GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

PROJECT : CONSTRUCTION OF IMPORTANT BRIDGES ON RURAL ROADS

DETAIL DRAWING
FOR
CONSTRUCTION OF 301.30M LONG PSC GIRDER BRIDGE AT NUNDAHA GHAT OVER THE RIVER KARTOA AT CH. 4+500 Km ON CHATRA GC - GILLABARI GHAT VIA NISCHINTOBATI PRIMARY SCHOOL ROAD
(ROAD ID: 185764034)
UPAZILA : PIRGANJ , DISTRICT : RANGPUR

DESIGN UNIT OF LGED
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Design Unit, LGED HQ
Drawing No: 2859
Dated 26.09.17
Signature of MIS Officer (DU)

SEPTEMBER - 2017

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GENERAL NOTES & SPECIFICATION FOR CONSTRUCTION OF RCC COMPONENTS OF BRIDGE

1. **DESIGN STANDARD** : AASHTO LRFD Bridge Design Specification 2007
2. **DESIGN LOADING** : AASHTO; HL-93
3. **CEMENT** : Cement Conforming To BDS EN 197-1: 2003 CEM I 52.5 N / ASTM C 150 TYPE I

3.a. SETTING TIME:

Initial Setting Time : Not Less Than 45 Minutes
Final Setting Time : Not More Than 8 Hours

3.b. STRENGTH :

Compressive Strength : 50mm Cube Specimen As per ASTM C 150
07 Days Strength : 19.30 Mpa

4. **REINFORCEMENT** :

4.a. STRENGTH :

4.a.1. All reinforcements are of 400 grade high strength deformed bar made from billet steel.

4.a.2. Ribbed or Deformed bar produced and marked as per BDS ISO 6935-2 : 2006 with minimum yield stress, f_y (R_{eH}) = 400 MPa, but the actual yield strength based on mill tests does not exceed f_y by more than the 125 MPa, the ratio of actual ultimate strength, f_u (R_e) to actual tensile yield strength (f_y) shall be at least 1.25 and minimum elongation after fracture ($A_{5.65}$) & minimum total elongation at maximum force (A_{gt}) is 14% and 2.5% respectively.

4.a.3. The following tests for reinforcing bars from random samples shall be conducted at BUET/ KUET/ RUET/ CUET as per BDS ISO 6935-2 : 2006/ ASTM A 615M / ASTM A 706M and test result shall be submitted to the engineer for checking and record :

Tensile strength test
Elongation test
Bend/ Re-bend test

4.b. SPLICES IN REINFORCEMENT :

4.b.1. Splices in Reinforcement if necessary shall be made only as approved by the Engineer-In-Charge. Splices in Reinforcement at maximum stress in Deck and Girders should be avoided.

4.c. LAP LENGTH :

4.c.1. Not more than 33% of reinforcement shall be lapped at any one section.

4.c.2. For closely spaced bars lapping may be avoided by providing suitable mechanical anchorage (with prior approval).

4.c.3. Minimum lap length of bar shall conform to AASHTO LRFD. Unless otherwise specified, length of the lap splice shall be in accordance with the following Table:

Table: 10

Bar Dia, mm	f'c (MPa)														
	25	30	35	40	45	25	30	35	40	45	25	30	35	40	45
	Tension										Compression				
	Top Bar					Bottom Bar									
10	650	600	550	525	500	500	450	425	400	375	225	225	225	225	225
12	750	700	650	625	600	575	525	500	475	450	250	225	225	225	225
16	1000	925	850	825	750	775	700	650	625	575	325	300	275	250	250
20	1275	1150	1075	1000	950	975	875	825	775	725	400	350	325	325	300
22	1400	1275	1175	1100	1050	1075	975	900	850	800	425	400	375	350	325
25	1575	1425	1350	1250	1175	1200	1100	1025	950	900	500	450	425	400	375
32	2025	1825	1700	1600	1500	1550	1400	1300	1225	1150	625	575	525	500	475
40	2500	2300	2125	2000	1900	1925	1775	1625	1525	1450	775	700	650	625	575

4.d. MINIMUM COVER TO MAIN REINFORCEMENT :

4.d.1. Clear concrete cover to reinforcing bar shall be maintained as follows unless otherwise shown in the drawings or as directed by the Engineer.

Concrete Element	Clear Cover (mm)	
	Normal Exposure	Saline Water
Abutment, Pier & Deck	0	
(a) Contact with earth	60	75
(b) Exposed to weather and Water	50	60
Piles		
(a) Cast-in-place bored pile >1000 dia	125	75
(b) Cast-in-place bored pile ≤1000 dia	75	50
(c) Pre-cast	40	50
Beam, Girder, Column	50	60
Pier Cap	50	60
Deck Slab (Bottom Layer)	40	40
Deck Slab (Top Layer)	50	50
Railing	25	25

5. **CONCRETE** :

5.a. Concrete shall have 28 days standard Cylinder Crushing strength f'_c = 25 MPa, for RCC Cast -in-situ Pile.

5.b. Concrete shall have 28 days standard Cylinder Crushing strength f'_c = 30 MPa, for all other RCC components.

The minimum suggested mix shall be 1:1½:3 for class 25 concrete or a richer mix to attain the specified strength. Mixing ratio shall be confirmed by mix design.

6. Water to be used in concreting and curing shall conform to AASHTO LRFD.
7. All Dimensions are in mm unless otherwise mentioned
8. Slump for Cast-In-Situ pile shall be :150 to 200mm, for other Components: 50 to 75mm
9. Coarse Aggregate : 20mm down graded Crushed Stone Chips in Accordance With ASTM C 33 Or Equivalent
10. All exposed RCC surfaces shall be form finished.
11. FM of Sand shall be 2.5 (Minimum) for all R.C.C Works whatever mentioned in other places.
12. All RCC casting work must be carried out in steel Form Work of Appropriate size & thickness.
13. Form work with Scaffolding details shall be submitted by the contractor for the approval
14. Welding of reinforcement bars shall not be permitted, unless approved by the Engineer in charge
15. Supporting Reinforcing chairs of 16mm diameter for main reinforcement shall be provided at suitable intervals.
16. Construction Joint:

16.a. The location and provision of construction joints shall be approved by the Engineer-in-Charge. The concreting operation shall be carried out continuously up to the construction joint.

16.b. The preparation of construction joint shall conform to AASHTO LRFD.

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UPAZILA: PIRGANJ, DISTRICT: RANGPUR, UNION:

DRAWING TITLE: GENERAL NOTES & SPECIFICATION FOR CONSTRUCTION OF RCC COMPONENT

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পরীক্ষিত ও অনুমোদনযোগ্য
খন্দকার আলীনূর
তত্ত্বাবধায়ক প্রকৌশলী (ডিজাইন)
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APPROVED BY :

SHEET NO : S - 01
TOTAL SHEET : 35
DRAWN BY : MD. FEROZ ISLAM
DATE

GENERAL NOTES & SPECIFICATION FOR CONSTRUCTION OF PC GIRDER

A. MATERIAL STRENGTH

01. CONCRETE SHALL HAVE SPECIFIED CHARACTERISTIC COMPRESSIVE STRENGTH OF STANDARD CYLINDER AT 28 DAYS, ARE AS FOLLOWS:
    a) STANDARAD CYLINDER CRUSHING STRENGTH, f'c = 40 MPa

02. REINFORCING STEEL SHALL CONFORM TO ASTM A615-88 GRADE 60 DEFORMED BARS (MARKED 'Y') HAVING MINIMUM YEILD STRENGTH Fy = 400 MPa

03. PRESTRESSING STEEL SHALL BE OF 15.3mm DIA 7 PLY UNCOATED LOW RELAXATION STRAND CONFORMING TO AASHTO-M203 /ASTM A 416 (GRADE-1860) OR EQUIVALENT HAVING THE FOLLOWING STRENGTH:
    (a) MINIMUM ULTIMATE TENSILE STRENGTH (UTS) f's = 1860 MPa
    (b) MINIMUM YIELD STRENGTH f'y = 1674 MPa

04. PRESTRESSING CABLE SHALL CONSISTS OF 19 NOS.15.3mm DIA. STRAND (19K15) IN A SHEATHING/DUCT

B. PRESTRESSING ACCESSORIES

01. THE DETAILS OF ANCHORAGES, DUCTS, CABLE SPACINGS AND END BLOCK REINFORCEMENT SHOWN ON THE DRAWINGS ARE BASED ON FREYSSINET 19K15 MULTI-STRAND ANCHORAGE SYSTEM.

02. THE SHEATHING/DUCTS FOR THE 19K15 PRESTRESSING CABLES SHALL BE FORMED FROM 100mm INTERNAL DIA. (ID) CORRUGATED STEEL SHEATHS OF GALVANIZED METAL HAVING MINIMUM THICKNESS 0.40mm. THE OUTSIDE DIA. (OD) OF THE SHEATH SHOULD BE ABOUT 6mm LARGER THAN THE ID. THE CONNECTING SLEEVES FOR SHEATH SHOULD HAVE A DIAMETER ABOUT 3.1mm GREATER.

03. FOLLOWING PROPERTIES HAVE BEEN CONSIDERED IN THE DESIGN
    AREA OF STRAND = 140 mm^2
    AREA OF CABLE = 2660 mm^2
    MODULLES OF ELASTICITY OF STRAND = 1.97×10^5 (N/mm^2)
    AVERAGE SLIP = 6mm
    JACKING FORCE IN EACH CABLE = 3750 KN.

C. WORKMANSHIP DETAILING

01. AFTER SATISFACTORY COMPLETION OF TENSIONING THE CABLES SHALL BE GROUTED AS PER STANDARED SPECIFICATION. BESIDES THE GROUT HOLES AT STRESSING END EXTRA GROUT VENT MAY ALSO BE PROVIDED AT LOWEST POINT OF EACH CABLE, IF REQUIRED.

02. EXTRA LENGTH OF CABLE REQUIRED FOR FIXING FREYSSINET JACK IS APPROX. 750mm. HOWEVER FOR OTHER ANCHORAGE SYSTEM EXTRA TENDON LENGTH FOR GRIPPING WITH JACK SHALL BE KEPT AS PER MANUFACTURER'S RECOMMENDATION.

03. THE CABLE MUST BE PLACED STRAIGHT AND CO-AXIAL WITH THE ANCHORAGE AT RECESS END FOR A DISTANCE OF AT LEAST 1000mm.

04. THE PROFILE OF LONGITUDINAL PRESTRESSING DUCTS SHALL BE MAINTAINED BY PROVIDING 10mm DIA. U-SHAPED MS WELDED SADDLES ATTACHED TO ONE BRANCH OF THE STIRRUPS @ 1000mm C/C APPROX.

05. NON-PRESTRESSED REINFORCEMENT IS TO BE ADJUSTED TO THE SATISFACTION OF THE EINGINNER, IF OBSTRUCTON TO CABLE DUCT OCCURS.

D. CLEAR COVER TO PRESTRESSING AND REINFORCING STEEL

01. MINIMUM CLEAR COVER TO PRESTRESSING DUCTS AND REINFORCING STEEL SHALL BE 40mm.

E. PRESTRESSING AND GROUTING OPERATION

01. THE PRESTRESSING FORCE IN EACH CABLE AT ANCHORAGE DURING STRESSING PRIOR TO LOCK OFF (JACKING FORCE) SHALL BE 3750 KN.

02. EACH CABLE SHALL BE SIMULTENOUSLY STRESSED FROM BOTH ENDS BY USING FREYSSINET/OR EUIVALENT MULTISTRAND JACK.

03. THE STRESSING SEQUENCE OF THE CABLES AND CONCRETE STRENGTH f'ci AT DIFFERENT STAGES ARE TO BE MAINTAINED AS FOLLOWS :-

3a. STAGE 1, SEQUENCE OF STRESSING - 4, 1 & 2. STRESSING OF CABLE SHALL BE DONE MINIMUM AFTER 14 DAYS OR CONCRETE STRENGTH NOT LESS THAN 32 MPa WHICHEVER IS LATER

3b. STAGE 2, SEQUENCE OF STRESSING - 3, STRESSING OF CABLE SHALL BE DONE MINIMUM AFTER 21 DAYS OR CONCRETE STRENGTH NOT LESS THAN 36 MPa WHICHEVER IS LATER

04. THE APPLIED PRESTRESSING FORCES ON THE CABLES SHALL BE MEASURED ON THE RECENTLY CALIBRATED JACKS & GAUGE ACCOMPANIED BY ELONGATION MEASUREMENT IN PRESENCE OF THE ENGINEER OR HIS DESIGNATED REPRESENTATIVE. PROPER RECORDS OF THE ABOVE SHALL BE MAINTAINED.

05. ALL DUCTS SHALL BE GROUTED FOLLOWING STANDARD SPECIFICATION AFTER SATISFACTORY COMPLETION OF THE STRESSING OPERATIONS AND APPROVAL OF THE ENGINEER.

06. FOR ALL STRESSING AND GROUTING OPERATIONS, THE PROCEDURE GIVEN IN THE GUIDE FOR FREYSSINET OR EQUIVALENT METHODS SHALL BE USED.

F. INSTALLATION DETAILS

01. THE PC GIRDERS SHALL BE MOVED AT LEAST AFTER COMPLETION OF THE 1ST STAGE STRESSING OF THE CABLES AND GROUTING OF THE CABLE DUCTS ONLY.

02. THE PC GIRDERS SHALL BE LIFTED BY PROIVIDING SUPPORTS IN THE VICINITY OF THE CENTER LINE OF BEARINGS ONLY.

03. ADEQUATE LATERAL SUPPORTS TO THE PRECAST PC GIRDER SHALL BE PROVIDED DURING MOVEMENT OPERATION OF THE SAME AND CONCRETING OF THE CAST-IN-SITU DECK TO INSURE SAFETY.

G. MISCELLANEOUS

01. THE SURFACE OF THE TOP FLANGE OF THE PC GIRDER SHALL BE INTENTIONALLY ROUGHENED EXPOSING ABOUT 1/4TH HEIGHT OF THE COARSE AGGREGATE BREAKING THEM TO DEVELOP COMPOSITE ACTION BETWEEN THE PC GIRDER AND CAST-IN-SITU DECK CONCRETE.

02. PRECAMBER TO THE GIRDER SHALL BE PROVIDED AT THE GIRDER SOFFIT BEFORE CASTING OF GIRDER

H. SPECIAL NOTE FOR PRESTRESSING

01. (i) IF THE CALCULATED ELONGATION IS REACHED BEFORE THE CALCULATED GUAGE PRESSURE IS OBTAINED, CONTINUE TENTIONING TILL ATTAINING THE CALCULATED GAUGE PRESSURE, PROVIDED THE ELONGATION DOES NOT EXCEED 1.05 TIMES THE CALCULATED ELONGATION. IF THIS ELONGATION IS ACHIEVED BEFORE THE CALCULATED GUAGE PRESSURE IS ATTAINED, STOP STRESSING AND INFORM THE ENGINEER.

(ii) IF THE CALCULATED ELONGATION HAS NOT BEEN REACHED CONTINUE TENSIONING BY INTERVALS OF 5 Kg/Sq.CM UNTIL THE CALCULATED ELONGATION IS REACHED PROVIDED THE GAUGE PRESSURE DOES NOT EXCEED 1.05 TIMES THE CALCULATED GUAGE PRESSURE.

(iii) IF THE ELONGATION AT 1.05 TIMES THE CALCULATED GAUGE PRESSURE IS LESS THAN 0.95 TIMES THE CALCULATED ELONGATION, THE FOLLOWING MEASURES MUST BE TAKEN, IN SUCCESSION,TO DEFINE THE CAUSE OF THIS LACK OF ELONGATION.

- RECALIBRATE THE PRESSURE GUAGE
- CHECK THE CORRECT FUNCTIONING OF THE JACK. PUMP AND LEADS.
- DE-TENSION THE CABLE, SLIDE IT IN ITS DUCT TO CHECK THAT IT IS NOT BLOCKED BY MORTAR WHICH HAS ENTERED THROUGH HOLES IN THE SHEATH. RE-TENSION THE CABLE IF FREE. IF THE REQUIRED ELONGATION IS NOT OBTAINED. FURTHER FINISHING OPERATIONS SUCH AS CUTTING OR SEALING SHOULD NOT BE UNDERTAKEN WITHOUT THE APPROVAL OF THE ENGINEER.

02. ELONGATION SHOWN IN THE DRAWINGS SHALL BE CORRECTED FOR THE ACTUAL 'A' AND 'E' VALUE OF STRANDS OBTAINED FROM THE TEST RESULT.
    CORRECTED ELONGATION = ELONGATION SHOWN IN THE DRAWINGS x A.E/A1.E1
    A, E ARE THE DESIGN AREA AND MODULUS OF ELASTICITY OF STRANDS.
    A1,E1 ARE ACTUAL AREA AND MODULUS OF ELASTICITY OF STRANDS.

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PROJECT : CONSTRUCTION OF IMPORTANT BRIDGES ON RURAL ROADS	UPAZILA: PIRGANJ, DISTRICT: RANGPUR, UNION: DRAWING TITLE: General Notes & Specification for Construction of PC Girder						TOTAL SHEET : 35 DRAWN BY : MD. FEROZ ISLAM DATE :

GUIDELINES FOR CONSTRUCTION OF BORED & CAST-IN-SITU PILES.

Before implementation of construction work the layout of the bridge shall be finalized, then confirmatory sub-soil investigation at each abutment & pier location shall be carried out upto depth of 50.00m below Existing Ground level. According to soil report the geo-technical design of pile foundation shall be reviewed by Design Unit of LGED and the length of the pile can be revised if needed.

In order to ensure quality of cast in situ bored piles, particularly for pile projected pier's and larger Diameter pier pile's exceeding 700mm, following equipments methodology to be used for pile construction:

a. **Hydraulic rotary for Boring**
b. **Mud pump for initial washing with fresh bentonite slurry.**
c. **Air compressor (minimum 100 psi capacity) for reverse circulation washing**
d. **Batching plant is mandatory in casting**
e. **De-sander must be used in the mud-circulation process during boring operations.**

1. For making bore hole of Cast-in situ pile upto 800mm diameter and 25m length either percussion drilling or rotary drilling method may be used.

2. For pile diameter more than 800mm of any length, rotary drilling method must be used for making bore hole.

3. Continuous bentonite circulation as drilling mud/fluid must be used for smoothly making bore holes avoiding bore hole walls caving and also for bore hole washing. The bentonite powder/slurry must be tested before using to maintain the following properties.

Dry bentonite Powder.
- Liquid limit of bentonite powder shall be > 350%
- Swell index shall be >450%

Bentonite slurry.
- The quantity of bentonite powder to be added to water for maintaining the required density and viscosity depends on the quality of Dry bentonite powder. For soil boring operation concentration of bentonite shall be typically between 4% & 6% by weight.

Note : Density of Fresh/Re-used Bentonite Slurry shall be measured with sample from slurry intake tank.
Before concreting the slurry sample shall be taken using SAMPLER from bottom of the bore hole to measure the slurry properties.

4. Washing of bore hole shall be continued with the circulation of bentonite slurry until the sand content in slurry is reduced to less than 4%
- Slurry density to be tested using Mud Balance
- Viscosity to be tested using MARSH FUNNEL
- Sand content in slurry to be tested using SAND CONTENT SET

TABLE : CHARACTERISTICS OF BENTONITE SLURRY

Property	Units	Stages			Test Equipment
		Fresh	Ready for reuse	Before concreting	
Density	g/ml	<1.1	<1.25	<1.15	Mud Balance
Viscosity(946ml)	sec	32 to 50	32 to 60	32 to 50	Marsh funnel
pH		7 to 9	7 to 9	n.a	pH meter
Sand content	%	n.a	n.a	<4	Sand content set

5. Specified type of admixture (ASTM-C494/C 494M-08) must be used with concrete to attain slump between 150mm and 175mm for smooth flowing of concrete through trieme pipe. The quantity of admixture to be added shall be determined as per manufacturer's specification.

6. The quality of Bentonite & admixture must be approved by the Engineer in charge before use in construction work.

7. Slurry Tank Design
- The pit should be three times the volume of the finished borehole.
- Each pit should have a settling section and a suction section.
- The dimension of the settling pit can be determined by using a basic equation to establish the width. Once width is known, the length and depth be calculated.

$$\text{Width (ft)} = \sqrt[3]{\frac{\text{hole volume (gal)} \times 2}{2.125 \times 7.5}}$$

For Settling pit

Length = 2.5x Width

Depth = 0.85 x Width

For Suction pit

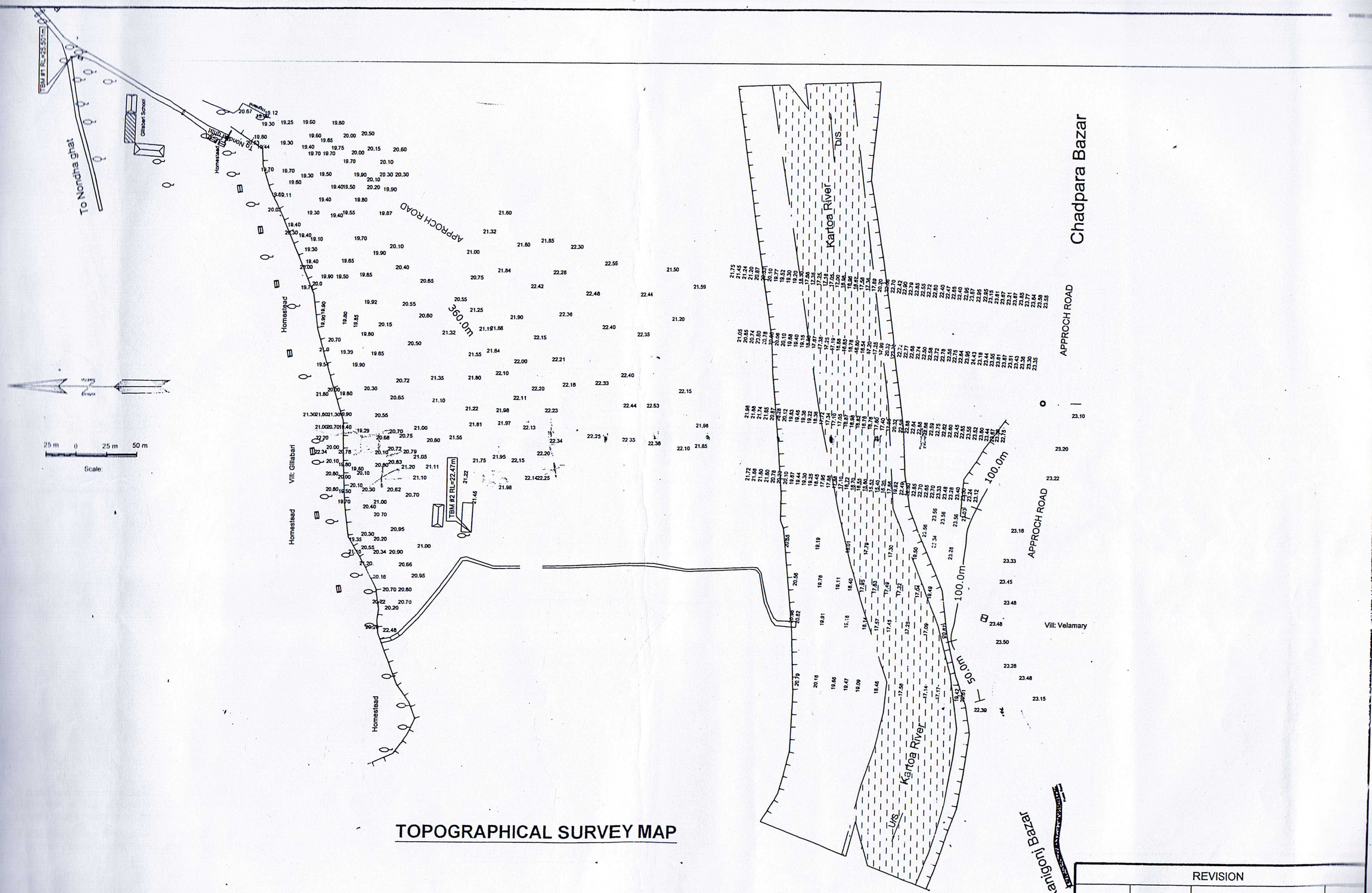
Length = 1.25 x Width

Depth = 0.85 x Width

8. The contractor at his own cost (Not reimbursable) shall arrange the following test kit/equipment for routine test of materials at Site.
- Mud Balance
- Marsh Funnel
- Sand Content Set
- Sieve set (Complete)
- Hydrometer
- Pycnometer
- Slump cone
- Concrete Cylinder Mould
- Oven
- Balance

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PROJECT : CONSTRUCTION OF IMPORTANT BRIDGES ON RURAL ROADS	UPAZILA: PIRGANJ. DISTRICT: RANGPUR. UNION: DRAWING TITLE: GUIDELINES FOR CONSTRUCTION OF BORED & CAST-IN-SITU PILES					TOTAL SHEET : 35 DRAWN BY : MD. FEROZ ISLAM DATE :



TOPOGRAPHICAL SURVEY MAP

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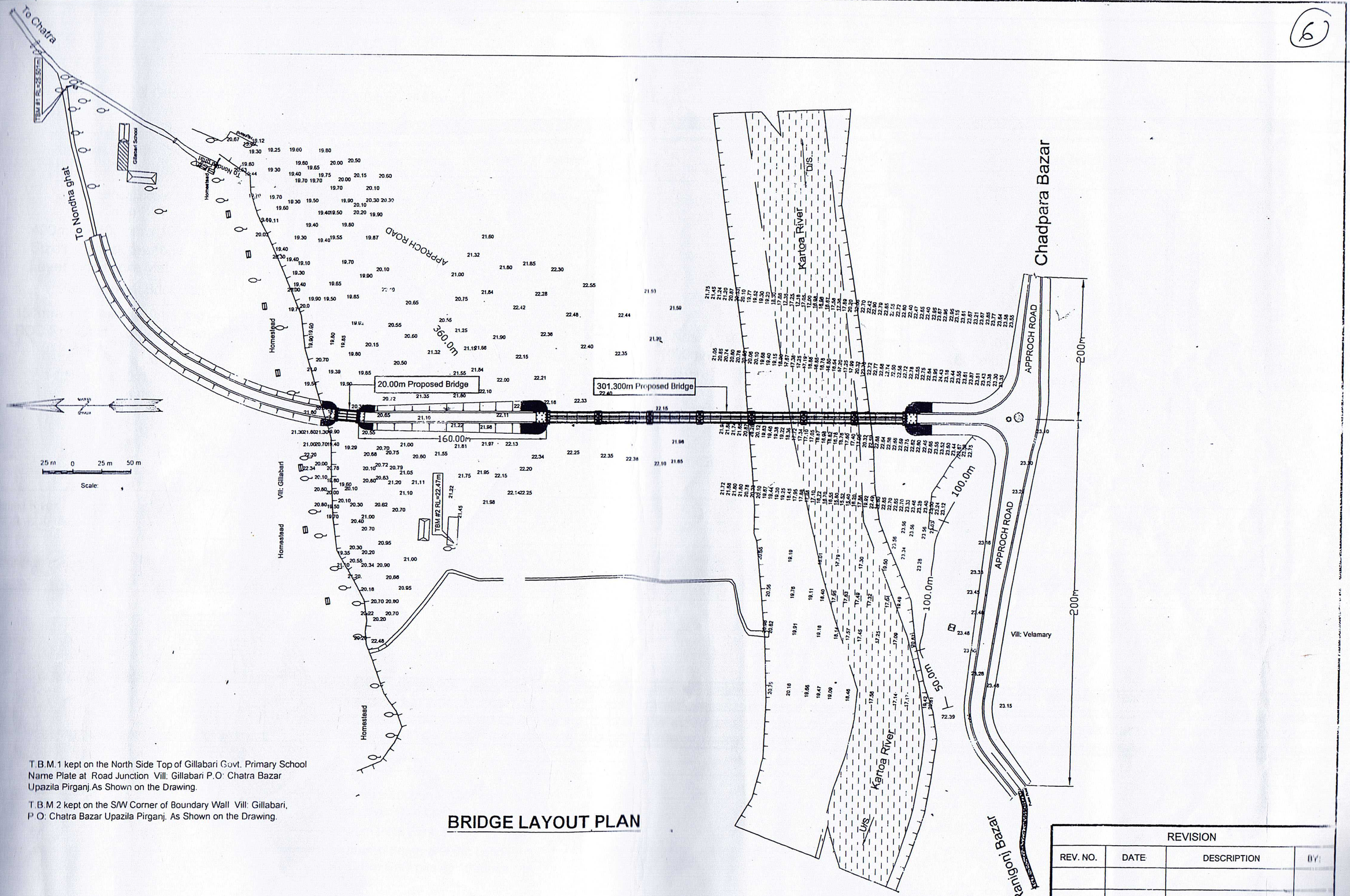
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DRAWING TITLE: TOPOGRAPHICAL SURVEY MAP

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E-mail : dosign@lged.gov.bd

DESIGNED BY :	CHECKED BY :	পরীক্ষিত ও অনমোদনযোগ্য	APPROVED BY :
MD. DELWAR HOSSAIN Bridge Design Engineer Design Unit, LGED HQ, Dhaka	MD. ZAHEDUL ISLAM XEN, (Design) LGED HQ, Dhaka	খন্দকার আলীনর তত্ত্বাবধায়ক প্রকৌশলী (ডিজাইন) এলজিইডি, সদর দপ্তর, ঢাকা।	

SHEET NO : 5 - 04
TOTAL SHEET : 35
DRAWN BY : MD. FEROZ ISLAM
DATE :



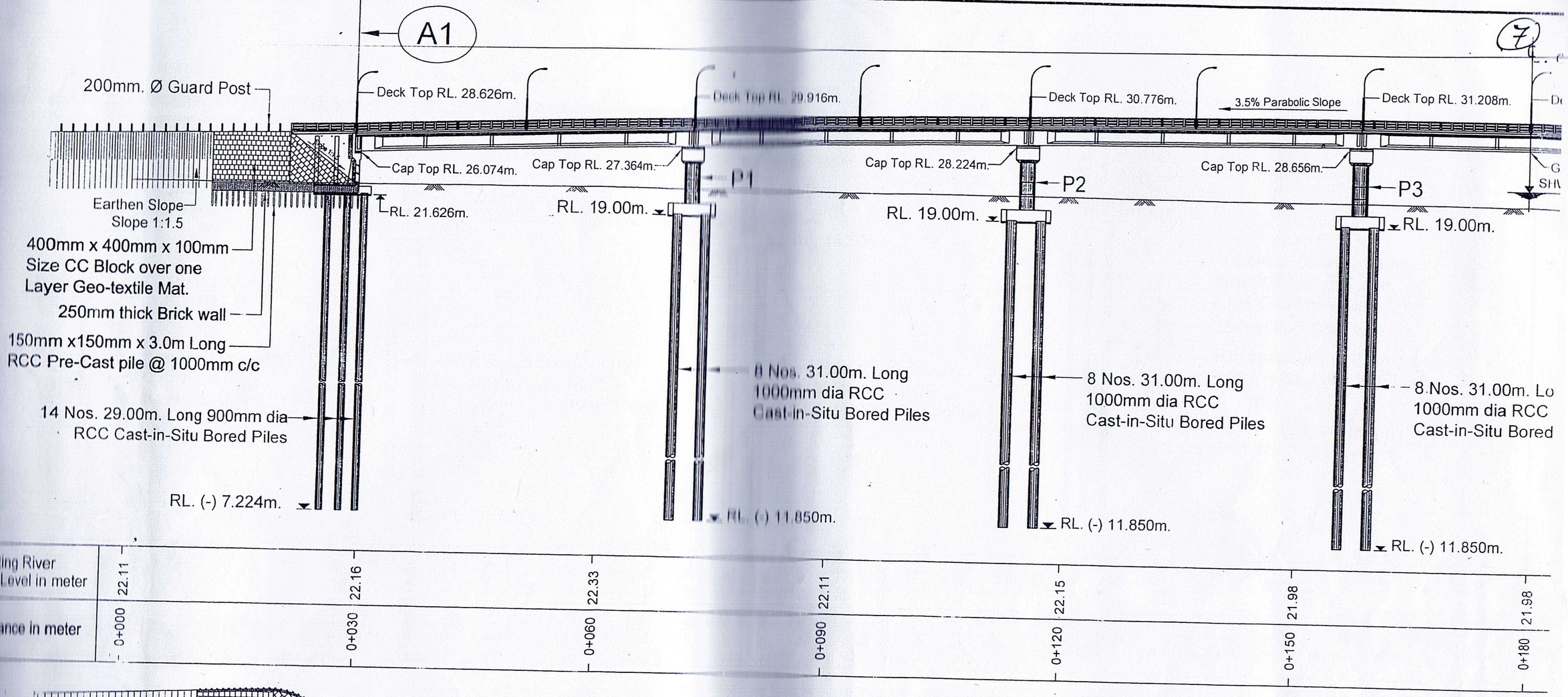
T.B.M.1 kept on the North Side Top of Gillabari Govt. Primary School Name Plate at Road Junction Vill: Gillabari P.O: Chatra Bazar Upazila Pirganj.As Shown on the Drawing.

T.B.M 2 kept on the S/W Corner of Boundary Wall Vill: Gillabari, P.O: Chatra Bazar Upazila Pirganj. As Shown on the Drawing.

