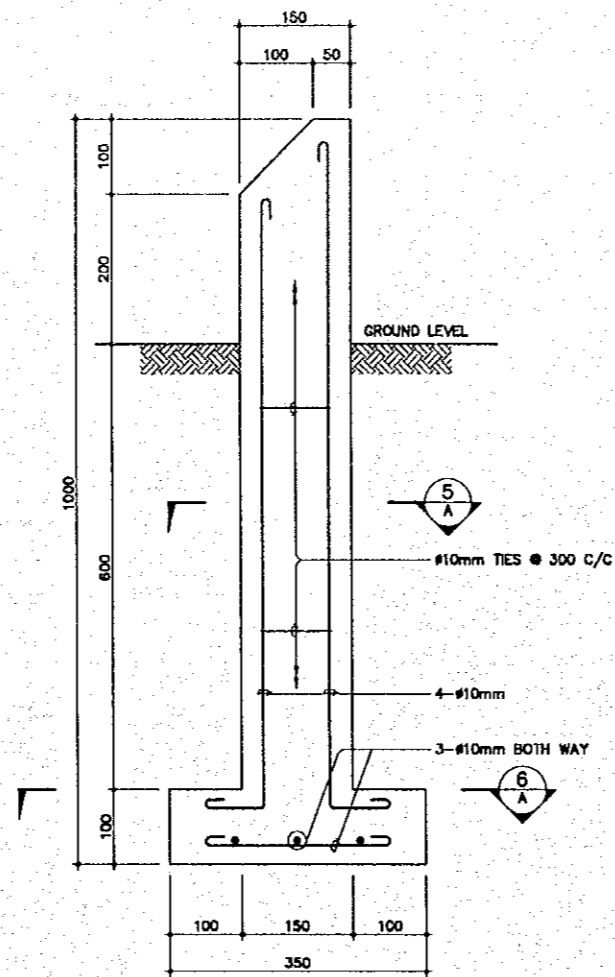
SCALE	SHEET NO.
1:5	H-24



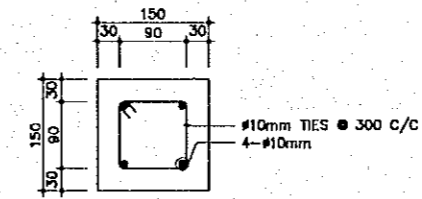
1 FRONT VIEW
SCALE 1:5



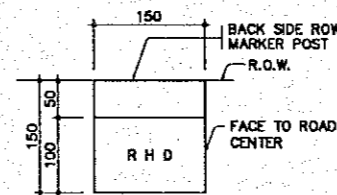
2 SIDE VIEW
SCALE 1:5



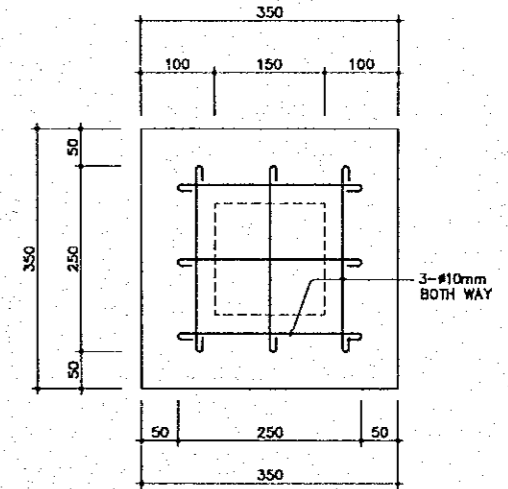
3 RE-BAR DETAIL
SCALE 1:5



5 SECTION
SCALE 1:5

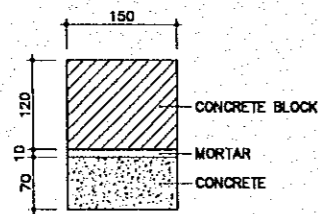


4 SECTION
SCALE 1:5

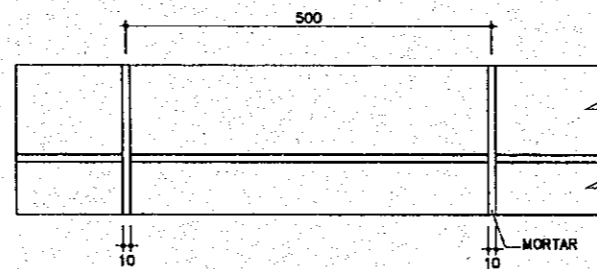


