GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
MINISTRY OF LOCAL GOVERNMENT, RURAL DEVELOPMENT & CO-OPERATIVES
LOCAL GOVERNMENT ENGINEERING DEPARTMENT (LGED)

ROAD STRUCTURES MANUAL FOR SINGLE LANE BRIDGES

PART-D STANDARD DRAWINGS

SUPERSTRUCTURE:

RC DECK
PC GIRDER

SUBSTRUCTURE:

RC ABUTMENT-WING WALL

FOUNDATION:

CAST IN-PLACE BORED PILE

VOLUME-II: PRE-STRESSED CONCRETE BRIDGES

PREPARED BY:
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1.0 INTRODUCTION

1.1 General

This Design Manual provides standard designs of Prestressed Concrete (PC) girders connected with RC deck of span range 25.00 to 40.00 m at an interval of 5.00 m and abutment heights varying between 5.00 m to 7.00 m at an interval of 0.5 m. The manual is developed for Single Lane Bridge with total deck width 5400 mm, with 3700 mm carriage way & 600 mm foot path on either side. Reinforced Elastomeric Neoprene Bearings are provided. Abutments and wing walls are wall type with short projected cantilever/flag at the wing wall ends. Pile foundations for abutments comprise of 600 mm and 700 mm dia cast-in-situ RC bored piles.

Load and Resistance Factor Design method (LRFD) is used for analysis and design purpose in accordance with the AASHTO LRFD Bridge Design Specifications SI Units, 2007, hereinafter called AASHTO 07. Vehicular live loadings on the road ways of bridges is used in accordance with the AASHTO 07 designated HL-93, consisting of a combination of Design truck or design tandem, and Design lane load (Ref: AASHTO '07, Art. 3.6.1.2.1). Design truck is equivalent to the previous HS20-44 loading. The Design tandem consists of a pair of 110KN axial load spaced 1200mm apart. The Design Lane load consists of a load of 9.3KN/m uniformly distributed in the longitudinal direction. Transversely the load shall be assumed to be uniformly distributed over a 3.05m width.

Structural analyses have been done using STAAD/PRO 2006. The post-tensioned prestressed concrete girders have been designed following AASHTO. LRFD Bridge Design 2007. For the structural design of the gravity and laterally loaded pile STAAD-pro software has been used. For geotechnical design of piles the equations developed by Tomlinson & Mayerhop have been used. All drawings are prepared by AutoCad 2008.

It is intended that the design manual will be helpful to strengthen the capacity of the LGED field Engineers.

1.2 Scope of the Manual

This manual contains the standard designs and drawings along with the bar bending schedule and quantities of the following components of Single Lane Bridges.

The contents of this Manual, Part-D Volume II comprises of,

a) Deck slab:

Carriageway width = 3.70 m
Width of 2 (two) sidewalks, each = 0.60 m
Out to out deck width = 5.40 m

b) PC Girder:

Span length/ Overall Length = 25, 30, 35 & 40 m.
C/C bearing of Girder = 24.30, 29.30, 34.30 & 39.30 m

c) Abutment-Wing walls:

Height ranges = 5 m to 7 m at an interval of 0.5 m.

Design Types = 4 Nos.

Design Type	Span (m)	Abutment Height (m)	No of Design
A	25	5 to 7	5
B	30	5 to 7	5
C	35	6 to 7	3
D	40	6 to 7	3

No of Design = 16

d) Pile Cap: Types = 5

e) Piles: 600mm & 700mm dia, Typical Length 25m.

f) Bridge Bearings: Multi-layer reinforced elastomeric.

g) Railing: Precast RC rail bars & cast- in-situ rail posts.

h) Miscellaneous: Expansion joint, rain water down pipe, elastomeric bridge bearing, railing (rail post, rail bar) & sidewalk.

Chapter 1- Introduction and Scope of the Manual.

Chapter 2- Selection criteria of length of bridge, height of abutment, longitudinal profile grade, cross-slope, deck type and geometry, PC girder, Abutment-wing wall types, pile cap, piles, bridge bearings, joints, railings, wearing course and Navigational Clearance.

Chapter 3- General Notes, Standard drawing of Abutments, Girders, Bearings, Expansion Joints & Cast-in-situ RCC Piles.

2.0 SELECTION CRITERIA

2.1 Length of the Bridge

Length of the bridge should be determined mainly from the consideration of regime width based on hydro-geological investigation. Bridge over constricted channel width increases unit discharge through the channel and thereby causes excessive scour depth around supports and the approaches. In scour calculation provision has been made to take into account the grain size of the bed materials.

For calculation of scour depth, usually the methods given by Lacey, Laursen and Blench are popular in the subcontinent, out of which Lacey's method is more popular in the sub-continent including Bangladesh. For the purpose of this manual, scour depth for the non-cohesive soil has been calculated using Lacey's method and the same for the cohesive soil has been calculated using the method of tractive forces given in R.V Farrady and F.G. Charlton, Hydraulic Factors in Bridge Design, Hydraulic Research, and Wallingford, U.K.

The selection criteria of the length of bridge incorporating the above factors are given in Flow Chart of Fig. 2.1. Page no. P-04.

2.2 Longitudinal Profile Grade

3% longitudinal parabolic grade has been provided for PC girder & deck and 3% straight slope to be maintained towards approach road for smooth passing of the vehicles.

2.3 Cross- Slope

2% cross- slope has been provided in the deck to ensure effective drainage of the bridge deck.

2.4 Deck Type and Geometry

The overall deck width is 5.40m, 0.25m high curbs measured over deck concrete excluding wearing course has been provided. This will act as vehicle barrier on either end of the carriage way.

2.5 PC Girder

Four different heights of PC girder sections have been provided as shown in Table 2.1 below:

Table 2.1: Types of PC Girder

SL NO.	Overall Girder Length (m)	Girder Height (m)	Width of web (mm)
1	25	1.5	280
2	30	1.8	280
3	35	2.1	300
4	40	2.3	300

Wide flange sections have been used for all the span lengths to develop better resistance against buckling & overturning effects. End blocks have been provided as required by AASHTO Standard Specifications of Highway Bridges, 2007.

2.6 Abutment and wing wall

Five types of abutment wing-walls have been provided. For Abutment height 5.0-6.5m no counterfort is provided. For 7.0m height counterfort have been provided. The cantilever flag type wing walls have been kept common in all these two types.

Table 2.2 Types of Abutment – Wing Walls

SL NO.	Abutment Height (m)	No of Counterforts in abutments	No of Counterforts in each wing wall
1	5.0	Nil	Nil
2	5.5	Nil	Nil
3	6.0	Nil	Nil
4	6.5	Nil	Nil
5	7.0	Nil	3

2.7 Abutment Pile cap

Five types of pile cap have been provided as given in Table 2.3

Table 2.3 Types of abutment pile caps along with size of pile caps and no. of piles.

SI. No.	Foundation Type	No. of piles	Size of Pile Cap L(m) x B(m)	Thickness, of Pile cap (mm)
1	A	12	6.6 x 5.75	850
2	B	16	6.6 x 6.95	850
3	C	16	6.6 x 7.15	850
4	D	16	6.6 x 7.75	900
5	E	18	6.6 x 8.55	1000

The top of pile cap shall be placed preferably about 1.00m below the prevailing natural ground level (NGL). The length of bridge and bottom elevation of abutment pile cap shall be so decided that the maximum scour below pile cap does not exceed 1.00 m.

2.8 Piles

600 mm & 700 mm dia RCC cast-in-situ bored piles have been provided on the basis of design load per pile.

2.9 Bridge Bearings

Reinforced elastomeric bearings have been provided below each girder end. For design of the same and their specifications, refer to Part A, Chapter 12.0.RSM-08.

2.10 Bridge Joints

Steel plate joint has been provided as the expansion joint in accordance with the current practice of LGED. The design of the joint has been made stronger than the existing design generally followed in the country, as the lighter joint provided so far in the bridge structures shows poor performance. Standard PVC joint would have been ideal, but these are expensive materials and not manufactured in the country. It is advisable to use in the future, standard PVC joint to achieve durability of the bridge structure to its design life which is about 100-120 years, as the relative cost of the standard joint is negligible compared to the cost of the bridge.

2.11 Bridge Railing

Pre-cast rail bars and cast-in-situ rail posts have been provided. Care should be taken to achieve quality of construction and finishing of the members.

2.12 Wearing Course

50mm average thick asphaltic concrete wearing course has been provided. Actually, for the bridge carriageway asphaltic concrete wearing course is always preferable for the bridge structure as the black top material, reduces the temperature on the concrete surface of the deck slab, and thereby reduces temperature gradient inside the deck concrete considerably.

2.13 Navigational Clearance

Navigational Clearance both for vertical and horizontal requirements must be considered before selection of the Abutment height as specified by the BIWTA.

Fig.-2.1 Flow chart for selection of Bridge Length Abutment-Wing Wall Heights and clearance

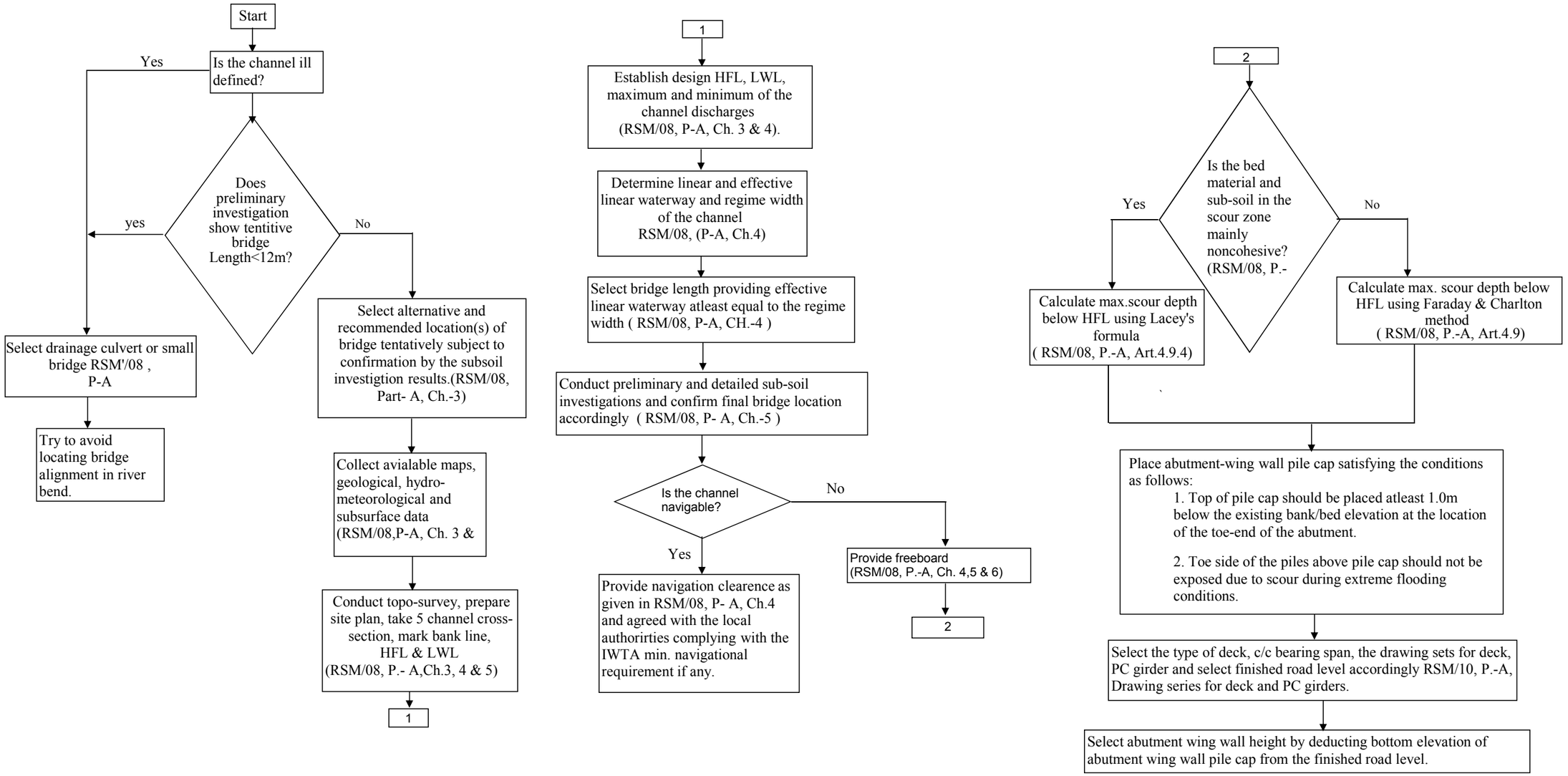
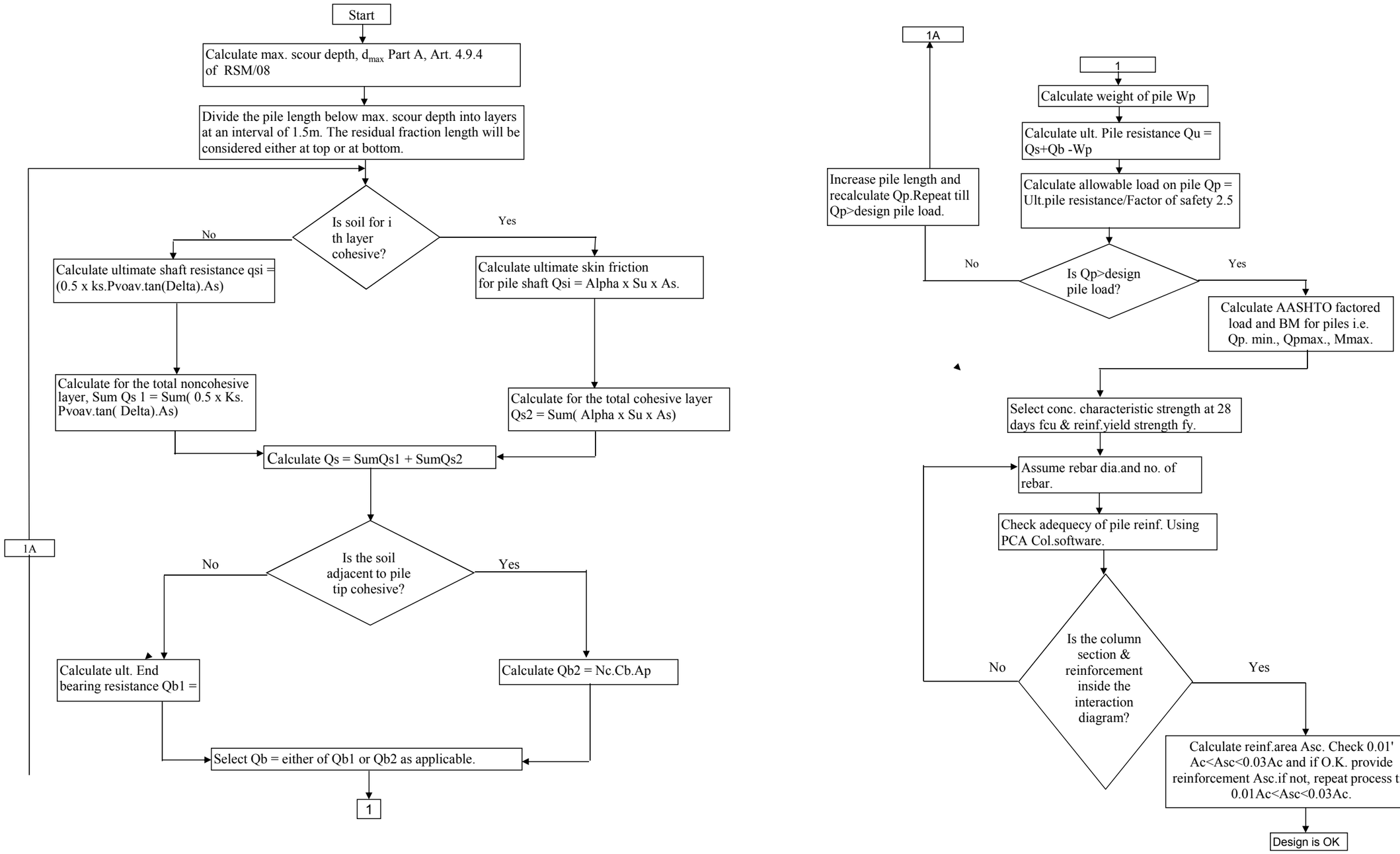


Fig.-2.2 Flow chart for selection of pile length



GENERAL NOTES & SPECIFICATION FOR CONSTRUCTION OF THE RCC COMPONENTS OF PC GIRDER BRIDGE

1. DESIGN STANDARD : AASHTO Standard Specification for Highway Bridges.
2. DESIGN LOADING : AASHTO; HL-93
3. CEMENT : Ordinary Portland Cement Type - (BDS EN -197 -1)

A) SETTING TIME :

Initial Setting Time : Not Less Than 45 Minutes

Final Setting Time : Not More Than 8 Hours

B) STRENGTH :

Compressive Strength 50mm Cube Specimen As per ASTM-C150-86

07 Days Strength :19.30 Mpa (2800psi)

4.REINFORCEMENT :

A) STRENGTH :

Yield Strength (fy) of M.S Deformed Bar shall not be less then 413 N/mm² (60000 psi).

The steel should conform ASTM-A615-88 & Equivalent.

B) SPLICES IN REINFORCEMENT :

Splices In Reinforcement if necessary shall be made only as approved by the Engineer-In- Charge

Splices In Reinforcement of maximum stress in slabs, Deck and Girders should be avoided.

C) LAP LENGTH :

(a) Not more than 33% of reinforcement bars shall be lapped at any one section.

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

(c) Splices shall be staggered at least 600mm. All splices shall be class A splices.

(d) Minimum lap length of bar shall conform to clause 8.32 of Division 1 of AASHTO-1996.

Unless otherwise specified, length of the lap splice shall be:

Bar Dia, mm	Lap Splice, mm (Deformed bar)
10	300
12	360
16	480
20	800
22	880
25	1000
32	1280

D. MINIMUM CLEAR COVER TO MAIN REINFORCEMENT :

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		
(a) Contact with earth	60	75
(b) Exposed to weather and water	50	60
Piles		
(a) Cast-in-place bored	75	75
(b) 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 :

i): Concrete shall have 28 days standard Cylinder Crushing strength f'c = 25 N/mm² (3600psi) , for all the Components Except Girder & Cross Girder.

ii): Concrete shall have 28 days standard Cylinder Crushing strength f'c = 35 N/mm² (5000psi) , for PC Girder & Diaphragms.

(iii) The nominal Saggested mix shall be 1:1$\frac{1}{2}$:3 for class 25 concrete & 1:1$\frac{1}{4}$:2$\frac{1}{2}$ for class 35 concrete or a richer mix to attain the specified strength.

iv): For RCC Cast-in-Situ Piles 28 Days Standard Cylinder Crushing Strength, f'c = 25 N/mm² (3600 psi), Clear Cover of Main Reinforcement Bar is to be 75mm for Cast-in-situ piles

6. Water

Water to be used in concreting and curing shall conform to clause 8.3.2 of Division II of ASHTO/1996

7. Mixer Machine and Vibrator must be used in all RCC Casting.
8. All Dimensions are in mm unless otherwise mentioned
9. Slump for Cast-In-Situ pile shall be:100 to 150mm, for other Components: 50 to 75mm
10. Coarse Aggregate : 20mm down graded Crushed Stone Chips in Accordance With BS882 Or Equivalent
11. All RCC work must be fair faced.
12. ***FM of sand*** shall be ***2.5*** (Minimum) for all R.C.C Works whatever mentioned in other places.
13. No plaster or cement washing will be allowed on any RCC surface.
14. All RCC casting work must be carried out in steel Form Work of Appropriate size & thickness.
15. Form work with Scaffolding details shall be submitted by the contractor for the approval
16. Welding of reinforcement bars shall not be permitted, unless approved by the Engineer in charge
17. Supporting Reinforcing of 16mm diameter for main reinforcement shall be provided at suitable intervals.
18. Construction Joint:
    (a) The location and provision of construction joints shall be approved by the Engineer. The concreting operation shall be carried continuously up to the construction joint.
    (b) The preparation of construction joint shall be conform to clause 8.8 of Division II of AASHTO-1996.
    (c) The nominal Saggested mix shall be 1:1$\frac{1}{2}$:3 for class 25 concrete & 1:1$\frac{1}{4}$:2$\frac{1}{2}$ for class 35 concrete or a richer mix to attain the specified strength.

	DESIGNED ,DRAWN & CHECKED BY		DRAWING TITLE
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GENERAL NOTES & SPECIFICATION FOR PC GIRDER CONSTRUCTION

A. MATERIAL STRENGTH

01. CONCRETE SHALL HAVE SPECIFIED CHARACTERISTIC COMPRESSIVE STRENGTH OF STANDARD CYLINDER OR CUBE (15 cm) AT 28 DAYS, ARE AS FOLLOWS:

    a) STANDARAD CYLINDER CRUSHING STRENGTH, f'c = 35 N/mm²

    b) STANDARD CUBE CRUSHING STRENGTH, fcu = 43 N/mm²

02. REINFORCING STEEL SHALL CONFORM TO ASTM A615-88 GRADE 60 DEFORMED BARS (MARKED 'Y') HAVING MINIMUM YEILD STRENGTH Fy = 413 N/mm²

03. PRESTRESSING STEEL SHALL OF 12.7mm DIA. 7 PLY UNCOATED LOW RELAXATION STRAND CONFORMING TO AASHTO-M203 (GRADE-270) OR EQUIVALENT HAVING THE FOLLOWING STRENGTH:

    (a) MINIMUM ULTIMATE TENSILE STRENGTH (UTS), f's = 1861 N/mm² (183.7 KN PER STRAND)
    (b) MINIMUM YIELD STRENGTH, f'y = 1674 N/mm² (165.3 KN PER STRAND)

03. PRESTRESSING CABLE SHALL BE CONSISTS OF 12 NOS.12.7mm DIA. STRAND (12T13) IN A SHEATHING/DUCT

B. PRESTRESSING ACCESSORIES

01. THE DETAILS OF ANCHORAGES, DUCTS, CABLE SPACINGS AND END BLOCK REINFORCEMENT SHOWN IN THE DRAWINGS ARE BASED ON FREYSSINET 12T13 MULTI-STRAND ANCHORAGE SYSTEM.

02. THE SHEATHING/DUCTS FOR THE 12T13 PRESTRESSING CABLES SHALL BE FORMED FROM 75mm 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 = 98.7 mm^2
    AREA OF CABLE = 1184.4 mm^2
    MODULLES OF ELASTICITY OF STRAND =$1.97x10^5(N/mm)^2$
    AVERAGE SLIP = 7mm
    JACKING FORCE IN EACH CABLE = 1652 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 LENGT 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 900mm.

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 1652KN

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

03. STRESSING SEQUENCE OF THE CABLES AND CONCRETE STRENGTH f'ci SHALL BE FOLLOWED AS SHOWN IN THE DRAWINGS OF PC GIRDER.

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. ALL THE RECORDS OF THE ABOVE ACTIVITIES SHALL BE MAINTAINED PROPERLY.

05. ALL DUCTS SHALL BE GROUTED FOLLOWING 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 OF FREYSSINET OR EQUIVALENT METHODS SHALL BE USED.

F. INSTALLATION DETAILS

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

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

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

04. TIME DIFFERENCE BETWEEN GIRDER CONCRETE & DECK CONCRETE SHALL NOT BE MORE THAN 2 MONTHS.

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

03. ALL LAP LENGTHS SHALL BE PROVIDED AT LEAST 40 x BAR DIA. AND SHALL BE STAGGERED BY +/- 50% UNLESS OTHERWISE SHOWN.

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 WIRES OBTAINED FROM THE MANUFACTURER .
    CORRECTED ELONGATION = ELONGATION SHOWN IN THE DRAWINGS x A.E/A1.E1
    A, E ARE THE DESIGN AREA AND MODULUS OF ELASTICITY OF THE STANDARD WIRES.
    A1, E1 ARE ACTUAL AREA AND MODULUS OF ELASTICITY OF THE SUPPLIED WIRES.

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METHODOLOGY OF BENTONITE SLURRY CIRCULATION IN BORED & CAST-IN-SITU PILE CONSTRUCTION

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. If pile diameter is 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 bentonite powder to be added to water for maintaining the required density and viscosity depends on the quality of the 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
Marsh Viscosity(946ml)	sec	32 to 50	32 to 60	32 to 50	Marsh funnel
Fluid loss (30min)	ml	<30	<50	n.a	Filter press
pH		7 to 11	7 to 12	n.a	pH meter
Sand content set	%	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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PURAKAUSHAL PROJUKTI LIMITED
House # 10 .Road # 4 .Banasree. Rampura.Dhaka-1219
Mobile :01711577016 E-mail:pprojltd@yahoo.com

NAME OF PROJECT:
LOCATION:
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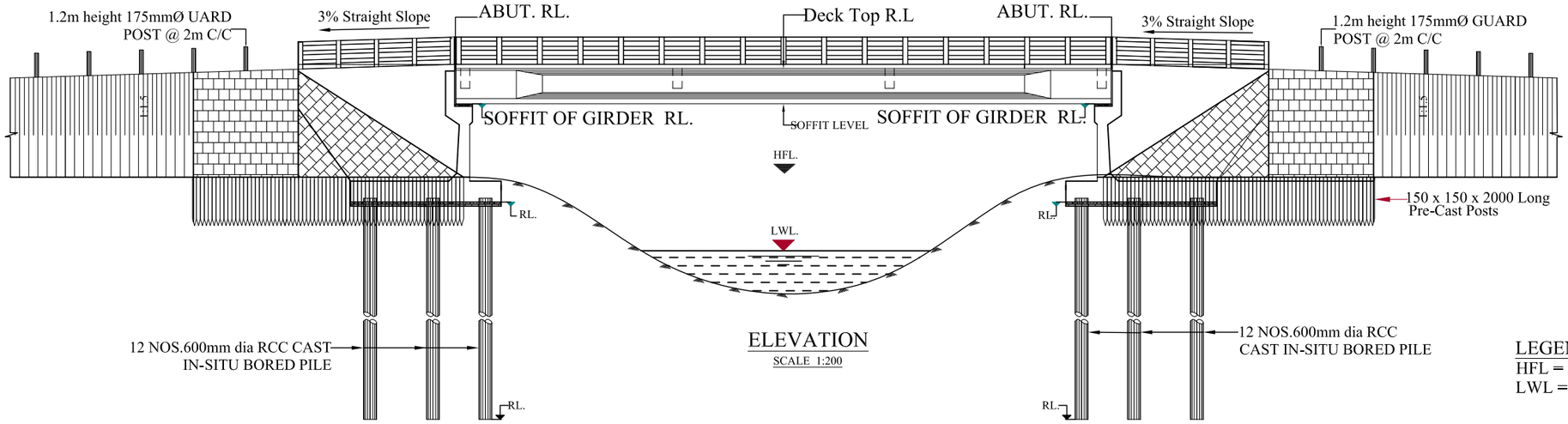
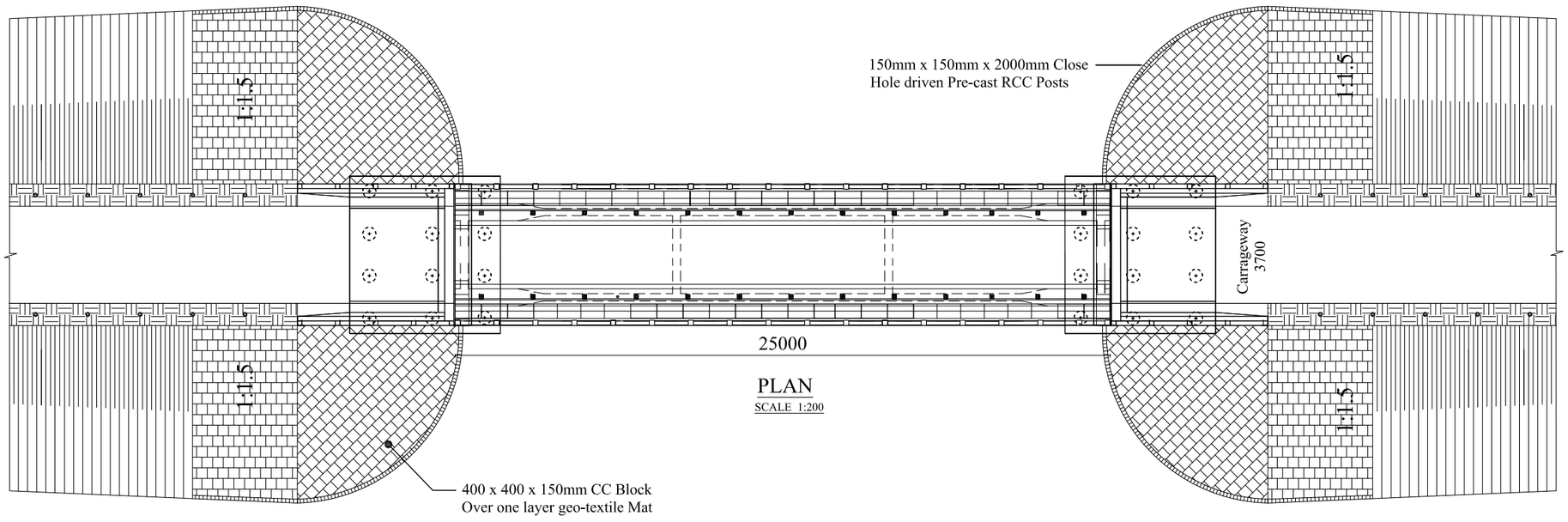
DISTRICT:

DRAWING TITLE
METHODOLOGY OF BENTONITE SLURRY USE
DRAWING NO. GN-03
PAGE NO. P-08



ELEVATION
SCALE 1:200

LEGEND:
HFL = DESIGN HIGH FLOOD LEVEL.
LWL = LOW WATER LEVEL.



PLAN
SCALE 1:200

NOTES:
1. All DIMENSIONS ARE IN mm UNLESS OTHERWISE SHOWN.
2. TO FIX SOFFIT LEVEL SEE GUIDE LINE IN THE FLOWCHART.
3. PILE FOUNDATION AND SUBSTRUCTURE DETAILS SHOWIN ARE TYPICAL ONLY.
4. OUT TO OUT WIDTH OF BRIDGE DECK: 5400mm
5. PILE LENGTH SHOULD BE DECIDED BASED ON SUB-SOIL REPORT.

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

DESIGNED ,DRAWN & CHECKED BY

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NAME OF PROJECT:

LOCATION:
UPAZILA:
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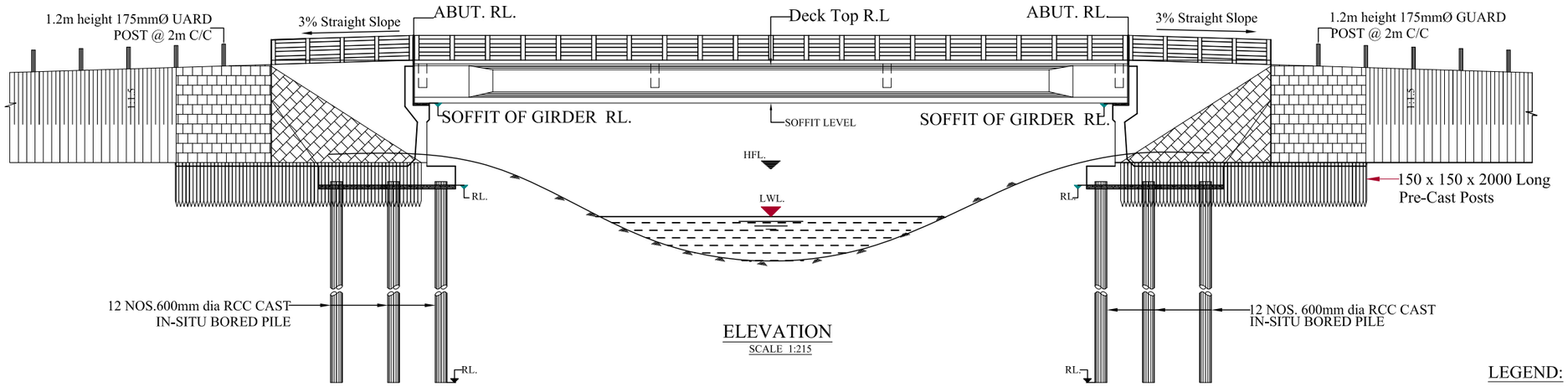
DRAWING TITLE

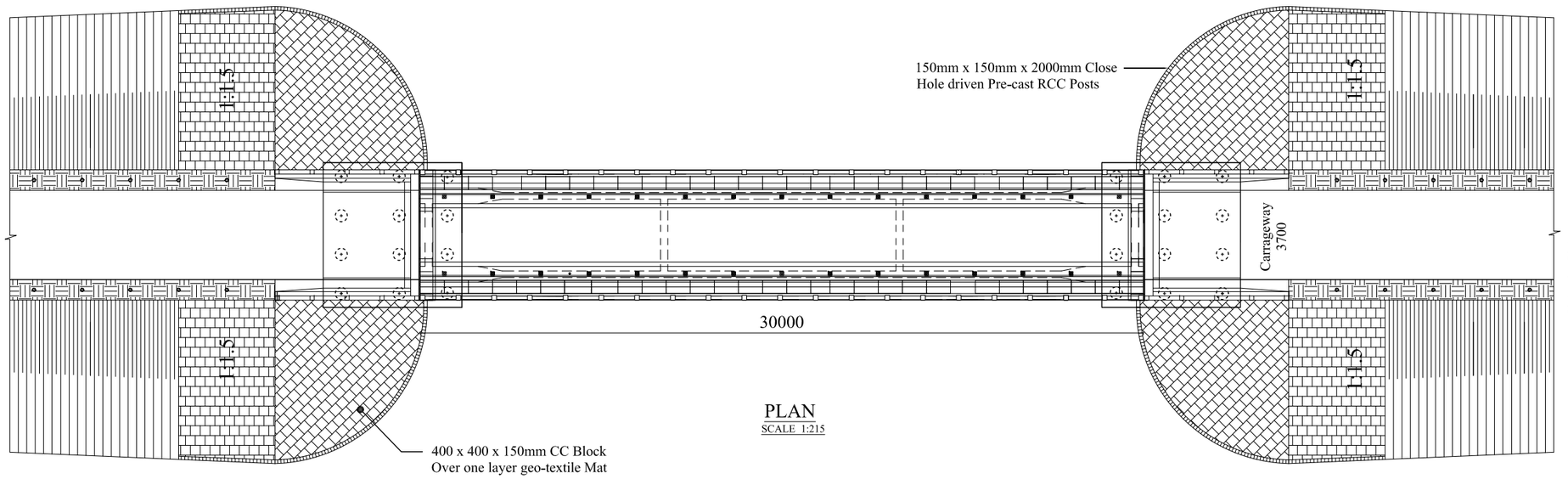
General Arrangement (Abutment 5.0m & Span 25m)

DRAWING NO. GA-01

PAGE NO. P-09



ELEVATION
SCALE 1:215



PLAN
SCALE 1:215

LEGEND:
HFL = DESIGN HIGH FLOOD LEVEL.
LWL = LOW WATER LEVEL.

NOTES:
1. All DIMENSIONS ARE IN mm UNLESS OTHERWISE SHOWN.
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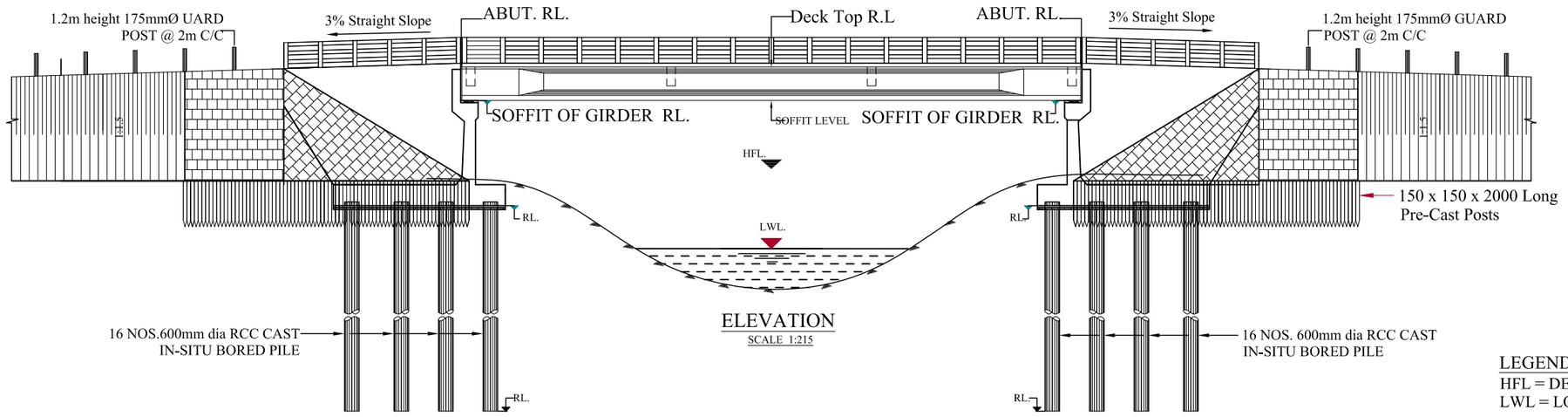
NAME OF PROJECT:
LOCATION:
UPAZILA:
DISTRICT:

DRAWING TITLE
General Arrangement
(Abutment 5.0m & Span 30m)
DRAWING NO. GA-02
PAGE NO. P-10



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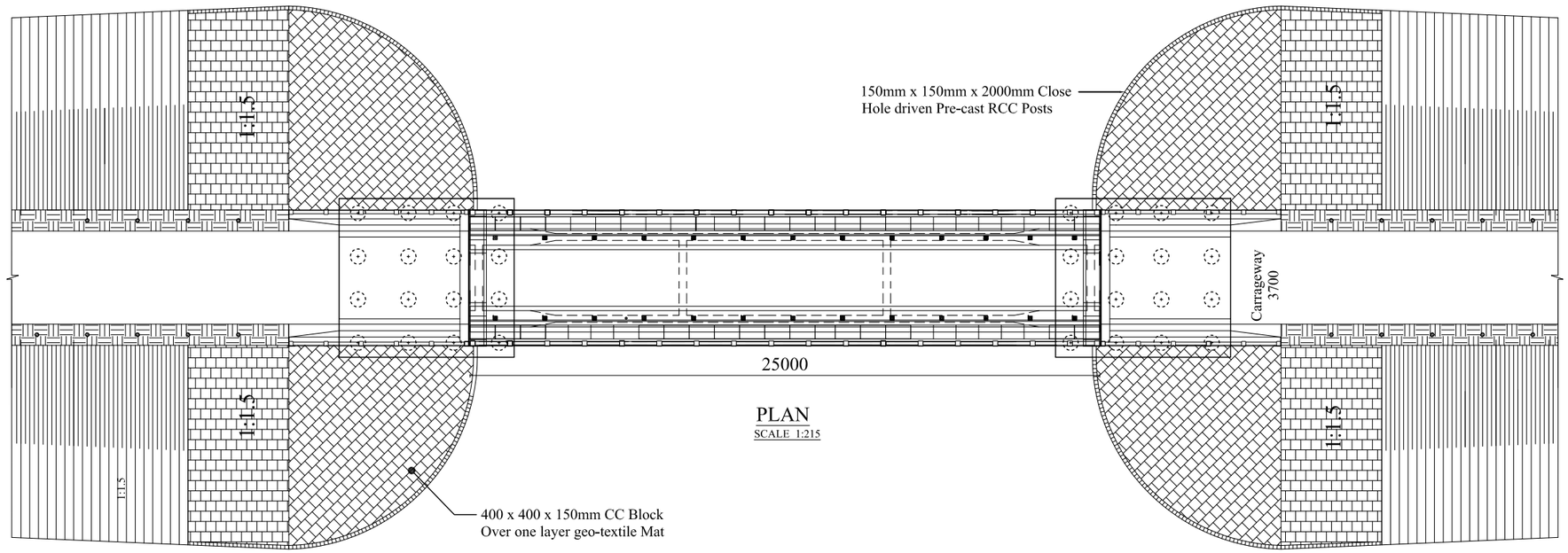
SCALE 1:215



PLAN
SCALE 1:215

LEGEND:
HFL = DESIGN HIGH FLOOD LEVEL.
LWL = LOW WATER LEVEL.

NOTES:
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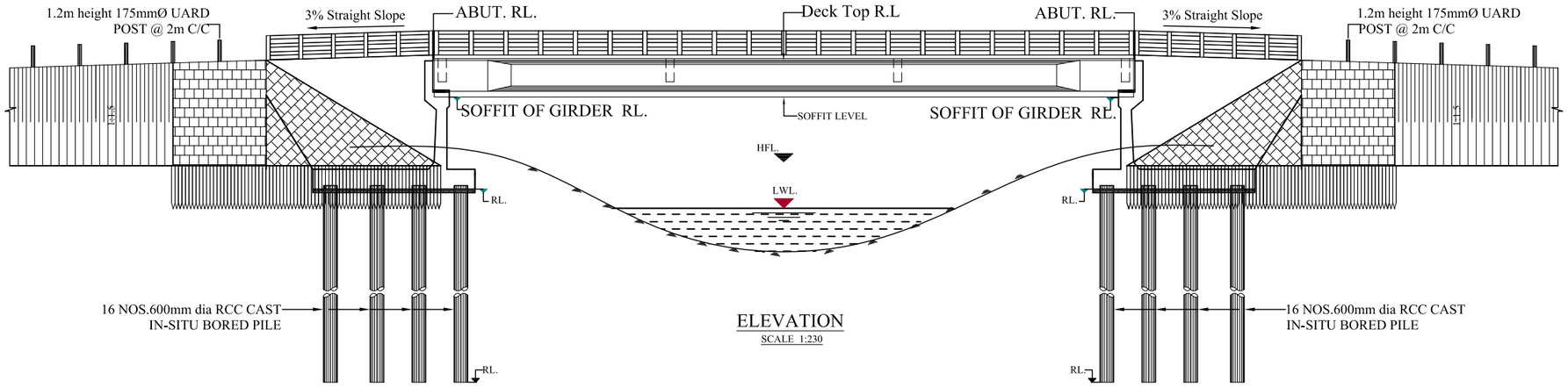
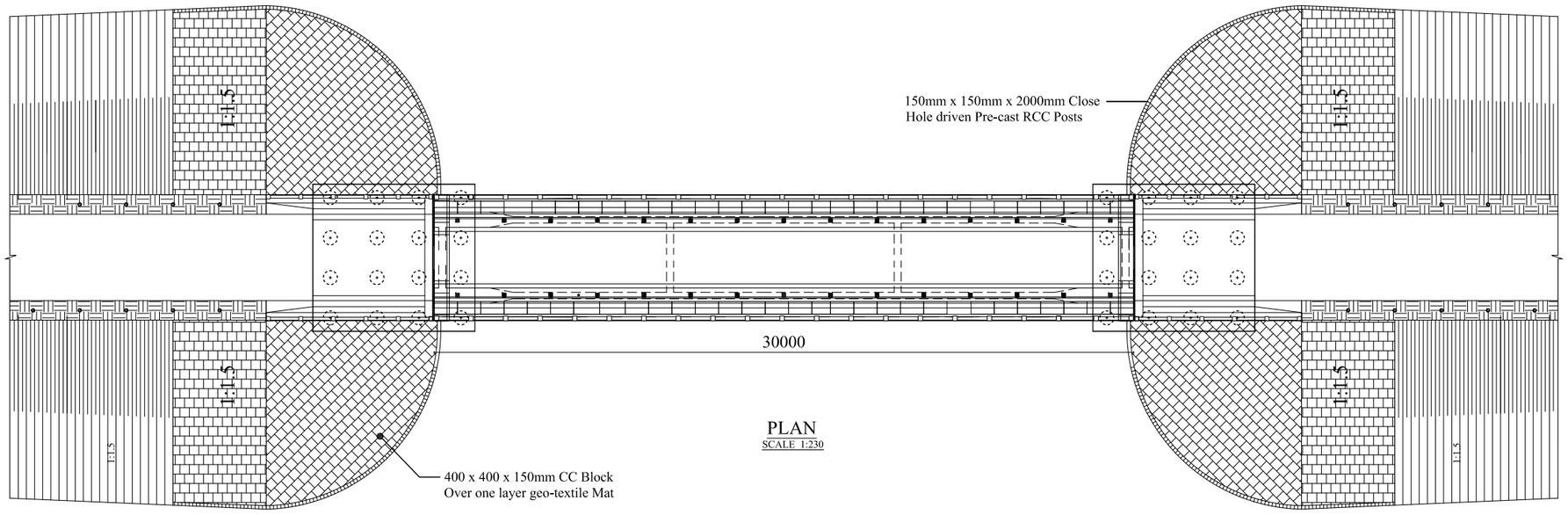
NAME OF PROJECT:
LOCATION:
UPAZILA:
DISTRICT:

DRAWING TITLE
General Arrangement
(Abutment 5.5m & Span 25m)
DRAWING NO. GA-03
PAGE NO. P-11



ELEVATION
SCALE 1:230



PLAN
SCALE 1:230

LEGEND:
HFL = DESIGN HIGH FLOOD LEVEL.
LWL = LOW WATER LEVEL.

NOTES:
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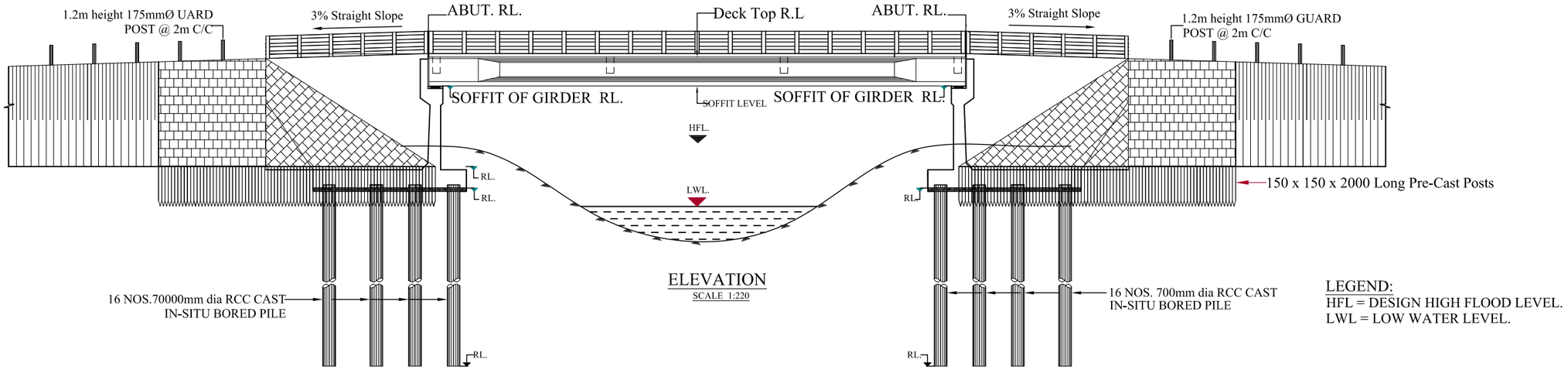
NAME OF PROJECT:
LOCATION:
UPAZILA:
DISTRICT:

DRAWING TITLE
General Arrangement
(Abutment 5.5m & Span 30m)
DRAWING NO. GA-04
PAGE NO. P-12



ELEVATION
SCALE 1:220

LEGEND:
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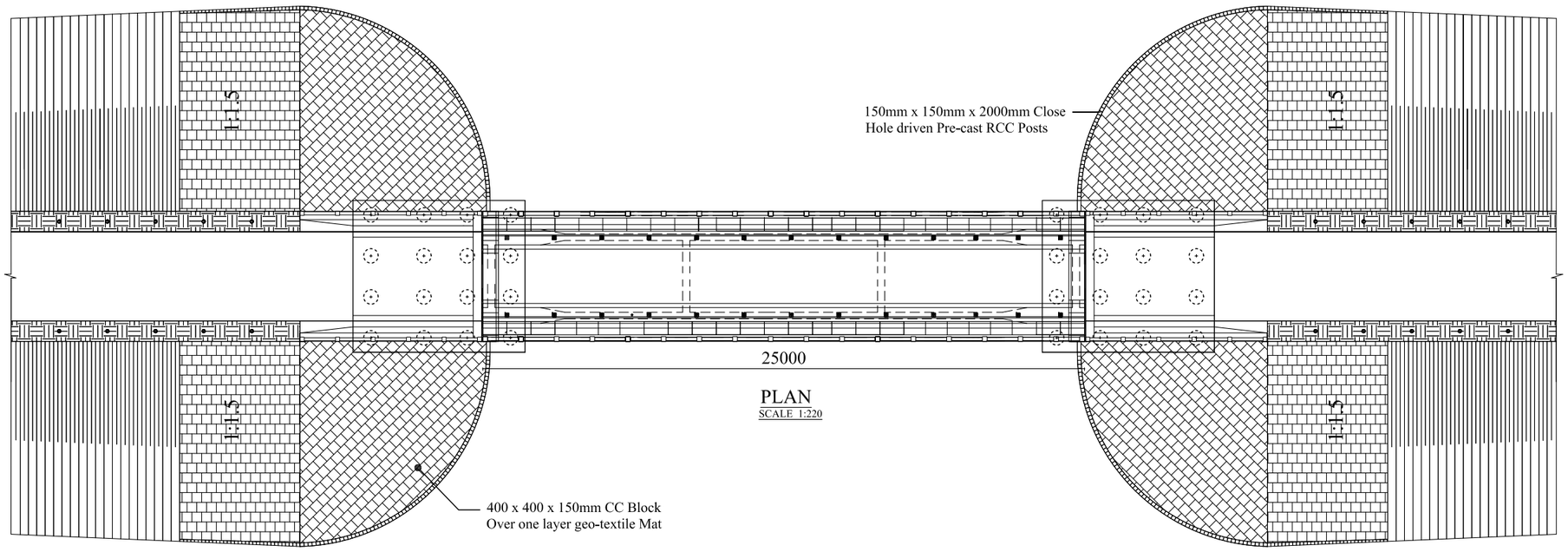
LWL = LOW WATER LEVEL.



PLAN
SCALE 1:220

NOTES:

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NAME OF PROJECT:

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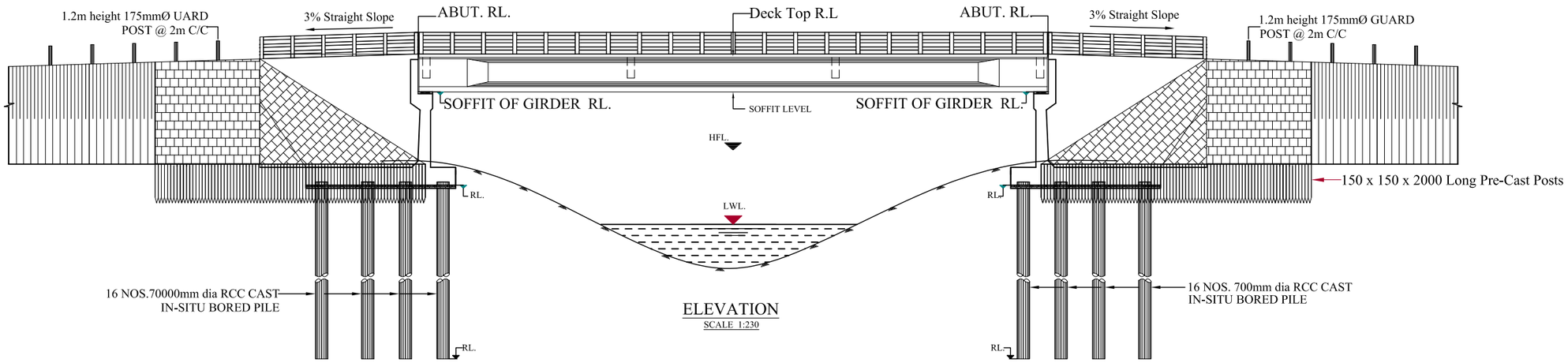
DRAWING TITLE

General Arrangement (Abutment 6.0m & Span 25m)

DRAWING NO. GA-05



ELEVATION
SCALE 1:230

LEGEND:
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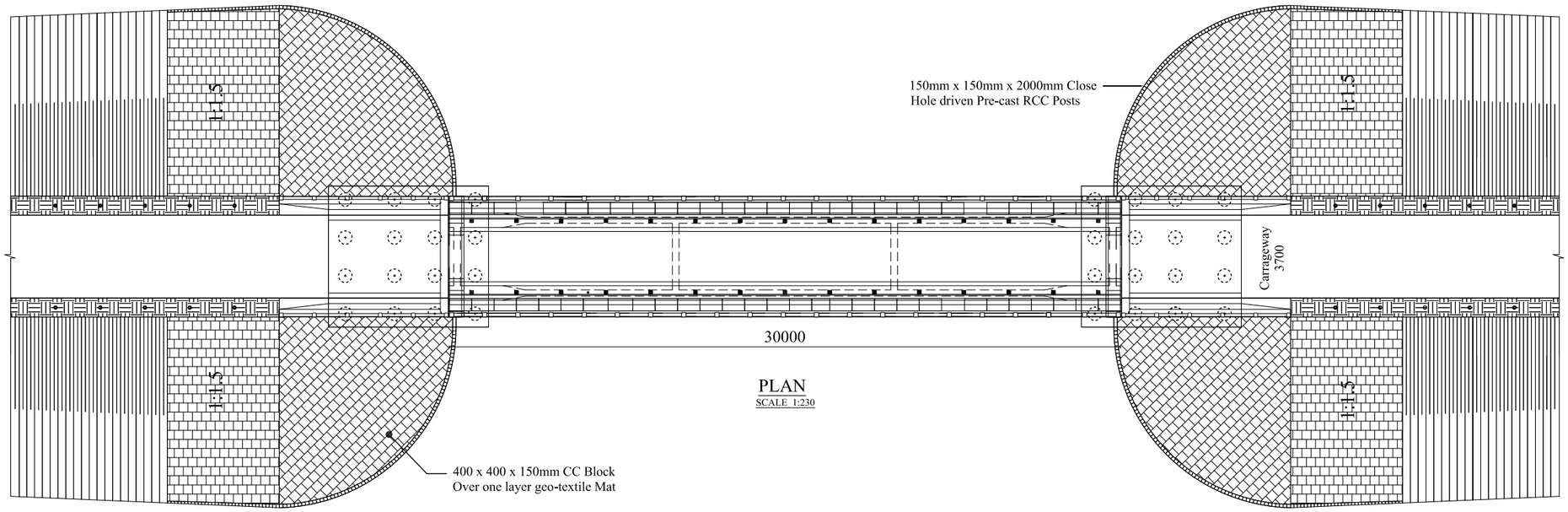
LWL = LOW WATER LEVEL.



PLAN
SCALE 1:230

NOTES:
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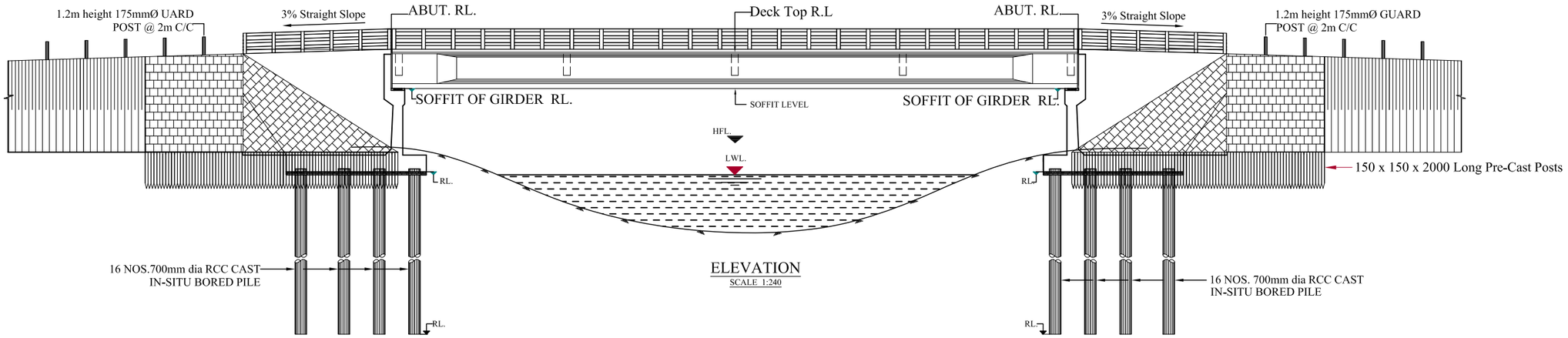
DRAWING TITLE
General Arrangement
(Abutment 6.0m & Span 30m)
DRAWING NO. GA-06
PAGE NO. P-14



ELEVATION
SCALE 1:240

LEGEND:
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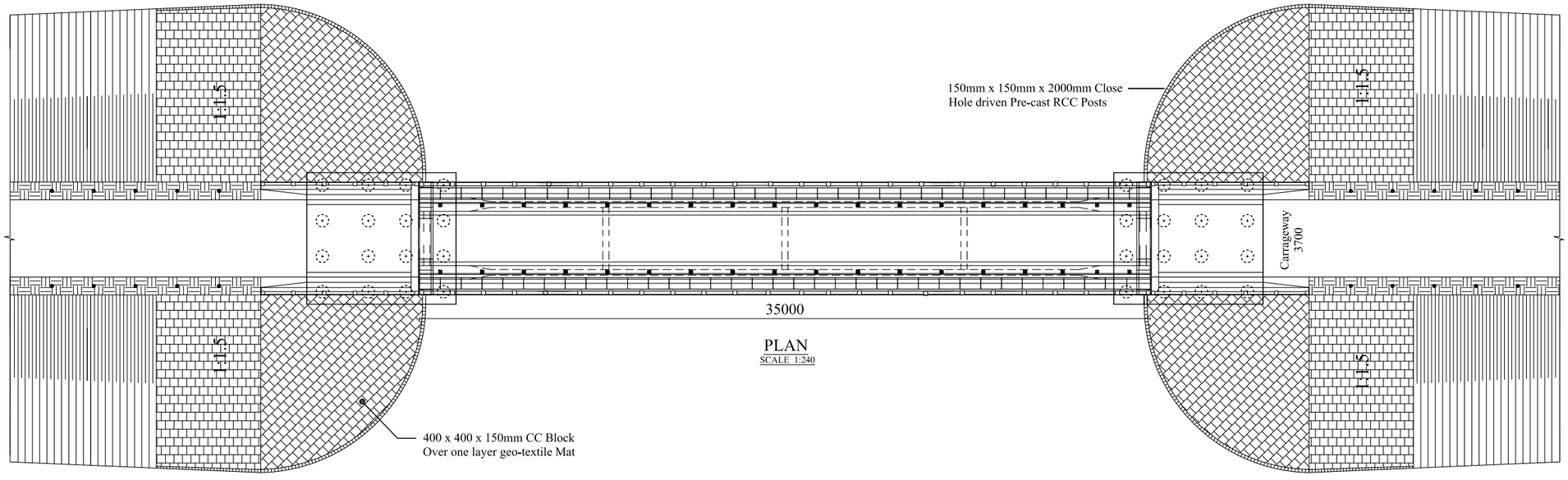
LWL = LOW WATER LEVEL.



PLAN
SCALE 1:240

NOTES:

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NAME OF PROJECT:

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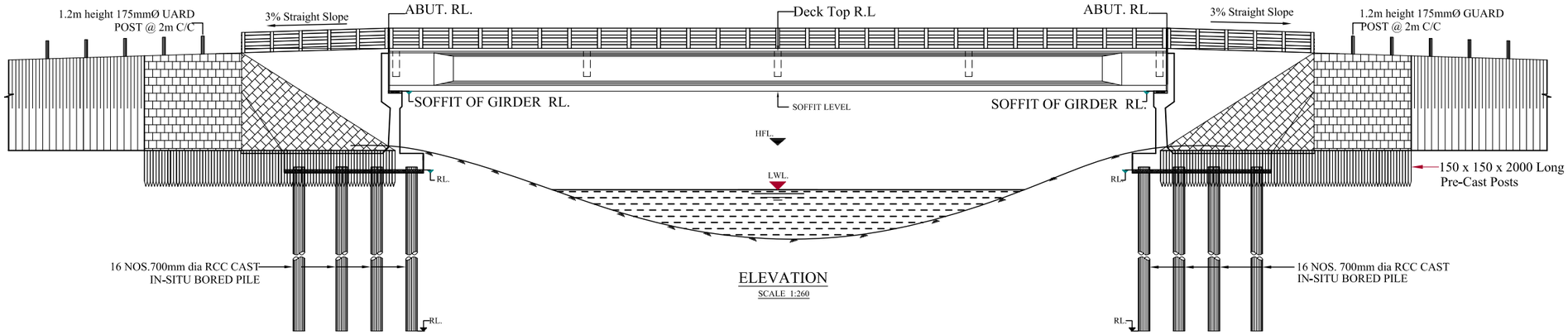
DRAWING TITLE

General Arrangement (Abutment 6.0m & Span 35m)

DRAWING NO. GA-07

PAGE NO. P-15

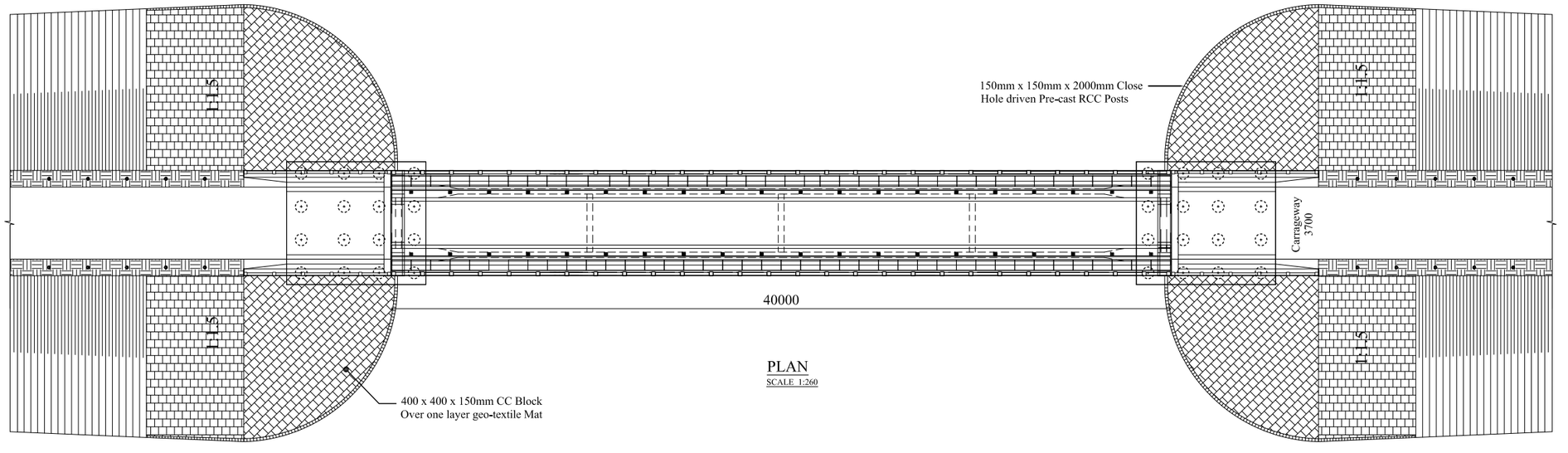


ELEVATION

SCALE 1:260

LEGEND:

HFL = DESIGN HIGH FLOOD LEVEL.
LWL = LOW WATER LEVEL.



PLAN

SCALE 1:260

NOTES:

1. All DIMENSIONS ARE IN mm UNLESS OTHERWISE SHOWN.
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NAME OF PROJECT:

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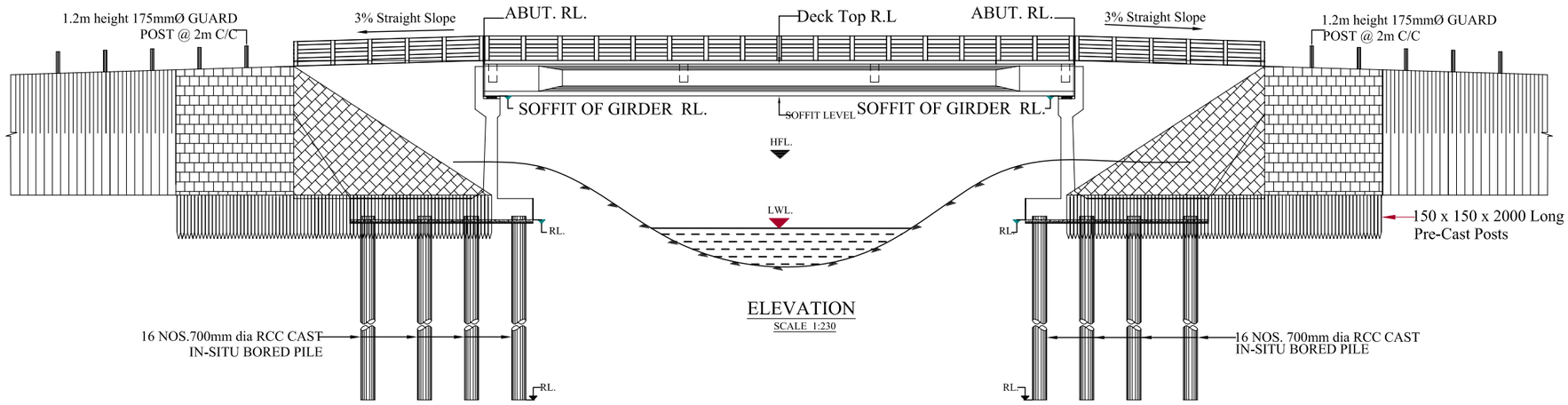
DRAWING TITLE

General Arrangement (Abutment 6.0m & Span 40m)

DRAWING NO. GA-08

PAGE NO. P-16



ELEVATION
SCALE 1:230

LEGEND:
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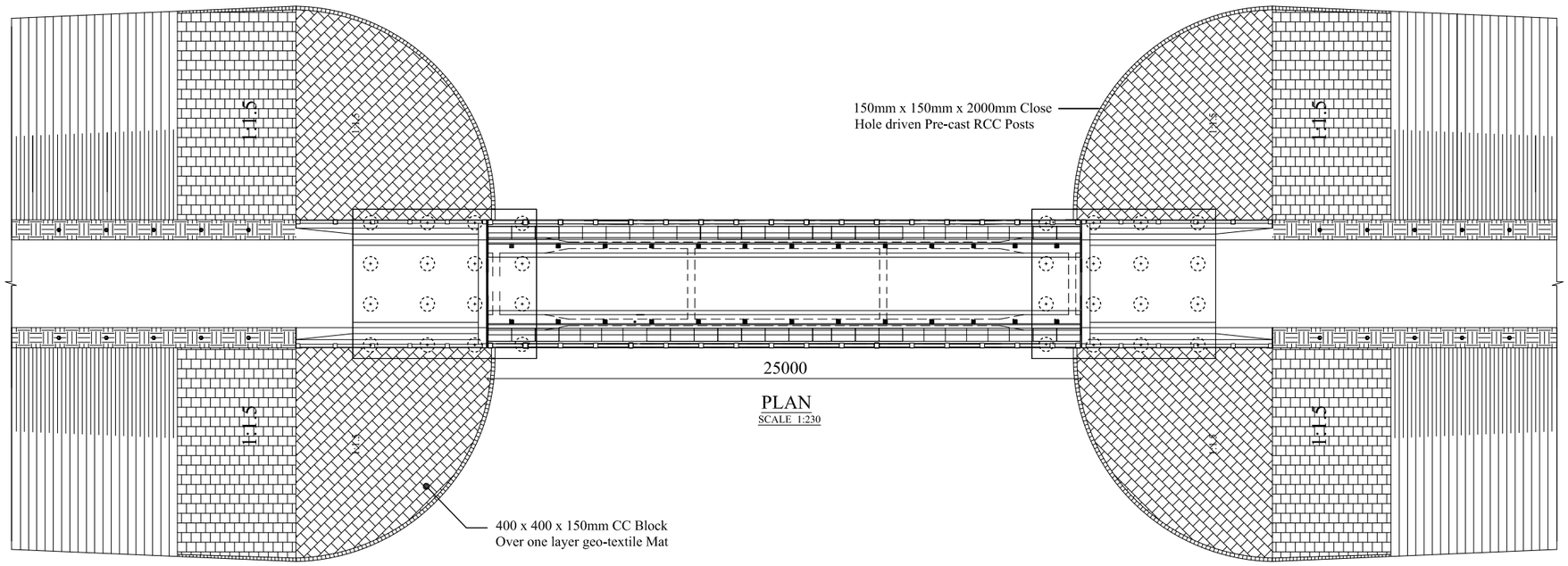
LWL = LOW WATER LEVEL.