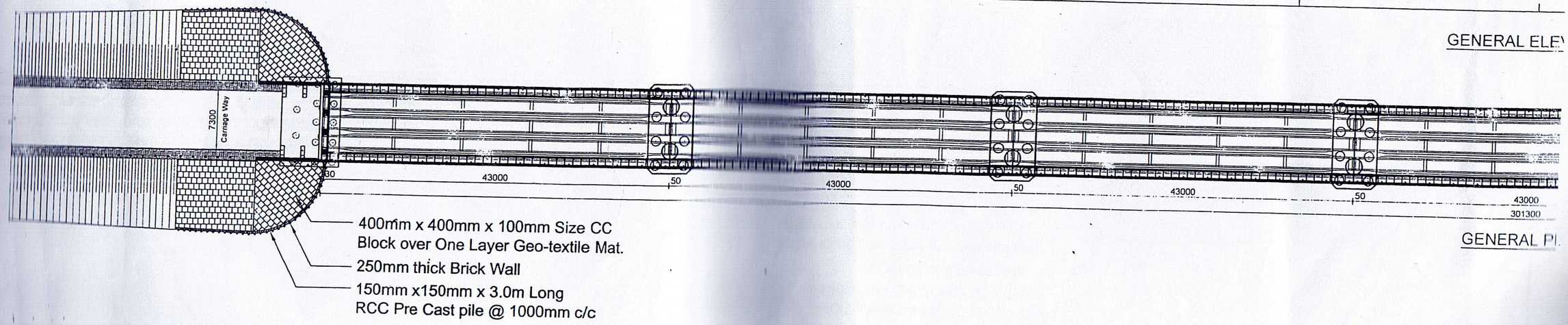
BRIDGE LAYOUT PLAN

REVISION			
REV. NO.	DATE	DESCRIPTION	BY

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH LOCAL GOVERNMENT ENGINEERING DEPARTMENT	NAME OF SCHEME: CONSTRUCTION OF 301.30M LONG PSC GIRDER BRIDGE AT NUNDAHA GHAT OVER THE RIVER KARTOA AT CH. 4+500 Km ON CHATRA GC - GILLABARI GHAT VIA NISCHINTOBATI PRIMARY SCHOOL ROAD (ROAD ID: 185764034)	DESIGN UNIT OF LGED RDEC BHABAN (LEVEL - 4), AGARGAON SHER-E-BANGLA NAGAR DHAKA - 1207. Tel. : +880 2 9119609, Fax. : +880 2 9118175 E-mail : design@lged.gov.bd	DESIGNED BY : MD. DELWAR HOSSAIN Bridge Design Engineer Design Unit, LGED HQ, Dhaka	CHECKED BY : MD. ZAHEDUL ISLAM XEN, (Design) LGED HQ, Dhaka	পরীক্ষিত ও অনুমোদনযোগ্য খন্দকার আলীনর তত্ত্বাবধায়ক প্রকৌশলী (ডিজাইন) এলজিইডি, সদর দপ্তর, ঢাকা।	APPROVED BY :	SHEET NO : S - 05 TOTAL SHEET : 35 DRAWN BY : MD. FEROZ ISLAM DATE :
PROJECT : CONSTRUCTION OF IMPORTANT BRIDGES ON RURAL ROADS	UPAZILA: PIRGANJ, DISTRICT: RANGPUR, UNION: DRAWING TITLE: BRIDGE LAYOUT PLAN						

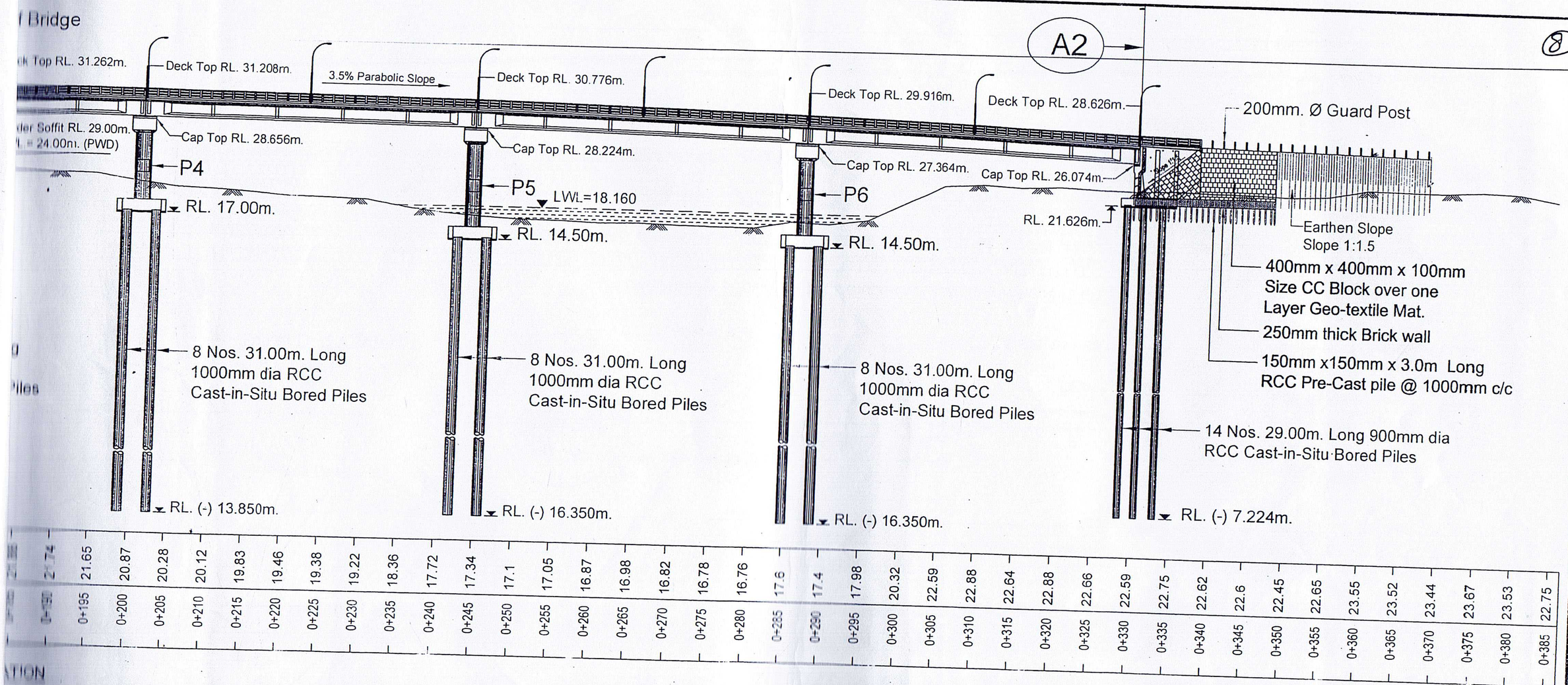


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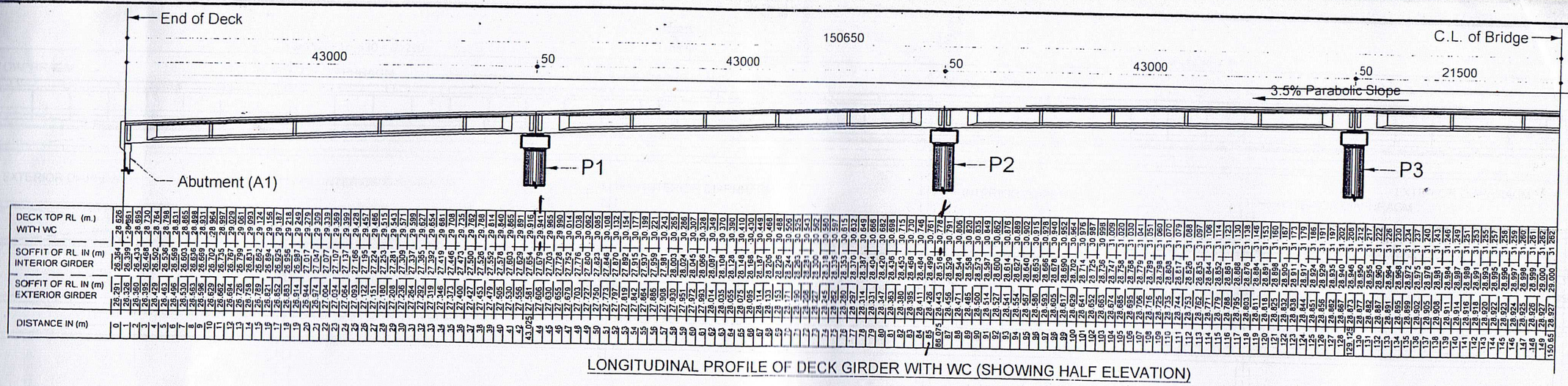


GENERAL PI

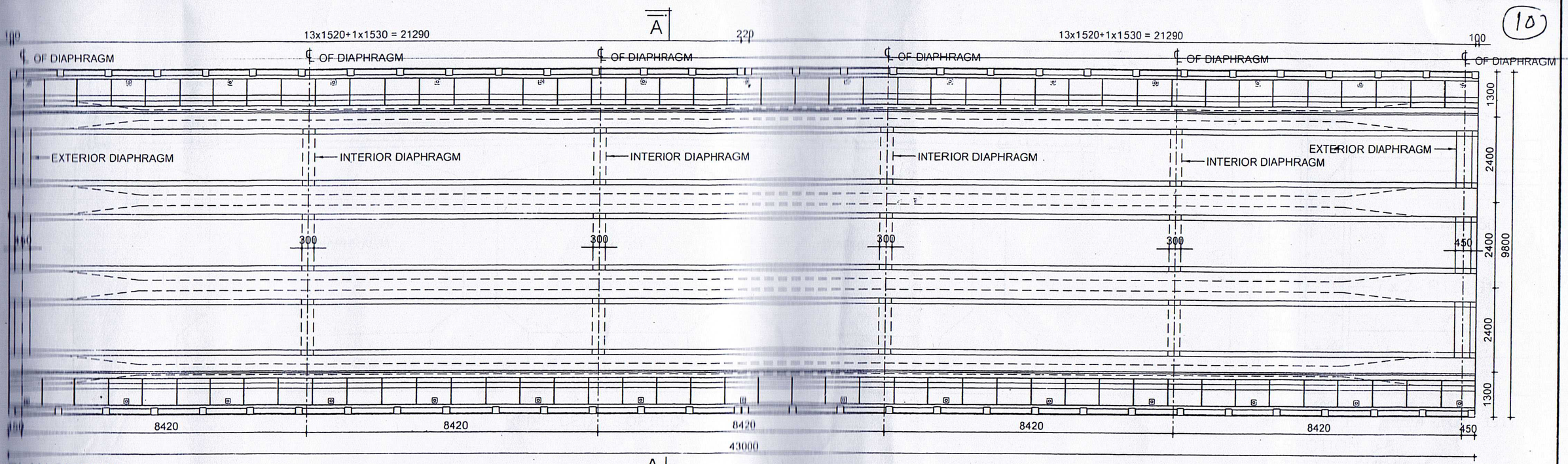
f Bridge


A2
8
ck Top RL. 31.262m.
Deck Top RL. 31.208m.
3.5% Parabolic Slope
Deck Top RL. 30.776m.
Deck Top RL. 29.916m.
Deck Top RL. 28.626m.
200mm. Ø Guard Post
der Soffit RL. 29.00m.
L. = 24.00m. (PWD)
Cap Top RL. 28.656m.
Cap Top RL. 28.224m.
Cap Top RL. 27.364m.
Cap Top RL. 26.074m.
P4
P5
P6
LWL=18.160
RL. 17.00m.
RL. 14.50m.
RL. 14.50m.
RL. 21.626m.
Earthen Slope
Slope 1:1.5
400mm x 400mm x 100mm
Size CC Block over one
Layer Geo-textile Mat.
250mm thick Brick wall
150mm x150mm x 3.0m Long
RCC Pre-Cast pile @ 1000mm c/c
8 Nos. 31.00m. Long
1000mm dia RCC
Cast-in-Situ Bored Piles
8 Nos. 31.00m. Long
1000mm dia RCC
Cast-in-Situ Bored Piles
8 Nos. 31.00m. Long
1000mm dia RCC
Cast-in-Situ Bored Piles
14 Nos. 29.00m. Long 900mm dia
RCC Cast-in-Situ Bored Piles
RL. (-) 13.850m.
RL. (-) 16.350m.
RL. (-) 16.350m.
RL. (-) 7.224m.

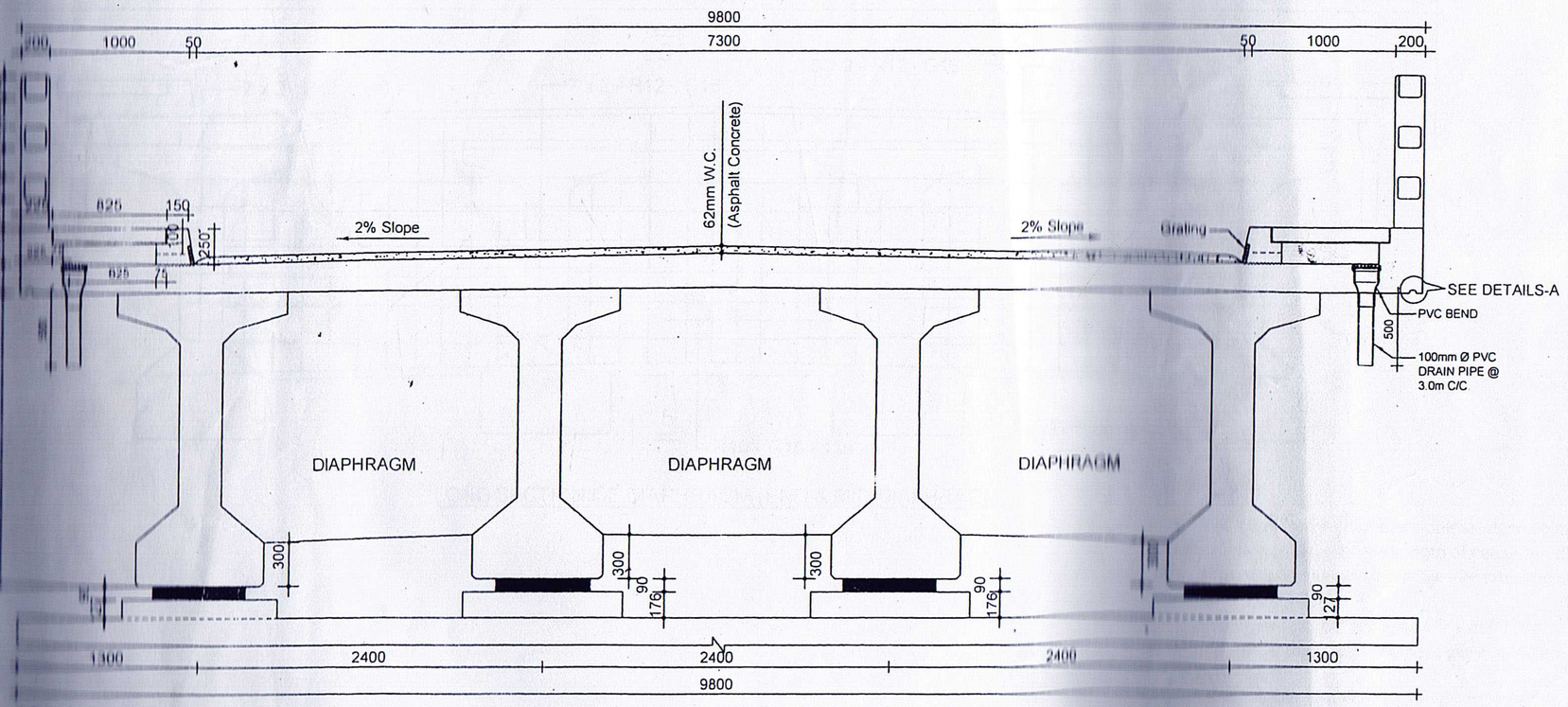
| | | |


End of Deck
C.L. of Bridge
43000
50
43000
150650
50
43000
50
21500
3.5% Parabolic Slope
Abutment (A1)
P1
P2
P3

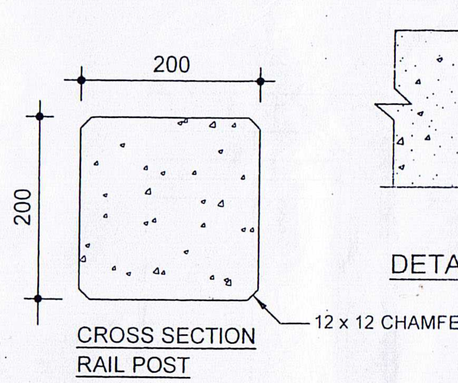
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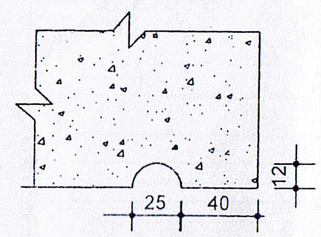
PLAN OF DECK



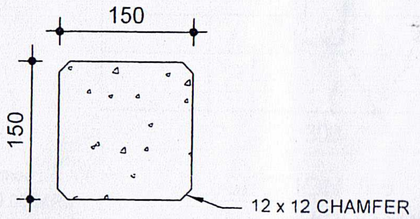
CROSS SECTION OF DECK SLAB



CROSS SECTION
RAIL POST



DETAIL "A"



CROSS SECTION
RAIL BAR

REVISION			
REV. NO.	DATE	DESCRIPTION	BY

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

PROJECT : CONSTRUCTION OF IMPORTANT BRIDGES ON RURAL ROADS

NAME OF SCHEME:
CONSTRUCTION OF 301.30M LONG PSC GIRDER BRIDGE AT NUNDAHA GHAT OVER THE RIVER KARTOA AT CH. 4+500 Km ON CHATRA GC - GILLABARI GHAT VIA NISCHINTOBATI PRIMARY SCHOOL ROAD (ROAD ID: 185764034)

UPAZILA: PIRGANJ, DISTRICT: RANGPUR, UNION:

DRAWING TITLE:
DIMENSIONAL DETAILS OF DECK SLAB

DESIGN UNIT OF LGED
RDEC BHABAN (LEVEL - 4),
AGARGAON
SHER-E-BANGLA NAGAR
DHAKA - 1207.
Tel. : +880 2 9119609,
Fax. : +880 2 9118175
E-mail : design@lged.gov.bd

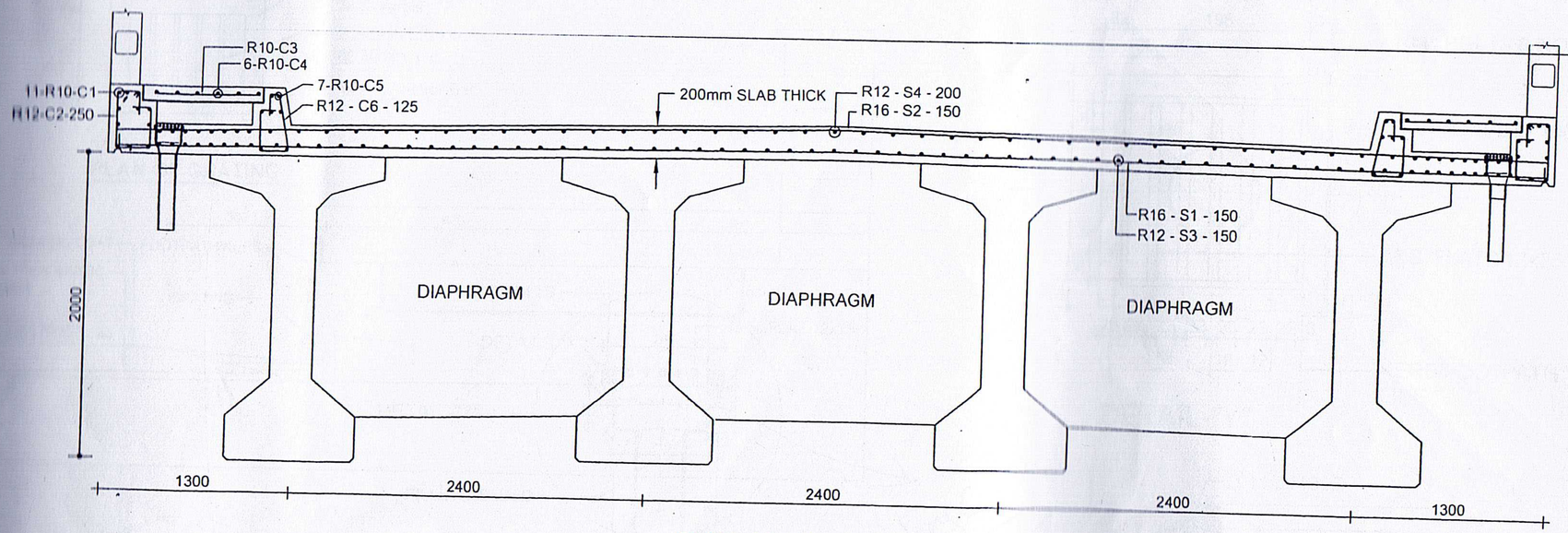
DESIGNED BY :
MD. DELWAR HOSSAIN

CHECKED BY :
MD. S.AHEDUL ISLAM
XEN (Design)
LGED HQ, Dhaka

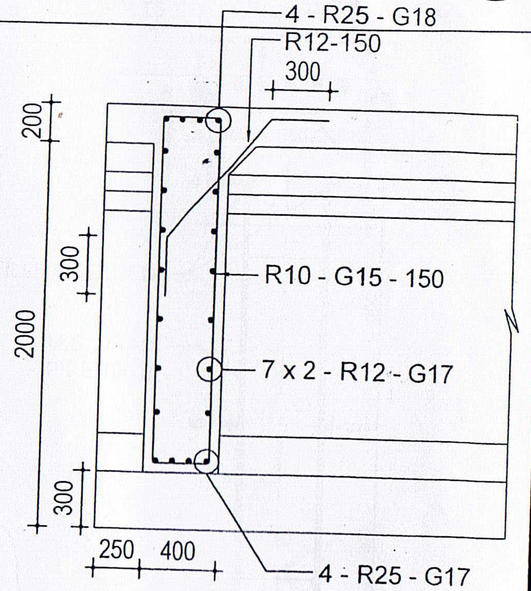
পরীক্ষিত ও অনুমোদনযোগ্য
খন্দকার আলীনূর
তত্ত্বাবধায়ক প্রকৌশলী (ডিজাইন)
এলজিইডি, সদর দপ্তর, ঢাকা।

APPROVED BY :

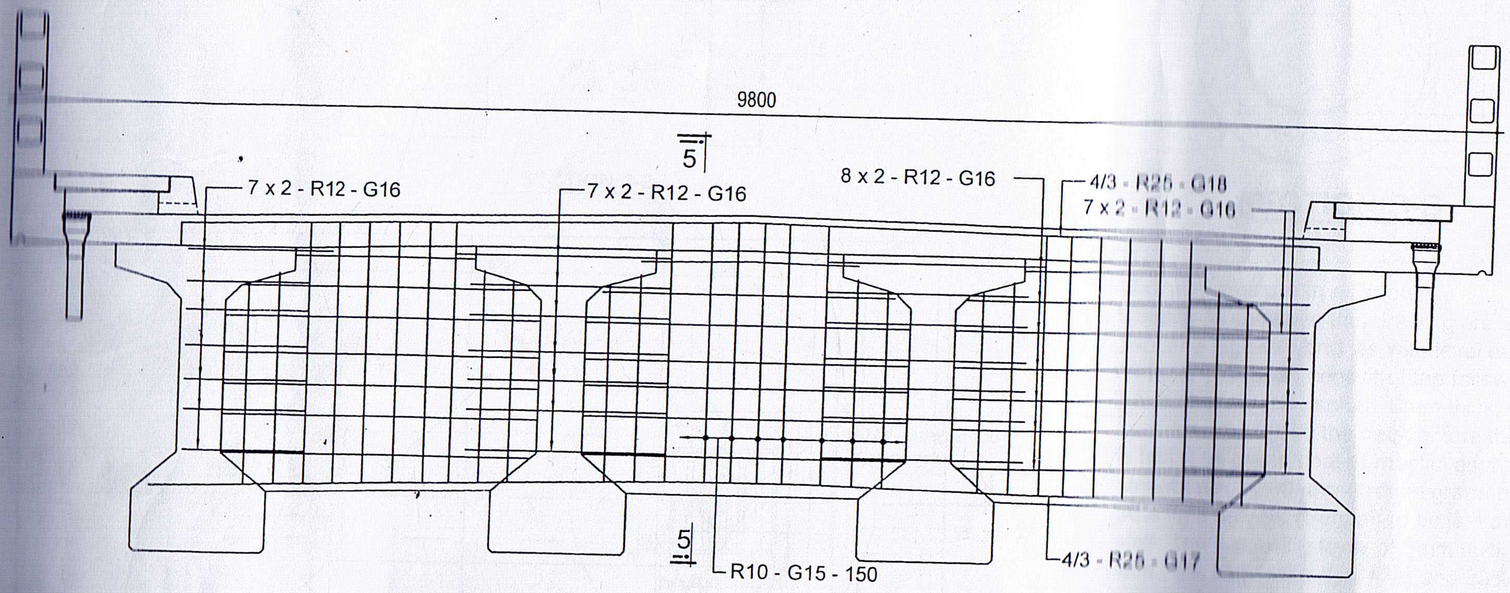
SHEET NO : S - 08
TOTAL SHEET : 35
DRAWN BY : MD. FEROZ ISLAM
DATE :



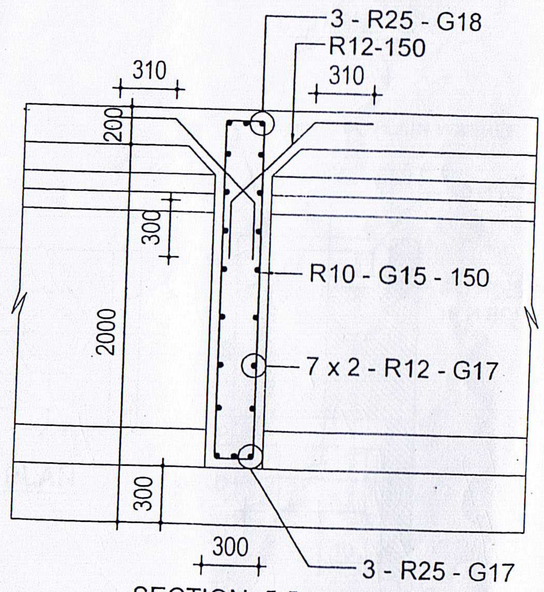
REINF. DETAILS OF DECK



SECTION 5-5
END DIAPHRAGM



LONG SECTION OF DIAPHRAGM (END & MID DIAPHRAGM)



SECTION 5-5
MID DIAPHRAGM

NOTES:

1. All dimensions are in milimeters unless othrwise mentioned.
2. 28 days standerd Cylinder strength of concrete: fc' = 30.00 MPa
3. For wearning course ultimates Cylinder crushing strength of Concrete: fc' = 30.0 MPa
4. Yield strength of .S deformed bar fy = 400 MPa
5. Clear Cover to main reinforcement bar is to 40mm. from the Bottom of slab.
6. Rain water down pipe shall be projected minimum 50mm from the bottom of slab.

REVISION			
REV. NO.	DATE	DESCRIPTION	BY:

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

SUBJECT : CONSTRUCTION OF IMPORTANT BRIDGES & RURAL ROADS

NAME OF SCHEME:
CONSTRUCTION OF 301.30M LONG PSC GIRDER BRIDGE AT NUNDAHA GHAT OVER THE RIVER KARTOA AT CH. 4+500 Km ON CHATRA GC - GILLABARI GHAT VIA NISCHINTOBATI PRIMARY SCHOOL ROAD (ROAD ID: 185764034)

UPAZILA: PIRGANJ, DISTRICT: RANGPUR, UNION:

DRAWING TITLE:
REINF. DETAILS OF DECK SLAB & DIAPHRAGM

DESIGN UNIT OF LGED
RDEC BHABAN (LEVEL - 4),
AGARGAON
SHER-E-BANGLA NAGAR
DHAKA - 1207.
Tel. : +880 2 9119609,
Fax. : +880 2 9118175
E-mail : design@lged.gov.bd

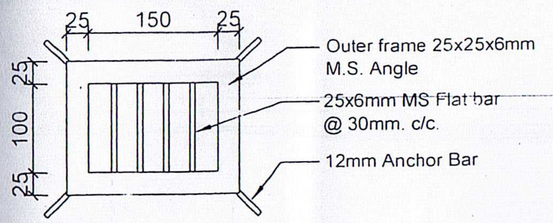
DESIGNED BY :
MD. DELWAR HOSSAIN

CHECKED BY :
MD. ZAHEDUL ISLAM
XEN. (Design)
LGED HQ, Dhaka

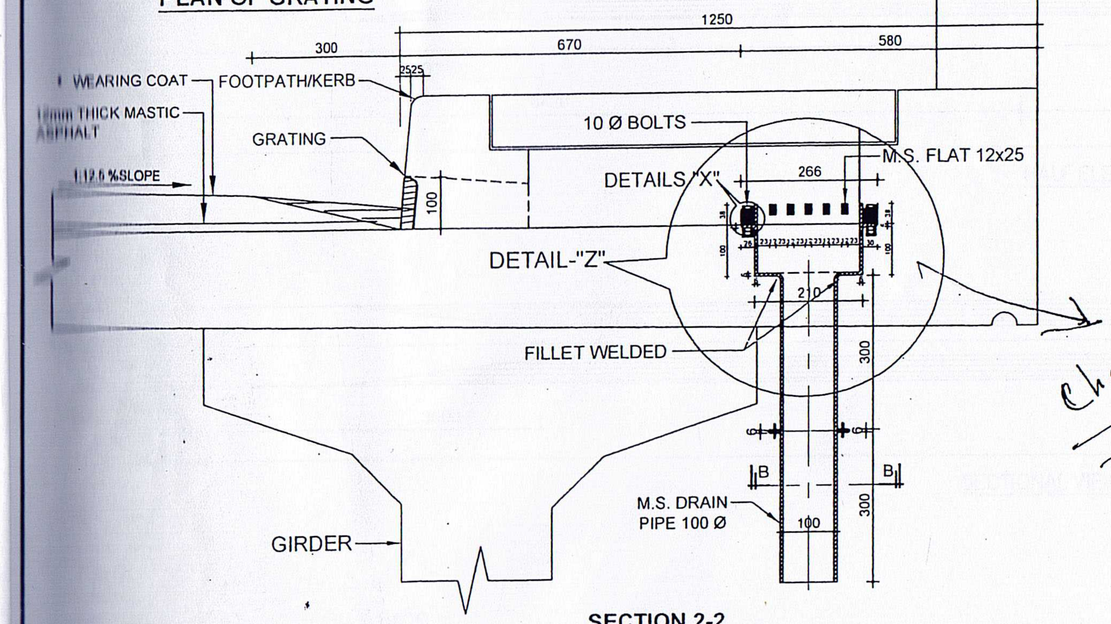
পরীক্ষিত ও অনুমোদনযোগ্য
খন্দকার আলীনুর
তত্ত্বাবধায়ক প্রকৌশলী (ডিজাইন)
এলজিইডি, সদর দপ্তর, ঢাকা।

APPROVED BY :

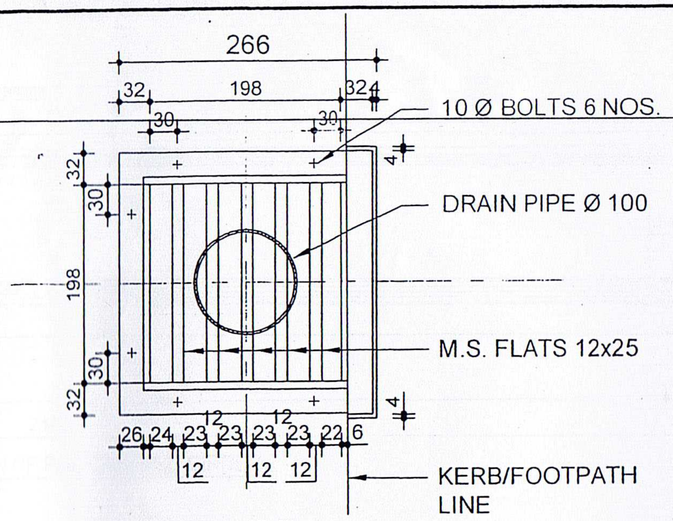
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TOTAL SHEET : 35
DRAWN BY : MD. FEROZ ISLAM
DATE :



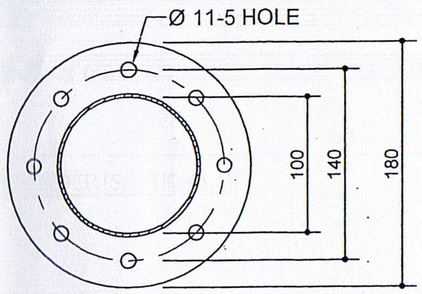
PLAN OF GRATING



SECTION 2-2

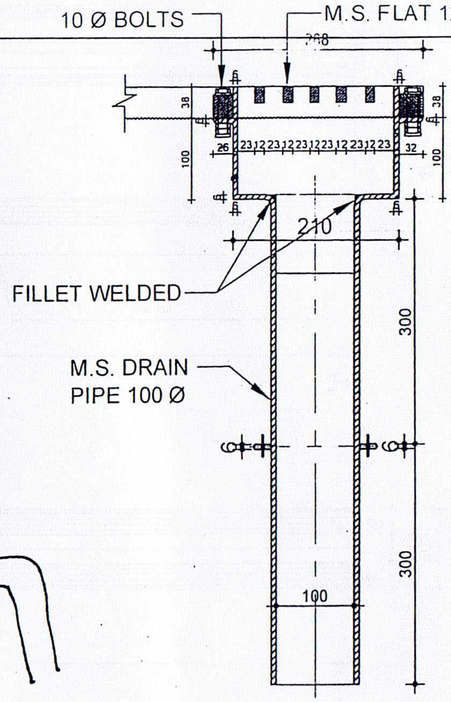


DETAIL-"Y"

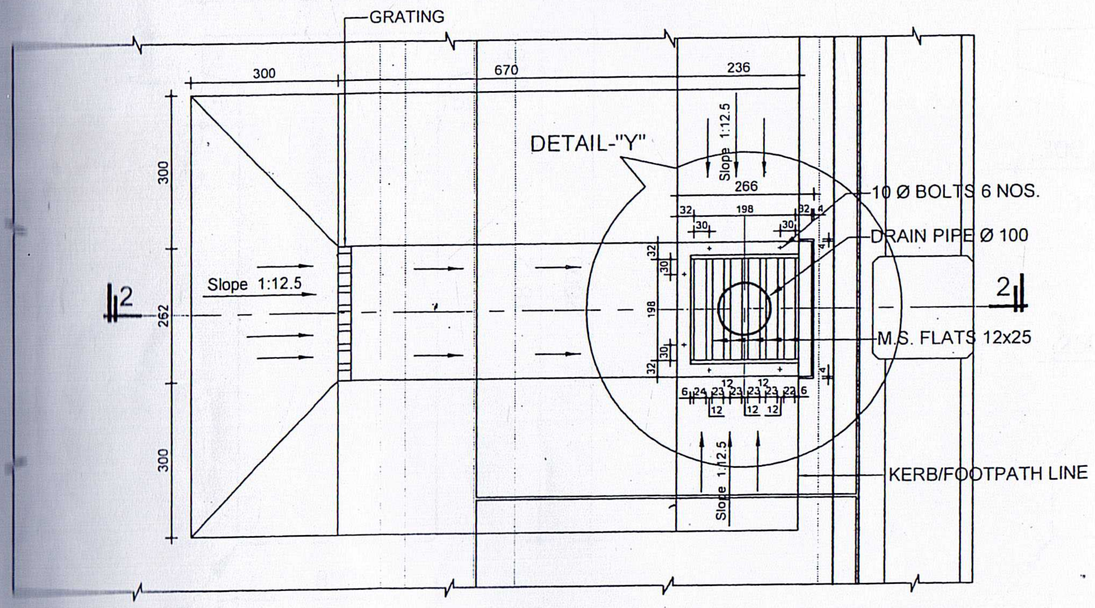


SECTION B-B





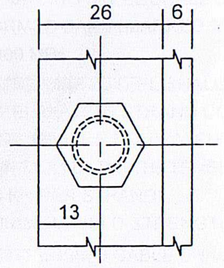
DETAIL-"Z"



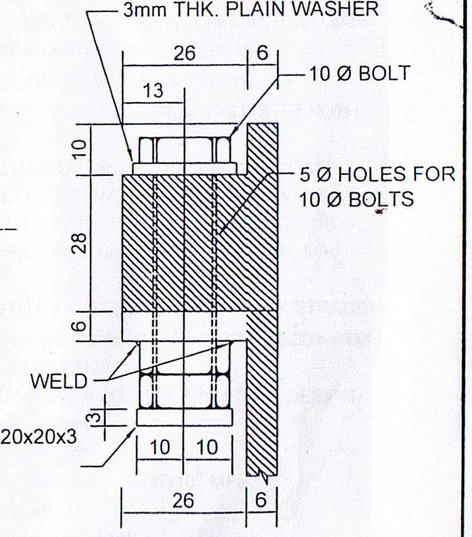
DETAILS OF DRAINAGE SPOUT AND COLLECTION PIT

NOTES:

1. All dimensions are in milimeters.
2. The details shown in this drawing are applicable for two lane highway bridges with level decks.
3. Wearing coat shall consist of the following:
   i) A coat of mastic asphalt, 6mm thick, with a prime coat over the top of the deck before the wearing coat is laid. The prime coat of mastic asphalt shall be 30% straight run 30/40 penetration grade bitumen and 50% light solvent (Benzal) to be laid over the deck slab. The insulating layer of 6mm thick mastic asphalt with 75% limestone dust filter and 25% of 30/40 penetration grade bitumen shall be laid at 375°F with broom over the prime coat.
   ii) 50mm thick asphalt concrete wearing coat in two layers of 25mm each as per clause 512 of MOST's specifications for Road & Bridge Works (2nd revision).
4. Drainage Spout and collection pit assembly shall be fabricated from mild steel and after fabrication the complete assembly except grating shall be given a hot dipped galvanised coating.
5. Spacing of drainage spout shall not exceed 7.5 metre.