6 PLAN OF FOOTING
SCALE 1:5

A R.O.W. MARKER POST (RM-1)
SCALE 1:5



1 SECTION
SCALE 1:5



2 PROFILE
SCALE 1:5

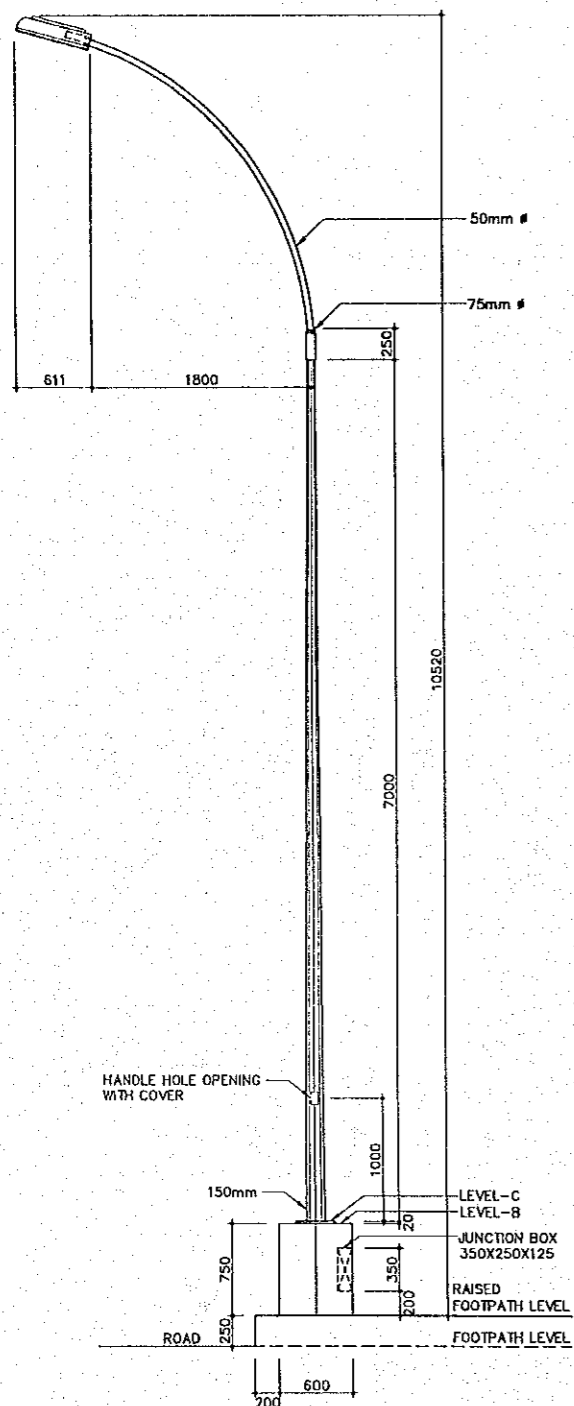
B EDGE BLOCK (EB-1)
SCALE 1:5

NOTE:
ALL DIMENSIONS ARE IN MILLIMETERS
UNLESS OTHERWISE SHOWN.

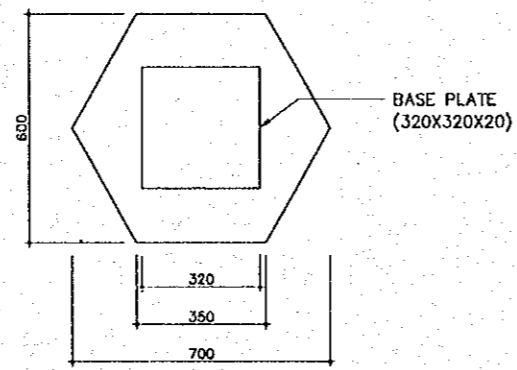
THE STUDY ON CONSTRUCTION OF THE BRIDGE
OVER THE RIVER RUPSA IN KHULNA (PHASE 2)