PLAN
SCALE 1:230

NOTES:
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NAME OF PROJECT:

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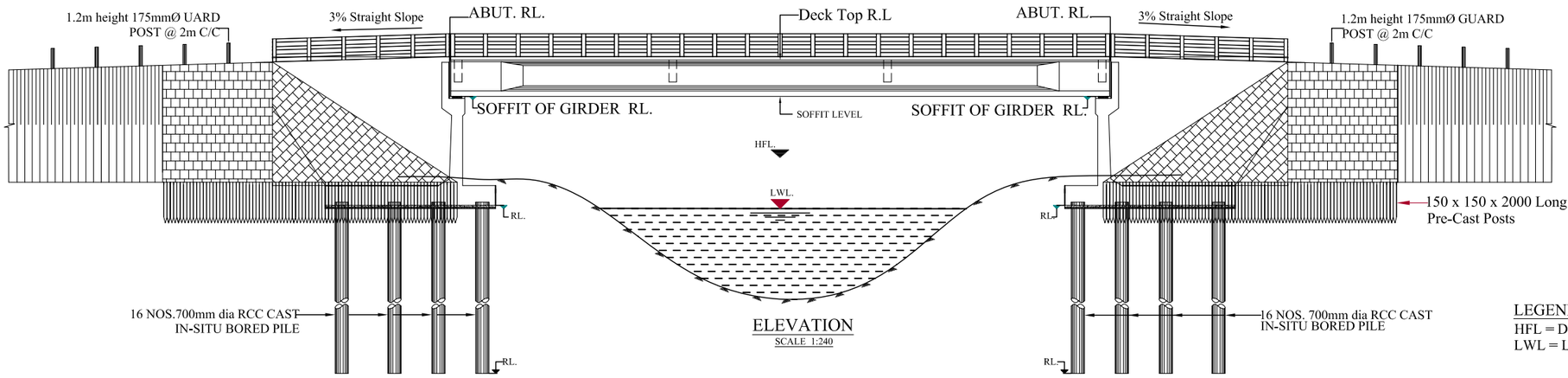
DRAWING TITLE

General Arrangement
(Abutment 6.5m & Span 25m)

DRAWING NO. GA-09

PAGE NO. P-17



ELEVATION
SCALE 1:240

LEGEND:
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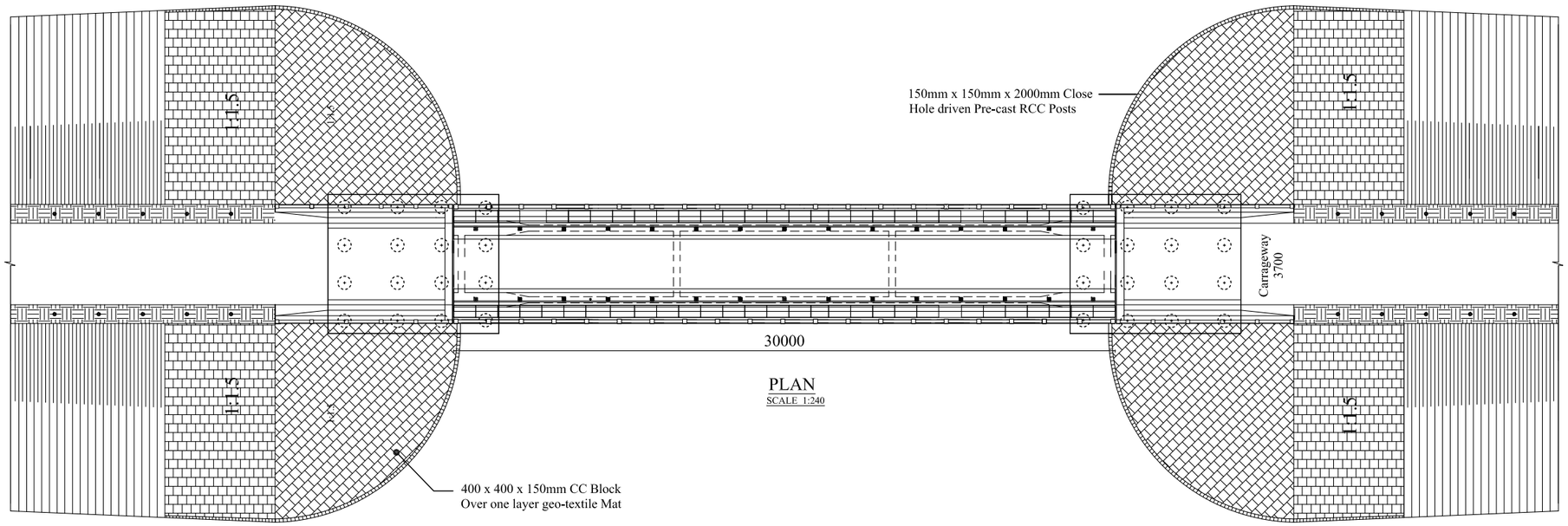
LWL = LOW WATER LEVEL.



PLAN
SCALE 1:240

NOTES:

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NAME OF PROJECT:

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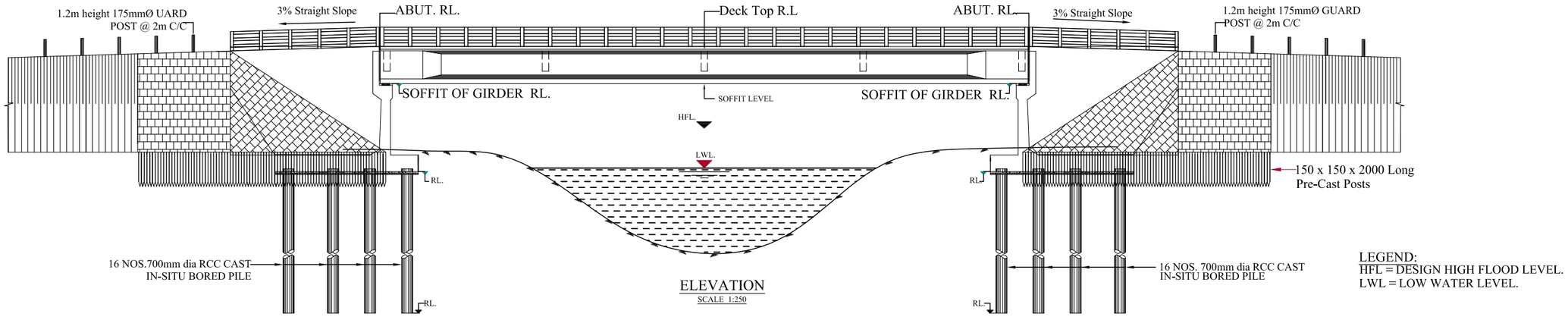
DRAWING TITLE

General Arrangement (Abutment 6.5m & Span 30m)

DRAWING NO. GA-10

PAGE NO. P-18



ELEVATION
SCALE 1:250

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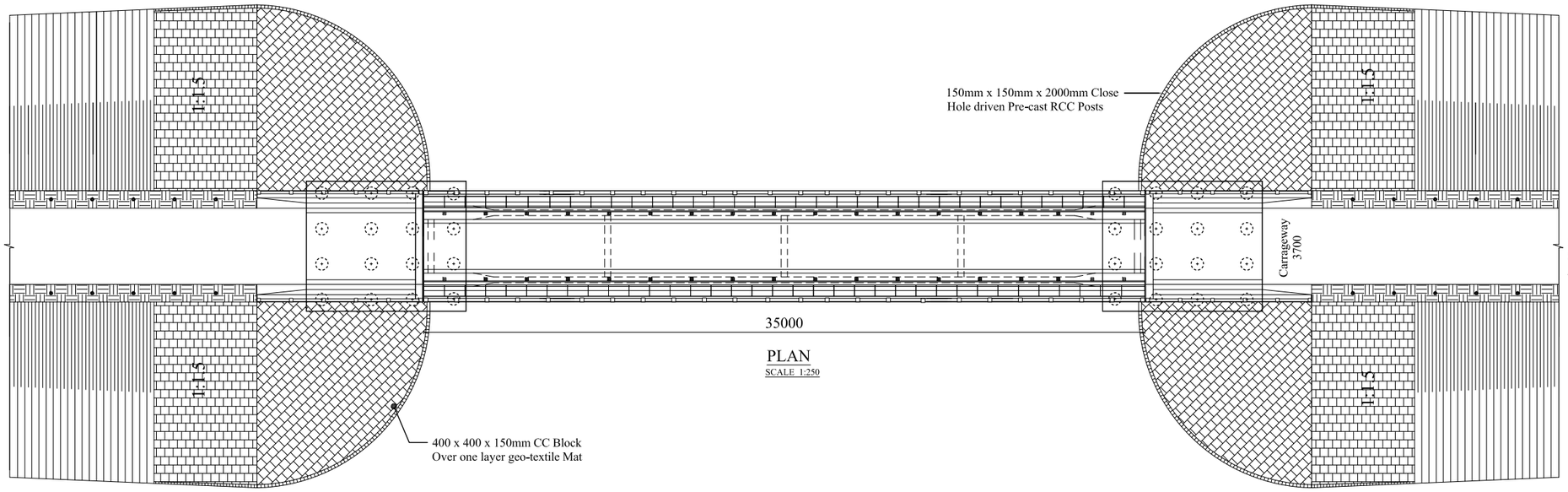
LWL = LOW WATER LEVEL.



PLAN
SCALE 1:250

NOTES:

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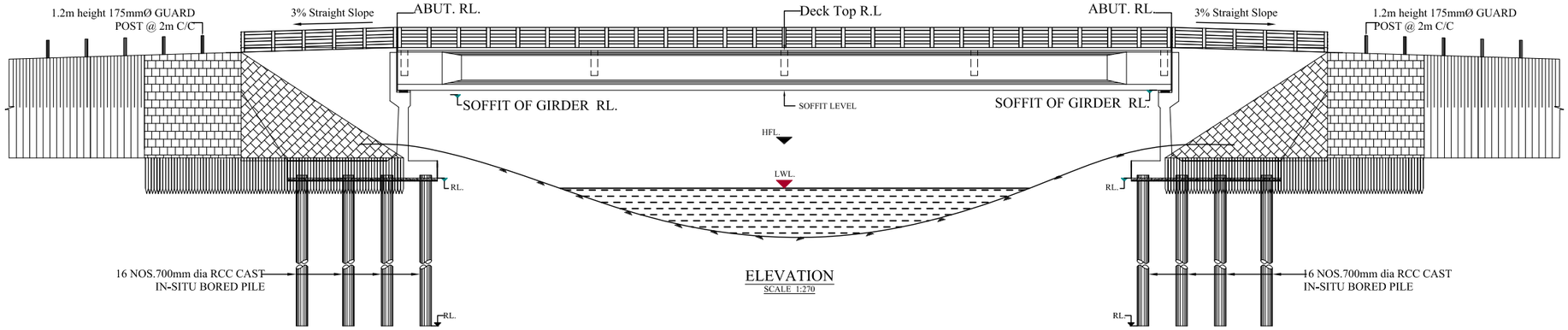
DRAWING TITLE

General Arrangement (Abutment 6.5m & Span 35m)

DRAWING NO. GA-11

PAGE NO. P-19



ELEVATION
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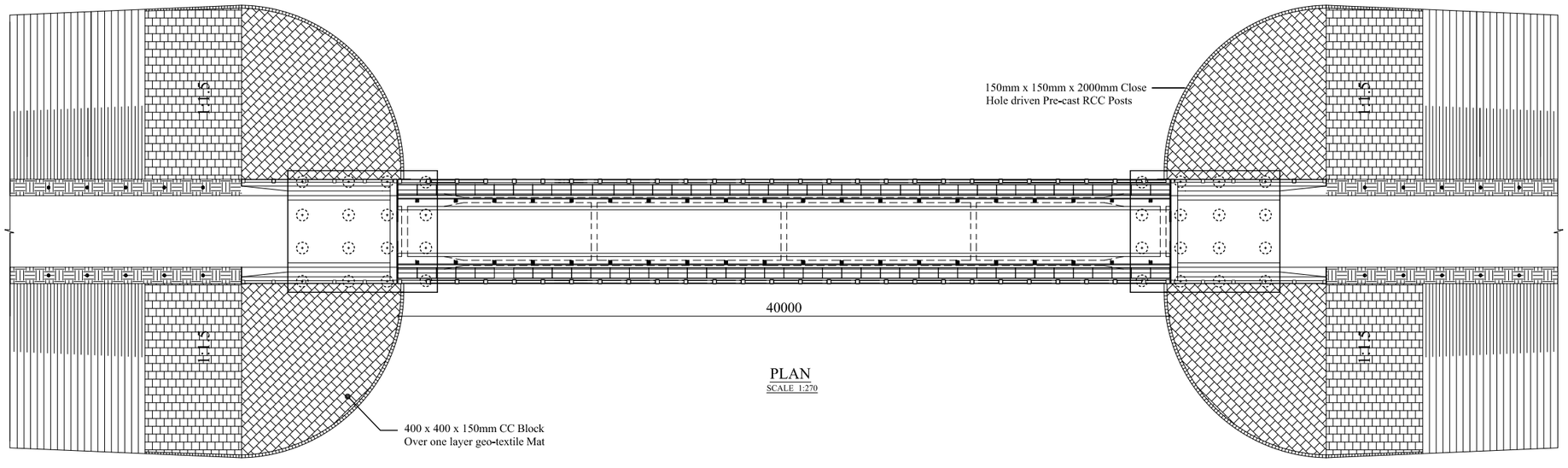
LWL = LOW WATER LEVEL.



PLAN
SCALE 1:270

NOTES:
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LOCATION:
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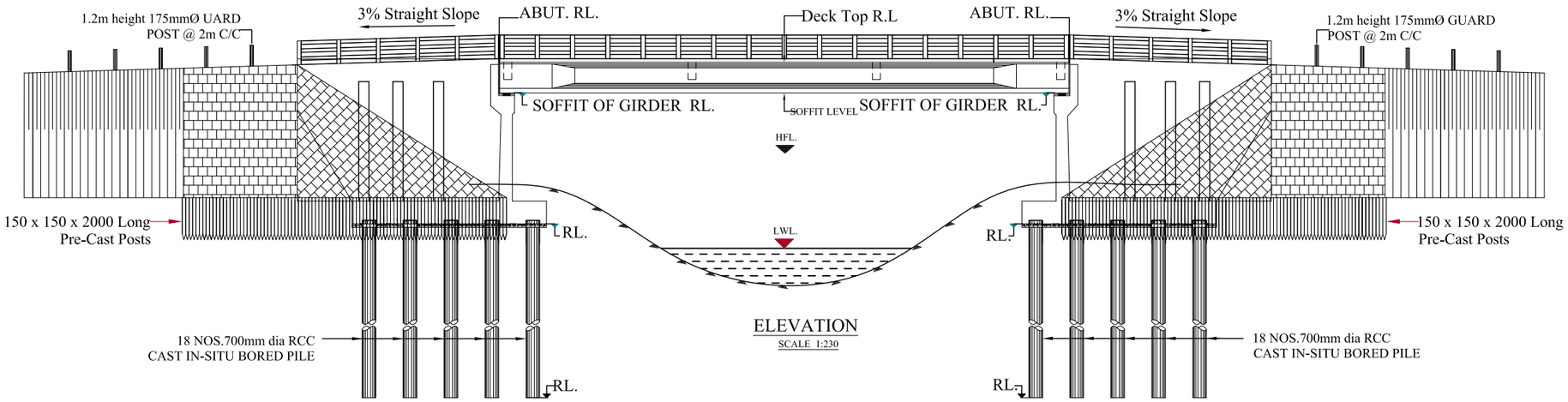
DRAWING TITLE

General Arrangement (Abutment 6.5m & Span 40m)

DRAWING NO. GA-12



ELEVATION

SCALE 1:230

LEGEND:

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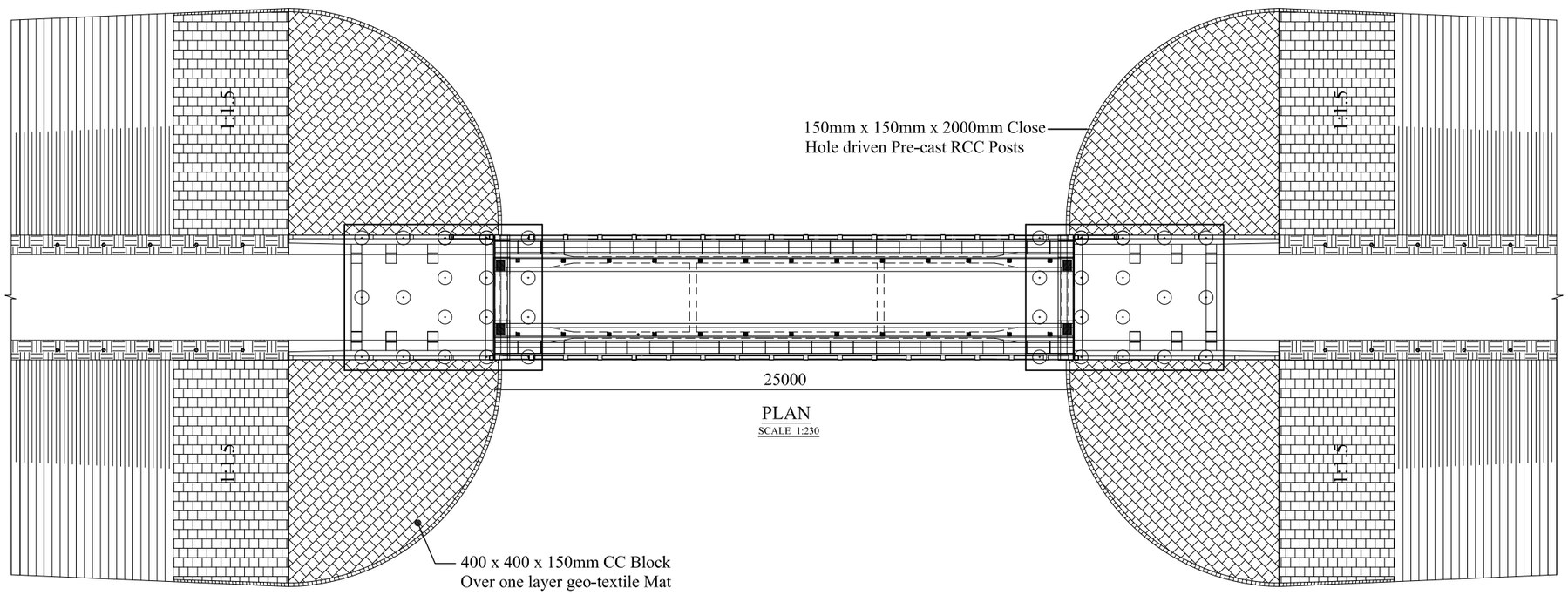
LWL = LOW WATER LEVEL.



PLAN

SCALE 1:230

NOTES:

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NAME OF PROJECT:

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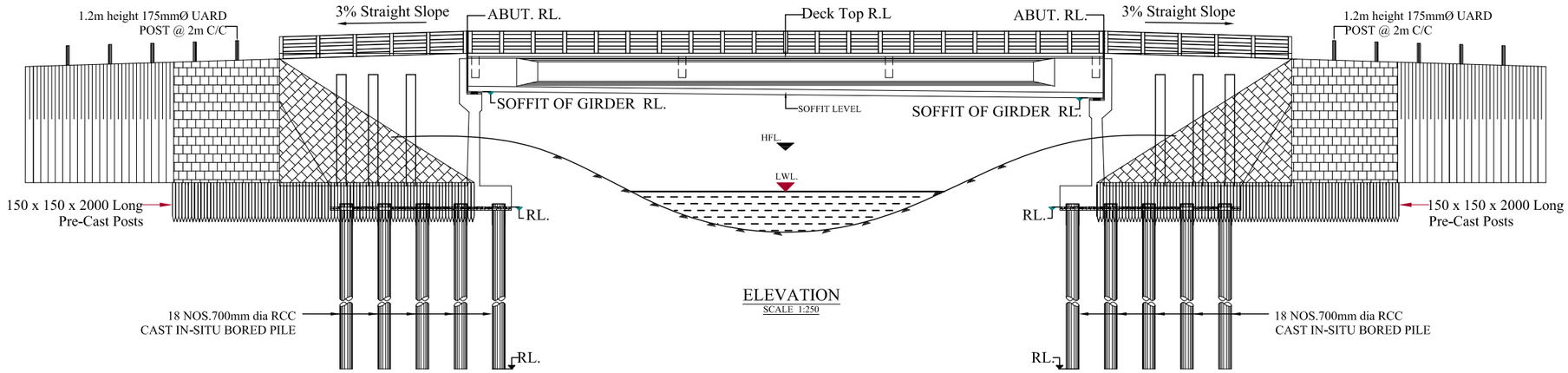
DISTRICT:

DRAWING TITLE

General Arrangement (Abutment 7.0m & Span 25m)

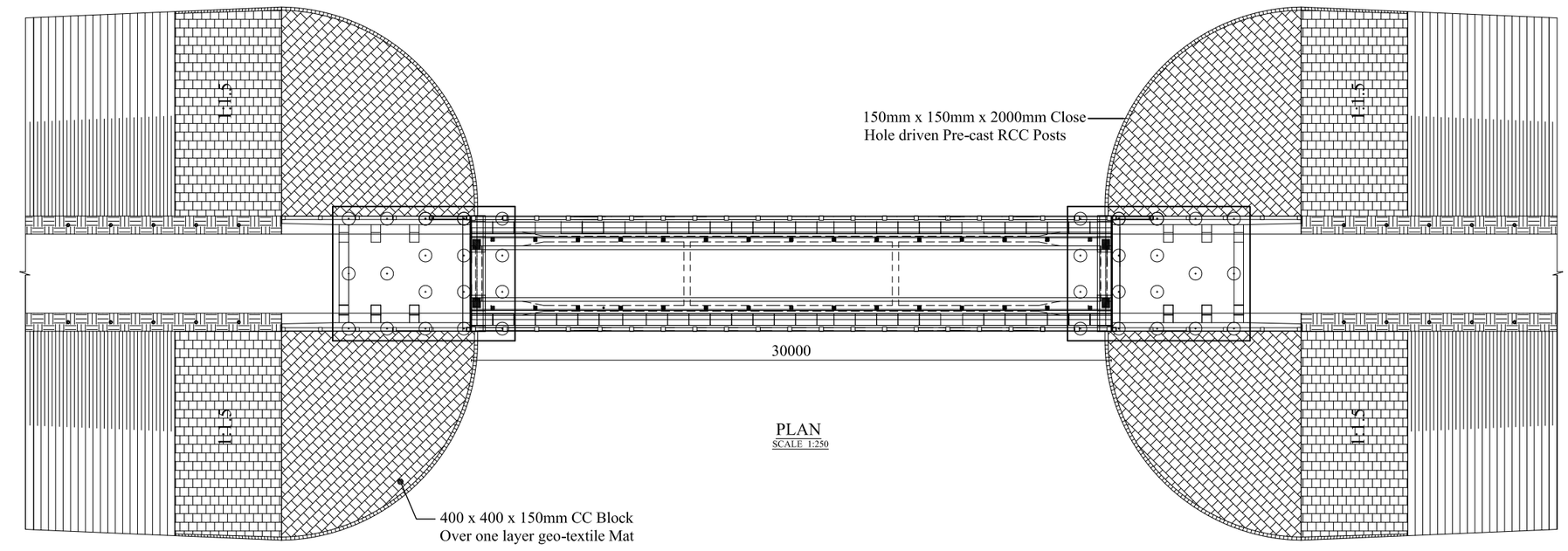
DRAWING NO. GA-13

PAGE NO. P-21



ELEVATION
SCALE 1:250

LEGEND:
HFL = DESIGN HIGH FLOOD LEVEL.
LWL = LOW WATER LEVEL.



PLAN
SCALE 1:250

NOTES:
1. All DIMENSIONS ARE IN mm UNLESS OTHERWISE SHOWN.
2. TO FIX SOFFIT LEVEL SEE GUIDE LINE IN THE FLOWCHART.
3. PILE FOUNDATION AND SUBSTRUCTURE DETAILS SHOWIN ARE TYPICAL ONLY.
4. OUT TO OUT WIDTH OF BRIDGE DECK: 5400mm
5. PILE LENGTH SHOULD BE DECIDED BASED ON SUB-SOIL REPORT.

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

DESIGNED ,DRAWN & CHECKED BY

PURAKAUSHAL PROJUKTI LIMITED

House # 10 ,Road # 4 ,Banasree. Rampura.Dhaka-1219
Mobile :01711577016 E-mail:pprojltd@yahoo.com

NAME OF PROJECT:

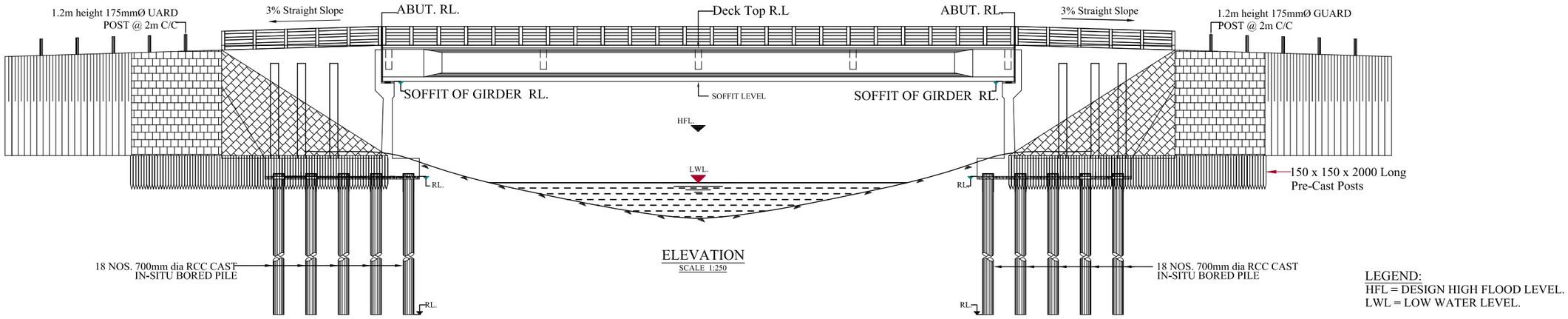
LOCATION:
UPAZILA:
DISTRICT:

DRAWING TITLE

General Arrangement
(Abutment 7.0m & Span 30m)

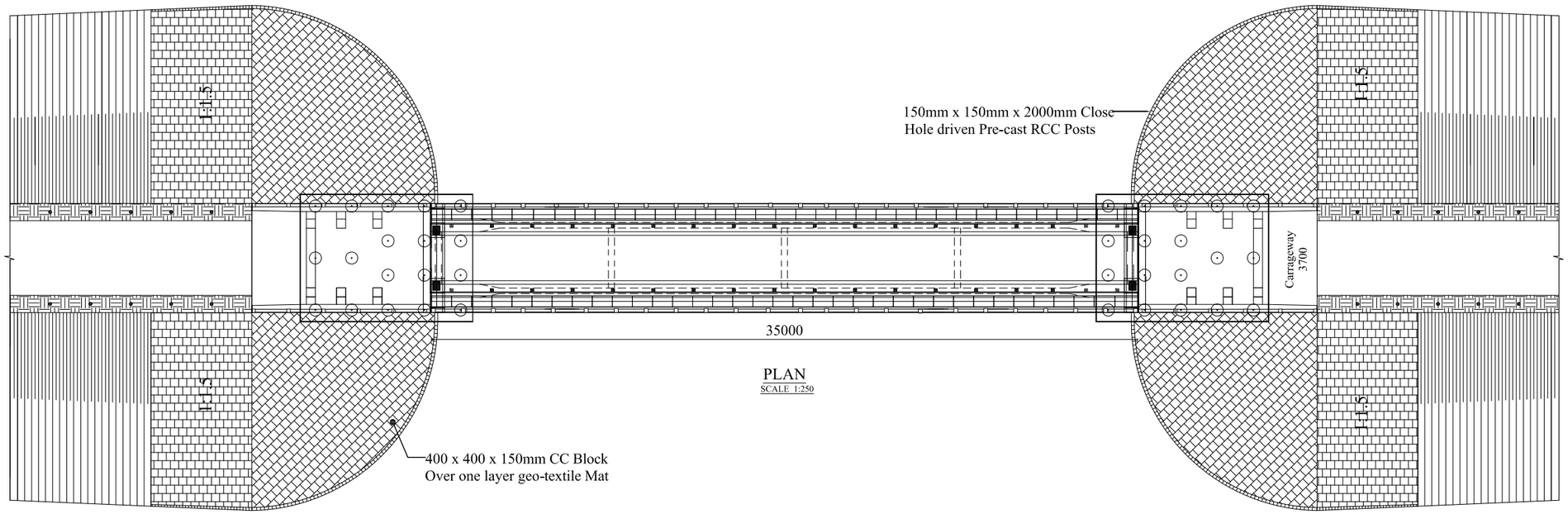
DRAWING NO. GA-14

PAGE NO. P-22



ELEVATION
SCALE 1:250

LEGEND:
HFL = DESIGN HIGH FLOOD LEVEL.
LWL = LOW WATER LEVEL.



PLAN
SCALE 1:250

NOTES:

1. All DIMENSIONS ARE IN mm UNLESS OTHERWISE SHOWN.
2. TO FIX SOFFIT LEVEL SEE GUIDE LINE IN THE FLOWCHART.
3. PILE FOUNDATION AND SUBSTRUCTURE DETAILS SHOWIN ARE TYPICAL ONLY.
4. OUT TO OUT WIDTH OF BRIDGE DECK: 5400mm
5. PILE LENGTH SHOULD BE DECIDED BASED ON SUB-SOIL REPORT.

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

DESIGNED ,DRAWN & CHECKED BY

PURAKAUSHAL PROJUKTI LIMITED
House # 10 .Road # 4 .Banasree. Rampura.Dhaka-1219
Mobile :01711577016 E-mail:pprojltd@yahoo.com

NAME OF PROJECT:

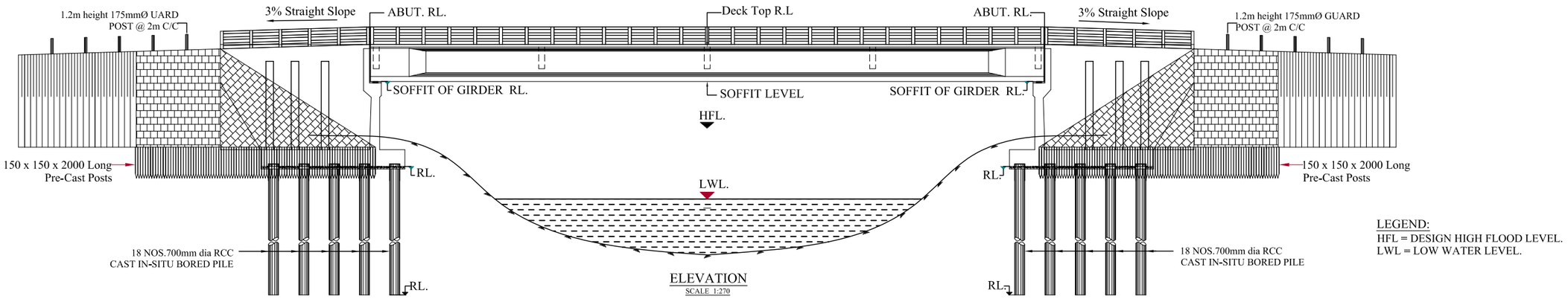
LOCATION:
UPAZILA:
DISTRICT:

DRAWING TITLE

General Arrangement (Abutment 7.0m & Span 35m)

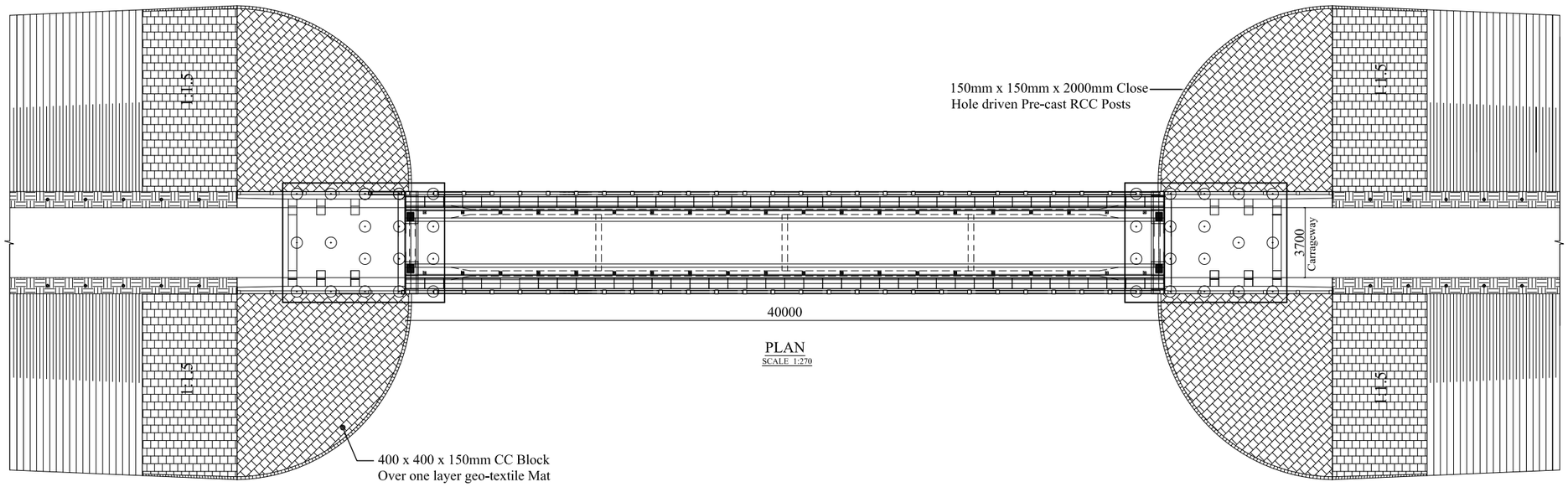
DRAWING NO. GA-15

PAGE NO. P-23



ELEVATION
SCALE 1:270

LEGEND:
HFL = DESIGN HIGH FLOOD LEVEL.
LWL = LOW WATER LEVEL.



PLAN
SCALE 1:270

NOTES:
1. All DIMENSIONS ARE IN mm UNLESS OTHERWISE SHOWN.
2. TO FIX SOFFIT LEVEL SEE GUIDE LINE IN THE FLOWCHART.
3. PILE FOUNDATION AND SUBSTRUCTURE DETAILS SHOWIN ARE TYPICAL ONLY.
4. OUT TO OUT WIDTH OF BRIDGE DECK: 5400mm
5. PILE LENGTH SHOULD BE DECIDED BASED ON SUB-SOIL REPORT.

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

DESIGNED ,DRAWN & CHECKED BY

PURAKAUSHAL PROJUKTI LIMITED
House # 10 .Road # 4 .Banasree. Rampura.Dhaka-1219
Mobile :01711577016 E-mail:pprojltd@yahoo.com

NAME OF PROJECT:

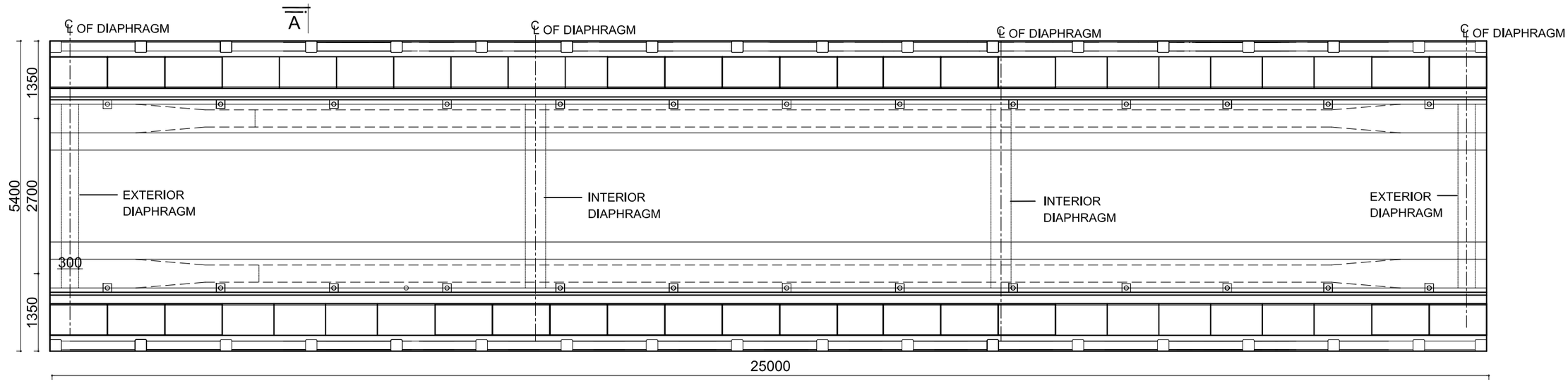
LOCATION:
UPAZILA:
DISTRICT:

DRAWING TITLE

General Arrangement (Abutment 7.0m & Span 40m)

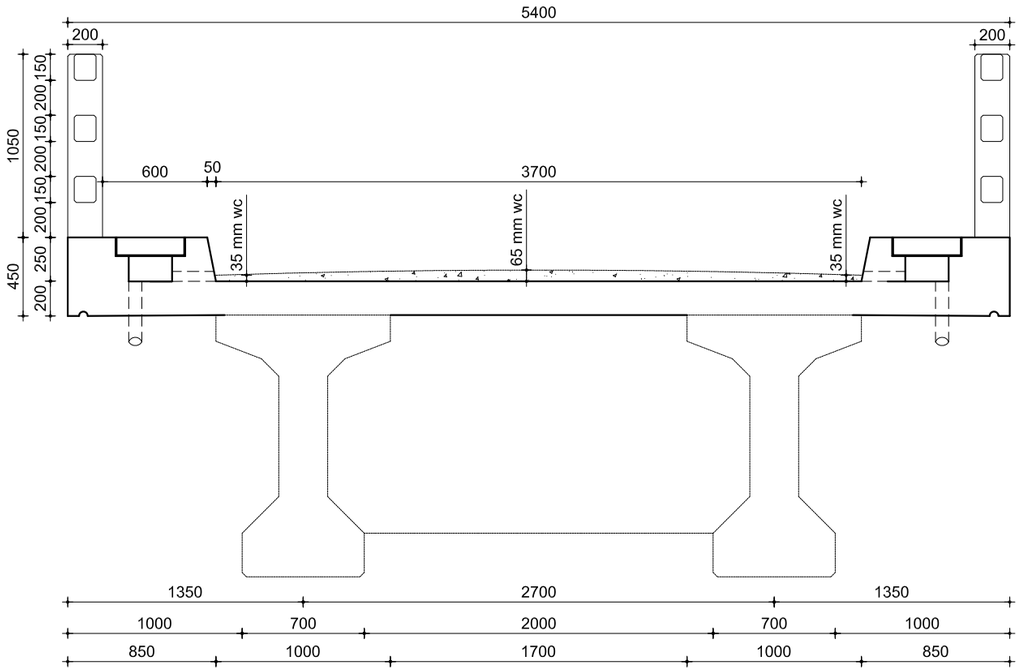
DRAWING NO. GA-16

PAGE NO. P-24



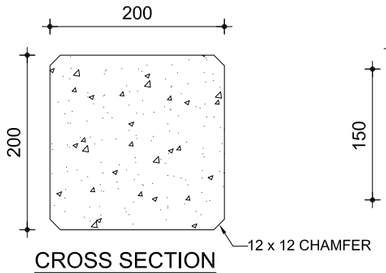
PLAN OF DECK

Scale 1:75



CROSS SECTION OF DECK SLAB

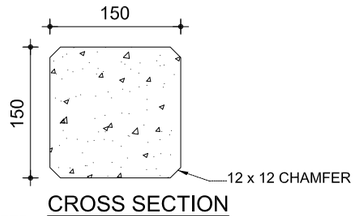
Scale 1:35



CROSS SECTION

RAIL POST

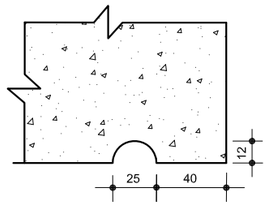
Scale 1:7



CROSS SECTION

RAIL BAR

Scale 1:7



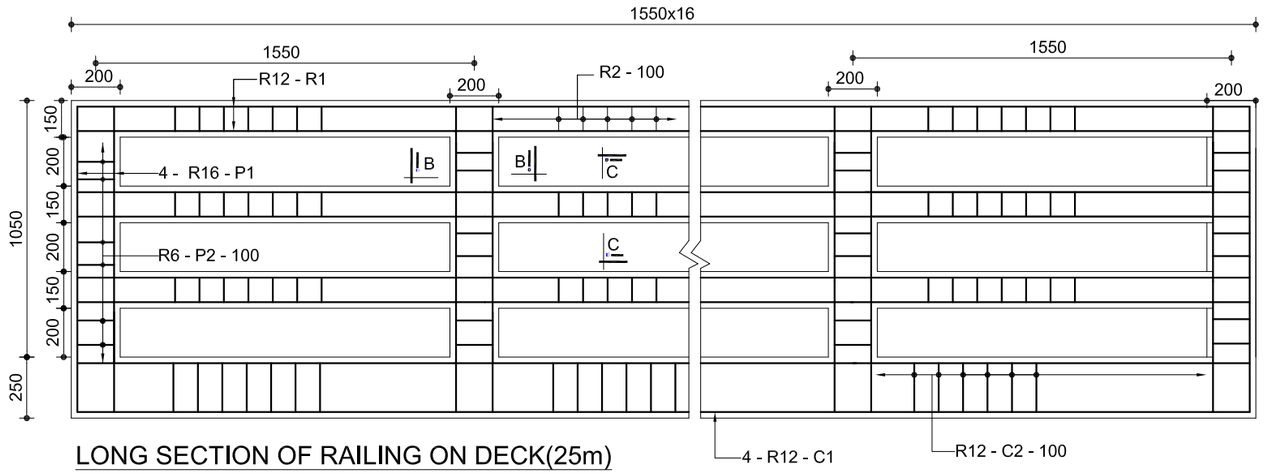
DETAIL "A"

Scale 1:7

NOTES:

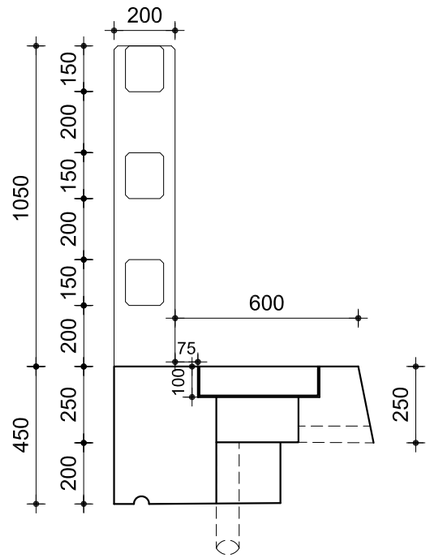
1. All dimensions are in milimeters unless othrwise mentioned.
2. 28 days standerd Cylinder strength of concrete: f 'c = 25.00N/mm² (3600 psi)
3. For wearning course ultimates Cylinder crushing strength of Concrete: f 'c = 25N/mm² (3600 psi)
4. Yield strength of M.S deformed bar fy = 413N/mm² (60000psi)
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.

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	DESIGNED ,DRAWN & CHECKED BY PURAKAUSHAL PROJUKTI LIMITED House # C10, Road # 4 ,Banasree, Rampura- 1219. E-maill: pproiltd@yahoo.com	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	DRAWING TITLE Details of Deck Slab With Deck Plan DRAWING NO. DS-01 PAGE NO. P-25

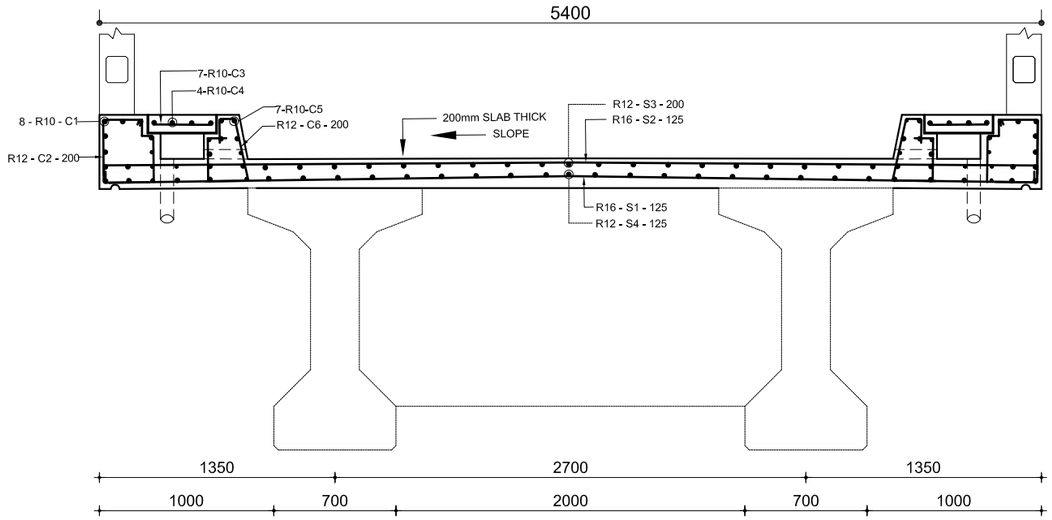


LONG SECTION OF RAILING ON DECK(25m)

Scale 1:25

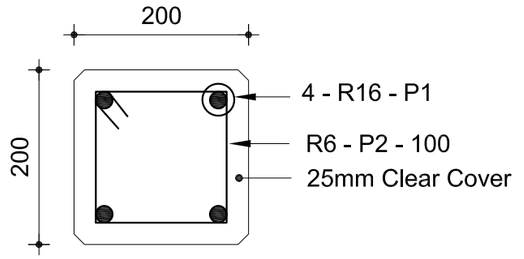


Scale 1:20



REINF. DETAILS OF DECK SLAB

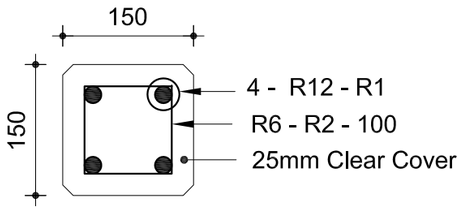
Scale 1:35



SECTION. B - B

RAIL POST

Scale 1:7



SECTION. C - C

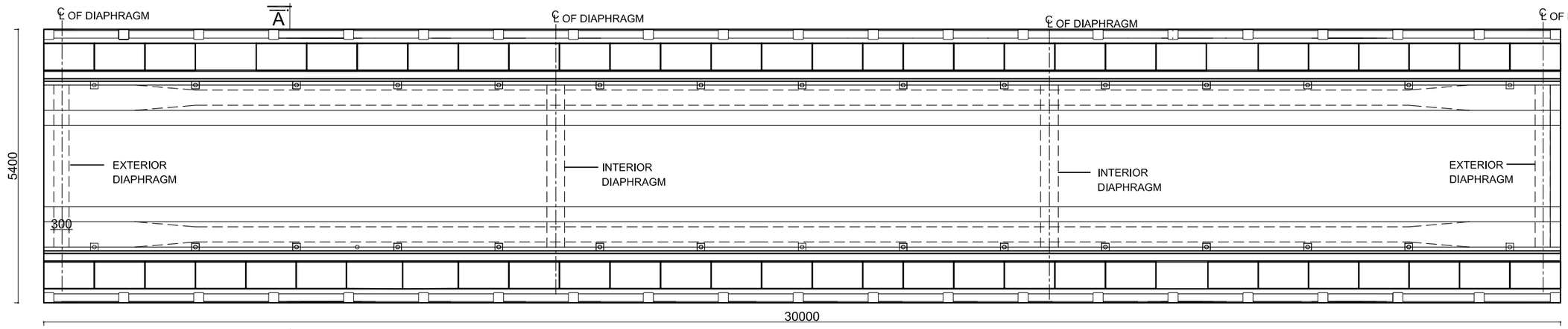
RAIL BAR

Scale 1:7

NOTES:

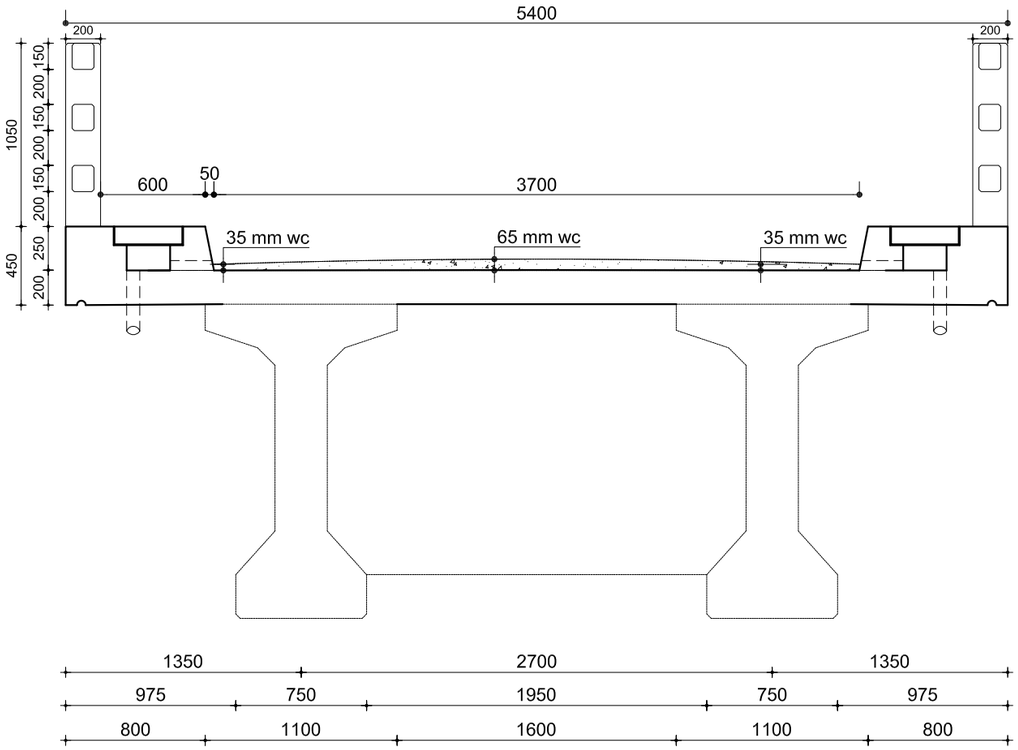
1. All dimensions are in milimeters unless otherwise mentioned.
2. 28 days standard cylinder strength of concrete: f 'c= 25.00 N/mm² (3600 psi)
3. Yield strength of M.S deformed bar fy = 413 N/mm² (60000psi)
4. Clear cover to main reinforcement is to be 25mm unless otherwise mentioned.
5. Rain water down pipe shall be projected minimum 50mm from the bottom of slab.

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	DESIGNED ,DRAWN & CHECKED BY PURAKAUSHAL PROJUKTI LIMITED House # C10, Road # 4 ,Banasree, Rampura- 1219. E-maill: pproiltd@yahoo.com	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	DRAWING TITLE Reinf. Details of Deck Slab With Railing. DRAWING NO. DS-02 PAGE NO. P-26



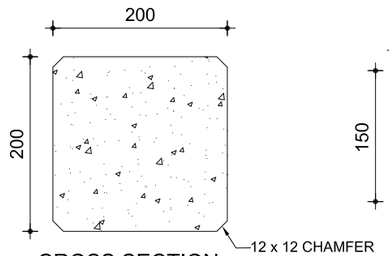
PLAN OF DECK A

Scale 1:90

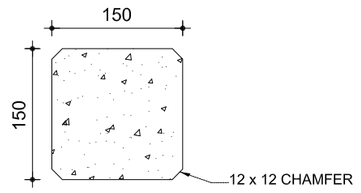


CROSS SECTION OF DECK SLAB

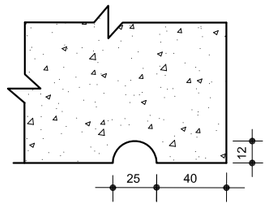
Scale 1:35



CROSS SECTION
RAIL POST
Scale 1:7



CROSS SECTION
RAIL BAR
Scale 1:7

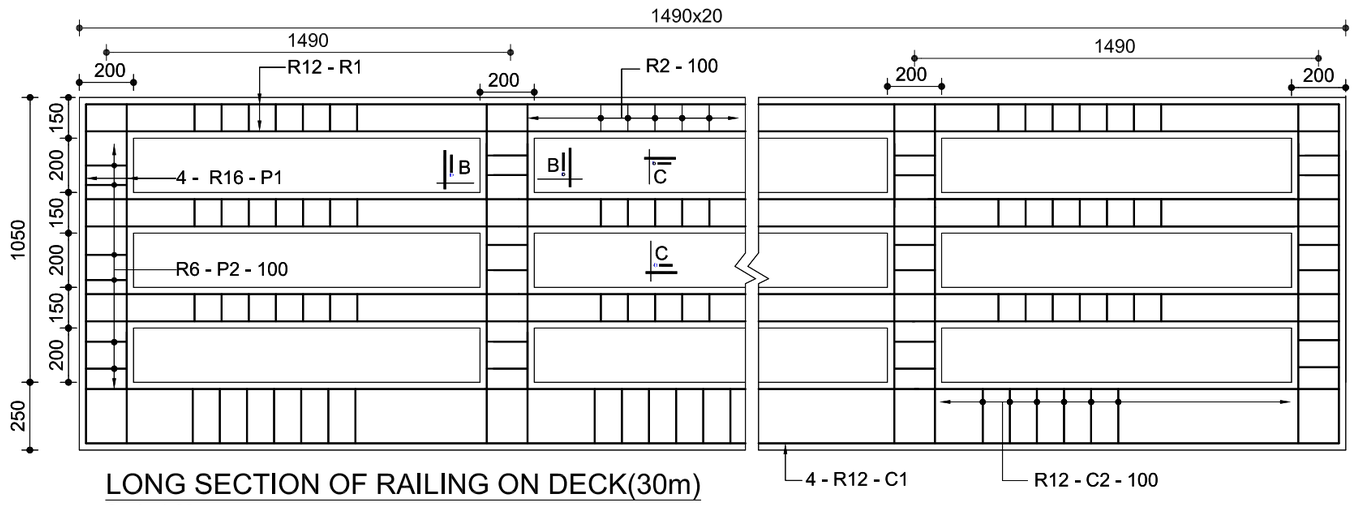


DETAIL "A"
Scale 1:7

NOTES:

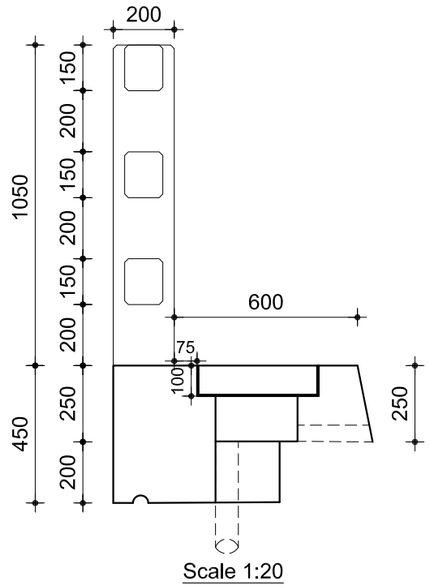
1. All dimensions are in milimeters unless othrwise mentioned.
2. 28 days standerd Cylinder strength of concrete: f 'c = 25.00N/mm² (3600 psi)
3. For wearning course ultimates Cylinder crushing strength of Concrete: f 'c = 25N/mm² (3600 psi)
4. Yield strength of M.S deformed bar fy = 413N/mm² (60000psi)
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.

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	DESIGNED ,DRAWN & CHECKED BY PURAKAUSHAL PROJUKTI LIMITED House # C10, Road # 4 ,Banasree, Rampura- 1219. E-maill: pproiltd@yahoo.com	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	DRAWING TITLE Details of Deck Slab With Deck Plan DRAWING NO. DS-03 PAGE NO. P-27

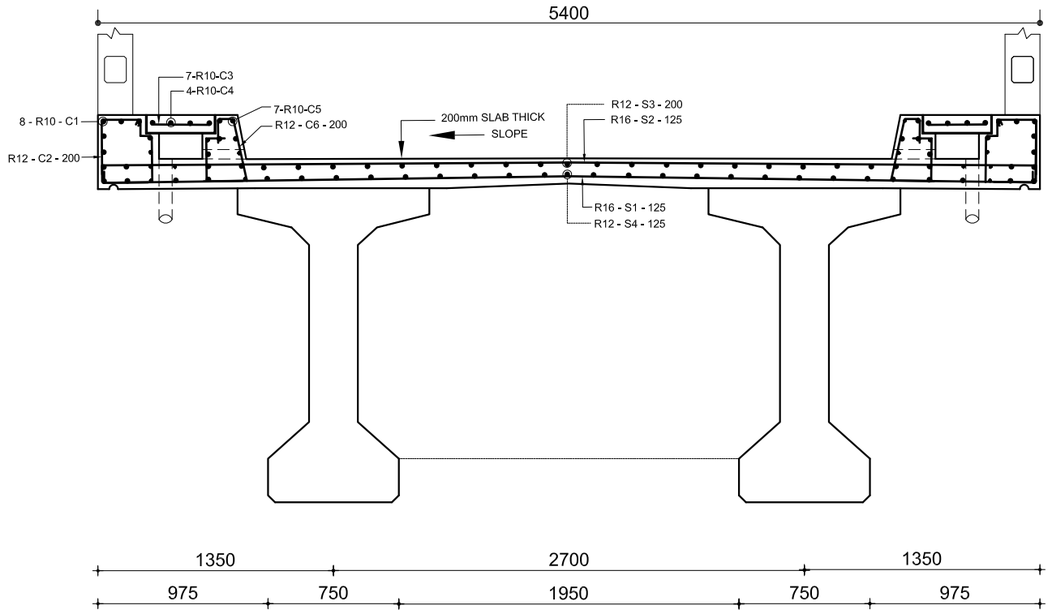


LONG SECTION OF RAILING ON DECK(30m)

Scale 1:30

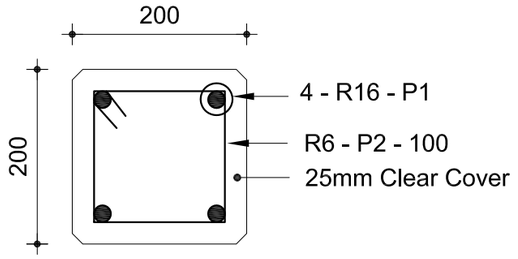


Scale 1:20



REINF. DETAILS OF DECK SLAB

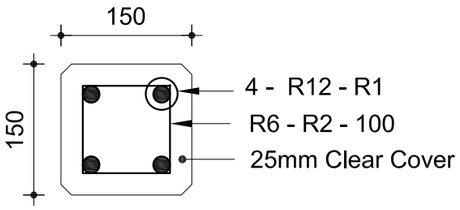
Scale 1:35



SECTION. B - B

RAIL POST

Scale 1:7



SECTION. C - C

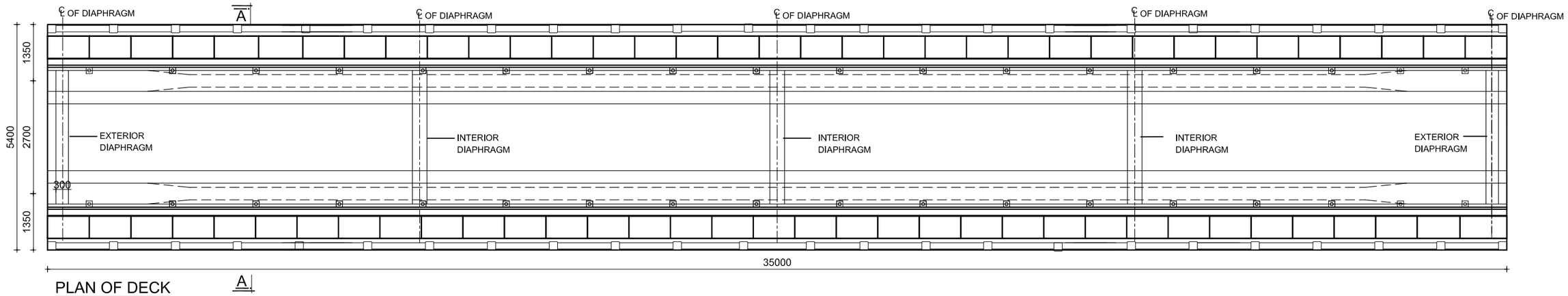
RAIL BAR

Scale 1:7

NOTES:

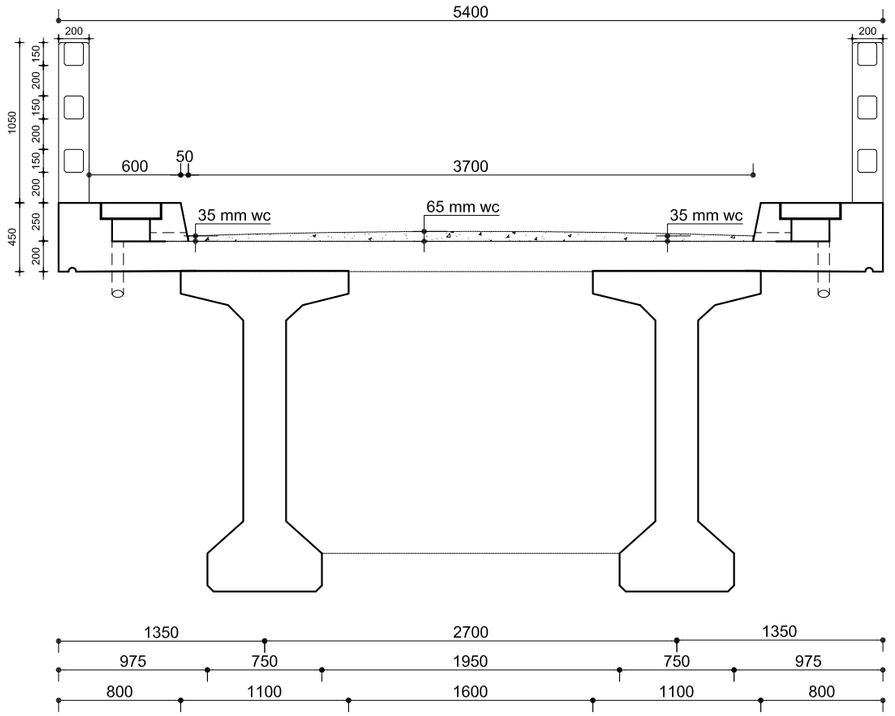
1. All dimensions are in milimeters unless otherwise mentioned.
2. 28 days standard cylinder strength of concrete:
   f 'c= 25.00 N/mm² (3600 psi)
3. Yield strength of M.S deformed bar fy = 413 N/mm² (60000psi)
4. Clear cover to main reinforcement is to be 25mm unless otherwise mentioned.
5. Rain water down pipe shall be projected minimum 50mm from the bottom of slab.

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	DESIGNED ,DRAWN & CHECKED BY PURAKAUSHAL PROJUKTI LIMITED House # C10, Road # 4 ,Banasree, Rampura- 1219. E-maill: pproiltd@yahoo.com	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	DRAWING TITLE Details of Deck Slab DRAWING NO. DS-04 PAGE NO. P-28



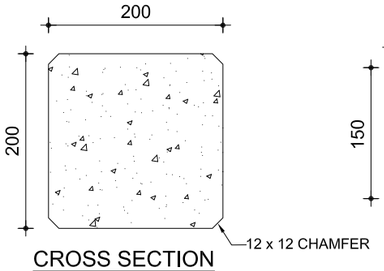
PLAN OF DECK

Scale 1:100



CROSS SECTION OF DECK SLAB

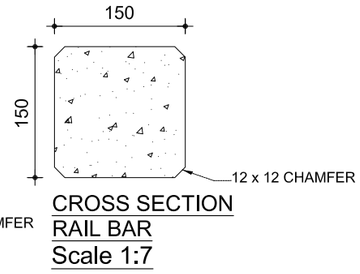
Scale 1:40



CROSS SECTION

RAIL POST

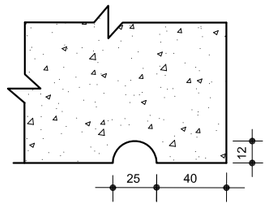
Scale 1:7



CROSS SECTION

RAIL BAR

Scale 1:7



DETAIL "A"

Scale 1:7

NOTES:

1. All dimensions are in milimeters unless othrwise mentioned.
2. 28 days standerd Cylinder strength of concrete: f 'c = 25.00N/mm² (3600 psi)
3. For wearning course ultimates Cylinder crushing strength of Concrete: f 'c = 25N/mm² (3600 psi)
4. Yield strength of M.S deformed bar fy = 413N/mm² (60000psi)
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.