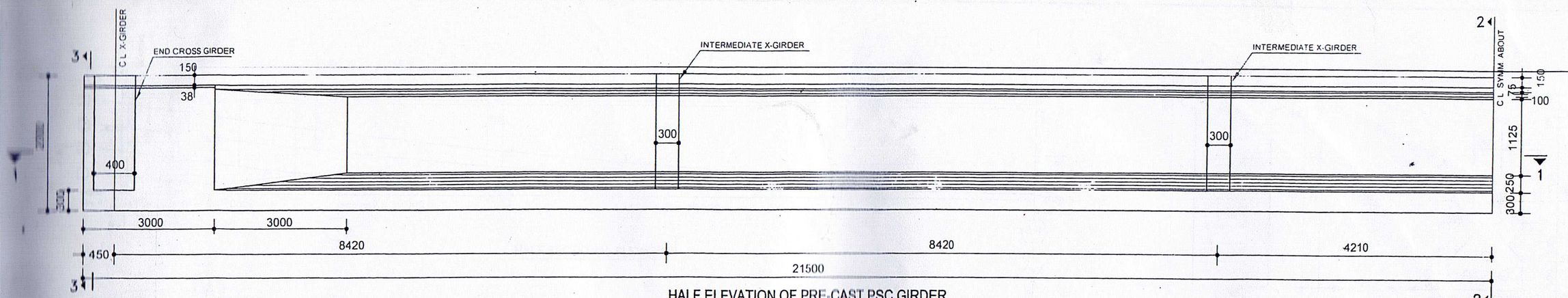
PLAN



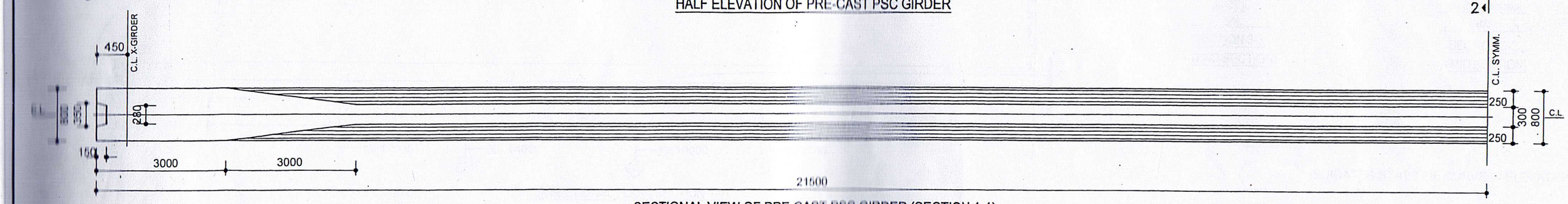
DETAIL-"X"

REVISION			
REV. NO.	DATE	DESCRIPTION	BY:

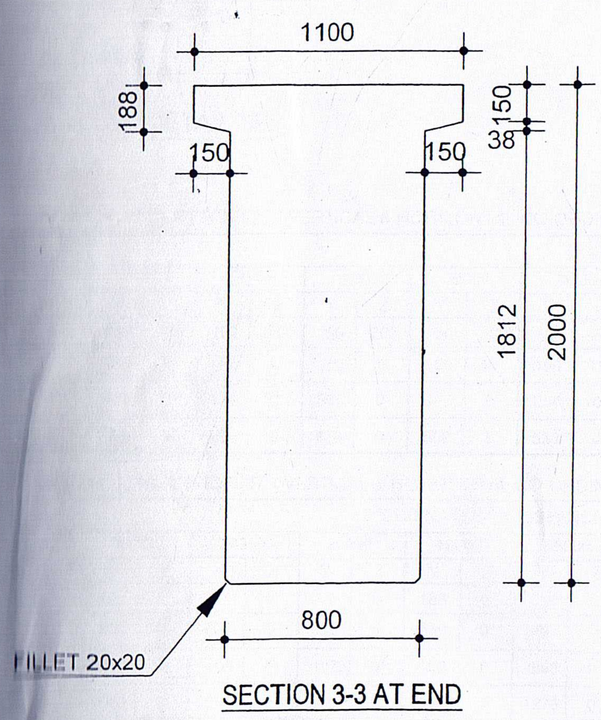
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH LOCAL GOVERNMENT ENGINEERING DEPARTMENT	NAME OF SCHEME: CONSTRUCTION OF 301.30M LONG PSC GIRDER BRIDGE AT NUNDAHA GHAT OVER THE RIVER KARTOA AT CH. 4+500 Km ON CHATRA GC - GILLABARI GHAT VIA NISCHINTOBATI PRIMARY SCHOOL ROAD (ROAD ID: 185764034)	DESIGN UNIT OF LGED RDEC BHABAN (LEVEL - 4), AGARGAON SHER-E-BANGLA NAGAR DHAKA - 1207. Tel. : +880 2 9119609, Fax. : +880 2 9118175 E-mail . design@lged.gov.bd	DESIGNED BY : MD. DELWAR HOSSAIN Bridge Design Engineer Design Unit, LGED HQ, Dhaka	CHECKED BY : MD. ZAHEDUL ISLAM XEN, (Design) LGED HQ, Dhaka	পরীক্ষিত ও অনুমোদনযোগ্য খন্দকার আলীনূর তত্ত্বাবধায়ক প্রকৌশলী (ডিজাইন) এলজিইডি, সদর দপ্তর, ঢাকা।	APPROVED BY :	SHEET NO : S - 10
PROJECT : CONSTRUCTION OF IMPORTANT BRIDGES ON RURAL ROADS	UPAZILA: PIRGANJ, DISTRICT: RANGPUR, UNION: DRAWING TITLE: DETAILS OF DRAINAGE SPOUT (Option-2)						TOTAL SHEET : 35 DRAWN BY : MD. FEROZ ISLAM DATE :



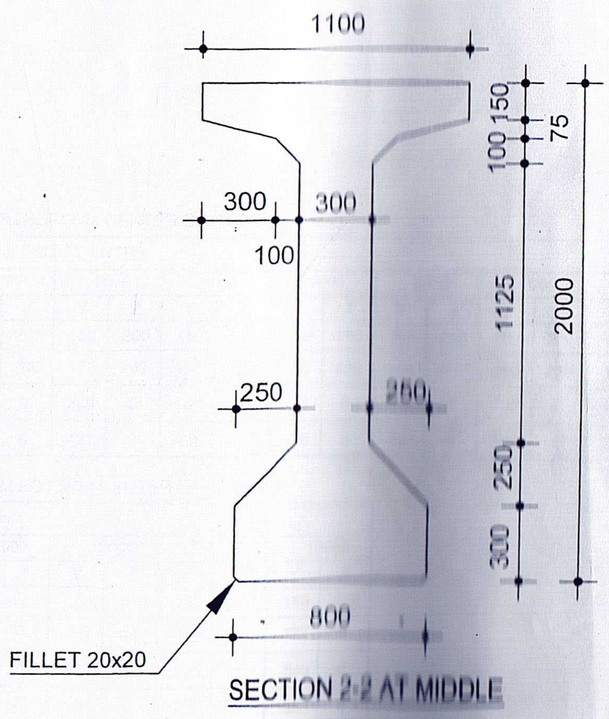
HALF ELEVATION OF PRE-CAST PSC GIRDER



SECTIONAL VIEW OF PRE-CAST PSC GIRDER (SECTION 1-1)



SECTION 3-3 AT END



SECTION 2-2 AT MIDDLE

NOTES:

1. CONCRETE SHALL HAVE SPECIFIED CHARACTERISTIC COMPRESSIVE STRENGTH OF STANDARD CYLINDER AT 28 DAYS, ARE AS FOLLOWS:
   STANDARD CYLINDER CRUSHING STRENGTH, f'c = 40 MPa
2. REINFORCING STEEL SHALL CONFORM TO BDS ISO 6935-2
   DEFORMED BARS (MARKED 'Y') HAVING MINIMUM YEILD STRENGTH
   Fy = 400 MPa
3. PRESTRESSING STEEL SHALL BE OF 15.3mm DIA. 7 PLY UNCOATE LOW RELAXATION STRAND CONFORMING TO AASHTO M203/ASTM A 416 (GRADE 1860) OR EQUIVALENT HAVING THE FOLLOWING STRENGTH:
   (a) MINIMUM ULTIMATE TENSILE STRENGTH (UTS) f 's = 1860 MPa (260.4 KN PER STRAND)
   (b) MINIMUM YIELD STRENGTH f 'y = 1674 MPa (234.4 KN PER STRAND)
4. PPRESTRESSING CABLE SHALL BE CONSISTS OF 19 NOS.15.30mm DIA. STRAND (19 K 15) IN A SHEATHING/DUCT
5. FOLLOWING PROPERTIES HAVE BEEN CONSIDERED IN THE DESIGN
   AREA OF STRAND = 140 mm²
   AREA OF CABLE = 2660 mm²
   MODULLES OF ELASTICITY OF STRAND =1.97x10^5 MPa
   AVERAGE SLIP = 6mm
   JACKING FORCE IN EACH CABLE = 3750 KN.

REVISION			
REV. NO.	DATE	DESCRIPTION	BY

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

PROJECT : CONSTRUCTION OF IMPORTANT BRIDGES ON RURAL ROADS

NAME OF SCHEME:
CONSTRUCTION OF 301.30M LONG PSC GIRDER BRIDGE AT NUNDAHA GHAT OVER THE RIVER KARTOA AT CH. 4+500 Km ON CHATRA GC - GILLABARI GHAT VIA NISCHINTOBATI PRIMARY SCHOOL ROAD (ROAD ID: 185764034)

UPAZILA: PIRGANJ, DISTRICT: RANGPUR, UNION:

DRAWING TITLE:
PC GIRDER CONCRETE OUTLINE DETAILS

DESIGN UNIT OF LGED
RDEC BHABAN (LEVEL - 4),
AGARGAON
SHER-E-BANGLA NAGAR
DHAKA - 1207.
Tel. : +880 2 9119600,
Fax. : +880 2 9118175
E-mail : design@lged.gov.bd

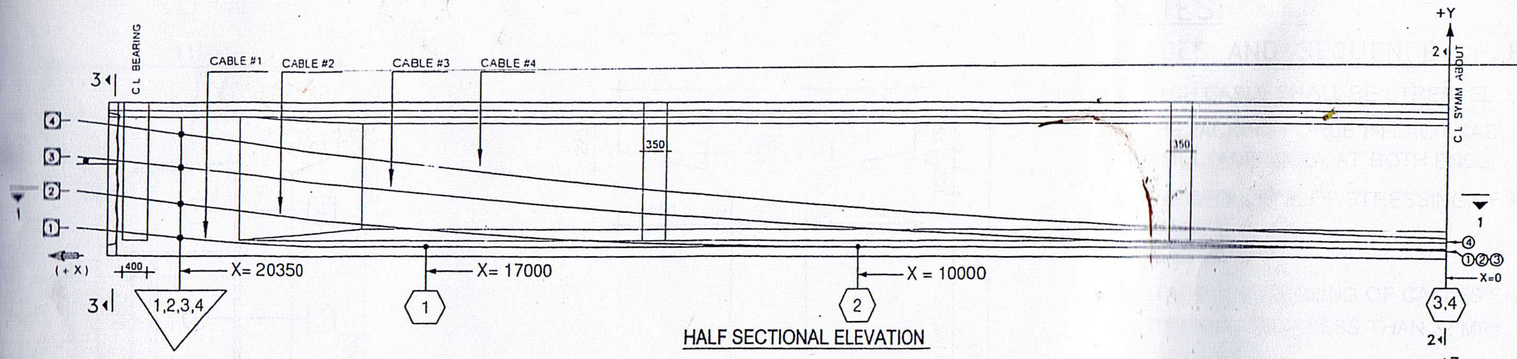
DESIGNED BY : MD. DELWAR HOSSAIN

CHECKED BY : MD. FAHEDUL ISLAM, XEN, (Design), LGED HQ, Dhaka

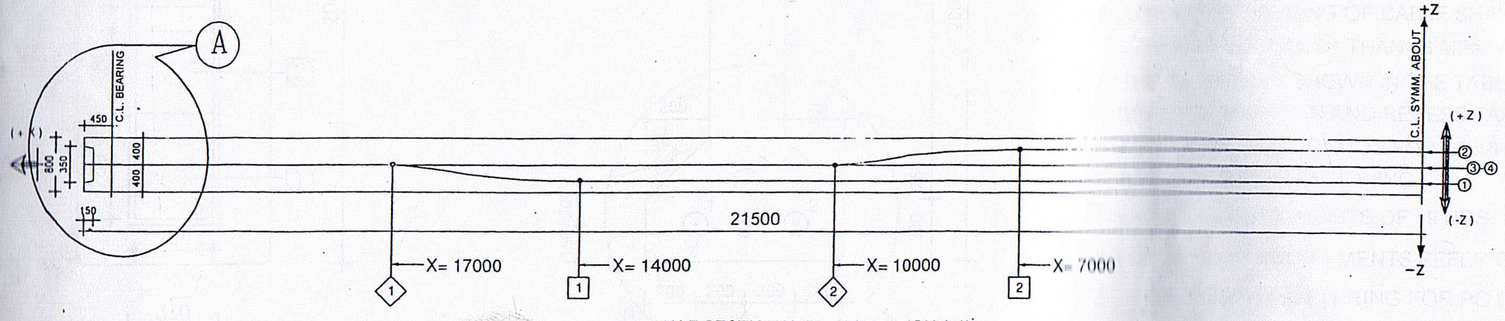
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তত্ত্বাবধায়ক প্রকৌশলী (ডিজাইন)
এলজিইডি, সদর দপ্তর, ঢাকা।

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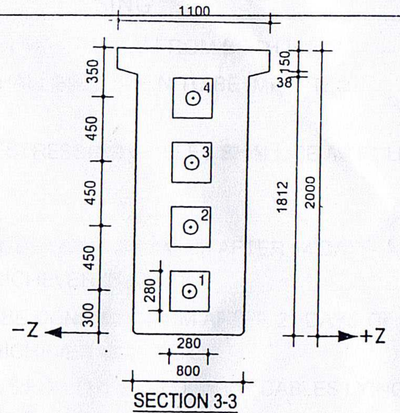
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TOTAL SHEET : 35
DRAWN BY : MD. FEROZ ISLAM
DATE :



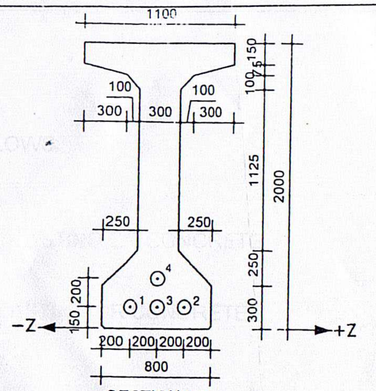
HALF SECTIONAL ELEVATION



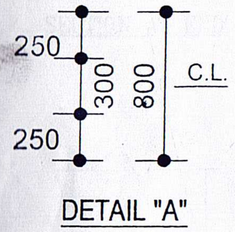
HALF SECTIONAL PLAN (SECTION 1-1)



SECTION 3-3
(END SECTION)



SECTION 2-2
(MID SECTION)



DETAIL "A"

LEGEND:

- INDICATES START OF CURVE IN ELEVATION
- INDICATES END OF CURVE IN ELEVATION
- INDICATES START OF CURVE IN PLAN
- INDICATES END OF CURVE IN PLAN
- INDICATES END OF CABLE
- INDICATES CABLE NUMBER

TABLE 1 : CABLE PROFILE (VERTICAL & HORIZONTAL CO-ORDINATE OF CABLES FROM BOTTOM CENTER OF GIRDER)

CABLE NO.	ORDINATES AT DISTANCE X FROM CENTRE																							
	12000		11000		10000		9000		8000		7000		6000		5000		4000		3000		2000		1000		0	
	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z
1	150	-200	150	-200	150	-200	150	-200	150	-200	150	-200	150	-200	150	-200	150	-200	150	-200	150	-200	150	-200	150	-200
2	169	0	155	0	150	0	150	44	150	156	150	200	150	200	150	200	150	200	150	200	150	200	150	200	150	200
3	482	0	429	0	381	0	337	0	298	0	263	0	233	0	208	0	187	0	171	0	159	0	152	0	150	0
4	762	0	696	0	636	0	582	0	533	0	490	0	453	0	421	0	396	0	376	0	361	0	353	0	350	0

TABLE 2 : CABLE EMERGENCE ANGLE,ELONGATION AND JACKING FORCE

CABLE NO	EMERGENCE ANGLE (Ø) AT END (Deg.)	ELONGATION AT EACH JACKING END (mm)	JAKING FORCE AT EACH END (KN)
1	3.21	142	3750
2	5.55	146	3750
3	5.37	150	3750
4	6.64	150	3750

TABLE 1 : CABLE PROFILE (VERTICAL & HORIZONTAL CO-ORDINATE OF CABLES FROM BOTTOM CENTER OF GIRDER)

CABLE NO.	ORDINATES AT DISTANCE X FROM CENTRE																			
	21350		20350		20000		19000		18000		17000		16000		15000		14000		13000	
	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z
1	300	0	244	0	225	0	183	0	150	0	150	0	150	-44	150	-156	150	-200	150	-200
2	750	0	653	0	619	0	530	0	450	0	380	0	319	0	267	0	225	0	192	0
3	1200	0	1106	0	1073	0	983	0	898	0	817	0	741	0	669	0	602	0	540	0
4	1650	0	1534	0	1493	0	1382	0	1276	0	1176	0	1082	0	993	0	910	0	833	0

REVISION			
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GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

PROJECT : CONSTRUCTION OF IMPORTANT BRIDGES ON RURAL ROADS

NAME OF SCHEME:
CONSTRUCTION OF 301.30M LONG PSC GIRDER BRIDGE AT NUNDAHA GHAT OVER THE RIVER KARTOA AT CH. 4+500 Km ON CHATRA GC - GILLABARI GHAT VIA NISCHINTOBATI PRIMARY SCHOOL ROAD (ROAD ID: 185764034)

UPAZILA: PIRGANJ, DISTRICT: RANGPUR, UNION:

DRAWING TITLE:
PC GIRDER PRESTRESSING CABLE DETAILS

DESIGN UNIT OF LGED
RDEC BHABAN (LEVEL : 4),
AGARGAON
SHER-E-BANGLA NAGAR
DHAKA - 1207.
Tel. : +880 2 9113609,
Fax. : +880 2 9118175
E-mail : design@lged.gov.bd

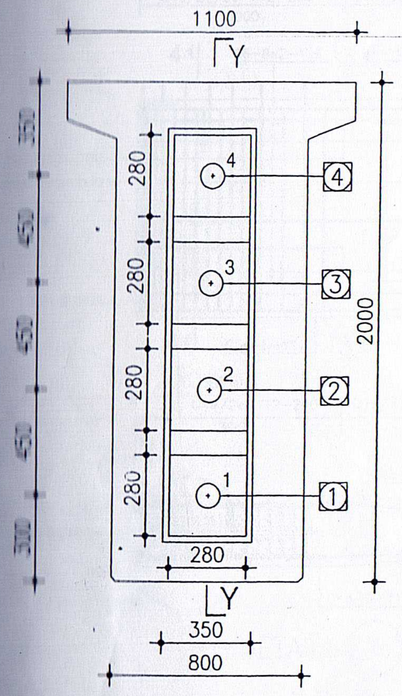
DESIGNED BY :

CHECKED BY :
MD. ZAHIDUL ISLAM
XEN, (Design)
LGED, HQ, Dhaka

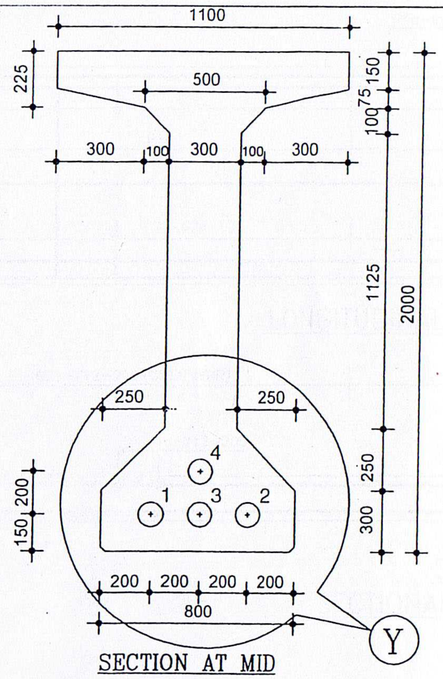
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খন্দকার আলীনুর
তত্ত্বাবধায়ক প্রকৌশলী (ডিজাইন)
এলজিইডি, সদর দপ্তর, ঢাকা।

APPROVED BY :

SHEET NO : S - 12
TOTAL SHEET : 35
DRAWN BY : MD. FEROZ ISLAM
DATE :



SECTION AT END

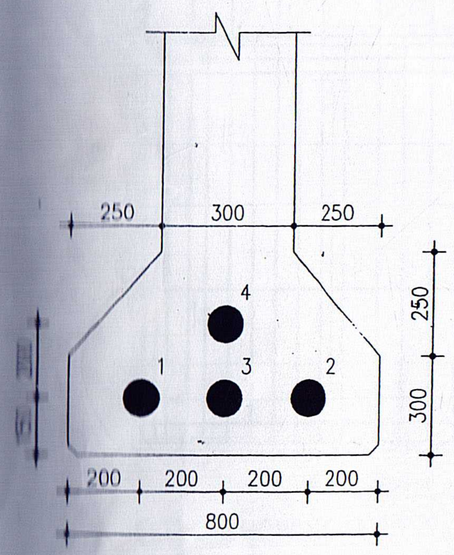


SECTION AT MID

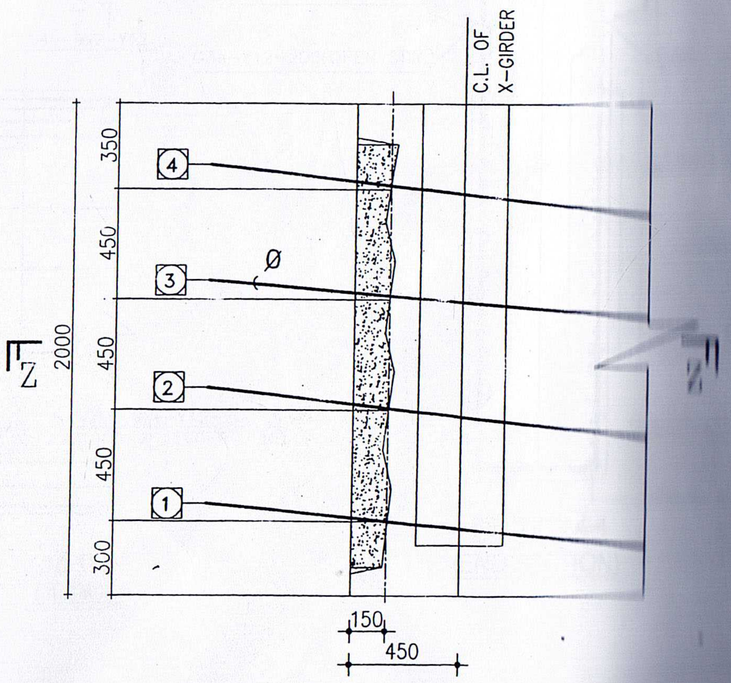
NOTES:

STAGES AND SEQUENCE OF PRESTRESSING

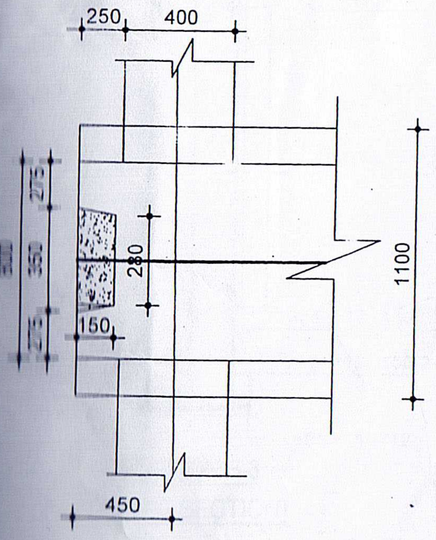
1. EACH CABLE SHALL BE STRESSED SIMULTANEOUSLY FROM BOTH ENDS.
   THE JACKING FORCE IN EACH CABLE SHALL BE 3750 KN TO BE IMPARTED SIMULTANEOUSLY AT BOTH ENDS.
2. THE SEQUENCE OF STRESSING OF PRESTRESSING CABLES SHALL BE AS FOLLOWS:
   STAGE 1 - 4, 1 & 2
   STAGE 2 - 3
3. STAGE-1: STRESSING OF CABLES SHALL BE DONE MINIMUM AFTER 14 DAYS OF CASTING OR CONCRETE STRENGTH NOT LESS THAN 32 MPa WHICHEVER IS LATER.
4. STAGE-2: STRESSING OF CABLE SHALL BE DONE MINIMUM AFTER 21 DAYS OF CASTING OR CONCRETE STRENGTH NOT LESS THAN 36 MPa WHICHEVER IS LATER.
5. THE EXTENSION SHOWN IN THE TABLE IS FOR THE PORTION OF CABLES LYING BETWEEN MID SPAN AND RECESS FACE OF THE GIRDER.
   ADDITIONAL ELONGATION FOR GRIPPING LENGTH BASED ON TENSIONING JACK MUST BE ADDED DURING TENSIONING.
6. EACH CABLES CONSISTS OF 19 NOS. 15.3mm DIA. (19 K 15) 7-PLY UNCOATED LOW RELAXATION STRANDS.
7. FOR OTHER REQUIREMENTS REFER GENERAL NOTES FOR PC GIRDER : S-02
8. FORM WORK/SHUTTERING FOR PC GIRDER SHALL BE OF 12 BWG MS SHEET & ADEQUQTE BRACING SHALL BE PROVIDED IN VERTICAL AND HORIZONTAL DIRECTION WITH 50X50X6MM MS ANGLE.
9. CONTRACTOR SHALL PREPARE AND SUBMIT DETAIL DRAWING AND CALCULATION OF SCAFFOLDING SYSTEM AND GET IT APPROVED BY CONCERN XEN, LGED, PRIOR TO PC GIRDERCONSTRUCTION.



DETAIL Ⓨ



DETAILS OF END BLOCK



SECTION Z-Z

Special Note:

At first, Cable no-1 should be stressed at 55% of jacking force, then Cable no-2 have to be stressed at 100% of jacking force. After that, Cable no-1 should be stressed again at remaining 45% of jacking force. But care must be taken so that for each of the cables the maximum jacking force shall be governed by the procedure as per item "H", Sheet-02 (S-02).

REVISION			
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GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

PROJECT : CONSTRUCTION OF IMPORTANT BRIDGES IN RURAL ROADS

NAME OF SCHEME:
CONSTRUCTION OF 301.30M LONG PSC GIRDER BRIDGE AT NUNDAHA GHAT OVER THE RIVER KARTOA AT CH. 4+500 Km ON CHATRA GC - GILLABARI GHAT VIA NISCHINTOBATI PRIMARY SCHOOL ROAD (ROAD ID: 185764034)

UPAZILA: PIRGANJ, DISTRICT: RANGPUR, UNION:

DRAWING TITLE: DETAILS OF PC GIRDER

DESIGN UNIT OF LGED
RDEC BHABAN (LEVEL - 4),
AGARGAON
SHER-E-BANGLA NAGAR
DHAKA - 1207.
Tel. : +880 2 9119609,
Fax. : +880 2 9118175
E-mail : design@lged.gov.bd

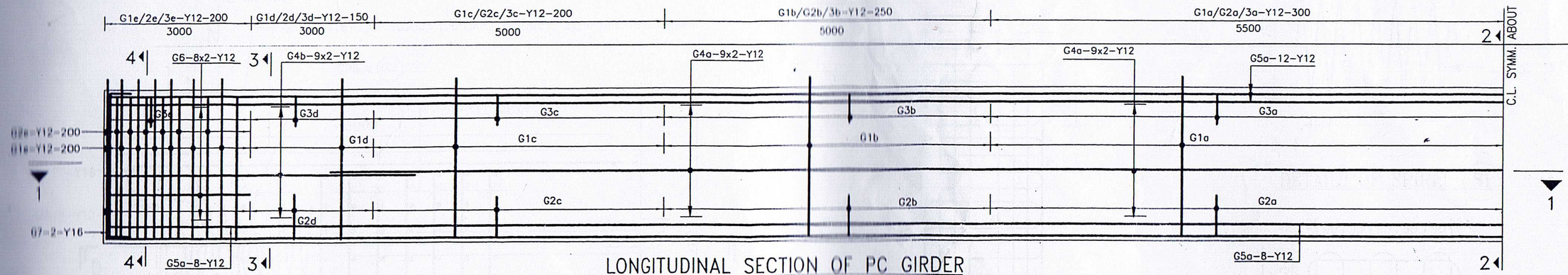
DESIGNED BY : MD. EHSANUR RAHMAN, ASSISTANT ENGINEER, LGED HQ, DHAKA

CHECKED BY : MD. ZAHIDUL ISLAM, XEN, (Design), LGED HQ, Dhaka

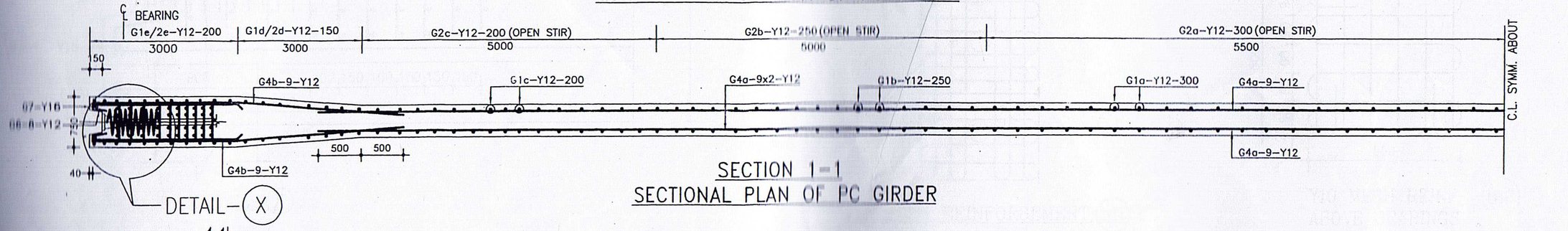
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তত্ত্বাবধায়ক প্রকৌশলী (ডিজাইন)
এলজিইডি, সদর দপ্তর, ঢাকা।

APPROVED BY :

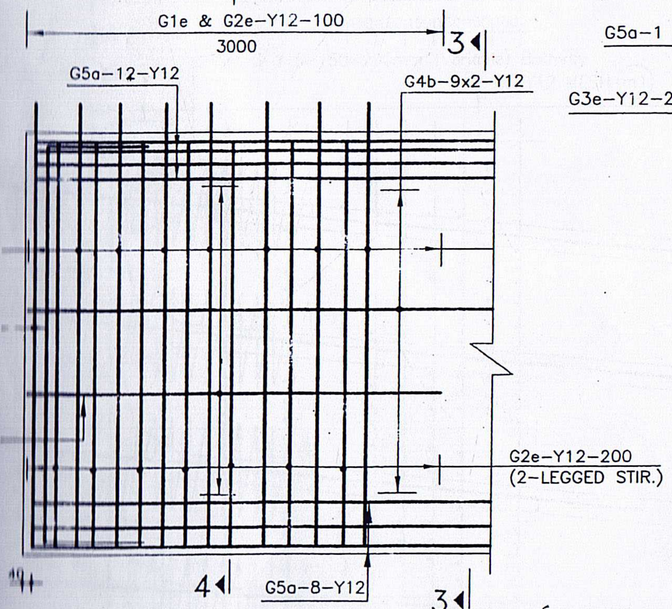
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DRAWN BY : MD. FEROZ ISLAM
DATE :



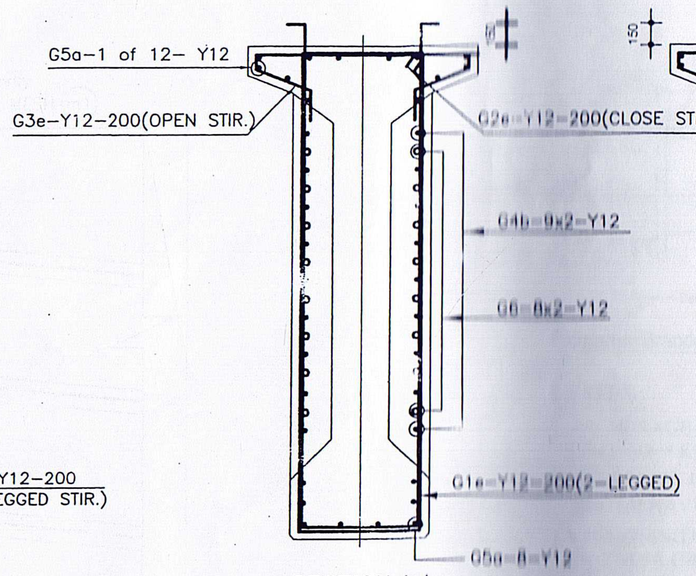
LONGITUDINAL SECTION OF PC GIRDER



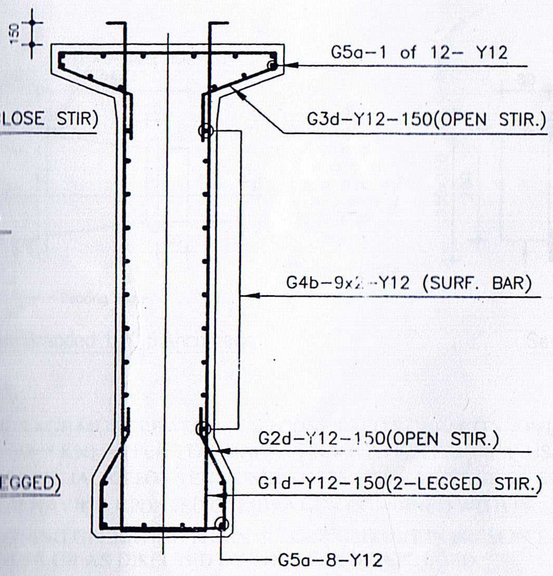
SECTION 1-1
SECTIONAL PLAN OF PC GIRDER



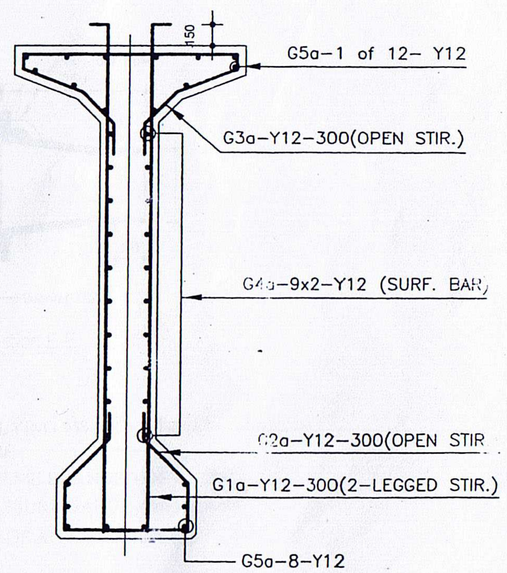
ELEV. SHOWING END REINF. DETAILS



SECTION 4-4
(END SECTION)



SECTION 3-3
(SLOPE SECTION)



SECTION 2-2
(MID SECTION)

REVISION			
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GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

PROJECT : CONSTRUCTION OF IMPORTANT BRIDGES ON RURAL ROADS

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UPAZILA: PIRGANJ, DISTRICT: RANGPUR, UNION:

DRAWING TITLE: PC GIRDER PRESTRESSING REINFORCEMENT DETAILS

DESIGN UNIT OF LGED
RDEC BHABAN (LEVEL - 4),
AGARGAON
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DHAKA - 1207.
Tel. : +880 2 9119609,
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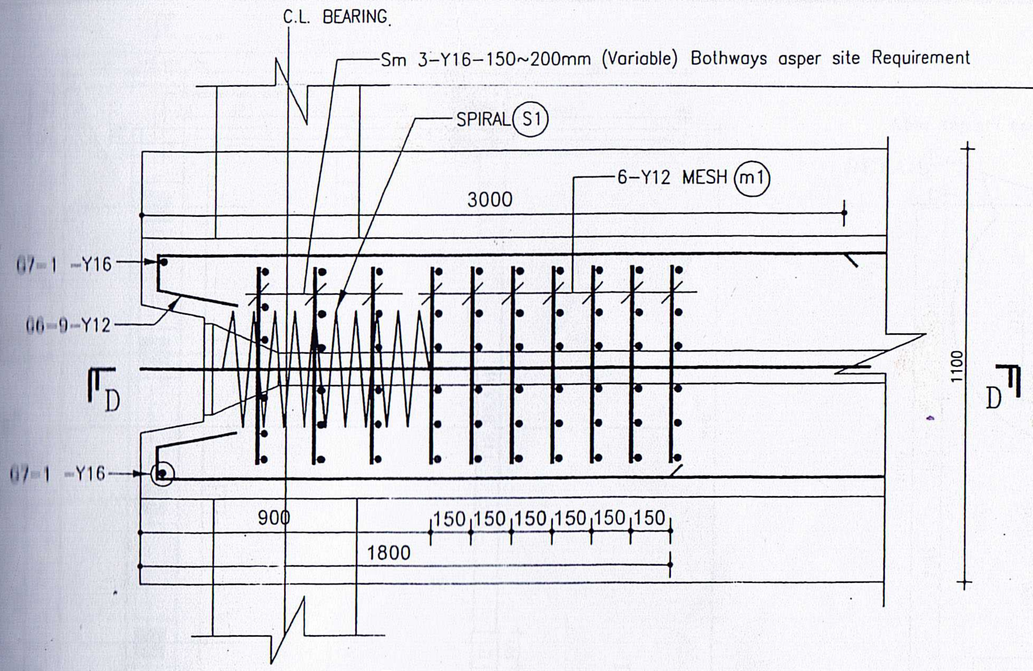
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MD. DELWAR HOSSAIN