LIGHTING ON EMBANKMENT

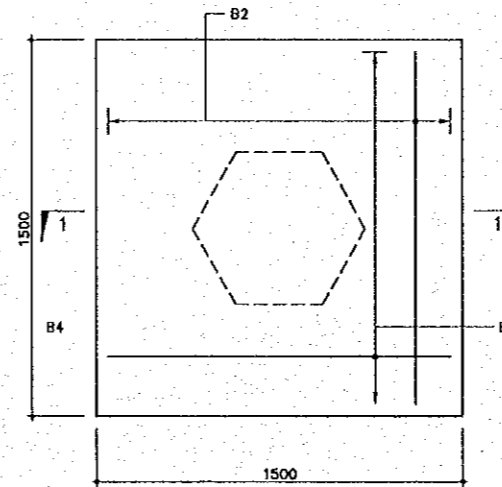
SCALE	SHEET NO.
AS SHOWN	H-25



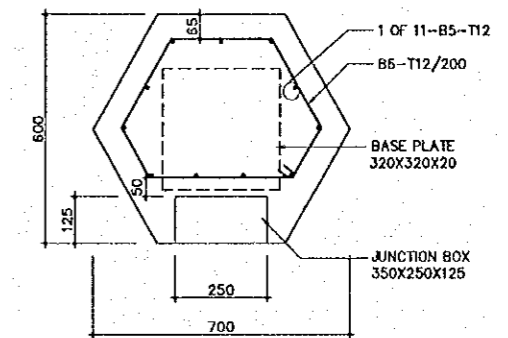
1 LIGHT COLUMN ON EMBANKMENT
SCALE 1:30



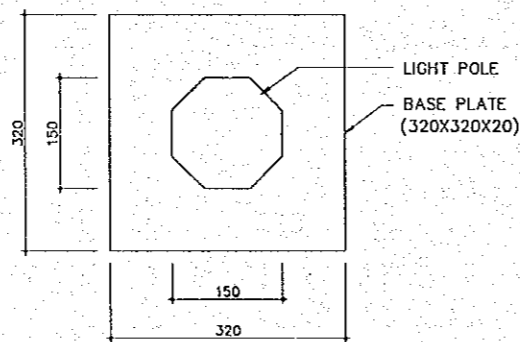
2 PLAN AT LEVEL-B
SCALE 1:10



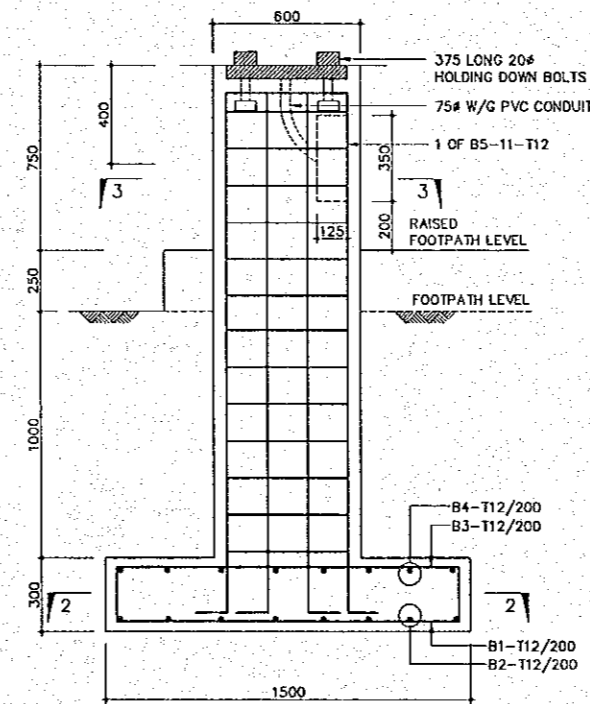
5 SECTION 2-2
SCALE 1:15



6 SECTION 3-3
SCALE 1:10



3 PLAN AT LEVEL-C
SCALE 1:5



4 FOUNDATION PROFILE OF LIGHTING POLE
SCALE 1:15

1 LIGHTING ON EMBANKMENT
SCALE AS SHOWN

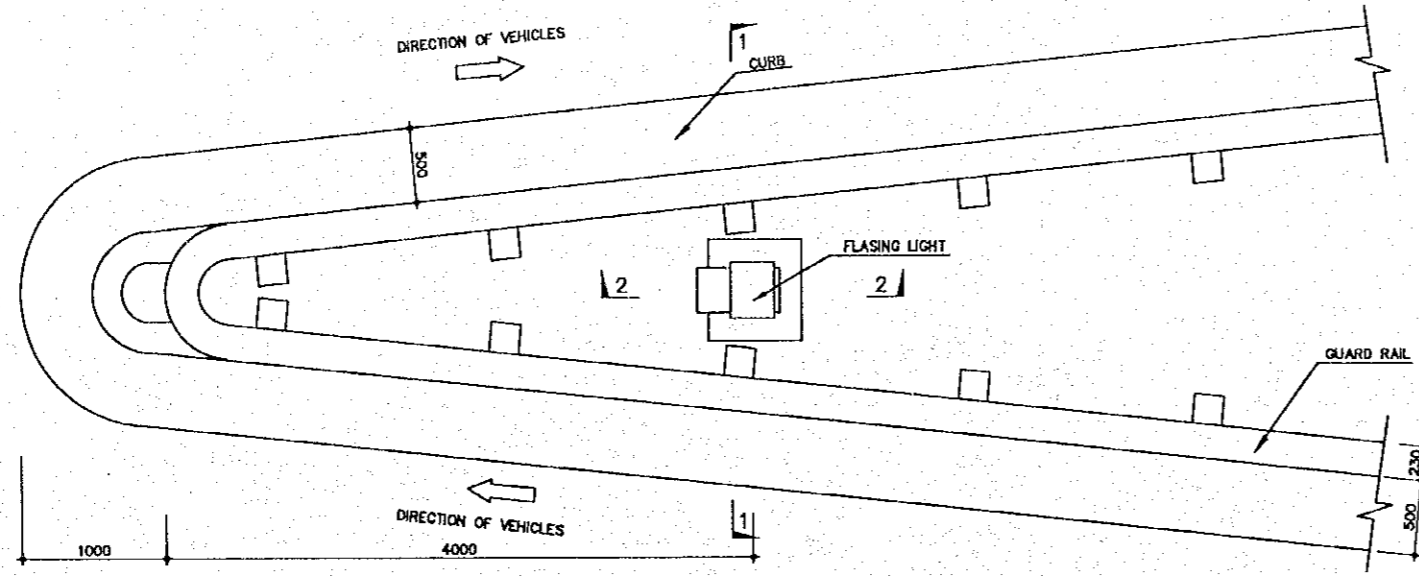
NOTES:

- ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN.
- ALL STEEL WORK TO BE HOT DIP GALVANIZED IN ACCORDING WITH THE SPECIFICATION.
- FOR DETAIL OF DISTRIBUTION BOARD REFER TO DRG NO. P-02

THE STUDY ON CONSTRUCTION OF THE BRIDGE
OVER THE RIVER RUPSA IN KHULNA (PHASE 2)