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH

LOCAL GOVERNMENT ENGINEERING DEPARTMENT

DESIGNED ,DRAWN & CHECKED BY

PURAKAUSHAL PROJUKTI LIMITED

House # C10, Road # 4 ,Banasree, Rampura- 1219.
E-maill: pproiltd@yahoo.com

NAME OF PROJECT:

LOCATION:

UPAZILA:

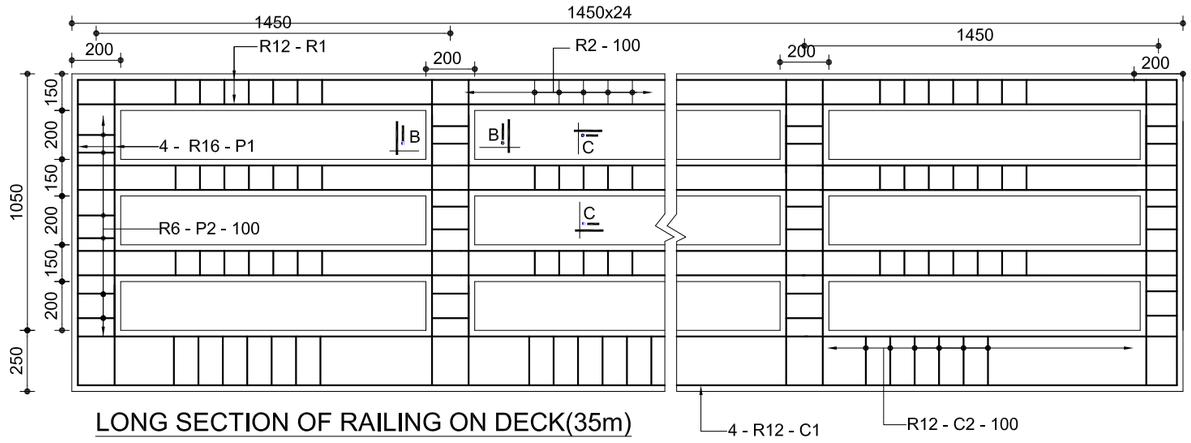
DISTRICT:

DRAWING TITLE

Details of Deck Slab With Deck Plan

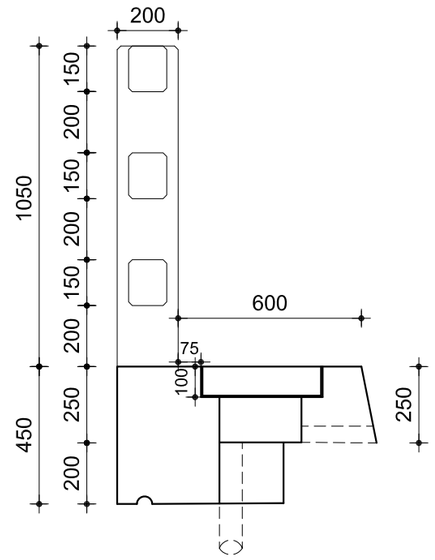
DRAWING NO. DS-05

PAGE NO. P-29

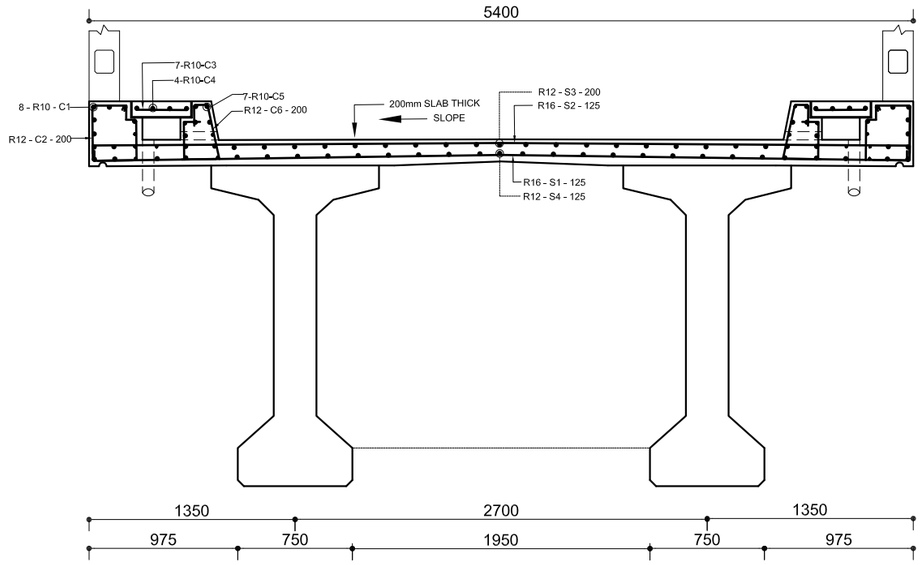


LONG SECTION OF RAILING ON DECK(35m)

Scale 1:25

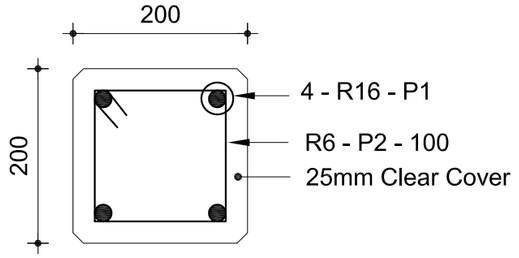


Scale 1:20



REINF. DETAILS OF DECK SLAB

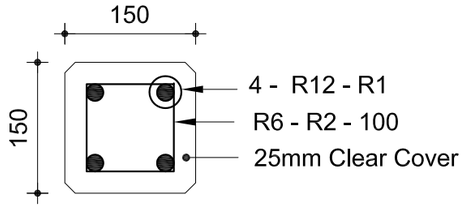
Scale 1:40



SECTION. B - B

RAIL POST

Scale 1:7



SECTION. C - C

RAIL BAR

Scale 1:7

NOTES:

1. All dimensions are in milimeters unless otherwise mentioned.
2. 28 days standard cylinder strength of concrete:
   f 'c= 25.00 N/mm² (3600 psi)
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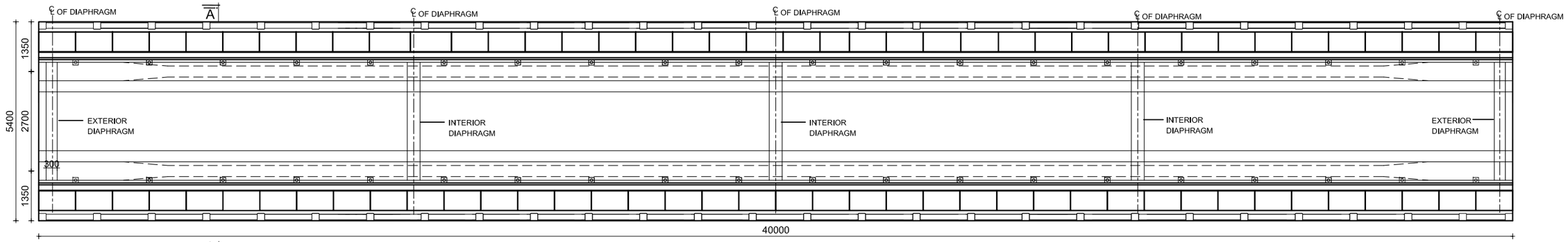
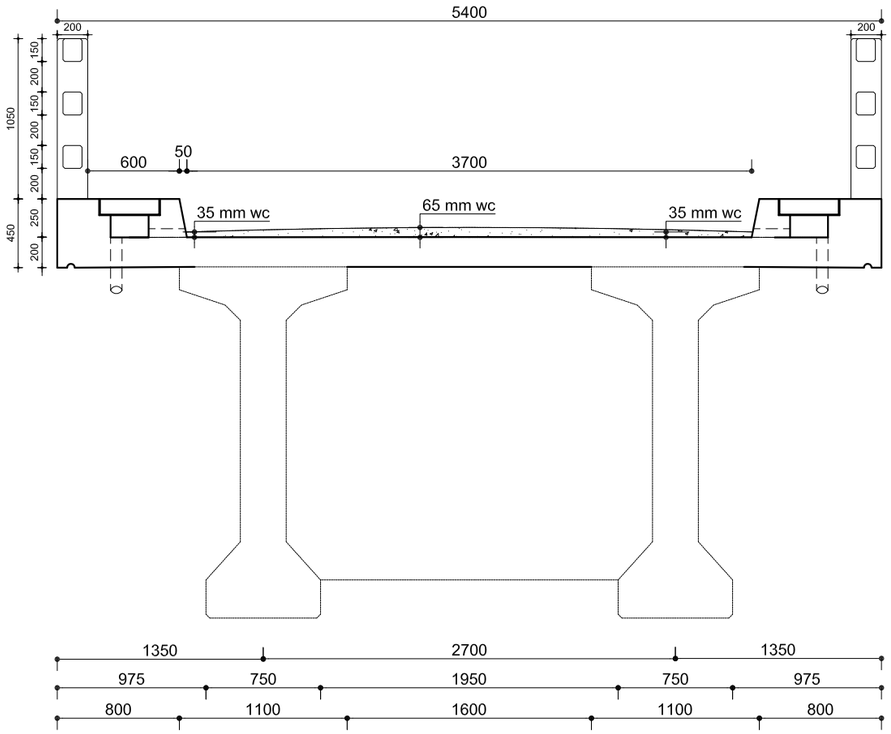
4. Clear cover to main reinforcement is to be 25mm unless otherwise mentioned.
5. Rain water down pipe shall be projected minimum 50mm from the bottom of slab.

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	DESIGNED ,DRAWN & CHECKED BY PURAKAUSHAL PROJUKTI LIMITED House # C10, Road # 4 ,Banasree, Rampura- 1219. E-maill: pproiltd@yahoo.com	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	DRAWING TITLE Details of Deck Slab DRAWING NO. DS-06 PAGE NO. P-30



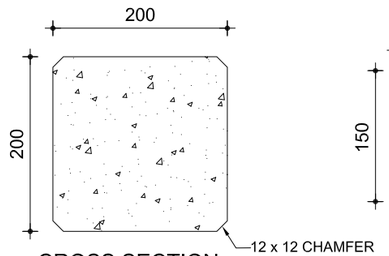
PLAN OF DECK

Scale 1:115



CROSS SECTION OF DECK SLAB

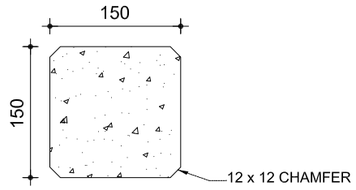
Scale 1:40



CROSS SECTION

RAIL POST

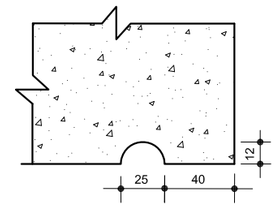
Scale 1:7



CROSS SECTION

RAIL BAR

Scale 1:7



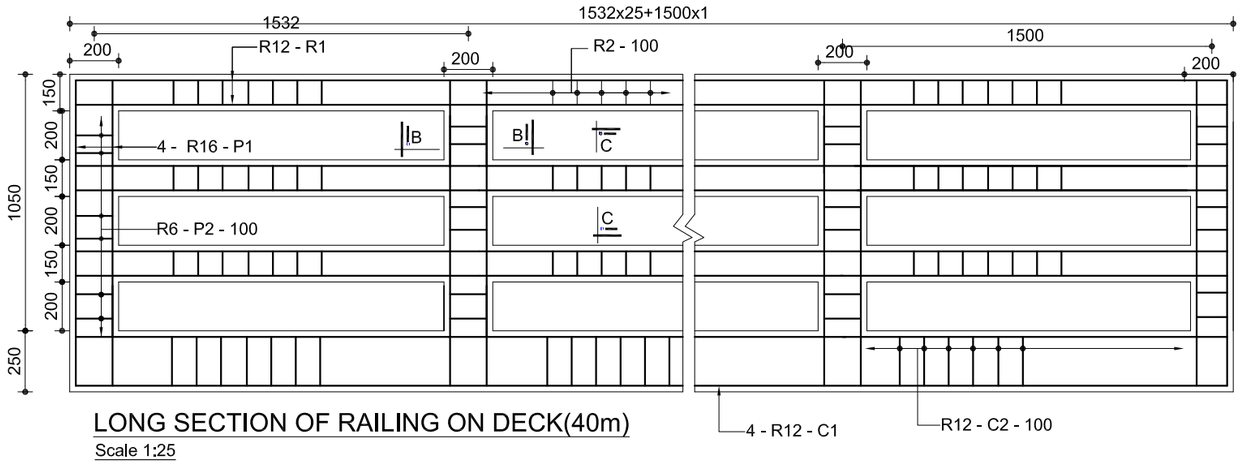
DETAIL "A"

Scale 1:7

NOTES:

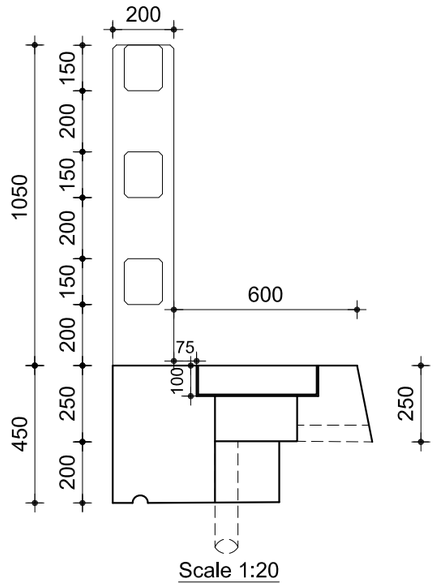
1. All dimensions are in milimeters unless othrwise mentioned.
2. 28 days standerd Cylinder strength of concrete: f 'c = 25.00N/mm² (3600 psi)
3. For wearning course ultimates Cylinder crushing strength of Concrete: f 'c = 25N/mm² (3600 psi)
4. Yield strength of M.S deformed bar fy = 413N/mm² (60000psi)
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.

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	DESIGNED ,DRAWN & CHECKED BY PURAKAUSHAL PROJUKTI LIMITED House # C10, Road # 4 ,Banasree, Rampura- 1219. E-maill: pproiltd@yahoo.com	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	DRAWING TITLE Details of Deck Slab With Deck Plan DRAWING NO. DS-07 PAGE NO. P-31

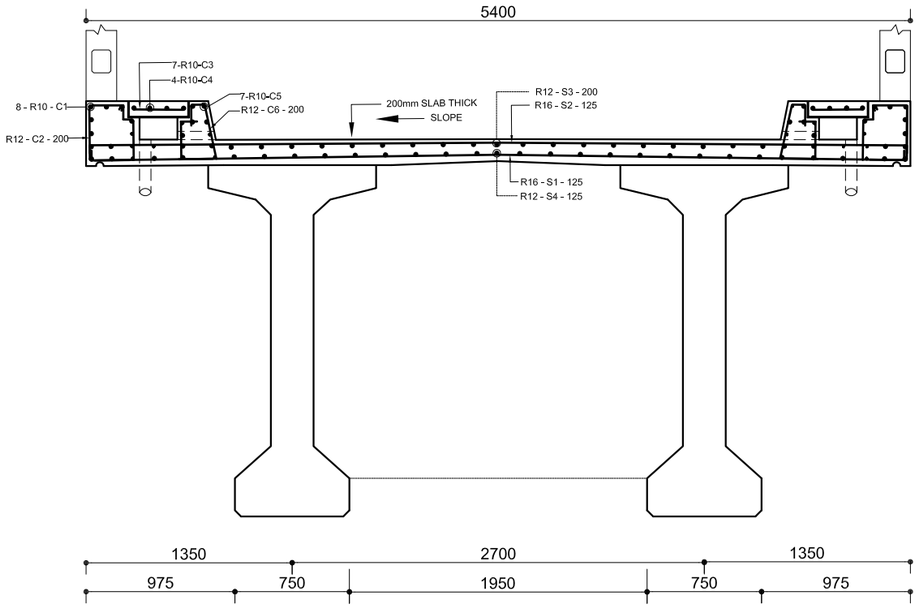


LONG SECTION OF RAILING ON DECK(40m)

Scale 1:25

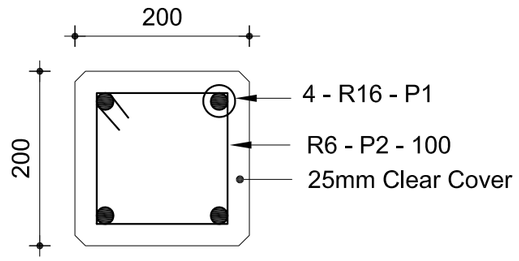


Scale 1:20



REINF. DETAILS OF DECK SLAB

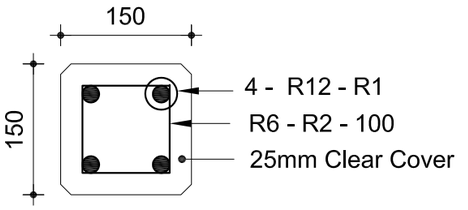
Scale 1:40



SECTION. B - B

RAIL POST

Scale 1:7



SECTION. C - C

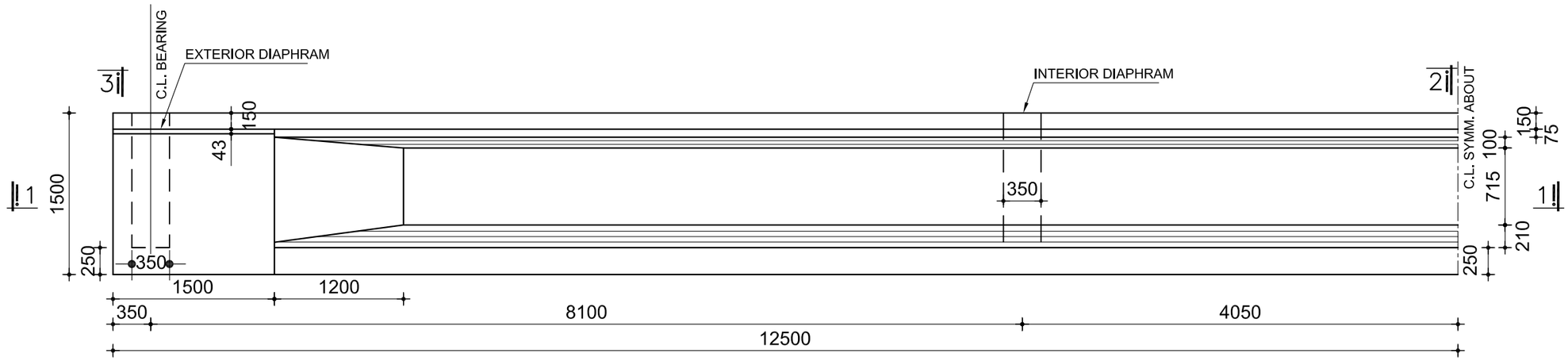
RAIL BAR

Scale 1:7

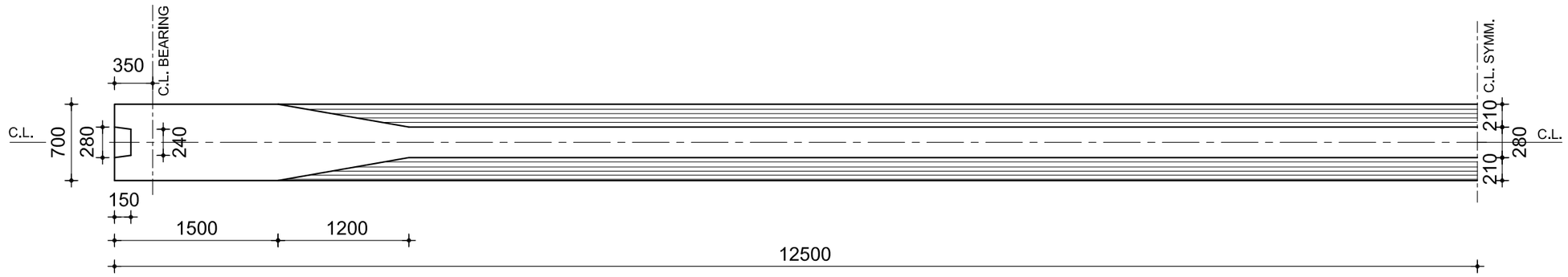
NOTES:

1. All dimensions are in milimeters unless otherwise mentioned.
2. 28 days standard cylinder strength of concrete:
   f 'c= 25.00 N/mm² (3600 psi)
3. Yield strength of M.S deformed bar fy = 413 N/mm² (60000psi)
4. Clear cover to main reinforcement is to be 25mm unless otherwise mentioned.
5. Rain water down pipe shall be projected minimum 50mm from the bottom of slab.

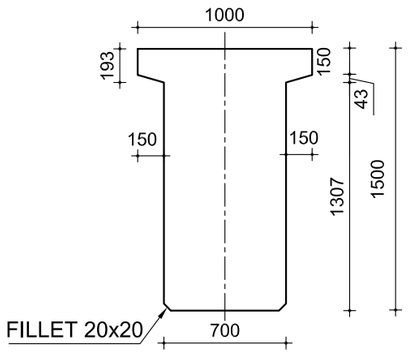
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	DESIGNED ,DRAWN & CHECKED BY PURAKAUSHAL PROJUKTI LIMITED House # C10, Road # 4 ,Banasree, Rampura- 1219. E-maill: pproiltd@yahoo.com	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	DRAWING TITLE Details of Deck Slab DRAWING NO. DS-08 PAGE NO. P-32



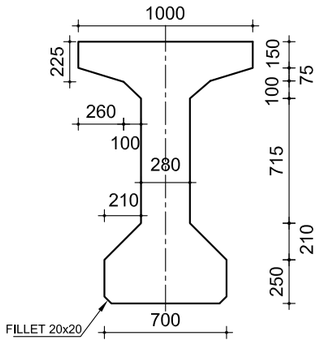
Scale 1:45 HALF ELEVATION OF PRE-CAST PSC GIRDER



Scale 1:45 SECTIONAL VIEW OF PRE-CAST PSC GIRDER (SECTION 1-1)



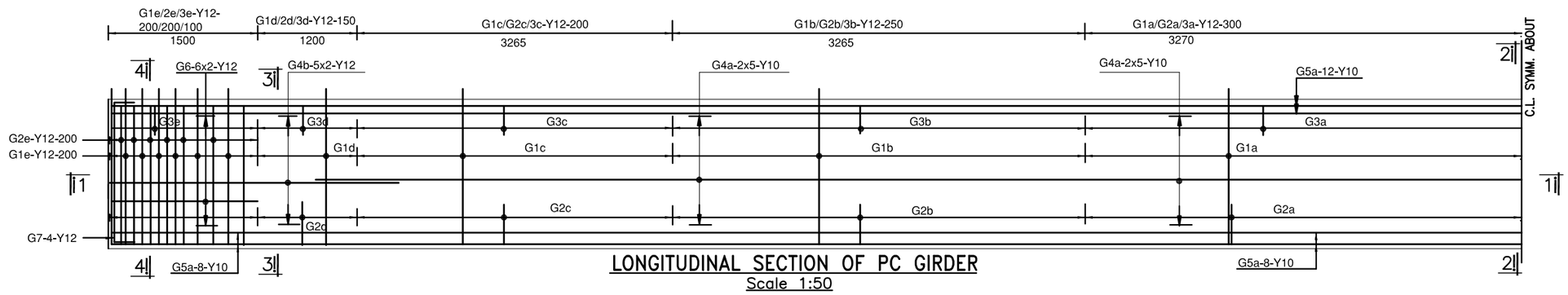
SECTION 3–3 AT EXTERIOR
Scale 1:35



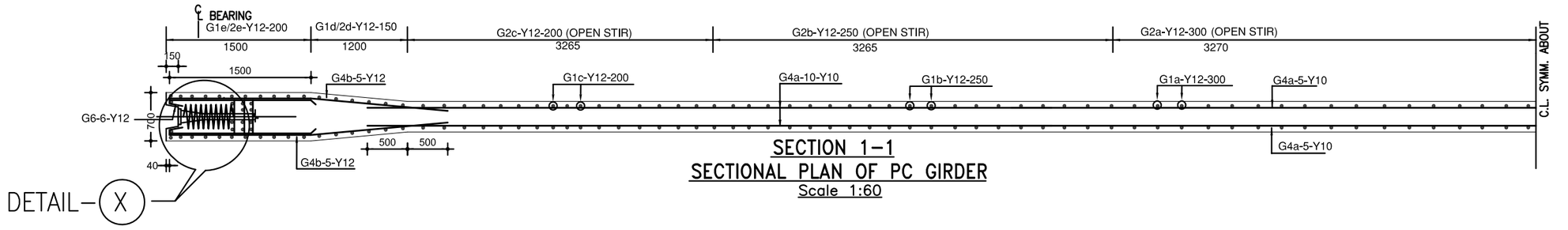
SECTION 2–2 AT INTERIOR
Scale 1:35

1. CONCRETE SHALL HAVE SPECIFIED CHARACTERISTIC COMPRESSIVE STRENGTH OF STANDARD CYLINDER OR CUBE (15 cm) AT 28 DAYS, ARE AS FOLLOWS:
   a) STANDARD CYLINDER CRUSHING STRENGTH, f'c = 35 N/mm²
   b) STANDARD CUBE CRUSHING STRENGTH, fcu = 43 N/mm²
2. REINFORCING STEEL SHALL CONFORM TO ASTM A615 - GRADE 60 DEFORMED BARS (MARKED 'Y') HAVING MINIMUM YEILD STRENGTH Fy = 413 N/mm²
3. PRESTRESSING STEEL SHALL OF 12.7mm DIA. 7 PLY UNCOATED LOW RELAXATION STRAND CONFORMING TO AASHTO-M203 (GRADE-270) OR EQUIVALENT HAVING THE FOLLOWING STRENGTH:
   (a) MINIMUM ULTIMATE TENSILE STRENGTH (UTS) f 's = 1861 N/mm² (183.7 KN PER STRAND)
   (b) MINIMUM YIELD STRENGTH f 'y = 1674 N/mm² (165.3 KN PER STRAND)
4. PRESTRESSING CABLE SHALL CONSISTS OF 12 NOS.12.7mm DIA. STRAND (12T13) IN A SHEATHING/DUCT
5. FOLLOWING PROPERTIES HAVE BEEN CONSIDERED IN THE DESIGN
   AREA OF STRAND = 98.7 mm²
   AREA OF CABLE = 1184.4 mm²
   MODULLES OF ELASTICITY OF STRAND =1.97x10^5(N/mm^2)
   AVERAGE SLIP = 7mm
   JACKING FORCE IN EACH CABLE = 1652 KN.

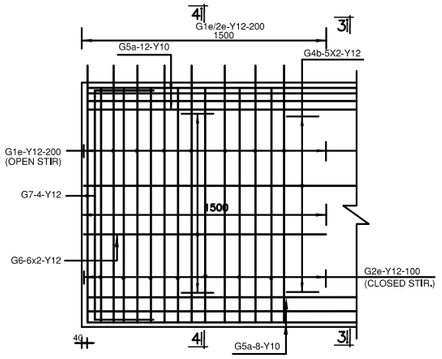
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	DESIGNED ,DRAWN & CHECKED BY PURAKAUSHAL PROJUKTI LIMITED House # C10, Road # 4 ,Banasree, Rampura- 1219. E-maill: pproiltd@yahoo.com	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	DRAWING TITLE PC GIRDER CONCRETE OUTLINE DETAILS (Out to Out Length: 25.00m) DRAWING NO. G-01 PAGE NO. P-33



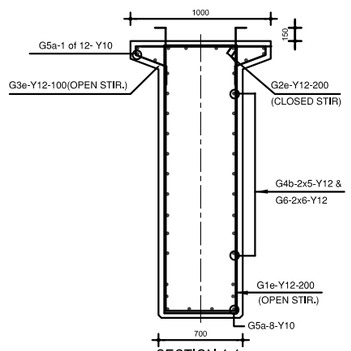
LONGITUDINAL SECTION OF PC GIRDER
Scale 1:50



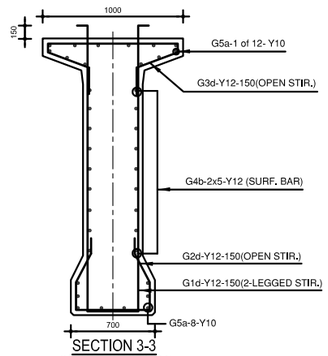
SECTION 1–1
SECTIONAL PLAN OF PC GIRDER
Scale 1:60



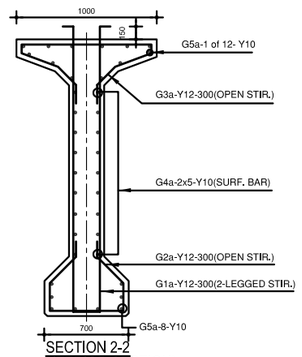
ELEV. SHOWING EXTERIOR REINF. DETAILS
Scale 1:40



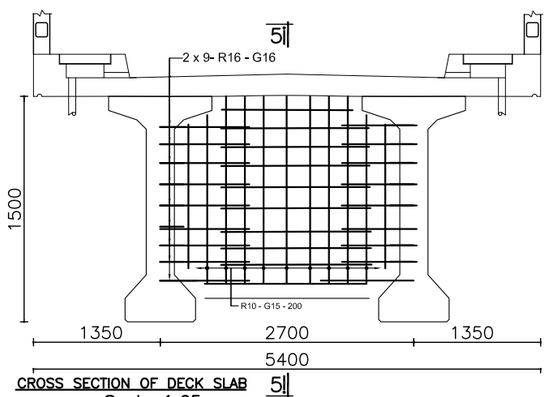
SECTION 4-4
(EXTERIOR SECTION)
Scale 1:45



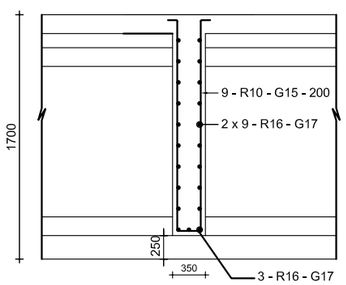
SECTION 3-3
(SLOPE SECTION)
Scale 1:45



SECTION 2-2
(INTERIOR SECTION)
Scale 1:45

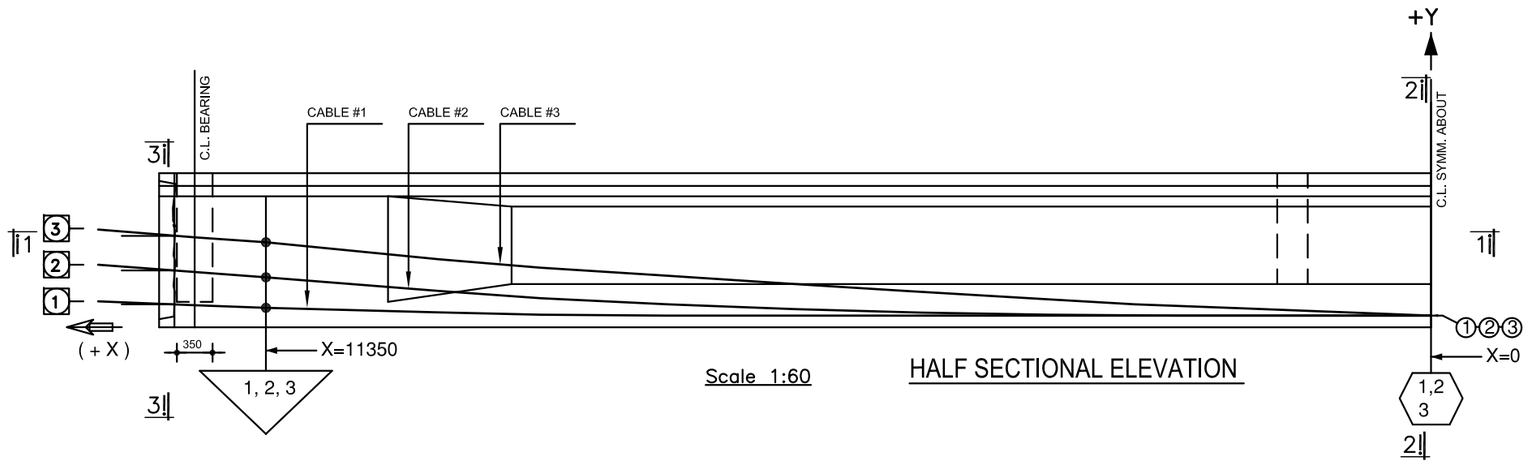


CROSS SECTION OF DECK SLAB
Scale 1:65

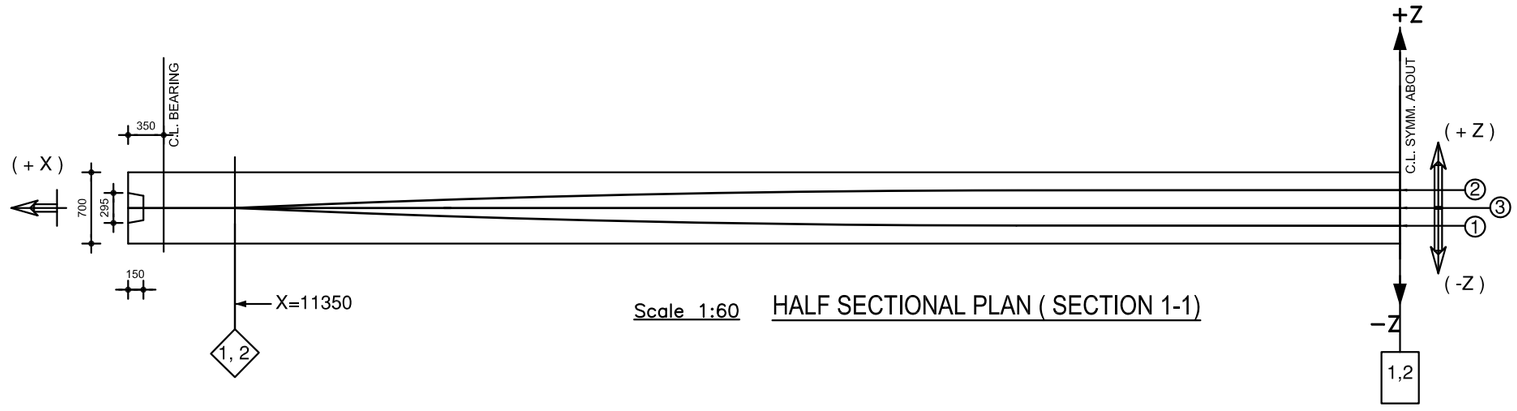


INTERIOR DIAPHRAGM
Scale 1:65

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	DESIGNED ,DRAWN & CHECKED BY PURAKAUSHAL PROJUKTI LIMITED House # C10, Road # 4 ,Banasree, Rampura- 1219. E-maill: pproiltd@yahoo.com	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	DRAWING TITLE PC GIRDER PRESTRESSING REINF. DETAILS (Out to Out Length: 25.00m) DRAWING NO. G-02 PAGE NO. P-34



Scale 1:60 HALF SECTIONAL ELEVATION



Scale 1:60 HALF SECTIONAL PLAN (SECTION 1-1)

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

Cable No.	Cable Position				Cable		DISTANCE 'X' FROM C/L TOWARDS THE END IN mm																Emergence Angle, Φ	Elongation at each end excluding grip, Δ (mm)
	End		Mid		Sag, a		12350		11350		10000		8000		6000		4000		2000		0			
	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Degree	
1	**450**	**0**	**110**	**200**	340	200	450	0	397	0	333	45	253	101	190	144	146	175	119	194	110	200	3.66	83.37
2	**800**	**0**	**110**	**-200**	690	200	800	0	693	0	562	-45	400	-101	273	-144	182	-175	128	-194	110	-200	6.67	82.97
3	**1150**	**0**	**110**	**0**	1040	0	1150	0	988	0	792	0	546	0	355	0	219	0	137	0	110	0	9.65	82.66

VERTICAL & HORIZONTAL PROFILE OF CABLES

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

DESIGNED ,DRAWN & CHECKED BY

PURAKAUSHAL PROJUKTI LIMITED
House # C10, Road # 4 ,Banasree, Rampura- 1219.
E-maill: pproiltd@yahoo.com

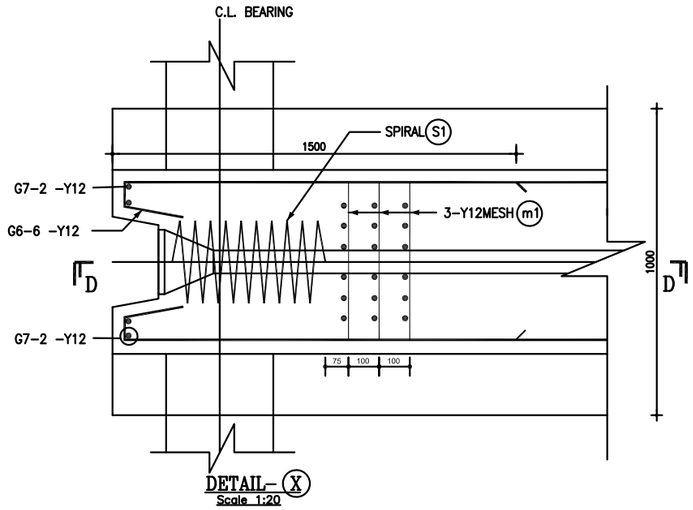
NAME OF PROJECT:
LOCATION:
UPAZILA:
DISTRICT:

DRAWING TITLE

PC GIRDER PRESTRESSING CABLE DETAILS
(Out to Out Length: 25.00m)

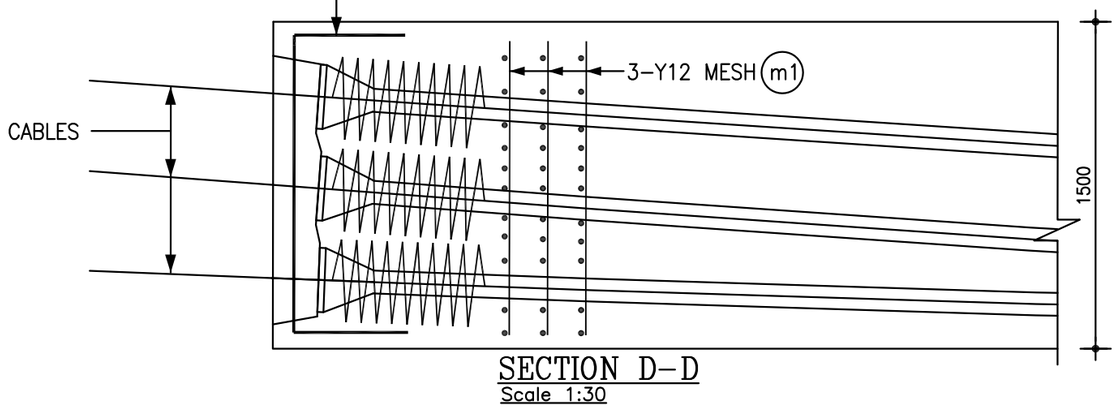
DRAWING NO. G-03

PAGE NO. P-35

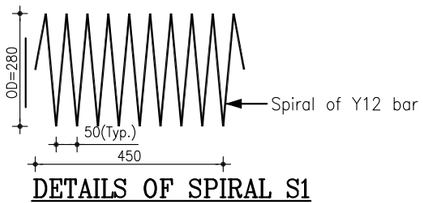


BAR BENDING SCHEDULE OF NON-PRE-STRESSED REINFORCEMENT

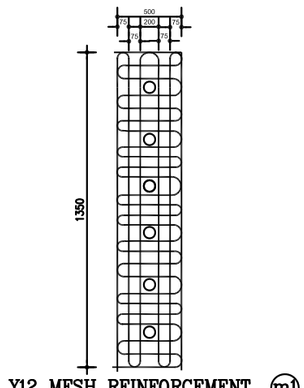
SYM. OF BAR	DIA OF BAR	SPACE OF BAR	BENDING DIMENSION (mm)							LENGTH OF EACH BAR	NO OF BAR	TOTAL LENGTH (m)	Wt. Of STEEL (Kg)	SHAPE CODE	BAR SHAPE	CODE NO
			a	b	c	d	e	f	g							
G1a	12	300	180	1610	150					3700	22	82	73	1		1
G1b	12	250	180	1610	150					3700	26	97	86	1		
G1c	12	200	180	1610	150					3700	34	127	113	1		2
*G1d	12	150	388	1610	150					3908	16	63	56	1		
G1e	12	100	620	1610	75					4610	16	74	66	1		3
G2a	12	300	620	210	297	360				2354	22	52	47	2		
G2b	12	250	620	210	297	360				2354	26	62	56	2		4
G2c	12	200	620	210	297	360				2354	34	81	73	2		
*G2d	12	150	620	210	150	360				2060	16	33	30	2		
G2e	12	100	620	1420	75					4230	16	68	61	3		5
G3a	12	300	920	70	270	125	300			2450	22	54	48	4		
G3b	12	250	920	60	270	125	300			2450	26	64	57	4		
G3c	12	200	920	60	270	125	300			2450	24	84	75	4		6
G3d	12	150	920	60	270	125	300			2450	16	40	36	4		
G3e	12	100	920	60	270	125				1830	30	55	49	5		7
G4a	10	-	20600							20600	16	300	204	6		
G4b	12	-	1500	1700						3200	16	103	92	7		8
G5a	10	-	24920							24920	24	300	185	6		
G6	12	-	1500		200					1700	24	41	37	6		9
G7	16	-	1420	320						2060	8	17	27	9		
Wt. of Non-Prestressed Steel per Girder = 1471 Kg																



SECTION D-D
Scale 1:30



DETAILS OF SPIRAL S1
Scale 1:15



Y12 MESH REINFORCEMENT m1
Scale 1:25

NOTES:

1. ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE MENTIONED
2. VERTICAL SPACING OF MESH REINF. MAY BE ADJUSTED TO AVOID CLASHING WITH CABLES
3. BAR BENDING SCHEDULE OF SPIRAL AND MESH REINF. SHALL BE PREPARED AT SITE BEFORE FEBRICATION & GET IT APPROVED.
4. CONCRETE SHALL HAVE SPECIFIED CHARACTERISTIC COMPRESSIVE STRENGTH OF STANDARD CYLINDER OR CUBE (15 cm) AT 28 DAYS, ARE AS FOLLOWS
   a) STANDARAD CYLINDER CRUSHING STRENGTH, f'c = 35 N/mm²
   b) STANDARD CUBE CRUSHING STRENGTH, fcu = 43 N/mm²
5. REINFORCING STEEL SHALL CONFORM TO ASTM A615-87 GRADE 60 DEFORMED BARS (MARKED 'Y') HAVING MINIMUM YEILD STRENGTH Fy = 413 N/mm²
6. PRESTRESSING STEEL SHALL OF 12.7mm DIA. 7 PLY UNCOATED LOW RELAXATION STRAND CONFORMING TO AASHTO-M203 (GRADE-270) OR EQUIVALENT HAVING THE FOLLOWING STRENGTH:
   (a) MINIMUM ULTIMATE TENSILE STRENGTH (UTS) f's = 1861 N/mm² (183.7 KN PER STRAND)
   (b) MINIMUM YIELD STRENGTH f'y = 1674 N/mm² (165.3 KN PER STRAND)
7. PRESTRESSING CABLE SHALL CONSISTS OF 12 NOS.12.7mm DIA STRAND (12T13) IN A SHEATHING/DUCT
8. FOLLOWING PROPERTIES HAVE BEEN CONSIDERED IN THE DESIGN
   AREA OF STRAND = 98.7 mm²
   AREA OF CABLE = 1184.4 mm²
   MODULLES OF ELASTICITY OF STRAND =1.97x10^5 (N/mm^2)
   AVERAGE SLIP = 7mm
   JACKING FORCE IN EACH CABLE = 1652 KN

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

DESIGNED ,DRAWN & CHECKED BY

PURAKAUSHAL PROJUKTI LIMITED
House # C10, Road # 4 ,Banasree, Rampura- 1219.
E-maill: pproiltd@yahoo.com

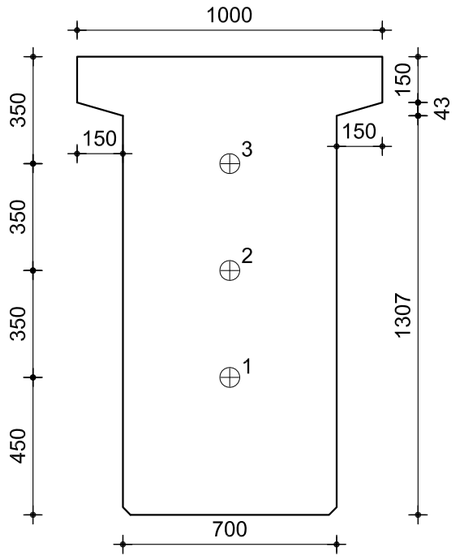
NAME OF PROJECT:
LOCATION:
UPAZILA:
DISTRICT:

DRAWING TITLE

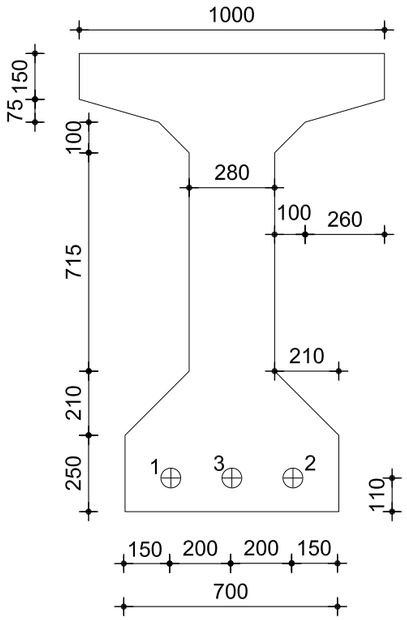
PC GIRDER PRESTRESSING ANCHORAGE DETAILS
(Out to Out Length: 25.00m)

DRAWING NO. G-04

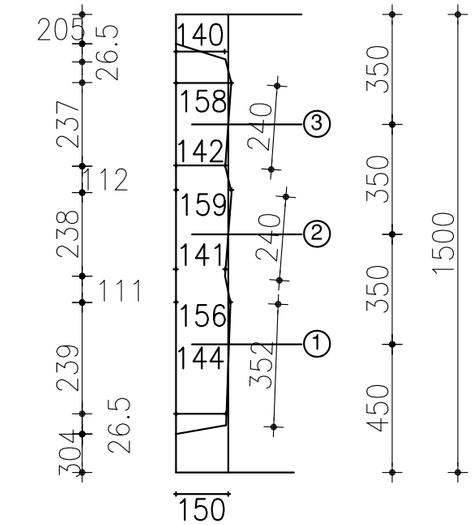
PAGE NO. P-36



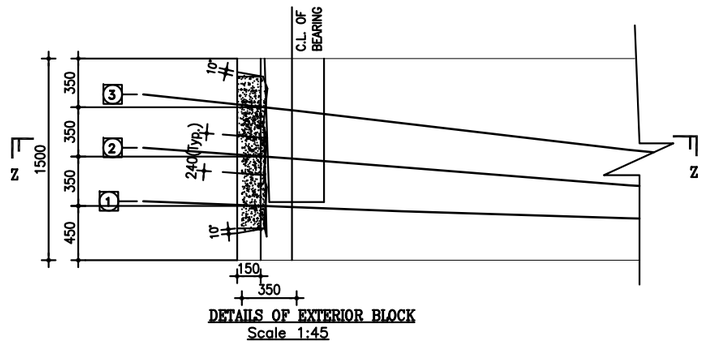
SECTION AT EXTERIOR
Scale 1:20



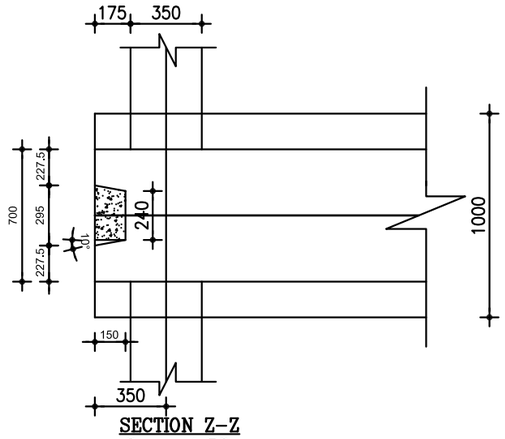
SECTION AT INTERIOR
Scale 1:20



SECTION AT Y–Y
SHOWS RECESS PROFILE
Scale 1:20



DETAILS OF EXTERIOR BLOCK
Scale 1:45



SECTION Z–Z
Scale 1:30

NOTES:

STAGES AND SEQUENCE OF PRESTRESSING

1. EACH CABLE SHALL STRESSED SIMULTANEOUSLY FROM BOTH ENDS. THE JACKING FORCE IN EACH CABLE SHALL 1652 KN TO BE IMPARTED SIMULTANEOUSLY AT BOTH ENDS.
2. STRESSING SHALL DONE IN ONE SEQUENCES 1, 2, 3
3. STRESSING SALL DONE AFTER ATTAINMENT OF MINIMUM CONCRETE CYLINDER STRENGTH OFT 26.25 MPA BUT NoT BEFORE 7-DAYS AFTER CONCRETE CASTING
4. CONSTRUCTION SEQUENCE

DAYS (AFTER CASTING OF GIRDER)	ACTIVITY
14	STRESSING OF STAGE CABLES (REF. NOTE NO. 2)
21	SHIFTING TO FINAL POSITION, CASTING OF DECK SLAB, INSTALLATION OF EXPANSION JOINTS CASTING/ LAYING OF FOOTHPATH, KERBS, WEARING COAT AND RAILINGS

AFTER STRESSING GIRDER CAN BE SHIFTED.

5. FOR ANCHORAGE DETAILS REFER DRG. NO. G-04
6. 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 MUST BE ADDED DURING TENSIONING.
7. EACH CABLES CONSISTS OF 12 NOS. 12.7mm DIA. (12T13) 7-PLY UNCOATED LOW RELAXATION STRANDS.
8. FOR OTHER REQUIREMENTS REFER GENERAL NOTES FOR PC GIRDER : BRDG/PSC/GEN
9. UPWARD HOGGING AT MID-SPAN AFTER TRANSFER OF PS-22.5mm

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

DESIGNED ,DRAWN & CHECKED BY

PURAKAUSHAL PROJUKTI LIMITED
House # C10, Road # 4 ,Banasree, Rampura- 1219.
E-maill: pproiltd@yahoo.com

NAME OF PROJECT:

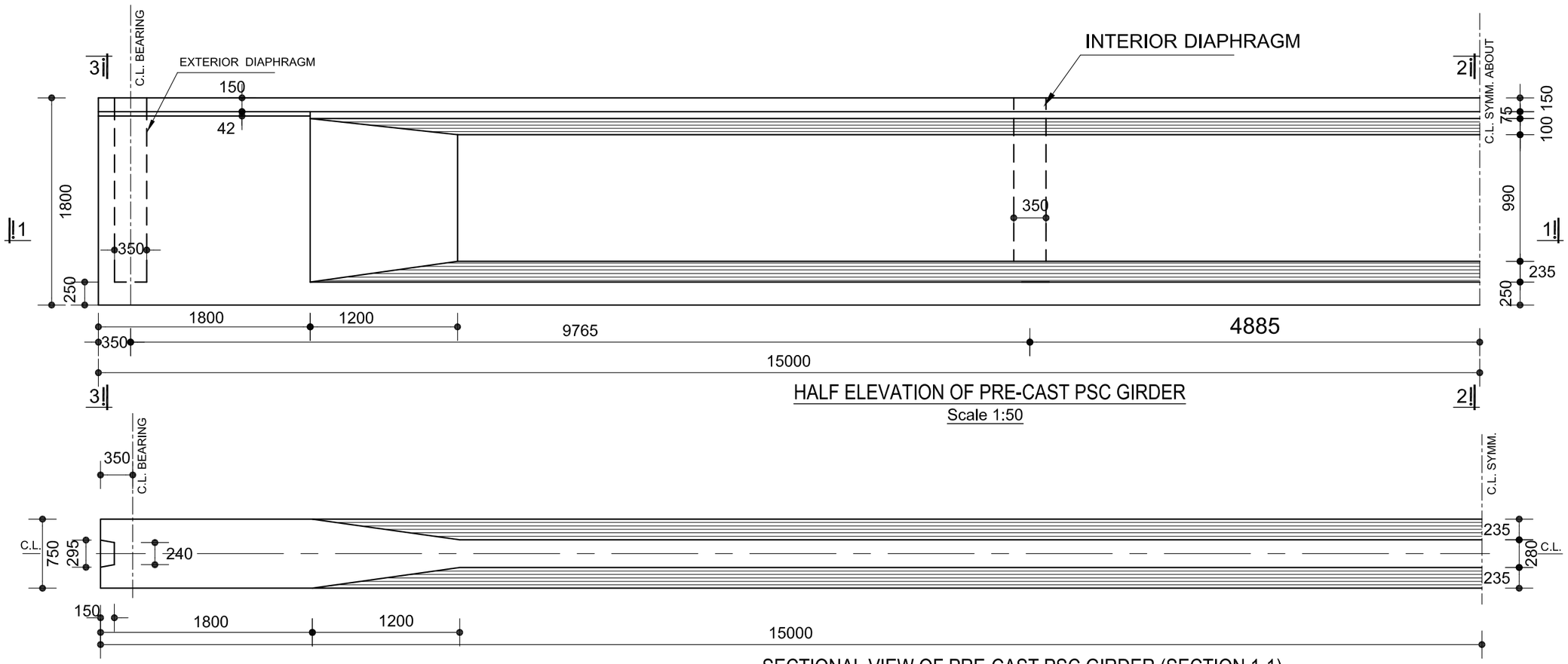
LOCATION:
UPAZILA:
DISTRICT:

DRAWING TITLE

PC GIRDER PRESTRESSING ANCHORAGE DETAILS
(Out to Out Length: 25.00m)

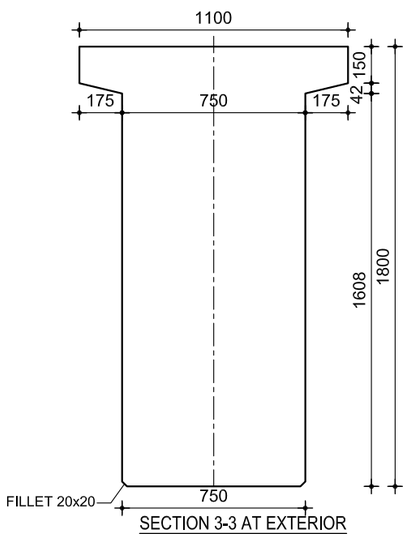
DRAWING NO. G-05

PAGE NO. P-37

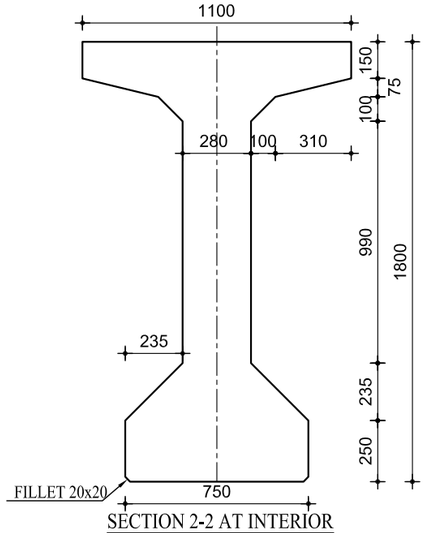


HALF ELEVATION OF PRE-CAST PSC GIRDER
Scale 1:50

SECTIONAL VIEW OF PRE-CAST PSC GIRDER (SECTION 1-1)
Scale 1:50



SECTION 3-3 AT EXTERIOR
Scale 1:25



SECTION 2-2 AT INTERIOR
Scale 1:25

1. CONCRETE SHALL HAVE SPECIFIED CHARACTERISTIC COMPRESSIVE STRENGTH OF STANDARD CYLINDER OR CUBE (15 cm) AT 28 DAYS, ARE AS FOLLOWS(15 cm) AT 28 DAYS, ARE AS FOLLOWS:
   a) STANDARD CYLINDER CRUSHING STRENGTH, f'c = 35 N/mm²
   b) STANDARD CUBE CRUSHING STRENGTH, fcu = 43N/mm²
2. REINFORCING STEEL SHALL CONFORM TO ASTM A615-87 GRADE 60 DEFORMED BARS (MARKED 'Y') HAVING MINIMUM YEILD STRENGTH Fy = 413 N/mm²
3. PRESTRESSING STEEL SHALL OF 12.7mm DIA. 7 PLY UNCOATED LOW RELAXATION STRAND CONFORMING TO AASHTO-M203 (GRADE-270) OR EQUIVALENT HAVING THE FOLLOWING STRENGTH:
   (a) MINIMUM ULTIMATE TENSILE STRENGTH (UTS) f 's = 1861 N/mm² (183.7 KN PER STRAND)
   (b) MINIMUM YIELD STRENGTH f 'y = 1674 N/mm² (165.3 KN PER STRAND)
4. PPRESTRESSING CABLE SHALL CONSISTS OF 12 NOS.12.7mm DIA. STRAND (12T13) IN A SHEATHING/DUCT
5. FOLLOWING PROPERTIES HAVE BEEN CONSIDERED IN THE DESIGN
   AREA OF STRAND = 98.7 mm²
   AREA OF CABLE = 1184.4 mm²
   MODULLES OF ELASTICITY OF STRAND =1.97x10^5 (N/mm^2)
   AVERAGE SLIP = 7mm²
   JACKING FORCE IN EACH CABLE = 1652 KN.