CHECKED BY :
MD. ZAHEDUL ISLAM
XEN, (Design)
LGED HQ, Dhaka

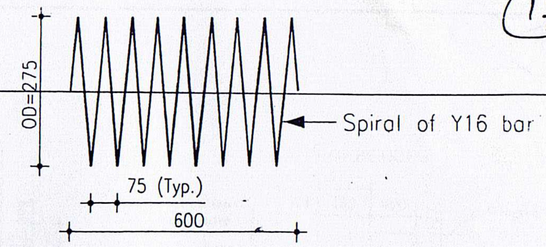
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খন্দকার আলীনূর
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এলজিইডি, সদর দপ্তর, ঢাকা।

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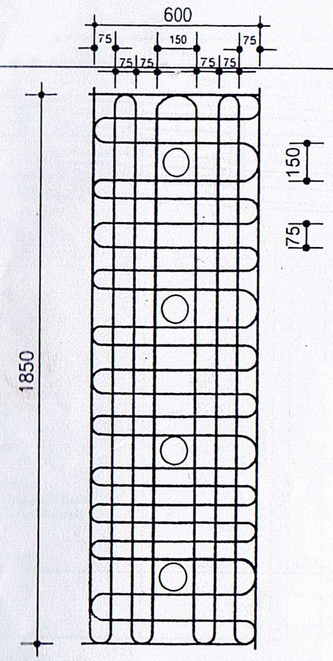
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DRAWN BY : MD. FEROZ ISLAM
DATE :



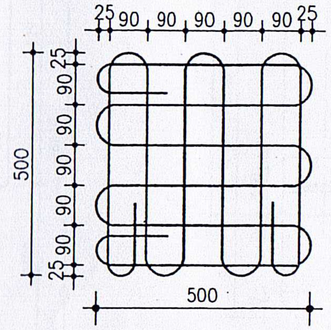
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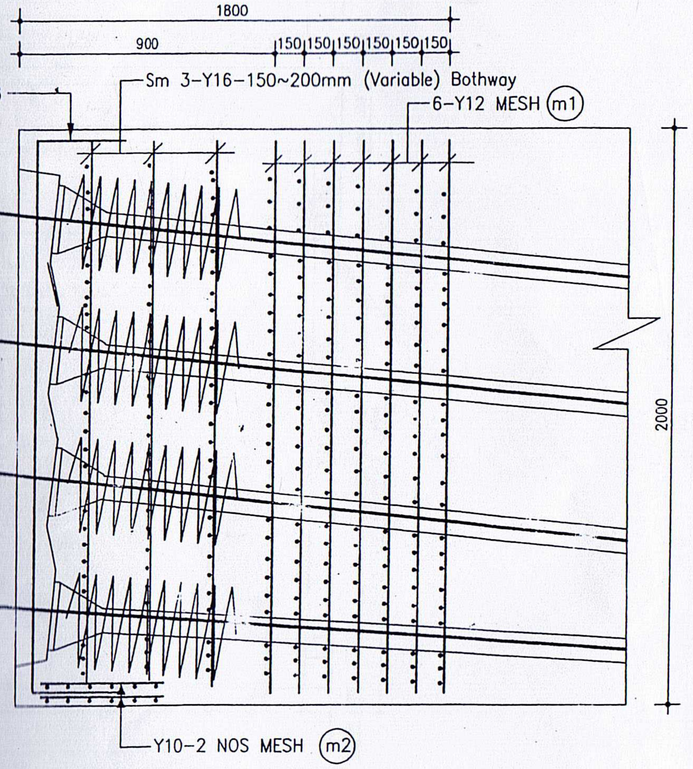
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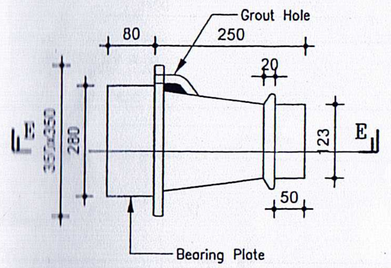
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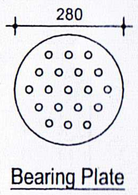
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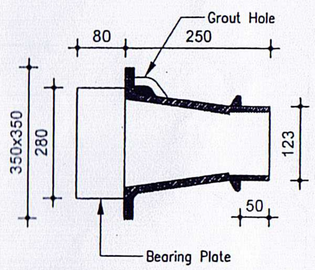


SECTION D-D



Freyssinet Branded 19K15 Anchorage





Section E-E

NOTES:

1. ANCHORAGE MUST BE TESTED TO CONFIRM ITS CAPACITY APPLYING 95% OF ULTIMATE TENDON LOAD (4948 KN) AS PER STANDARD SPECIFICATION PRIOR TO USE
2. HYDRAULIC JACKS FOR TENSIONING OPERATION MUST BE OF SAME BRANDED OF ANCHORAGE SYSTEM HAVING UPDATED CALIBRATION COMBINED WITH PRESSURE GAUGE AND PUMP
3. TENSIONING OPERATION SHALL BE CARRIED OUT IN PRESENCE OF AN EXPERIENCED ENGINEER OR AS DIRECTED BY THE DESIGN UNIT, LGED
4. THE PRE-STRESSING PARTY, IF SUBCONTRACTED, SHALL BE SELECTED TAKING PRIOR APPROVAL OF CONCERNED EXECUTIVE ENGINEER OR AS APPROVED BY DESIGN UNIT, LGED
5. THE HYDRAULIC JACK, PUMP & PRESSURE GAUGE MUST HAVE UPDATED CALIBRATION (MAX. SIX MONTH) PREFERABLY FROM BUET.

REVISION			
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GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

PROJECT : CONSTRUCTION OF IMPORTANT BRIDGES ON RURAL ROADS

NAME OF SCHEME:
CONSTRUCTION OF 301 30M LONG PSC GIRDER BRIDGE AT NUNDAHA GHAT OVER THE RIVER KARTOA AT CH. 4+500 Km ON CHATRA GC - GILLABARI GHAT VIA NISCHINTOBATI PRIMARY SCHOOL ROAD (ROAD ID. 185764034)

UPAZILA: PIRGANJ. DISTRICT: RANGPUR. UNION.

DRAWING TITLE: PC GIRDER PRESTRESSING ANCHORAGE DETAILS

DESIGN UNIT OF LGED
RDEC BHABAN (LEVEL - 4),
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Tel. : +880 2 9119609,
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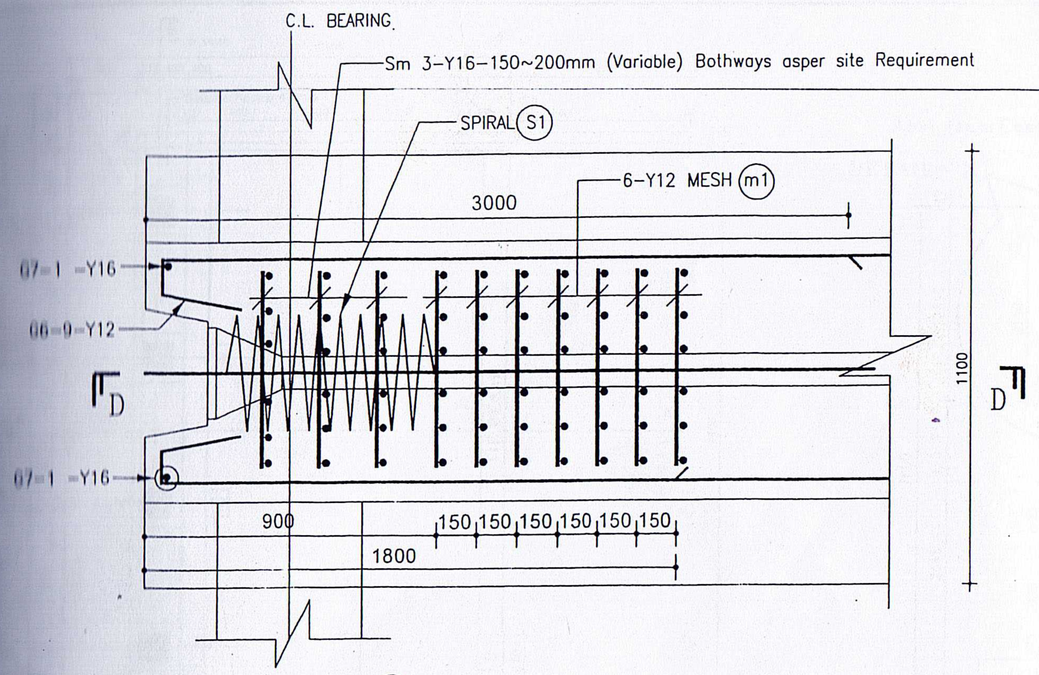
DESIGNED BY :
MD. DELWAR HOSSAIN
Bridge Design Engineer
Design Unit, LGED HQ, Dhaka

CHECKED BY :
MD. ZAHEDUL ISLAM
XEN, (Design)
LGED HQ, Dhaka

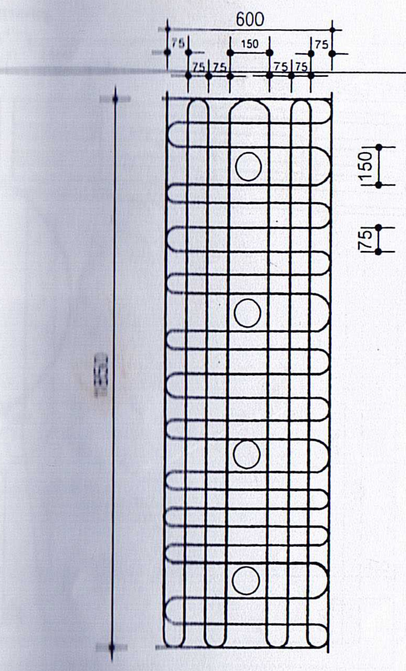
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তত্ত্বাবধায়ক প্রকৌশলী (ডিজাইন)
এলজিইডি, সদর দপ্তর, ঢাকা।

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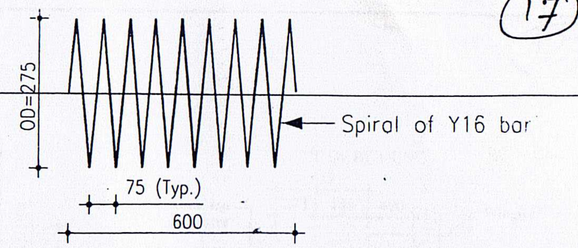
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DRAWN BY : MD. FEROZ ISLAM
DATE :



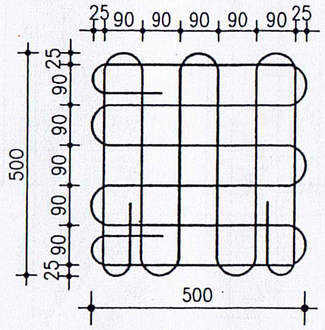
DETAIL- (X)



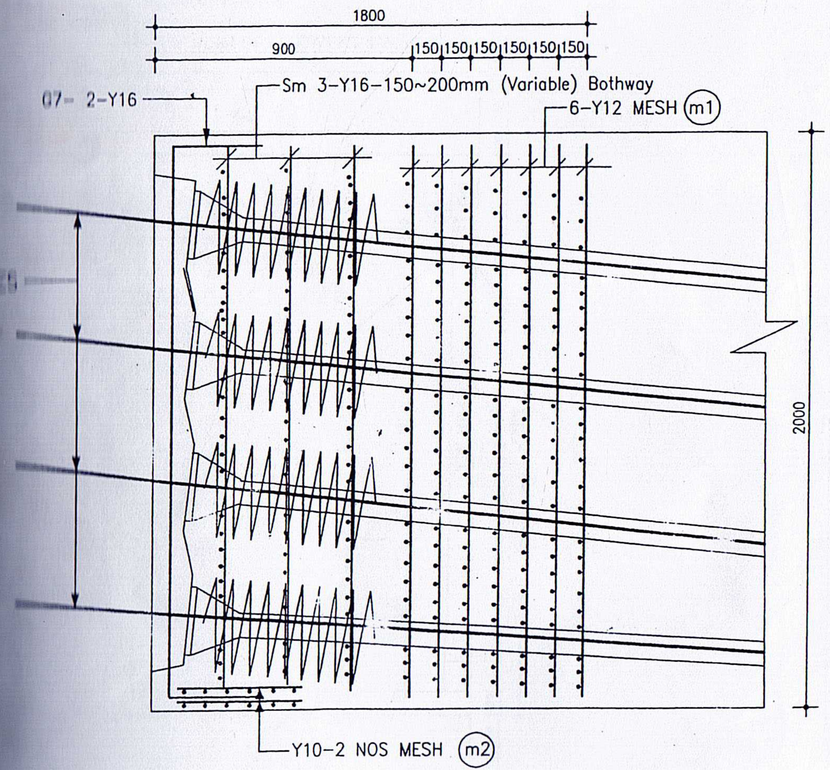
Y12 MESH REINFORCEMENT (m1)



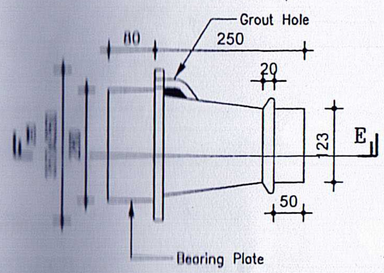
DETAILS OF SPIRAL (S1)



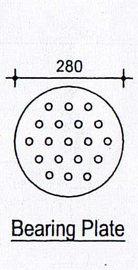
Y10 MESH REINF. ABOVE BEARINGS (m2)

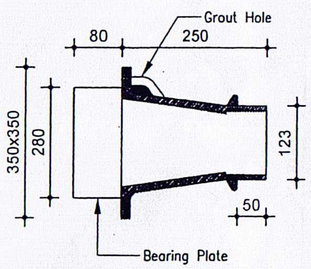


SECTION D-D



Freyssinet Branded 19K15 Anchorage





Section E-E

NOTES:

1. ANCHORAGE MUST BE TESTED TO CONFIRM ITS CAPACITY APPLYING 95% OF ULTIMATE TENDON LOAD (4938 KN) AS PER STANDARD SPECIFICATION PRIOR TO USE
2. HYDRAULIC JACKS FOR TENSIONING OPERATION MUST BE OF SAME BRANDED OF ANCHORAGE SYSTEM HAVING UPDATED CALIBRATION COMBINED WITH PRESSURE GAUGE AND PUMP
3. TENSIONING OPERATION SHALL BE CARRIED OUT IN PRESENCE OF AN EXPERIENCED ENGINEER OR AS DIRECTED BY THE DESIGN UNIT, LGED
4. THE PRE-STRESSING PARTY, IF SUBCONTRACTED, SHALL BE SELECTED TAKING PRIOR APPROVAL OF CONCERNED EXECUTIVE ENGINEER OR AS APPROVED BY DESIGN UNIT, LGED
5. THE HYDRAULIC JACK, PUMP & PRESSURE GAUGE MUST HAVE UPDATED CALIBRATION (MAX. SIX MONTH) PREFERABLY FROM BUET.

REVISION			
REV. NO.	DATE	DESCRIPTION	BY

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

PROJECT : CONSTRUCTION OF IMPORTANT BRIDGES ON RURAL ROADS

NAME OF SCHEME:
CONSTRUCTION OF 301.30M LONG PSC GIRDER BRIDGE AT NUNDAHA GHAT OVER THE RIVER KARTOA AT CH. 4+500 Km ON CHATRA GC - GILLABARI GHAT VIA NISCHINTOBATI PRIMARY SCHOOL ROAD (ROAD ID. 185764034)

UPAZILA: PIRGANJ. DISTRICT: RANGPUR. UNION.

DRAWING TITLE: PC GIRDER PRESTRESSING ANCHORAGE DETAILS

DESIGN UNIT OF LGED
RDEC BHABAN (LEVEL - 4),
AGARGAON
SHER-E-BANGLA NAGAR
DHAKA - 1207.
Tel. : +880 2 9119609,
Fax. : +880 2 9118175
E-mail : design@lged.gov.bd

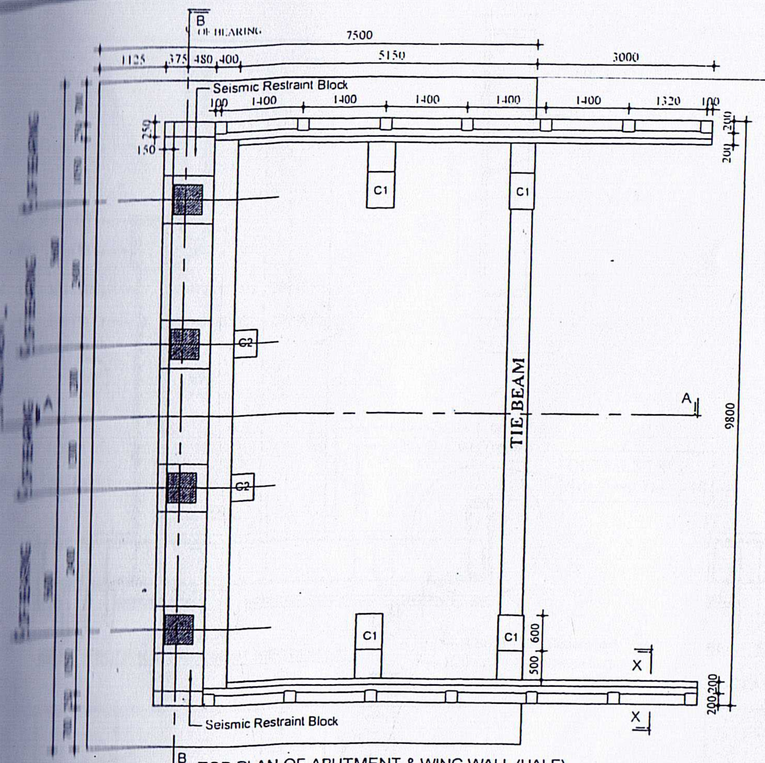
DESIGNED BY : MD. DELWAR HOSSAIN, Asstt. Engr.

CHECKED BY : MD. ZAHIDUL ISLAM, XEN. (Design), LGED HQ, Dhaka

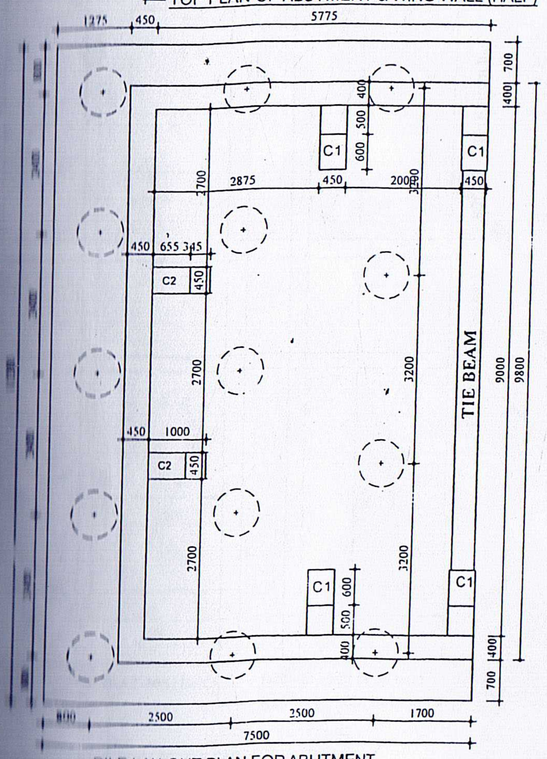
পরীক্ষিত ও অনুমোদনযোগ্য
খন্দকার আলীনূর
তত্ত্বাবধায়ক প্রকৌশলী (ডিজাইন)
এলজিইডি, সদর দপ্তর, ঢাকা।

APPROVED BY :

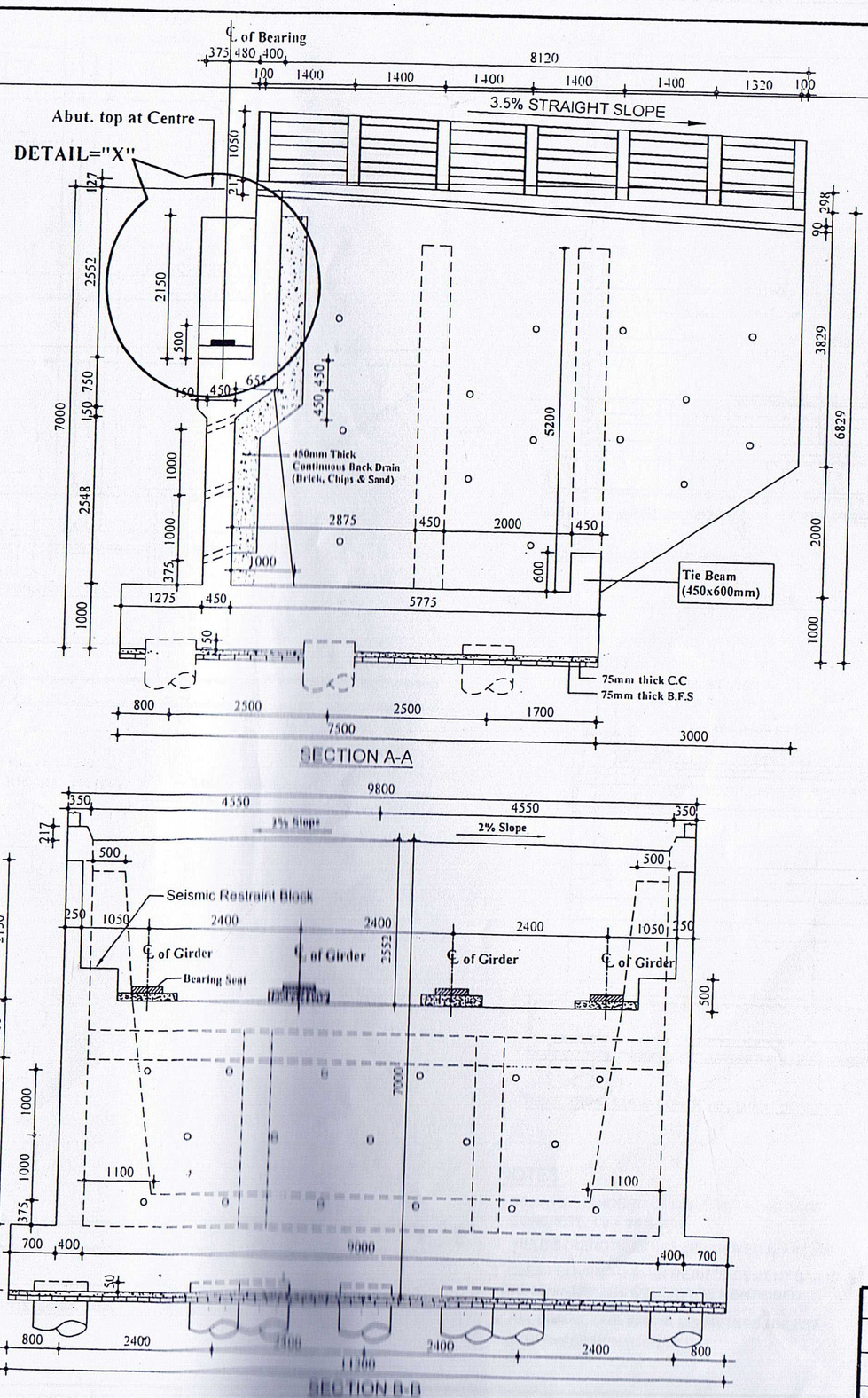
SHEET NO : S - 15
TOTAL SHEET : 35
DRAWN BY : MD. FEROZ ISLAM
DATE :



TOP PLAN OF ABUTMENT & WING WALL (HALF)

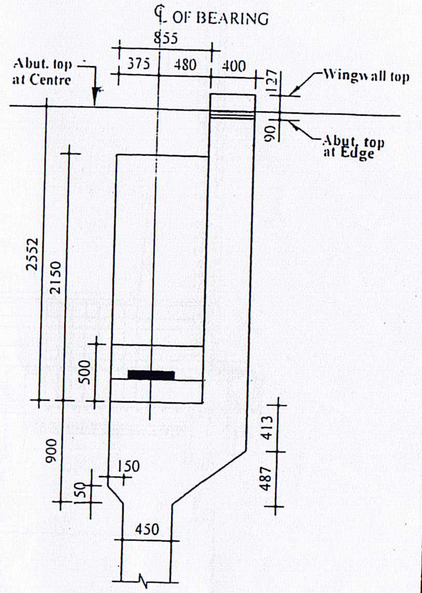


PILE LAY-OUT PLAN FOR ABUTMENT

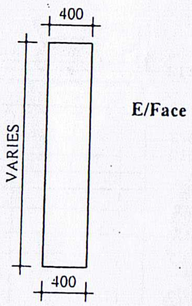


SECTION A-A

SECTION B-B



DETAIL -'X'



SECTION - X-X

REVISION			
REV. NO.	DATE	DESCRIPTION	BY:

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

SECTOR : CONSTRUCTION OF IMPORTANT BRIDGES
RURAL ROADS

NAME OF SCHEME:
CONSTRUCTION OF 301.30M LONG PSC GIRDER BRIDGE AT NUNDAHA GHAT OVER THE RIVER KARTOA AT CH. 4+500 Km ON CHATRA GC - GILLABARI GHAT VIA NISCHINTOBATI PRIMARY SCHOOL ROAD (ROAD ID: 185764034)

UPAZILA: PIRGANJ, | DISTRICT: RANGPUR, | UNION:

DRAWING TITLE:
DIMENSIONAL DETAILS OF ABUTMENT

DESIGN UNIT OF LGED
RDEC BHABAN (LEVEL - 4),
AGARGAON
SHER-E-BANGLA NAGAR
DHAKA - 1207.
Tel. : +880 2 9119609,
Fax. : +880 2 9118175
E-mail : design@lged.gov.bd

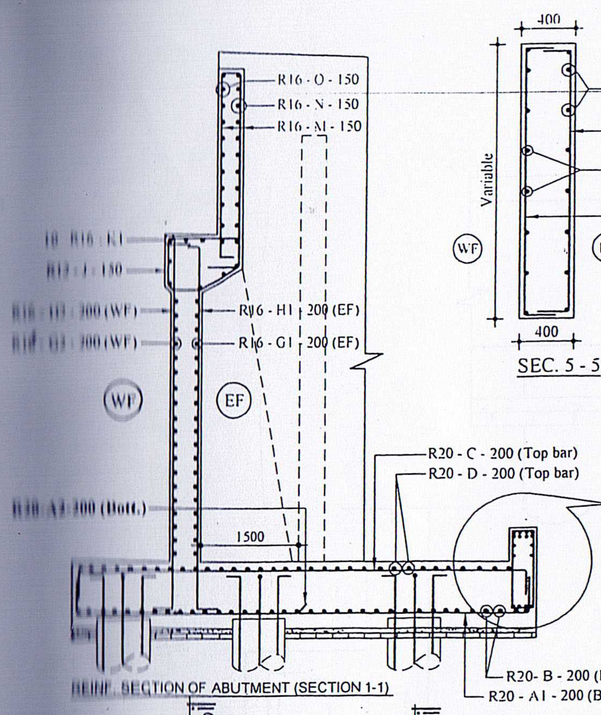
DESIGNED BY : MD. DELWAR HOSSAIN

CHECKED BY : MD. ZAHIDUL ISLAM

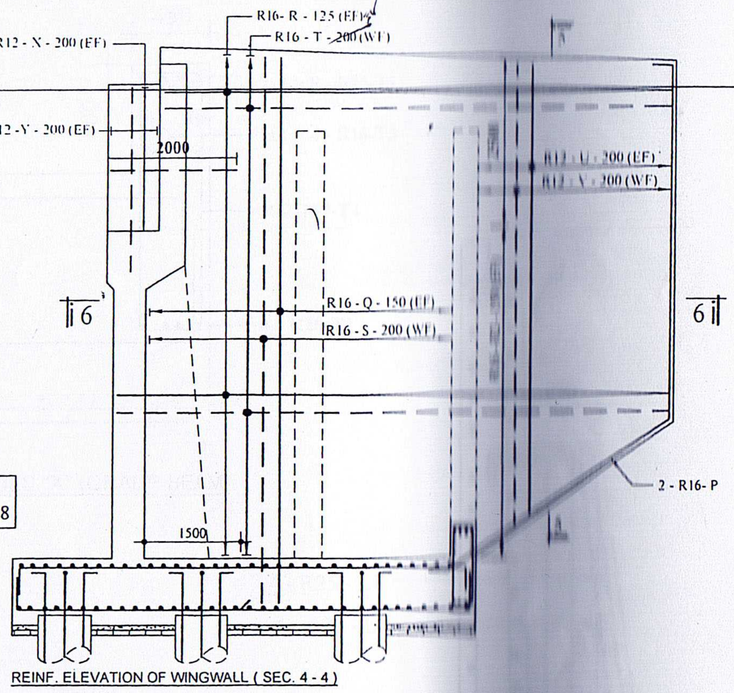
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খন্দকার আশীনর
তত্ত্বাবধায়ক প্রকৌশলী (ডিজাইন)
এলজিইডি, সদর দপ্তর, ঢাকা।

APPROVED BY :

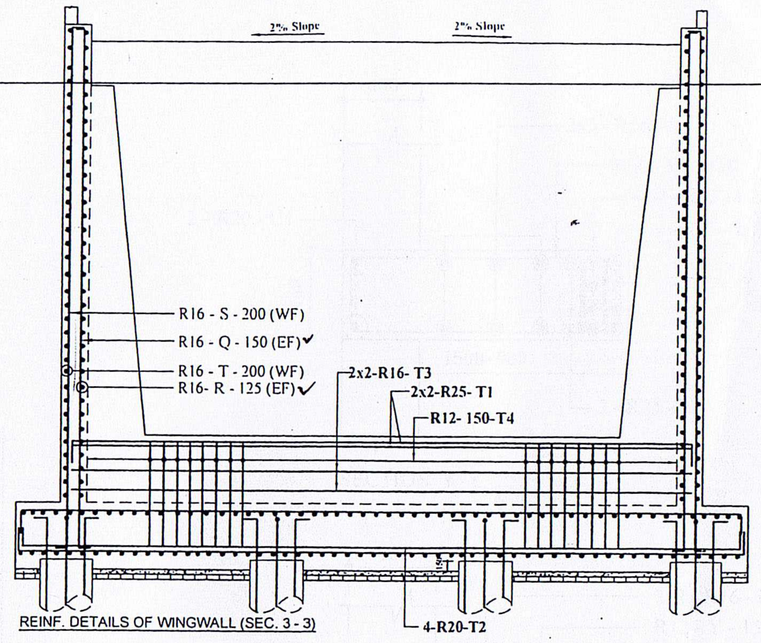
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TOTAL SHEET : 35
DRAWN BY : MD. FEROZ ISLAM
DATE :



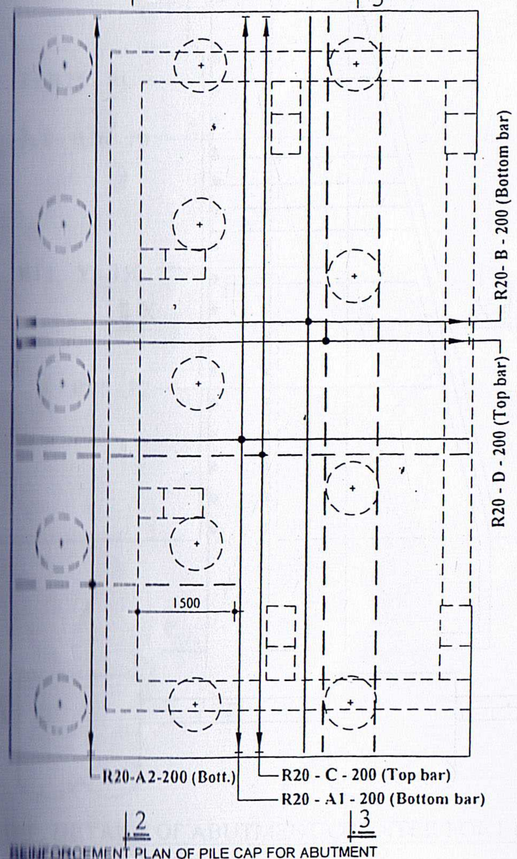
REINF. SECTION OF ABUTMENT (SECTION 1-1)



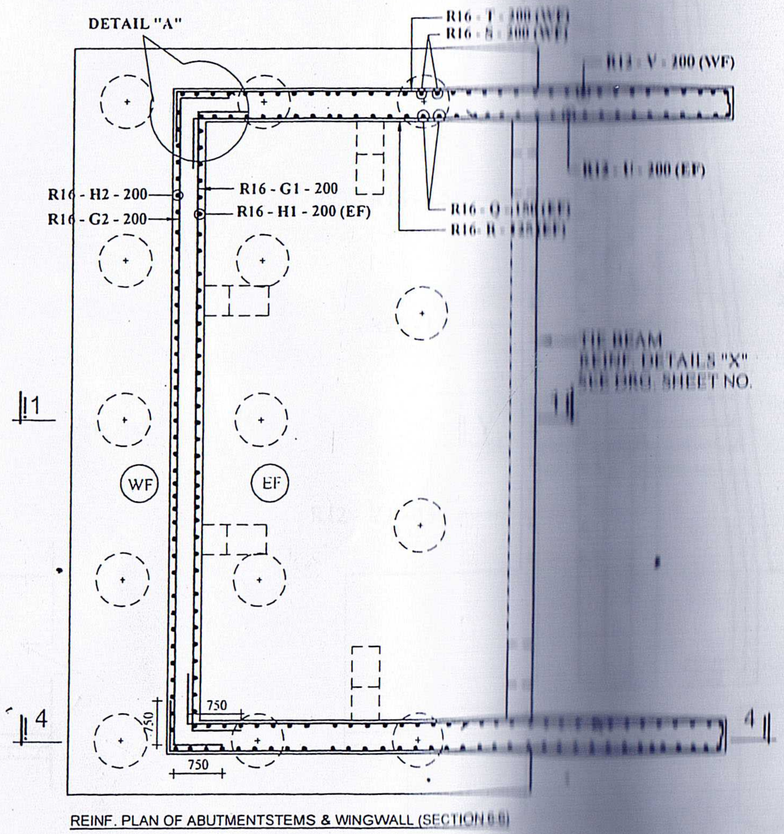
REINF. ELEVATION OF WINGWALL (SEC. 4 - 4)



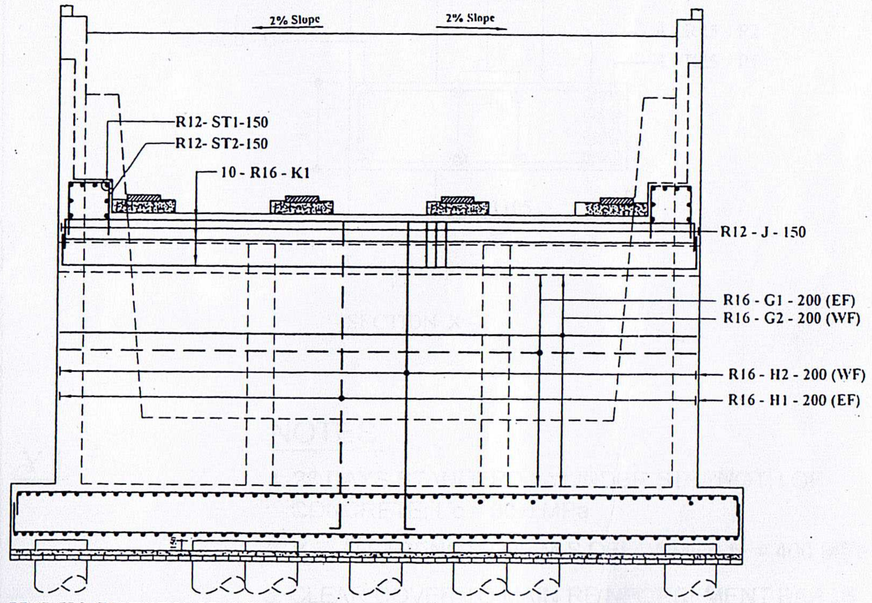
REINF. DETAILS OF WINGWALL (SEC. 3 - 3)



REINFORCEMENT PLAN OF PILE CAP FOR ABUTMENT



REINF. PLAN OF ABUTMENTSTEMS & WINGWALL (SECTION 6-6)



REINF. FRONT ELEVATION OF ABUTMENT (SEC. 2 - 2)

NOTES:

1. 28 DAYS STANDERD CYLINDER STRENGTH OF CONCRETE: f 'c = 30.0 MPa
2. YIELD STRENGTH OF M.S.DEFORMED fy = 400 MPa
3. CLEAR COVER TO MAIN REINFORCEMENT BAR IS TO 50mm UNLESS OTHERWISE MENTIONED.
4. ALL DIMENSIONS ARE IN MILIMETERS UNLESS OTHERWISE MENTIONED.