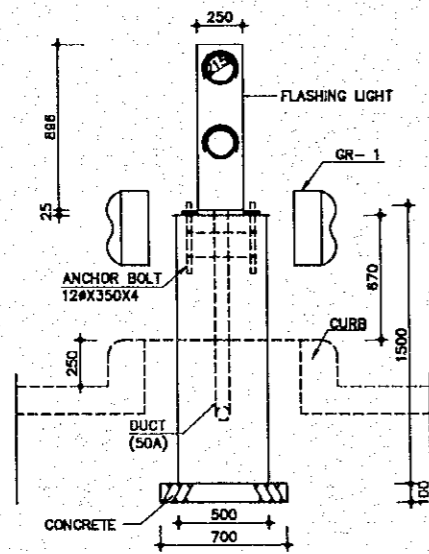
FLASHING LIGHT

SCALE	SHEET NO.
AS SHOWN	H-26

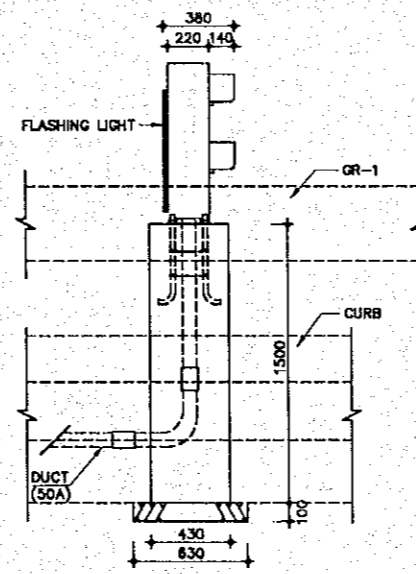


NOTE:
ALL DIMENSIONS ARE IN MILLIMETERS
UNLESS OTHERWISE SHOWN

1 PLACEMENT FOR FLASHING LIGHT
SCALE 1:25

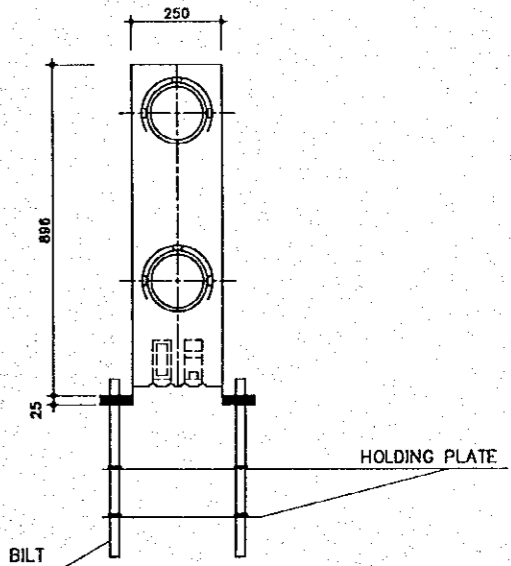


2 SECTION 1-1
SCALE 1:20

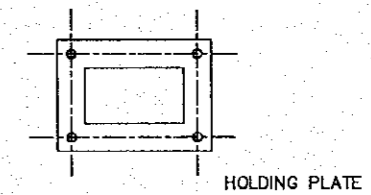


3 SECTION 2-2
SCALE 1:20

A FLASHING LIGHT (FL)
SCALE 1:20



4 PROFILE OF HOLDING PLATE
SCALE 1:10

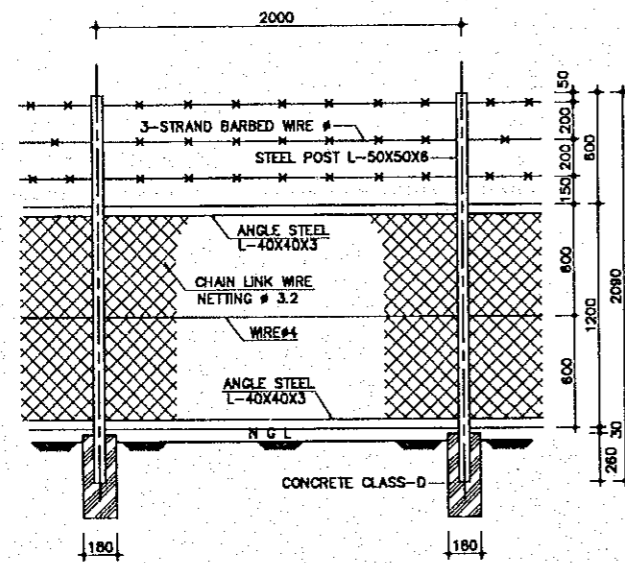


5 PLAN OF HOLDING PLATE
SCALE 1:10

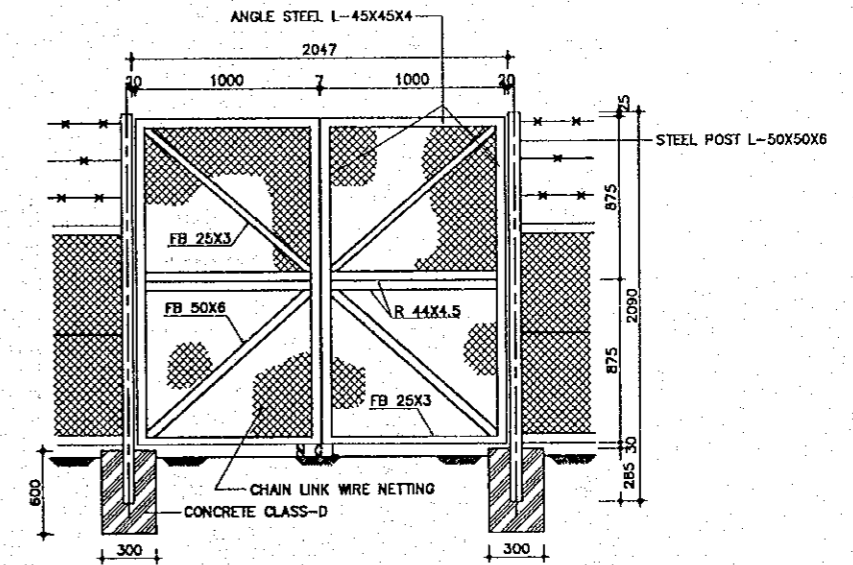
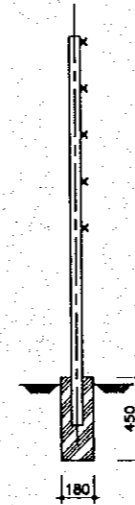
THE STUDY ON CONSTRUCTION OF THE BRIDGE
OVER THE RIVER RUPSA IN KHULNA (PHASE 2)

SAFETY FENCE

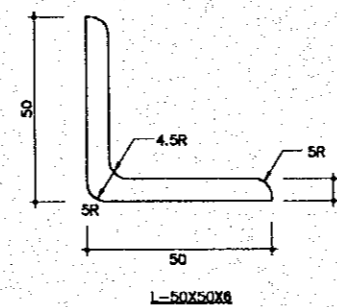
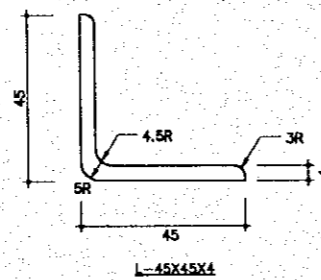
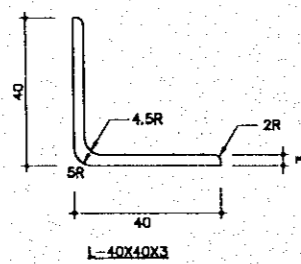
SCALE	SHEET NO.
AS SHOWN	H-27