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

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E-maill: pproiltd@yahoo.com

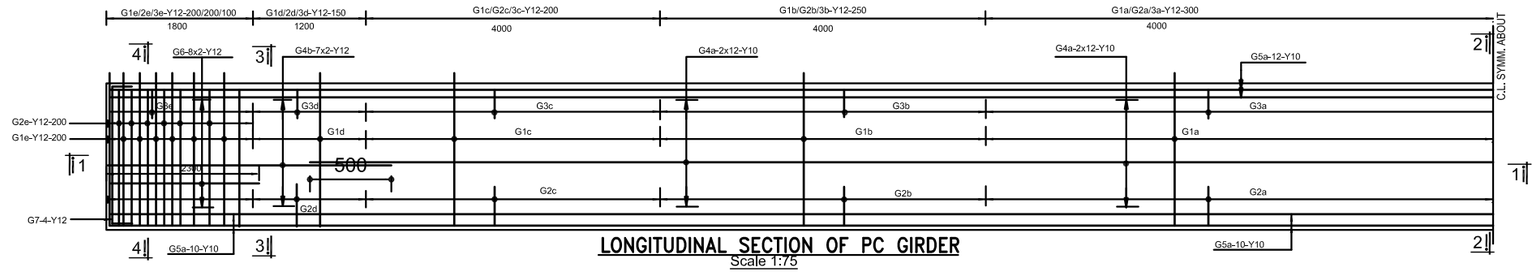
NAME OF PROJECT:
LOCATION:
UPAZILA:
DISTRICT:

DRAWING TITLE

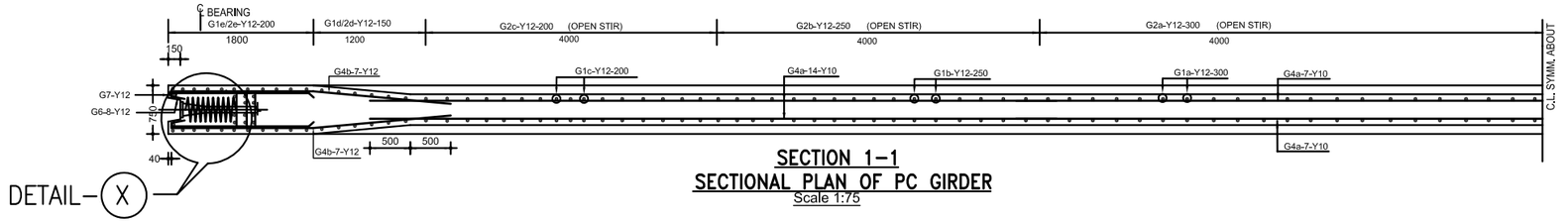
PC GIRDER CONCRETE OUTLINE DETAILS
(Out to Out Length: 30.00m)

DRAWING NO. G-06

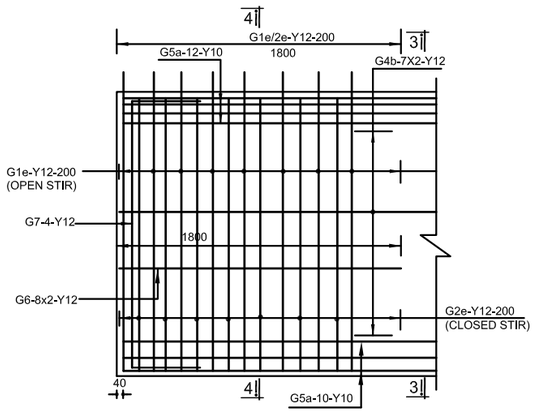
PAGE NO. P-38



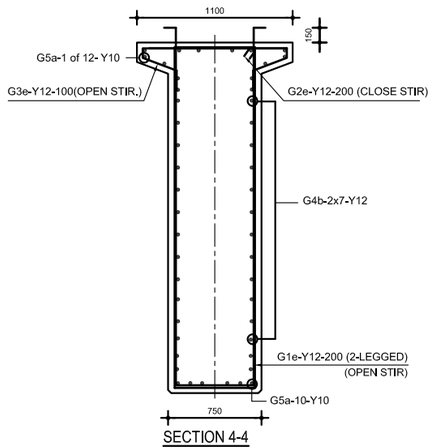
LONGITUDINAL SECTION OF PC GIRDER
Scale 1:75



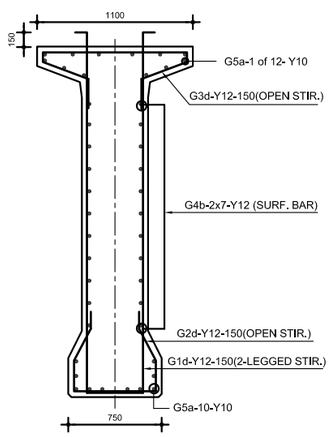
SECTION 1–1
SECTIONAL PLAN OF PC GIRDER
Scale 1:75



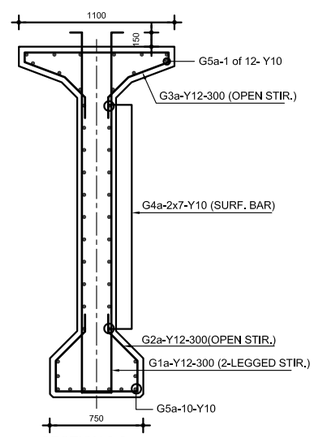
ELEV. SHOWING EXTERIOR REINF. DETAILS
Scale 1:40



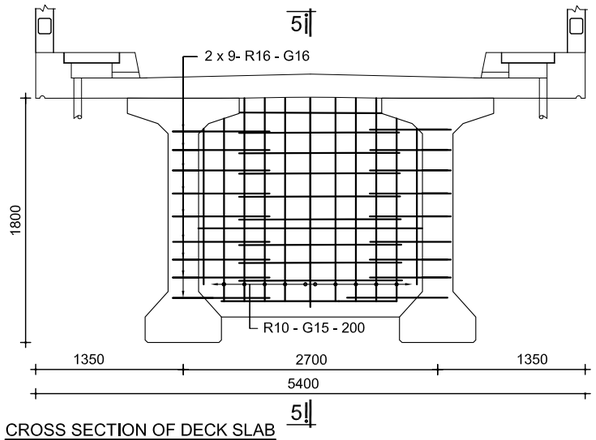
SECTION 4-4
(EXTERIOR SECTION)
Scale 1:45



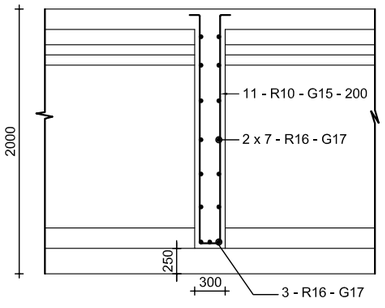
SECTION 3-3
(SLOPE SECTION)
Scale 1:45



SECTION 2-2
(INTERIOR SECTION)
Scale 1:45

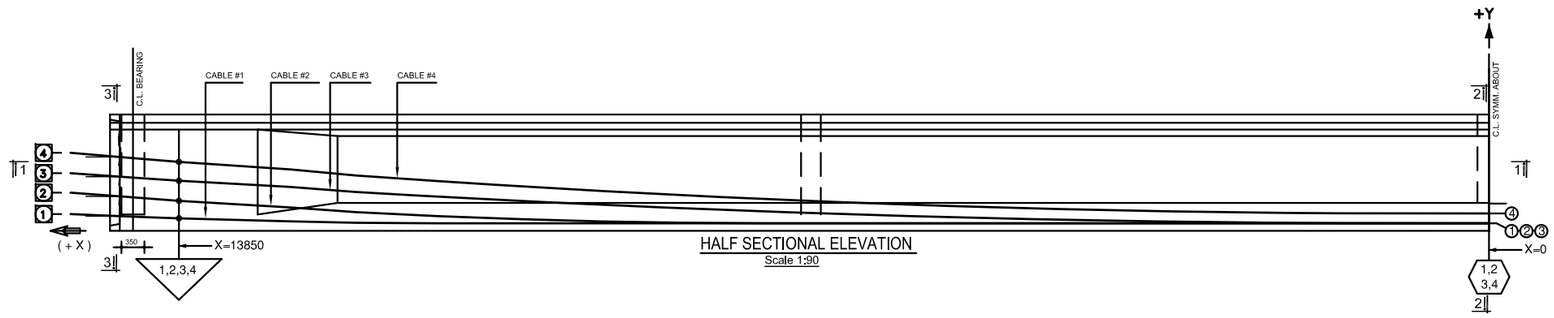


CROSS SECTION OF DECK SLAB
Scale 1:60

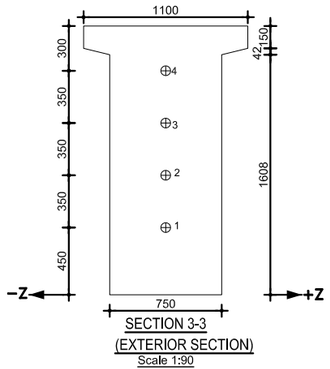


INTERIOR DIAPHRAGM
Scale 1:45

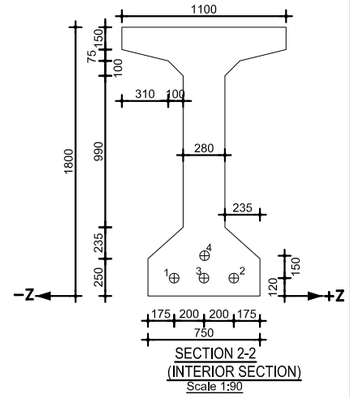
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	DESIGNED ,DRAWN & CHECKED BY PURAKAUSHAL PROJUKTI LIMITED House # C10, Road # 4 ,Banasree, Rampura- 1219. E-maill: pproiltd@yahoo.com	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	DRAWING TITLE PC Girder Reinforcement Details (Out to Out Length: 30.00m) DRAWING NO. G-07 PAGE NO. P-39



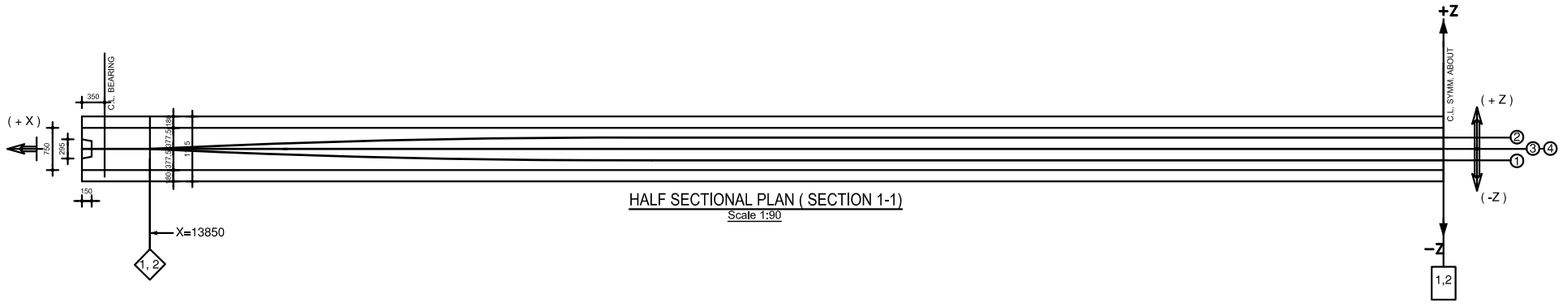
HALF SECTIONAL ELEVATION
Scale 1:90



SECTION 3-3
(EXTERIOR SECTION)
Scale 1:90



SECTION 2-2
(INTERIOR SECTION)
Scale 1:90



HALF SECTIONAL PLAN (SECTION 1-1)
Scale 1:90

LEGEND:

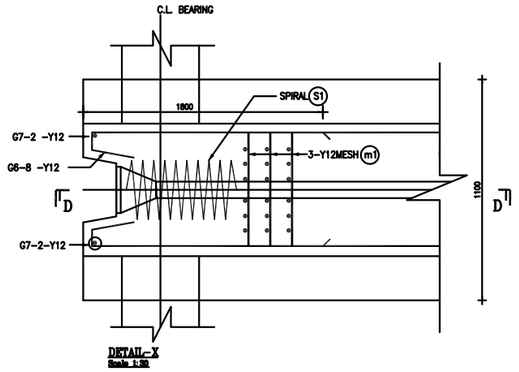
- INDICATES START OF CURVE IN ELEVATION
- INDICATES END OF CURVE IN ELEVATION
- INDICATES START OF CURVE IN PLAN
- INDICATES END OF CURVE IN PLAN
- INDICATES END OF CABLE
- INDICATES CABLE NUMBER

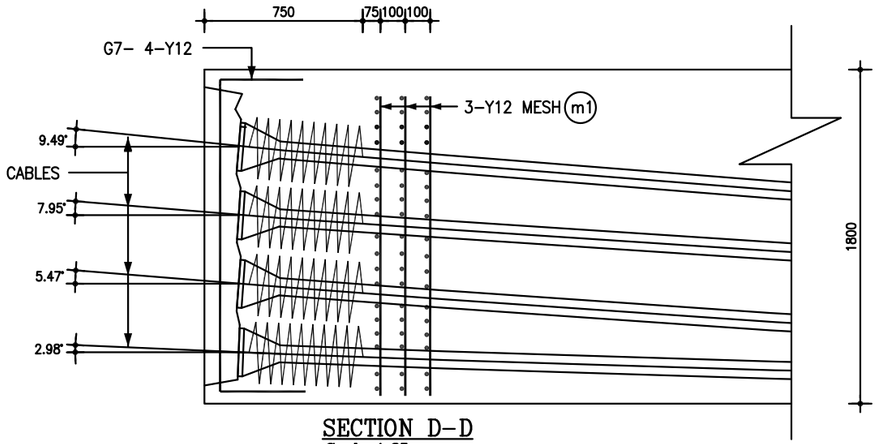
TABLE

Cable No.	Cable Position				Cable		DISTANCE 'X' FROM END TOWARDS THE C/L IN mm																		Emergence Angle, Φ	Elongation at each end excluding
	End		Mid		Sag, a		14850		13850		13000		12000		10000		8000		6000		4000		2000		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	Degree	
1	450	0	120	200	330	200	450	0	407	0	373	24	335	50	270	96	216	133	174	162	144	183	126	196	120	200	2.98	99.57
2	800	0	120	-200	680	200	800	0	712	0	641	-24	564	-50	428	-96	317	-133	231	-162	169	-183	132	-196	120	-200	5.47	99.14
3	1150	0	120	0	1030	0	1150	0	1016	0	909	0	793	0	587	0	419	0	288	0	195	0	139	0	120	0	7.95	98.80
4	1500	0	270	0	1230	0	1500	0	1340	0	1213	0	1073	0	828	0	627	0	471	0	359	0	292	0	270	0	9.49	98.61

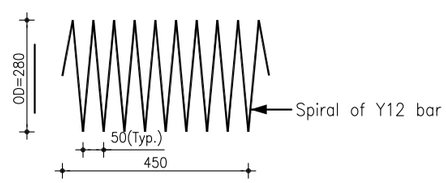
VERTICAL & HORIZONTAL PROFILE OF CABLES

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	DESIGNED ,DRAWN & CHECKED BY PURAKAUSHAL PROJUKTI LIMITED House # C10, Road # 4 ,Banasree, Rampura- 1219. E-maill: pproiltd@yahoo.com	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	DRAWING TITLE PC Girder Prestressing Cable Details (Out to Out Length: 30.00m) DRAWING NO. G-08 PAGE NO. P-40

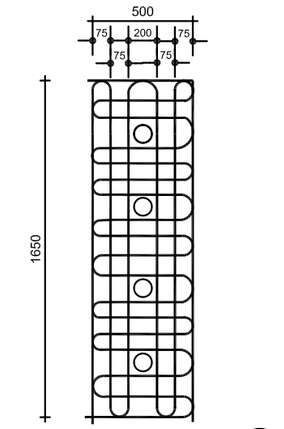




SECTION D-D
Scale 1:35



DETAILS OF SPIRAL S1
Scale 1:15



Y12 MESH REINFORCEMENT m1
Scale 1:30

BAR BENDING SCHEDULE OF NON-PRE-STRESSED REINFORCEMENT

SYM. OF BAR	DIA OF BAR	SPACE OF BAR	BENDING DIMENSION (mm) a	b	c	d	e	f	g	LENGTH OF EACH BAR	NO OF BAR	NO OF	TOTAL LENGTH (m)	Wt. Of STEEL (Kg/m)	Wt. Of STEEL (Kg)	SHAPE CODE	BAR SHAPE	CODE NO
G1a	12	300	200	1910	150					4320	15	2	130	0.888	116	1	a b c	1
G1b	12	250	200	1910	150					4320	17	2	147		131	1		
G1c	12	200	200	1910	150					4320	21	2	182		162	1	a b c d	2
*G1d	12	150	435	1910	150					4555	5	2	46		41	1		
G1e	12	100	670	1910	150					4790	16	2	154		137	1	a b c	3
G2a	12	300	670	170	332	360				2394	15	2	82		73	2		
G2b	12	250	670	170	332	360				2394	17	2	83		74	2	a b c d e	4
G2c	12	200	670	170	332	360				2394	21	2	101	0.888	90	2		
*G2d	12	150	670	170	280	360				2290	5	2	23		21	2		
G2e	12	100	670	1520	75					4530	16	2	144.96		128.72	3	a b c d	5
G3a	12	300	1020	70	302	187	240			2618	15	2	78.54		69.74	4		
G3b	12	250	1020	70	302	187	240			2618	17	2	89.012		79.04	4		
G3c	12	200	1020	70	302	187	240			2618	21	2	109.956		97.64	4	a	6
G3d	12	150	1020	70	230	93.5	240			2287	5	2	22.87		20.31	4		
G3e	12	100	1020	70	180	240				2000	16	2	64.00	0.888	56.83	5	a b	7
G4a	10	-	25000	-	-					25000	14	1	350	0.617	216	6		
G4b	12	-	1560	1286						2846	14	2	79.688	0.888	70.76	7	b c a	8
G5a	10	-	29920							29920	22	1	658.24	0.617	406.13	6		
G6	12	-	1560	148	200					1904	16	2	16.055	0.888	54.22	8	a b	9
G7	16	-	1520	320						2160	2	2	8.64	1.78	13.63	9		
Wt. of Non-Prestressed Steel per Girder = 2058 KG																		

NOTES:

1. ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE MENTIONED
2. VERTICAL SPACING OF MESH REINF. MAY BE ADJUSTED TO AVOID CLASHING WITH CABLES
3. BAR BENDING SCHEDULE OF SPIRAL AND MESH REINF. SHALL PREPARED AT SITE BEFORE FEBRICATION & GET IT APPROVED.
4. CONCRETE SHALL HAVE SPECIFIED CHARACTERISTIC COMPRESSIVE STRENGTH OF STANDARD CYLINDER OR CUBE (15 cm) AT 28 DAYS, ARE AS FOLLOWS
   a) STANDARAD CYLINDER CRUSHING STRENGTH, f'c = 35 N/mm²
   b) STANDARD CUBE CRUSHING STRENGTH, fcu = 43 N/mm²
5. REINFORCING STEEL SHALL CONFORM TO ASTM A615-87 GRADE 60 DEFORMED BARS (MARKED 'Y') HAVING MINIMUM YEILD STRENGTH Fy = 413 N/mm²
6. PRESTRESSING STEEL SHALL OF 12.7mm DIA. 7 PLY UNCOATED LOW RELAXATION STRAND CONFORMING TO AASHTO-M203 (GRADE-270) OR EQUIVALENT HAVING THE FOLLOWING STRENGTH:
   (a) MINIMUM ULTIMATE TENSILE STRENGTH (UTS) f's = 1861 N/mm² (183.7 KN PER STRAND)
   (b) MINIMUM YIELD STRENGTH f'y = 1674 N/mm² (165.3 KN PER STRAND)
7. PRESTRESSING CABLE SHALL CONSISTS OF 12 NOS.12.7mm DIA STRAND (12T13) IN A SHEATHING/DUCT
8. FOLLOWING PROPERTIES HAVE BEEN CONSIDERED IN THE DESIGN
   AREA OF STRAND = 98.7 mm²
   AREA OF CABLE = 1184.4 mm²
   MODULLES OF ELASTICITY OF STRAND =1.97x10^5 (N/mm^2)
   AVERAGE SLIP = 7mm
   JACKING FORCE IN EACH CABLE = 1652 KN

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

DESIGNED ,DRAWN & CHECKED BY

PURAKAUSHAL PROJUKTI LIMITED
House # C10, Road # 4 ,Banasree, Rampura- 1219.
E-maill: pproiltd@yahoo.com

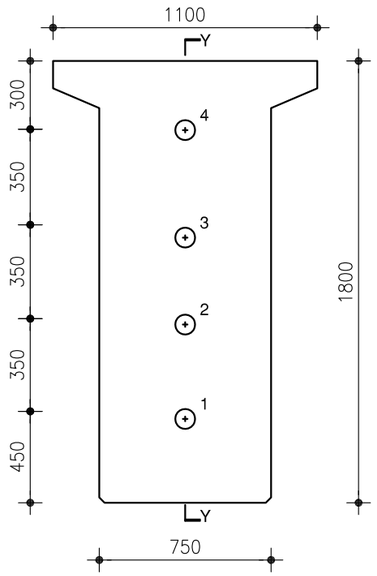
NAME OF PROJECT:
LOCATION:
UPAZILA:
DISTRICT:

DRAWING TITLE

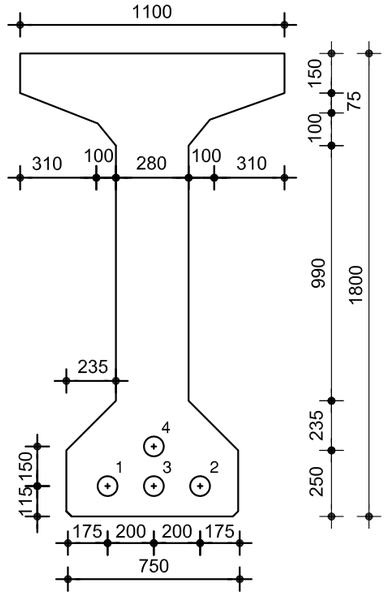
PRESTRESSING ANCHORAGE DETAILS
(Out to Out Length: 30.00m)

DRAWING NO. G-09

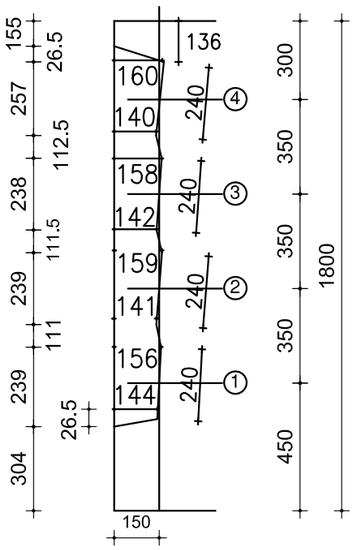
PAGE NO. P-41



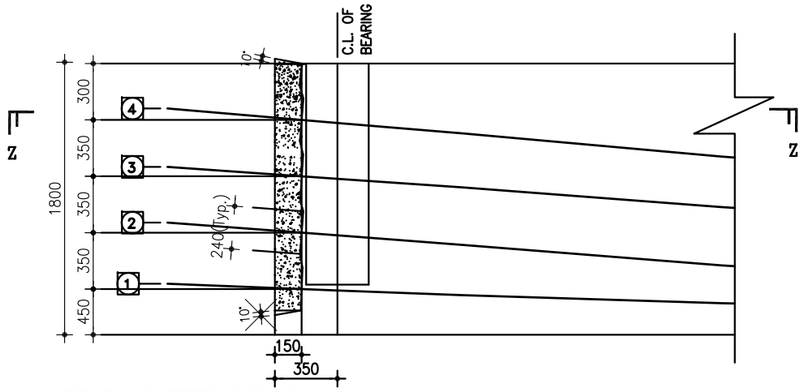
SECTION AT EXTERIOR
Scale 1:25



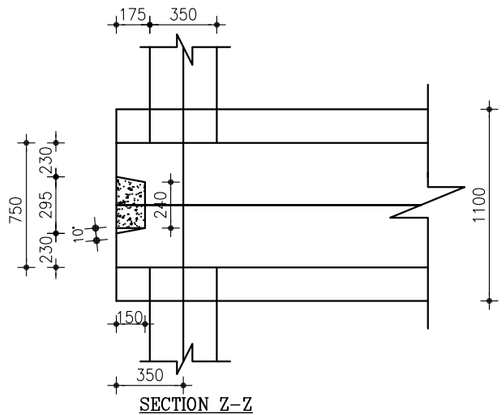
SECTION AT INTERIOR
Scale 1:25



SECTION AT Y–Y
SHOWS RECESS PROFILE
Scale 1:25



DETAILS OF EXTERIOR BLOCK
Scale 1:40



SECTION Z–Z
Scale 1:35

NOTES:

STAGES AND SEQUENCE OF PRESTRESSING

1. EACH CABLE SHALL BE STRESSED SIMULTANEOUSLY FROM BOTH ENDS. THE JACKING FORCE IN EACH CABLE SHALL 1652 KN TO BE IMPARTED SIMULTANEOUSLY AT BOTH ENDS.
2. STRESSING SHALL DONE IN ONE SEQUENCES 1, 2, 3, 4, 5, 6
3. STRESSING SALL DONE AFTER ATTAINMENT OF MINIMUM CONCRETE CYLINDER STRENGTH OFT 26.25 MPA BUT NoT BEFORE 7-DAYS AFTER CONCRETE CASTING
4. CONSTRUCTION SEQUENCE

DAYS ACTIVITY (AFTER CASTING OF GIRDER)	
14	STRESSING OF STAGE 1 CABLES (REF. NOTE NO. 4)
21	SHIFTING TO FINAL POSITION, CASTING OF DECK SLAB, INSTALLATION OF EXPANSION JOINTS CASTING/ LAYING OF FOOTHPATH, KERBS, WEARING COAT AND RAILINGS

AFTER STRESSING GIRDER CAN BE SHIFTED.

5. FOR ANCHORAGE DETAILS REFER DRG. NO. PSCG-40-03 (Sheet 2 of 2)
6. 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 MUST BE ADDED DURING TENSIONING.
7. EACH CABLES CONSISTS OF 12 NOS. 12.7mm DIA. (12T13) 7-PLY UNCOATED LOW RELAXATION STRANDS.
8. FOR OTHER REQUIREMENTS REFER GENERAL NOTES FOR PC GIRDER : BRDG/PSC/GEN
9. UPWARD HOGGING AT MID-SPAN AFTER TRANSFER OF PS-1

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

DESIGNED ,DRAWN & CHECKED BY

PURAKAUSHAL PROJUKTI LIMITED
House # C10, Road # 4 ,Banasree, Rampura- 1219.
E-maill: pproiltd@yahoo.com

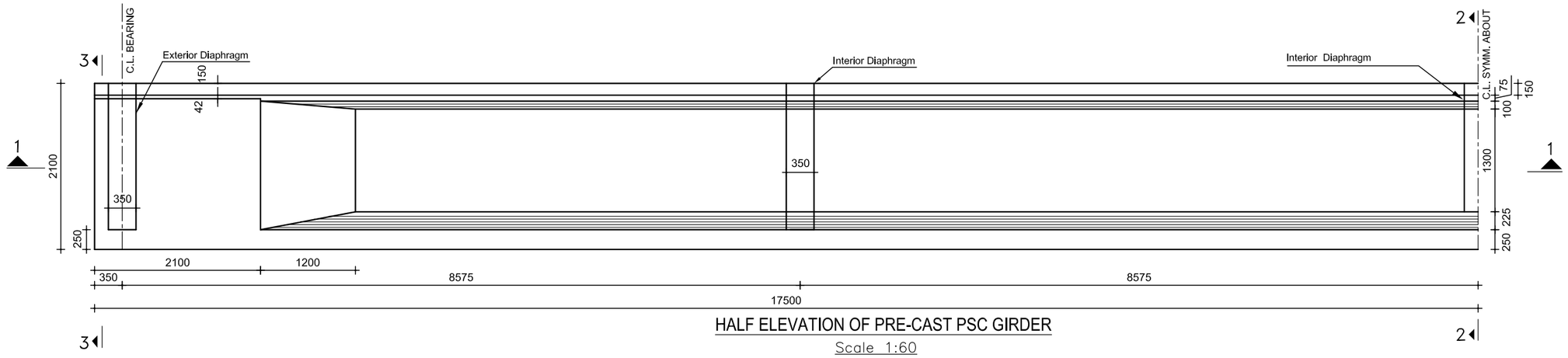
NAME OF PROJECT:
LOCATION:
UPAZILA:
DISTRICT:

DRAWING TITLE

Details of PC Girder
(Out to Out Length: 30.00m)

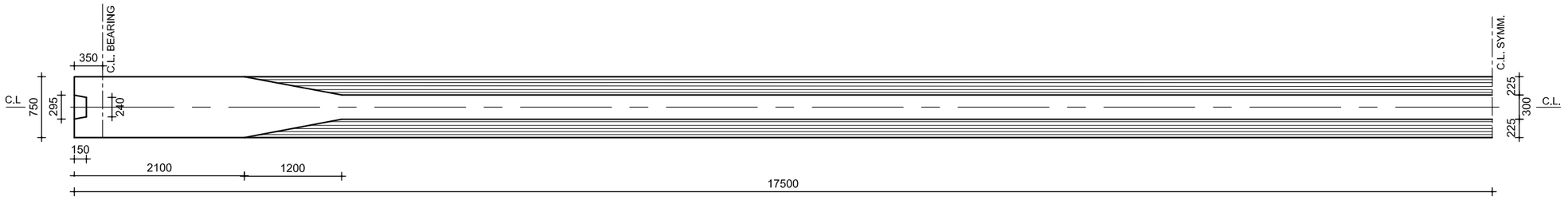
DRAWING NO. G-10

PAGE NO. P-42



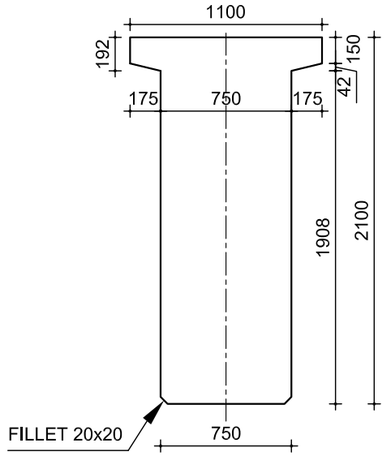
HALF ELEVATION OF PRE-CAST PSC GIRDER

Scale 1:60



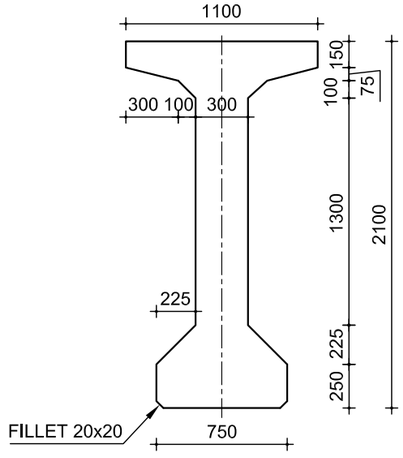
SECTIONAL VIEW OF PRE-CAST PSC GIRDER (SECTION 1-1)

Scale 1:60



SECTION 3-3 AT END

Scale 1:35



SECTION 2-2 AT MIDDLE

Scale 1:35

1. CONCRETE SHALL HAVE SPECIFIED CHARACTERISTIC COMPRESSIVE STRENGTH OF STANDARD CYLINDER OR CUBE (15 cm) AT 28 DAYS, ARE AS FOLLOWS:
   a) STANDARD CYLINDER CRUSHING STRENGTH, f'c = 35 N/mm²
   b) STANDARD CUBE CRUSHING STRENGTH, fcu = 43 N/mm²
2. REINFORCING STEEL SHALL CONFORM TO ASTM A615-87 GRADE 60 DEFORMED BARS (MARKED 'Y') HAVING MINIMUM YEILD STRENGTH Fy = 413 N/mm²
3. PRESTRESSING STEEL SHALL BE OF 12.7mm DIA. 7 PLY UNCOATED LOW RELAXATION STRAND CONFORMING TO AASHTO-M203 (GRADE-270) OR EQUIVALENT HAVING THE FOLLOWING STRENGTH:
   (a) MINIMUM ULTIMATE TENSILE STRENGTH (UTS) f 's = 1861 N/mm² (183.7 KN PER STRAND)
   (b) MINIMUM YIELD STRENGTH f 'y = 1674 N/mm² (165.3 KN PER STRAND)
4. PRESTRESSING CABLE SHALL CONSISTS OF 12 NOS.12.7mm DIA. STRAND (12T13) IN A SHEATHING/DUCT
5. FOLLOWING PROPERTIES HAVE BEEN CONSIDERED IN THE DESIGN
   AREA OF STRAND = 98.7 mm²
   AREA OF CABLE = 1184.4 mm²
   MODULLES OF ELASTICITY OF STRAND =1.97×10^5 (N/mm²)
   AVERAGE SLIP = 7mm
   JACKING FORCE IN EACH CABLE = 1652 KN.

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH

LOCAL GOVERNMENT ENGINEERING DEPARTMENT

DESIGNED ,DRAWN & CHECKED BY

PURAKAUSHAL PROJUKTI LIMITED

House # C10, Road # 4 ,Banasree, Rampura- 1219.
E-maill: pproiltd@yahoo.com

NAME OF PROJECT:

LOCATION:

UPAZILA:

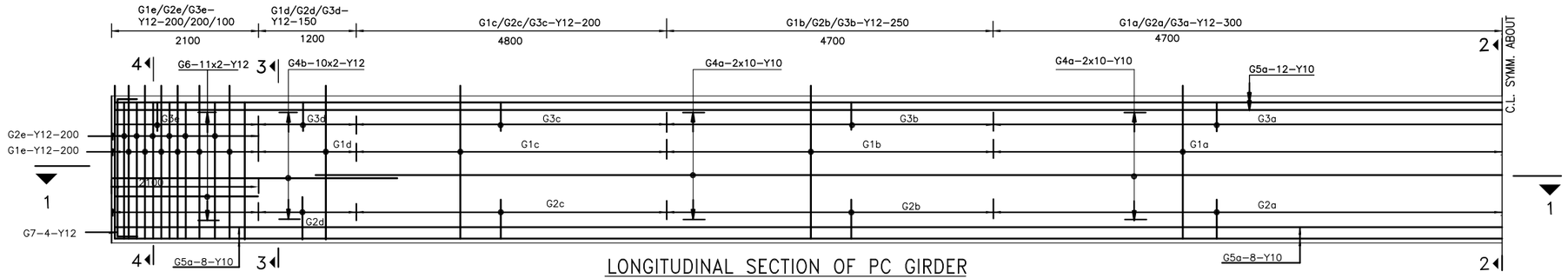
DISTRICT:

DRAWING TITLE

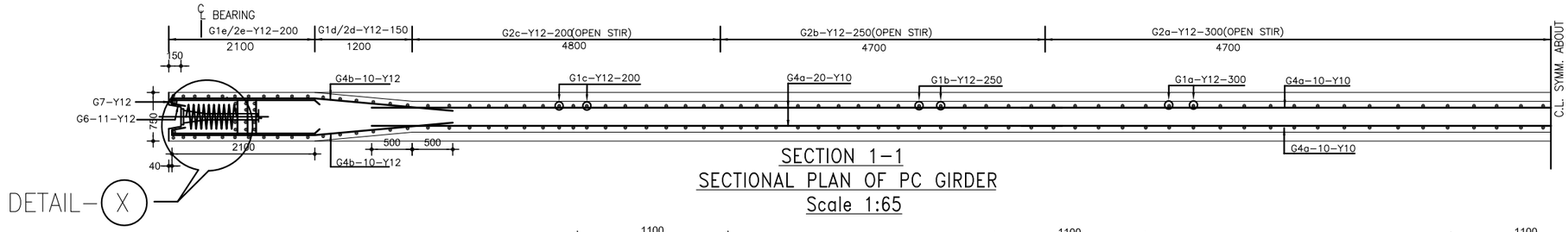
PC GIRDER
(Out to Out Length: 35.00m)
PRESTRESSING ANCHORAGE DETAILS

DRAWING NO. G-11

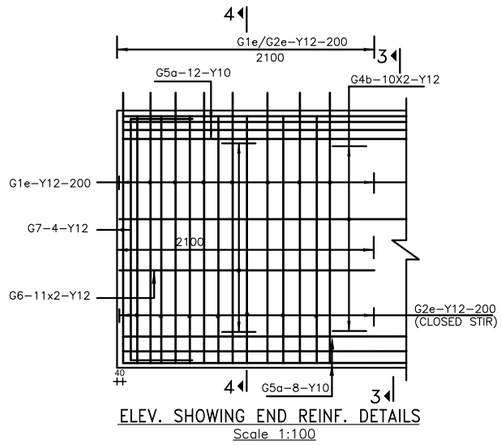
PAGE NO. P-43



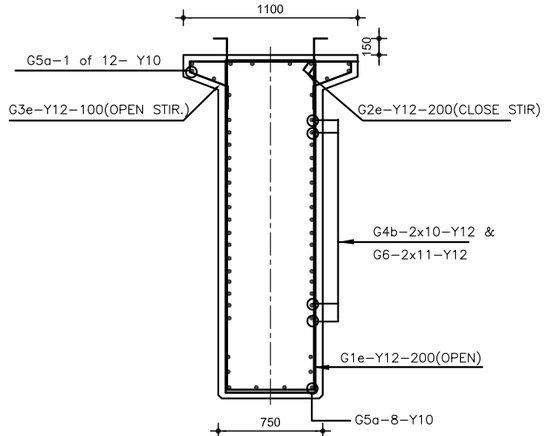
LONGITUDINAL SECTION OF PC GIRDER
Scale 1:65



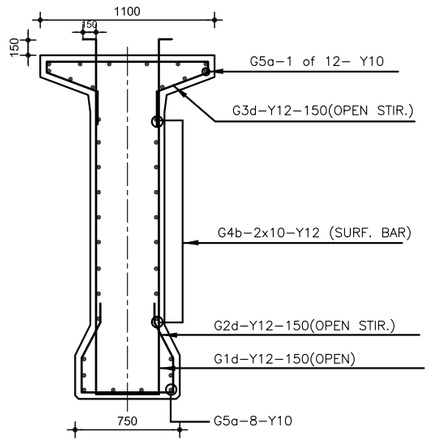
SECTION 1–1
SECTIONAL PLAN OF PC GIRDER
Scale 1:65



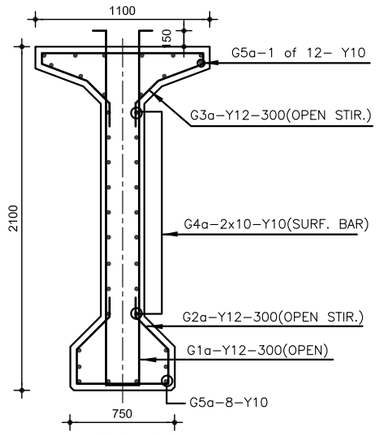
ELEV. SHOWING END REINF. DETAILS
Scale 1:100



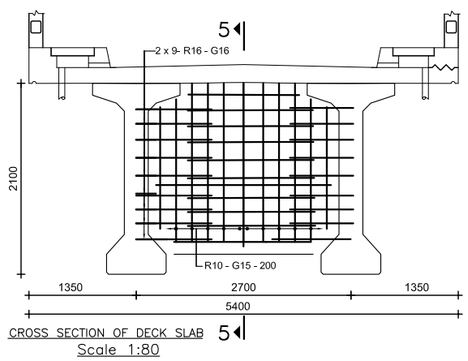
SECTION 4-4
(END SECTION)
Scale 1:100



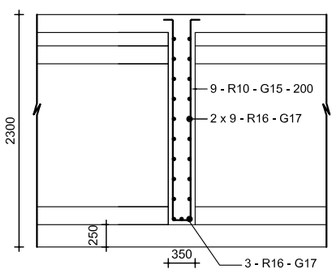
SECTION 3-3
(SLOPE SECTION)
Scale 1:100



SECTION 2-2
(MID SECTION)
Scale 1:100

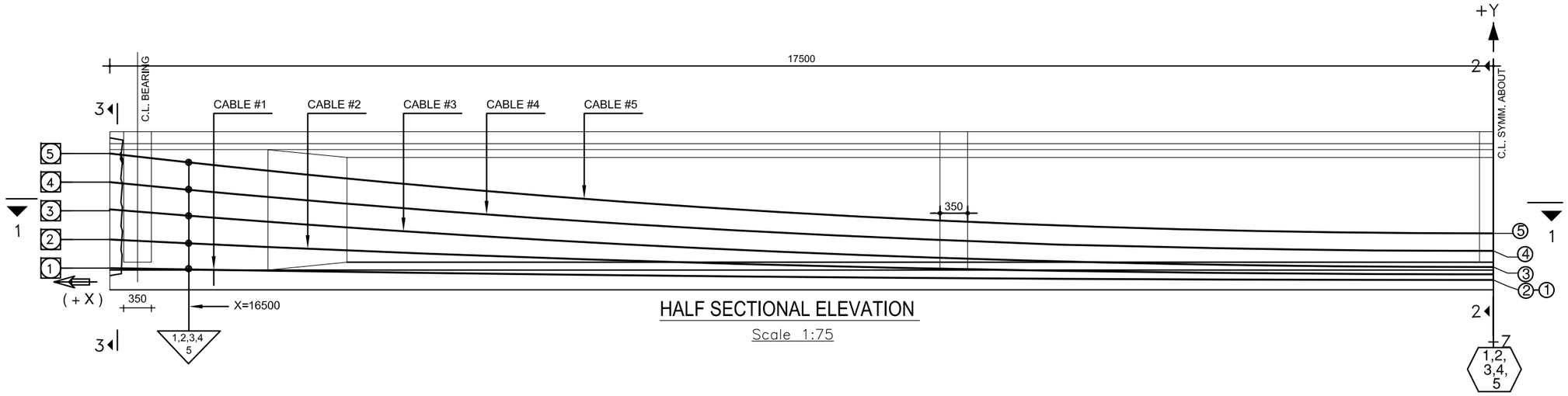


CROSS SECTION OF DECK SLAB
Scale 1:80



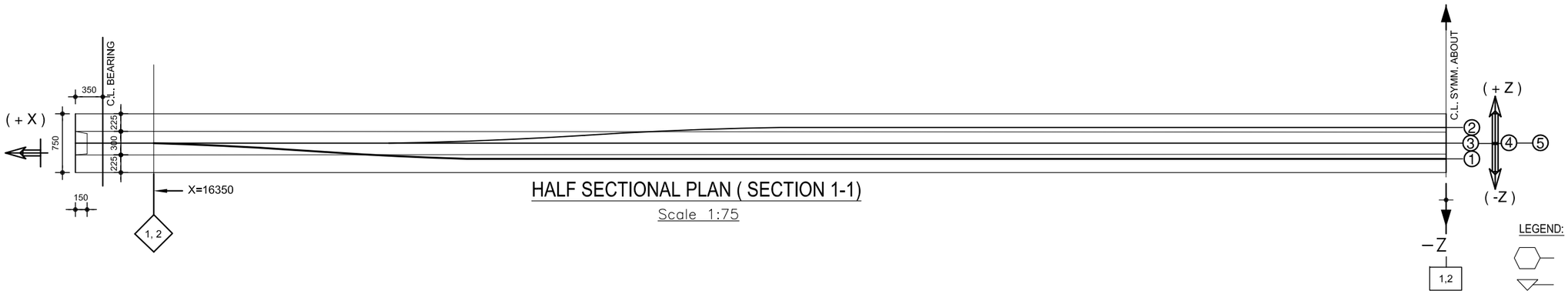
SECTION 5–5
MID DIAPHRAGM
Scale 1:80

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	DESIGNED ,DRAWN & CHECKED BY PURAKAUSHAL PROJUKTI LIMITED House # C10, Road # 4 ,Banasree, Rampura- 1219. E-maill: pproiltd@yahoo.com	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	DRAWING TITLE PC Girder Reinforcement Details (Out to Out Length: 35.00m) DRAWING NO. G-12 PAGE NO. P-44



HALF SECTIONAL ELEVATION

Scale 1:75



HALF SECTIONAL PLAN (SECTION 1-1)

Scale 1:75

LEGEND:

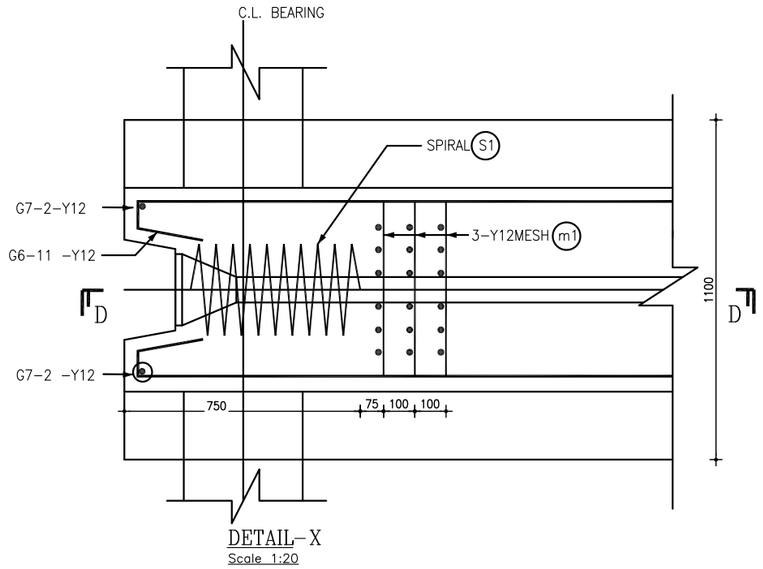
- INDICATES START OF CURVE IN ELEVATION
- INDICATES END OF CURVE IN ELEVATION
- INDICATES START OF CURVE IN PLAN
- INDICATES END OF CURVE IN PLAN
- INDICATES END OF CABLE
- INDICATES CABLE NUMBER

TABLE

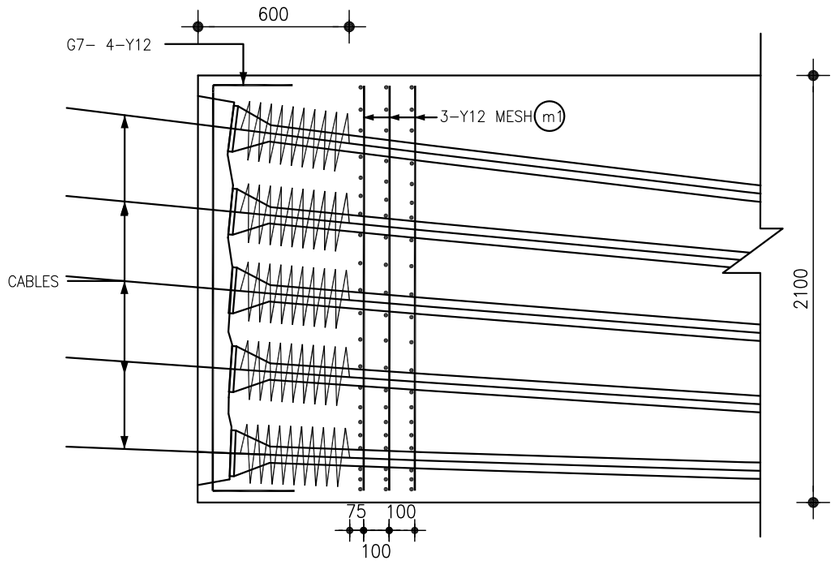
Cable No.	Cable Position				Cable		DISTANCE 'X' FROM C/L TOWARDS THE END IN mm																		Emergence Angle, Φ	Elongation at each end excluding grip, Δ (mm)
	End		Mid		Sag, a		17350		16350		14000		12000		10000		8000		6000		4000		2000		0			
	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Y	Z	Degree	
1	450	0	100	-200	350	200	450	0	411	0	328	-53	267	-92	216	-125	174	-152	142	-173	119	-188	105	-197	100	-200	2.66	115.46
2	800	0	100	200	700	200	800	0	722	0	556	53	435	92	333	125	249	152	184	173	137	188	109	197	100	200	4.81	115.03
3	1150	0	100	0	1050	0	1150	0	1032	0	784	0	602	0	449	0	323	0	226	0	156	0	114	0	100	0	6.93	114.66
4	1500	0	250	0	1250	0	1500	0	1360	0	1064	0	848	0	665	0	516	0	399	0	316	0	267	0	250	0	8.26	114.46
5	1850	0	400	0	1450	0	1850	0	1688	0	1344	0	1094	0	882	0	708	0	573	0	477	0	419	0	400	0	9.58	114.27

VERTICAL & HORIZONTAL PROFILE OF CABLES

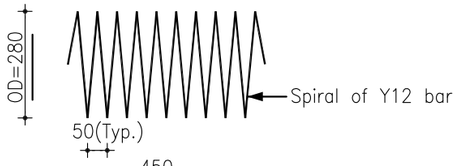
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	DESIGNED ,DRAWN & CHECKED BY PURAKAUSHAL PROJUKTI LIMITED House # C10, Road # 4 ,Banasree, Rampura- 1219. E-maill: pproiltd@yahoo.com	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	DRAWING TITLE PC Girder Prestressing Cable Details (Out to Out Length: 35.00m) DRAWING NO. G-13 PAGE NO. P-45



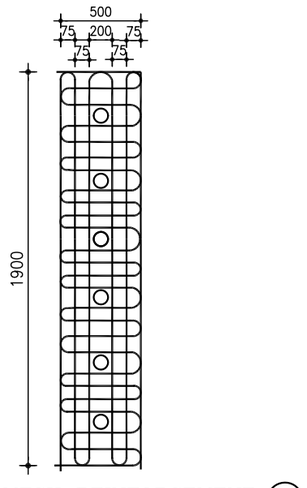
DETAIL–X
Scale 1:20



SECTION D–D
Scale 1:30



DETAILS OF SPIRAL S1
Scale 1:15



Y12 MESH REINFORCEMENT m1
Scale 1:30

BAR BENDING SCHEDULE OF NON-PRE-STRESSED REINFORCEMENT (Eor FULL Length)

SYM. OF BAR	DIA OF BAR	SPACE OF BAR	BENDING DIMENSION (mm)							LENGTH OF EACH BAR	NO OF BAR	TOTAL LENGTH (m)	Wt. Of STEEL (Kg)	SHAPE CODE	BAR SHAPE	CODE NO
			a	b	c	d	e	f	g							
G1a	12	300	200	2210	150					4920	31	152	136	1		1
G1b	12	250	200	2210	150					4920	38	187	167	1		
G1c	12	200	200	2210	150					4920	48	235	209	1		2
*G1d	12	150	435	2210	150					5155	16	83	74	1		
G1e	12	200	670	2210	150					5390	20	108	96	1		3
G2a	12	300	670	180	333	300				2316	29	67	60	2		
G2b	12	250	670	190	333	300				2316	40	93	83	2		4
G2c	12	200	670	190	333	300				2316	50	116	103	2		
*G2d	12	150	670	190	200	300				2050	14	29	26	2		
G2e	12	200	670	2020	75					5282	20	106	95	3		5
G3a	12	300	1020	68	320	142	300			2668	29	78	70	4		
G3b	12	250	1020	68	320	142	300			2668	40	107	96	4		
G3c	12	200	1020	68	320	142	300			2668	50	134	119	4		6
G3d	12	150	1020	68	190.4	132.6	300			2330	14	33	30	4		
G3e	12	200	1020	68	206	240				2036	20	41	37	5		7
G4a	10	-	34920							34920	20	700	432	6		
G4b	12	-	2060	1720						3780	40	152	135	7		8
G5a	10	-	34920							34920	20	698.4	431	6		
G6	12	-	2060	98	200					2358	44	104	93	8		9
G7	16	-	2020	320						2660	4	11	18	9		
Wt. of Non-Prestressed Steel per Girder = 2510 KG																

NOTES:

1. ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE MENTIONED
2. VERTICAL SPACING OF MESH REINF. MAY BE ADJUSTED TO AVOID CLASHING WITH CABLES
3. BENDING SCHEDULE OF SPIRAL AND MESH REINF. SHALL BE PREPARED AT SITE BEFORE FEBRICATION & GET IT APPROVED.
4. CONCRETE SHALL HAVE SPECIFIED CHARACTERISTIC COMPRESSIVE STRENGTH OF STANDARD CYLINDER OR CUBE (15 cm) AT 28 DAYS, ARE AS FOLLOWS
   a) STANDARAD CYLINDER CRUSHING STRENGTH, f'c = 35 N/mm²
   b) STANDARD CUBE CRUSHING STRENGTH, fcu = 43 N/mm²
5. REINFORCING STEEL SHALL CONFORM TO ASTM A615-87 GRADE 60 DEFORMED BARS (MARKED 'Y') HAVING MINIMUM YEILD STRENGTH Fy = 413 N/mm²
6. PRESTRESSING STEEL SHALL BE OF 12.7mm DIA. 7 PLY UNCOATED LOW RELAXATION STRAND CONFORMING TO AASHTO-M203 (GRADE-270) OR EQUIVALENT HAVING THE FOLLOWING STRENGTH:
   (a) MINIMUM ULTIMATE TENSILE STRENGTH (UTS) f 's = 1861 N/mm² (183.7 KN PER STRAND)
   (b) MINIMUM YIELD STRENGTH f 'y = 1674 N/mm² (165.3 KN PER STRAND)
7. PRESTRESSING CABLE SHALL CONSISTS OF 12 NOS.12.7mm DIA STRAND (12T13) IN A SHEATHING/DUCT
8. FOLLOWING PROPERTIES HAVE BEEN CONSIDERED IN THE DESIGN
   AREA OF STRAND = 98.7 mm²
   AREA OF CABLE = 1184.4 mm²
   MODULLES OF ELASTICITY OF STRAND =1.97x10^5 (N/mm^2)
   AVERAGE SLIP = 7mm
   JACKING FORCE IN EACH CABLE = 1652 KN.

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

DESIGNED ,DRAWN & CHECKED BY

PURAKAUSHAL PROJUKTI LIMITED
House # C10, Road # 4 ,Banasree, Rampura- 1219.
E-maill: pproiltd@yahoo.com

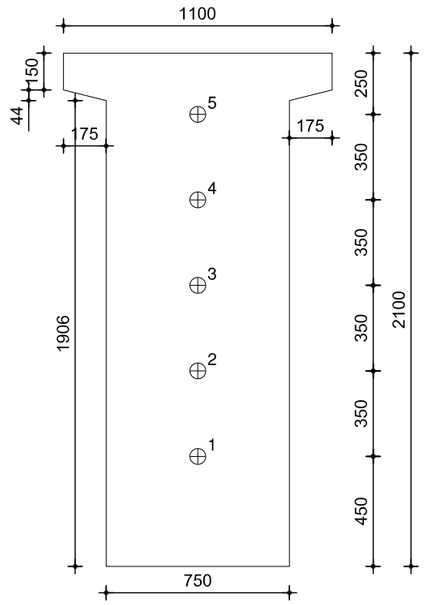
NAME OF PROJECT:
LOCATION:
UPAZILA:
DISTRICT:

DRAWING TITLE

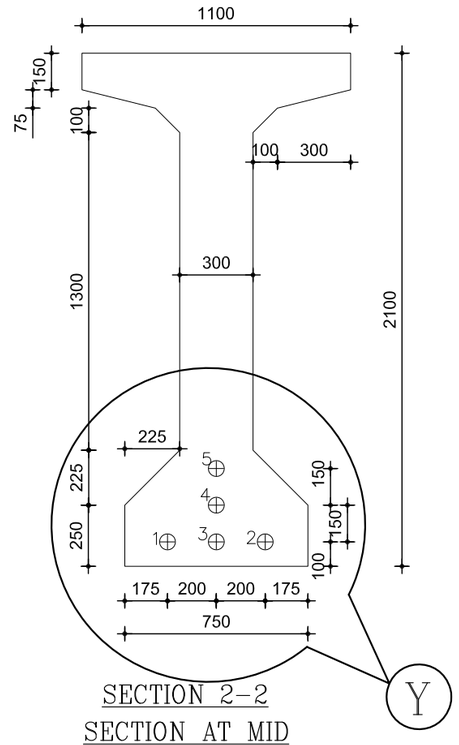
PRESTRESSING ANCHORAGE DETAILS
(Out to Out Length: 35.00m)

DRAWING NO. G-14

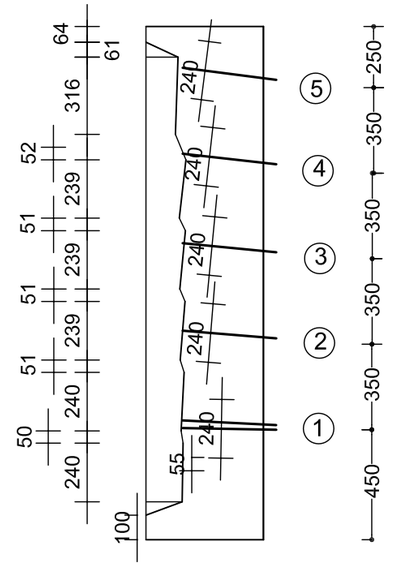
PAGE NO. P-46



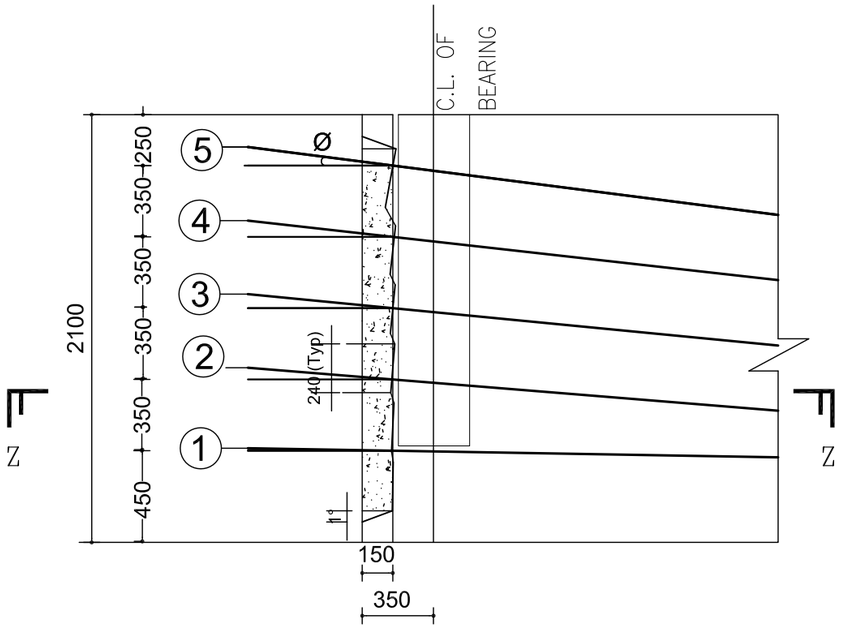
SECTION 3-3
SECTION AT END
Scale 1:25



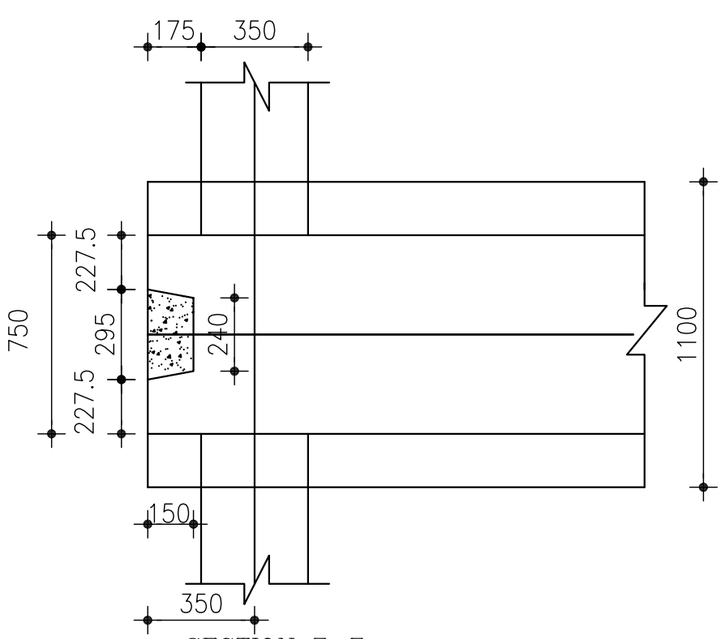
SECTION 2-2
SECTION AT MID
Scale 1:25



SECTION AT Y-Y
SHOWS RECESS PROFILE
Scale 1:25



DETAILS OF END BLOCK
Scale 1:40



SECTION Z-Z
Scale 1:40

NOTES:

STAGES AND SEQUENCE OF PRESTRESSING

1. EACH CABLE SHALL STRESSED SIMULTANEOUSLY FROM BOTH ENDS. THE JACKING FORCE IN EACH CABLE SHALL 1652 KN TO BE IMPARTED SIMULTANEOUSLY AT BOTH ENDS.
2. STRESSING SHALL DONE IN ONE SEQUENCES 1, 2, 3, 4, 5
3. STRESSING SALL DONE AFTER ATTAINMENT OF MINIMUM CONCRETE CYLINDER STRENGTH OFT 26.25 MPA BUT NoT BEFORE 7-DAYS AFTER CONCRETE CASTING
4. CONSTRUCTION SEQUENCE

DAYS (AFTER CASTING OF GIRDER)	ACTIVITY
14	STRESSING OF STAGE 1 CABLES (REF. NOTE NO. 3)
21	SHIFTING TO FINAL POSITION, CASTING OF DECK SLAB, INSTALLATION OF EXPANSION JOINTS CASTING/ LAYING OF FOOTHPATH, KERBS, WEARING COAT AND RAILINGS

AFTER STRESSING GIRDER CAN BE SHIFTED.

5. FOR ANCHORAGE DETAILS REFER DRG. NO. G-14
6. 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 MUST BE ADDED DURING TENSIONING.
7. EACH CABLES CONSISTS OF 12 NOS. 12.7mm DIA. (12T13) 7-PLY UNCOATED LOW RELAXATION STRANDS.
8. FOR OTHER REQUIREMENTS REFER GENERAL NOTES FOR PC GIRDER.
9. UPWARD HOGGING AT MID-SPAN AFTER TRANSFER OF PS-28mm

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

DESIGNED ,DRAWN & CHECKED BY

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House # C10, Road # 4 ,Banasree, Rampura- 1219.
E-maill: pproiltd@yahoo.com

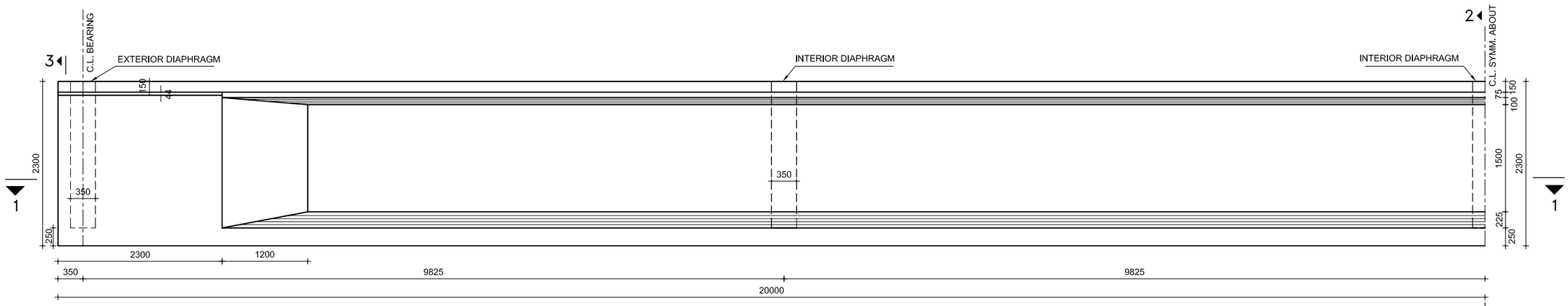
NAME OF PROJECT:
LOCATION:
UPAZILA:
DISTRICT:

DRAWING TITLE

Details of PC Girder
(Out to Out Length: 35.00m)

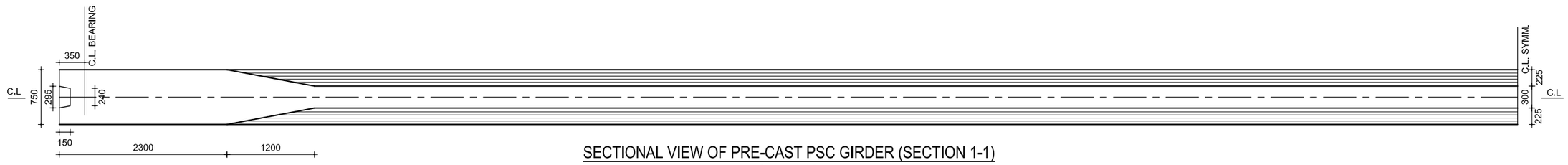
DRAWING NO. G-15

PAGE NO. P-47



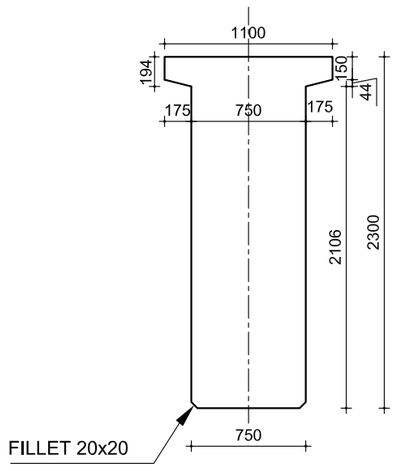
HALF ELEVATION OF PRE-CAST PSC GIRDER

Scale 1:60



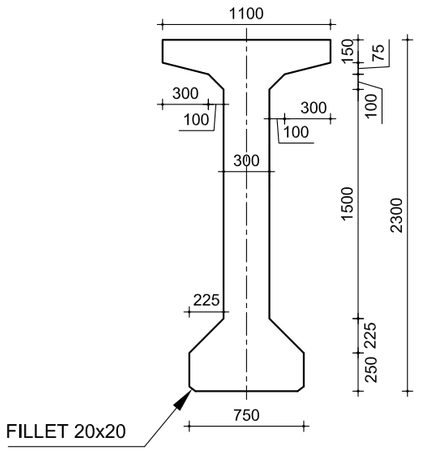
SECTIONAL VIEW OF PRE-CAST PSC GIRDER (SECTION 1-1)

Scale 1:60



SECTION 3-3 AT END

Scale 1:40



SECTION 2-2 AT MIDDLE

Scale 1:40

NOTE:

1. CONCRETE SHALL HAVE SPECIFIED CHARACTERISTIC COMPRESSIVE STRENGTH OF STANDARD CYLINDER OR CUBE (15 cm) AT 28 DAYS, ARE AS FOLLOWS :
   a) STANDARD CYLINDER CRUSHING STRENGTH, f'c = 35 N/mm²
   b) STANDARD CUBE CRUSHING STRENGTH, fcu = 43 N/mm²
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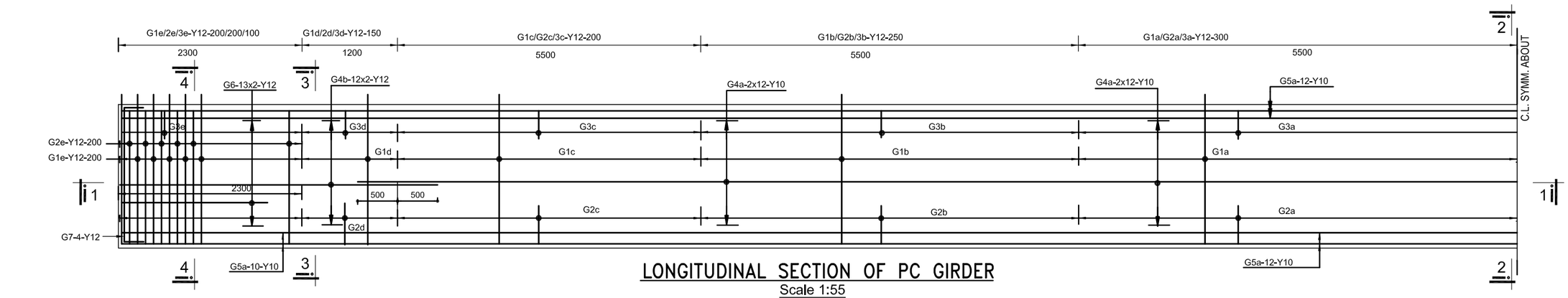
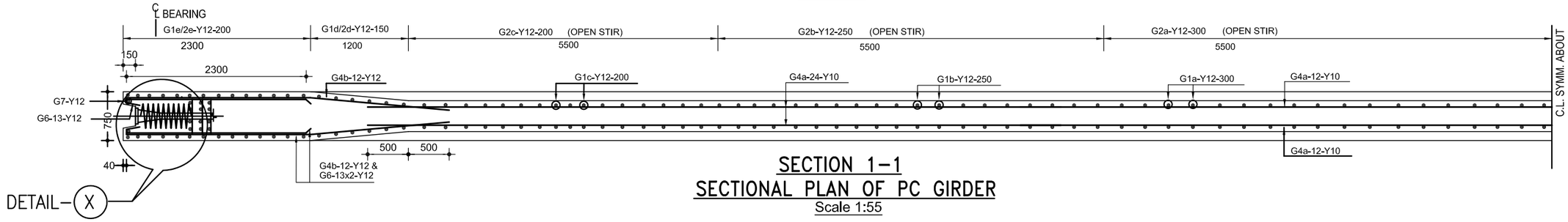
   AVERAGE SLIP =7mm
   JACKING FORCE IN EACH CABLE = 1652 KN.