REVISION			
REV. NO.	DATE	DESCRIPTION	BY:

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LOCAL GOVERNMENT ENGINEERING DEPARTMENT

PROJECT : CONSTRUCTION OF IMPORTANT BRIDGES ON RURAL ROADS

NAME OF SCHEME:
CONSTRUCTION OF 301.30M LONG PSC GIRDER BRIDGE AT NUNDAHA GHAT OVER THE RIVER KARTOA AT CH. 4+500 Km ON CHATRA GC - GILLABARI GHAT VIA NISCHINTOBATI PRIMARY SCHOOL ROAD (ROAD ID: 185764034)

UPAZILA: PIRGANJ, DISTRICT: RANGPUR, UNION:

DRAWING TITLE: REINF. DETAILS OF ABUTMENT

DESIGN UNIT OF LGED
RDEC BHABAN (LEVEL - 4),
AGARGAON
SHER-E-BANGLA NAGAR
DHAKA - 1207.
Tel. : +880 2 9119609,
Fax. : +880 2 9118175
E-mail : design@lged.gov.bd

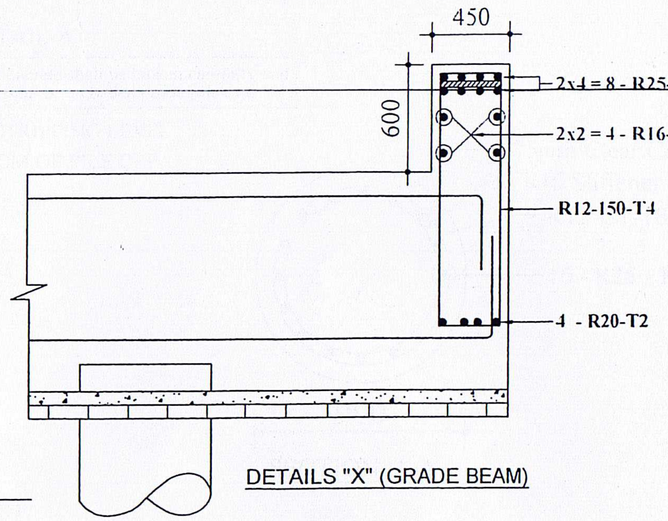
DESIGNED BY : MD. DELWAR HOSSAIN

CHECKED BY : MD. ZAHEDUL ISLAM

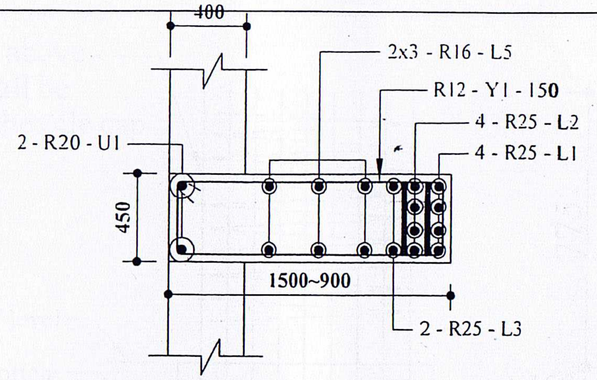
পরীক্ষিত ও অনমোদনযোগ্য
খন্দকার আলীনর
তত্ত্বাবধায়ক পকৌশলী (ডিজাইন)
এলজিইডি, সদর দপ্তর, ঢাকা।

APPROVED BY :

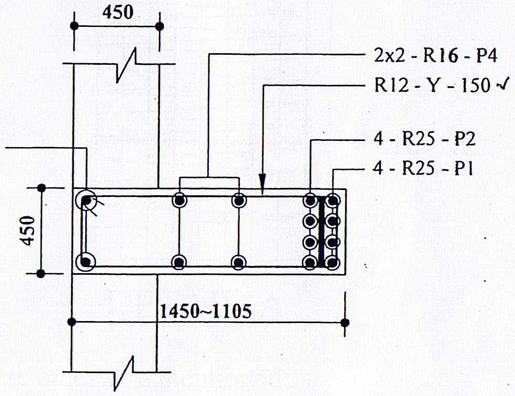
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TOTAL SHEET : 38
DRAWN BY : MD. FEROZ ISLAM
DATE :



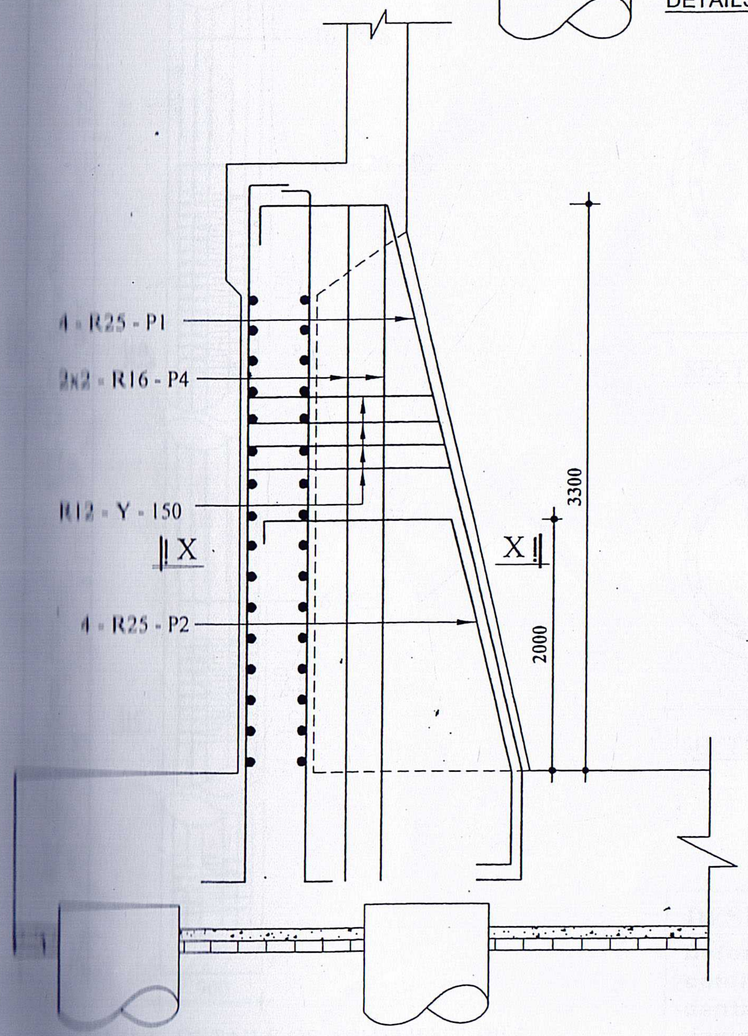
DETAILS "X" (GRADE BEAM)



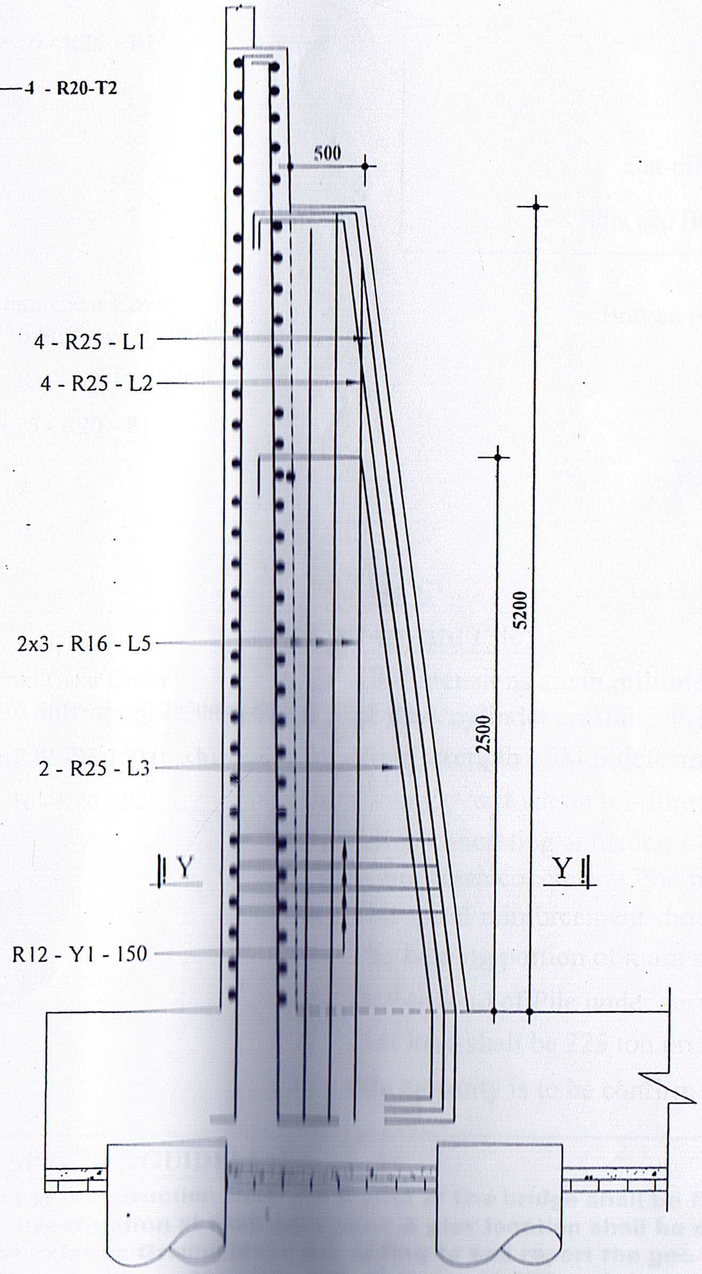
SECTION Y -Y



SECTION X -X



REINF. DETAILS OF ABUTMENT COUNTER FORT (C2)



REINF. DETAILS OF WING WALL COUNTER FORT (C1)

NOTES:

1. 28 DAYS STANDERD CYLINDER STRENGTH OF CONCRETE: f 'c = 30.0 MPa
2. YIELD STRENGTH OF M.S DEFORMED fy = 400 MPa
3. CLEAR COVER TO MAIN REINFORCEMENT BAR IS TO 50mm UNLESS OTHERWISE MENTIONED.
4. ALL DIMENSIONS ARE IN MILIMETERS UNLESS OTHERWISE MENTIONED.

REVISION			
REV. NO.	DATE	DESCRIPTION	BY:

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

PROJECT : CONSTRUCTION OF IMPORTANT BRIDGES ON RURAL ROADS

NAME OF SCHEME:
CONSTRUCTION OF 301.30M LONG PSC GIRDER BRIDGE AT NUNDAHA GHAT OVER THE RIVER KARTOA AT CH. 4+500 Km ON CHATRA GC - GILLABARI GHAT VIA NISCHINTOBATI PRIMARY SCHOOL ROAD (ROAD ID: 185784034)

UPAZILA: PIRGANJ, DISTRICT: RANGPUR, UNION:

DRAWING TITLE: REINF. DETAILS OF COUNTERFORT

DESIGN UNIT OF LGED
RDEC BHABAN (LEVEL - 4),
AGARGAON
SHER-E-BANGLA NAGAR
DHAKA - 1207.
Tel. : +880 2 9119609,
Fax. : +880 2 9118175
E-mail : design@lged.gov.bd

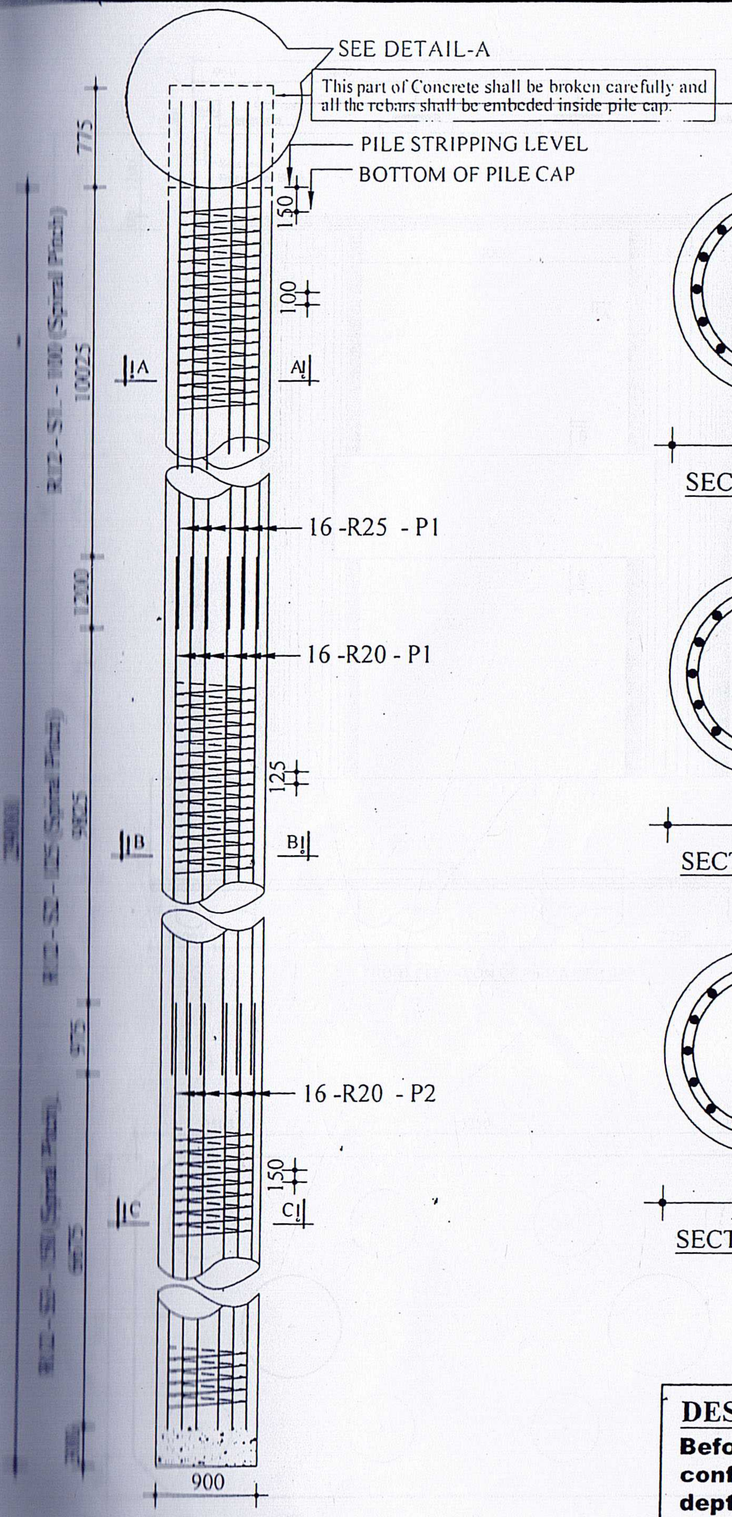
DESIGNED BY
MD. DELWAR HOSSAIN

CHECKED BY :
MD. ZANEDUL ISLAM

পরীক্ষিত ও অনুমোদনযোগ্য
খন্দকার আলীনুর
তত্ত্বাবধায়ক প্রকৌশলী (ডিজাইন)
এলজিইডি, সদর দপ্তর, ঢাকা।

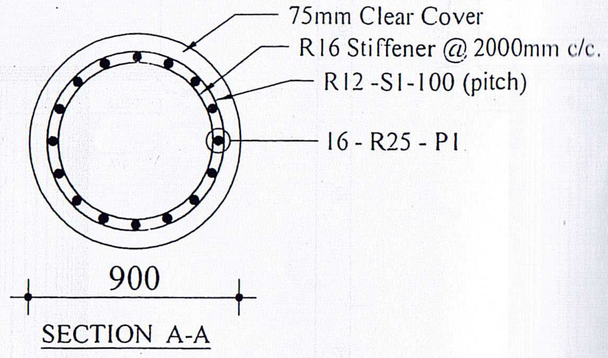
APPROVED BY :

SHEET NO : S - 18
TOTAL SHEET : 35
DRAWN BY : MD. FEROZ ISLAM
DATE :

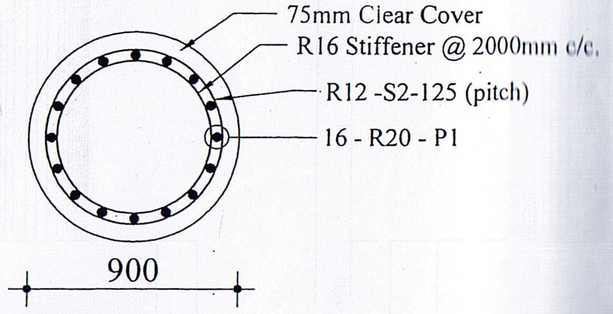


REINF. DETAILS OF ABUTMENT PILE

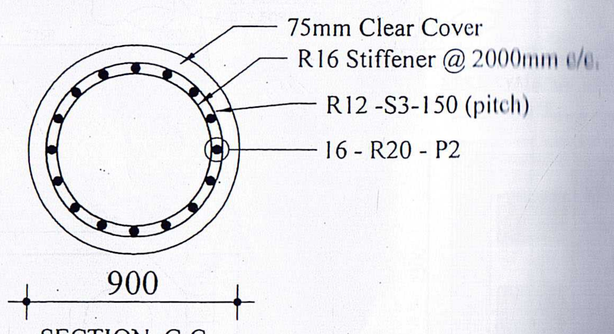
CAST-IN-SITU PILE DETAILS



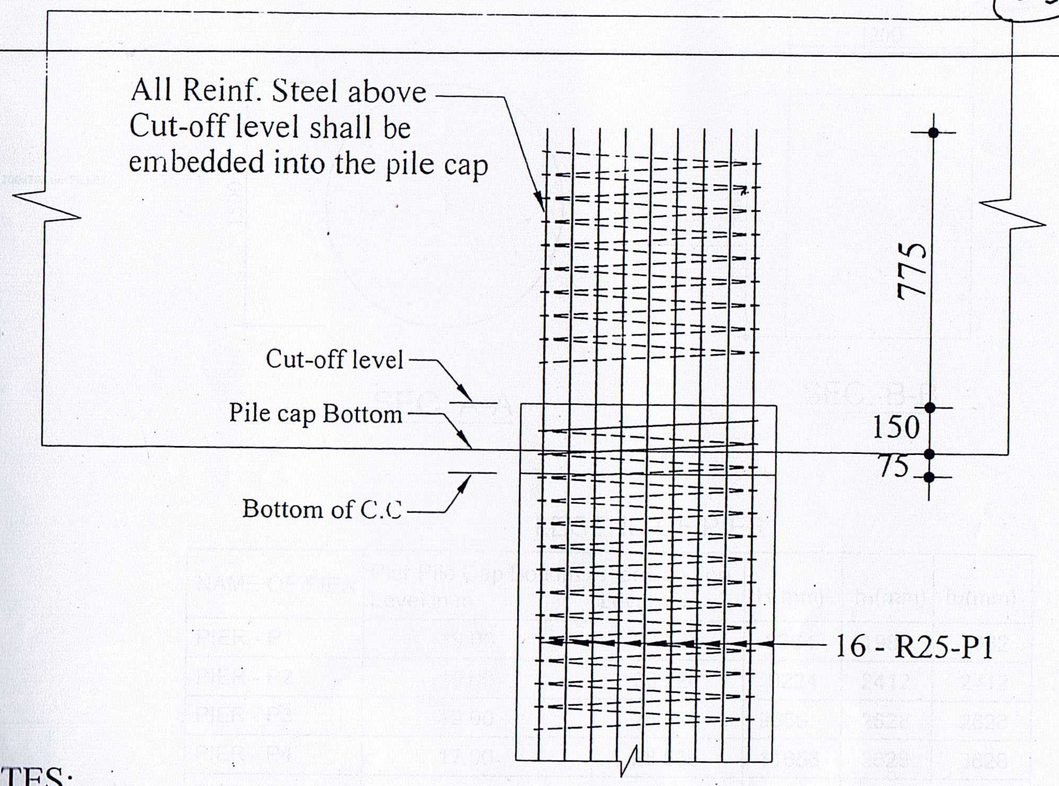
SECTION A-A



SECTION B-B



SECTION C-C



DETAIL-A

NOTES:

Cast-in-situ Pile:

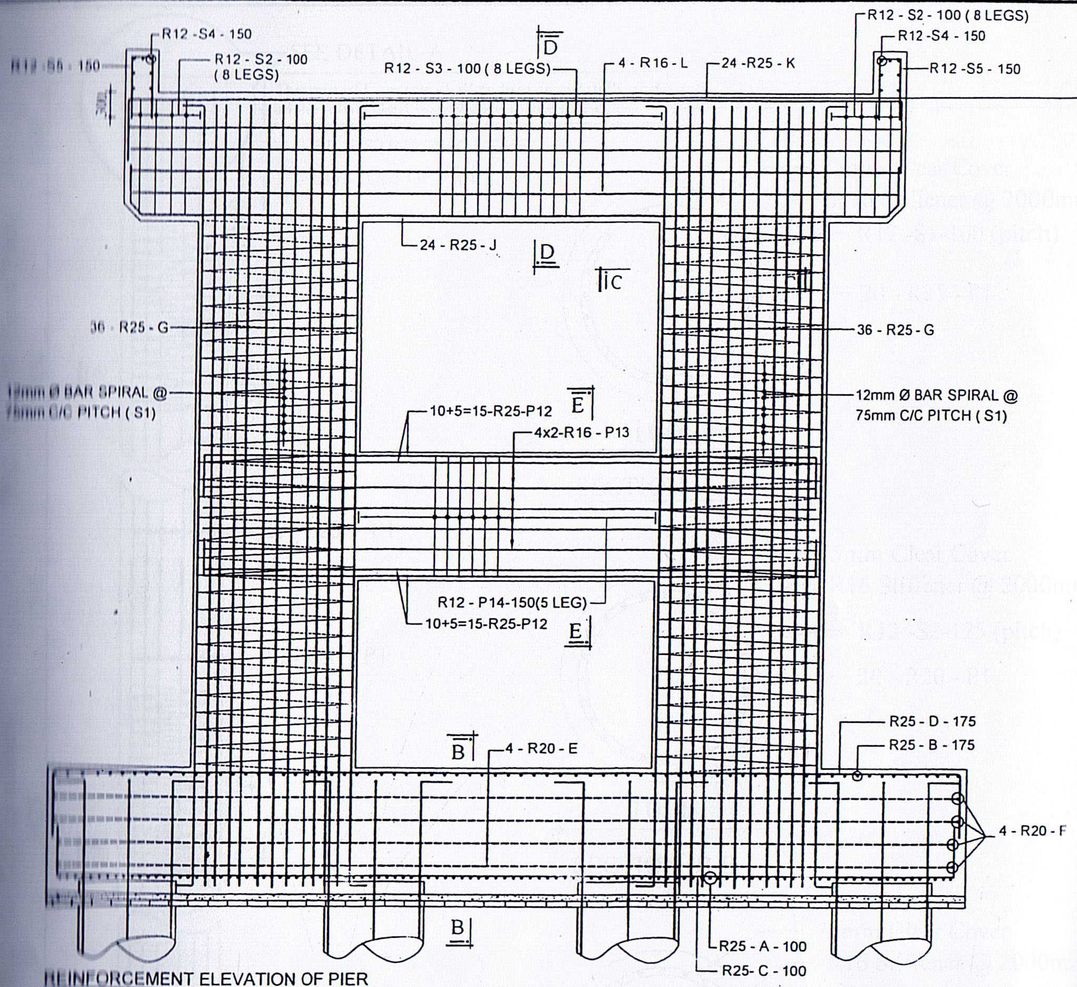
1. All dimensions are in millimeters unless otherwise mentioned .
2. 28 days cylinder crushing strength of concrete f'c= 25 MPa
3. Yield strength of M.S deformed reinforcement bar fy = 400 MPa
4. Clear Cover to main reinforcement bar is to be 75mm. unless otherwise mentioned.
5. When concreting at the top of Pile one batch of concrete must be over flown to insure fresh concrete at Pile head..
6. The spiral reinforcement should preferably be tack welded to the main Reinforceing bars.
7. The lapping portion of main reinforcement shall be joint welded .
8. Design load of Pile under service load condition is 150 ton for Pier Abutment Pile.
9. Test load shall be 225 ton on service Pile.
10. Pile capacity is to be confirmed by static pile load test.

DESIGN RELATED SPECIAL GUIDELINES:

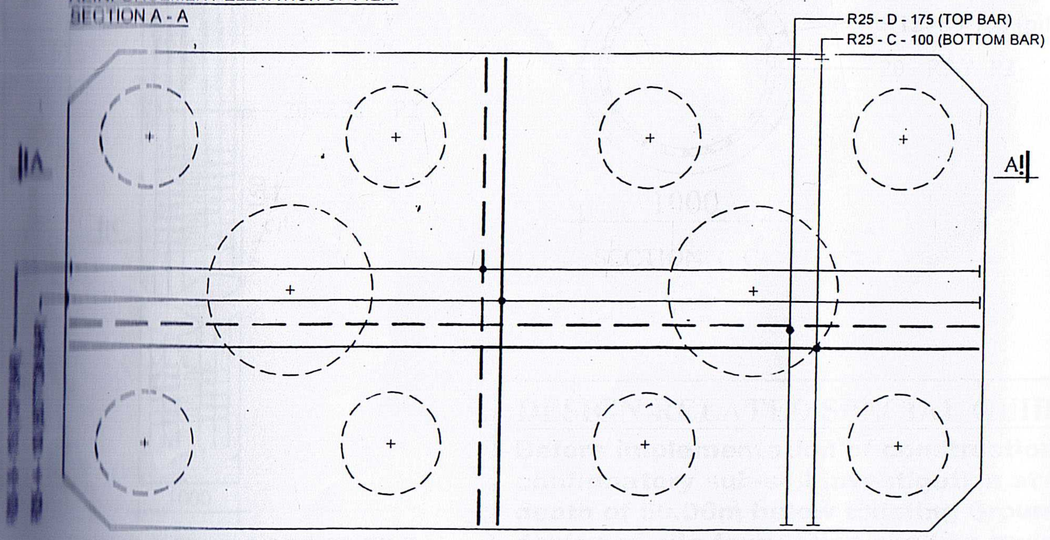
Before implementation of construction work the layout of the bridge shall be finalized, then confirmatory sub-soil investigation at each abutment & pier location shall be carried out upto depth of 50.00m below Existing Ground level. According to soil report the geo-technical design of pile foundation shall be reviewed by Design Unit of LGED and the length of the pile can be revised if needed.

REVISION			
REV. NO.	DATE	DESCRIPTION	BY:

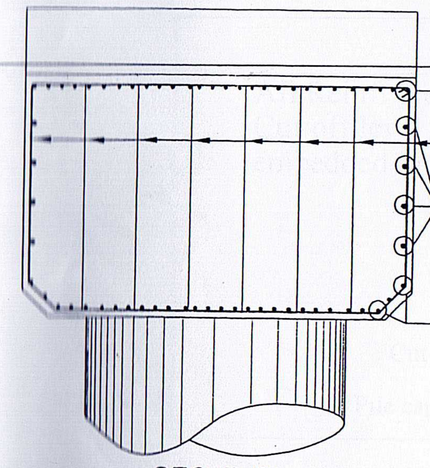
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH LOCAL GOVERNMENT ENGINEERING DEPARTMENT	NAME OF SCHEME: CONSTRUCTION OF 301.30M LONG PSC GIRDER BRIDGE AT NUNDAHA GHAT OVER THE RIVER KARTOA AT CH. 4+500 Km ON CHATRA GC - GILLABARI GHAT VIA NISCHINTOBATI PRIMARY SCHOOL ROAD (ROAD ID: 185764034)	DESIGN UNIT OF LGED RDEC BHABAN (LEVEL - 4), AGARGAON SHER-E-BANGLA NAGAR DHAKA - 1207. Tel. : +880 2 9119609, Fax. : +880 2 9118175 E-mail : design@lged.gov.bd	DESIGNED BY MD. DELWAR HOSSAIN Asst. Engineer LGED, Dhaka	CHECKED BY MD. ZAHEDUL ISLAM XEN, (Design) LGED HQ, Dhaka	পরীক্ষিত ও অনুমোদনযোগ্য খন্দকার আলীনূর তত্ত্বাবধায়ক প্রকৌশলী (ডিজাইন) এলজিইডি, সদর দপ্তর, ঢাকা।	APPROVED BY	SHEET NO : S - 19 TOTAL SHEET : 35 DRAWN BY : MD. FEROZ ISLAM DATE :
PROJECT : CONSTRUCTION OF IMPORTANT BRIDGES ON RURAL ROADS	UPAZILA: PIRGANJ, DISTRICT: RANGPUR, UNION: DRAWING TITLE: REINF. DETAILS OF ABUTMENT PILE					



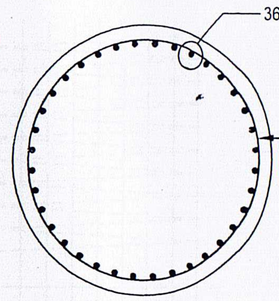
REINFORCEMENT ELEVATION OF PIER
SECTION A - A



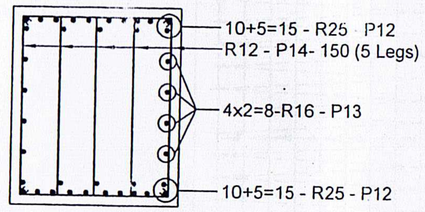
REINFORCEMENT PLAN OF PILE CAP



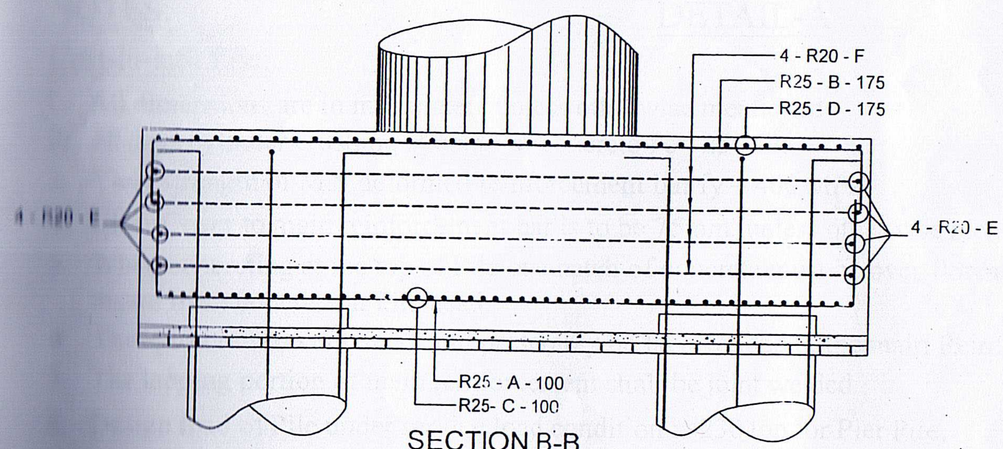
SEC. D-D



SEC. C-C



SEC. E - E



SECTION B-B

NOTES:

1. 28 DAYS STANDERD CYLINDER STRENGTH OF CONCRETE: f'c = 30.0 MPa
2. YIELD STRENGTH OF M.S DEFORMED fy = 400 MPa
3. CLEAR COVER TO MAIN REINFORCEMENT BAR IS TO 50mm UNLESS OTHERWISE MENTIONED.
4. ALL DIMENSIONS ARE IN MILIMETERS UNLESS OTHERWISE MENTIONED.

REVISION			
REV. NO.	DATE	DESCRIPTION	BY:

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

PROJECT : CONSTRUCTION OF IMPORTANT BRIDGES ON RURAL ROADS

NAME OF SCHEME:
CONSTRUCTION OF 301.30M LONG PSC GIRDER BRIDGE AT NUNDAHA GHAT OVER THE RIVER KARTOA AT CH. 4+500 Km ON CHATRA GC - GILLABARI GHAT VIA NISCHINTOBATI PRIMARY SCHOOL ROAD (ROAD ID: 185784034)

UPAZILA: PIRGANJ, DISTRICT: RANGPUR, UNION:

DRAWING TITLE:
REINF. DETAILS OF PIER FOR P2, P3, P6 & P7

DESIGN UNIT OF LGED
RDEC BHABAN (LEVEL - 4),
AGARGAON
SHER-E-BANGLA NAGAR
DHAKA - 1207.
Tel. : +880 2 9119609,
Fax. : +880 2 9118175
E-mail : design@lged.gov.bd

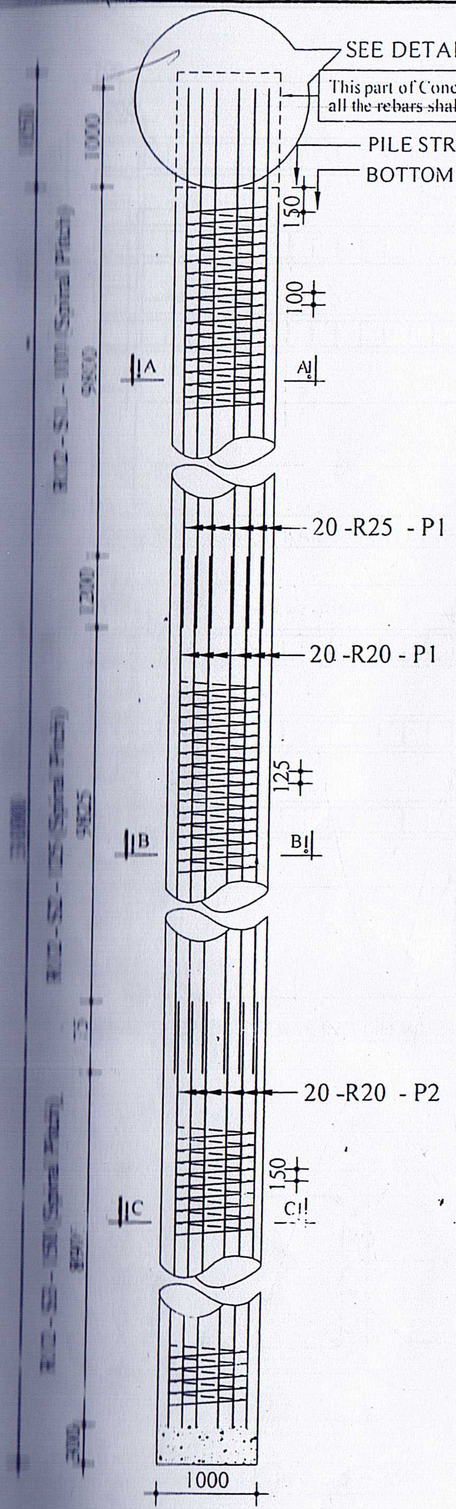
DESIGNED BY:
MD. [illegible]
[illegible]

CHECKED BY :
MD. ZAHEDUL ISLAM
SEN. (Design)
LGED HQ, Dhaka

পরীক্ষিত ও অনুমোদনযোগ্য
খন্দকার আলীনর
তত্ত্বাবধায়ক প্রকৌশলী (ডিজাইন)
এলজিইডি, সদর দপ্তর, ঢাকা।

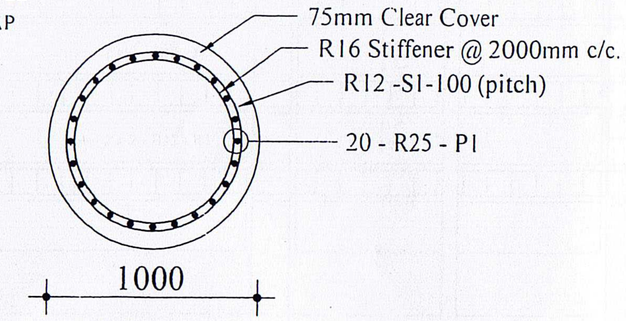
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SHEET NO : S - 21
TOTAL SHEET : 35
DRAWN BY : MD. FEROZ ISLAM
DATE :

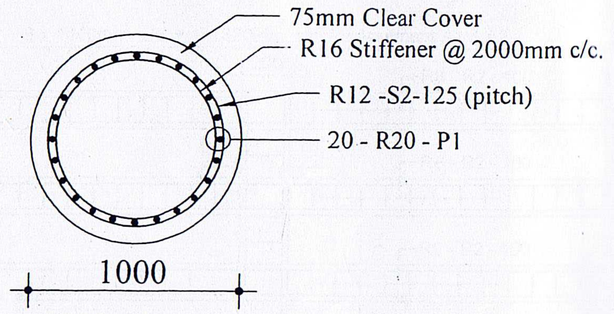


REINF. DETAILS OF PIER PILE

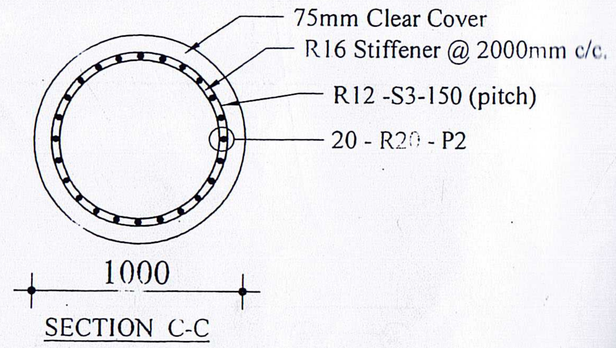
CAST-IN-SITU PILE DETAILS



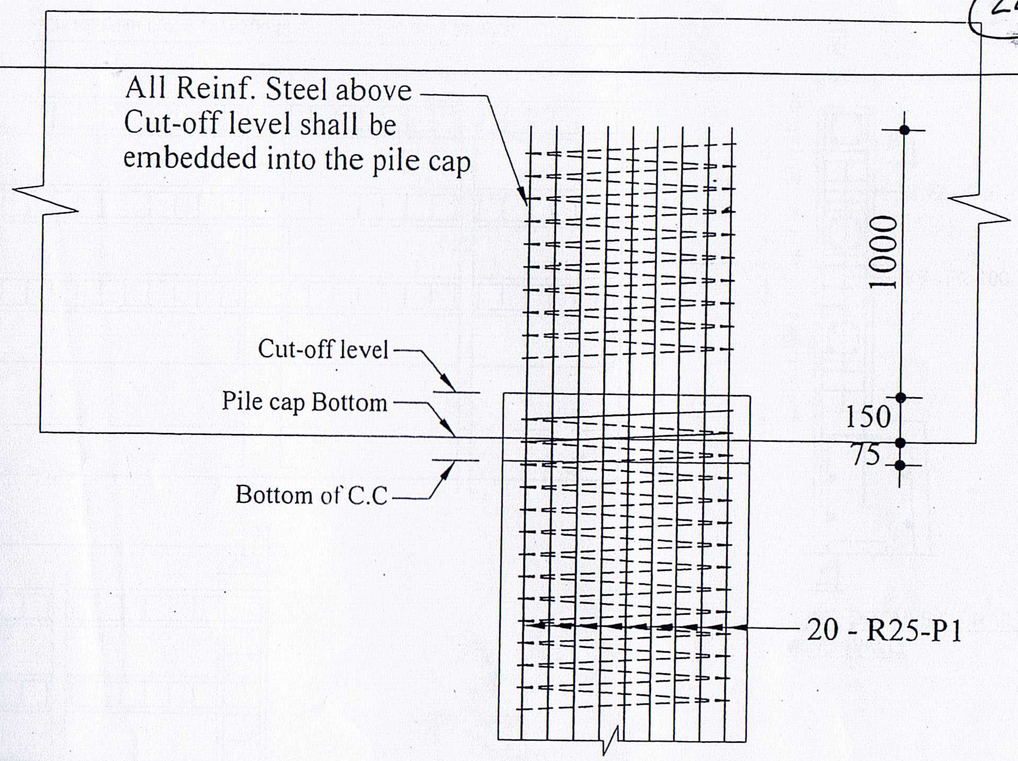
SECTION A-A



SECTION B-B



SECTION C-C



DETAIL-A

NOTES:

Cast-in-situ Pile:

1. All dimensions are in millimeters unless otherwise mentioned .
2. 28 days cylinder crushing strength of concrete f'c= 25 MPa
3. Yield strength of M.S deformed reinforcement bar fy = 400 MPa
4. Clear Cover to main reinforcement bar is to be 75mm. unless otherwise mentioned.
5. When concreting at the top of Pile one batch of concrete must be over flown to insure fresh concrete at Pile head.
6. The spiral reinforcement should preferably be tack welded to the main Reinforcing bars.
7. The lapping portion of main reinforcement shall be joint welded .
8. Design load of Pile under service load condition is 230 ton for Pier Pile.
9. Test load shall be 420 ton on service Pile.
10. Pile capacity is to be confirmed by static pile load test.