1 SAFETY FENCE (SF-1)
SCALE 1:20



2 SAFETY FENCE (SF-2)
SCALE 1:20



3 SECTIONAL DIMENSIONS OF STEEL ANGLE
SCALE 1:1

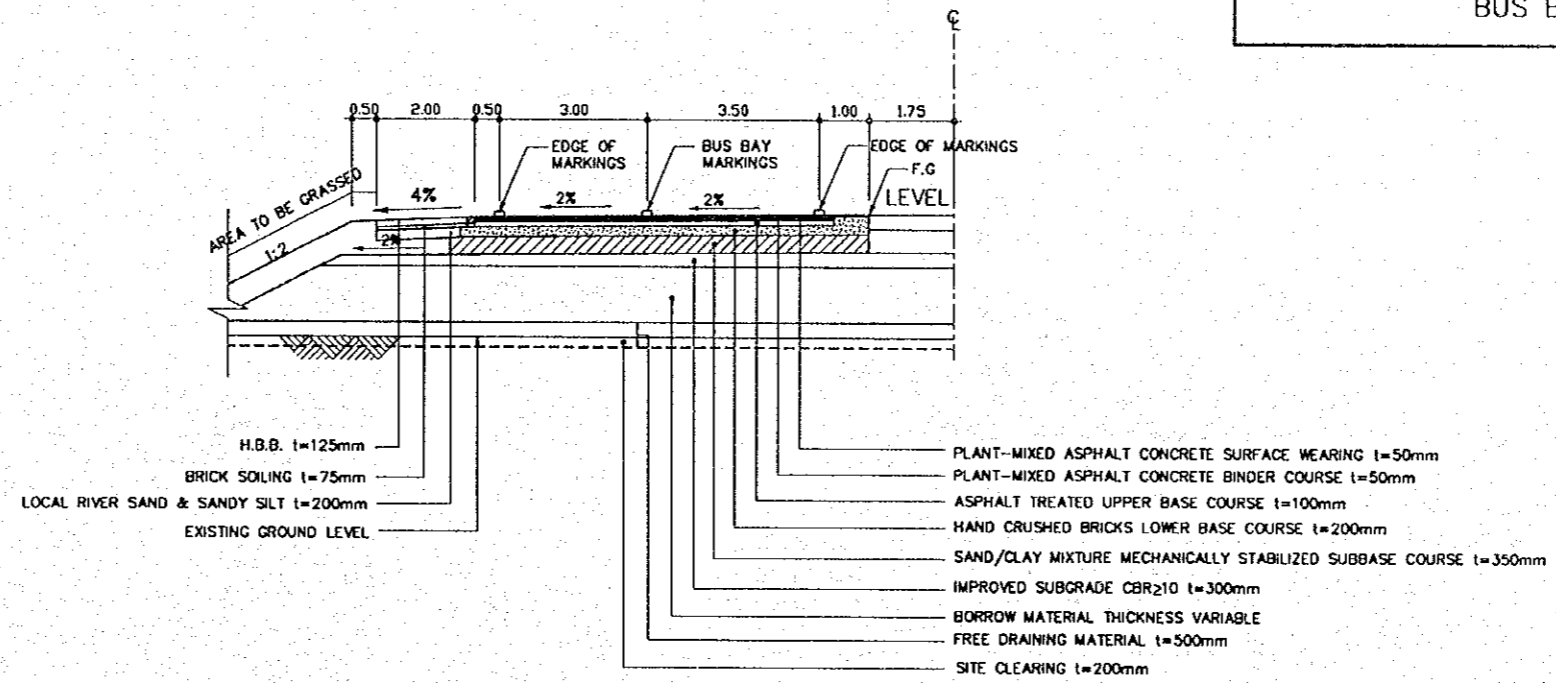
2 SEPARATOR FENCE
SCALE AS SHOWN

1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN.
2. ALL EXPOSED STEEL MATERIALS EXCEPT STAINLESS STEEL SHALL BE COATED BY GALVANISING.
3. SEPARATOR FENCES SF-1 SHALL BE INSTALLED AS SHOWN ON THE PLAN OR AS INSTRUCTED BY THE ENGINEER.
4. SEPARATOR FENCE, SF-2, SHALL BE INSTALLED AS INSTRUCTED BY THE ENGINEER.

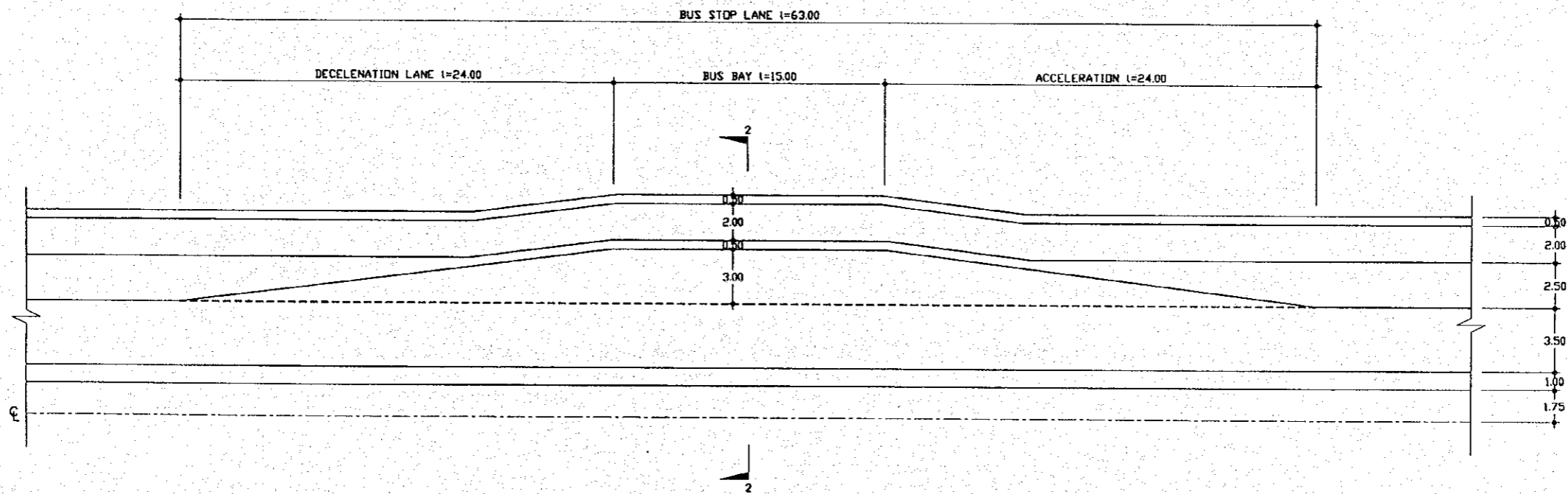
THE STUDY ON CONSTRUCTION OF THE BRIDGE
OVER THE RIVER RUPSA IN KHULNA (PHASE 2)