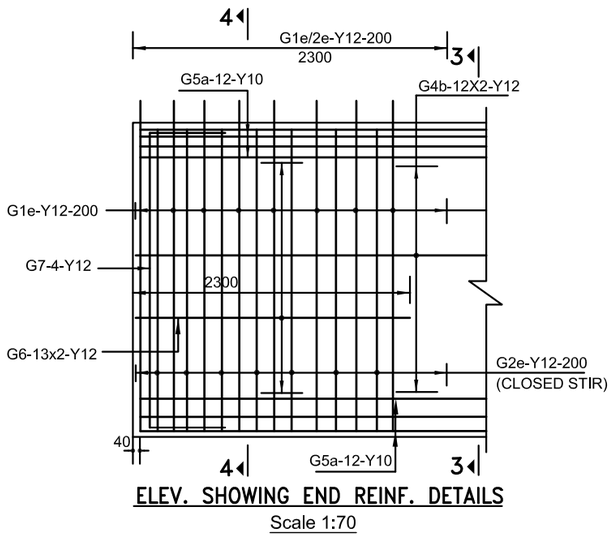
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	DESIGNED ,DRAWN & CHECKED BY PURAKAUSHAL PROJUKTI LIMITED House # C10, Road # 4 ,Banasree, Rampura- 1219. E-maill: pproiltd@yahoo.com	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	DRAWING TITLE PC GIRDER CONCRETE OUTLINE DETAILS (Out to Out Length: 40.00m) DRAWING NO. G-16 PAGE NO. P-48



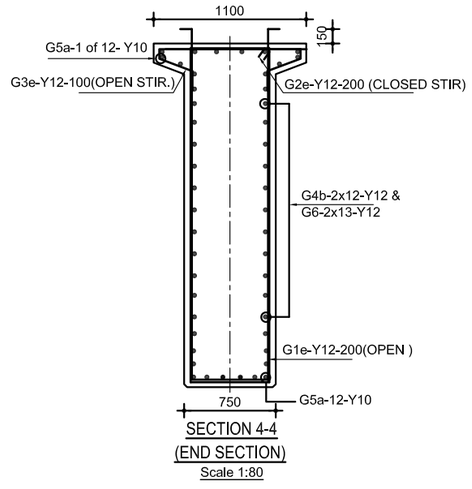
LONGITUDINAL SECTION OF PC GIRDER
Scale 1:55



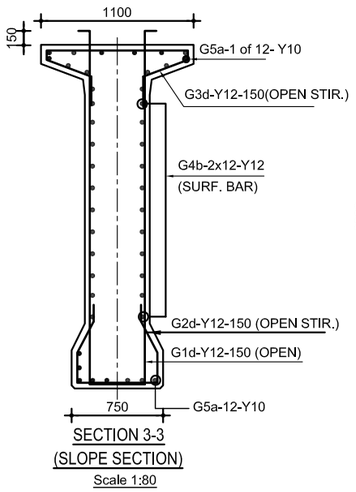
SECTION 1–1
SECTIONAL PLAN OF PC GIRDER
Scale 1:55



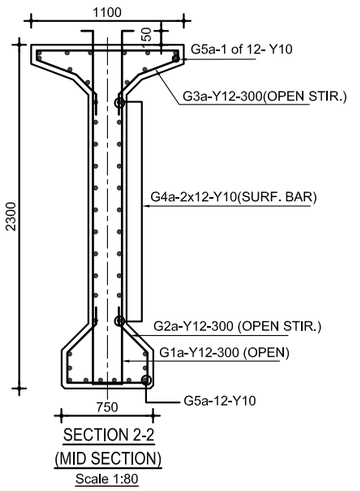
ELEV. SHOWING END REINF. DETAILS
Scale 1:70



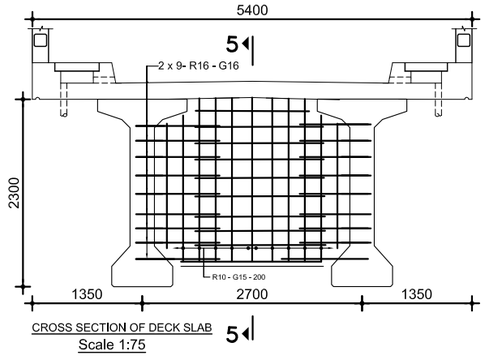
SECTION 4-4
(END SECTION)
Scale 1:80



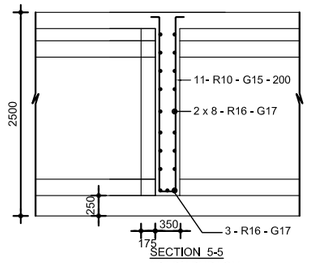
SECTION 3-3
(SLOPE SECTION)
Scale 1:80



SECTION 2-2
(MID SECTION)
Scale 1:80

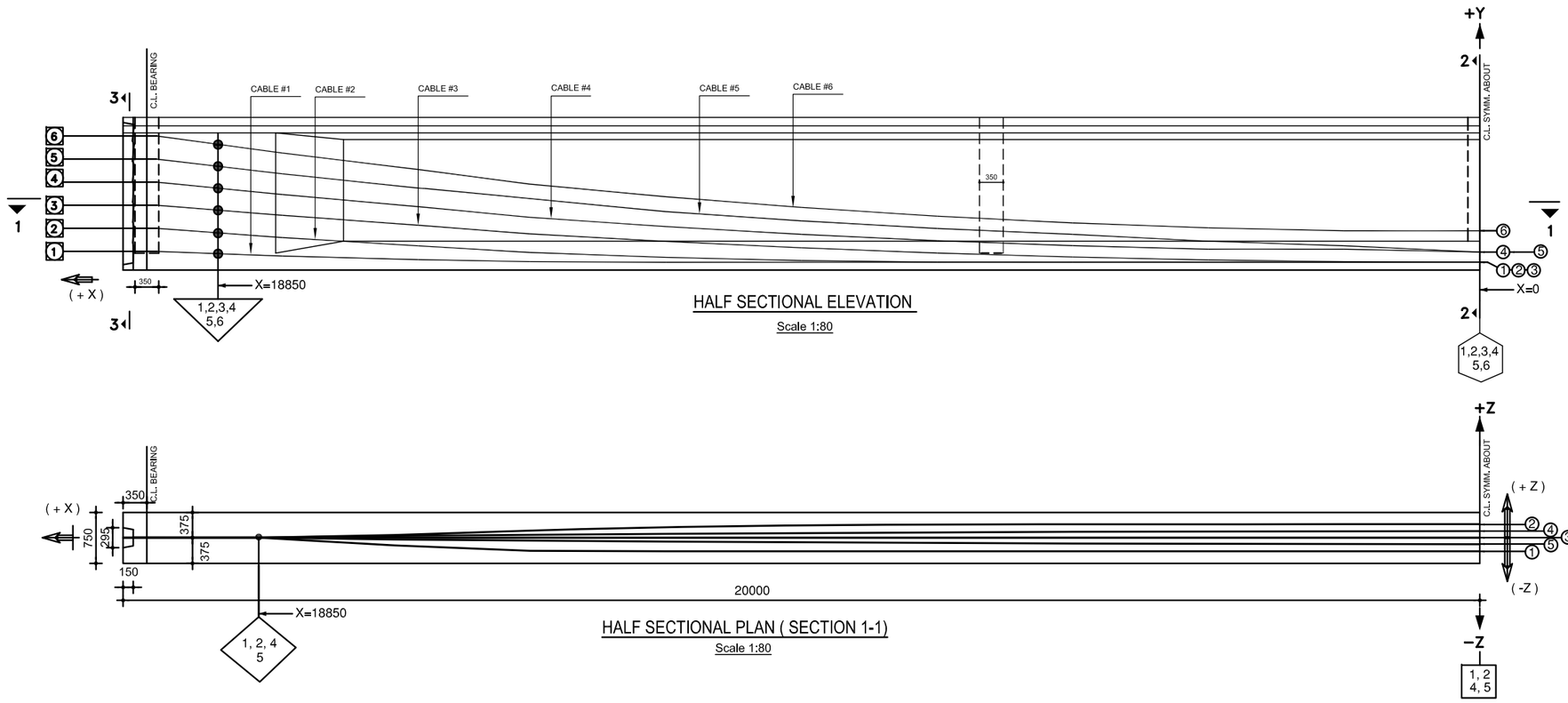


CROSS SECTION OF DECK SLAB
Scale 1:75



SECTION 5-5
Mid DIAPHRAGM
Scale 1:75

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	DESIGNED ,DRAWN & CHECKED BY PURAKAUSHAL PROJUKTI LIMITED House # C10, Road # 4 ,Banasree, Rampura- 1219. E-maill: pproiltd@yahoo.com	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	DRAWING TITLE PC GIRDER PRESTRESSING CABLE DETAILS (Out to Out Length: 40.00m) DRAWING NO. G-17 PAGE NO. P-49



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

T A B L E

Cable No.	Cable Position				Cable		DISTANCE 'X' FROM C/L TOWARDS THE END IN mm																				Emergence Angle, Φ	Elongation at each end excluding grip, Δ (mm)
	End		Mid		Sag, a		19850		18850		18000		16000		14000		12000		10000		8000		6000		4000		2000		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	Y	Z	Degree	
1	**350**	**0**	**110**	**-200**	240	200	350	0	326	0	307	-18	266	-56	229	-90	198	-119	171	-144	149	-164	132	-180	120	-191	112	-198	110	-200	1.80	131.26
2	**690**	**0**	**110**	**200**	580	200	690	0	633	0	587	18	487	56	399	90	322	119	257	144	204	164	163	180	134	191	116	198	110	200	3.54	130.83
3	**1030**	**0**	**110**	**0**	920	0	1030	0	940	0	867	0	708	0	568	0	446	0	343	0	259	0	194	0	147	0	119	0	110	0	5.31	130.46
4	**1370**	**0**	**260**	**-100**	1110	100	1370	0	1261	0	1173	-9	981	-28	812	-45	666	-59	542	-72	440	-82	361	-90	305	-95	271	-99	260	-100	6.43	130.23
5	**1710**	**0**	**260**	**100**	1450	100	1710	0	1568	0	1452	9	1202	28	981	45	790	59	628	72	496	82	392	90	319	95	275	99	260	100	8.39	129.88
6	**2050**	**0**	**410**	**0**	1640	0	2050	0	1889	0	1759	0	1476	0	1226	0	1009	0	826	0	676	0	560	0	477	0	427	0	410	0	9.47	129.71

VERTICAL & HORIZONTAL PROFILE OF CABLES

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

DESIGNED ,DRAWN & CHECKED BY

PURAKAUSHAL PROJUKTI LIMITED
House # C10, Road # 4 ,Banasree, Rampura- 1219.
E-maill: pproiltd@yahoo.com

NAME OF PROJECT:

LOCATION:

UPAZILA:

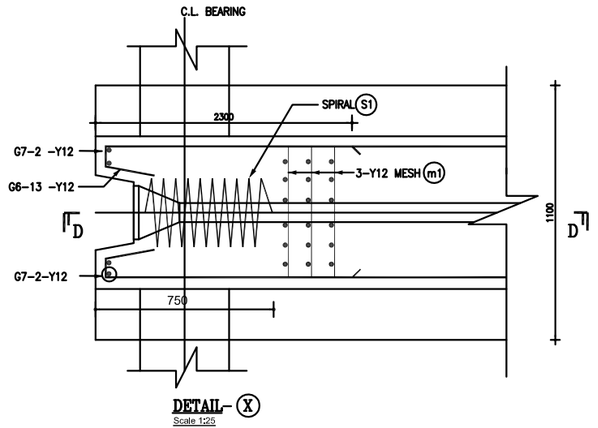
DISTRICT:

DRAWING TITLE

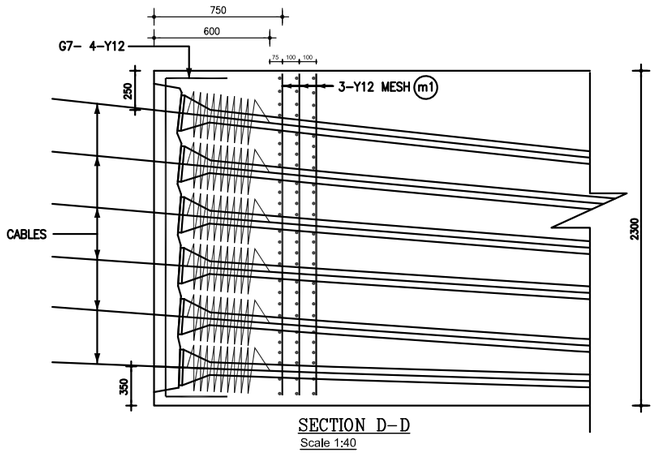
PC GIRDER PRESTRESSING CABLE DETAILS
(Out to Out Length: 40.00m)

DRAWING NO. G-18

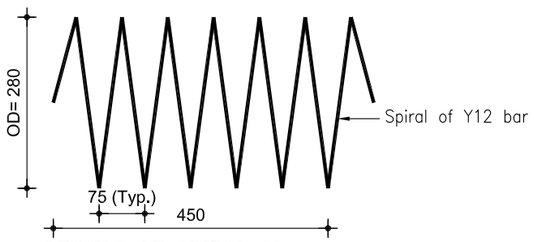
PAGE NO. P-50



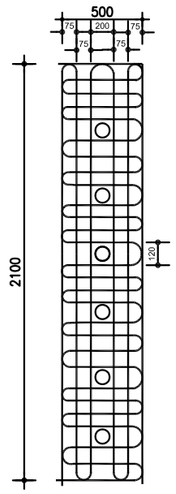
DETAIL- X
Scale 1:25



SECTION D-D
Scale 1:40



DETAILS OF SPIRAL S1
Scale 1:10



Y12 MESH REINFORCEMENT m1
Scale 1:30

BAR BENDING SCHEDULE OF NON-PRE-STRESSED REINFORCEMENT

SYM. OF BAR	DIA OF BAR	SPACE OF BAR	BENDING DIMENSION (mm)							LENGTH OF EACH BAR	TOTAL NO OF BAR	TOTAL LENGTH (m)	Wt. Of STEEL (Kg/m)	TOTAL Weight (Kg)	SHAPE CODE	BAR SHAPE	CODE NO
			a	b	c	d	e	f	g								
G1a	12	300	220	2410	150					5340	19x2	203	0.888	180	1		1
G1b	12	250	220	2410	150					5340	22x2	236	0.888	209	1		
G1c	12	200	220	2410	150					5340	28x2	301	0.888	267	1		2
*G1d	12	150	435	2410	150					5555	7x2	78	do	70	1		
G1e	12	100	670	2410	150					5790	23x2	267	do	238	1		3
G2a	12	300	670	145	318	360				2316	19x2	88	do	79	2		
G2b	12	250	670	145	318	360				2316	22x2	102	do	91	2		4
G2c	12	200	670	145	318	360				2316	28x2	130	do	116	2		
*G2d	12	150	670	145	272	360				2224	7x2	31	do	28	2		
G2e	12	100	670	2370	75					6230	23x2	287	do	265	3		5
G3a	12	300	1020	70	302	187	240			2618	19x2	99.484	do	88.34	4		
G3b	12	250	1020	70	302	187	240			2618	22x2	115.192	do	402.29	4		
G3c	12	200	1020	70	302	187	240			2618	28x2	146.608	do	130.19	4		6
G3d	12	150	1020	70	230	93.5	240			2287	7x2	32.018	do	28.43	4		
G3e	12	100	1020	70	180	240				2000	23x2	92.00	0.888	81.70	5		7
G4a	10	-	34400							34400	24x1	825.60	0.617	509.40	6		
G4b	10	-	2260	1527						3787	24x2	181.776	0.888	161.42	7		8
G5a	10	-	39920							39920	22x2	878.24	0.617	541.87	6		
G6	12	-	2260	148	200					2608	26x2	235.616	0.888	120.43	8		10
G7	16	-	2170	320						2810	2x2	11.24	1.578	17.74	9		
Wt. of Non-Prestressed Steel per Girder = 3624.70 KG																	

NOTES:

1. ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE MENTIONED
2. VERTICAL SPACING OF MESH REINF. MAY BE ADJUSTED TO AVOID CLASHING WITH CABLES
3. BENDING SCHEDULE OF SPIRAL AND MESH REINF. SHALL BE PREPARED AT SITE BEFORE FEBRICATION & GET IT APPROVED.
4. CONCRETE SHALL HAVE SPECIFIED CHARACTERISTIC COMPRESSIVE STRENGTH OF STANDARD CYLINDER OR CUBE (15 cm) AT 28 DAYS, ARE AS FOLLOWS
   a) STANDARAD CYLINDER CRUSHING STRENGTH, f'c = 35 N/mm²
   b) STANDARD CUBE CRUSHING STRENGTH, fcu = 43 N/mm²
5. REINFORCING STEEL SHALL CONFORM TO ASTM A615-87 GRADE 60 DEFORMED BARS (MARKED 'Y') HAVING MINIMUM YEILD STRENGTH Fy = 413 N/mm²
6. PRESTRESSING STEEL SHALL BE OF 12.7mm DIA. 7 PLY UNCOATED LOW RELAXATION STRAND CONFORMING TO AASHTO-M203 (GRADE-270) OR EQUIVALENT HAVING THE FOLLOWING STRENGTH:
   (a) MINIMUM ULTIMATE TENSILE STRENGTH (UTS) f'ₛ = 1861 N/mm² (183.7 KN PER STRAND)
   (b) MINIMUM YIELD STRENGTH f'y = 1675 N/mm² (165.3 KN PER STRAND)
7. PRESTRESSING CABLE SHALL CONSISTS OF 12 NOS.12.7mm DIA STRAND (12T13) IN A SHEATHING/DUCT
8. FOLLOWING PROPERTIES HAVE BEEN CONSIDERED IN THE DESIGN
   AREA OF STRAND = 98.7 mm²
   AREA OF CABLE = 1184.4 mm²
   MODULLES OF ELASTICITY OF STRAND =1.97×10^5 (N/mm²)
   AVERAGE SLIP = 7mm
   JACKING FORCE IN EACH CABLE = 1652 KN.

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

DESIGNED ,DRAWN & CHECKED BY

PURAKAUSHAL PROJUKTI LIMITED
House # C10, Road # 4 ,Banasree, Rampura- 1219.
E-maill: pproiltd@yahoo.com

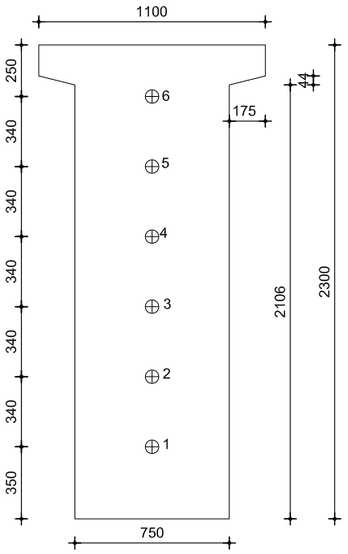
NAME OF PROJECT:
LOCATION:
UPAZILA:
DISTRICT:

DRAWING TITLE

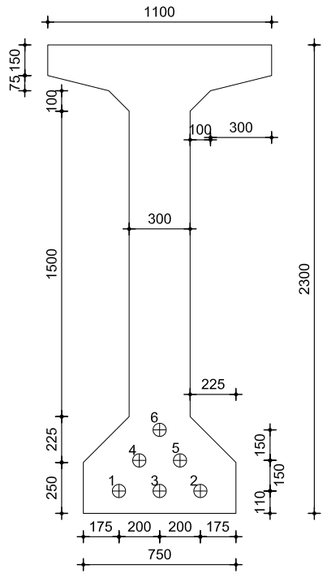
TYPICAL PRESTRESSING ANCHORAGE DETAILS
(Out to Out Length: 40.00m)

DRAWING NO. G-19

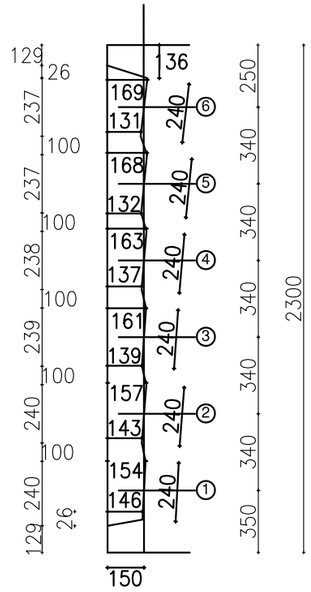
PAGE NO. P-51



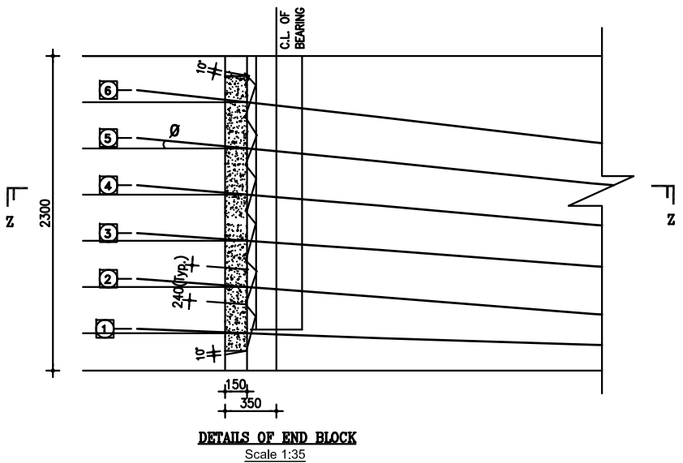
SECTION 3-3
SECTION AT END
Scale 1:35



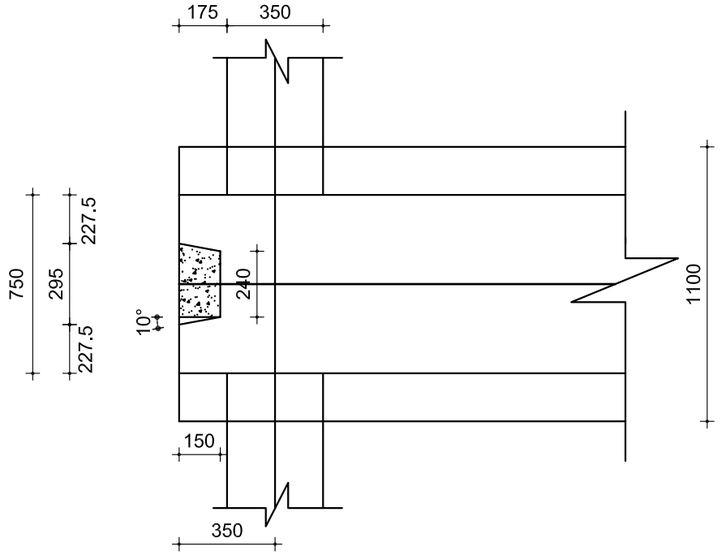
SECTION 2-2
MID SECTION
Scale 1:35



SECTION AT Y-Y
SHOWS RECESS PROFILE
Scale 1:35



DETAILS OF END BLOCK
Scale 1:35



SECTION Z-Z
Scale 1:35

NOTES:

STAGES AND SEQUENCE OF PRESTRESSING

1. EACH CABLE SHALL BE STRESSED SIMULTANEOUSLY FROM BOTH ENDS. THE JACKING FORCE IN EACH CABLE SHALL BE 1652 KN TO BE IMPARTED SIMULTANEOUSLY AT BOTH ENDS.
2. STRESSING SHALL BE DONE IN ONE SEQUENCES 1, 2, 3, 4, 5, 6
3. STRESSING SALL BE DONE AFTER ATTAINMENT OF MINIMUM CONCRETE CYLINDER STRENGTH OFT 26,25 MPA BUT NoT BEFORE 7-DAYS AFTER CONCRETE CASTING
4. CONSTRUCTION SEQUENCE

DAYS (AFTER CASTING OF GIRDER)	ACTIVITY
14	STRESSING OF STAGE 1 CABLES (REF. NOTE NO. 3)
21	SHIFTING TO FINAL POSITION, CASTING OF DECK SLAB, INSTALLATION OF EXPANSION JOINTS CASTING/ LAYING OF FOOTHPATH, KERBS, WEARING COAT AND RAILINGS

AFTER STRESSING GIRDER CAN BE SHIFTED.

5. FOR ANCHORAGE DETAILS REFER DRG. NO. G-19
6. 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 MUST BE ADDED DURING TENSIONING.
7. EACH CABLES CONSISTS OF 12 NOS. 12.7mm DIA. (12T13) 7-PLY UNCOATED LOW RELAXATION STRANDS.
8. FOR OTHER REQUIREMENTS REFER GENERAL NOTES FOR PC GIRDER : BRDG/PSC/GEN
9. UPWARD HOGGING AT MID-SPAN AFTER TRANSFER OF PS-31.5mm

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

DESIGNED ,DRAWN & CHECKED BY

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E-maill: pproiltd@yahoo.com

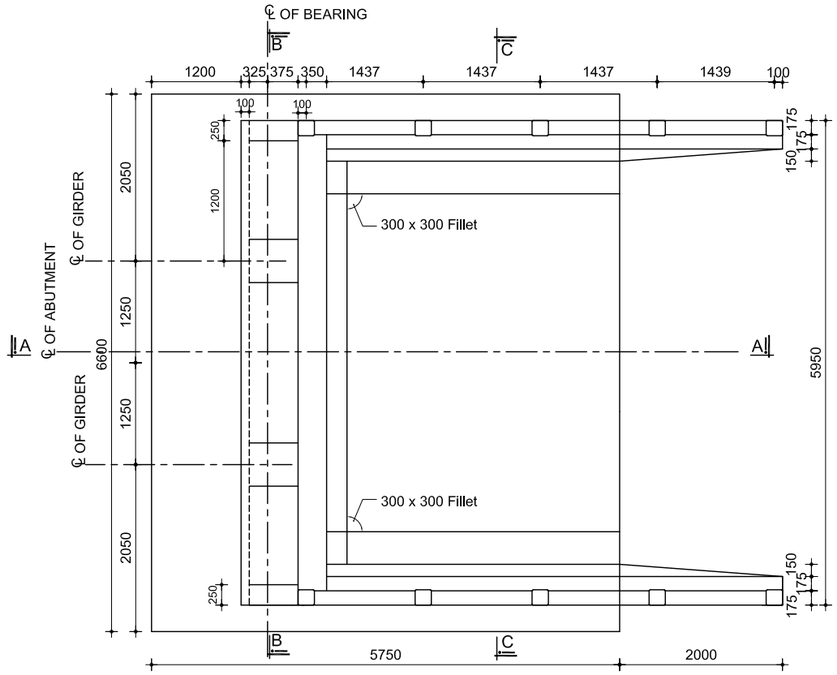
NAME OF PROJECT:
LOCATION:
UPAZILA:
DISTRICT:

DRAWING TITLE

DETAILS OF PC GIRDER
(Out to Out Length: 40.00m)

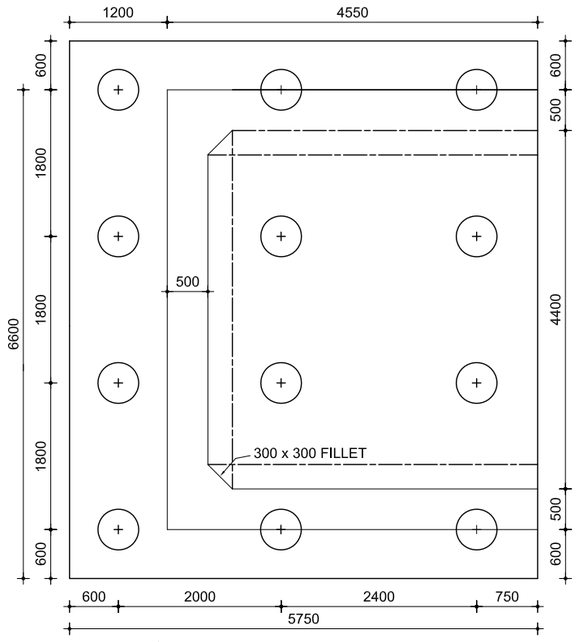
DRAWING NO. G-20

PAGE NO. P-52



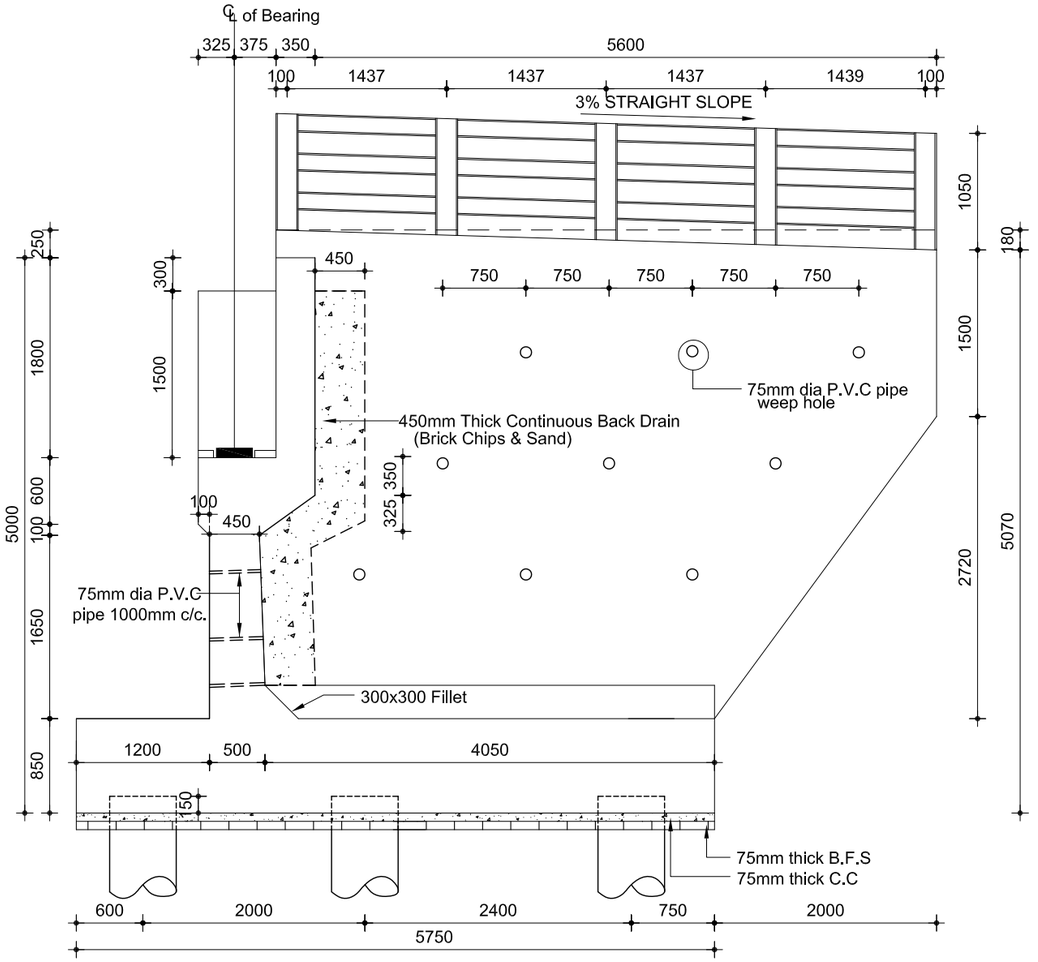
TOP PLAN OF ABUTMENT & WING WALL

Scale: 1:75



PILE LAY-OUT PLAN

Scale: 1:75



SECTION A-A

Scale: 1:55

NOTES:

1. Abutment Details for 25m span.
2. All dimensions are in millimeter unless otherwise mentioned.
3. Clear cover to main reinforcement bar is to be 50mm. unless otherwise mentioned
4. 28 days cylinder strength of concrete: f 'c = 25.00N/mm² (3600 psi)
5. Yield strength of mild steel deformed bar fy = 413N/mm² (60000psi)

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH

LOCAL GOVERNMENT ENGINEERING DEPARTMENT

DESIGNED ,DRAWN & CHECKED BY

PURAKAUSHAL PROJUKTI LIMITED

House # C10, Road # 4 ,Banasree, Rampura- 1219.
E-maill: pproiltd@yahoo.com

NAME OF PROJECT:

LOCATION:

UPAZILA:

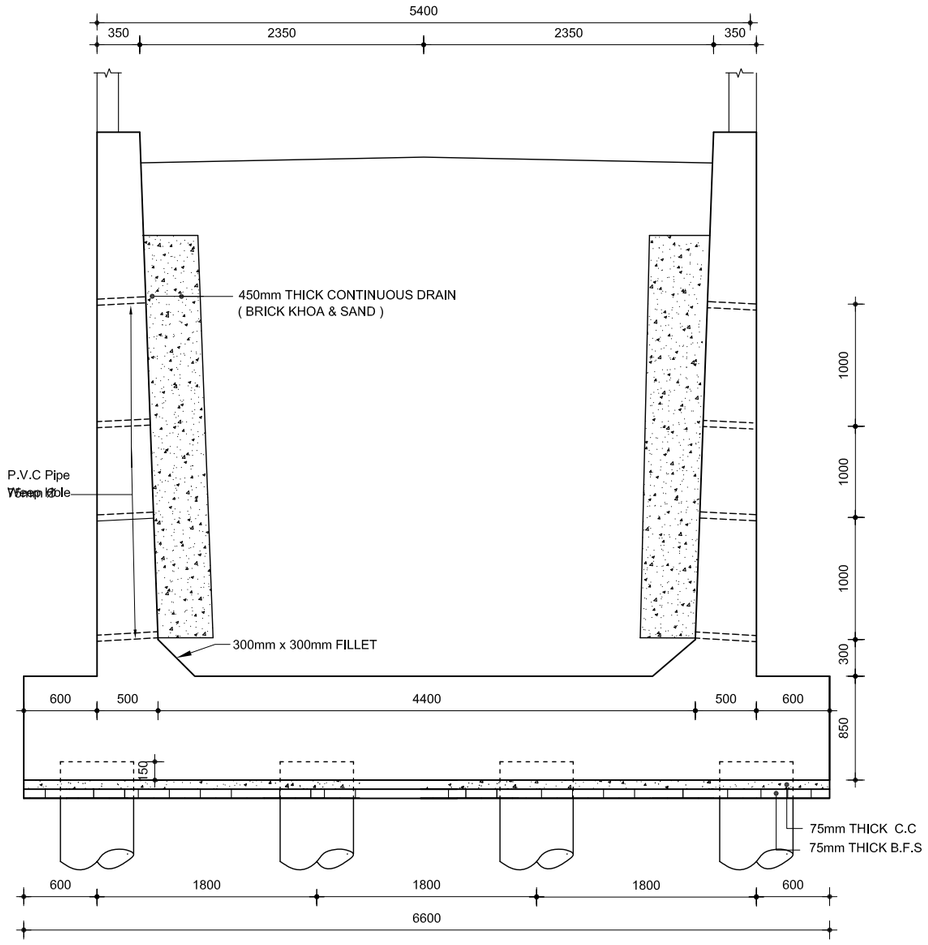
DISTRICT:

DRAWING TITLE

Details of Abutment
Span 25m Abutment Height 5.0m

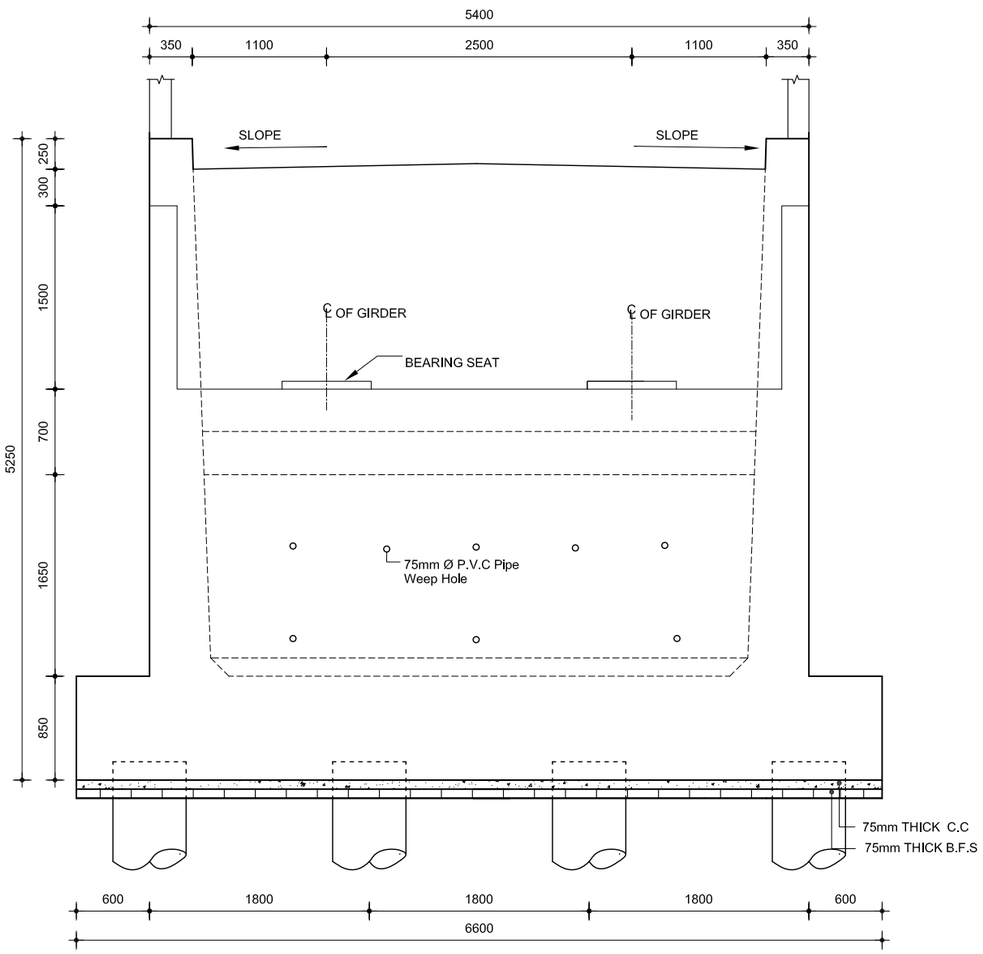
DRAWING NO. AB-01

PAGE NO. P-53



SECTION: C - C

Scale: 1:50



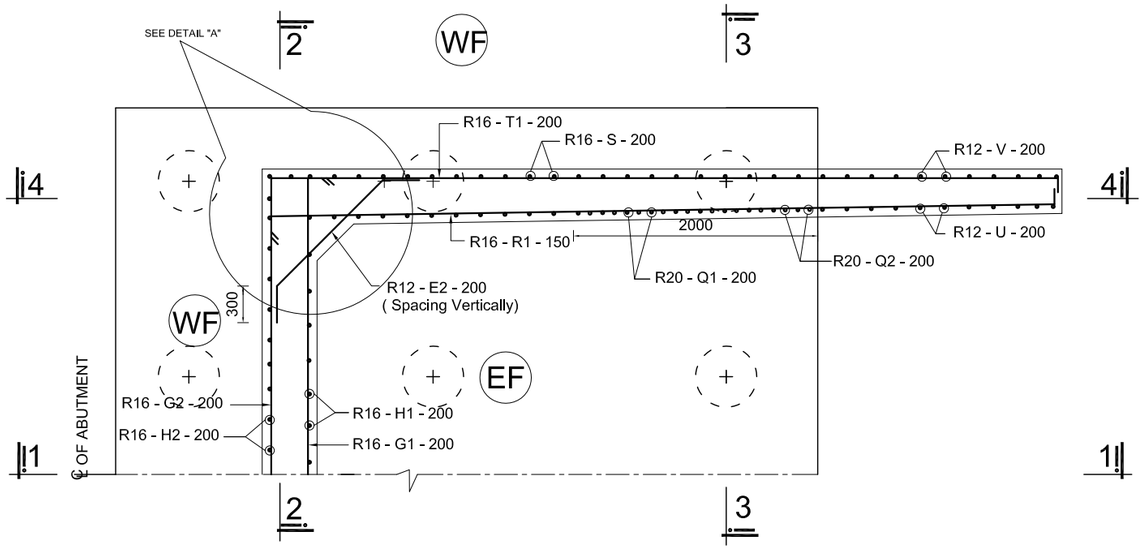
SECTION: B - B

Scale: 1:50

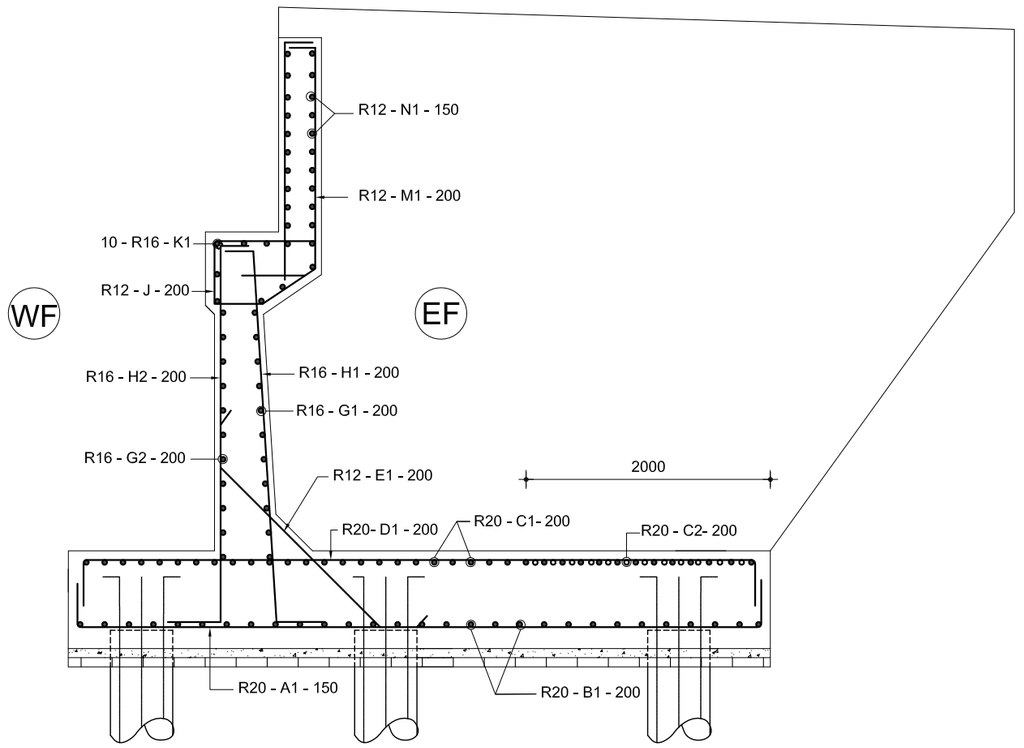
NOTES:

1. All dimensions are in millimeter unless otherwise mentioned.
2. 28 days cylinder strength of concrete: f 'c = 25.00N/mm² (3600 psi)
3. Yield strength of mild steel deformed bar fy = 413N/mm² (60000psi)
4. Clear cover to main reinforcement bar is to be 50mm unless otherwise mentioned.

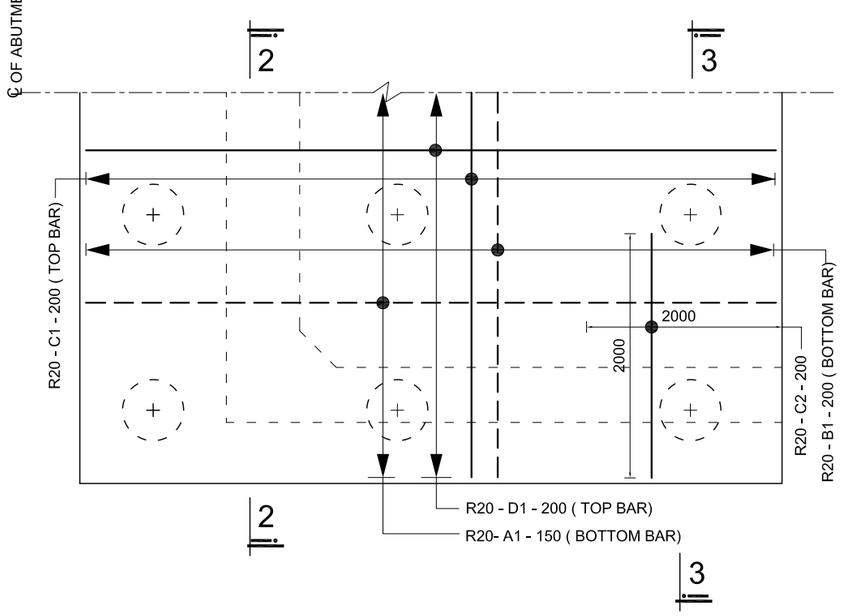
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	DESIGNED ,DRAWN & CHECKED BY PURAKAUSHAL PROJUKTI LIMITED House # C10, Road # 4 ,Banasree, Rampura- 1219. E-maill: pproiltd@yahoo.com	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	DRAWING TITLE Sectional Elevation of Abutment & Wing wall, Span 25m Abutment Height 5.0m DRAWING NO. AB-02 PAGE NO. P-54



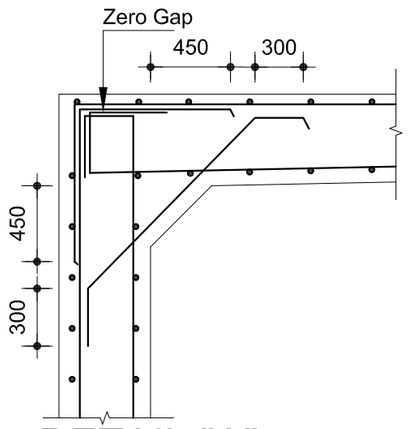
PLAN OF ABUTMENT & WINGWALL
SHOWING REINFORCEMENT
Scale: 1:50



CROSS SECTION OF ABUTMENT (SECTION 1-1)
SHOWING REINFORCEMENT DETAILS
Scale: 1:50



PLAN OF PILE CAP
SHOWING REINFORCEMENT
Scale: 1:50

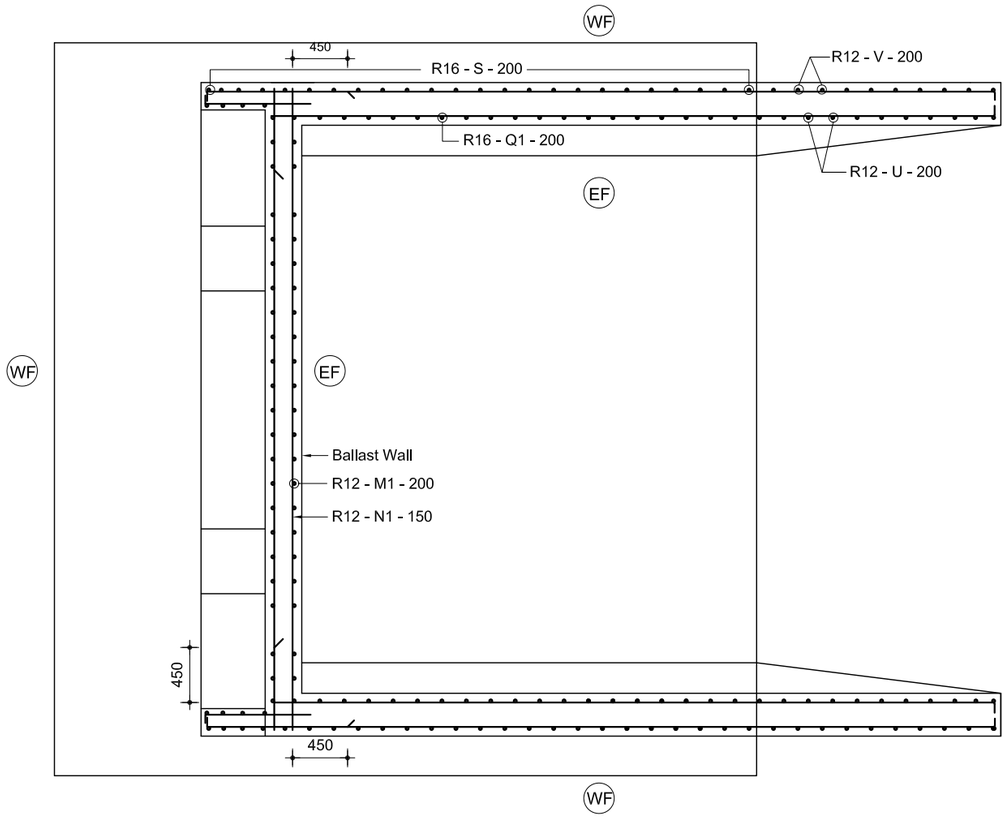


DETAIL "A"
Scale: 1:30

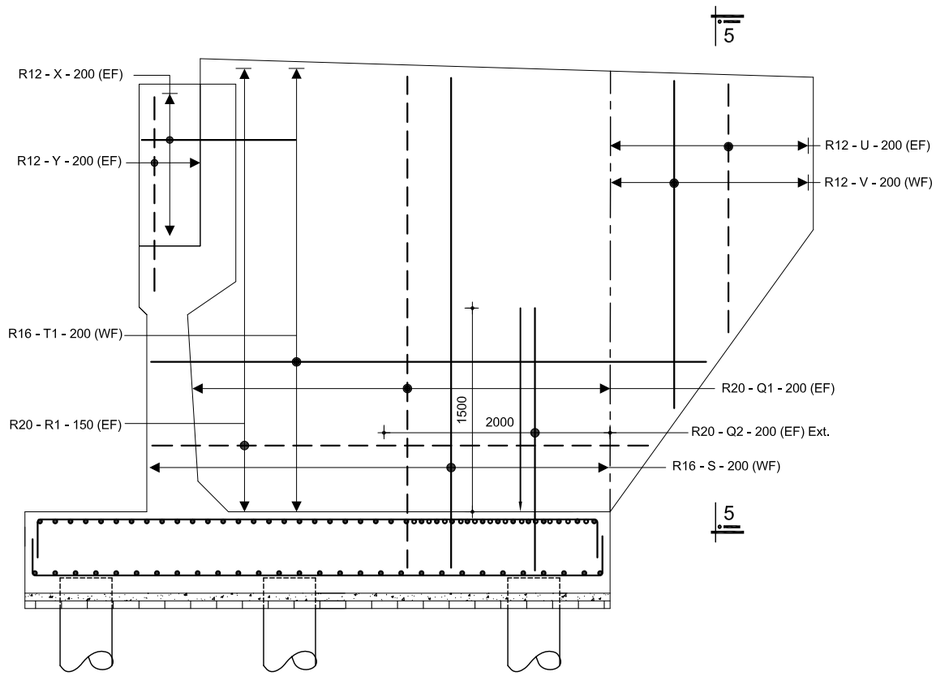
NOTES:

1. 28 days cylinder strength of concrete: f 'c = 25.00N/mm² (3600 psi)
2. Yield strength of mild steel deformed bar fy = 413N/mm² (60000psi)
3. Clear cover to main reinforcement bar is to be 50mm. unless otherwise mentioned.
4. EF = Earth Face, WF = Water Face

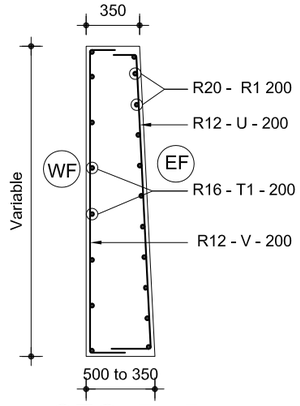
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	DESIGNED ,DRAWN & CHECKED BY PURAKAUSHAL PROJUKTI LIMITED House # C10, Road # 4 ,Banasree, Rampura- 1219. E-maill: pproiltd@yahoo.com	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	DRAWING TITLE Reinf. Details of Abutment & Wing wall, Span 25m Abutment Height 5.0m DRAWING NO. AB-03 PAGE NO. P-55



TOP PLAN OF BALLAST WALL & WINGWALL
SHOWING TOP REINFORCEMENT
Scale: 1:50



SECTIONAL ELEVATION OF WINGWALL (SEC. 4 - 4)
SHOWING TOP REINFORCEMENT
Scale: 1:60

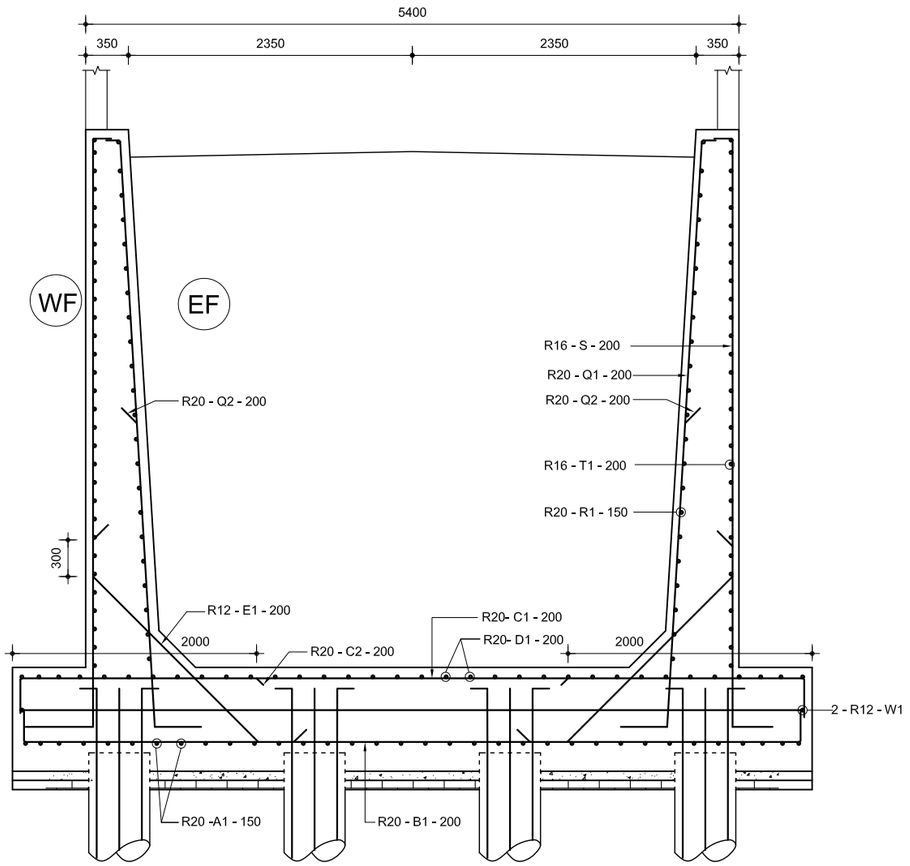


SEC. 5 - 5
Scale: 1:40

NOTES:

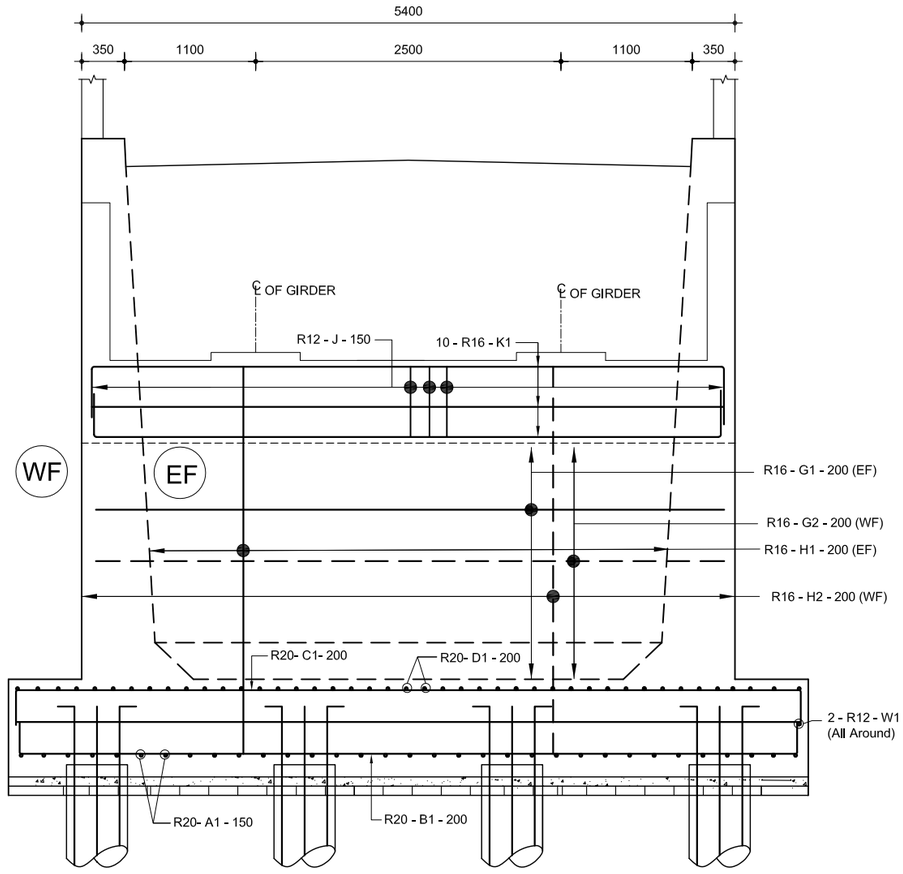
1. 28 days cylinder strength of concrete: f 'c = 25.00N/mm² (3600 psi)
2. Yield strength of mild steel deformed bar fy = 413N/mm² (60000psi)
3. Clear cover to main reinforcement bar is to be 50mm. unless otherwise mentioned.
4. EF = Earth Face, WF = Water Face

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	DESIGNED ,DRAWN & CHECKED BY PURAKAUSHAL PROJUKTI LIMITED House # C10, Road # 4 ,Banasree, Rampura- 1219. E-maill: pproiltd@yahoo.com	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	DRAWING TITLE Reinf. Details of Abutment & Wing wall, 25m Abutment Height 5.0m DRAWING NO. AB-04 PAGE NO. P-56



CROSS SECTION OF WINGWALL (SEC. 3 - 3)
SHOWING REINFORCEMENT

Scale: 1:50



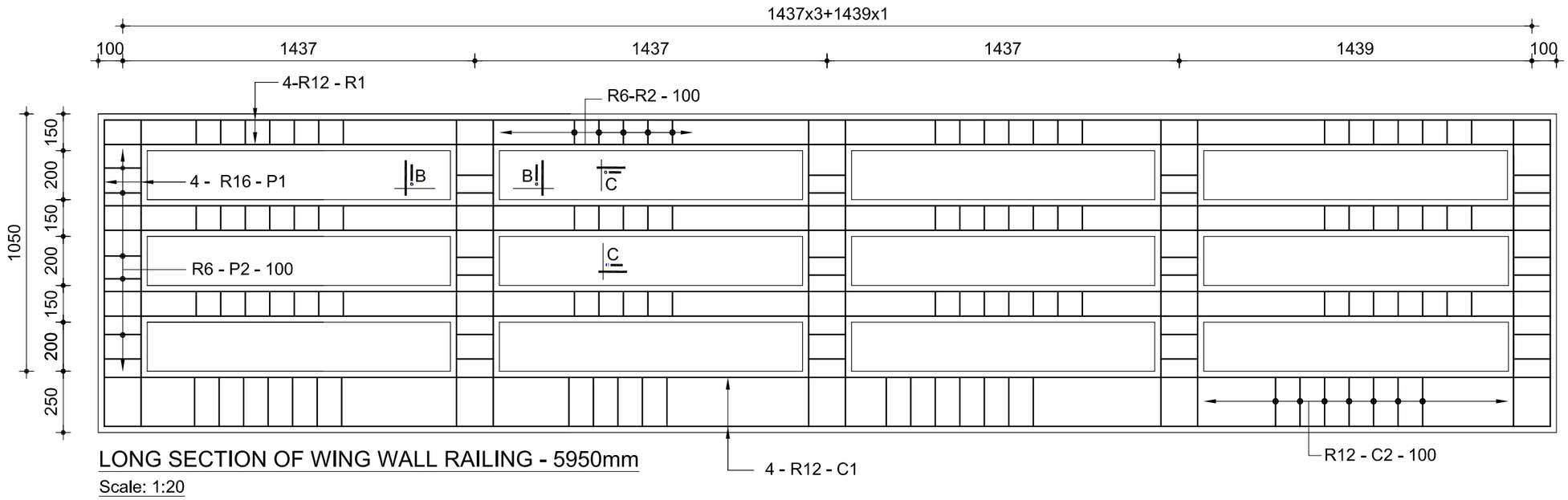
SECTIONAL FRONT ELEVATION OF ABUTMENT (SEC. 2 - 2)
SHOWING REINFORCEMENT

Scale: 1:50

NOTES:

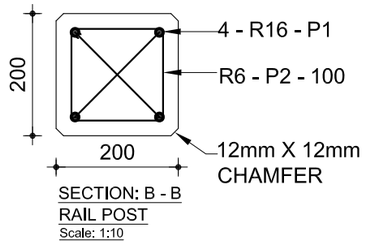
1. All dimensions are in millimeter unless otherwise mentioned.
2. 28 days cylinder strength of concrete: f 'c = 25.00N/mm² (3600 psi)
3. Yield strength of mild steel deformed bar fy = 413N/mm² (60000psi)
4. EF = Earth Face, WF = Water Face

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	DESIGNED ,DRAWN & CHECKED BY PURAKAUSHAL PROJUKTI LIMITED House # C10, Road # 4 ,Banasree, Rampura- 1219. E-maill: pproiltd@yahoo.com	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	DRAWING TITLE Cross Section of Wing wall Showing Reinf. Details, Span 25m Abutment Height 5.0m DRAWING NO. AB-05 PAGE NO. P-57



LONG SECTION OF WING WALL RAILING - 5950mm

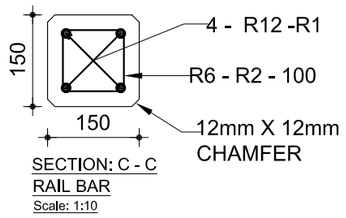
Scale: 1:20



SECTION: B - B

RAIL POST

Scale: 1:10

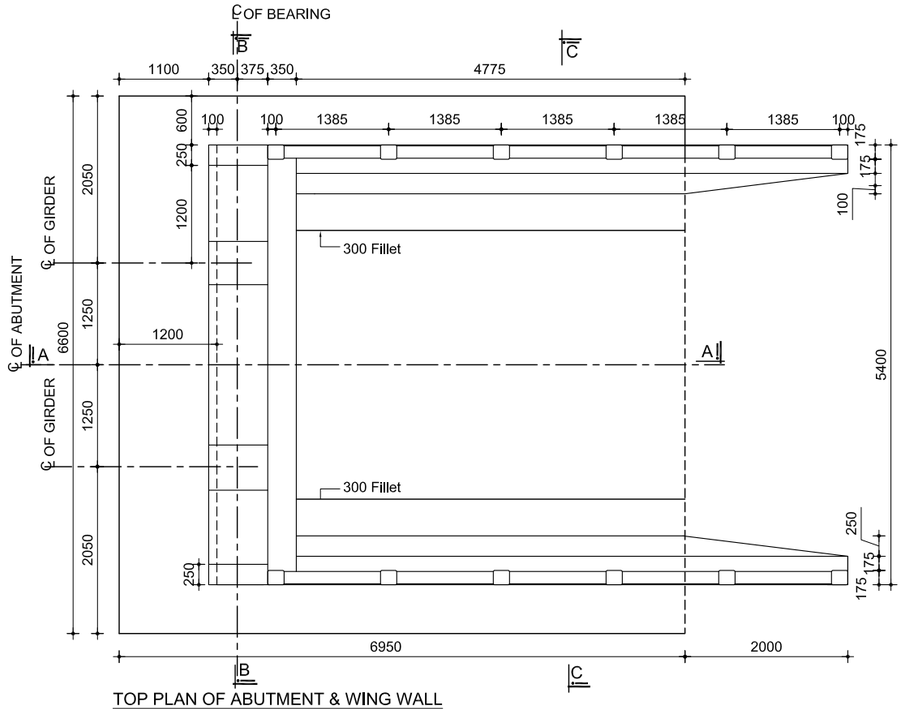


SECTION: C - C

RAIL BAR

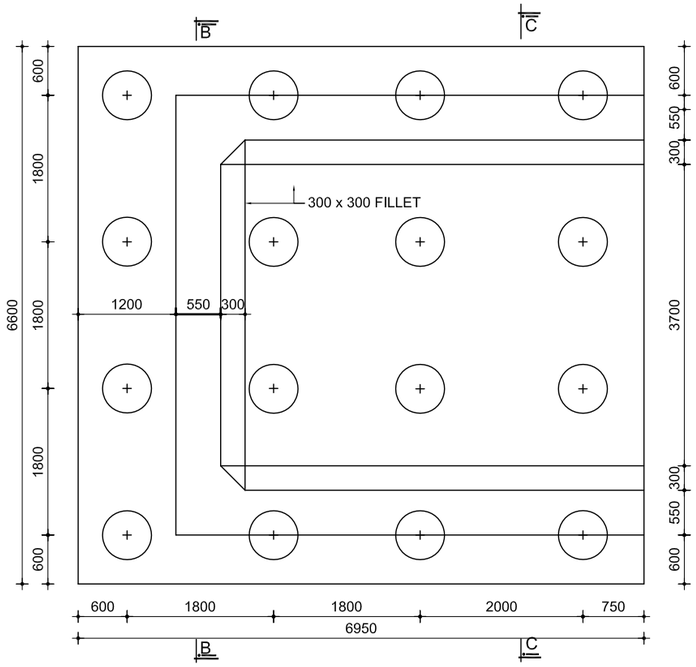
Scale: 1:10

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	DESIGNED ,DRAWN & CHECKED BY PURAKAUSHAL PROJUKTI LIMITED House # C10, Road # 4 ,Banasree, Rampura- 1219. E-maill: pproiltd@yahoo.com	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	DRAWING TITLE Details of Railing on Wing wall, Span 25m Abutment Height 5.0m DRAWING NO. AB-06 PAGE NO. P-58



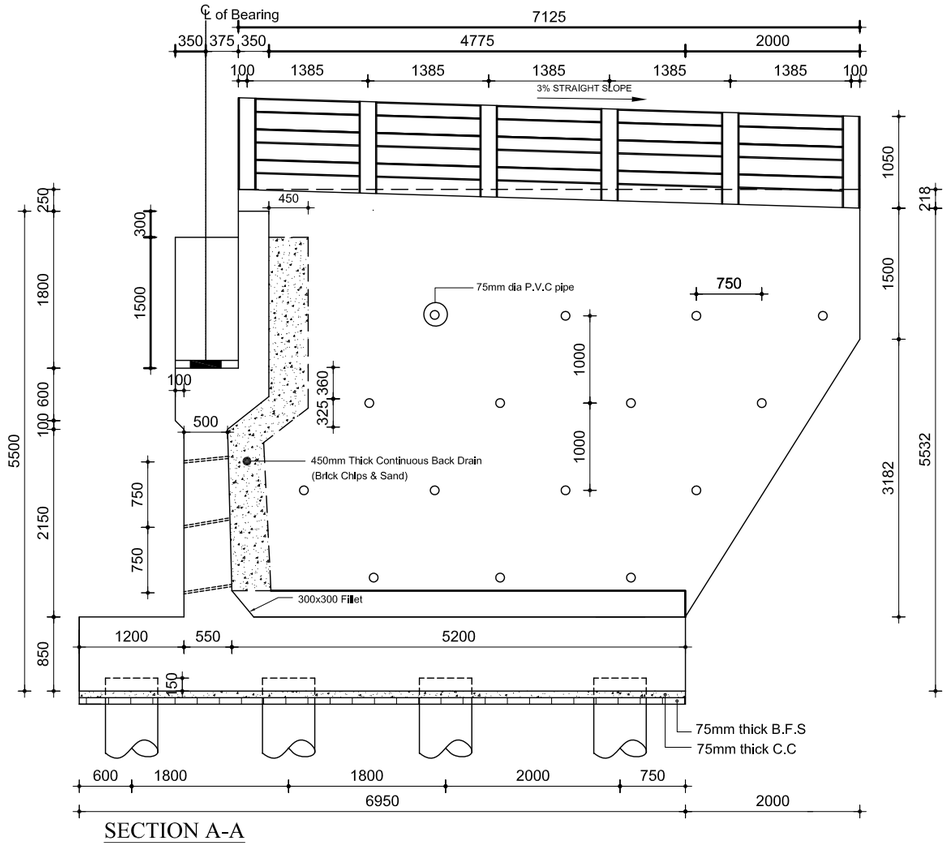
TOP PLAN OF ABUTMENT & WING WALL

Scale: 1:75



PILE LAY-OUT PLAN

Scale: 1:75



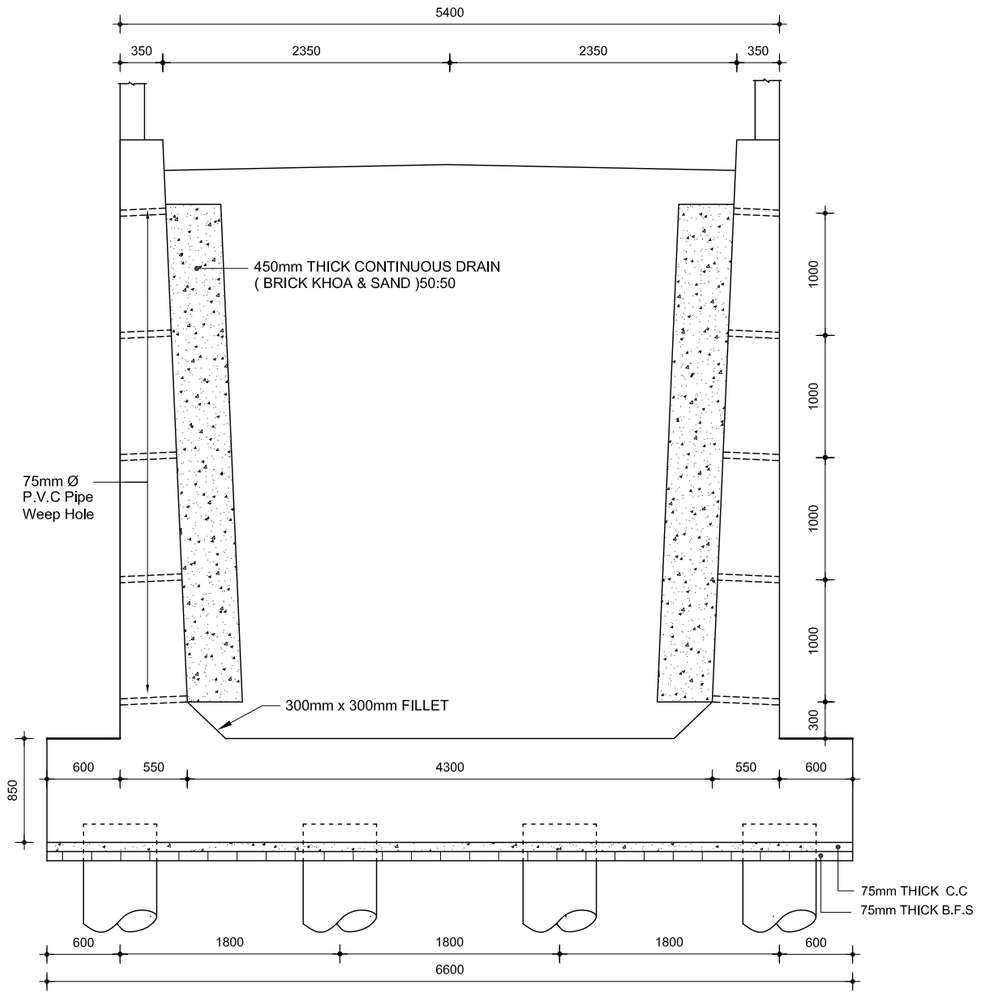
SECTION A-A

Scale: 1:70

NOTES:

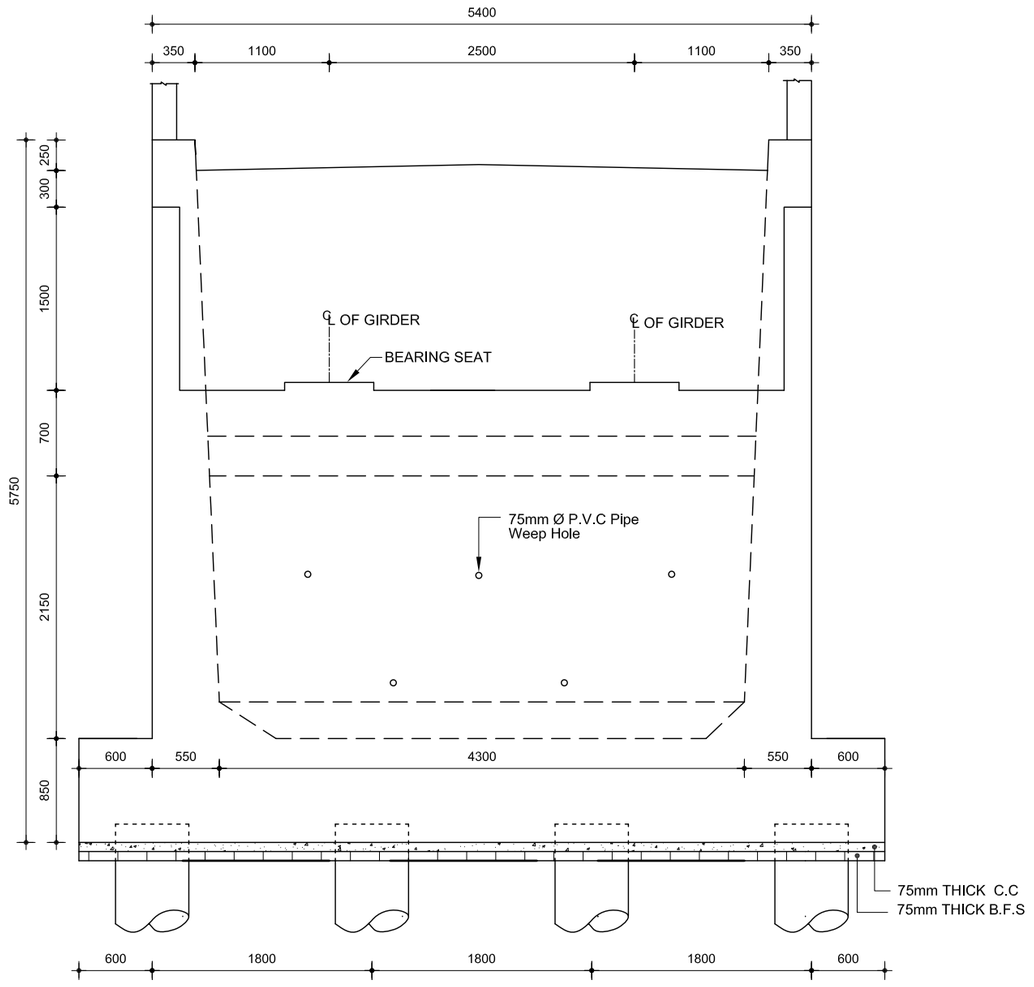
1. Abutment Details for 25m span..
2. All dimensions are in millimeter unless otherwise mentioned.
3. Clear cover to main reinforcement bar is to be 50mm. unless otherwise mentioned.
4. 28 days cylinder strength of concrete: f 'c = 25.0N/mm²(3600 psi)
5. Yield strength of mild steel deforme bar fy = 413N/mm² (60000psi)

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	DESIGNED ,DRAWN & CHECKED BY PURAKAUSHAL PROJUKTI LIMITED	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	DRAWING TITLE Details of Abutment Span 25m. Abutment Height 5.5m DRAWING NO. AB-07 PAGE NO. P-59



SECTION: C - C

Scale: 1:50



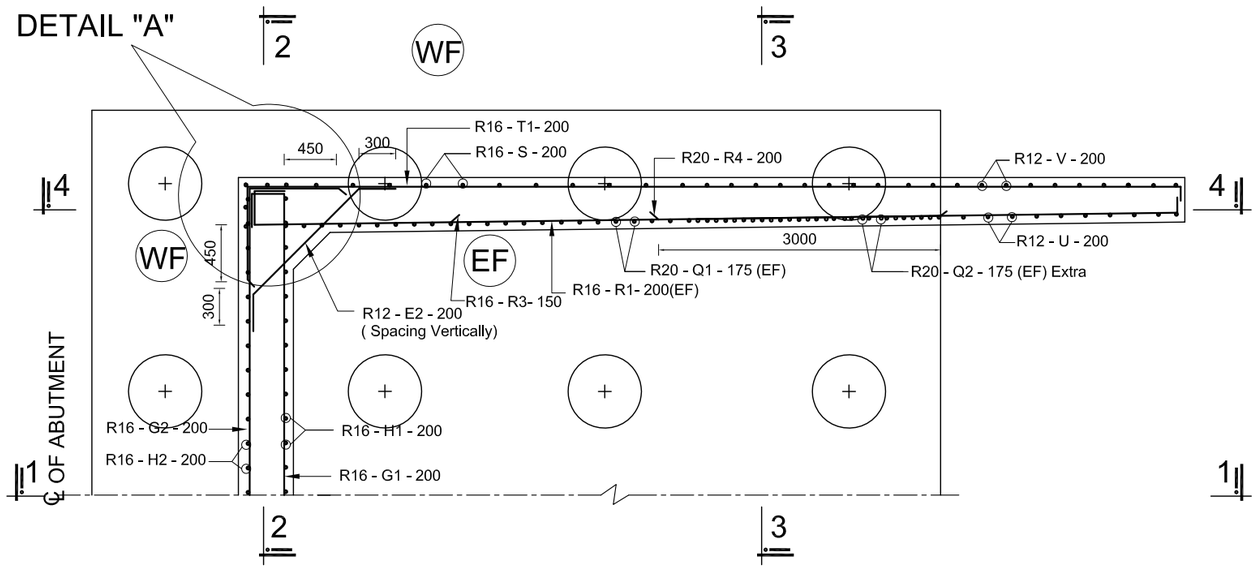
SECTION: B - B

Scale: 1:50

NOTES:

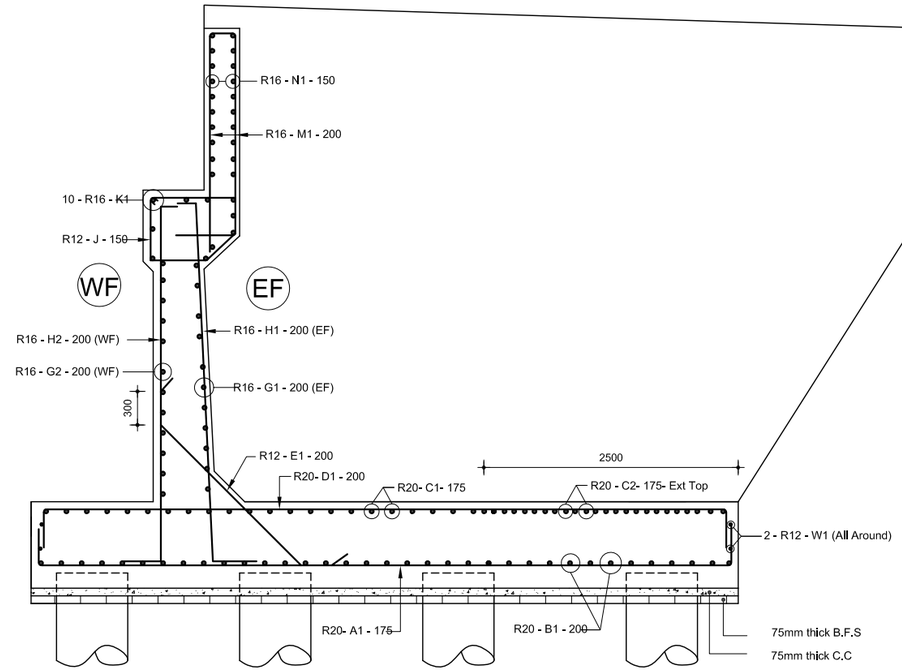
1. All dimensions are in millimeter unless otherwise mentioned.
2 Clear cover to main reinforcement bar is to be 50mm. unless otherwise mentioned.
3. 28 days cylinder strength of concrete: f 'c = 25.0N/mm² (3600 psi)
4. Yield strength of mild steel deformed bar fy = 413N/mm² (60000psi)

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	DESIGNED ,DRAWN & CHECKED BY PURAKAUSHAL PROJUKTI LIMITED	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	DRAWING TITLE Sectional Elevation of Abutment & Wing wall, Span 25m, Abutment Height 5.5m DRAWING NO. AB-08 PAGE NO. P-60



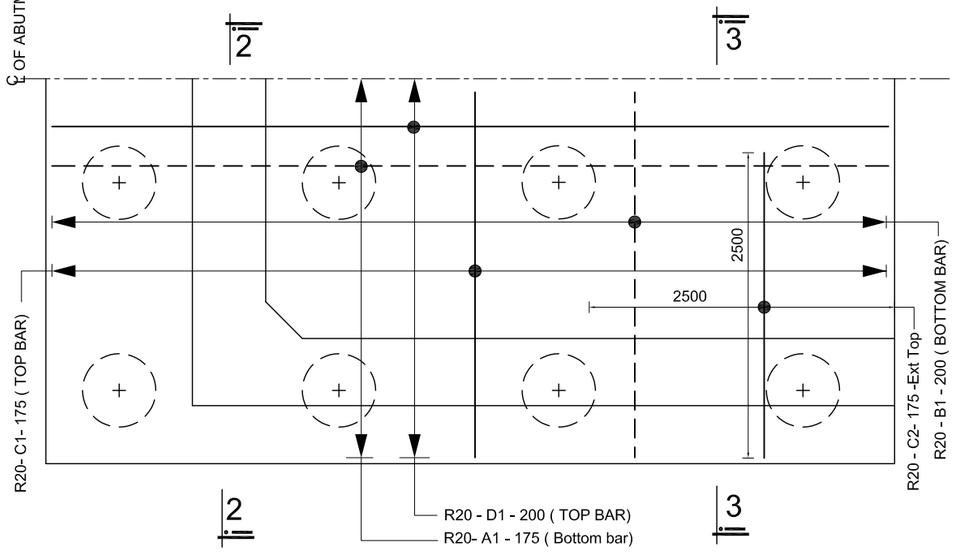
PLAN OF ABUTMENT & WINGWALL
SHOWING REINFORCEMENT

Scale: 1:50



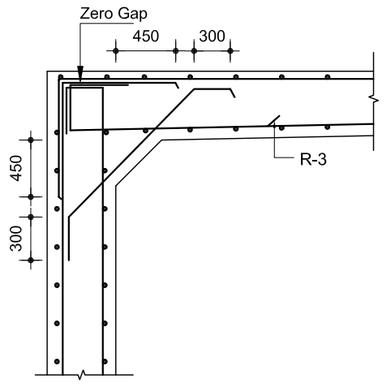
CROSS SECTION OF ABUTMENT (SECTION 1-1)
SHOWING REINFORCEMENT DETAILS

Scale: 1:60



PLAN OF PILE CAP
SHOWING REINFORCEMENT

Scale: 1:50



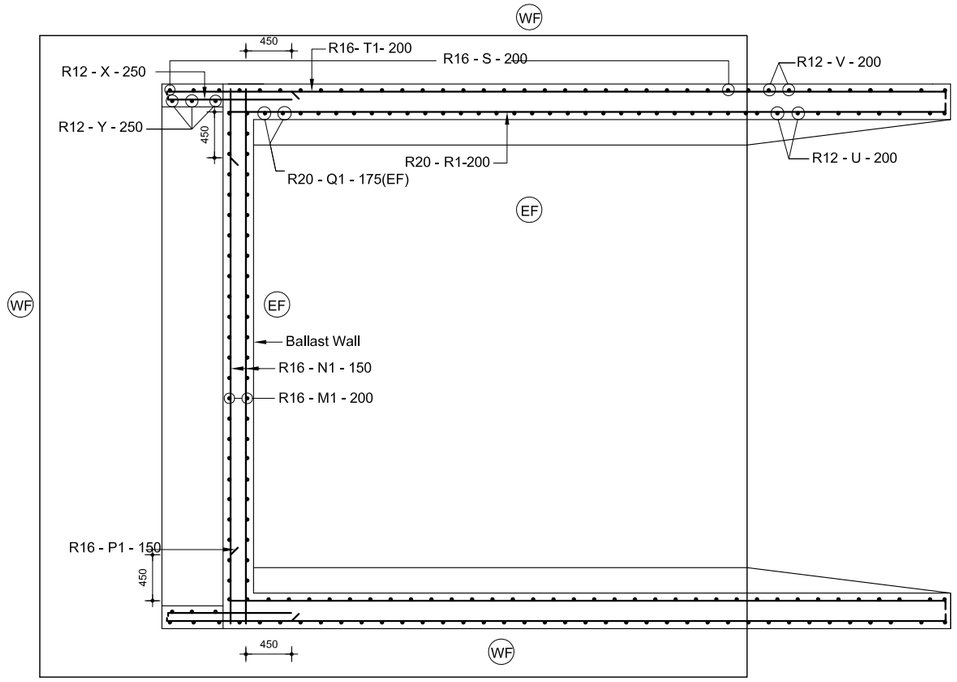
DETAIL "A"

Scale: 1:40

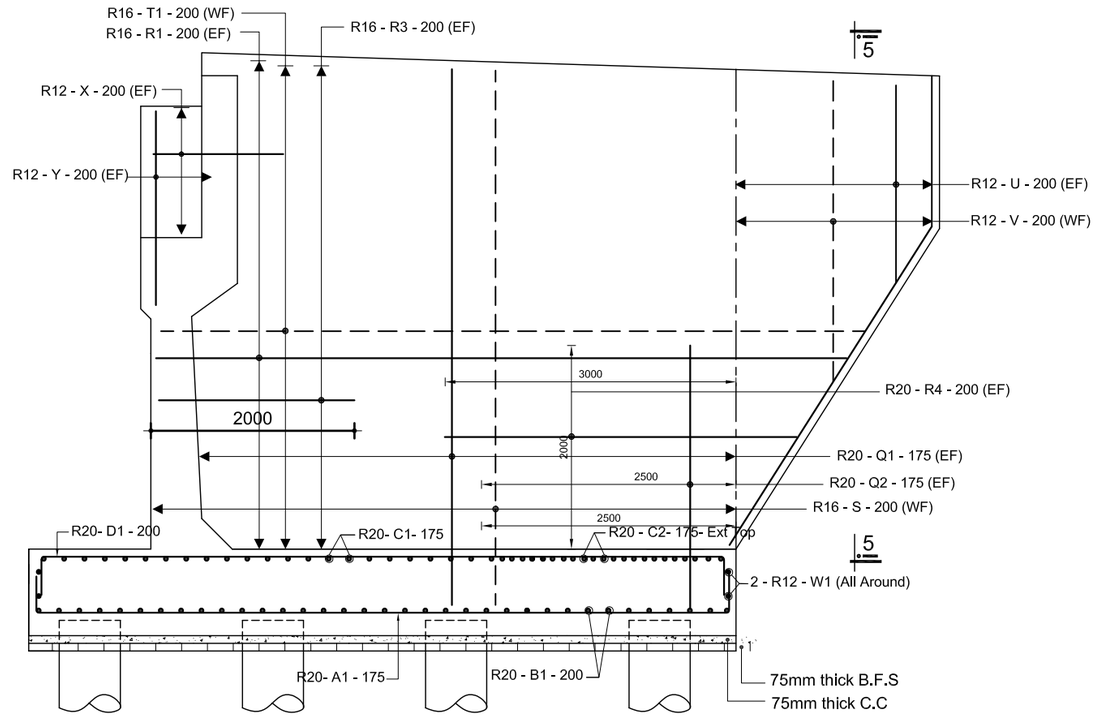
NOTES:

1. Clear cover to main reinforcement bar is to be 50mm. unless otherwise mentioned.
2. 28 days cylinder strength of concrete: f 'c = 25.0N/mm² (3600 psi)
3. Yield strength of mild steel deformed bar fy = 413N/mm² (60000psi)
4. EF = Earth Face WF = Water Face

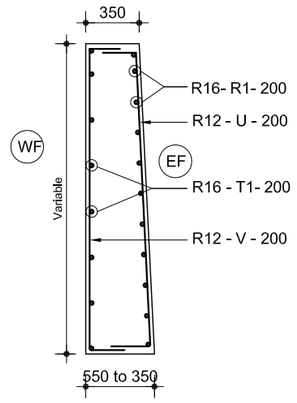
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	DESIGNED ,DRAWN & CHECKED BY PURAKAUSHAL PROJUKTI LIMITED	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	DRAWING TITLE Reinf. Details of Abutment & Wingwall, Span 25m Abutment Height 5.5m DRAWING NO. AB-09 PAGE NO. P-61



TOP PLAN OF BALLAST WALL & WINGWALL
SHOWING TOP REINFORCEMENT
Scale: 1:60



SECTIONAL ELEVATION OF WINGWALL (SEC. 4 - 4)
SHOWING REINFORCEMENT
Scale: 1:60

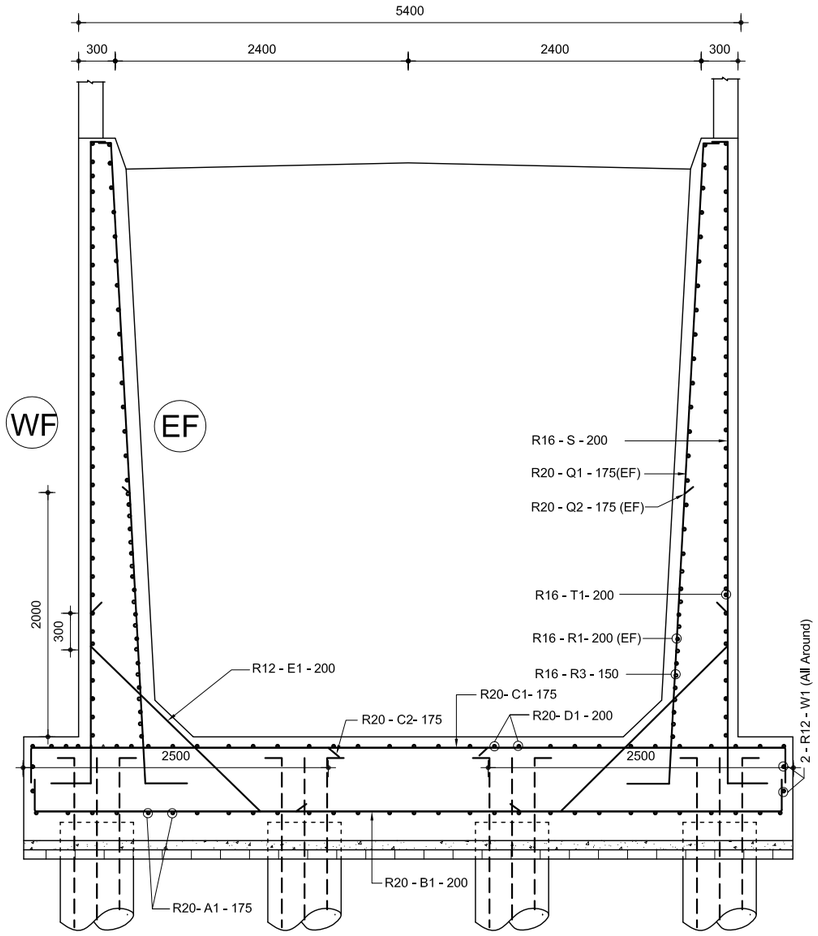


SEC. 5 - 5
Scale: 1:40

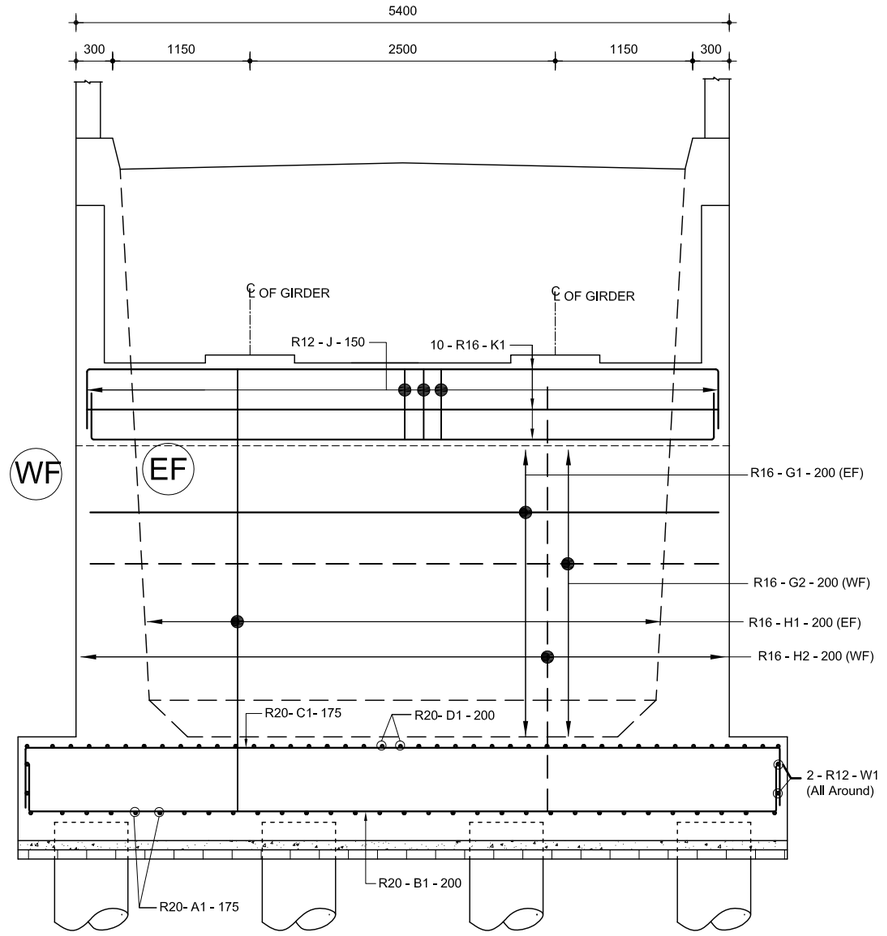
NOTES:

1. Clear cover to main reinforcement bar is to be 50mm. unless otherwise mentioned.
2. 28 days cylinder strength of concrete: f 'c = 25.0N/mm² (3600 psi)
3. Yield strength of mild steel deformed bar fy = 413N/mm² (60000psi)
4. EF = Earth Face, WF = Water Face

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	DESIGNED ,DRAWN & CHECKED BY	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	DRAWING TITLE
	PURAKAUSHAL PROJUKTI LIMITED		Reinf. Details of Abutment & Wingwall, Span 25m, Abutment Height 5.5m
			DRAWING NO. AB-10
			PAGE NO. P-62



CROSS SECTION OF WINGWALL (SEC. 3 - 3)
SHOWING REINFORCEMENT
Scale: 1:50



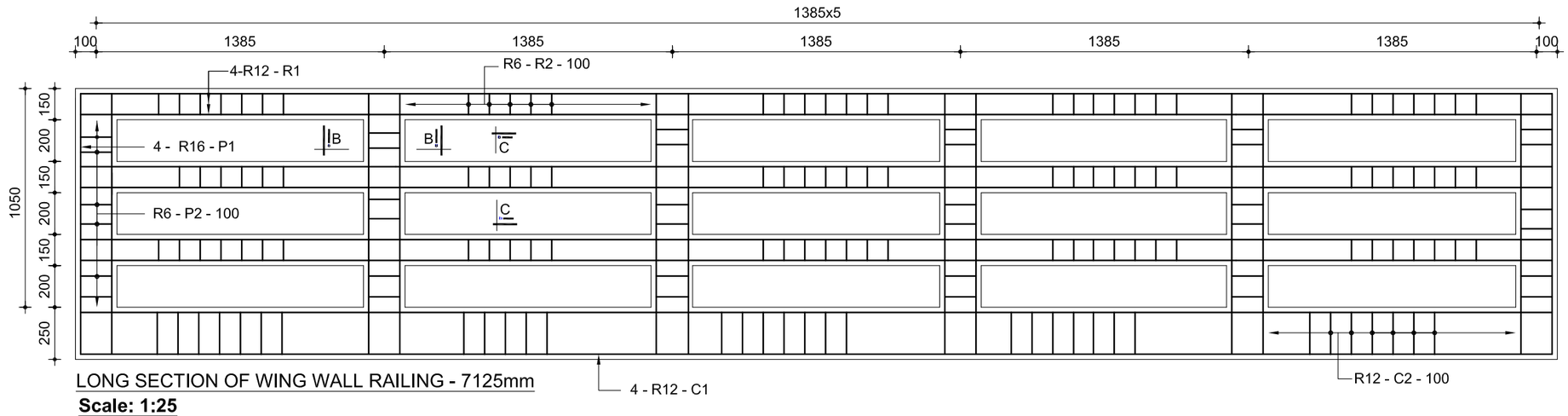
SECTIONAL FRONT ELEVATION OF ABUTMENT (SEC. 2 - 2)
SHOWING REINFORCEMENT

Scale: 1:50

NOTES:

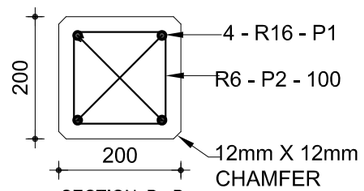
1 Clear cover to main reinforcement bar is to be 50mm. unless otherwise mentioned.
2. 28 days cylinder strength of concrete: f 'c = 25.0N/mm² (3600 psi)
3. Yield strength of mild steel deformed bar fy = 413N/mm² (60000psi)
4. EF = Earth Face, WF = Water Face

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	DESIGNED ,DRAWN & CHECKED BY		DRAWING TITLE
	PURAKAUSHAL PROJUKTI LIMITED	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	Cross Section of Wingwall Showing Reinf. Details, Span 25m Abutment Height 5.5m DRAWING NO. AB-11 PAGE NO. P-63

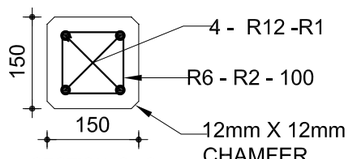


LONG SECTION OF WING WALL RAILING - 7125mm

Scale: 1:25

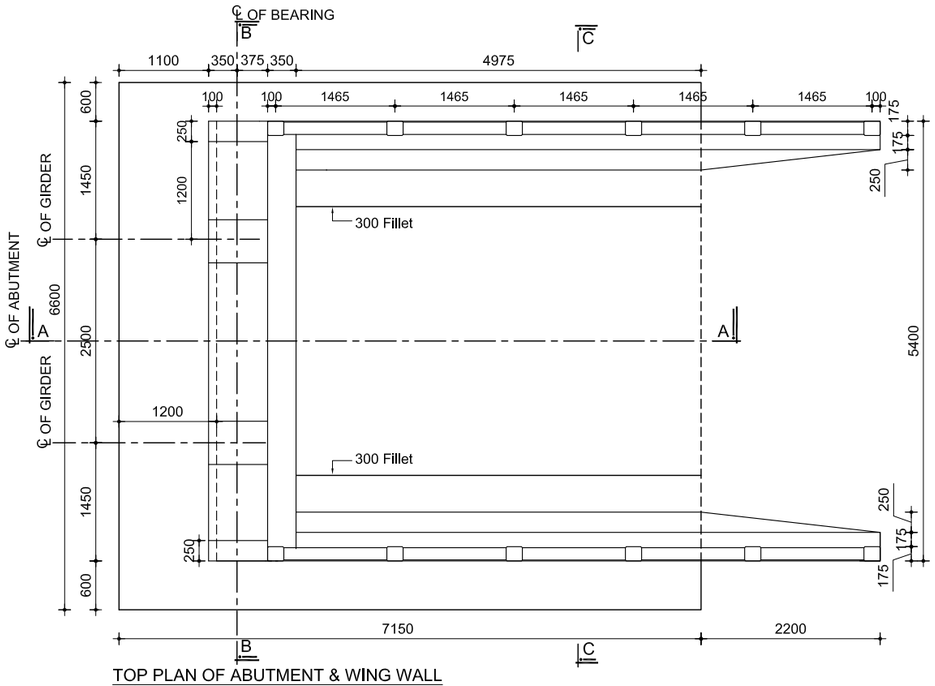


SECTION: B - B
RAIL POST
Scale: 1:10



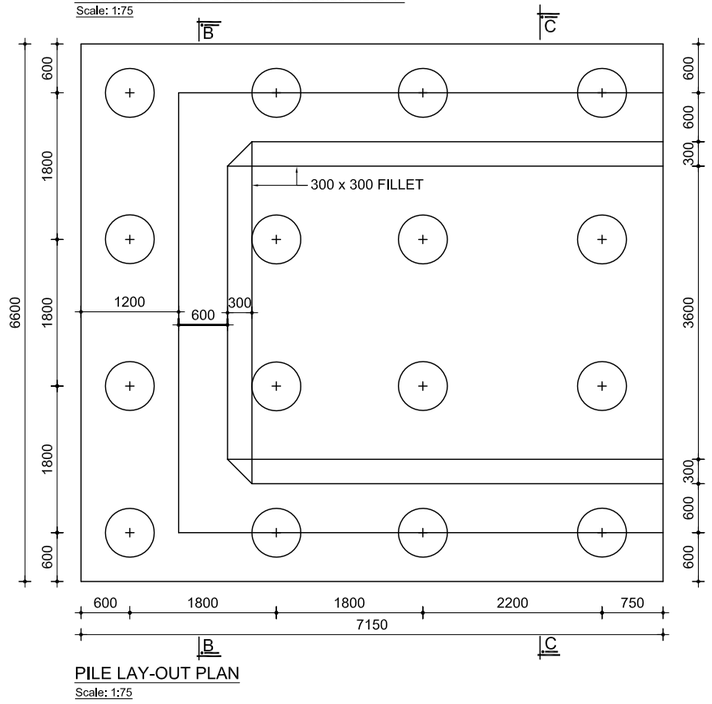
SECTION: C - C
RAIL BAR
Scale: 1:10

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	DESIGNED ,DRAWN & CHECKED BY		DRAWING TITLE
	PURAKAUSHAL PROJUKTI LIMITED	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	Details of Railing on Wing wall, Span 25m Abutment Height 5.5m DRAWING NO. AB-12 PAGE NO. P-64



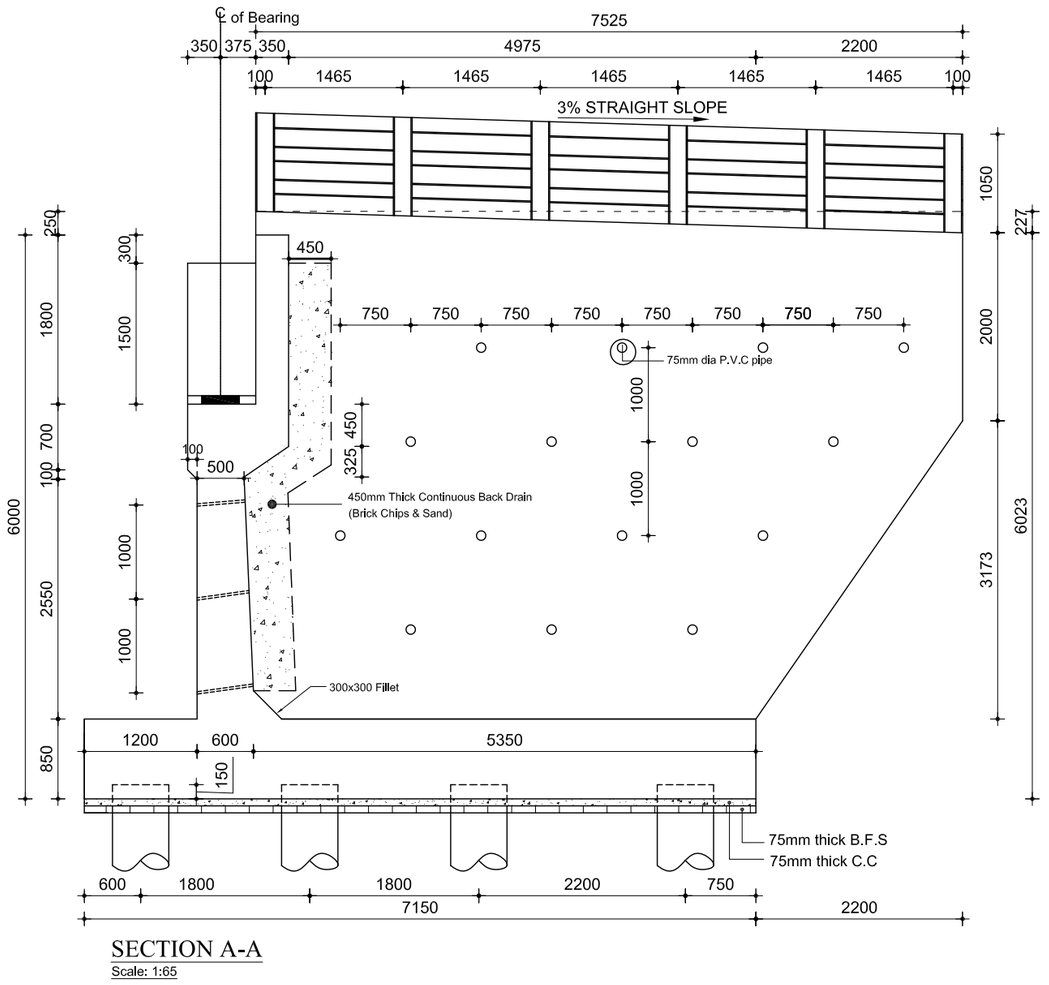
TOP PLAN OF ABUTMENT & WING WALL

Scale: 1:75



PILE LAY-OUT PLAN

Scale: 1:75



SECTION A-A

Scale: 1:65

NOTES:

1. Abutment Details for 25m span.
3. All dimensions are in millimeter unless otherwise mentioned.
4. Clear cover to main reinforcement bar is to be 50mm. unless otherwise mentioned.
5. 28 days cylinder strength of concrete: f 'c = 25.0N/mm² (3600 psi)
6. Yield strength of mild steel deformed bar fy = 413N/mm² (60000psi)

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH

LOCAL GOVERNMENT ENGINEERING DEPARTMENT

DESIGNED ,DRAWN & CHECKED BY

PURAKAUSHAL PROJUKTI LIMITED

House # C10, Road # 4 ,Banasree, Rampura- 1219.
E-maill: pproiltd@yahoo.com

NAME OF PROJECT:

LOCATION:

UPAZILA:

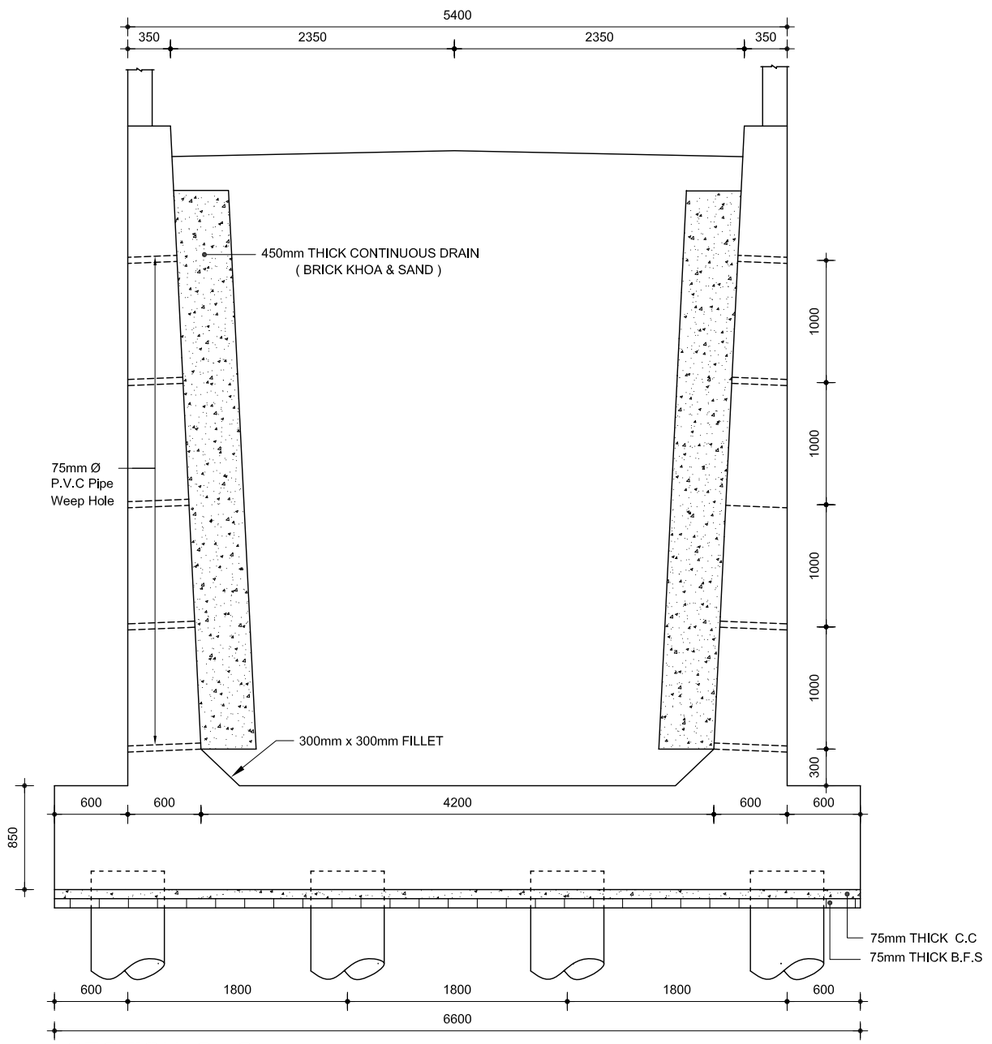
DISTRICT:

DRAWING TITLE

Details of Abutment
Span 25m Height 6.0m Abutment

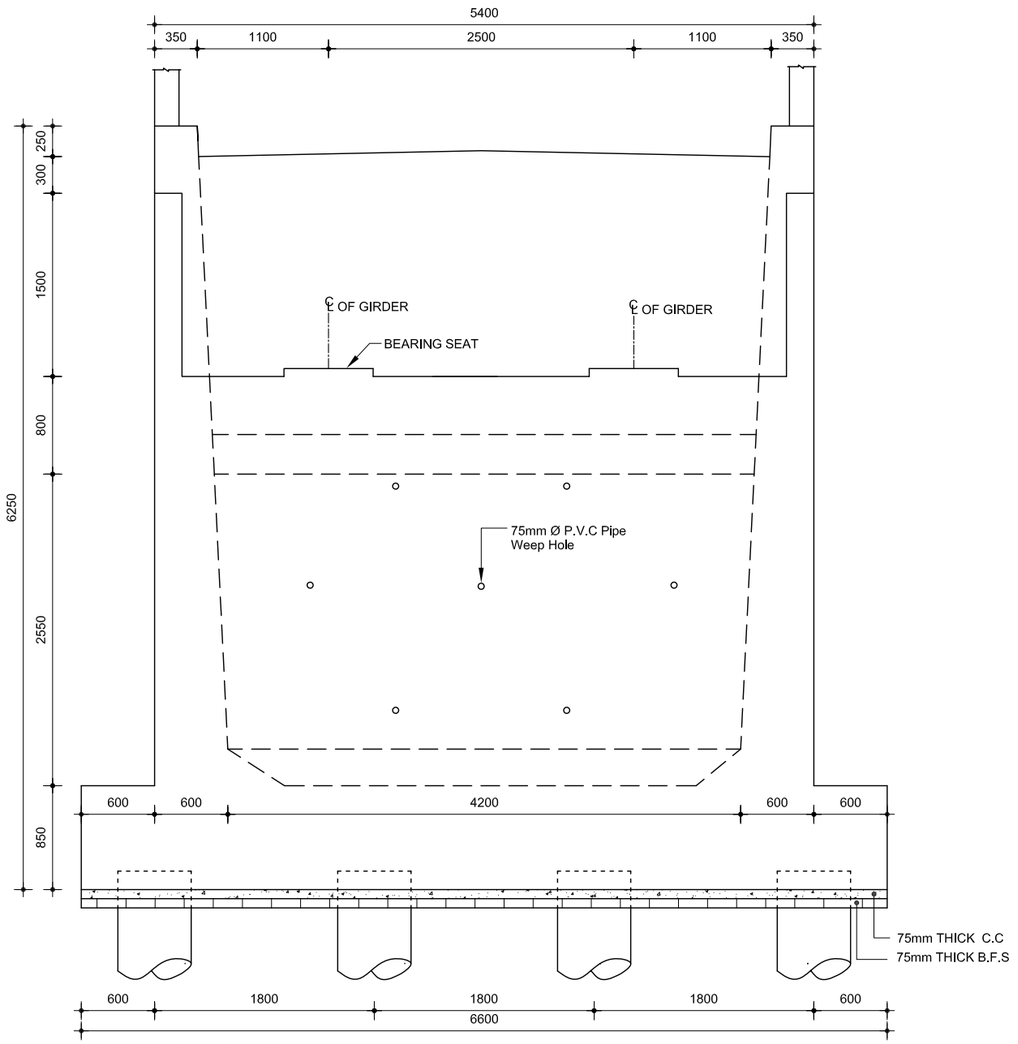
DRAWING NO. AB-13

PAGE NO. P-65



SECTION: C - C

Scale: 1:50



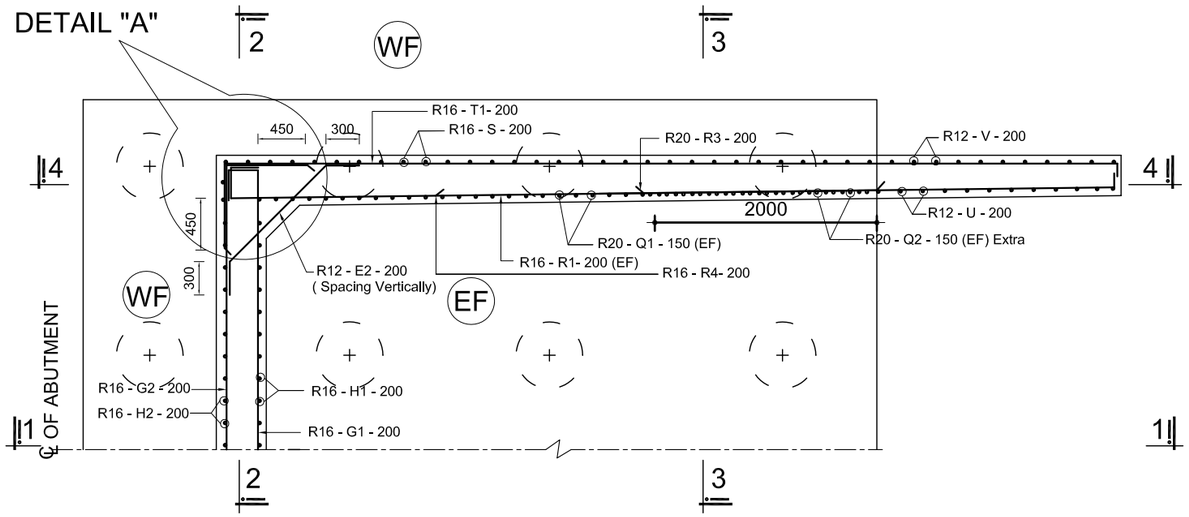
SECTION: C - C

Scale: 1:50

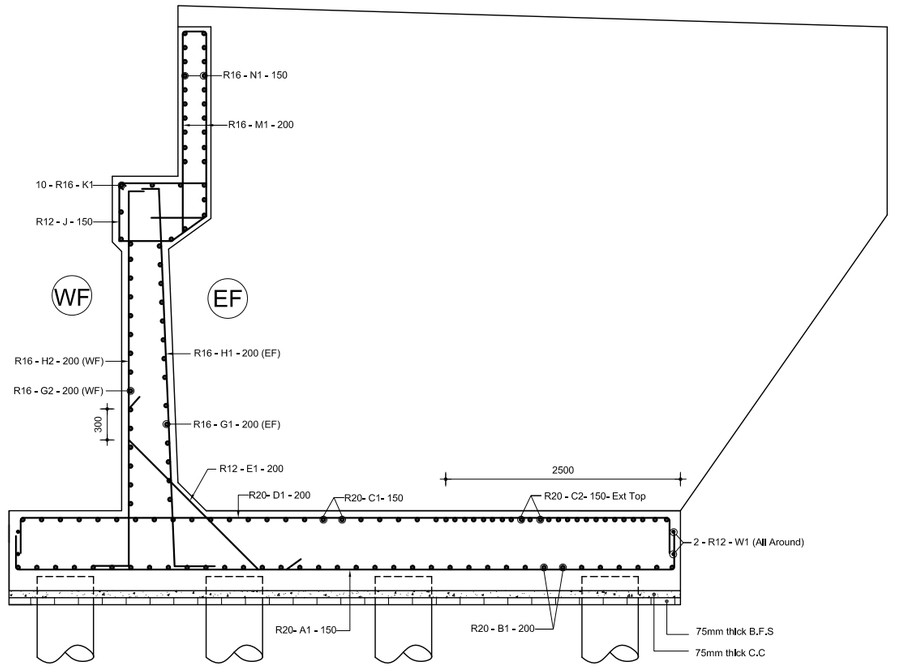
NOTES:

1. All dimensions are in millimeter unless otherwise mentioned.
2. Clear cover to main reinforcement bar is to be 50mm. unless otherwise mentioned.
3. 28 days cylinder strength of concrete: f 'c = 25.0N/mm (3600 psi)
4. Yield strength of mild steel deformed bar fy = 413N/mm (60000psi)

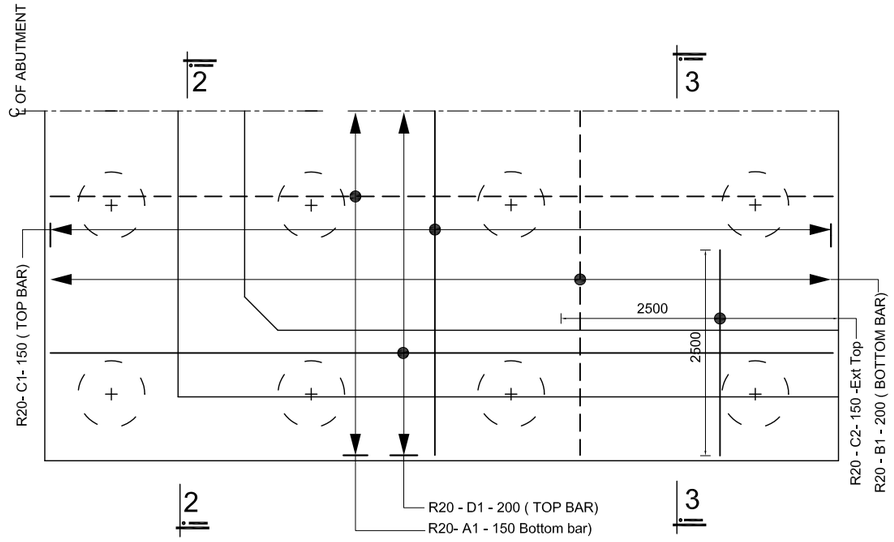
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	DESIGNED ,DRAWN & CHECKED BY PURAKAUSHAL PROJUKTI LIMITED House # C10, Road # 4 ,Banasree, Rampura- 1219. E-maill: pproiltd@yahoo.com	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	DRAWING TITLE Sectional Elevation of Abutment & Wing wall, Span 25m Height 6.0m Abutment DRAWING NO. AB-14 PAGE NO. P-66



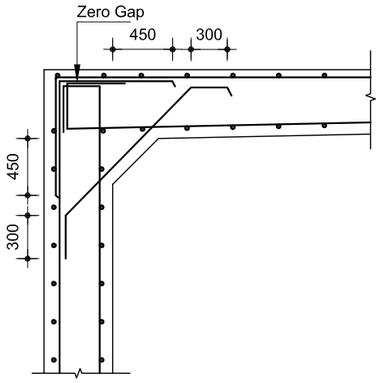
PLAN OF ABUTMENT & WINGWALL
SHOWING REINFORCEMENT
Scale: 1:65



CROSS SECTION OF ABUTMENT (SECTION 1-1)
SHOWING REINFORCEMENT DETAILS
Scale: 1:65



PLAN OF PILE CAP
SHOWING REINFORCEMENT
Scale: 1:65

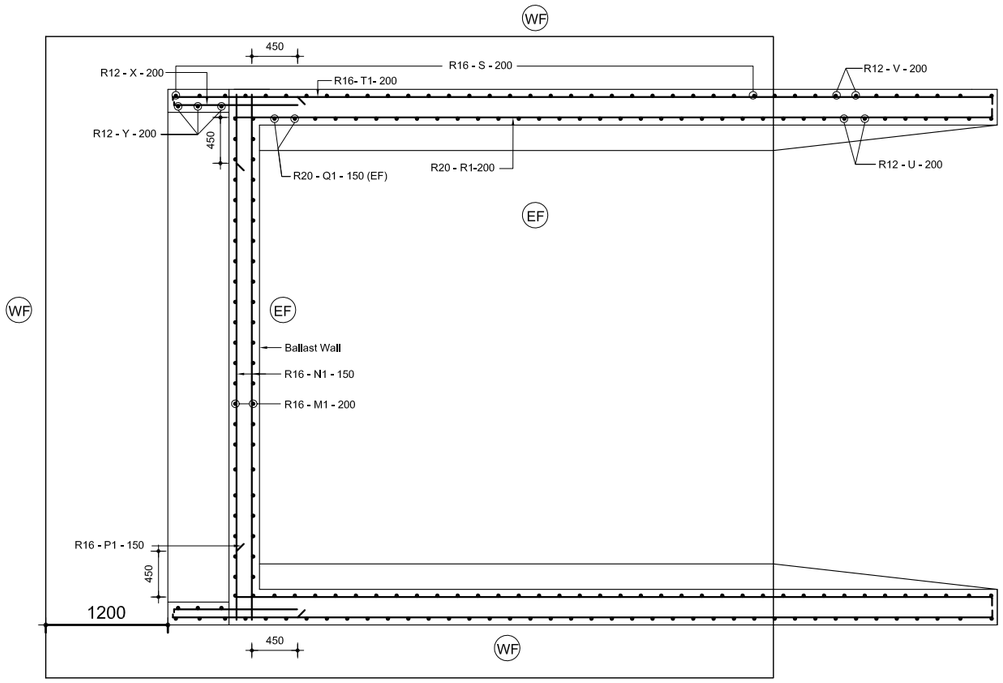


DETAIL "A"
Scale: 1:40

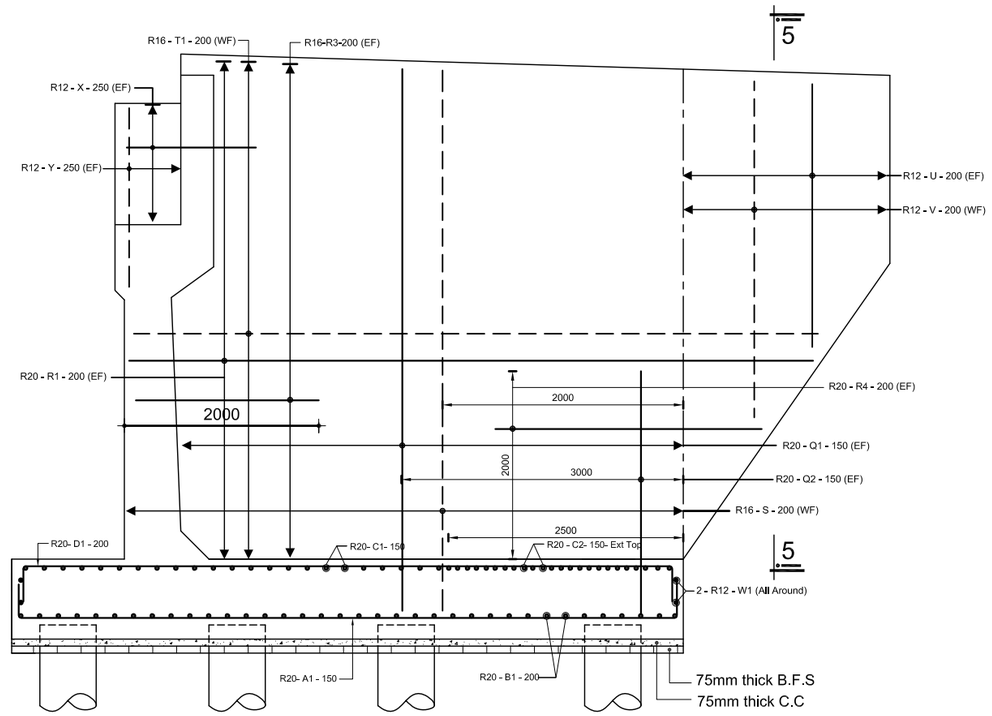
NOTES:

1. Clear cover to main reinforcement bar is to be 50mm. unless otherwise mentioned.
2. 28 days cylinder strength of concrete: f 'c = 25.0N/mm² (3600 psi)
3. Yield strength of mild steel deformed bar fy = 413N/mm² (60000psi)
4. EF = Earth Face WF = Water Face

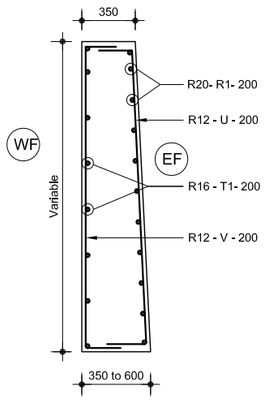
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	DESIGNED ,DRAWN & CHECKED BY PURAKAUSHAL PROJUKTI LIMITED House # C10, Road # 4 ,Banasree, Rampura- 1219. E-maill: pproiltd@yahoo.com	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	DRAWING TITLE Reinf. Details of Abutment & Wing wall, Span 25m Height 6.0m Abutment DRAWING NO. AB-15 PAGE NO. P-67



TOP PLAN OF BALLAST WALL & WINGWALL
SHOWING TOP REINFORCEMENT
Scale: 1:65



SECTIONAL ELEVATION OF WINGWALL (SEC. 4 - 4)
SHOWING REINFORCEMENT
Scale: 1:65

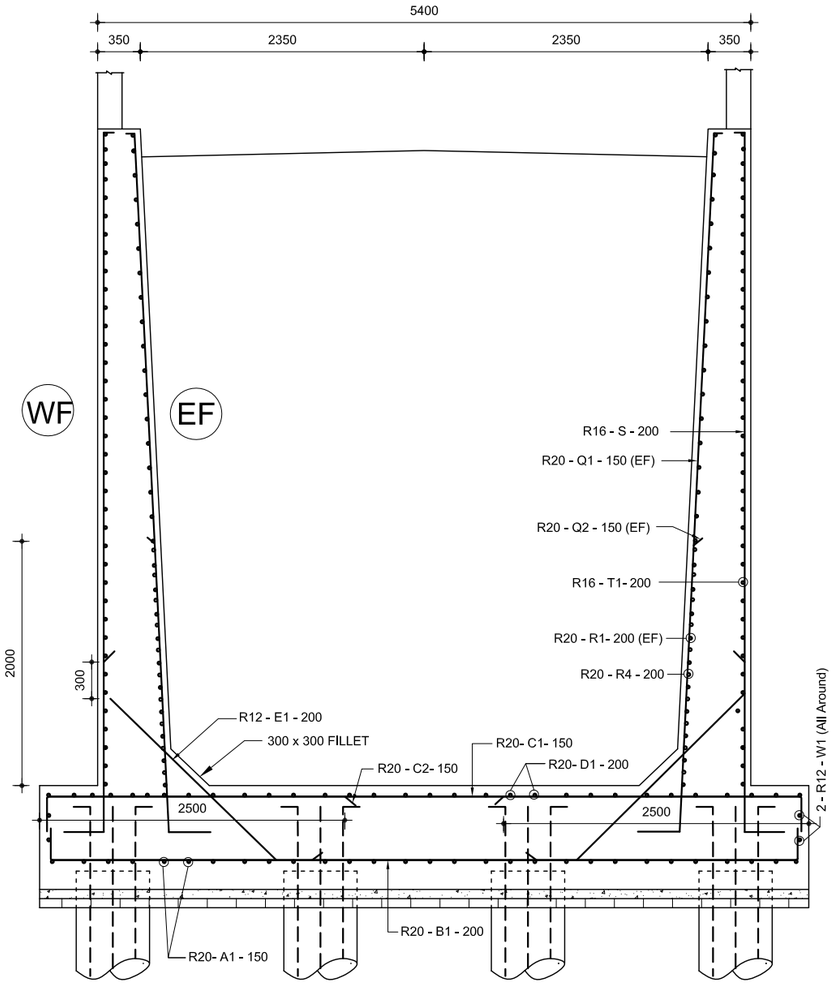


SEC. 5 - 5
Scale: 1:40

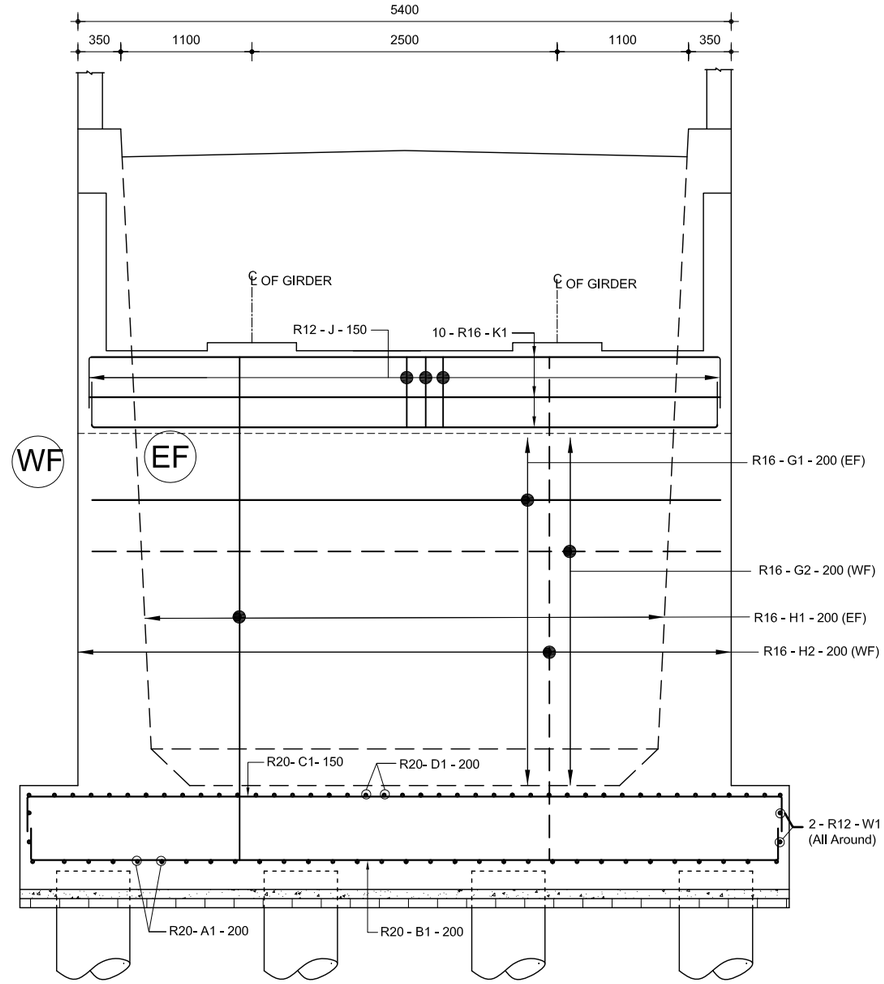
NOTES:

1. Clear cover to main reinforcement bar is to be 50mm. unless otherwise mentioned.
2. 28 days cylinder strength of concrete: f 'c = 25.0N/mm (3600 psi)
3. Yield strength of mild steel deformed bar fy = 413N/mm (60000psi)
4. EF = Earth Face, WF = Water Face

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	DESIGNED ,DRAWN & CHECKED BY		DRAWING TITLE
	PURAKAUSHAL PROJUKTI LIMITED House # C10, Road # 4 ,Banasree, Rampura- 1219. E-maill: pproiltd@yahoo.com	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	Reinf. Details of Abutment & Wing wall, Span 25m Height 6.0m Abutment DRAWING NO. AB-16 PAGE NO. P- 68



CROSS SECTION OF WINGWALL (SEC. 3 - 3)
SHOWING REINFORCEMENT
Scale: 1:50

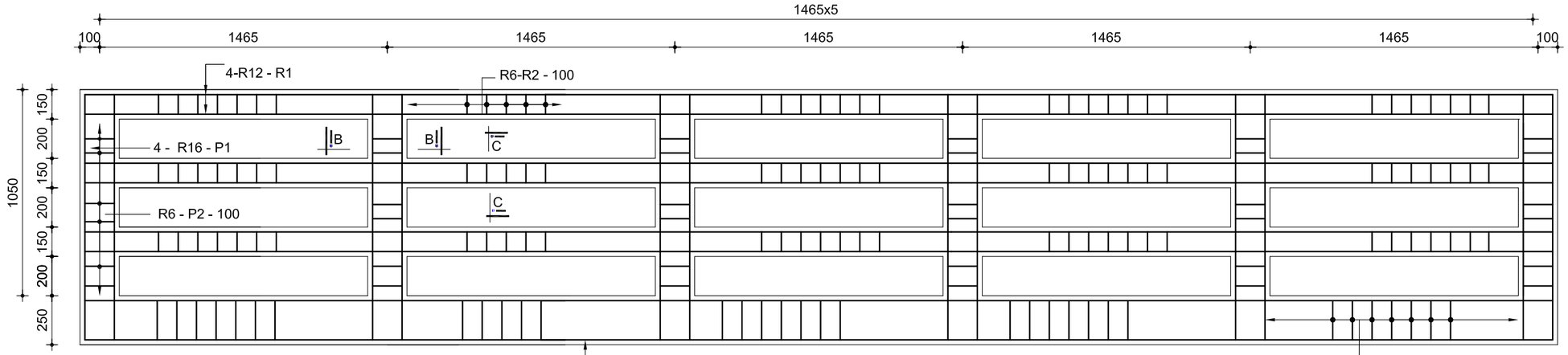


SECTIONAL FRONT ELEVATION OF ABUTMENT (SEC. 2 - 2)
SHOWING REINFORCEMENT
Scale: 1:50

NOTES:

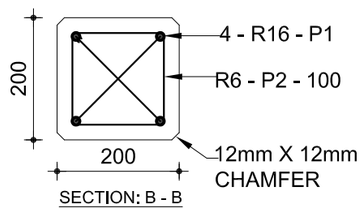
1. Clear cover to main reinforcement bar is to be 50mm. unless otherwise mentioned.
2. 28 days cylinder strength of concrete: f 'c = 25.0N/mm (3600 psi)
3. Yield strength of mild steel deformed bar fy = 413N/mm (60000psi)
4. EF = Earth Face, WF = Water Face

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	DESIGNED ,DRAWN & CHECKED BY PURAKAUSHAL PROJUKTI LIMITED House # C10, Road # 4 ,Banasree, Rampura- 1219. E-maill: pproiltd@yahoo.com	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	DRAWING TITLE Cross Section of Wingwall Showing Reinf. Details, Span 25m Height 6.0m Abutment DRAWING NO. AB-17 PAGE NO. P-69



LONG SECTION OF WING WALL RAILING - 7525mm

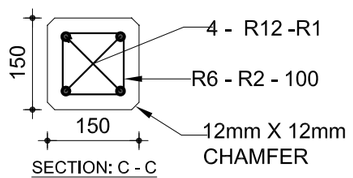
Scale: 1:25



SECTION: B - B

RAIL POST

Scale: 1:10



SECTION: C - C

RAIL BAR

Scale: 1:10

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH

LOCAL GOVERNMENT ENGINEERING DEPARTMENT

DESIGNED ,DRAWN & CHECKED BY

PURAKAUSHAL PROJUKTI LIMITED

House # C10, Road # 4 ,Banasree, Rampura- 1219.
E-maill: pproiltd@yahoo.com

NAME OF PROJECT:

LOCATION:

UPAZILA:

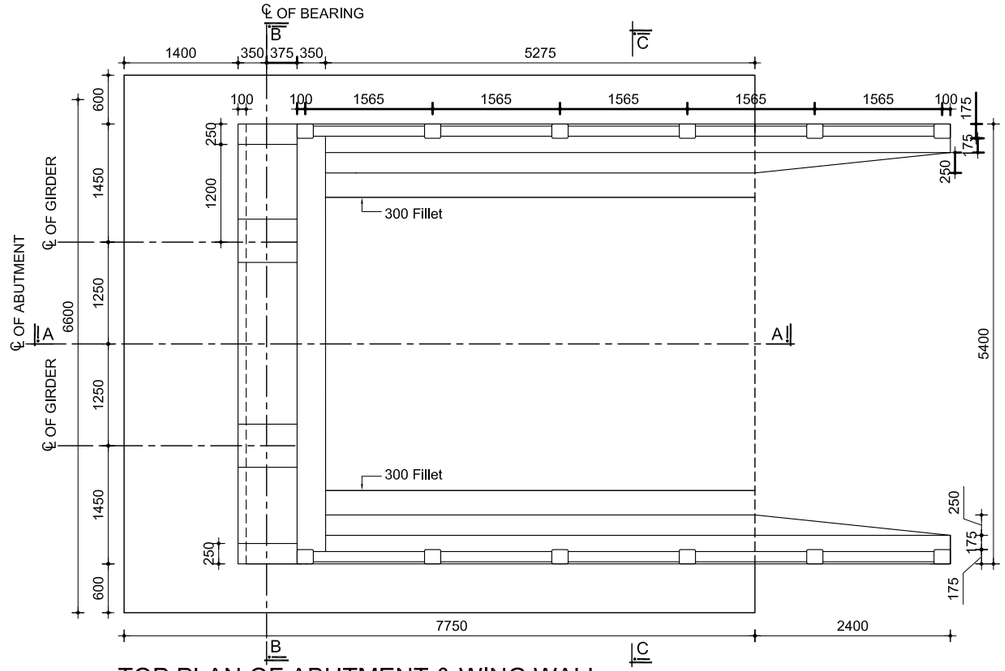
DISTRICT:

DRAWING TITLE

Details of Abutment Railing, Span 25m Height 6.0m Abutment

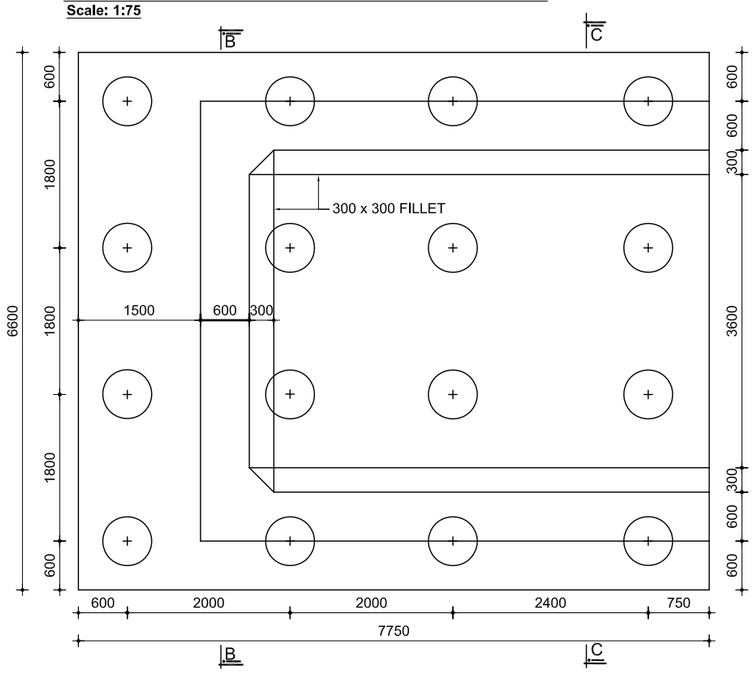
DRAWING NO. AB-18

PAGE NO. P-70



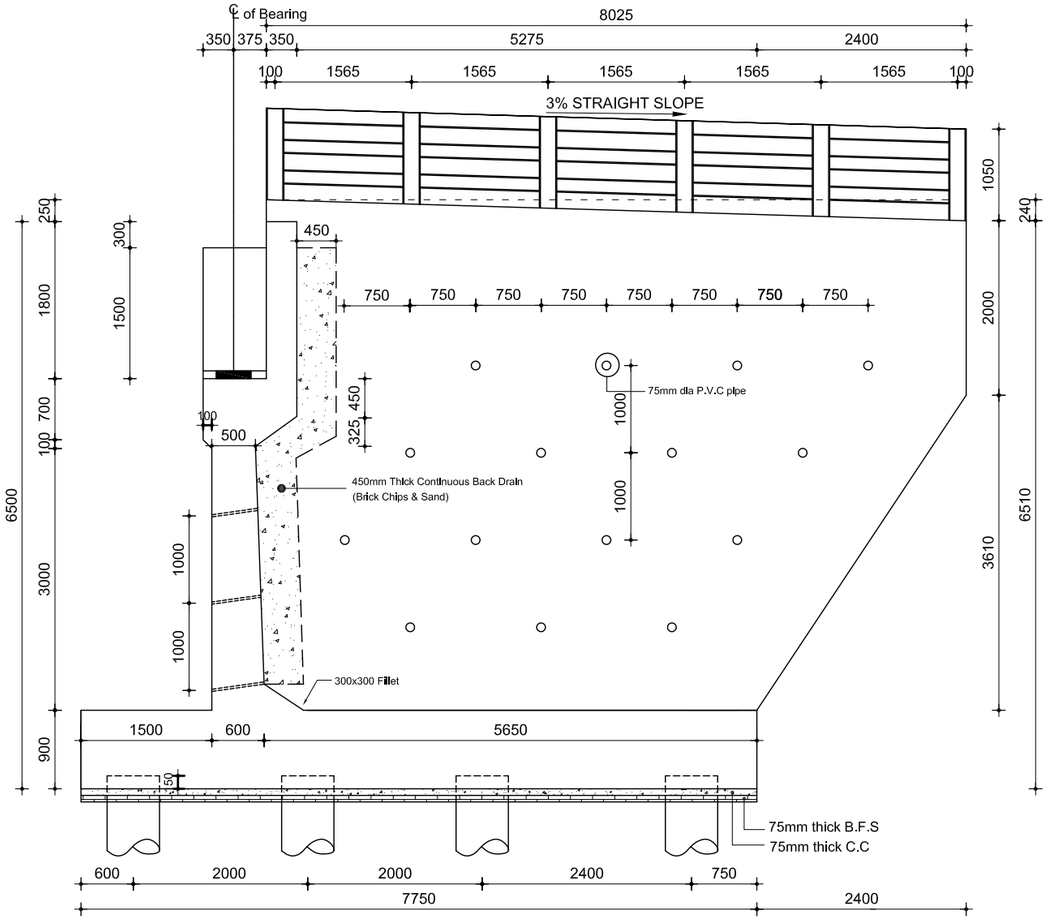
TOP PLAN OF ABUTMENT & WING WALL

Scale: 1:75



PILE LAYOUT PLAN

Scale: 1:75



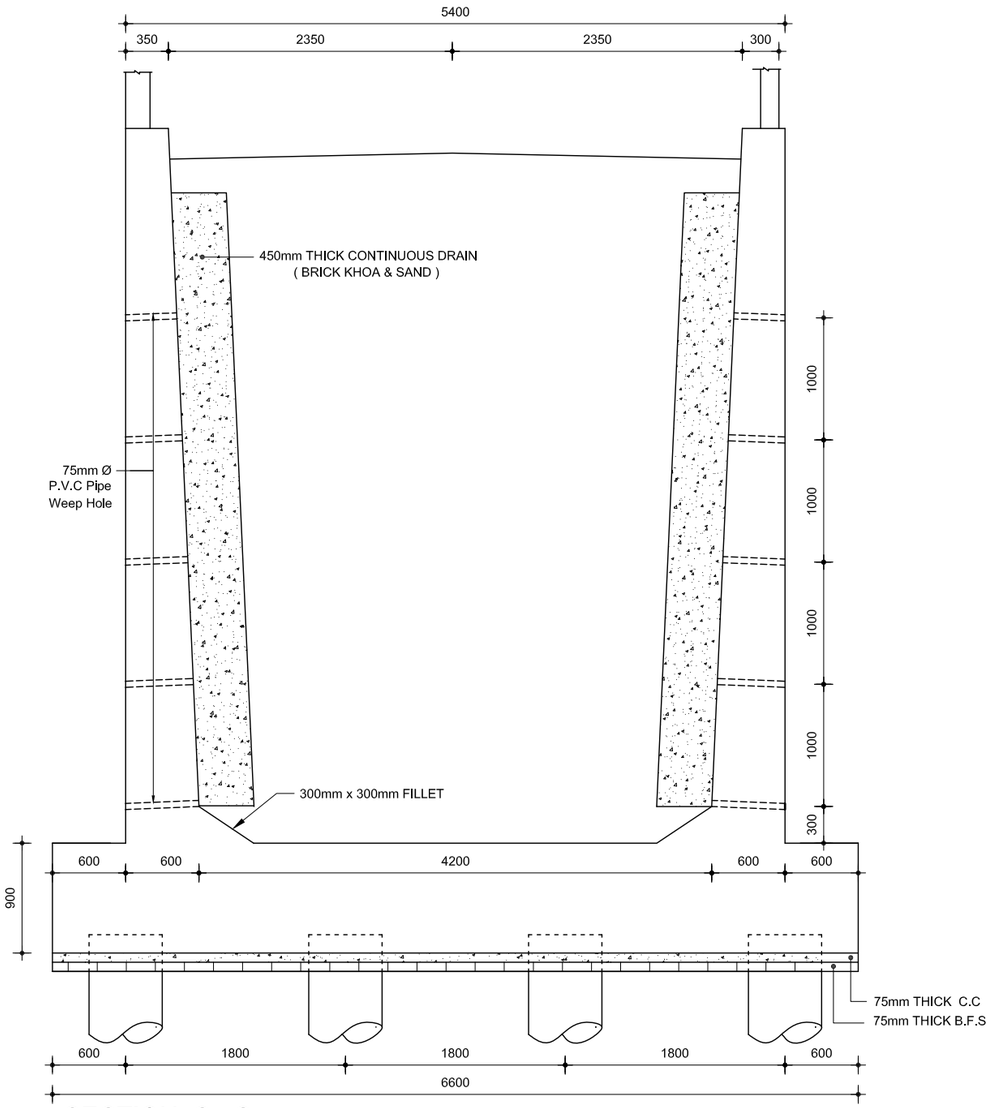
SECTION A-A

Scale: 1:75

NOTES:

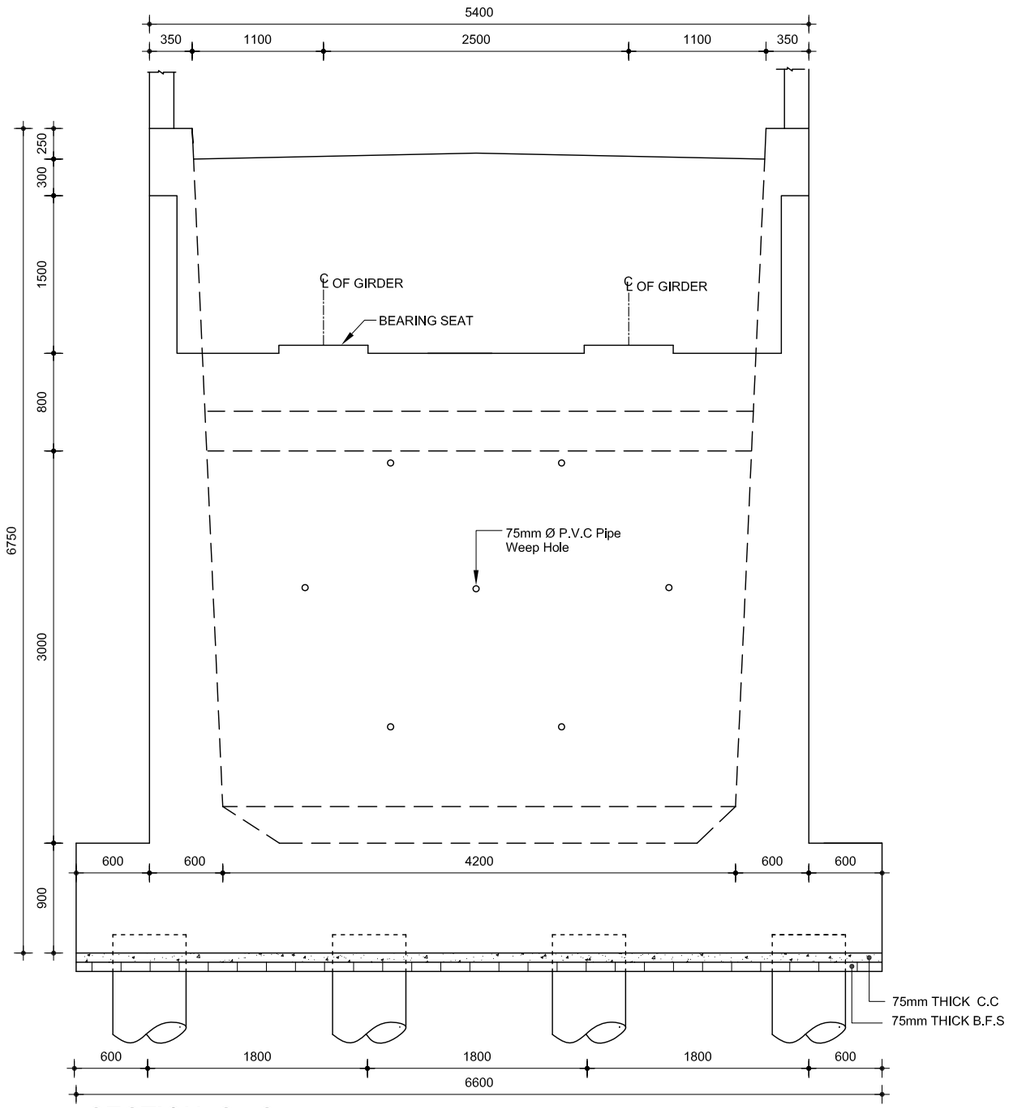
1. Abutment Details for 25m. span.
2 All dimensions are in millimeter unless otherwise mentioned.
3. Clear cover to main reinforcement bar is to be 50mm. unless otherwise mentioned.
4. 28 days cylinder strength of concrete: f 'c = 25.0N/mm² (3600 psi)
5. Yield strength of mild steel deformed bar fy = 413N/mm² (60000psi)

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	DESIGNED ,DRAWN & CHECKED BY PURAKAUSHAL PROJUKTI LIMITED	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	DRAWING TITLE Details of Abutment Span 25m Abutment Height 6.5m DRAWING NO. AB-19 PAGE NO. P-71



SECTION: C - C

Scale: 1:50



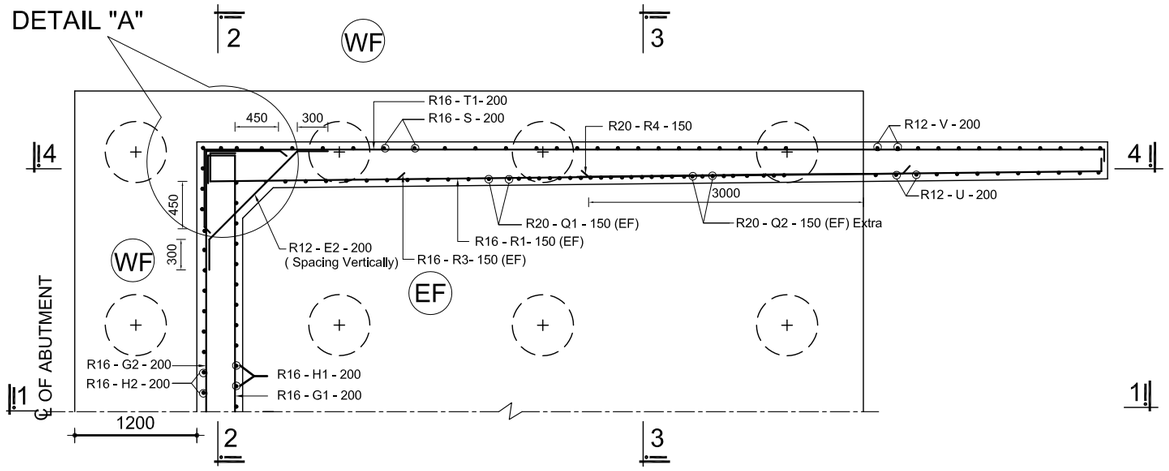
SECTION: C - C

Scale: 1:50

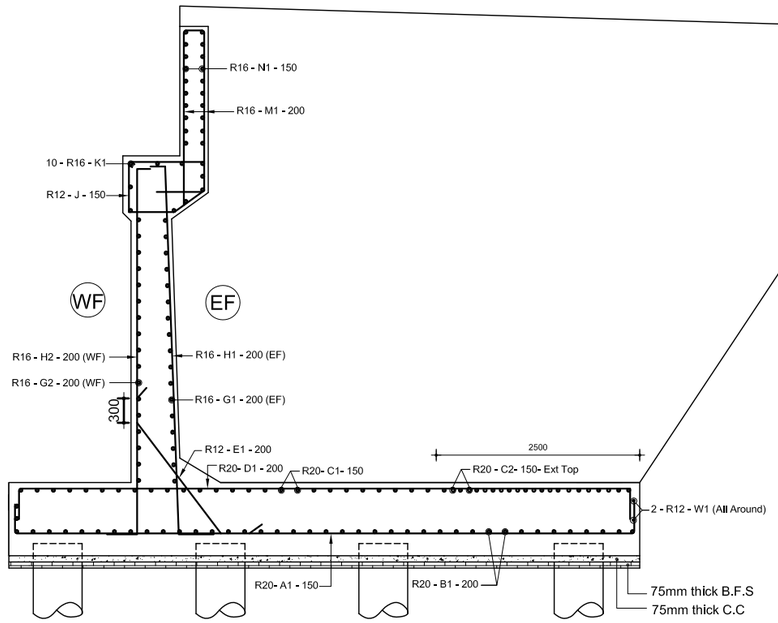
NOTES:

1. All dimensions are in millimeter unless otherwise mentioned.
2. Clear cover to main reinforcement bar is to be 50mm. unless otherwise mentioned.
3. 28 days cylinder strength of concrete: f 'c = 25.0N/mm² (3600 psi)
4. Yield strength of mild steel deformed bar fy = 413N/mm² (60000psi)

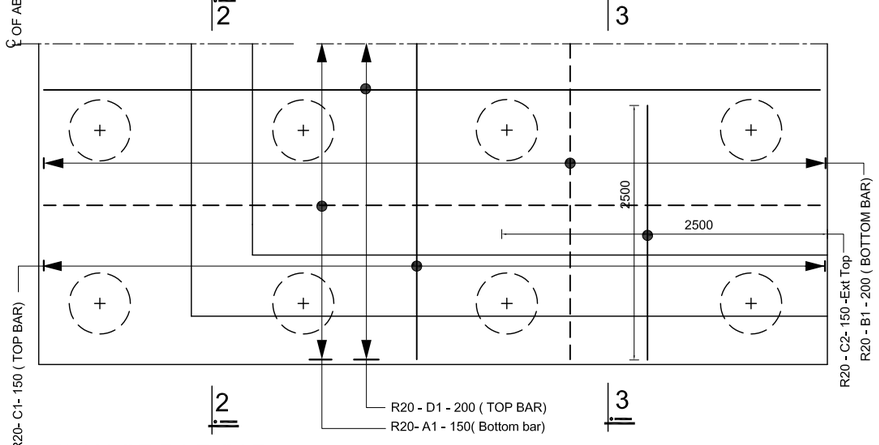
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	DESIGNED ,DRAWN & CHECKED BY		DRAWING TITLE
	PURAKAUSHAL PROJUKTI LIMITED	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	Sectional Elevation of Abutment & Wing wall, Span 25m Abutment Height 6.5m DRAWING NO. AB-20 PAGE NO. P-72



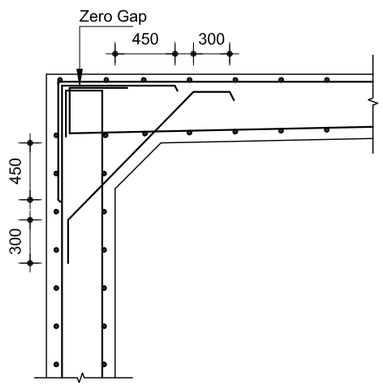
PLAN OF ABUTMENT & WINGWALL
SHOWING REINFORCEMENT
Scale: 1:60



CROSS SECTION OF ABUTMENT (SECTION 1-1)
SHOWING REINFORCEMENT DETAILS
Scale: 1:75



PLAN OF PILE CAP
SHOWING REINFORCEMENT
Scale: 1:60

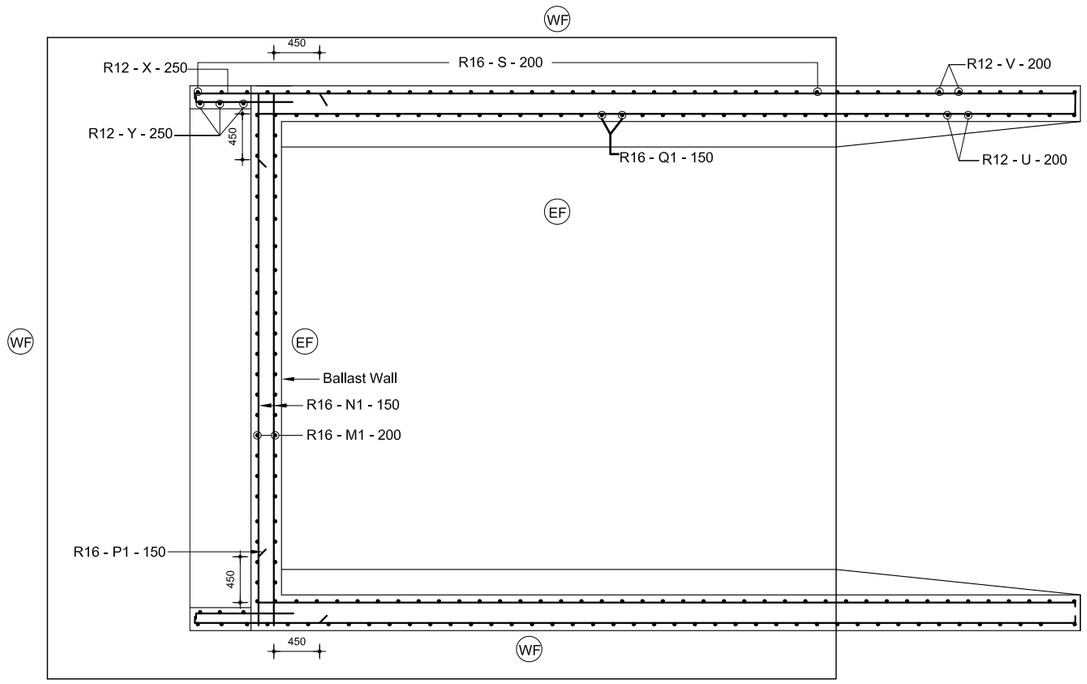


DETAIL "A"
Scale: 1:40

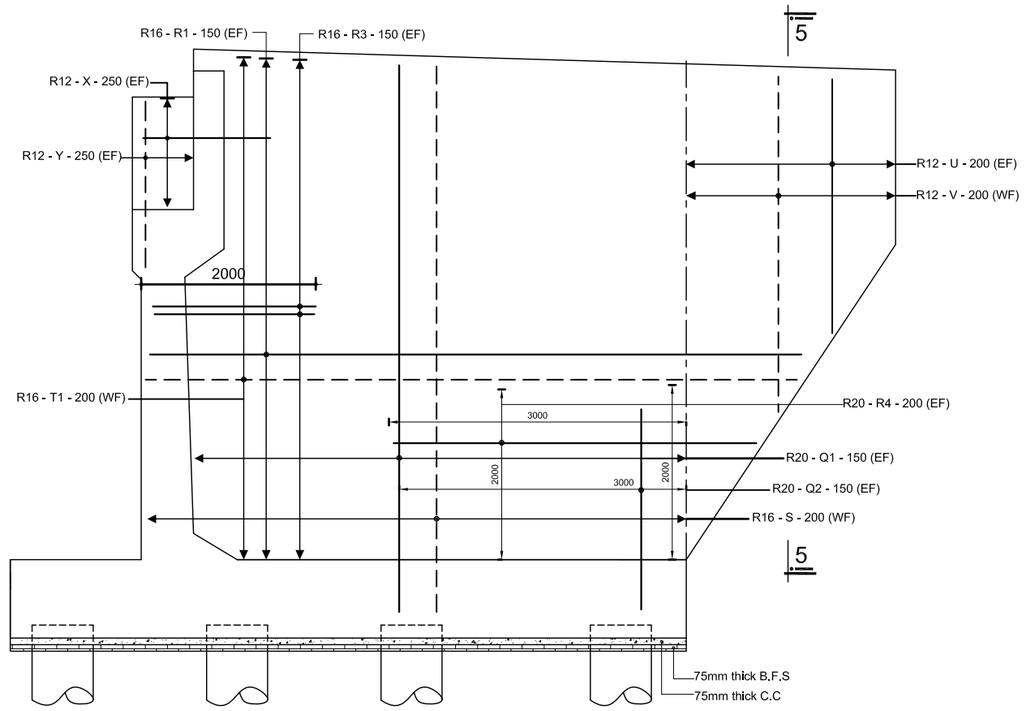
NOTES:

1. Clear cover to main reinforcement bar is to be 50mm. unless otherwise mentioned.
2. 28 days cylinder strength of concrete: f 'c = 25.0N/mm² (3600 psi)
3. Yield strength of mild steel deformed bar fy = 413N/mm² (60000psi)
4. EF = Earth Face WF = Water Face

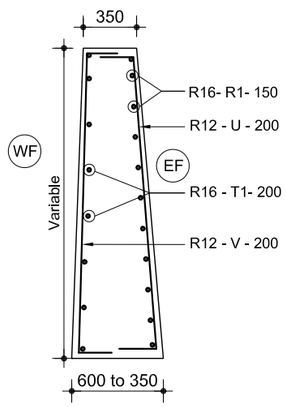
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	DESIGNED ,DRAWN & CHECKED BY		DRAWING TITLE
	PURAKAUSHAL PROJUKTI LIMITED	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	Reinf. Details of Abutment & Wingwall, Span 25m Abutment Height 6.5m DRAWING NO. AB-21 PAGE NO. P-73



TOP PLAN OF BALLAST WALL & WINGWALL
SHOWING TOP REINFORCEMENT
Scale: 1:60



SECTIONAL ELEVATION OF WINGWALL (SEC. 4 - 4)
SHOWING REINFORCEMENT
Scale: 1:70

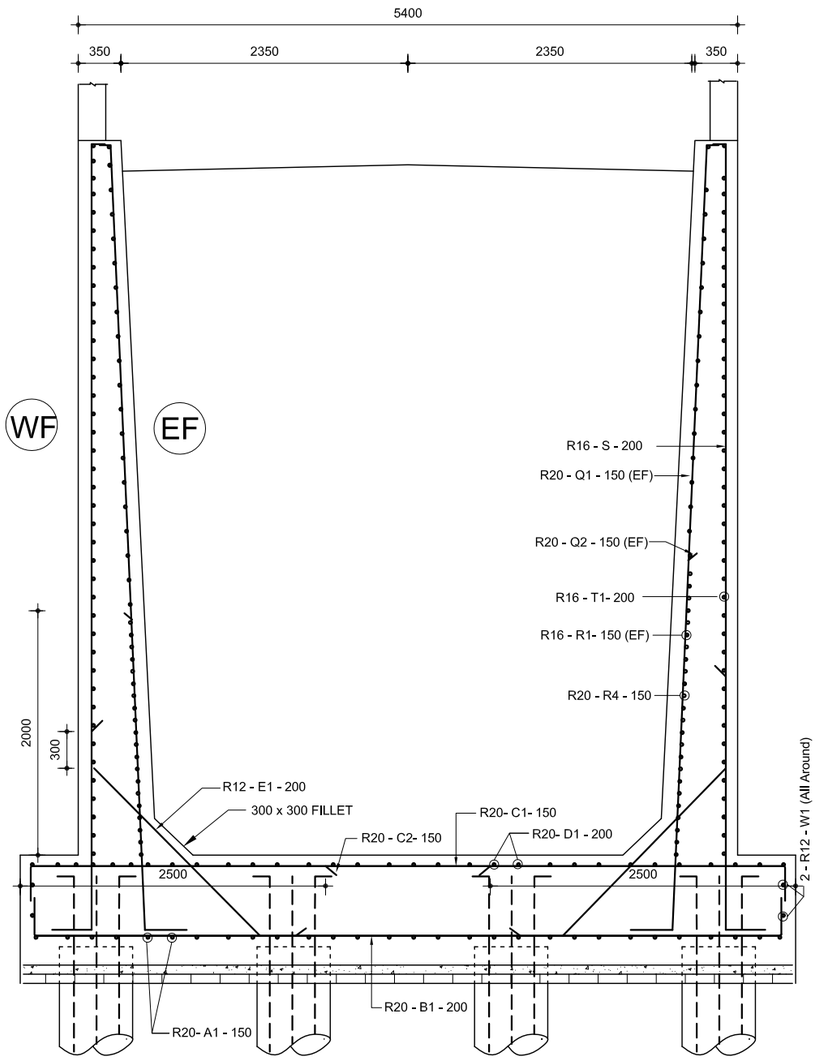


SEC. 5 - 5
Scale: 1:40

NOTES:

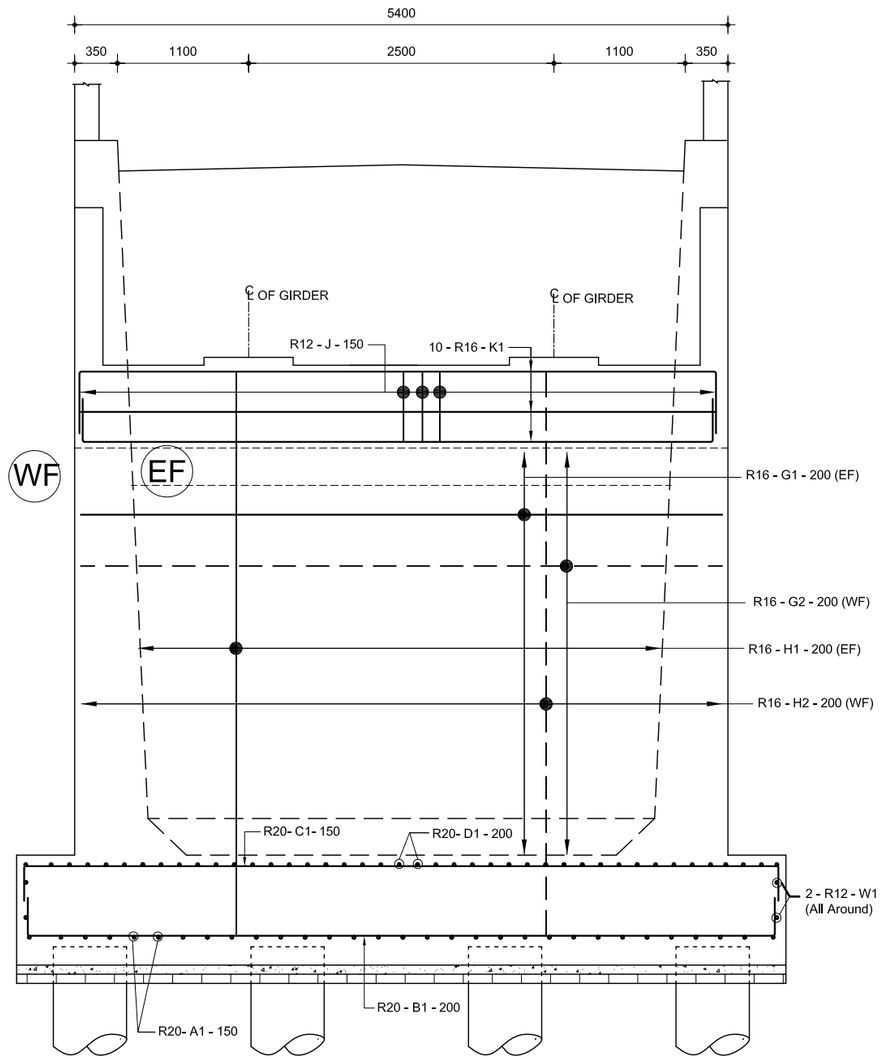
1. Clear cover to main reinforcement bar is to be 50mm. unless otherwise mentioned.
2. 28 days cylinder strength of concrete: f 'c = 25.0N/mm (3600 psi)
3. Yield strength of mild steel deformed bar fy = 413N/mm (60000psi)
4. EF = Earth Face, WF = Water Face

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	DESIGNED ,DRAWN & CHECKED BY		DRAWING TITLE
	PURAKAUSHAL PROJUKTI LIMITED	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	Reinf. Details of Abutment & Wing wall, Span 25m Abutment Height 6.5m DRAWING NO. AB-22 PAGE NO. P-74



CROSS SECTION OF WINGWALL (SEC. 3 - 3)
SHOWING REINFORCEMENT

Scale: 1:50



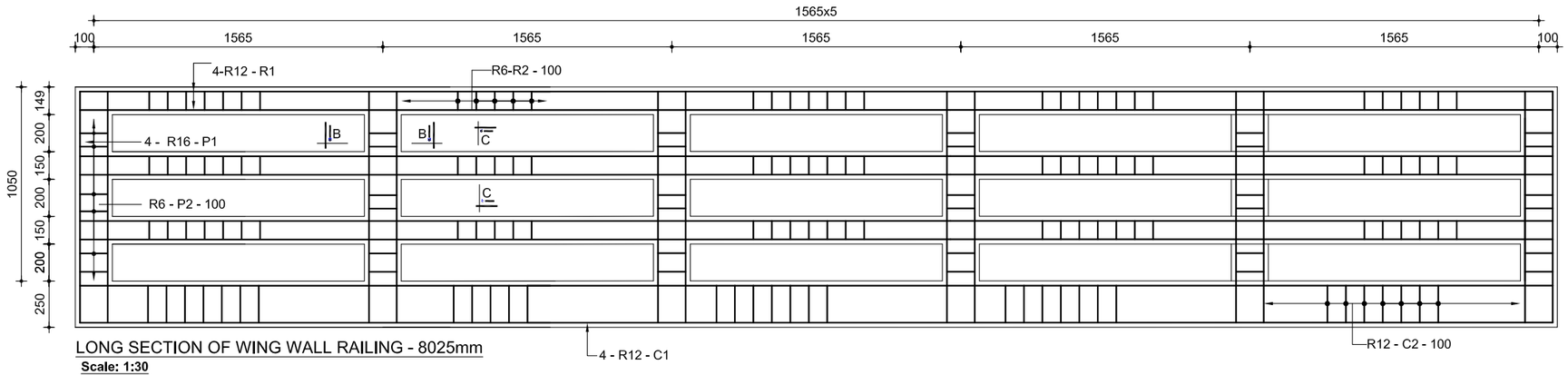
SECTIONAL FRONT ELEVATION OF ABUTMENT (SEC. 2 - 2)
SHOWING REINFORCEMENT

Scale: 1:50

NOTES:

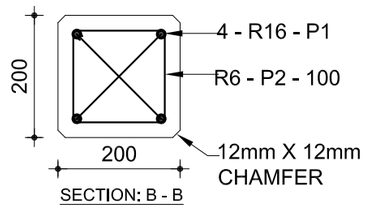
1. Clear cover to main reinforcement bar is to be 50mm. unless otherwise mentioned.
2. 28 days cylinder strength of concrete: f 'c = 25.0N/mm² (3600 psi)
3. Yield strength of mild steel deformed bar fy = 413N/mm² (60000psi)
4. EF = Earth Face, WF = Water Face

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	DESIGNED ,DRAWN & CHECKED BY	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	DRAWING TITLE Cross Section of Wingwall Showing Reinf. Details, Span 25m Abutment Height 6.5m DRAWING NO. AB-23 PAGE NO. P-75
	PURAKAUSHAL PROJUKTI LIMITED		

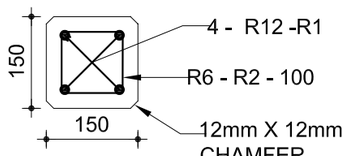


LONG SECTION OF WING WALL RAILING - 8025mm

Scale: 1:30

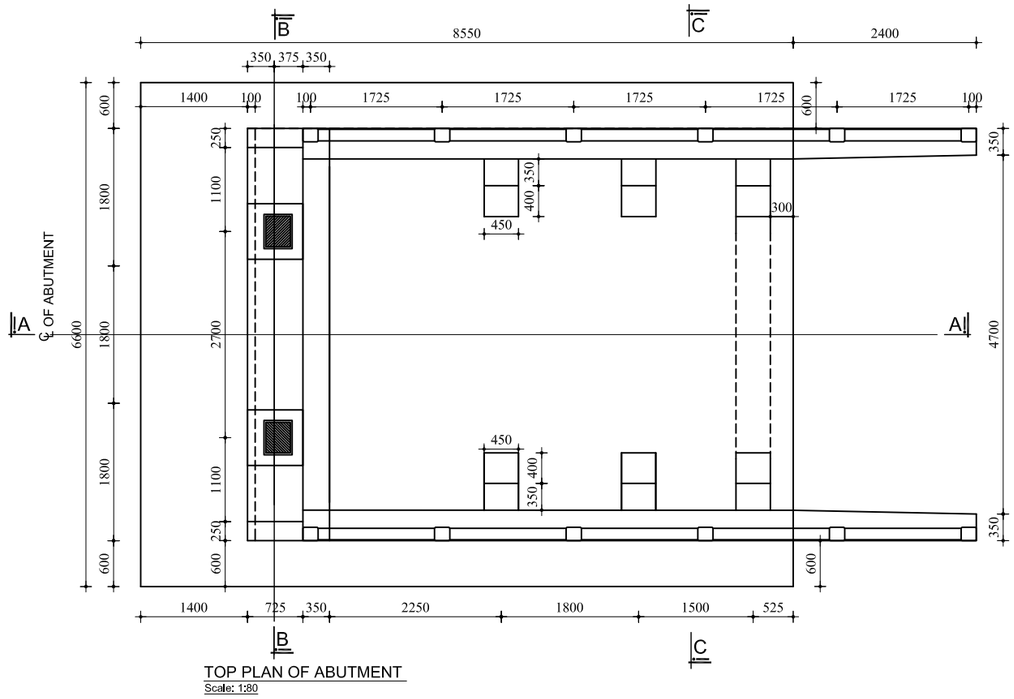


SECTION: B - B
RAIL POST
Scale: 1:10



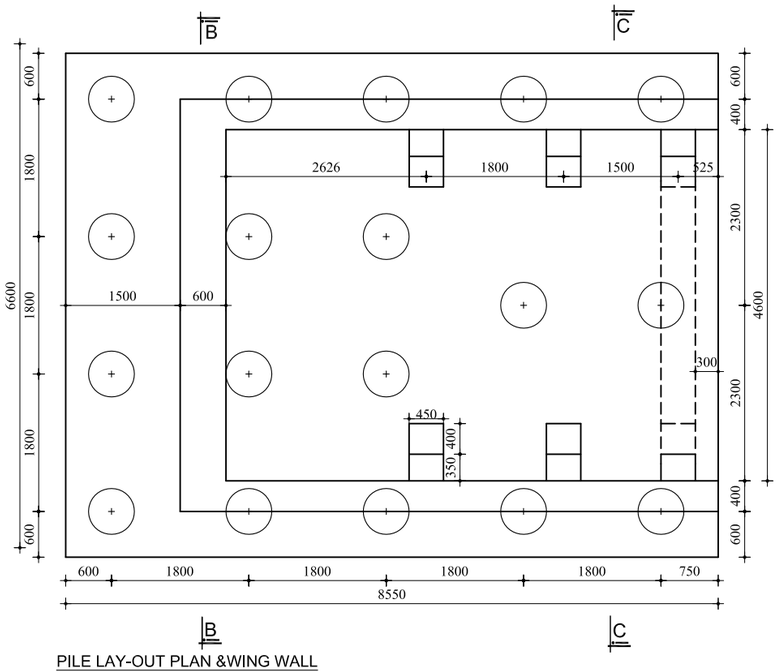
SECTION: C - C
RAIL BAR
Scale: 1:10

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	DESIGNED ,DRAWN & CHECKED BY		DRAWING TITLE
	PURAKAUSHAL PROJUKTI LIMITED	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	Details of Abutment Railing, Span 25m Abutment Height 6.5m
			DRAWING NO. AB-24
			PAGE NO. P-76



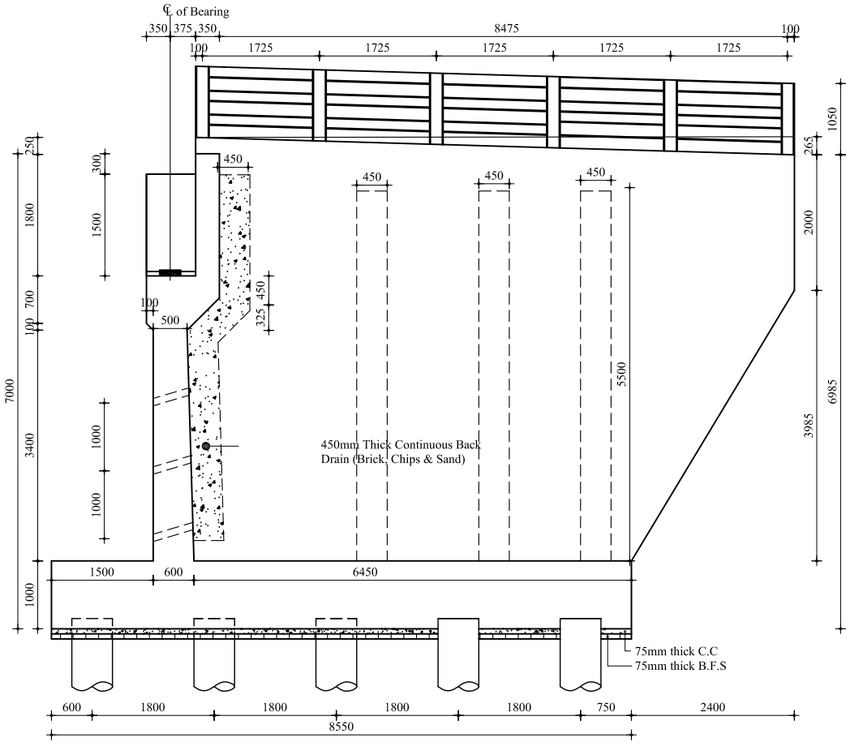
TOP PLAN OF ABUTMENT

Scale: 1:80



PILE LAY-OUT PLAN &WING WALL

Scale: 1:80



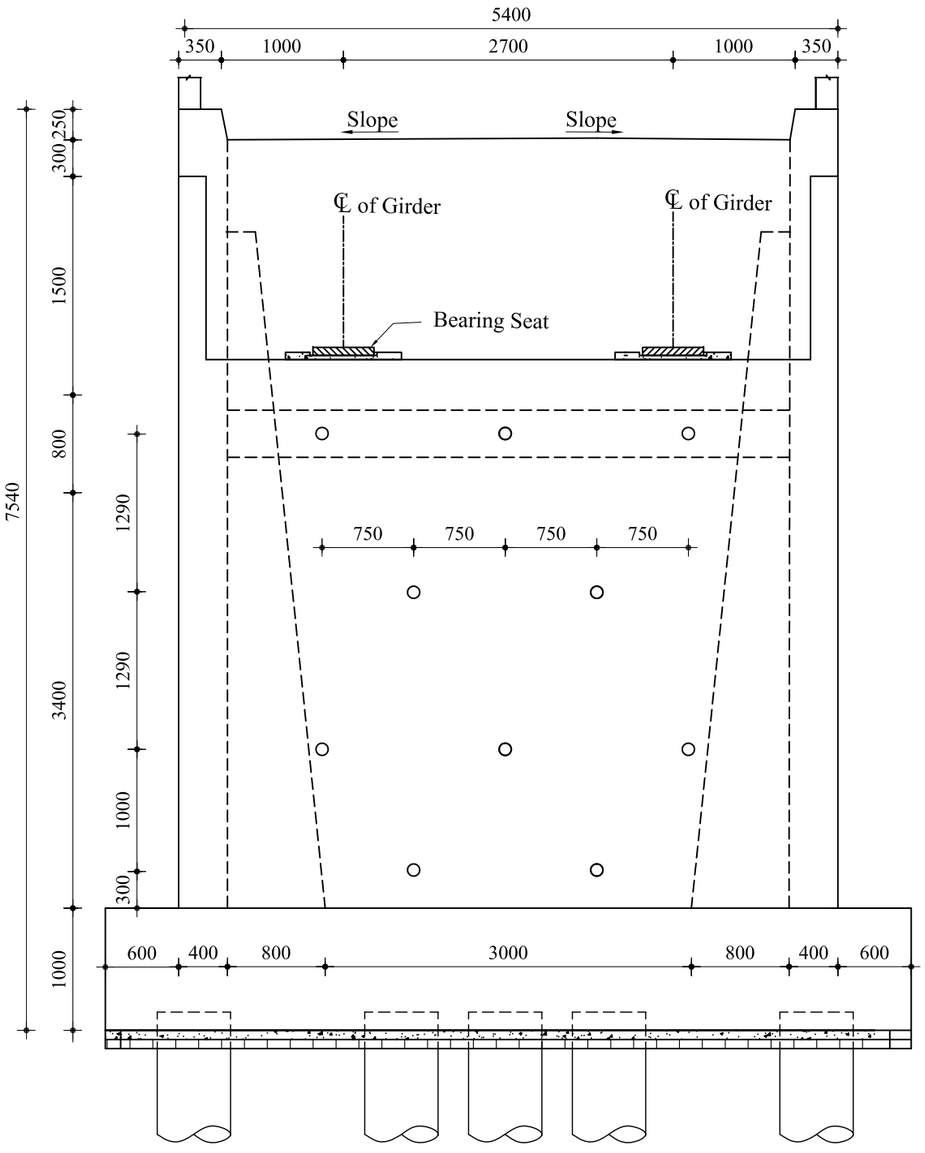
SECTION A-A

Scale: 1:90

NOTES:

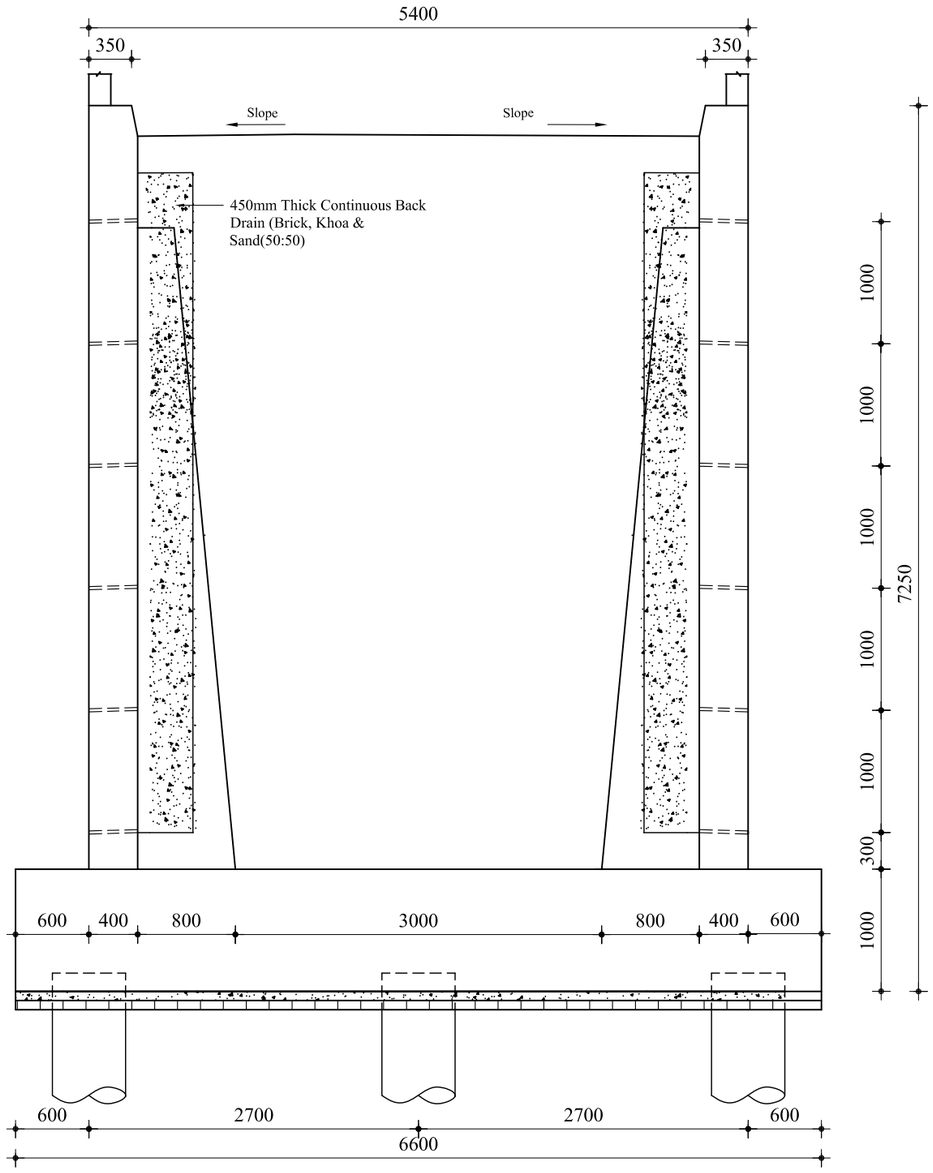
1. Abutment Details for 25m span.
2. All dimensions are in millimeter unless otherwise mentioned.
3. Clear cover to main reinforcement bar is to be 50mm. unless otherwise mentioned.
4 28 days cylinder strength of concrete: f 'c = 25.0N/mm² (3600 psi)
5. Yield strength of mild steel deformed bar fy = 413N/mm² (60000psi)

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	DESIGNED ,DRAWN & CHECKED BY PURAKAUSHAL PROJUKTI LIMITED House # C10, Road # 4 ,Banasree, Rampura- 1219. E-maill: pproiltd@yahoo.com	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	DRAWING TITLE Details of Abutment Span 25m Abutment Height 7.0m DRAWING NO. AB-25 PAGE NO. P-77



SECTION B-B

Scale: 1:50



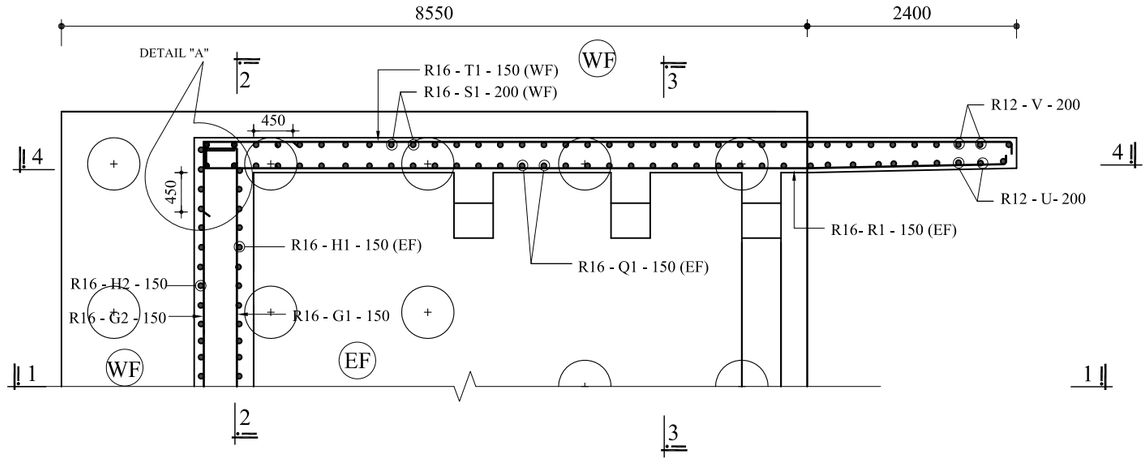
SECTION C-C

Scale: 1:50

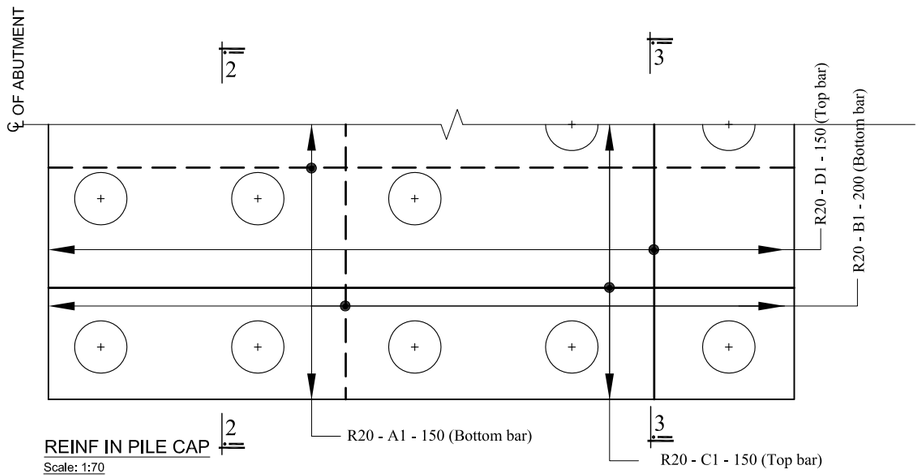
NOTES:

1. All dimensions are in millimeter unless otherwise mentioned.
2. Clear cover to main reinforcement bar is to be 50mm. unless otherwise mentioned.
3. 28 days cylinder strength of concrete: f 'c = 25.0N/mm² (3600 psi)
4. Yield strength of mild steel deformed bar fy = 413N/mm² (60000psi)

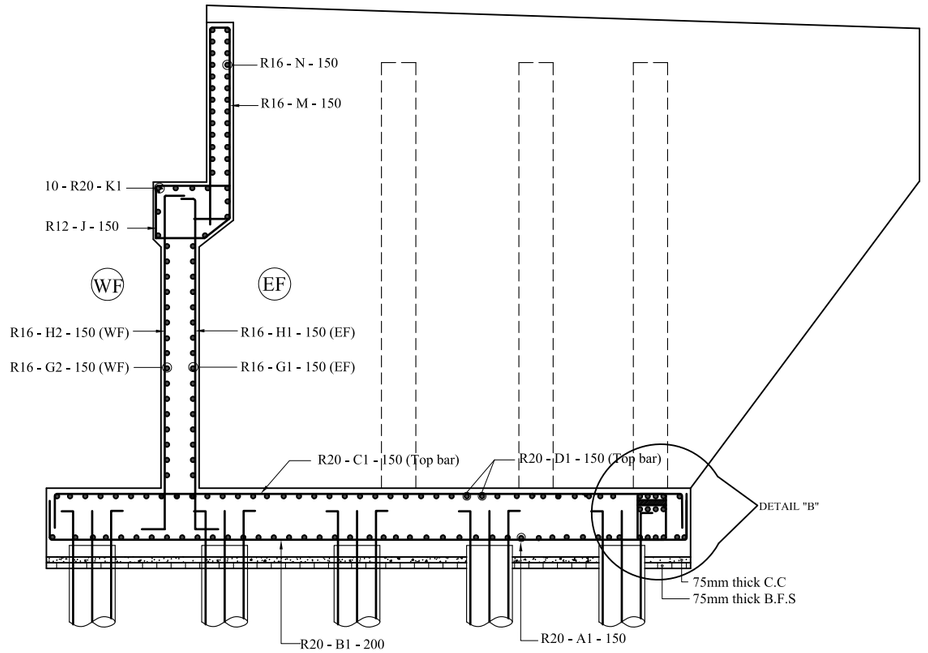
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	DESIGNED ,DRAWN & CHECKED BY PURAKAUSHAL PROJUKTI LIMITED House # C10, Road # 4 ,Banasree, Rampura- 1219. E-maill: pproiltd@yahoo.com	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	DRAWING TITLE Sectional Elevation of Abutment & Wing wall, Span 25m Abutment Height 7.0m DRAWING NO. AB-26 PAGE NO. P-78



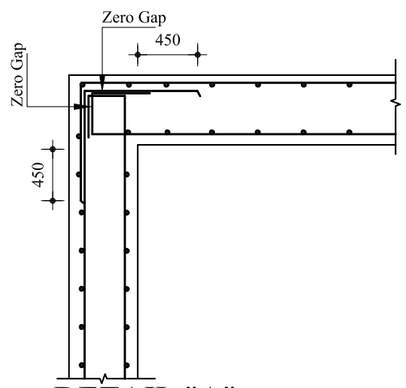
REINF IN ABUTMENT & WING WALL
Scale: 1:70



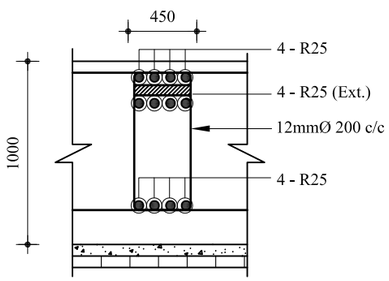
REINF IN PILE CAP
Scale: 1:70



CROSS SECTION OF ABUTMENT (SECTION 1-1)
SHOWING REINFORCEMENT DETAILS
Scale: 1:80



DETAIL "A"
Scale: 1:40

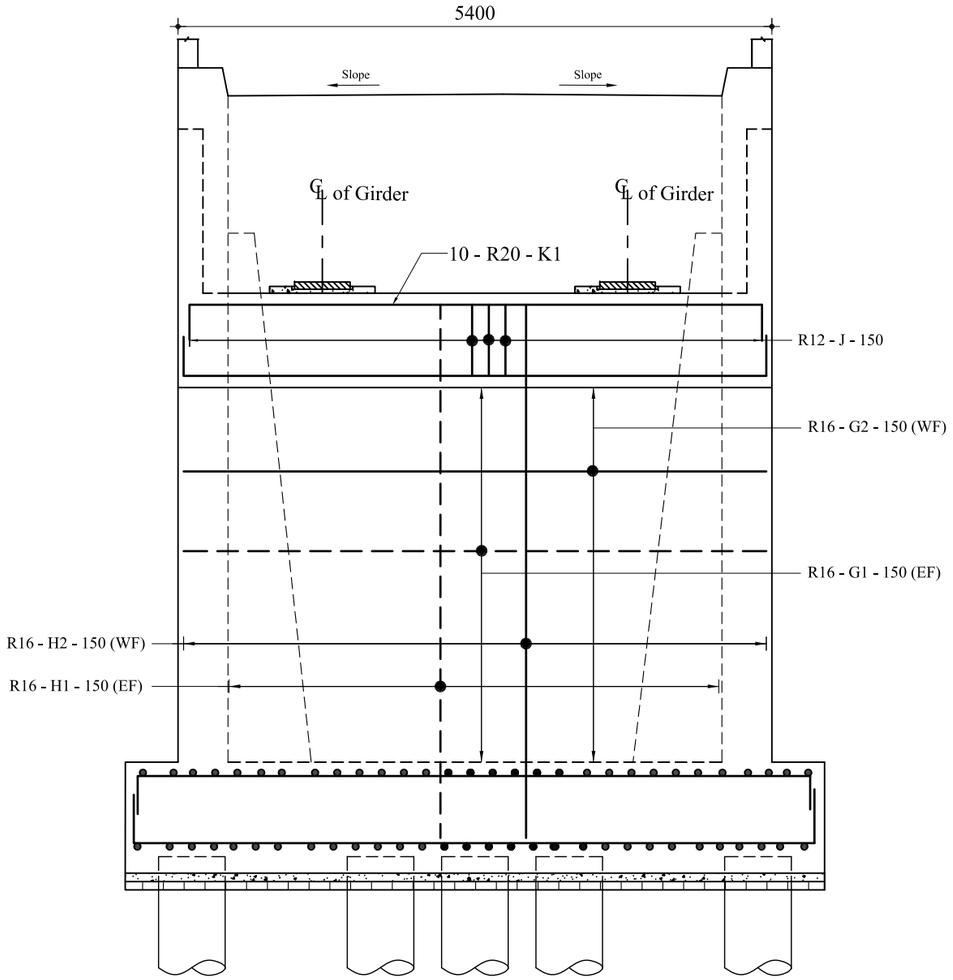


DETAIL "B"
Scale: 1:40

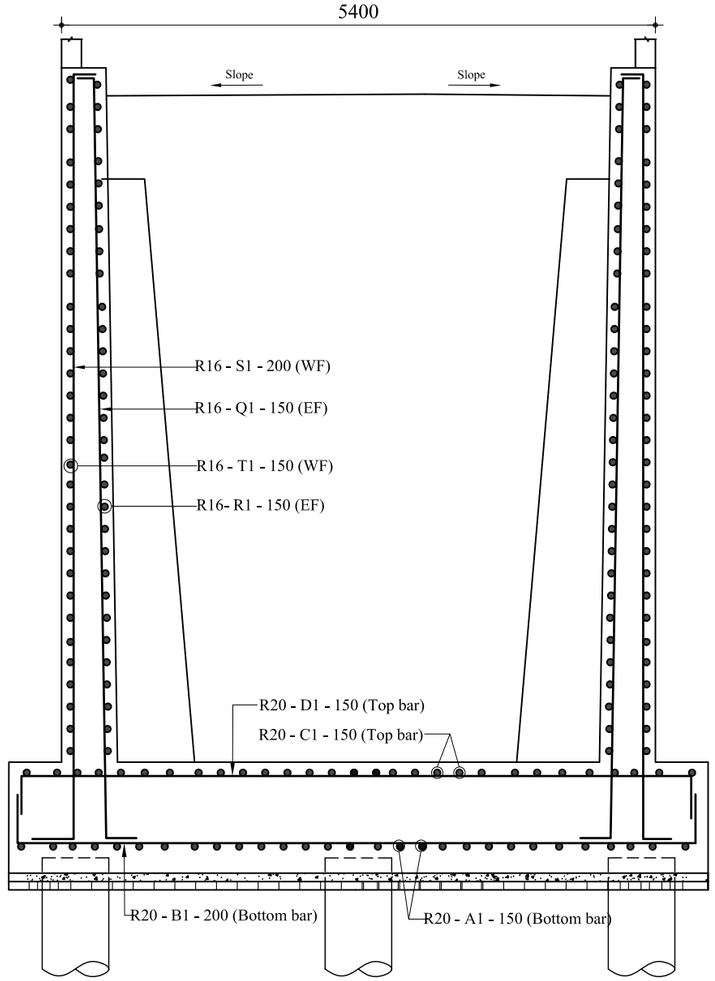
NOTES:

1. All dimensions are in millimeter unless otherwise mentioned.
2. Clear cover to main reinforcement bar is to be 50mm. unless otherwise mentioned.
3. 28 days cylinder strength of concrete: f 'c = 25.0N/mm² (3600 psi)
4. EF = Earth Face WF = Water Face

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	DESIGNED ,DRAWN & CHECKED BY PURAKAUSHAL PROJUKTI LIMITED House # C10, Road # 4 ,Banasree, Rampura- 1219. E-maill: pproiltd@yahoo.com	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	DRAWING TITLE Reinf. Details of Abutment & Wing wall, Span 25m Abutment Height 7.0m DRAWING NO. AB-27 PAGE NO. P-79



SECTIONAL FRONT ELEVATION OF ABUTMENT (SECTION 2-2)
SHOWING REINFORCEMENT
Scale: 1:55

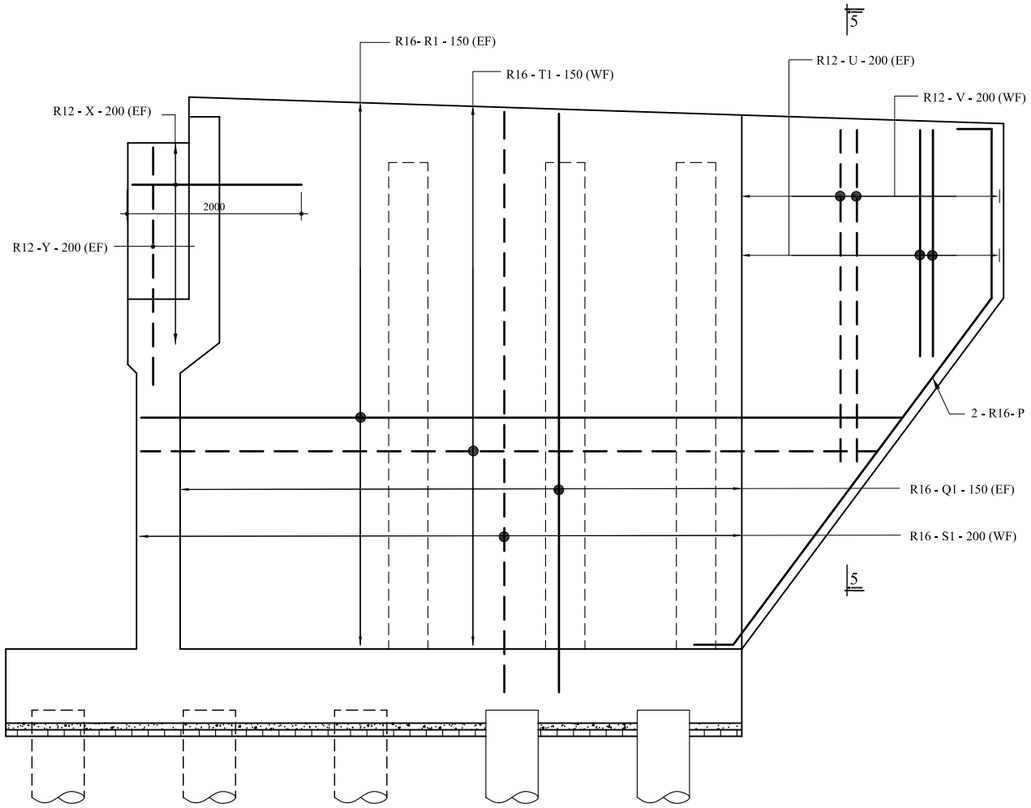


CROSS-SECTION OF WINGWALL (SEC.3-3)
SHOWING REINFORCEMENT
Scale: 1:55

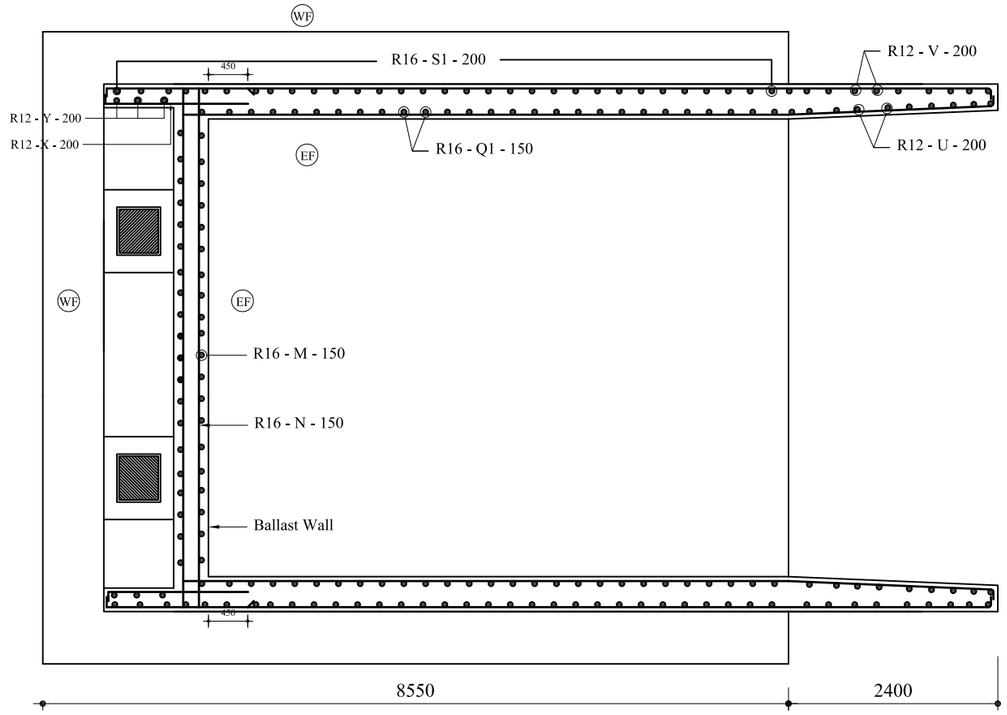
NOTES:

1. All dimensions are in millimeter unless otherwise mentioned.
2. Clear cover to main reinforcement bar is to be 50mm. unless otherwise mentioned.
3. 28 days cylinder strength of concrete: f 'c = 25.0N/mm² (3600 psi)
4. EF = Earth Face, WF = Water Face

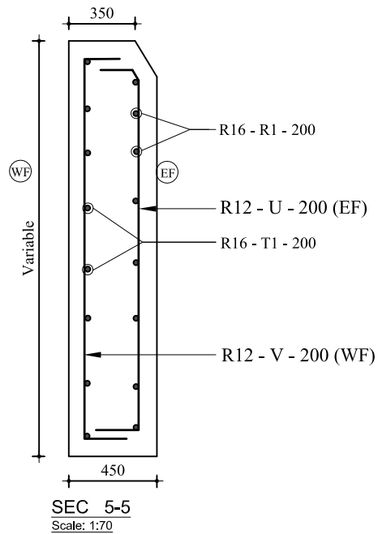
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	DESIGNED ,DRAWN & CHECKED BY PURAKAUSHAL PROJUKTI LIMITED House # C10, Road # 4 ,Banasree, Rampura- 1219. E-maill: pproiltd@yahoo.com	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	DRAWING TITLE Cross Section of Wingwall Showing Reinf. Details, Span 25m Abutment Height 7.0m DRAWING NO. AB-28 PAGE NO. P-80