DESIGN RELATED SPECIAL GUIDELINES:

Before implementation of construction work the layout of the bridge shall be finalized, then confirmatory sub-soil investigation at each abutment & pier location shall be carried out upto depth of 50.00m below Existing Ground level. According to soil report the geo-technical design of pile foundation shall be reviewed by Design Unit of LGED and the length of the pile can be revised if needed.

REVISION			
REV. NO.	DATE	DESCRIPTION	BY

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

PROJECT : CONSTRUCTION OF IMPORTANT BRIDGES ON RURAL ROADS

NAME OF SCHEME:
CONSTRUCTION OF 301.30M LONG PSC GIRDER BRIDGE AT NUNDAHA GHAT OVER THE RIVER KARTOA AT CH. 4+500 Km ON CHATRA GC - GILLABARI GHAT VIA NISCHINTOBATI PRIMARY SCHOOL ROAD (ROAD ID: 185764034)

UPAZILA: PIRGANJ, DISTRICT: RANGPUR, UNION.

DRAWING TITLE:
REINF. DETAILS OF PIER PILE

DESIGN UNIT OF LGED
RDEC BHABAN (LEVEL - 4),
AGARGAON
SHER-E-BANGLA NAGAR
DHAKA - 1207.
Tel. : +880 2 9119609,
Fax. : +880 2 9118175
E-mail : design@lged.gov.bd

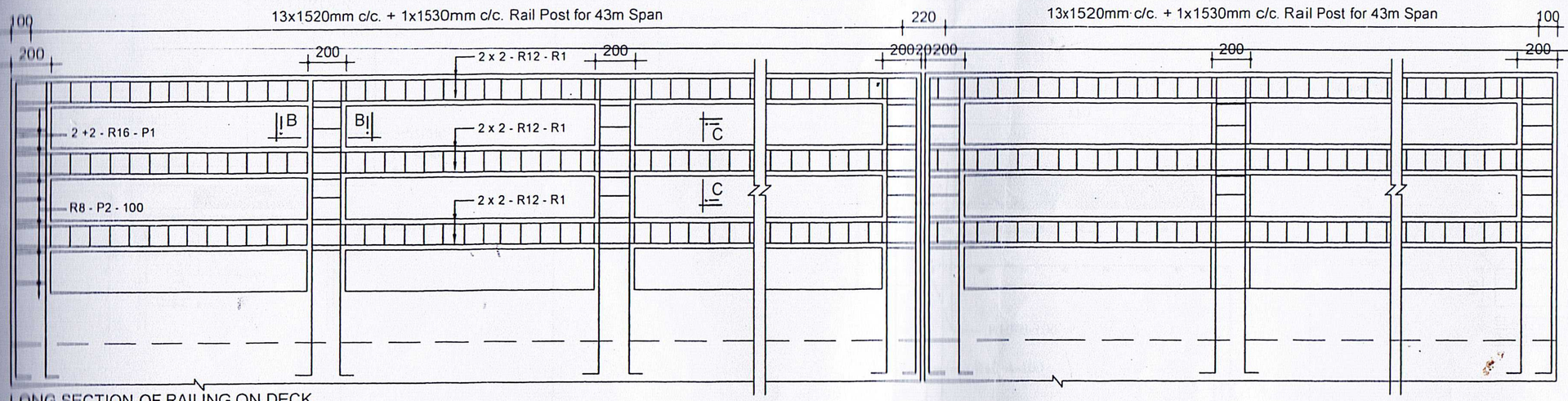
DESIGNED BY : MD. DELWAR HOSSAIN

CHECKED BY : MD. SAIFUL ISLAM, XEN. (Design), LGED HQ, Dhaka

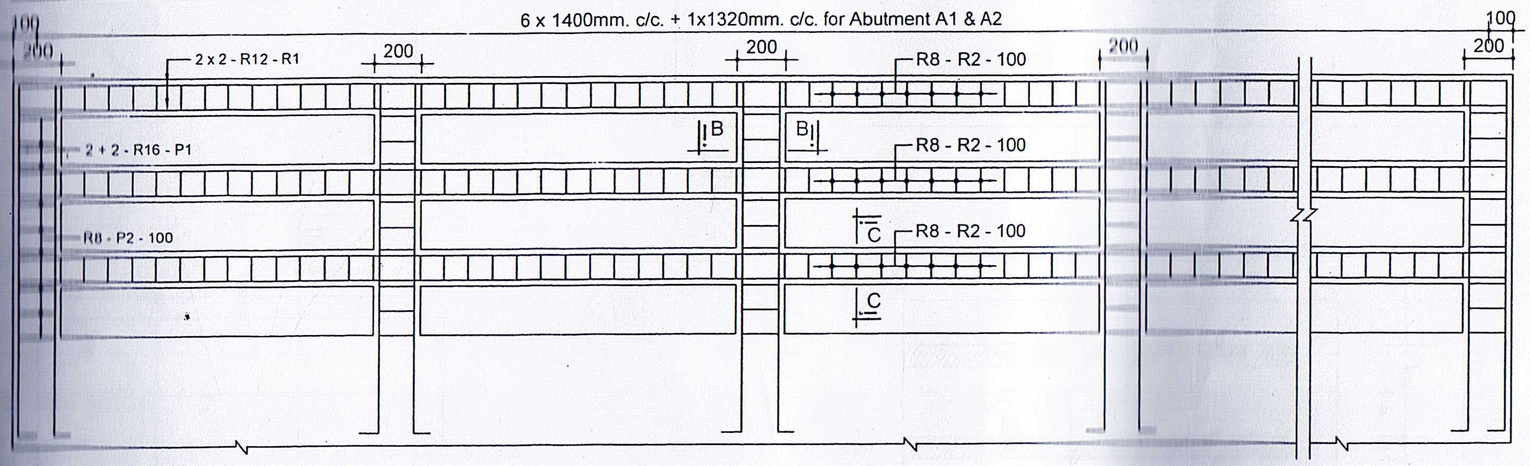
পরীক্ষিত ও অনুমোদনযোগ্য
খন্দকার আলীনুর
তত্ত্বাবধায়ক প্রকৌশলী (ডিজাইন)
এলজিইডি, সদর দপ্তর, ঢাকা।

APPROVED BY :

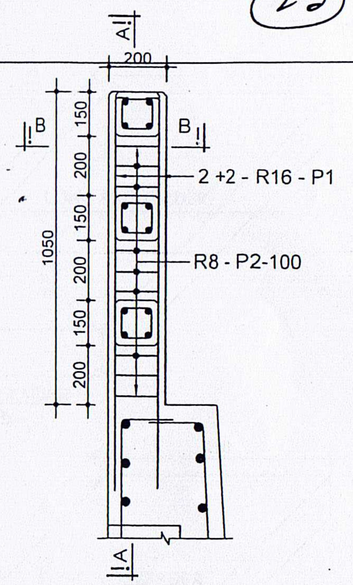
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TOTAL SHEET : 35
DRAWN BY : MD. FEROZ ISLAM
DATE :



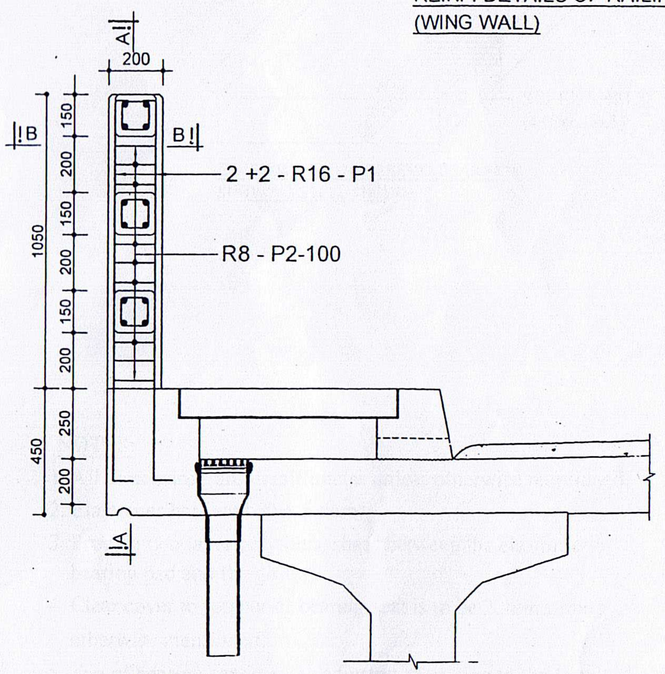
LONG SECTION OF RAILING ON DECK



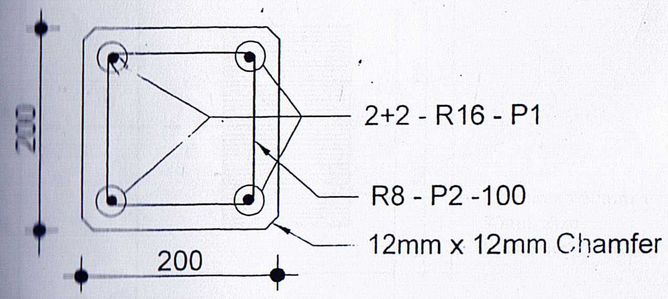
LONG SECTION OF RAILING ON WINGWALL



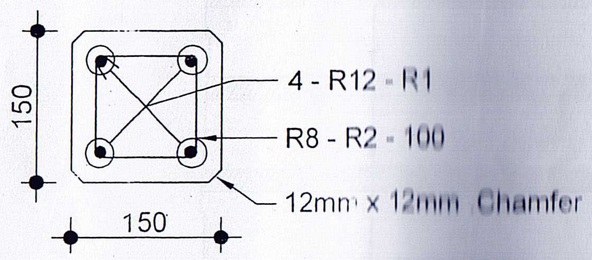
REINF. DETAILS OF RAILING (WING WALL)



REINF. DETAILS OF RAILING ON DECK



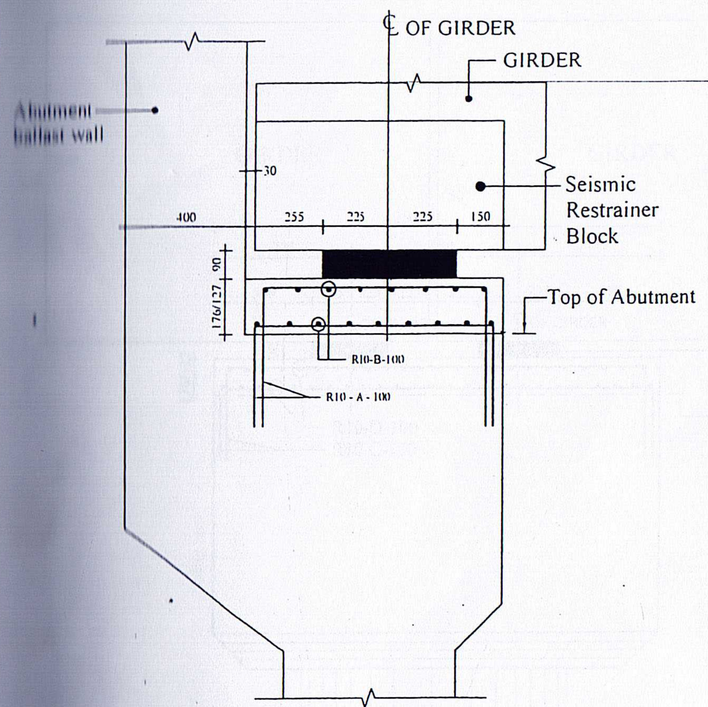
SECTION. B - B
RAIL POST



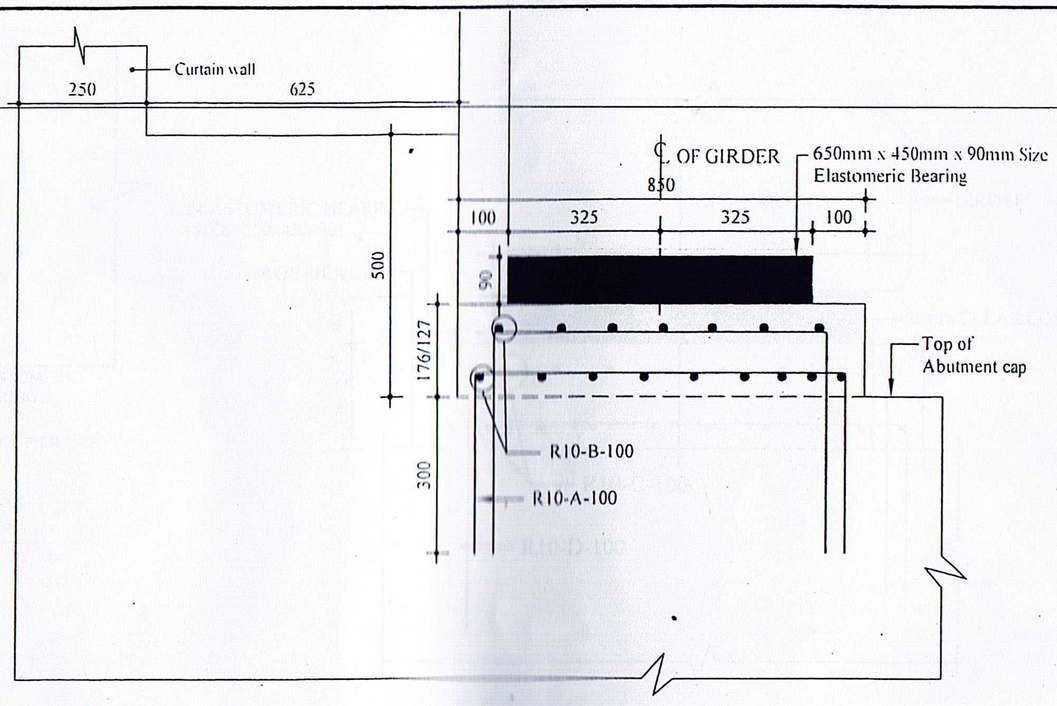
SECTION. C - C
HAND RAIL

REVISION			
REV. NO.	DATE	DESCRIPTION	BY:

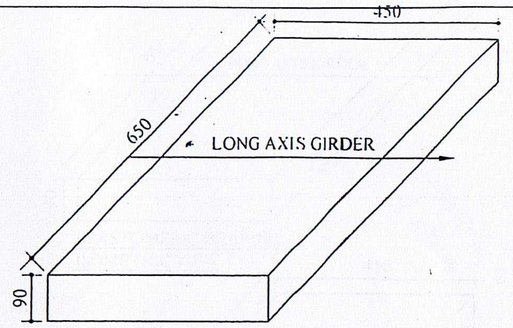
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH LOCAL GOVERNMENT ENGINEERING DEPARTMENT	NAME OF SCHEME: CONSTRUCTION OF 301.30M LONG PSC GIRDER BRIDGE AT NUNDAHA GHAT OVER THE RIVER KARTOA AT CH. 4+500 Km ON CHATRA GC - GILLABARI GHAT VIA NISCHINTOBATI PRIMARY SCHOOL ROAD (ROAD ID: 185764034)	DESIGN UNIT OF LGED RDEC BHABAN (LEVEL - 4), AGARGAON SHER-E-BANGLA NAGAR DHAKA - 1207. Tel. : +880 2 9119609, Fax. : +880 2 9118175 E-mail : design@lged.gov.bd	DESIGNED BY : MD. DELWAR HOSSAIN	CHECKED BY : MD. ZAHEDUL ISLAM XEN, (Design) LGED HQ, Dhaka	পরীক্ষিত ও অনুমোদনযোগ্য খন্দকার আলীনূর তত্ত্বাবধায়ক প্রকৌশলী (ডিজাইন) এলজিইডি, সদর দপ্তর, ঢাকা।	APPROVED BY :	SHEET NO : S - 23
PROJECT : CONSTRUCTION OF IMPORTANT BRIDGES ON RURAL ROADS	UPAZILA: PIRGANJ, DISTRICT: RANGPUR, UNION: DRAWING TITLE: DETAILS OF RAILING ON DECK & WINGWALL					TOTAL SHEET : 35 DRAWN BY : MD. FEROZ ISLAM DATE :



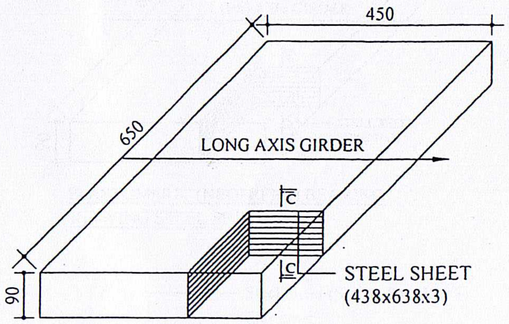
SECTION: A-A



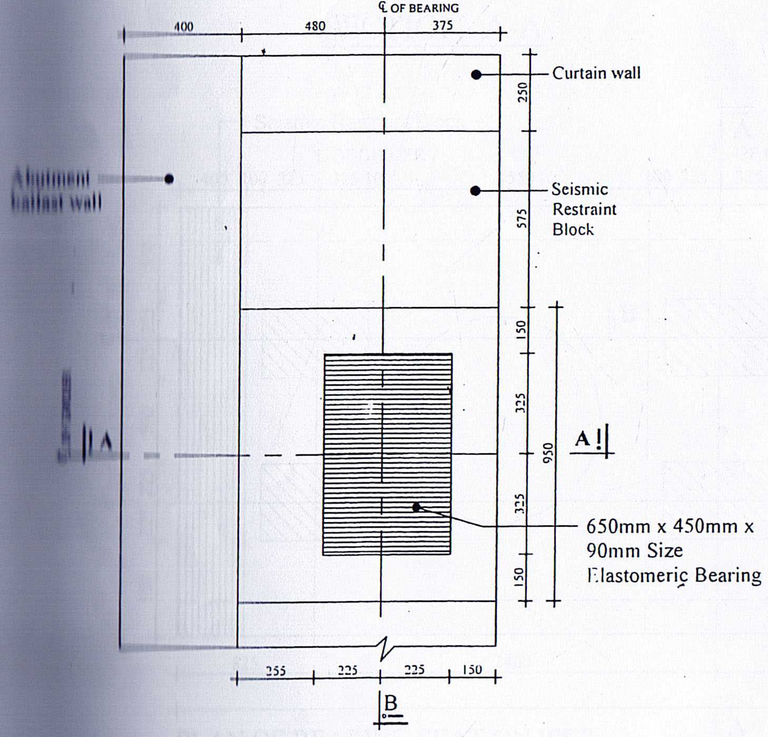
SECTION. B-B



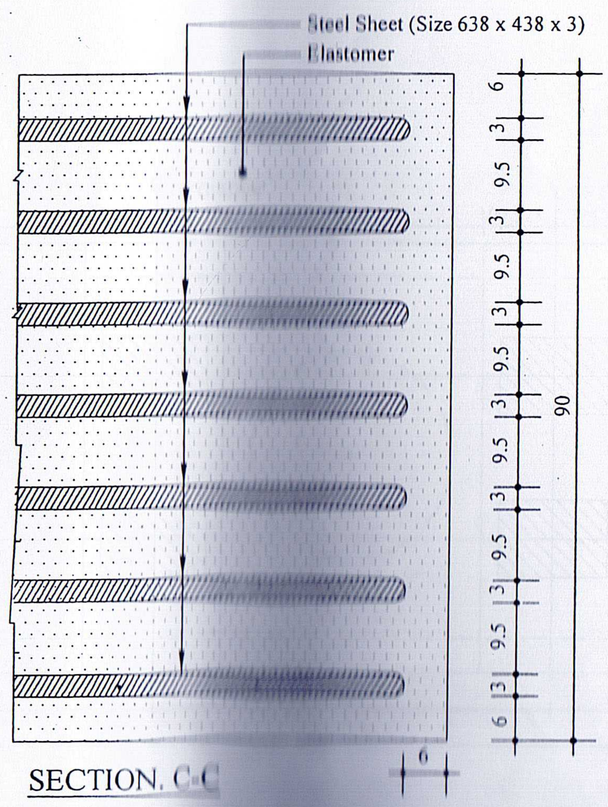
ELASTOMERIC BEARING
ISOMETRIC VIEW



ELASTOMERIC (NEOPRENE) BEARING
SHOWING STEEL SHEET



PLAN OF BEARING SEAT ON ABUTMENT



SECTION. C-C

NOTES:

1. All dimensions are in millimetre unless otherwise mentioned.
2. Elastomer hardness 60 ± 5 duro
3. Provide two layer polythene sheet between the elastomeric bearing pad and the girder.
4. Clear cover to top bar of bearing seat is to be 20mm.unless otherwise mentioned.
5. Top of bearing seat is to be adjusted according to the longitudinal slope of girder as shown on the elevation drawing of bridge.

REVISION			
REV. NO.	DATE	DESCRIPTION	BY

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

PROJECT : CONSTRUCTION OF IMPORTANT BRIDGES ON RURAL ROADS

NAME OF SCHEME:
CONSTRUCTION OF 301.30M LONG PSC GIRDER BRIDGE AT NUNDAHA GHAT OVER THE RIVER KARTOA AT CH. 4+500 Km ON CHATRA GC - GILLABARI GHAT VIA NISCHINTOBATI PRIMARY SCHOOL ROAD (ROAD ID: 185764034)

UPAZILA: PIRGANJ, DISTRICT: RANGPUR, UNION:

DRAWING TITLE: DETAILS OF ELASTOMERIC NEOPRENE BEARING ON ABUTMENT

DESIGN UNIT OF LGED
RDEC BHABAN (LEVEL - 4),
AGARGAON
SHER-E-BANGLA NAGAR
DHAKA - 1207.
Tel. : +880 2 9119609,
Fax. : +880 2 9118175
E-mail : design@lged.gov.bd

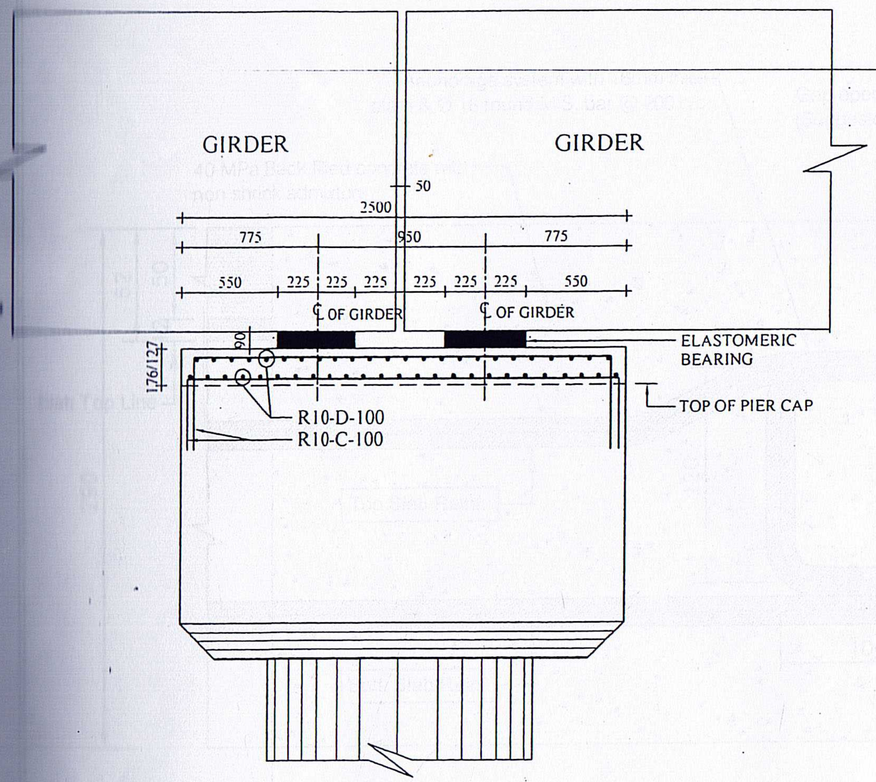
DESIGNED BY : MD. FEROZ ISLAM, EEE (Design), LGED HQ, Dhaka

CHECKED BY : MD. ZAHEDUL ISLAM, EEE (Design), LGED HQ, Dhaka

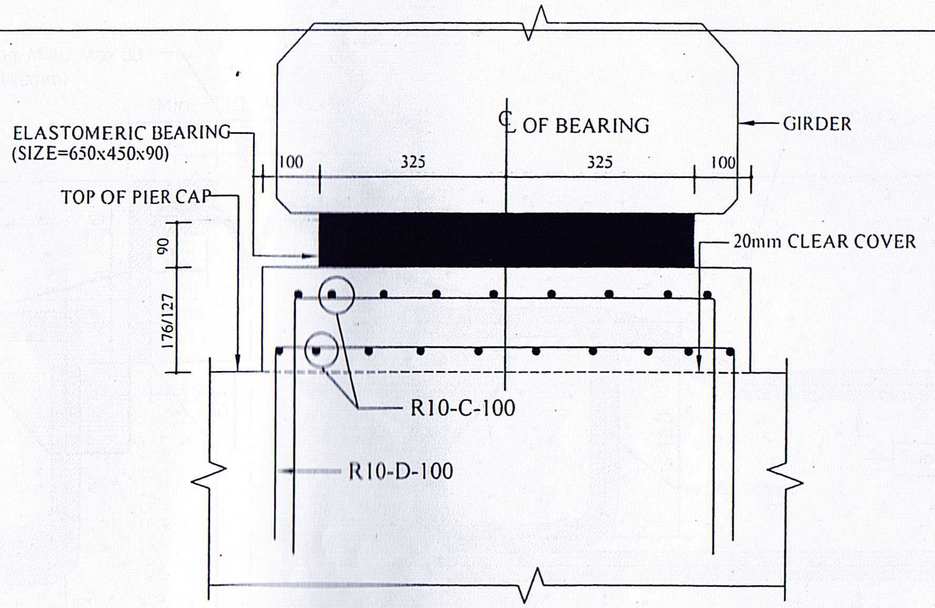
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খন্দকার আলীনুর
তত্ত্বাবধায়ক প্রকৌশলী (ডিজাইন)
এলজিইডি, সদর দপ্তর, ঢাকা।

APPROVED BY :

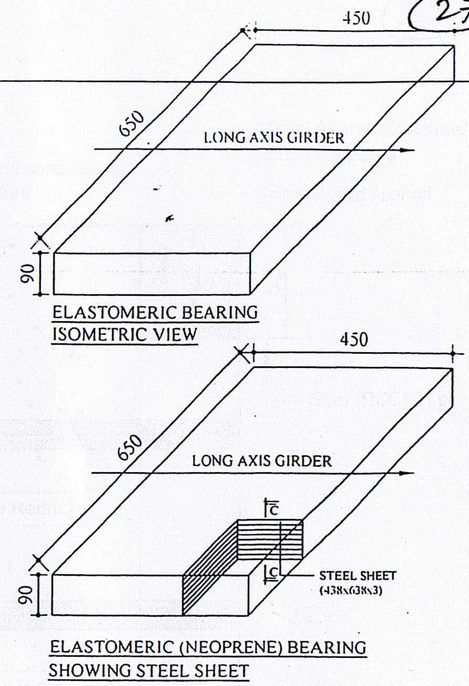
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DATE :

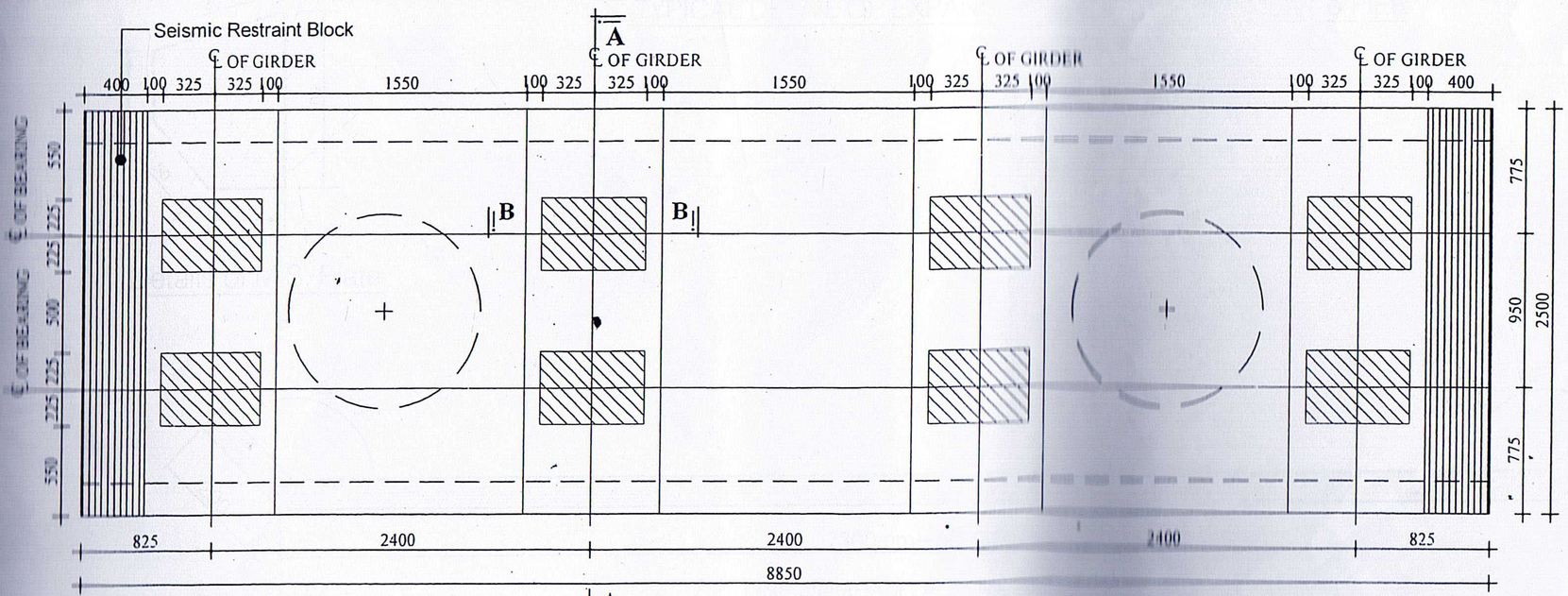


SECTION. A-A

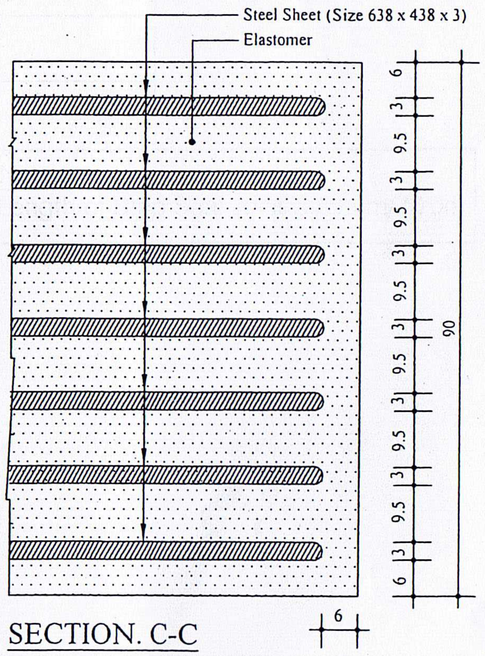


PART SECTION: B-B





PLAN OF BEARING SEAT ON PIER



SECTION. C-C

REVISION			
REV. NO.	DATE	DESCRIPTION	BY

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

PROJECT : CONSTRUCTION OF IMPORTANT BRIDGES ON RURAL ROADS

NAME OF SCHEME:
CONSTRUCTION OF 301.30M LONG PSC GIRDER BRIDGE AT NUNDAHA GHAT OVER THE RIVER KARTOA AT CH. 4+500 Km ON CHATRA GC - GILLABARI GHAT VIA NISCHINTOBATI PRIMARY SCHOOL ROAD (ROAD ID: 185764034)

UPAZILA: PIRGANJ, DISTRICT: RANGPUR, UNION:

DRAWING TITLE: DETAILS OF ELASTOMERIC NEOPRENE BEARING ON PIER

DESIGN UNIT OF LGED
RDEC BHABAN (LEVEL - 4),
AGARGAON
SHER-E-BANGLA NAGAR
DHAKA - 1207.
Tel. : +880 2 9119609,
Fax. : +880 2 9118175
E-mail : design@lged.gov.bd