BUS BAY

SCALE	SHEET NO.
AS SHOWN	H-28



2 CROSS SECTION 2-2
H-28 SCALE 1:75



1 PLAN
A SCALE 1:150

A BUS BAY
H-28 SCALE AS SHOWN

NOTE.
ALL DIMENSIONS ARE IN METERS
UNLESS OTHERWISE SHOWN.

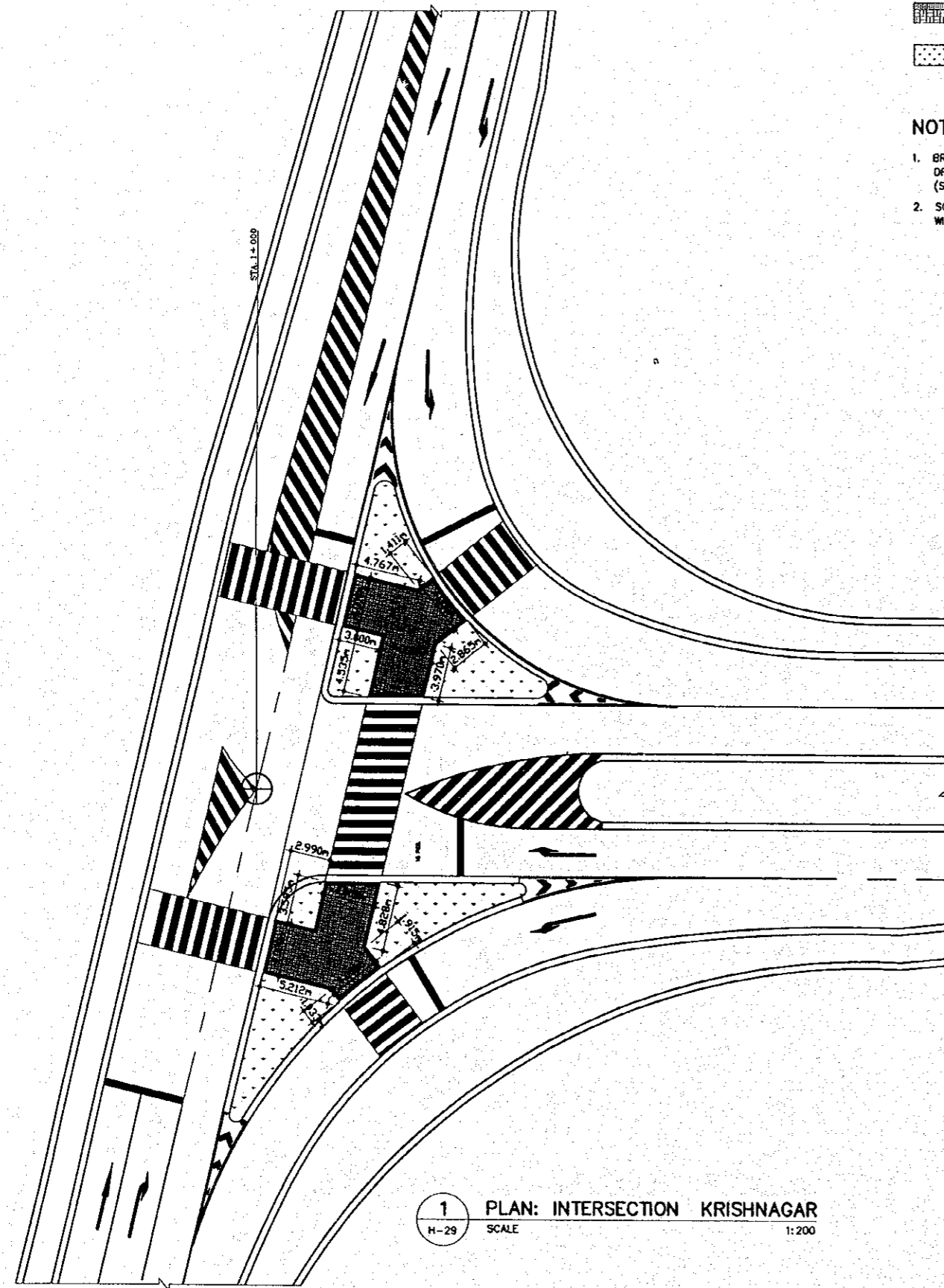
LEGEND

BRICK PAVING

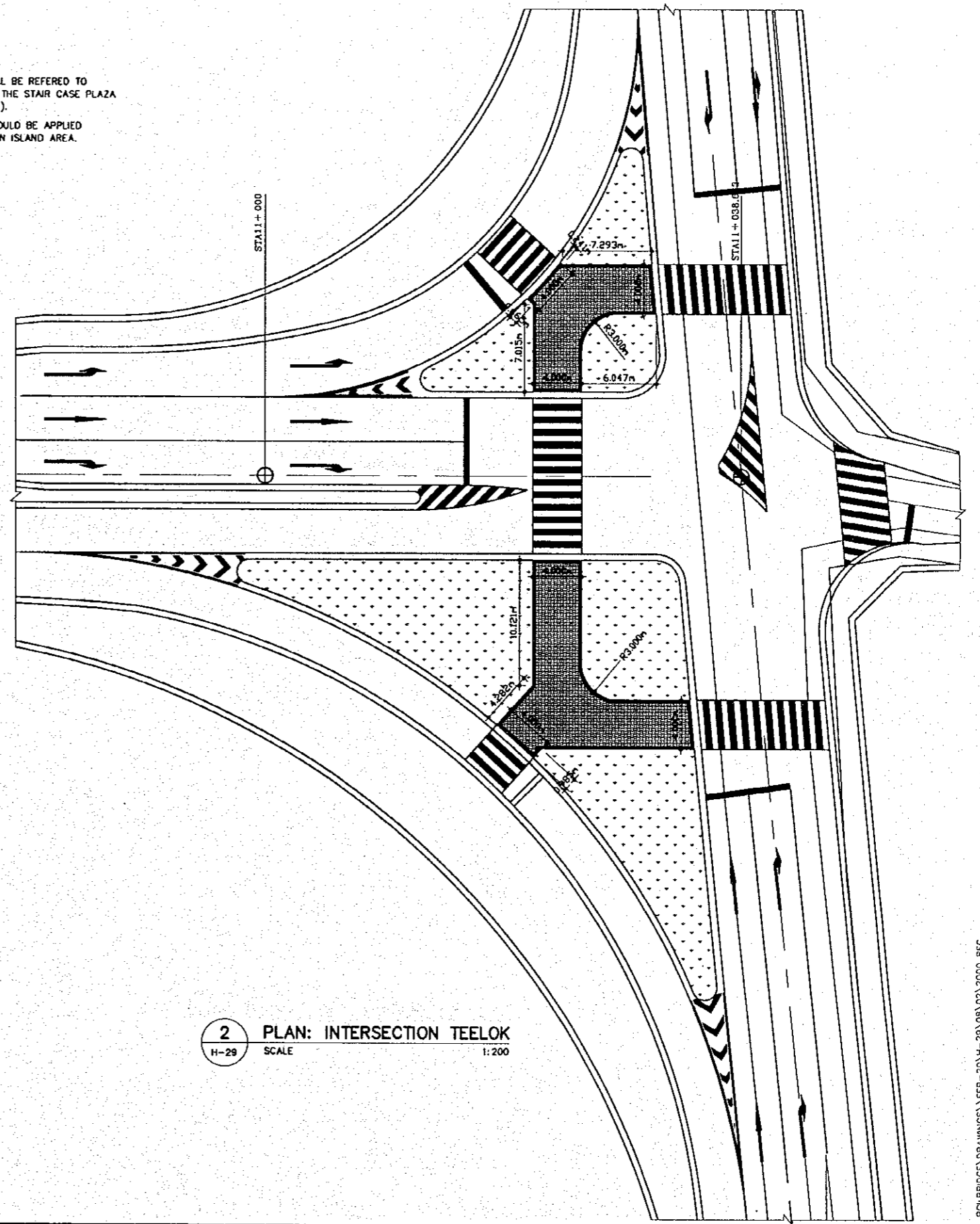
SOLID SOODING

NOTE

1. BRICK PAVING SHALL BE REFERED TO DRAWING SAME AS THE STAIR CASE PLAZA (SEE DRG.NO. N-21).
2. SOLID SOODING SHOULD BE APPLIED WITHIN INTERSECTION ISLAND AREA.



1 PLAN: INTERSECTION KRISHNAGAR
H-29 SCALE 1:200





2 PLAN: INTERSECTION TEELOK
H-29 SCALE 1:200

THE STUDY ON CONSTRUCTION OF THE BRIDGE
OVER THE RIVER RUPSA IN KHULNA (PHASE 2)

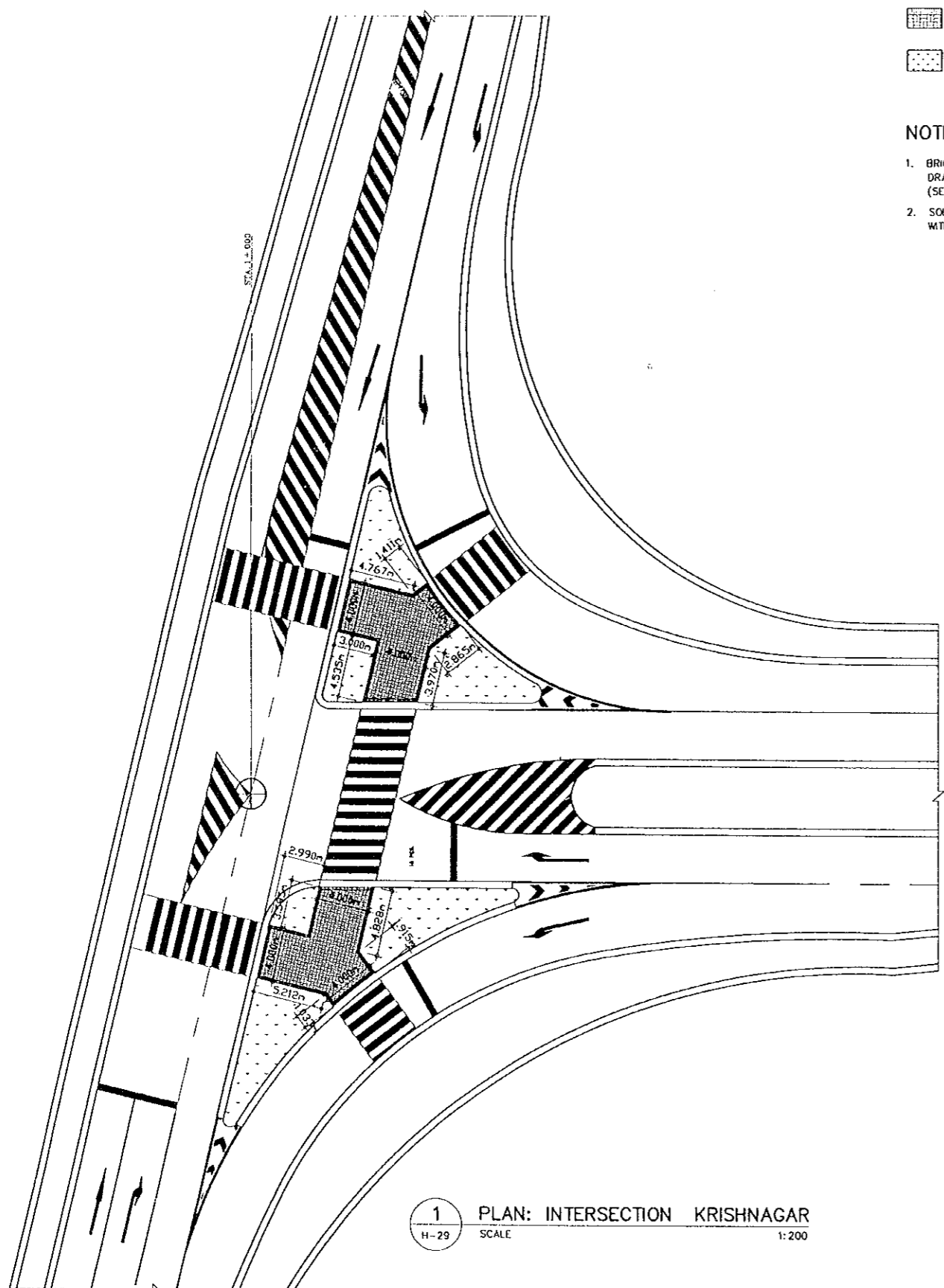
ROAD INTERSECTION PLANTING AND BRICK PAVEMENT	SCALE AS SHOWN	SHEET NO. H-29
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LEGEND