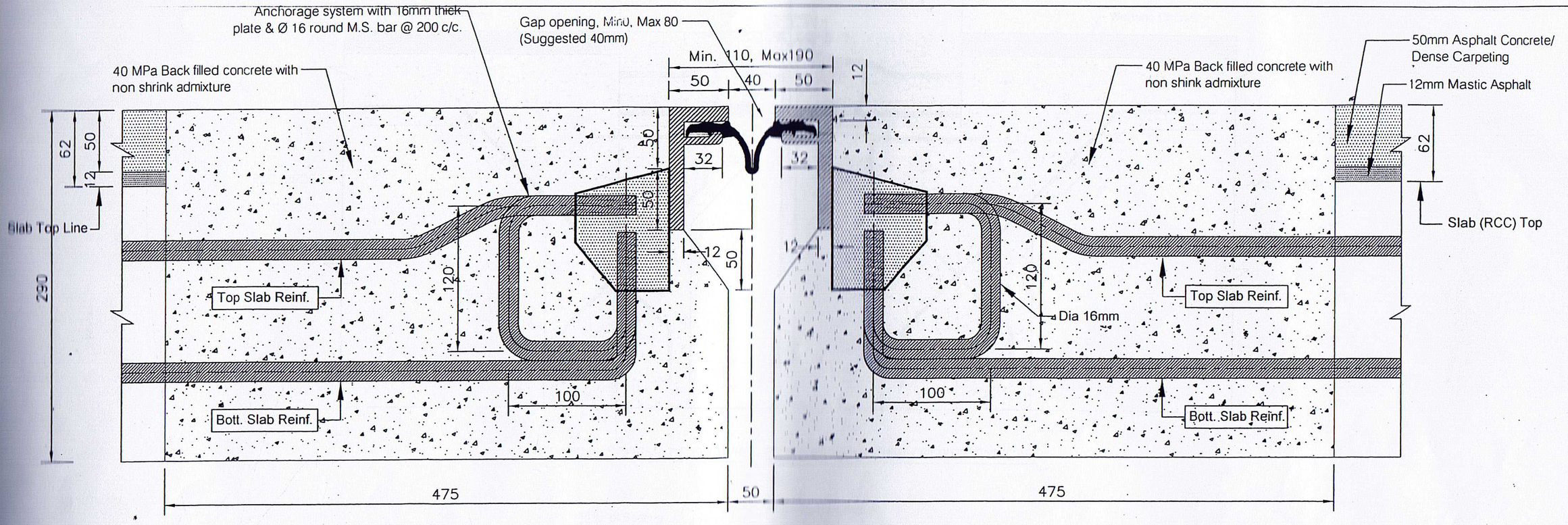
DESIGNED BY : MD. DELWAR HOSSAIN

CHECKED BY : MD. SAIFUL ISLAM

পরীক্ষিত ও অনুমোদনযোগ্য
খন্দকার আলীনুর
তত্ত্বাবধায়ক প্রকৌশলী (ডিজাইন)
এলজিইডি, সদর দপ্তর, ঢাকা।

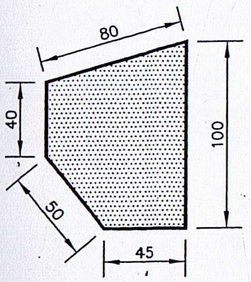
APPROVED BY :

SHEET NO : S - 25
TOTAL SHEET : 35
DRAWN BY : MD. FEROZ ISLAM
DATE :



TYPICAL DETAIL OF EXPANSION JOINT ON ABUTMENT & PIER

Note:
Length of Strip Seal Joint is 5.90m/7.70m



Details of M.S. Plate



LINE DIAGRAM OF STRIP SEALS

REVISION			
REV. NO.	DATE	DESCRIPTION	BY:

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

PROJECT : CONSTRUCTION OF IMPORTANT BRIDGES ON RURAL ROADS

NAME OF SCHEME:
CONSTRUCTION OF 301.30M LONG PSC GIRDER BRIDGE AT NUNDAHA GHAT OVER THE RIVER KARTOA AT CH. 4+500 Km ON CHATRA GC - GILLABARI GHAT VIA NISCHINTOBATI PRIMARY SCHOOL ROAD (ROAD ID: 185764034)

UPAZILA: PIRGANJ, DISTRICT: RANGPUR, UNION:

DRAWING TITLE: TYPICAL DETAILS OF EXPANSION JOINT ON ABUTMENT & PIER

DESIGN UNIT OF LGED
RDEC BHABAN (LEVEL - 4),
AGARGAON
SHER-E-BANGLA NAGAR
DHAKA - 1207.
Tel : +880 2 9119609,
Fax. : +880 2 9118175
E-mail : design@lged.gov.bd

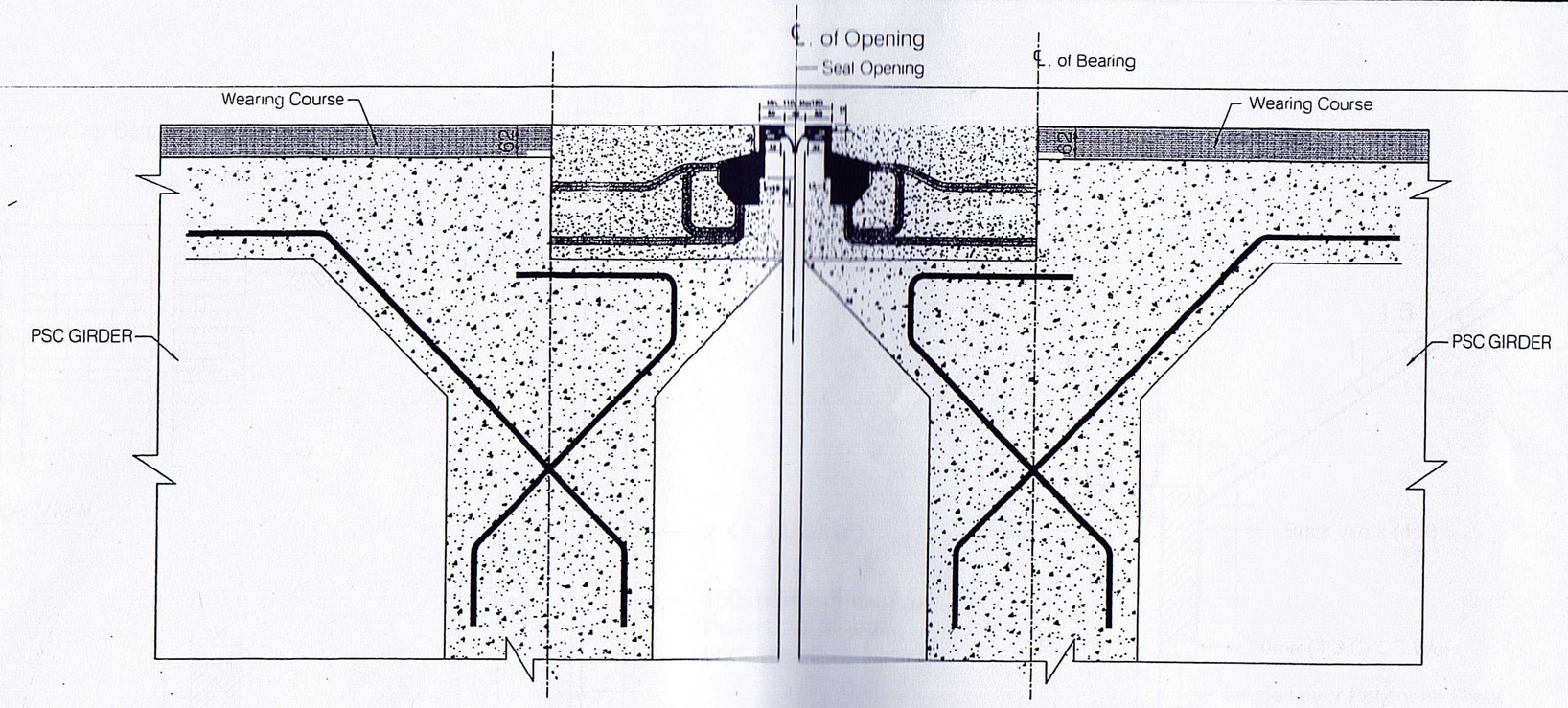
DESIGNED BY :
MD. DELWAR HOSSAIN

CHECKED BY :
MD. ZAHEDUL ISLAM
XEN, (Design)
LGED HQ, Dhaka

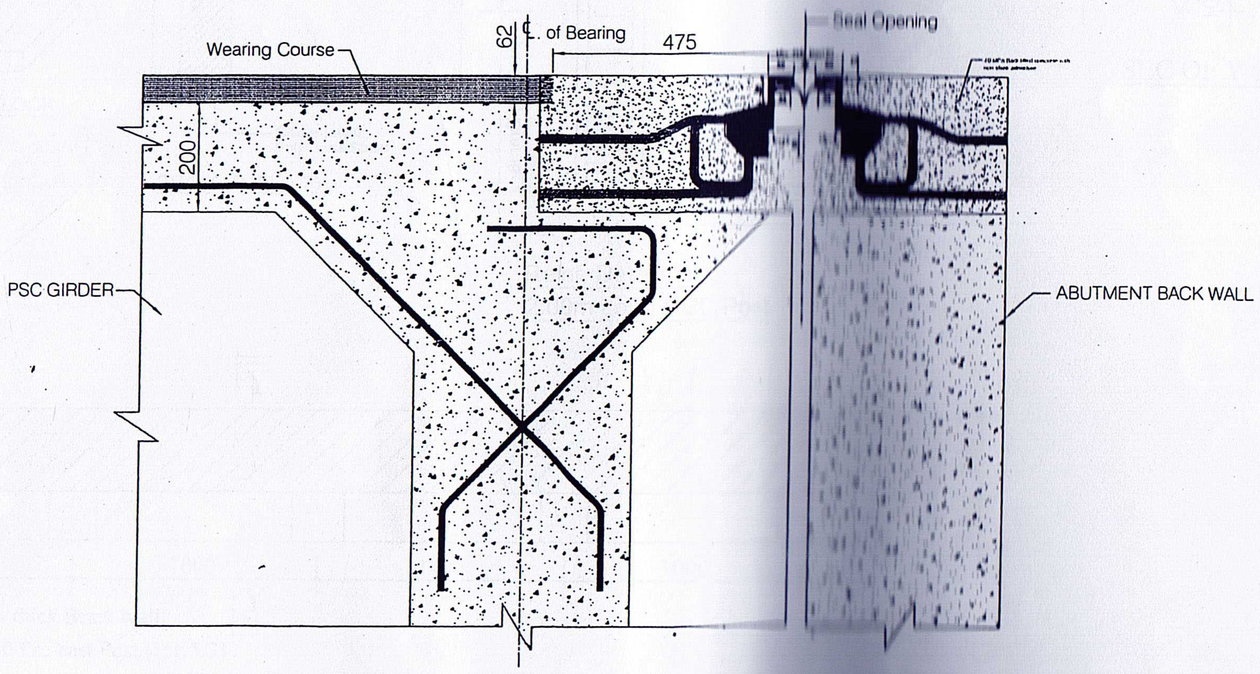
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খন্দকার আলীনুর
তত্ত্বাবধায়ক প্রকৌশলী (ডিজাইন)
এলজিইডি, সদর দপ্তর, ঢাকা

APPROVED BY :

SHEET NO : S - 26
TOTAL SHEET : 35
DRAWN BY : MD. FEROZ ISLAM
DATE :



TYPICAL SCHEMATIC DRAWING OF EXPANSION JOINT ON PIER (TYPICAL)



TYPICAL SCHEMATIC DRAWING OF EXPANSION JOINT ON ABUTMENT

REVISION			
REV. NO.	DATE	DESCRIPTION	BY.

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

PROJECT : CONSTRUCTION OF IMPORTANT BRIDGES ON RURAL ROADS

NAME OF SCHEME:
CONSTRUCTION OF 301.30M LONG PSC GIRDER BRIDGE AT NUNDAHA GHAT OVER THE RIVER KARTOA AT CH. 4+500 Km ON CHATRA GC - GILLABARI GHAT VIA NISCHINTOBATI PRIMARY SCHOOL ROAD (ROAD ID: 185764034)

UPAZILA: PIRGANJ, DISTRICT: RANGPUR, UNION:

DRAWING TITLE: TYPICAL SCHEMATIC DRAWING OF EXPANSION JOINT ON ABUTMENT & PIER

DESIGN UNIT OF LGED
RDEC BHABAN (LEVEL - 4),
AGARGAON
SHER-E-BANGLA NAGAR
DHAKA - 1207.
Tel : +880 2 9119609,
Fax. : +880 2 9118175
E-mail : design@lged.gov.bd

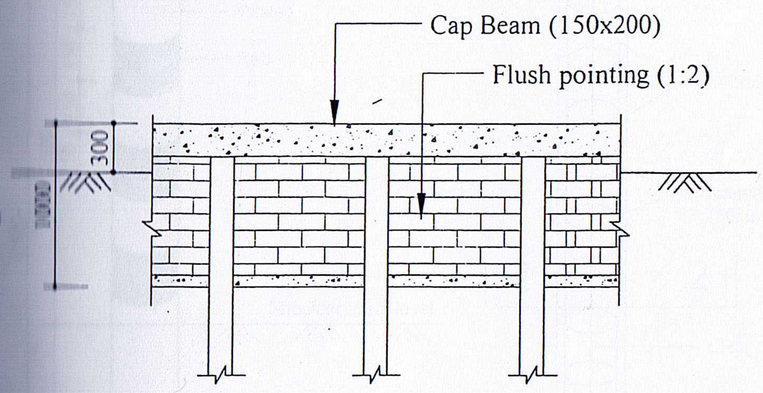
DESIGNED BY
MD. FEROZ ISLAM

CHECKED BY :
MD. NAHEDUL ISLAM

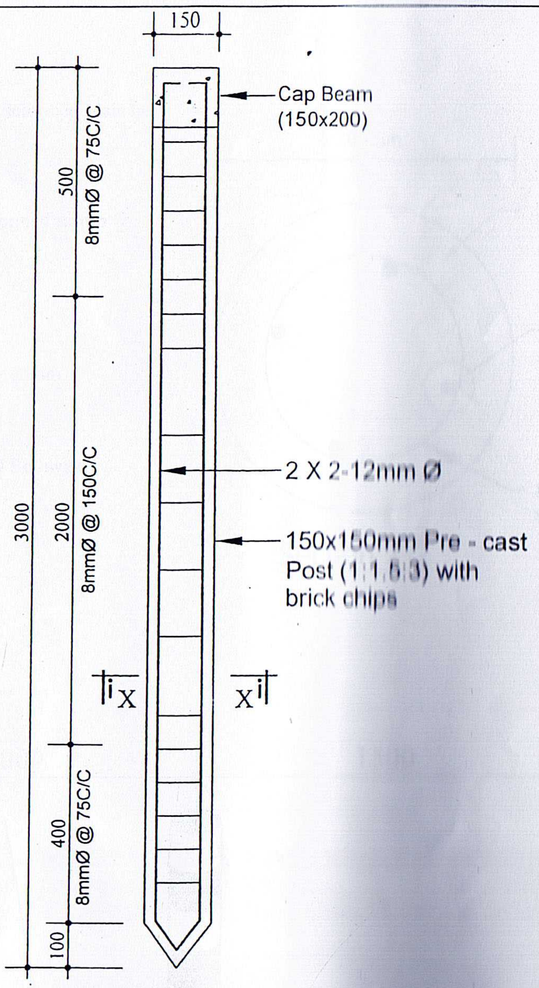
পরীক্ষিত ও অনুমোদনযোগ্য
খন্দকার আলীনুর
তত্ত্বাবধায়ক প্রকৌশলী (ডিজাইন)
এলজিইডি, সদর দপ্তর, ঢাকা।

APPROVED BY :

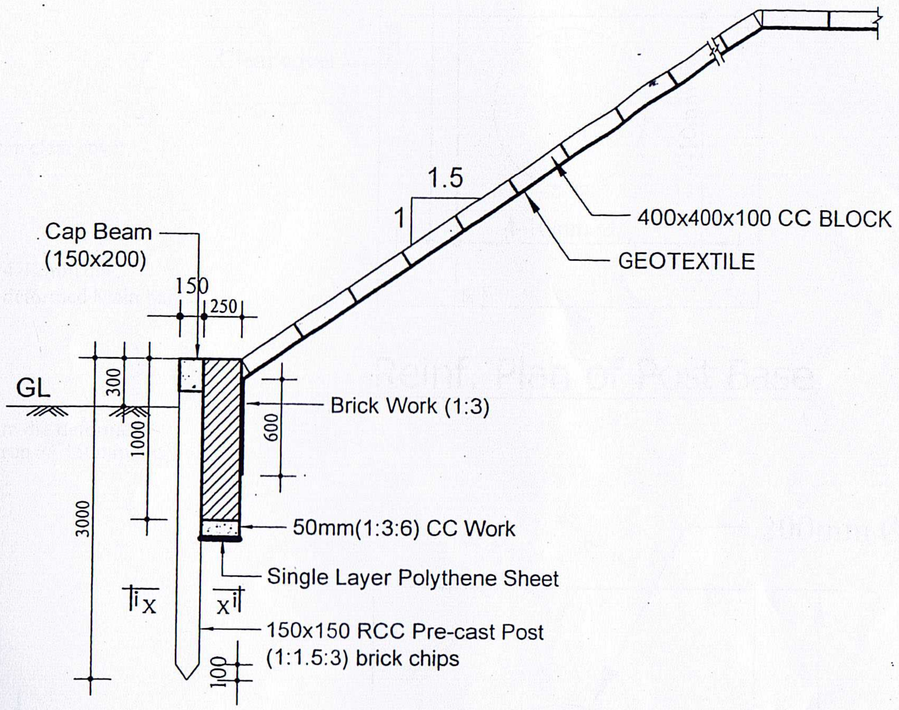
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TOTAL SHEET : 35
DRAWN BY : MD. FEROZ ISLAM
DATE :



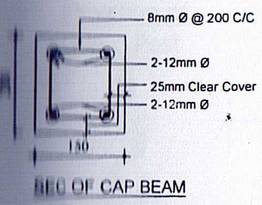
River Side View



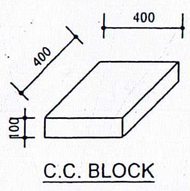
Reinf. Details of 2.00m Long RCC Post



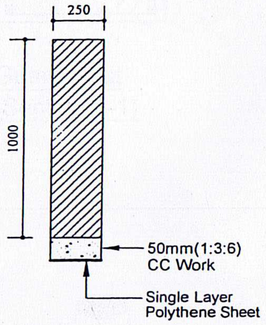
SEC OF Y - Y



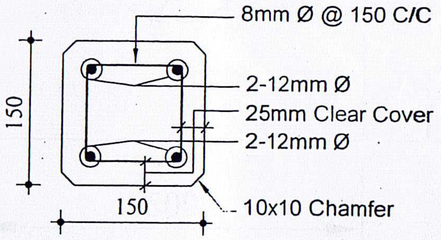
SEC OF CAP BEAM



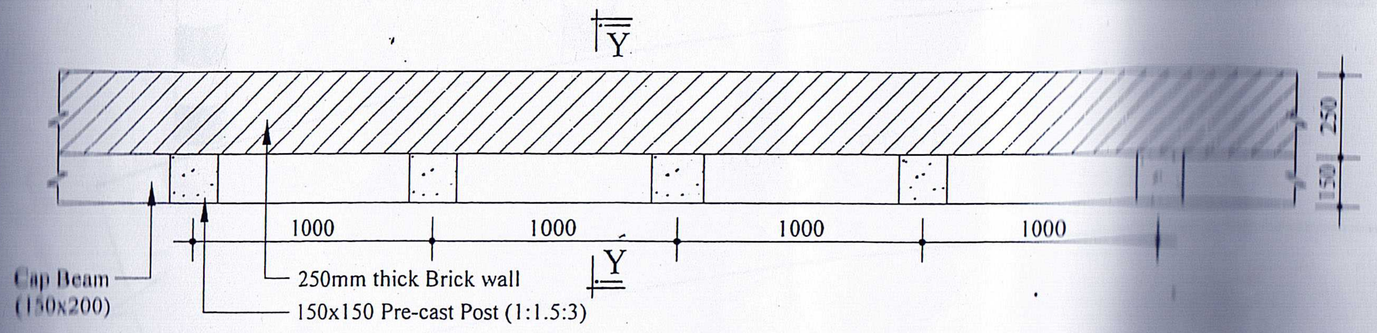
C.C. BLOCK



BRICK WALL(1:3)



SEC OF X-X



Plan of Protection Wall

REVISION			
REV. NO.	DATE	DESCRIPTION	BY:

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

PROJECT : CONSTRUCTION OF IMPORTANT BRIDGES AND RURAL ROADS

NAME OF SCHEME:
CONSTRUCTION OF 301.30M LONG PSC GIRDER BRIDGE AT NUNDAHA GHAT OVER THE RIVER KARTOA AT CH. 4+500 Km ON CHATRA GC - GILLABARI GHAT VIA NISCHINTOBATI PRIMARY SCHOOL ROAD (ROAD ID: 185764034)

UPAZILA: PIRGANJ, DISTRICT: RANGPUR, UNION:

DRAWING TITLE: DETAILS OF PROTECTION WORK

DESIGN UNIT OF LGED
RDEC BHABAN (LEVEL - 4),
AGARGAON
SHER-E-BANGLA NAGAR
DHAKA - 1207.
Tel. : +880 2 9119609,
Fax. : +880 2 9118175
E-mail : design@lged.gov.bd

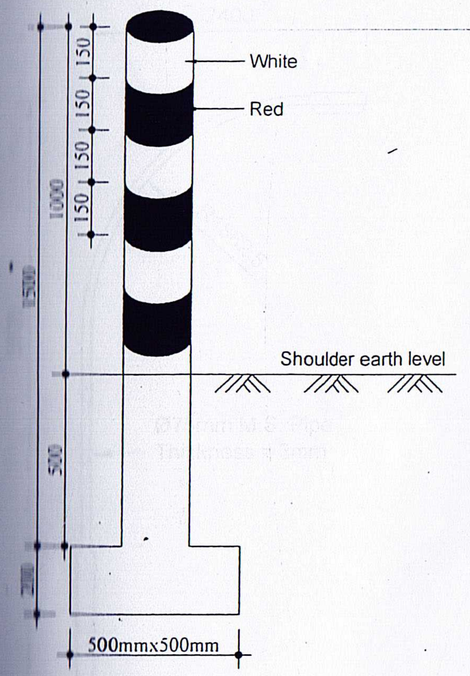
DESIGNED BY : MD. DELWAR HOSSAIN

CHECKED BY : MD. SAIFEDUL ISLAM

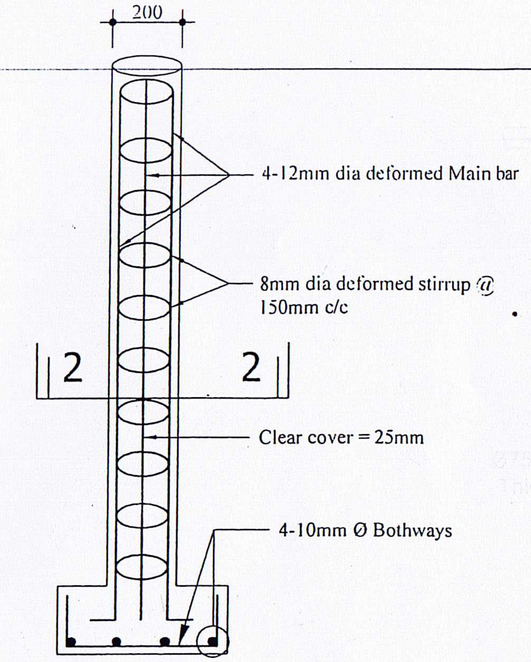
পরীক্ষিত ও অনমোদনযোগ্য
খন্দকার আলীনর
তত্তাবধায়ক পকৌশলী (ডিজাইন)
এলজিইডি, সদর দপ্তর, ঢাকা।

APPROVED BY :

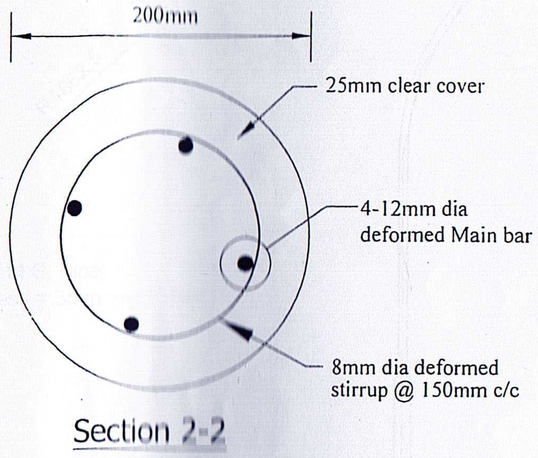
SHEET NO : S - 28
TOTAL SHEET : 35
DRAWN BY : MD. FEROZ ISLAM
DATE :



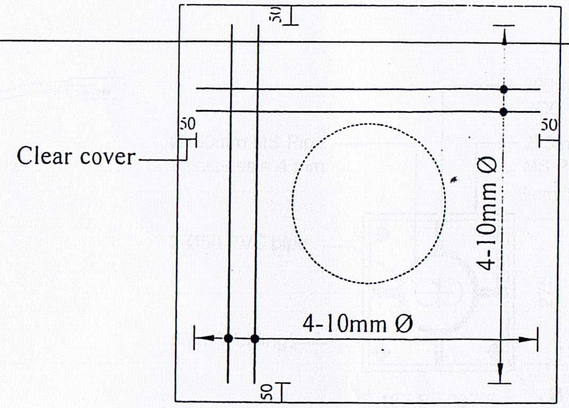
Elevation of Guard Post



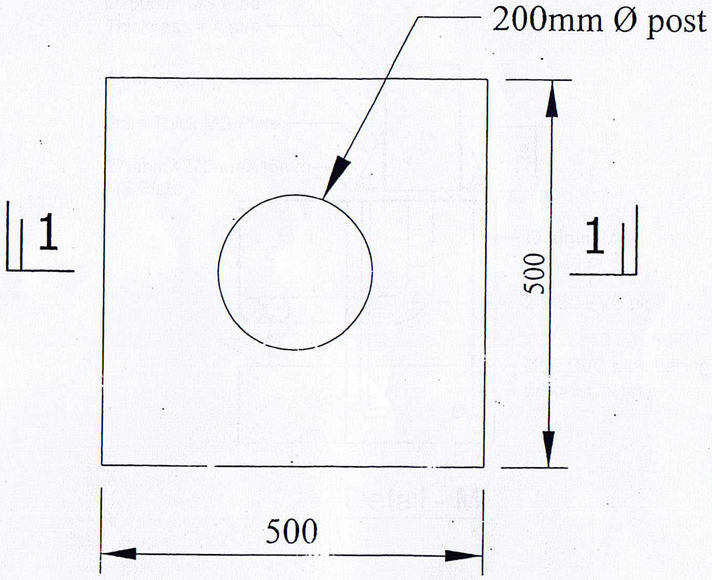
Guard Post (Section 1-1)



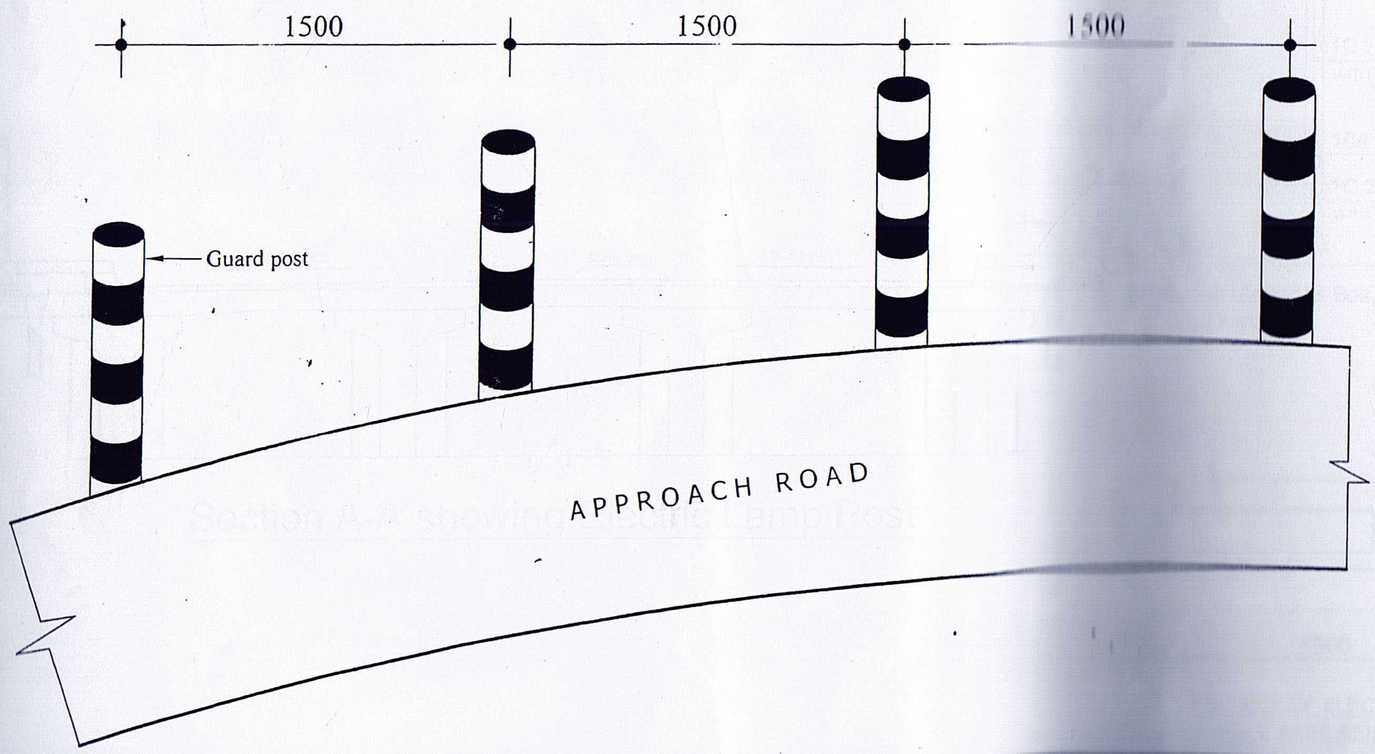
Section 2-2



Reinf. Plan of Post Base



Plan of Guard Post



Guard Post

REVISION			
REV. NO.	DATE	DESCRIPTION	BY.

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

PROJECT : CONSTRUCTION OF IMPORTANT BRIDGES ON RURAL ROADS

NAME OF SCHEME:
CONSTRUCTION OF 301.30M LONG PSC GIRDER BRIDGE AT NUNDAHA GHAT OVER THE RIVER KARTOA AT CH. 4+500 Km ON CHATRA GC - GILLABARI GHAT VIA NISCHINTOBATI PRIMARY SCHOOL ROAD (ROAD ID: 185764034)

UPAZILA. PIRGANJ. DISTRICT: RANGPUR. UNION:

DRAWING TITLE.
DETAILS OF GUARD POST

DESIGN UNIT OF LGED
RDEC BHABAN (LEVEL - 4),
AGARGAON
SHER-E-BANGLA NAGAR
DHAKA - 1207.
Tel. : +880 2 9119609,
Fax. : +880 2 9118175
E-mail : design@lged.gov.bd

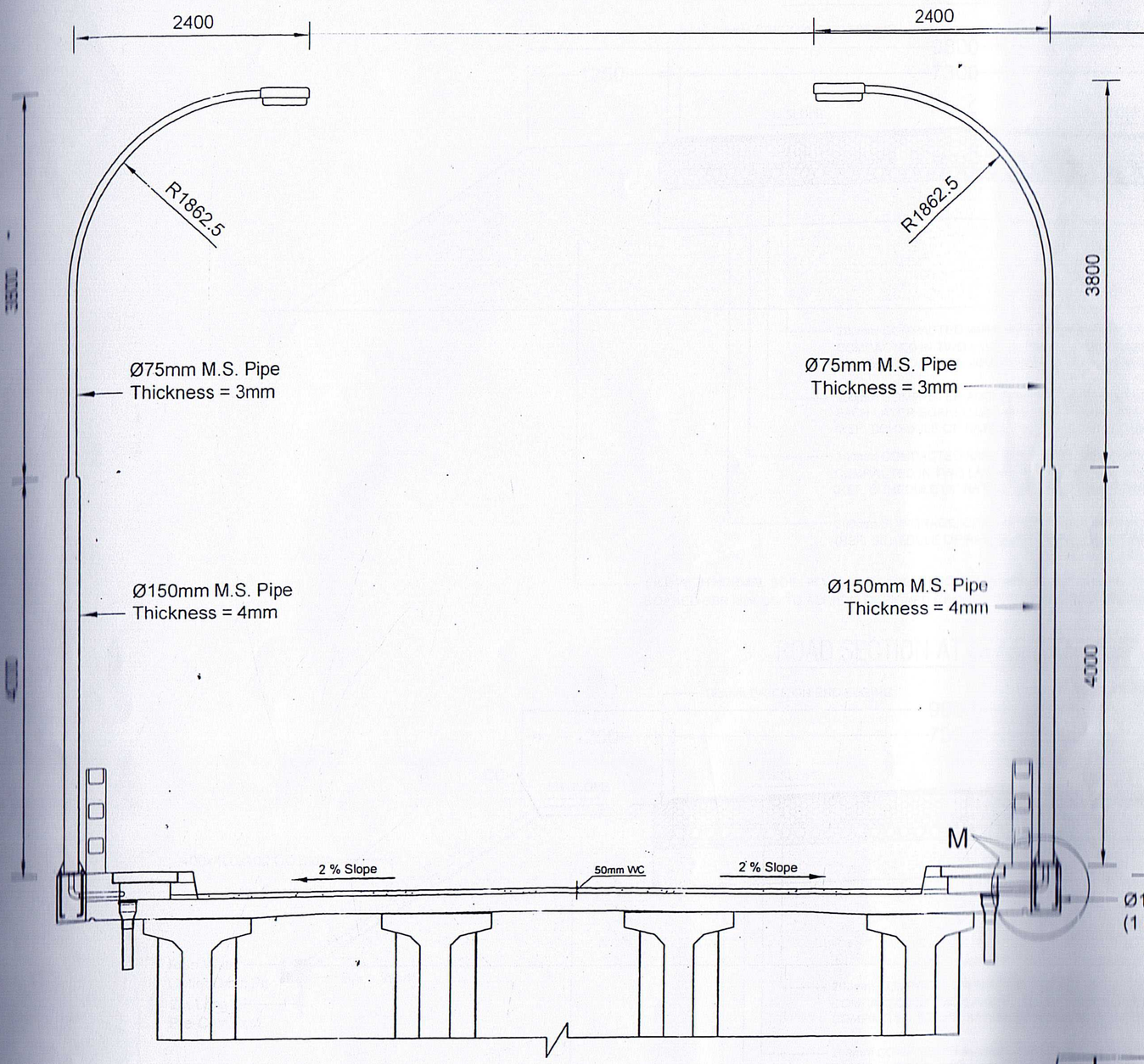
DESIGNED BY : MD. DELWAR HOSSAIN

CHECKED BY : MD. ZAHEDUL ISLAM

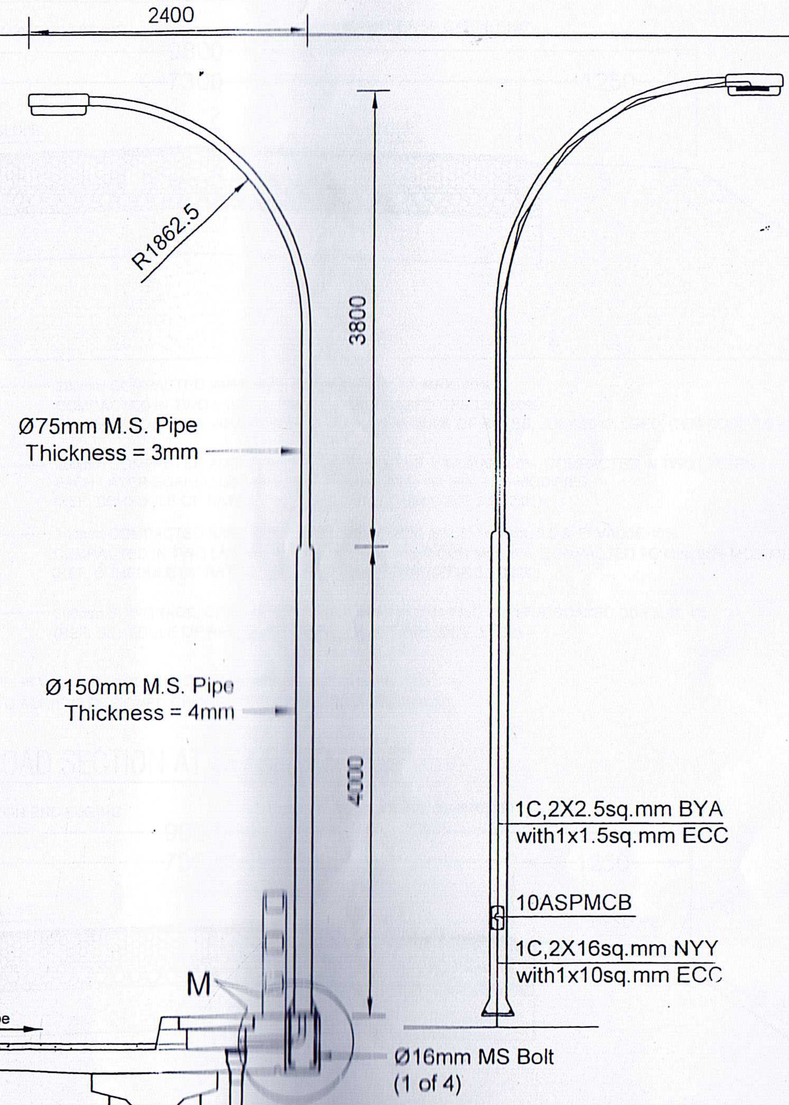
পরীক্ষিত ও অনুমোদনযোগ্য
খন্দকার আলীনূর
তত্ত্বাবধায়ক প্রকৌশলী (ডিজাইন)
এলজিইডি, সদর দপ্তর, ঢাকা।

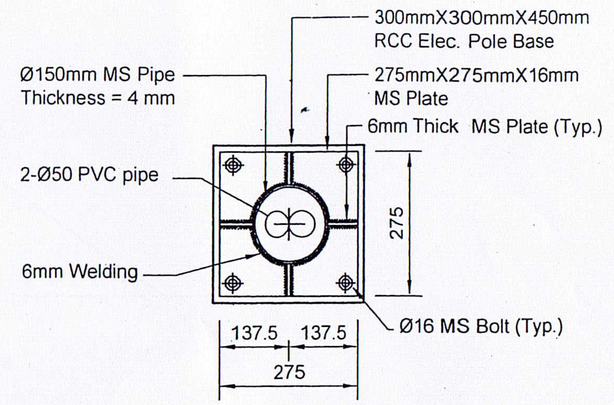
APPROVED BY :

SHEET NO : S - 29
TOTAL SHEET : 35
DRAWN BY : MD. FEROZ ISLAM
DATE :

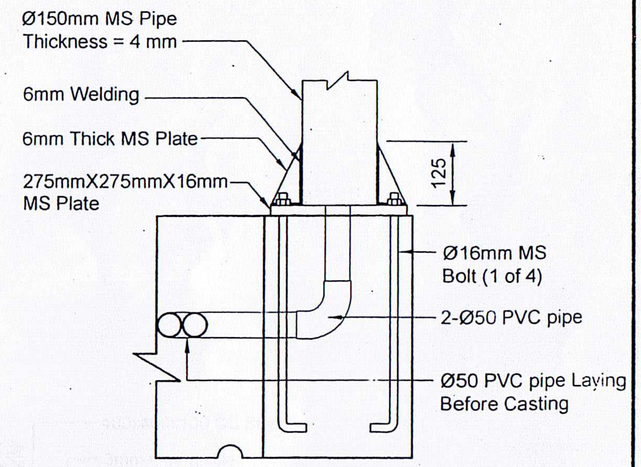


Section A-A showing Electric Lamp Post

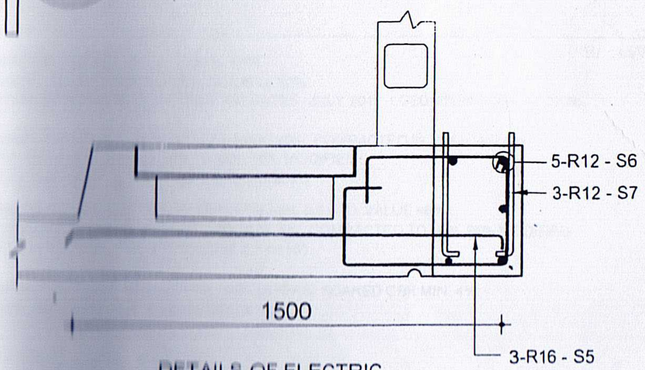




Detail of Top Lamp Post Plan



Detail - M



DETAILS OF ELECTRIC
POLE BASE REINF.