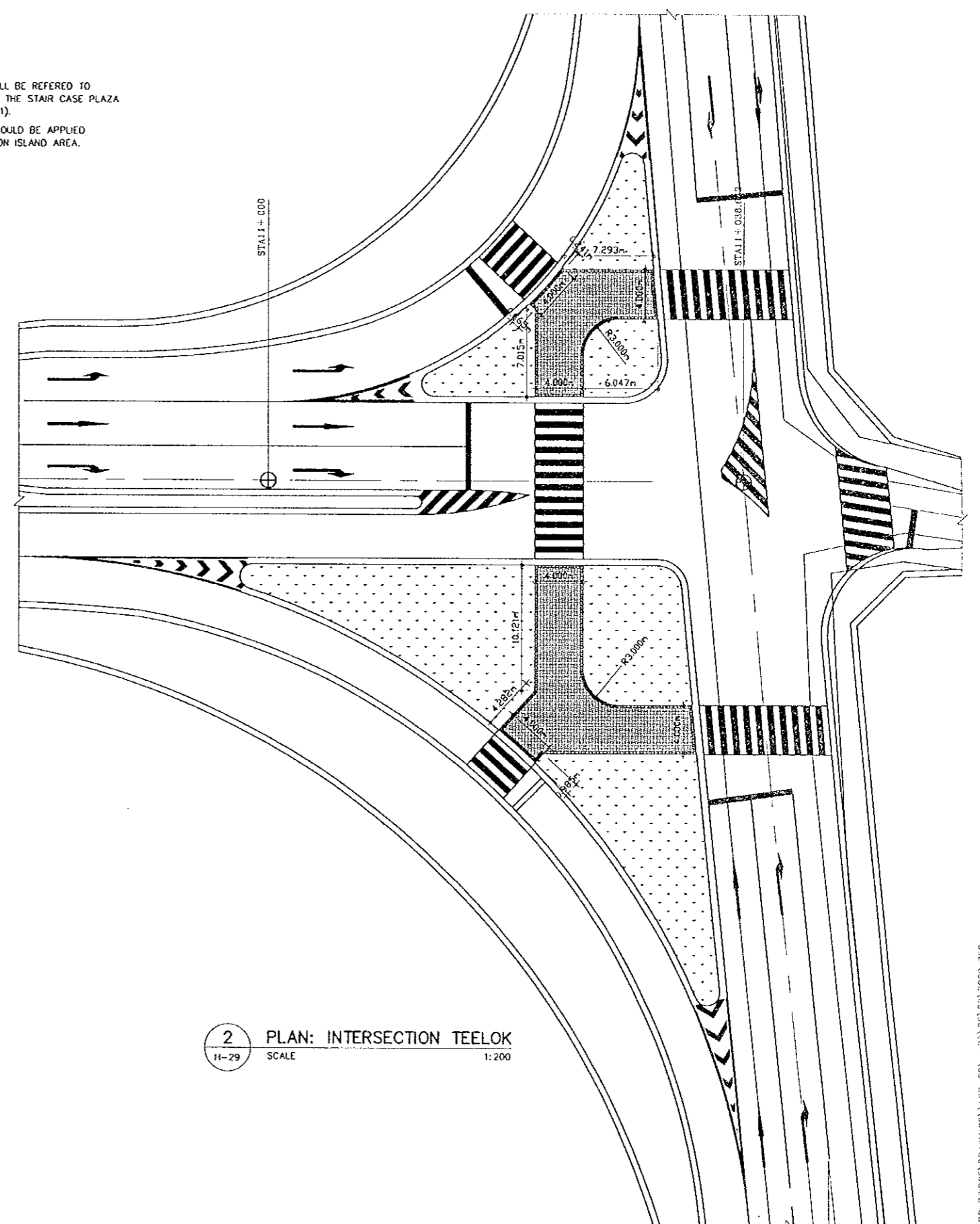
-  BRICK PAVING
-  SOLID SOODING

NOTE

1. BRICK PAVING SHALL BE REFERED TO DRAWING SAME AS THE STAIR CASE PLAZA (SEE ORG.NO. N-21).
2. SOLID SOODING SHOULD BE APPLIED WITHIN INTERSECTION ISLAND AREA.



1 PLAN: INTERSECTION KRISHNAGAR
H-29 SCALE 1:200



2 PLAN: INTERSECTION TEELOK
H-29 SCALE 1:200