REVISION			
REV. NO.	DATE	DESCRIPTION	BY:

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

PROJECT : CONSTRUCTION OF IMPORTANT BRIDGES
ON RURAL ROADS

NAME OF SCHEME:
CONSTRUCTION OF 301.30M LONG PSC GIRDER BRIDGE AT NUNDAHA GHAT OVER THE RIVER KARTOA AT CH. 4+500 Km ON CHATRA GC - GILLABARI GHAT VIA NISCHINTOBATI PRIMARY SCHOOL ROAD (ROAD ID: 185764034)

UPAZILA: PIRGANJ, DISTRICT: RANGPUR, UNION:

DRAWING TITLE:
DETAILS OF ELECTRIC POLE

DESIGN UNIT OF LGED
RDEC BHABAN (LEVEL - 4),
AGARGAON
SHER-E-BANGLA NAGAR
DHAKA - 1207.
Tel. : +880 2 9119609,
Fax. : +880 2 9118175
E-mail : design@lged.gov.bd

DESIGNED BY :
MD. PERWAR HOSSAIN
Bridge Design Engineer
Design Unit, LGED

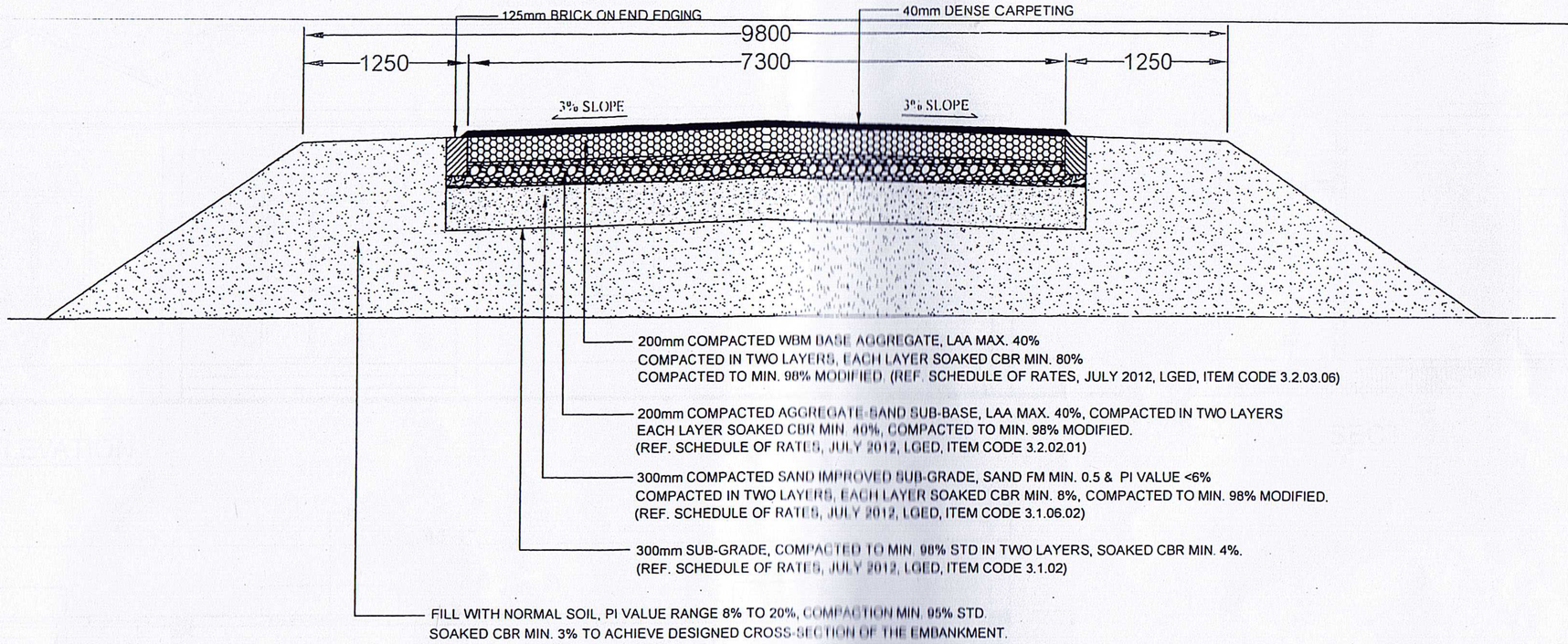
CHECKED BY :
MD. SAIFEDUL ISLAM
XEN (Design)
LGED HQ, DHAKA

পরীক্ষিত ও অনুমোদনযোগ্য
খন্দকার অলীনূর
তত্ত্বাবধায়ক প্রকৌশলী (ডিজাইন)
এলজিইডি, সদর দপ্তর, ঢাকা।

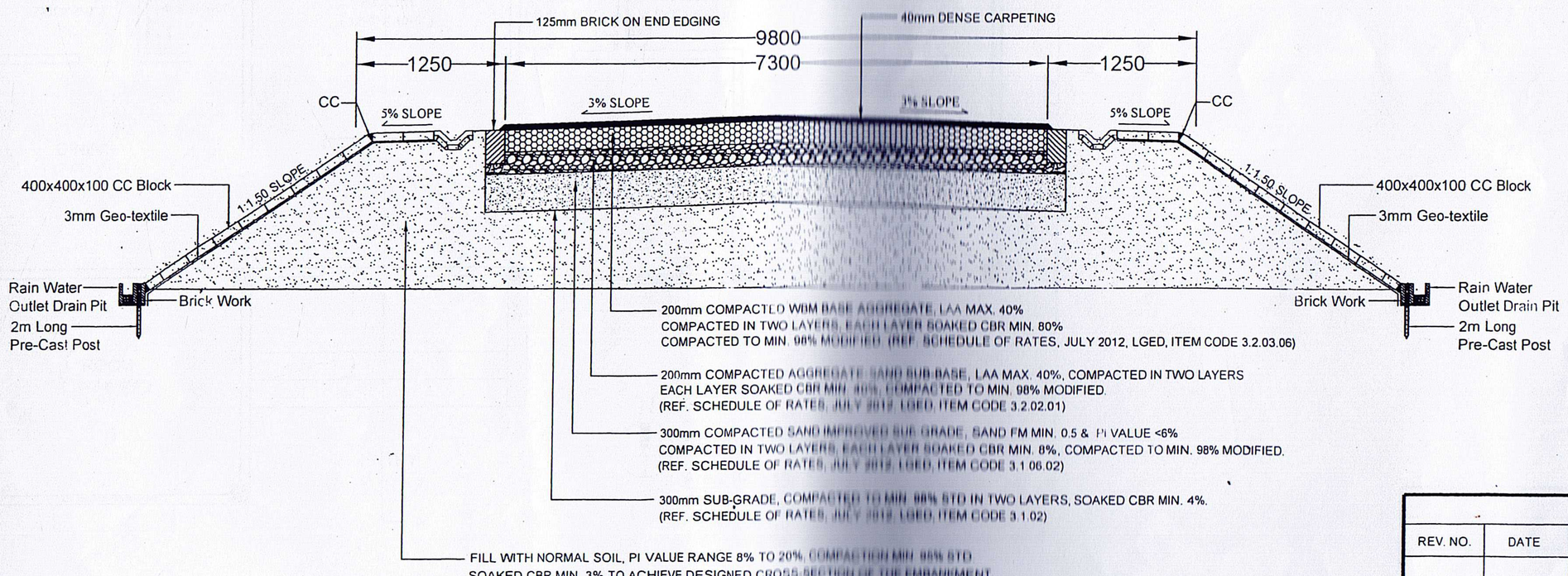
APPROVED BY :

SHEET NO : S - 30
TOTAL SHEET : 35
DRAWN BY : MD. FEROZ ISLAM
DATE :

ROAD SECTION (DESIGN TYPE-7)



ROAD SECTION AT NEAR ABUTMENT



REVISION			
REV. NO.	DATE	DESCRIPTION	BY

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

PROJECT : CONSTRUCTION OF IMPORTANT BRIDGES ON RURAL ROADS

NAME OF SCHEME:
CONSTRUCTION OF 301.30M LONG PSC GIRDER BRIDGE AT NUNDAHA GHAT OVER THE RIVER KARTOA AT CH. 4+500 Km ON CHATRA GC - GILLABARI GHAT VIA NISCHINTOBATI PRIMARY SCHOOL ROAD (ROAD ID: 185764034)

UPAZILA: PIRGANJ, DISTRICT: RANGPUR, UNION:

DRAWING TITLE:
SECTION OF APPROACH ROAD

DESIGN UNIT OF LGED
RDEC BHABAN (LEVEL - 4),
AGARGAON
SHER-E-BANGLA NAGAR
DHAKA - 1207.
Tel. : +880 2 9119609,
Fax : +880 2 9118175
E-mail : design@lged.gov.bd

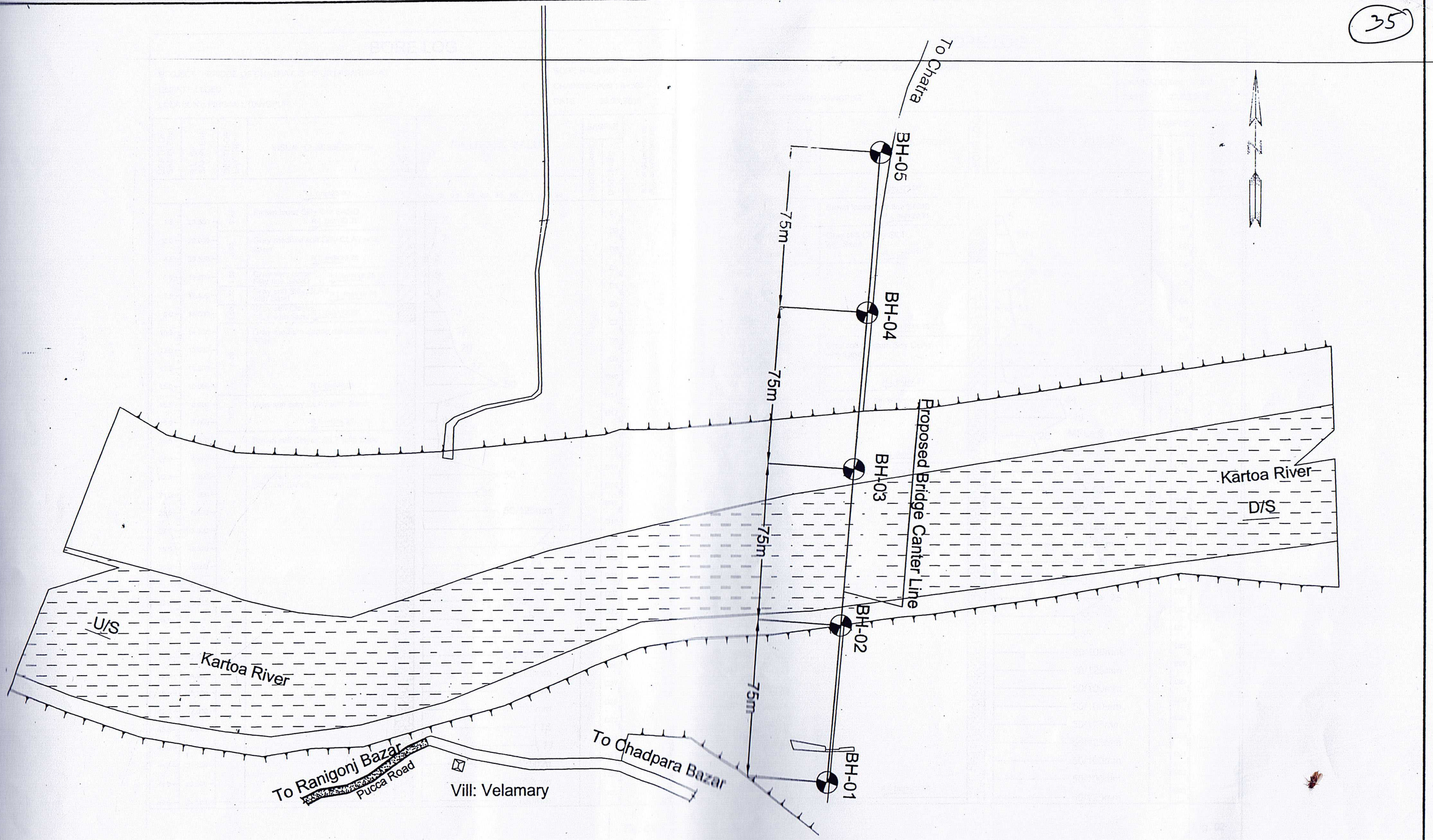
DESIGNED BY
MD. DELWAR HOSSAIN

CHECKED BY :
MD. FAHEDUL ISLAM

পরীক্ষিত ও অনুমোদনযোগ্য
খন্দকার আলীনুর
তত্ত্বাবধায়ক প্রকৌশলী (ডিজাইন)
এলজিইডি, সদর দপ্তর, ঢাকা।

APPROVED BY

SHEET NO : S - 31
TOTAL SHEET : 35
DRAWN BY : MD. FEROZ ISLAM
DATE :



REVISION			
REV. NO	DATE	DESCRIPTION	BY:

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH LOCAL GOVERNMENT ENGINEERING DEPARTMENT	NAME OF SCHEME: CONSTRUCTION OF 301.30M LONG PSC GIRDER BRIDGE AT NUNDAHA GHAT OVER THE RIVER KARTOA AT CH. 4+500 Km ON CHATRA GC - GILLABARI GHAT VIA NISCHINTOBATI PRIMARY SCHOOL ROAD (ROAD ID: 185764034)	DESIGN UNIT OF LGED RDEC BHABAN (LEVEL - 4), AGARGAON SHER-E-BANGLA NAGAR DHAKA - 1207. Tel. : +880 2 9119609, Fax : +880 2 9118175 E-mail : design@lged.gov.bd	DESIGNED BY : MD. DELWAR HOSSAIN Bridge Design Engineer Design Unit, LGED HQ, Dhaka	CHECKED BY : MD. ZAHEDUL ISLAM XEN, (Design) LGED HQ, Dhaka	পরীক্ষিত ও অনুমোদনযোগ্য খন্দকার আলীনুর তত্ত্বাবধায়ক প্রকৌশলী (ডিজাইন) এলজিইডি, সদর দপ্তর, ঢাকা।	APPROVED BY :	SHEET NO : S-33 TOTAL SHEET : 35 DRAWN BY : MD. FEROZ ISLAM DATE :
PROJECT : CONSTRUCTION OF IMPORTANT BRIDGES ON RURAL ROADS	UPAZILA: PIRGANJ, DISTRICT: RANGPUR, UNION: DRAWING TITLE: **BORE HOLE LOCATION MAP**						

BORE LOG

PROJECT : BRIDGE OF CHATRA CC TO GILLABARI GHAT
CLIENT : LGED
LOCATION : PIRGANJ, RANGPUR

BORE HOLE NO : 01
CHAINAGE(Km) : 4+500
DATE : 23.03.2016

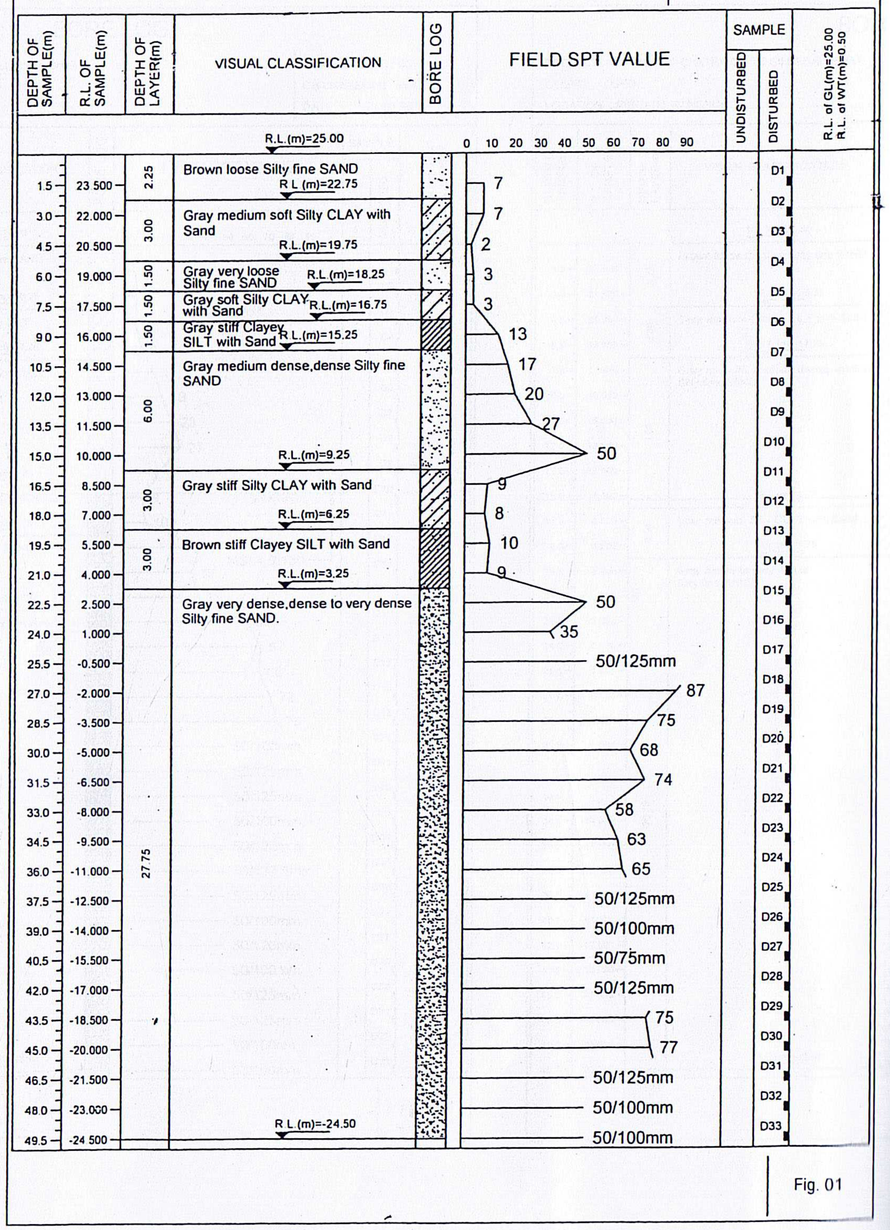


Fig. 01

BORE LOG

PROJECT : BRIDGE OF CHATRA GC TO GILLABARI GHAT
CLIENT : LGED
LOCATION : PIRGANJ, RANGPUR

BORE HOLE NO.: 02
CHAINAGE(Km) : 4+500
DATE : 27.03.2016

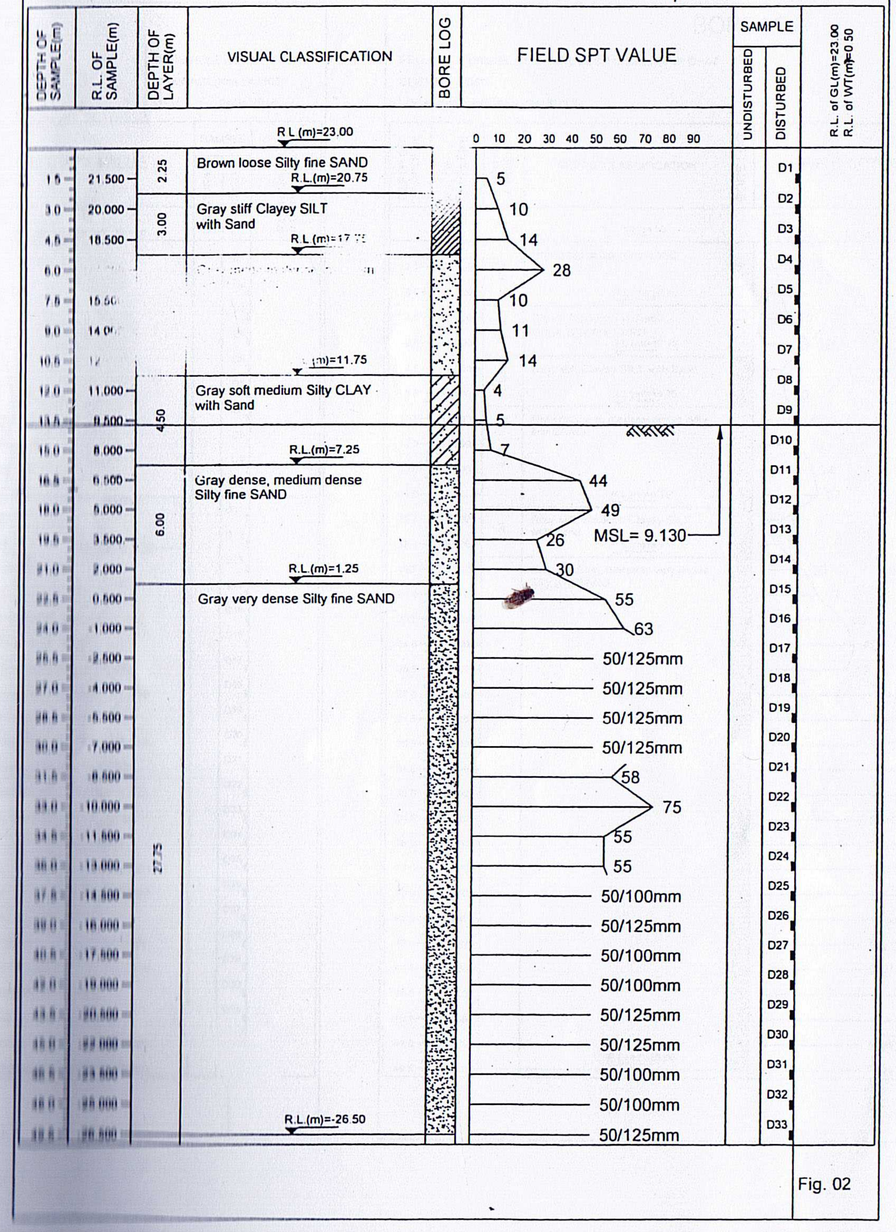


Fig. 02

REVISION			
REV. NO.	DATE	DESCRIPTION	BY:

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

PROJECT : CONSTRUCTION OF IMPORTANT BRIDGES ON RURAL ROADS

NAME OF SCHEME:
CONSTRUCTION OF 301.30M LONG PSC GIRDER BRIDGE AT NUNDAHA GHAT OVER THE RIVER KARTOA AT CH. 4+500 Km ON CHATRA GC - GILLABARI GHAT VIA NISCHINTOBATI PRIMARY SCHOOL ROAD (ROAD ID: 185764034)

UPAZILA: PIRGANJ, DISTRICT: RANGPUR, UNION:

DRAWING TITLE:
SOIL REPORT (Boring 01 TO 02)

DESIGN UNIT OF LGED
RDEC BHABAN (LEVEL - 4),
AGARGAON
SHER-E-BANGLA NAGAR
DHAKA - 1207.
Tel. : +880 2 9119609,
Fax. : +880 2 9118175
E-mail : design@lged.gov.bd

DESIGNED BY :
MD. DELWAR HOSSAIN

CHECKED BY :
MD. ZAHIDUL ISLAM

পরীক্ষিত ও অনুমোদনযোগ্য
খন্দকার আলীনূর
তত্ত্বাবধায়ক প্রকৌশলী (ডিজাইন)
এলজিইডি, সদর দপ্তর, ঢাকা।

APPROVED BY :

SHEET NO : S-34
TOTAL SHEET : 35
DRAWN BY : MD. FEROZ ISLAM
DATE :

BORE LOG

PROJECT : BRIDGE OF CHATRA GC TO GILLABARI GHAT
CLIENT : LGED
LOCATION : PIRGANJ, RANGPUR

BORE HOLE NO. 03
CHAINAGE(Km) : 4+500
DATE : 31.03.2016

DEPTH OF SAMPLE(m)	R.L. OF SAMPLE(m)	DEPTH OF LAYER(m)	VISUAL CLASSIFICATION	BORE LOG	FIELD SPT VALUE	SAMPLE UNDISTURBED	SAMPLE DISTURBED	R.L. of GL(m)=24.00 R.L. of WT(m)=0.50
			R.L.(m)=24.00		0 10 20 30 40 50 60 70 80 90			
1.5	22.500	3.75	Brown Loose Silty fine SAND		5		D1	
3.0	21.000		R.L.(m)=20.25		6		D2	
4.5	19.500	3.00	Gray medium Clayey SILT with Sand		5		D3	
6.0	18.000		R.L.(m)=17.25		8		D4	
7.5	16.500	7.50	Gray medium, medium dense Silty fine SAND		14		D5	
9.0	15.000				18		D6	
10.5	13.500				23		D7	
12.0	12.000				27		D8	
13.5	10.500		R.L.(m)=9.75		17		D9	
15.0	9.000	3.00	Gray stiff Clayey SILT with Sand		9		D10	
16.5	7.500		R.L.(m)=6.75		10		D11	
18.0	6.000	4.50	Gray dense Silty fine SAND		37 MSL= 9.130		D12	
19.5	4.500				33		D13	
21.0	3.000		R.L.(m)=2.25		36		D14	
22.5	1.500	27.75	Gray very dense Silty fine SAND		60		D15	
24.0	0.000				67		D16	
25.5	-1.500				66		D17	
27.0	-3.000				72		D18	
28.5	-4.500				75		D19	
30.0	-6.000				50/100mm		D20	
31.5	-7.500				50/125mm		D21	
33.0	-9.000				50/125mm		D22	
34.5	-10.500				50/100mm		D23	
36.0	-12.000				50/125mm		D24	
37.5	-13.500				50/137.5mm		D25	
39.0	-15.000				50/125mm		D26	
40.5	-16.500				50/100mm		D27	
42.0	-18.000				50/125mm		D28	
43.5	-19.500				50/100mm		D29	
45.0	-21.000				50/125mm		D30	
46.5	-22.500				50/125mm		D31	
48.0	-24.000				50/100mm		D32	
49.5	-25.500		R.L.(m)=-25.50		50/100mm		D33	

Fig. 03

BORE LOG

PROJECT : BRIDGE OF CHATRA GC TO GILLABARI GHAT
CLIENT : LGED
LOCATION : PIRGANJ, RANGPUR

BORE HOLE NO. 04
CHAINAGE(Km) : 4+500
DATE : 04.04.2016

DEPTH OF SAMPLE(m)	R.L. OF SAMPLE(m)	DEPTH OF LAYER(m)	VISUAL CLASSIFICATION	BORE LOG	FIELD SPT VALUE	SAMPLE UNDISTURBED	SAMPLE DISTURBED	R.L. of GL(m)=24.50 R.L. of WT(m)=0.50
			R.L.(m)=24.50		0 10 20 30 40 50 60 70 80 90			
1.5	23.000	3.75	Brown loose medium Silty fine SAND		7		D1	
3.0	21.500		R.L.(m)=20.75		10		D2	
4.5	20.000	3.00	Gray medium Clayey SILT with Sand		6		D3	
6.0	18.500		R.L.(m)=17.75		7		D4	
7.5	17.000	9.00	Gray medium, medium dense, medium Silty fine SAND		14		D5	
9.0	15.500				16		D6	
10.5	14.000				17		D7	
12.0	12.500				19		D8	
13.5	11.000				16		D9	
15.0	9.500		R.L.(m)=8.75		12		D10	
16.5	8.000	3.00	Gray medium Silty CLAY with Sand		6		D11	
18.0	6.500		R.L.(m)=5.75		7 MSL= 9.130		D12	
19.5	5.000		Gray dense to very dense Silty fine SAND		36		D13	
21.0	3.500				40		D14	
22.5	2.000				38		D15	
24.0	0.500				44		D16	
25.5	-1.000				65		D17	
27.0	-2.500				74		D18	
28.5	-4.000				65		D19	
30.0	-5.500				50/100mm		D20	
		30.75			65		D21	
34.5	-10.000				73		D22	
36.0	-11.500				69		D23	
37.5	-13.000				62		D24	
39.0	-14.500				50/100mm		D25	
40.5	-16.000				50/125mm		D26	
42.0	-17.500				125mm		D27	
43.5	-19.000						D28	
45.0	-20.500				50		D29	
46.5	-22.000				50/10		D30	
48.0	-23.500				50/100mm		D31	
49.5	-25.000		R.L.(m)=-25.00		50/100mm			

BORE LOG

PROJECT : BRIDGE OF CHATRA GC TO GILLABARI GHAT
CLIENT : LGED
LOCATION : PIRGANJ, RANGPUR

BORE HOLE NO. 05
CHAINAGE(Km) : 4+500
DATE : 08.04.16

DEPTH OF SAMPLE(m)	R.L. OF SAMPLE(m)	DEPTH OF LAYER(m)	VISUAL CLASSIFICATION	BORE LOG	FIELD SPT VALUE	SAMPLE UNDISTURBED	SAMPLE DISTURBED	R.L. of GL(m)=24.50 R.L. of WT(m)=0.50
			R.L.(m)=24.50		0 10 20 30 40 50 60 70 80 90			
1.5	23.000	3.75	Brown loose Silty fine SAND		5		D1	
3.0	21.500		R.L.(m)=20.75		7		D2	
4.5	20.000	3.00	Brown medium, medium dense Silty fine SAND		12		D3	
6.0	18.500		R.L.(m)=17.75		22		D4	
7.5	17.000	3.00	Gray stiff Clayey SILT with Sand		8		D5	
9.0	15.500		R.L.(m)=14.75		10		D6	
10.5	14.000	6.00	Gray medium, medium dense Silty fine SAND		14		D7	
12.0	12.500				18		D8	
13.5	11.000				24		D9	
15.0	9.500		R.L.(m)=8.75		27		D10	
16.5	8.000	3.00	Gray stiff, medium Clayey SILT with Sand		9		D11	
18.0	6.500		R.L.(m)=5.75		7		D12	
19.5	5.000		Gray medium, dense to very dense Silty fine SAND		20		D13	
21.0	3.500				27		D14	
22.5	2.000				40		D15	
-24.0	0.500				46		D16	
25.5	-1.000				42		D17	
27.0	-2.500				66		D18	
28.5	-4.000				70		D19	
30.0	-5.500				50/100mm		D20	
31.5	-7.000				73		D21	
33.0	-8.500	30.75			75		D22	
34.5	-10.000				50/125mm		D23	
36.0	-11.500				50/125mm		D24	
37.5	-13.000				50/100mm		D25	
39.0	-14.500				74		D26	
40.5	-16.000				78		D27	
42.0	-17.500				50/100mm		D28	
43.5	-19.000				50/100mm		D29	
45.0	-20.500				68		D30	
46.5	-22.000				75		D31	
48.0	-23.500				50/125mm		D32	
49.5	-25.000		R.L.(m)=-25.00		50/100mm		D33	

Fig. 05

REVISION

REV. NO.	DATE	DESCRIPTION	BY

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
LOCAL GOVERNMENT ENGINEERING DEPARTMENT

PROJECT : CONSTRUCTION OF IMPORTANT BRIDGES ON RURAL ROADS

NAME OF SCHEME:
CONSTRUCTION OF 301.30M LONG PSC GIRDER BRIDGE AT NUNDAHA GHAT OVER THE RIVER KARTOA AT CH. 4+500 Km ON CHATRA GC - GILLABARI GHAT VIA NISCHINTOBATI PRIMARY SCHOOL ROAD (ROAD ID: 185764034)

UPAZILA: PIRGANJ, DISTRICT: RANGPUR, UNION:

DRAWING TITLE: **SOIL REPORT (Boring 03 TO 05)**

DESIGN UNIT : OF LGED
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SHER-E-BANGLA NAGAR
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DESIGNED BY : MD. FEROZ ISLAM

CHECKED BY : MUFAKHEDUL ISLAM

পরীক্ষিত ও অনুমোদনযোগ্য
খন্দকার আলীনূর
তত্ত্বাবধায়ক প্রকৌশলী (তিআইএম)
এলজিইডি, সদর দপ্তর, ঢাকা।

APPROVED BY :

SHEET NO : S-35
TOTAL SHEET : 35
DRAWN BY : MD. FEROZ ISLAM
DATE :