SECTIONAL ELEVATION OF WINGWALL (SEC. 4 - 4)
SHOWING REINFORCEMENT
Scale: 1:70



TOP PLAN OF BALLASTWALL & WINGWALL
SHOWING TOP REINFORCEMENT
Scale: 1:70

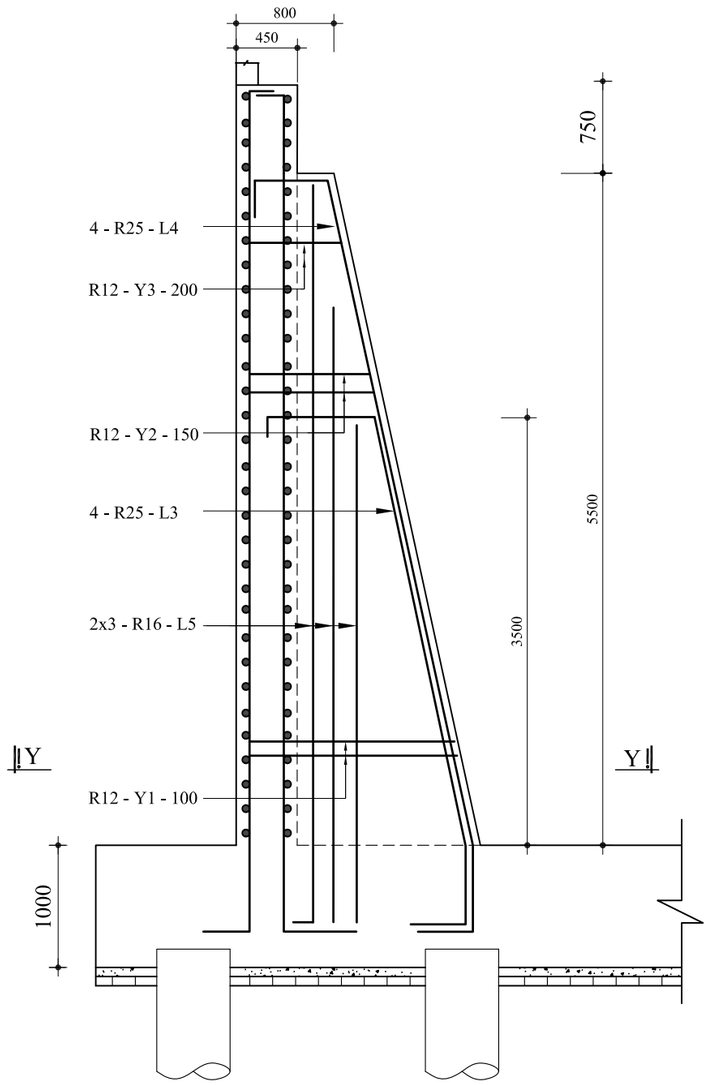


SEC 5-5
Scale: 1:70

NOTES:

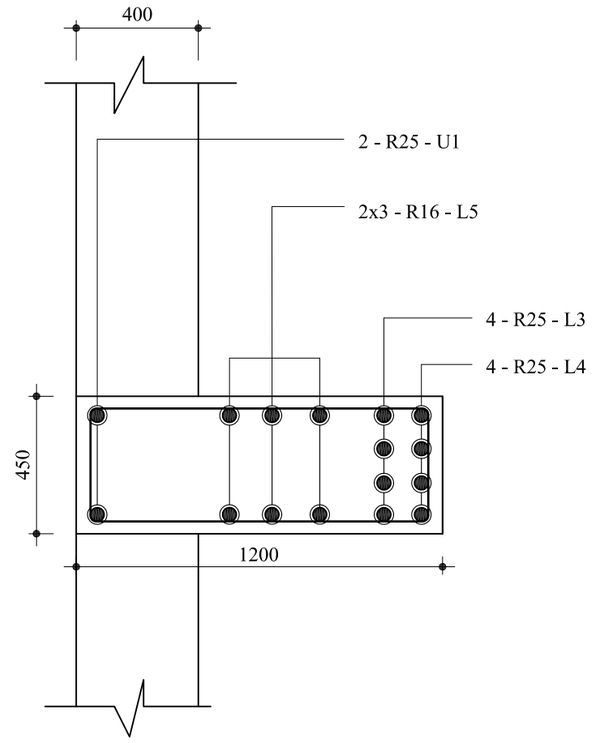
1. All dimensions are in millimeter unless otherwise mentioned.
2. Clear cover to main reinforcement bar is to be 50mm. unless otherwise mentioned.
3. 28 days cylinder strength of concrete: f 'c = 25.0N/mm² (3600 psi)
4. EF = Earth Face WF = Water Face

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	DESIGNED ,DRAWN & CHECKED BY PURAKAUSHAL PROJUKTI LIMITED House # C10, Road # 4 ,Banasree, Rampura- 1219. E-maill: pproiltd@yahoo.com	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	DRAWING TITLE Reinf. Details of Abutment & Wing wall, Span 25m Abutment Height 7.0m DRAWING NO. AB-29 PAGE NO. P-81



REINF. DETAILS OF WING WALL COUNTER FORT

Scale: 1:50



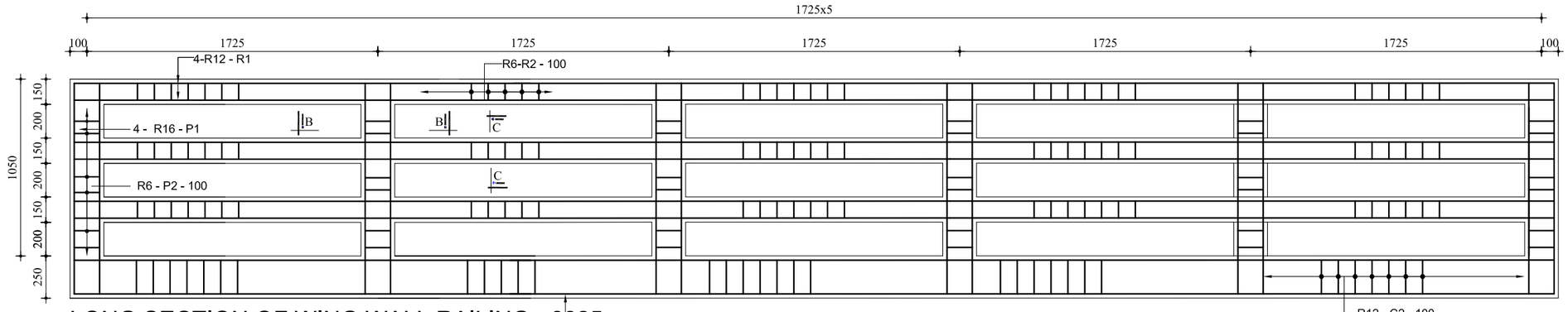
SECTION Y -Y

Scale: 1:20

NOTES:

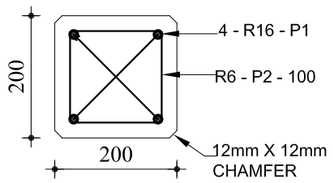
1. All dimensions are in millimeter unless otherwise mentioned.
2. Clear cover to main reinforcement bar is to be 50mm. unless otherwise mentioned.
3. 28 days cylinder strength of concrete: f 'c = 25.0N/mm² (3600 psi)
4. EF = Earth Face WF = Water Face

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	DESIGNED ,DRAWN & CHECKED BY PURAKAUSHAL PROJUKTI LIMITED House # C10, Road # 4 ,Banasree, Rampura- 1219. E-maill: pproiltd@yahoo.com	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	DRAWING TITLE Reinf. Details of Counter Fort, Span 25m Abutment Height 7.0m DRAWING NO. AB-30 PAGE NO. P-82

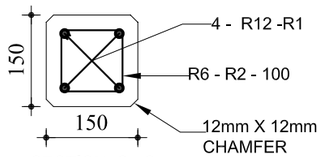


LONG SECTION OF WING WALL RAILING - 8825mm

Scale: 1:30

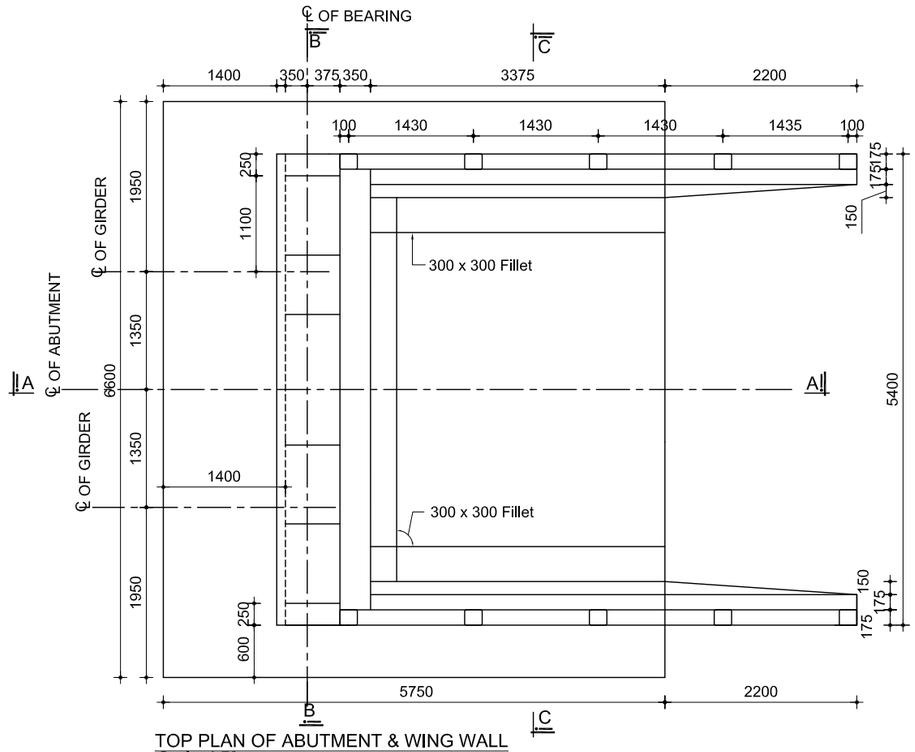


SECTION: B - B
RAIL POST
Scale: 1:10



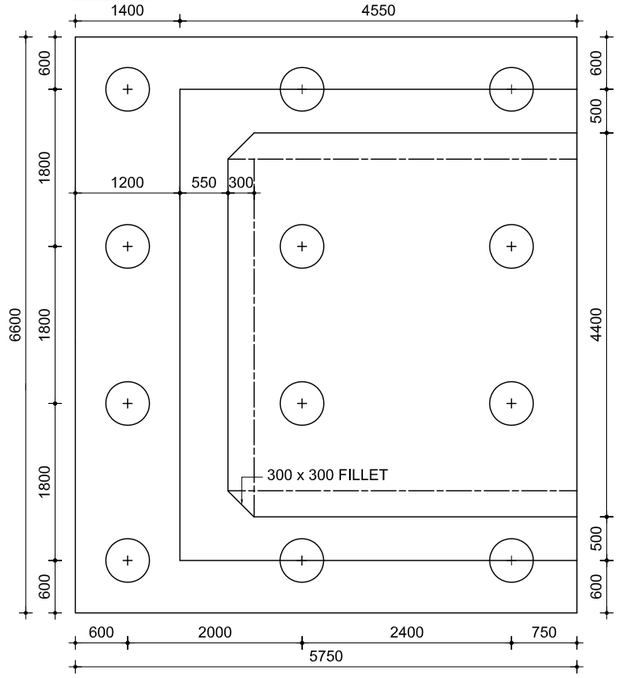
SECTION: C - C
RAIL BAR
Scale: 1:10

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	DESIGNED ,DRAWN & CHECKED BY PURAKAUSHAL PROJUKTI LIMITED House # C10, Road # 4 ,Banasree, Rampura- 1219. E-maill: pproiltd@yahoo.com	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	DRAWING TITLE Details of Abutment Railing, Span 25m Abutment Height 7.0m DRAWING NO. AB-31 PAGE NO. P-83



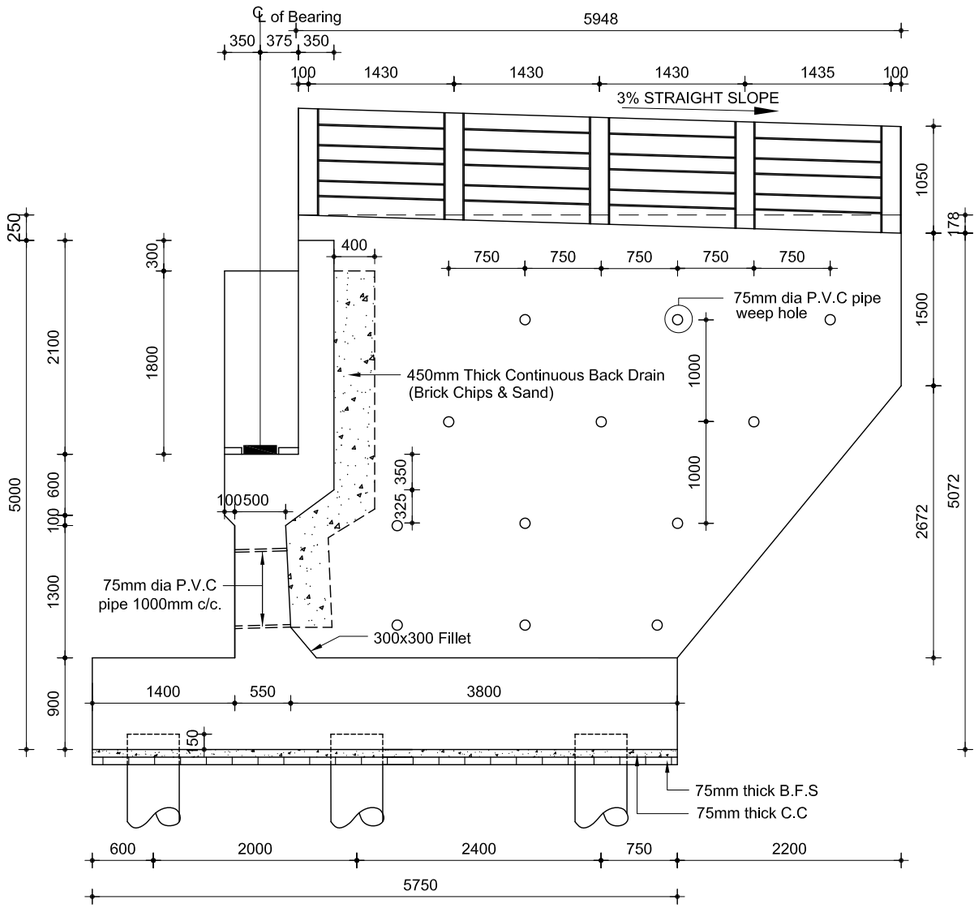
TOP PLAN OF ABUTMENT & WING WALL

Scale: 1:70



PILE LAY-OUT PLAN

Scale: 1:70



SECTION A-A

Scale: 1:60

NOTES:

1. Abutment Details for 30m span.
2. All dimensions are in millimeter unless otherwise mentioned.
3. Clear cover to main reinforcement bar is to be 50mm. unless otherwise mentioned
4. 28 days cylinder strength of concrete: f 'c = 25.00N/mm² (3600 psi)
5. Yield strength of mild steel deformed bar fy = 413N/mm² (60000psi)

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH

LOCAL GOVERNMENT ENGINEERING DEPARTMENT

DESIGNED ,DRAWN & CHECKED BY

PURAKAUSHAL PROJUKTI LIMITED

House # C10, Road # 4 ,Banasree, Rampura- 1219.
E-maill: pproiltd@yahoo.com

NAME OF PROJECT:

LOCATION:

UPAZILA:

DISTRICT:

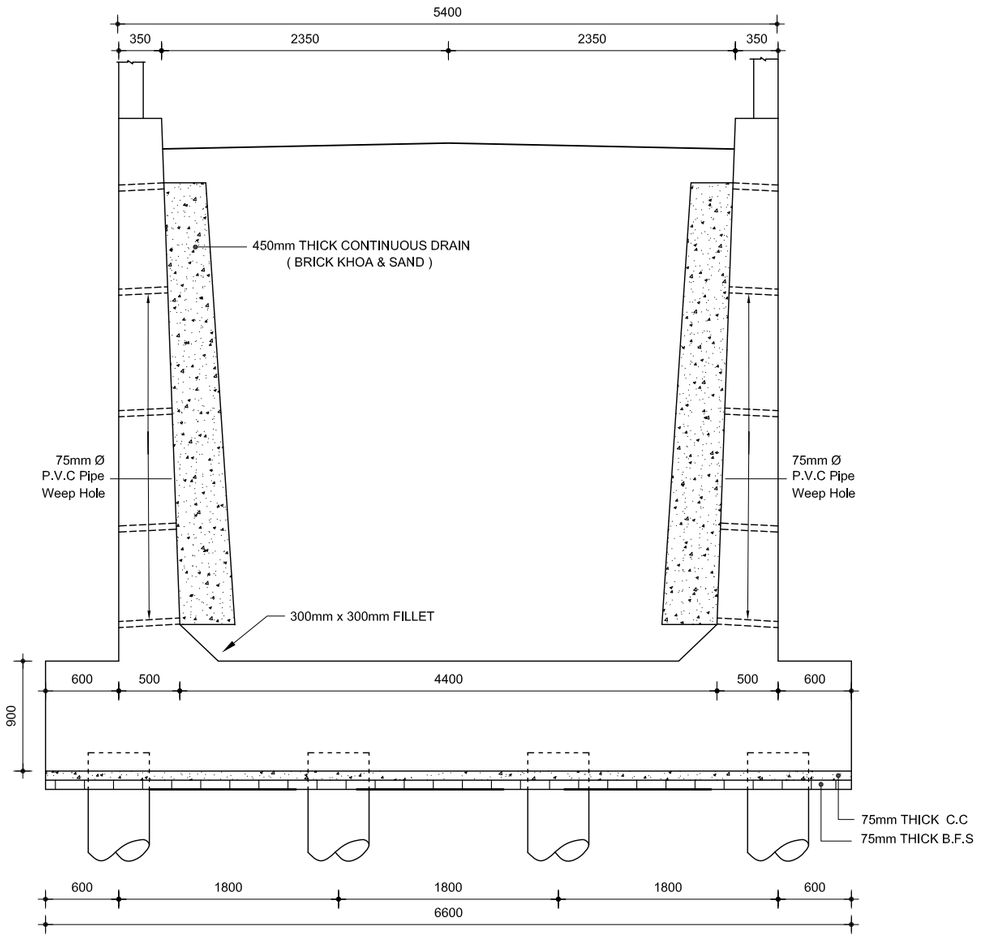
DRAWING TITLE

Details of Abutment

Span 30m. Abutment Height 5.0m

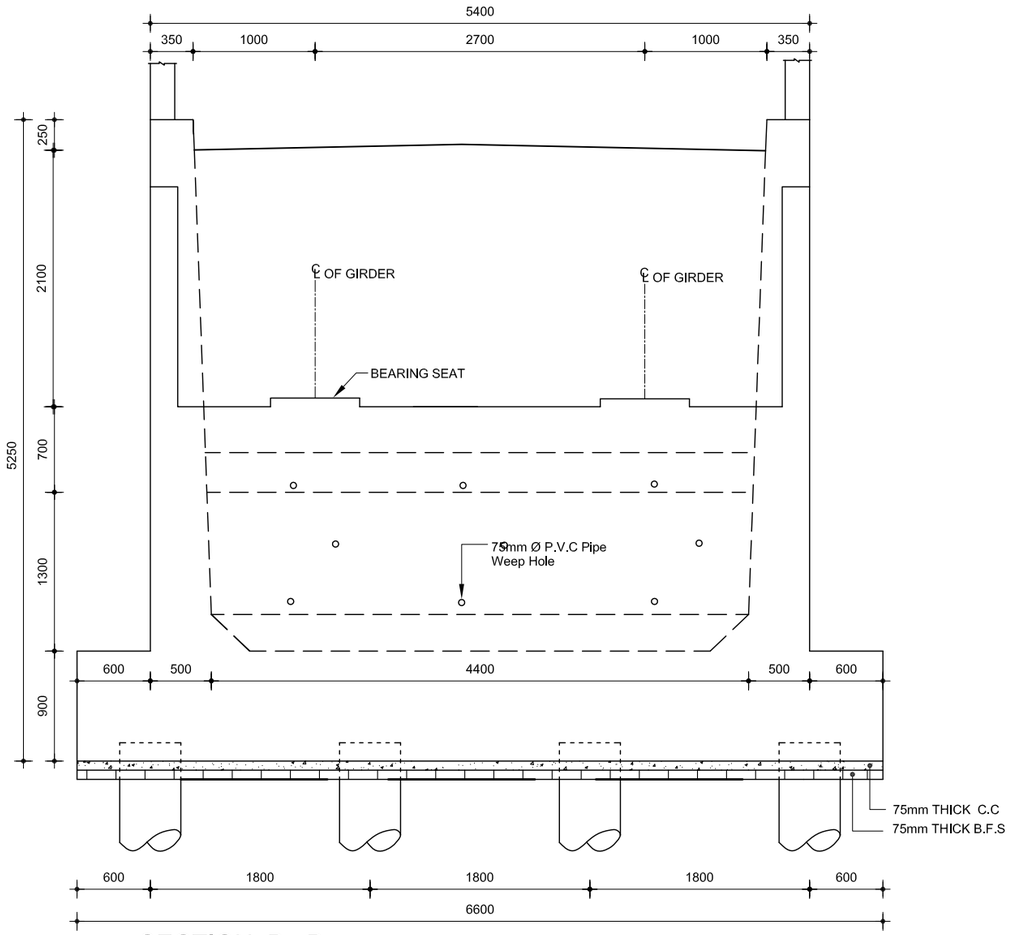
DRAWING NO. AB-32

PAGE NO. P-84



SECTION: C - C

Scale: 1:50



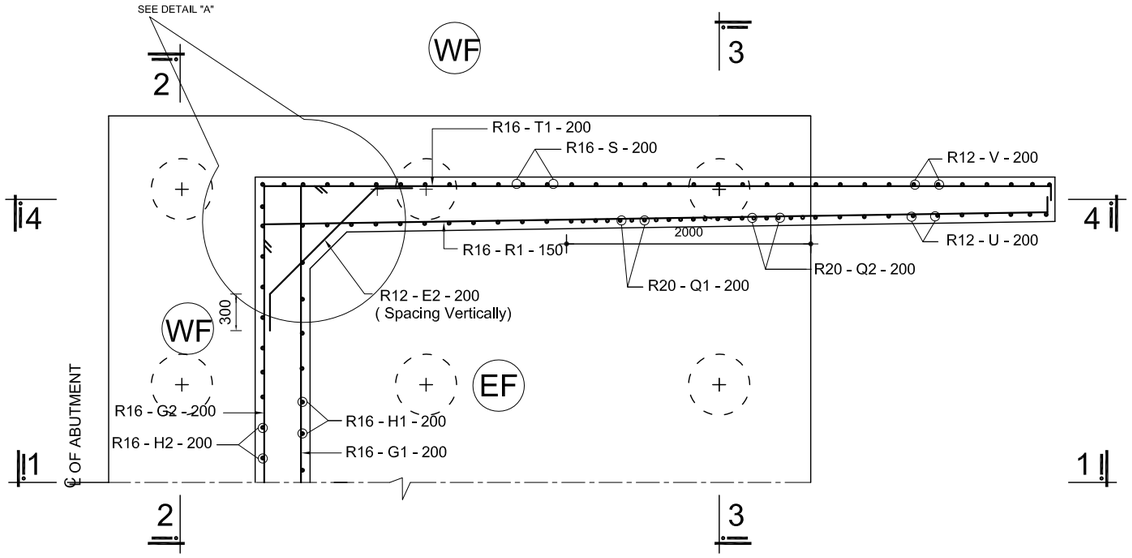
SECTION: B - B

Scale: 1:50

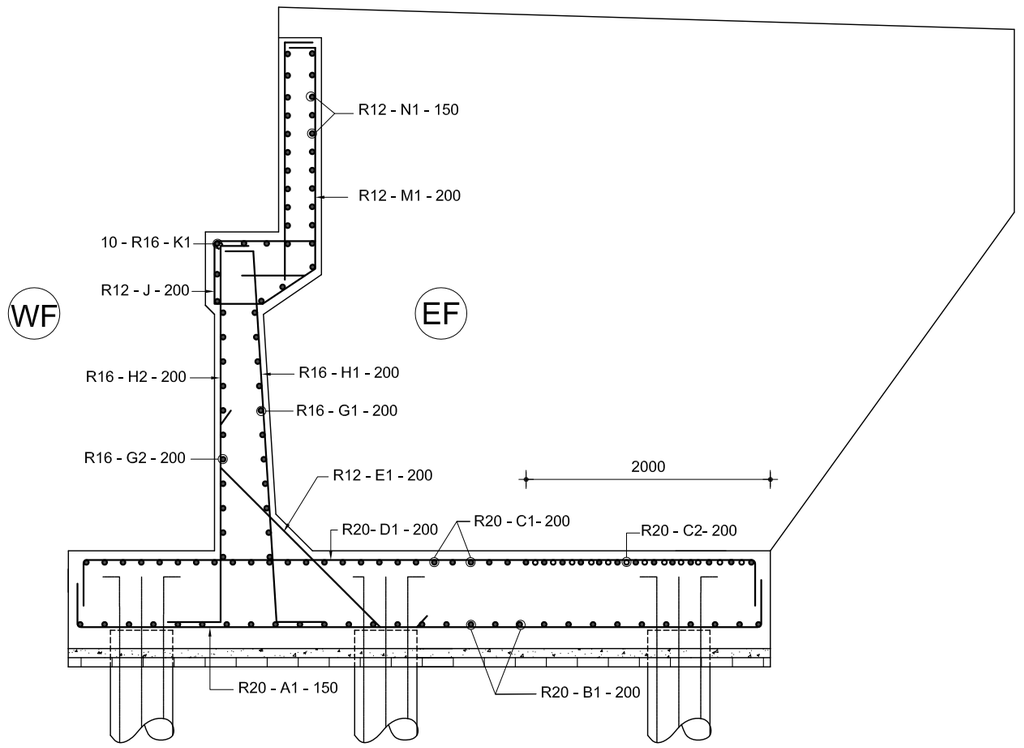
NOTES:

1. All dimensions are in millimeter unless otherwise mentioned.
2. 28 days cylinder strength of concrete: f 'c = 25.00N/mm² (3600 psi)
3. Yield strength of mild steel deformed bar fy = 413N/mm² (60000psi)
4. Clear cover to main reinforcement bar is to be 50mm unless otherwise mentioned.

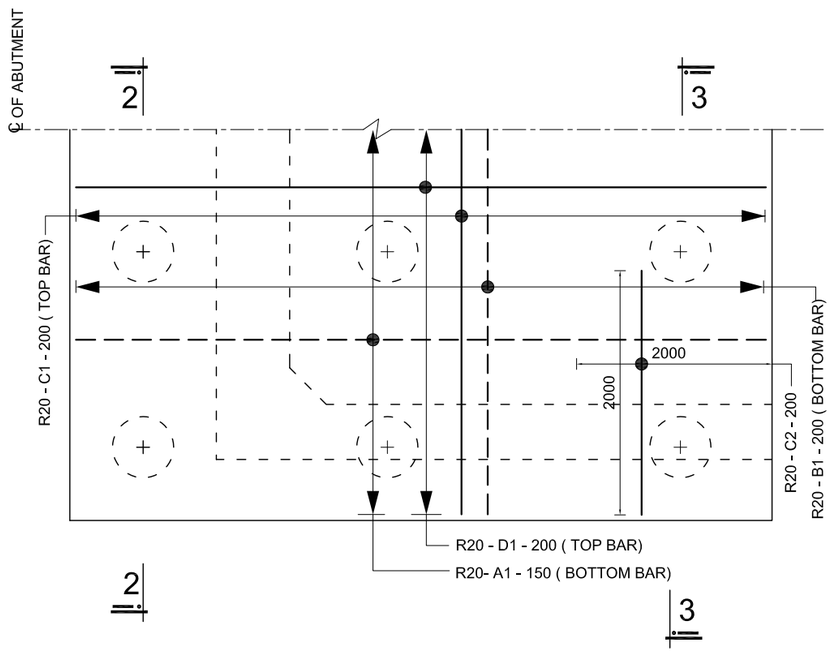
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	DESIGNED ,DRAWN & CHECKED BY PURAKAUSHAL PROJUKTI LIMITED House # C10, Road # 4 ,Banasree, Rampura- 1219. E-maill: pproiltd@yahoo.com	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	DRAWING TITLE Sectional Elevation of Abutment & Wing wall, Span 30m. Abutment Height 5.0m DRAWING NO. AB-33 PAGE NO. P-85



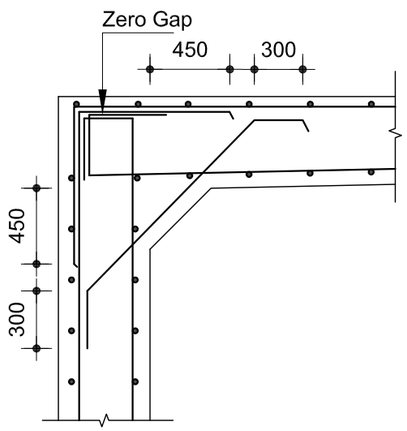
PLAN OF ABUTMENT & WINGWALL
SHOWING REINFORCEMENT
Scale: 1:50



CROSS SECTION OF ABUTMENT (SECTION 1-1)
SHOWING REINFORCEMENT DETAILS
Scale: 1:50



PLAN OF PILE CAP
SHOWING REINFORCEMENT
Scale: 1:50

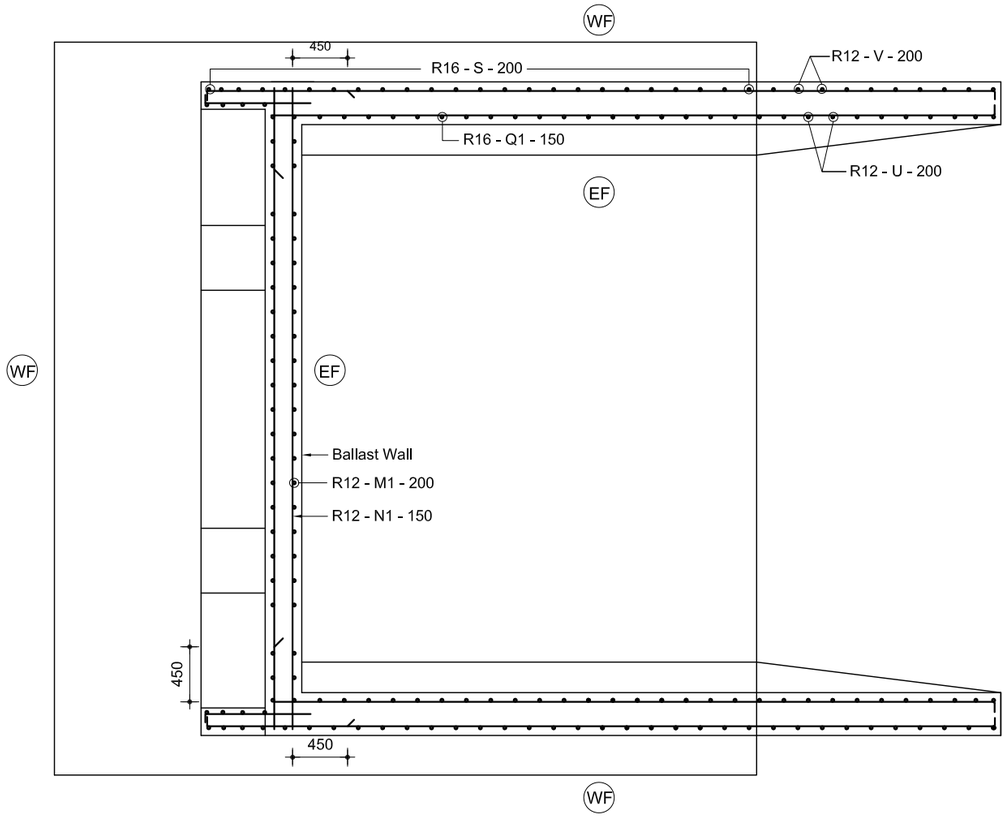


DETAIL "A"
Scale: 1:30

NOTES:

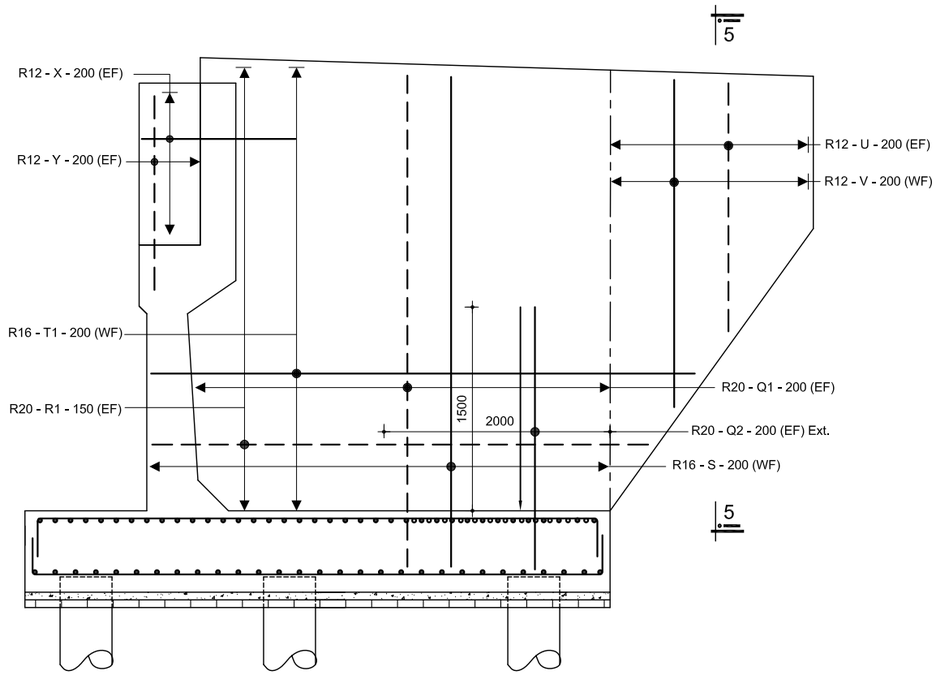
1. 28 days cylinder strength of concrete: f 'c = 25.00N/mm² (3600 psi)
2. Yield strength of mild steel deformed bar fy = 413N/mm² (60000psi)
3. Clear cover to main reinforcement bar is to be 50mm. unless otherwise mentioned.
4. EF = Earth Face, WF = Water Face

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	DESIGNED ,DRAWN & CHECKED BY PURAKAUSHAL PROJUKTI LIMITED House # C10, Road # 4 ,Banasree, Rampura- 1219. E-maill: pproiltd@yahoo.com	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	DRAWING TITLE Reinf. Details of Abutment & Wing wall, Span 30m. Abutment Height 5.0m DRAWING NO. AB-34 PAGE NO. P-86



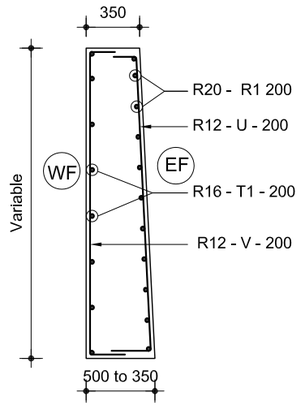
TOP PLAN OF BALLAST WALL & WINGWALL
SHOWING TOP REINFORCEMENT

Scale: 1:50



SECTIONAL ELEVATION OF WINGWALL (SEC. 4 - 4)
SHOWING TOP REINFORCEMENT

Scale: 1:60



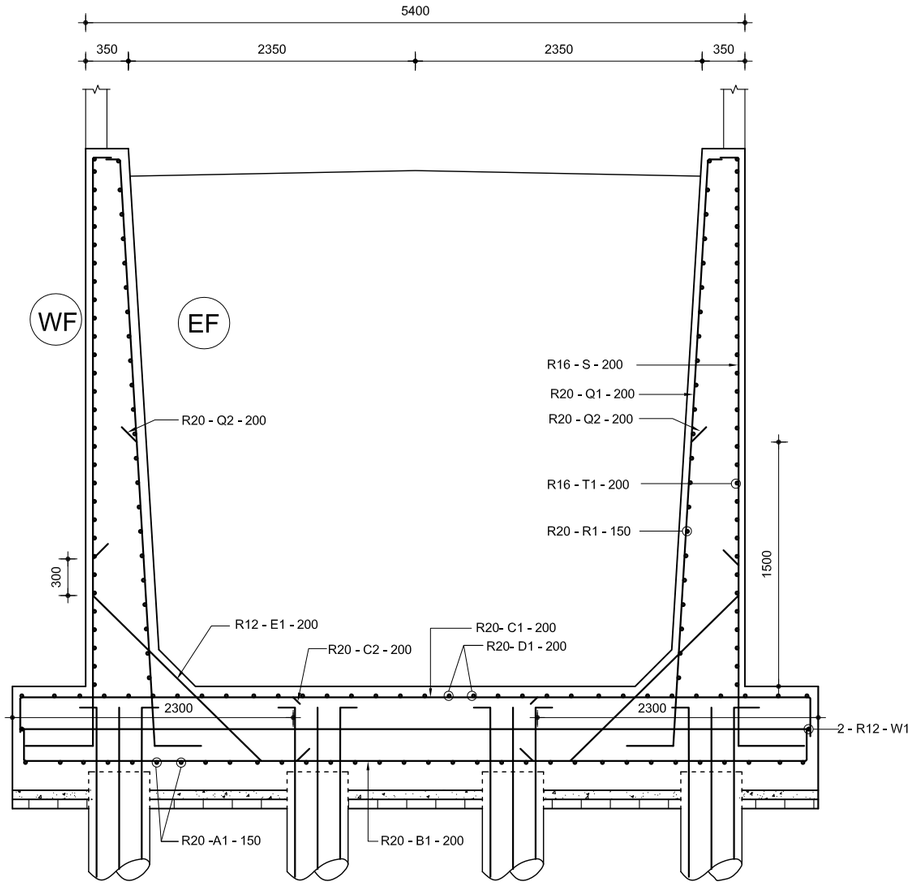
SEC. 5 - 5

Scale: 1:40

NOTES:

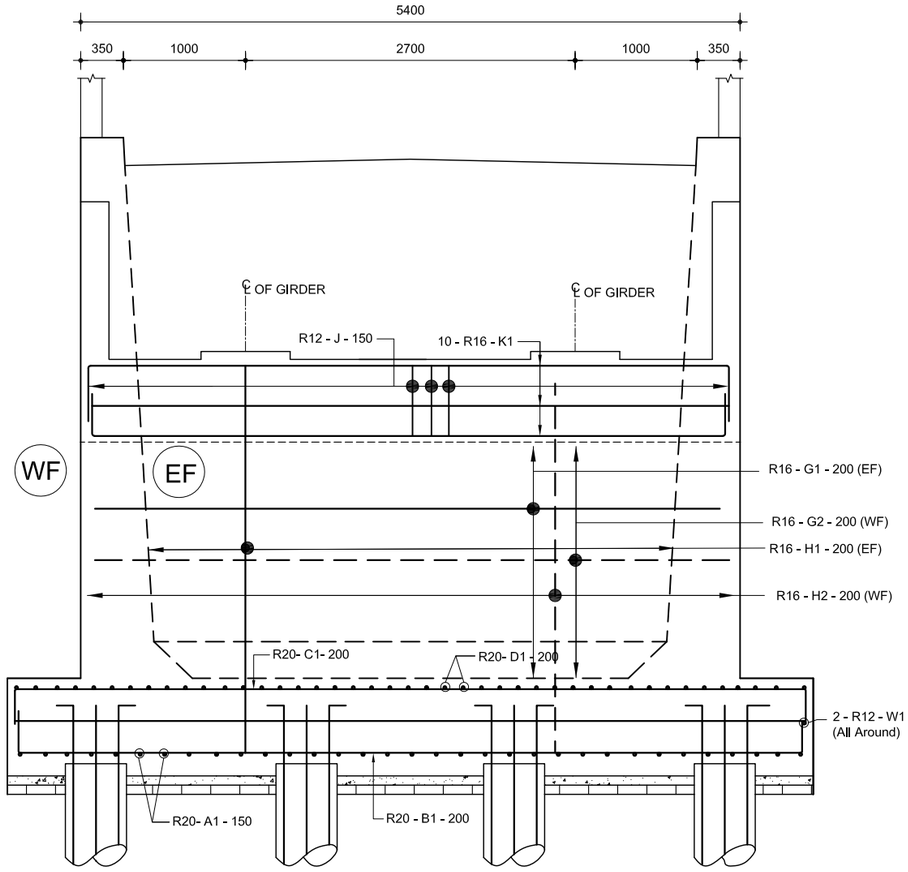
1. 28 days cylinder strength of concrete: f 'c = 25.00N/mm² (3600 psi)
2. Yield strength of mild steel deformed bar fy = 413N/mm² (60000psi)
3. Clear cover to main reinforcement bar is to be 50mm. unless otherwise mentioned.
4. EF = Earth Face, WF = Water Face

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	DESIGNED ,DRAWN & CHECKED BY PURAKAUSHAL PROJUKTI LIMITED House # C10, Road # 4 ,Banasree, Rampura- 1219. E-maill: pproiltd@yahoo.com	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	DRAWING TITLE Reinf. Details of Abutment & Wingwall DRAWING NO. AB-35 PAGE NO. P-87



CROSS SECTION OF WINGWALL (SEC. 3 - 3)
SHOWING REINFORCEMENT

Scale: 1:50



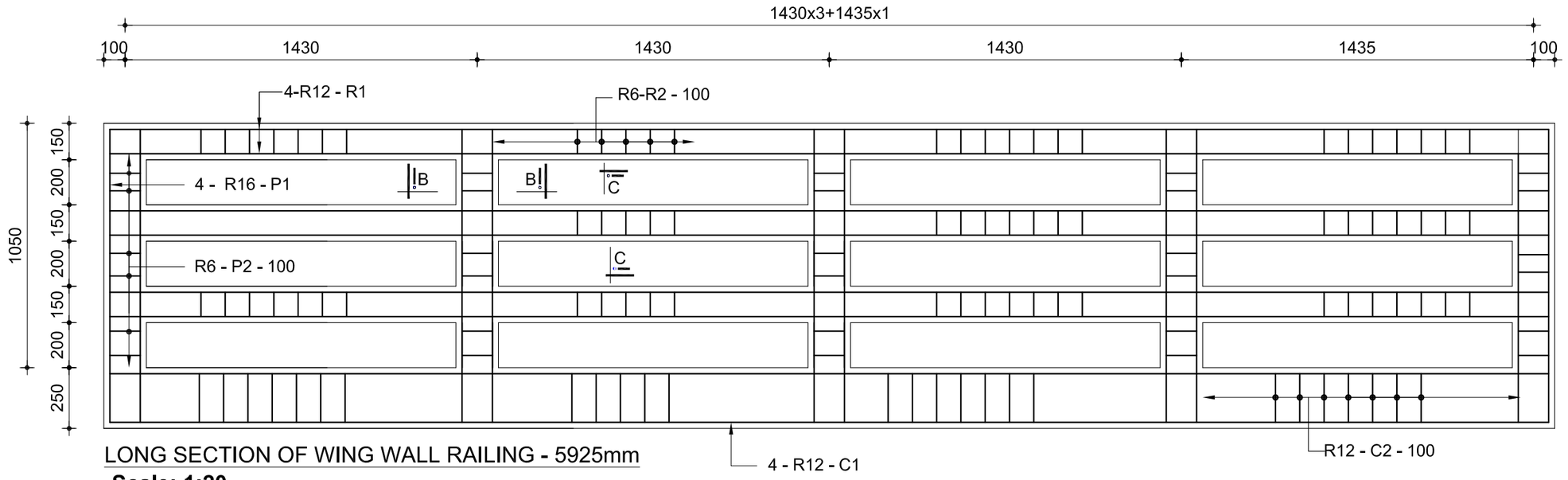
SECTIONAL FRONT ELEVATION OF ABUTMENT (SEC. 2 - 2)
SHOWING REINFORCEMENT

Scale: 1:50

NOTES:

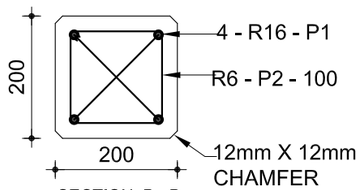
1. All dimensions are in millimeter unless otherwise mentioned.
2. 28 days cylinder strength of concrete: f 'c = 25.00N/mm² (3600 psi)
3. Yield strength of mild steel deformed bar fy = 413N/mm² (60000psi)
4. EF = Earth Face, WF = Water Face

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	DESIGNED ,DRAWN & CHECKED BY PURAKAUSHAL PROJUKTI LIMITED House # C10, Road # 4 ,Banasree, Rampura- 1219. E-maill: pproiltd@yahoo.com	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	DRAWING TITLE Cross Section of Wingwall Showing Reinf. Details, Span 30m. Abutment Height 5.0m DRAWING NO. AB-36 PAGE NO. P-88



LONG SECTION OF WING WALL RAILING - 5925mm

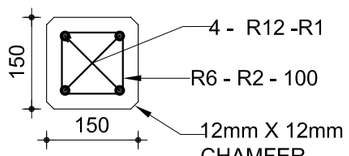
Scale: 1:20



SECTION: B - B

RAIL POST

Scale: 1:10



SECTION: C - C

RAIL BAR

Scale: 1:10

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH

LOCAL GOVERNMENT ENGINEERING DEPARTMENT

DESIGNED ,DRAWN & CHECKED BY

PURAKAUSHAL PROJUKTI LIMITED

House # C10, Road # 4 ,Banasree, Rampura- 1219.

E-maill: pproiltd@yahoo.com

NAME OF PROJECT:

LOCATION:

UPAZILA:

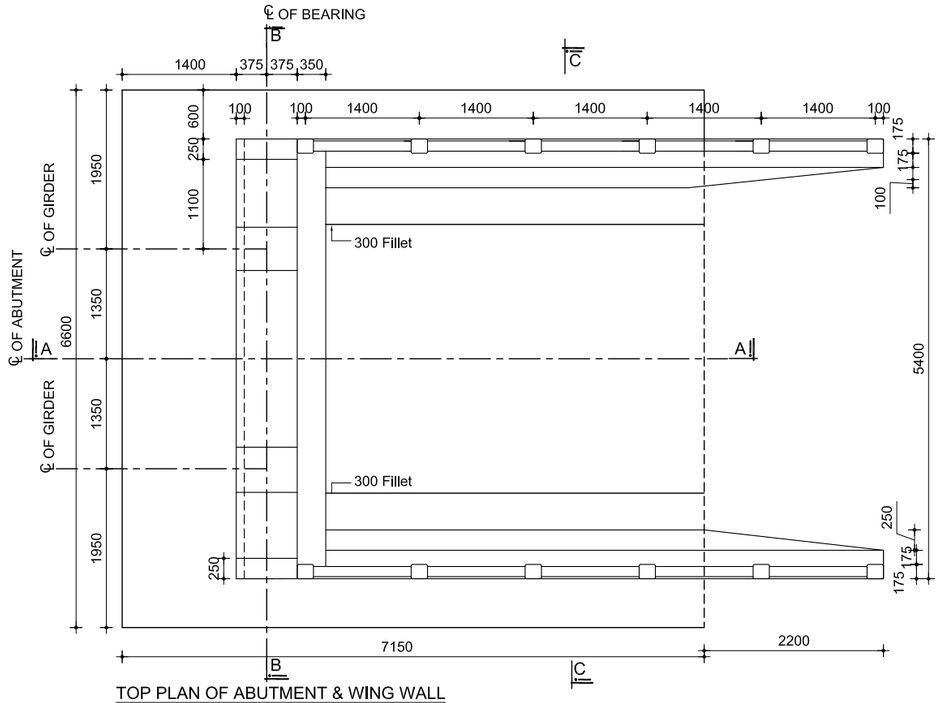
DISTRICT:

DRAWING TITLE

Details of Railing on Wing wall,
Span 30m. Abutment Height 5.0m

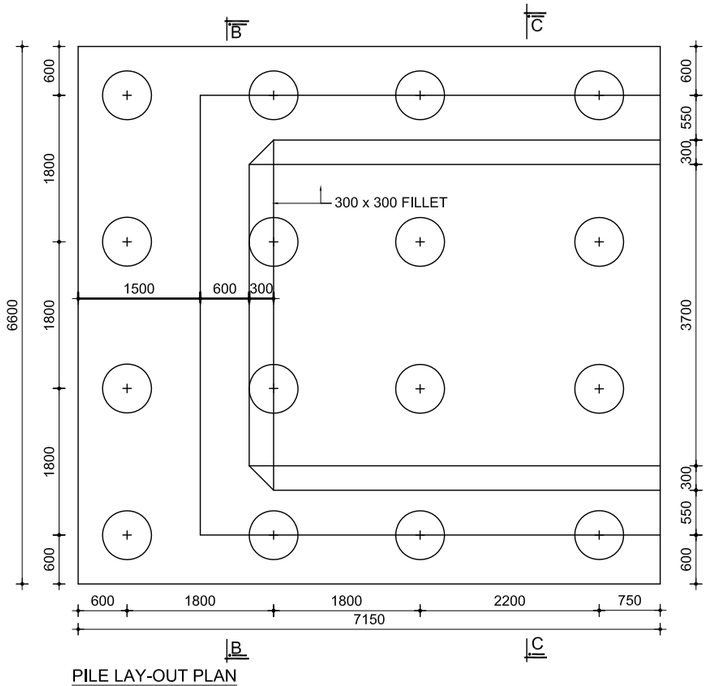
DRAWING NO. AB-37

PAGE NO. P-89



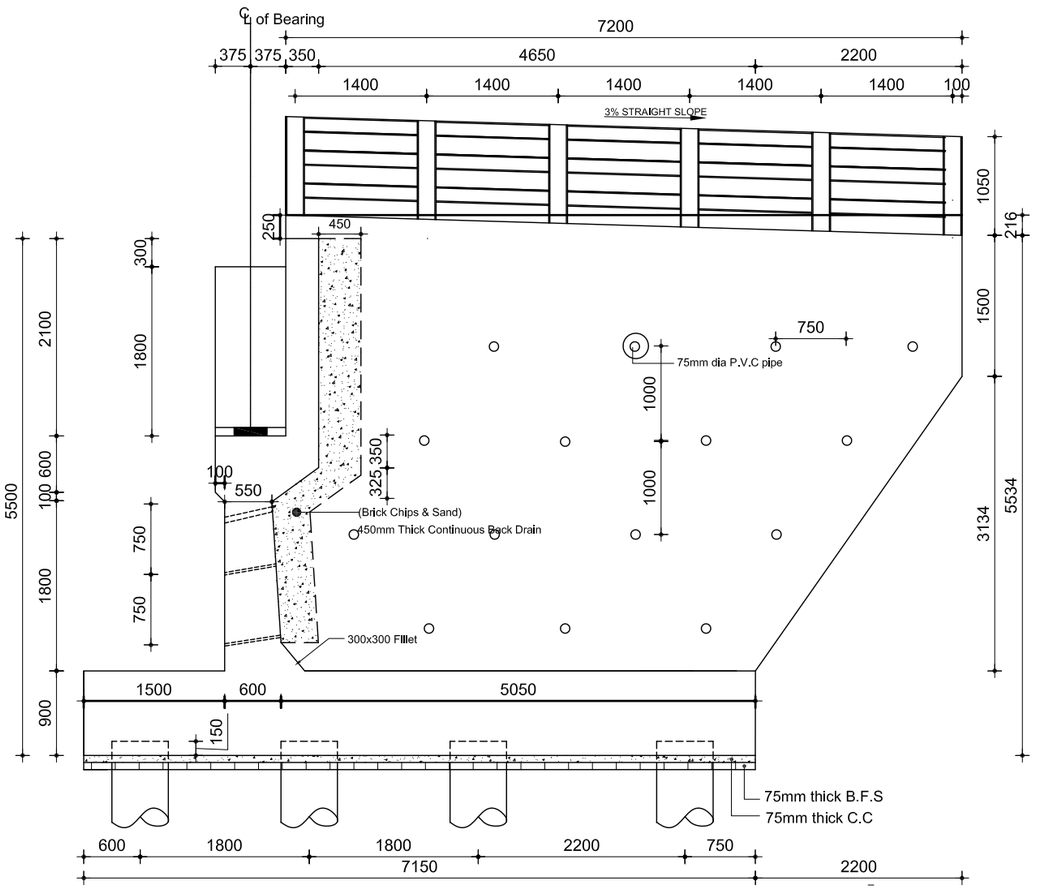
TOP PLAN OF ABUTMENT & WING WALL

Scale: 1:75



PILE LAY-OUT PLAN

Scale: 1:75



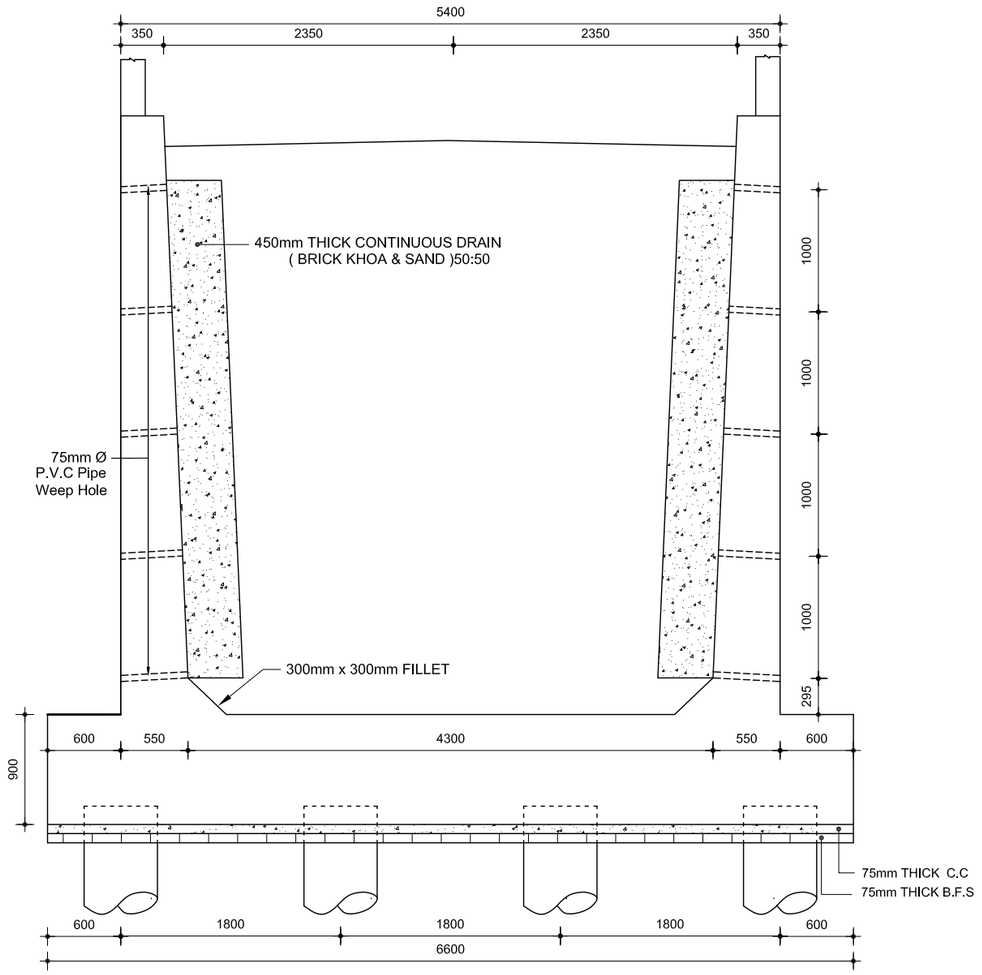
SECTION A-A

Scale: 1:65

NOTES:

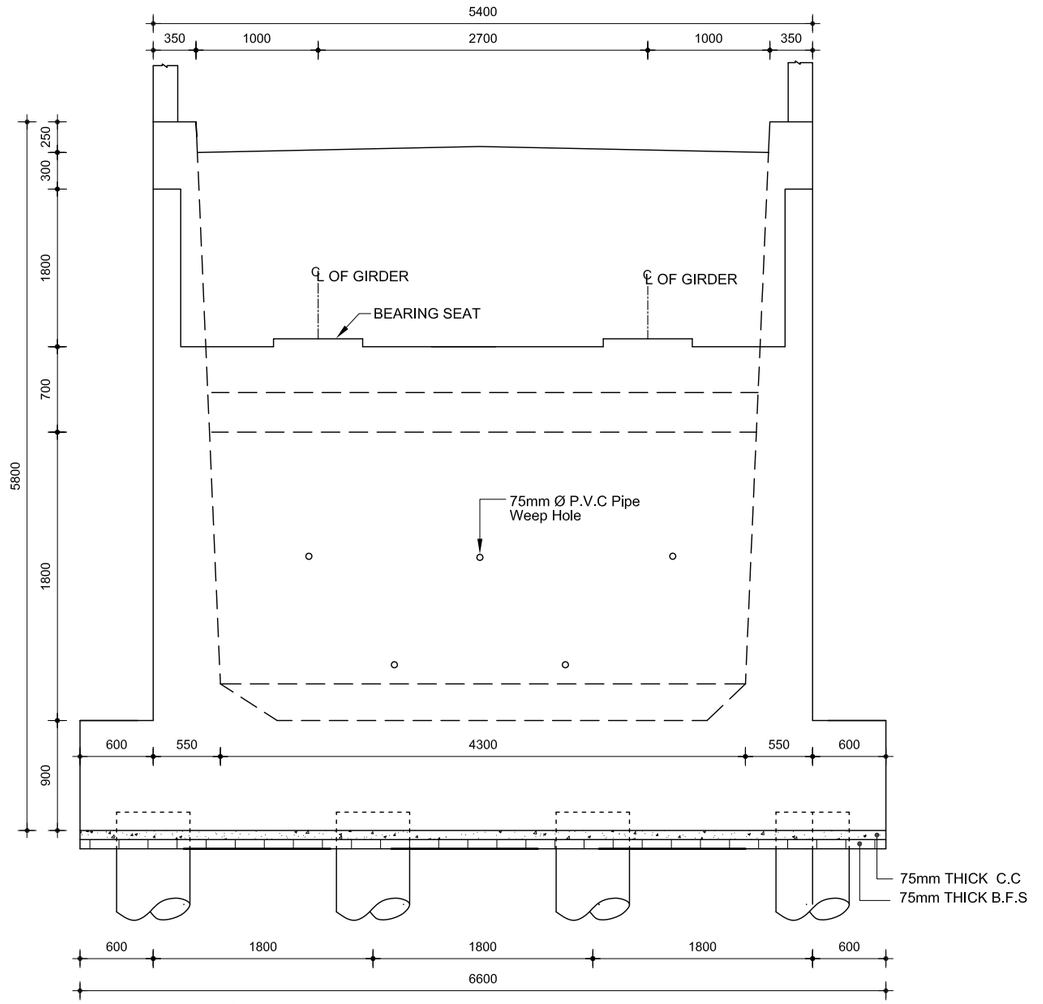
1. Abutment Details for 30m span..
3. All dimensions are in millimeter unless otherwise mentioned.
4. Clear cover to main reinforcement bar is to be 50mm. unless otherwise mentioned.
5. 28 days cylinder strength of concrete: f 'c = 25.0N/mm² (3600 psi)
6. Yield strength of mild steel deforme bar fy = 413N/mm² (60000psi)

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	DESIGNED ,DRAWN & CHECKED BY PURAKAUSHAL PROJUKTI LIMITED	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	DRAWING TITLE Details of Abutment Span 30m Abutment Height 5.5m DRAWING NO. AB-38 PAGE NO. P-90



SECTION: C - C

Scale: 1:50



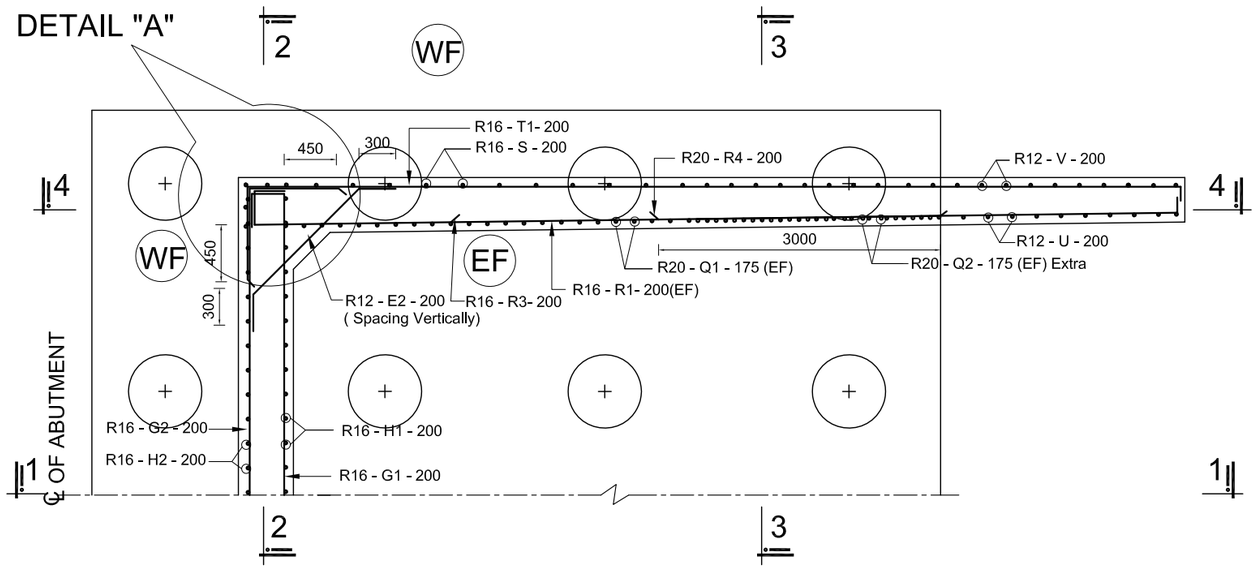
SECTION: B - B

Scale: 1:50

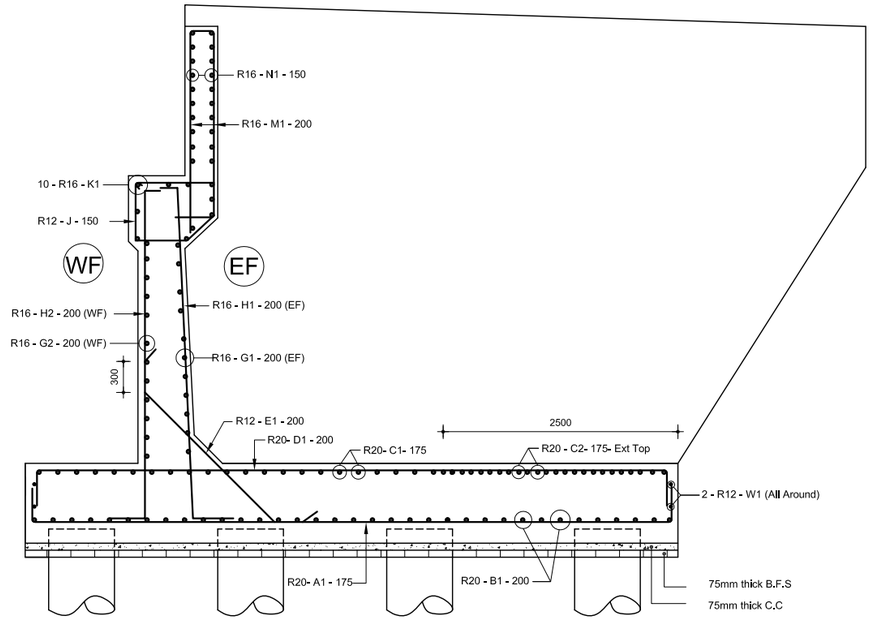
NOTES:

1. All dimensions are in millimeter unless otherwise mentioned.
2 Clear cover to main reinforcement bar is to be 50mm. unless otherwise mentioned.
3. 28 days cylinder strength of concrete: f 'c = 25.0N/mm² (3600 psi)
4. Yield strength of mild steel deformed bar fy = 413N/mm² (60000psi)

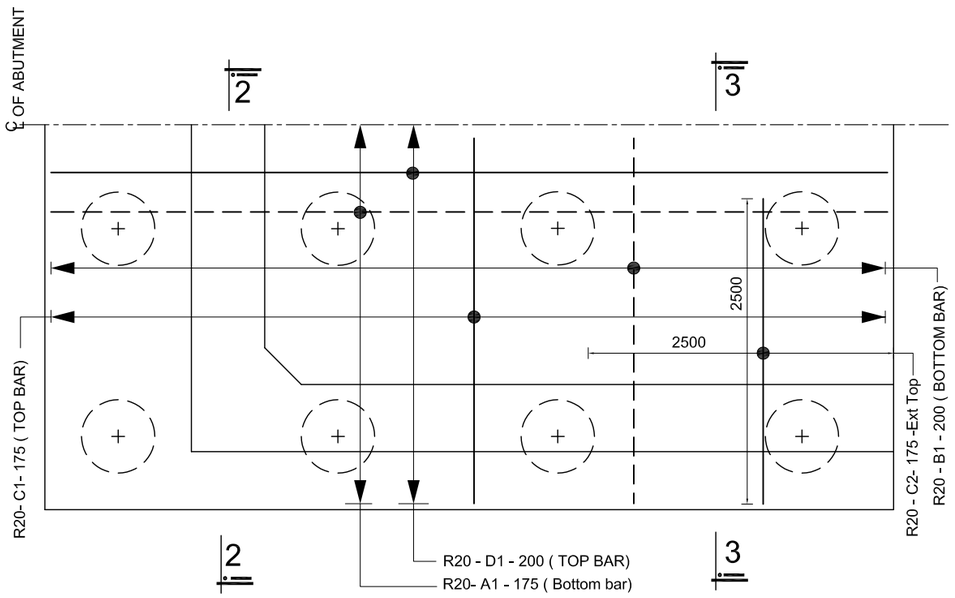
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	DESIGNED ,DRAWN & CHECKED BY PURAKAUSHAL PROJUKTI LIMITED	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	DRAWING TITLE Sectional Elevation of Abutment & Wing wall, Span 30m Abutment Height 5.5m DRAWING NO. AB-39 PAGE NO. P-91



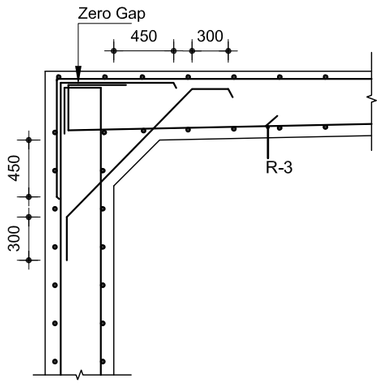
PLAN OF ABUTMENT & WINGWALL
SHOWING REINFORCEMENT
Scale: 1:50



CROSS SECTION OF ABUTMENT (SECTION 1-1)
SHOWING REINFORCEMENT DETAILS
Scale: 1:65



PLAN OF PILE CAP
SHOWING REINFORCEMENT
Scale: 1:50

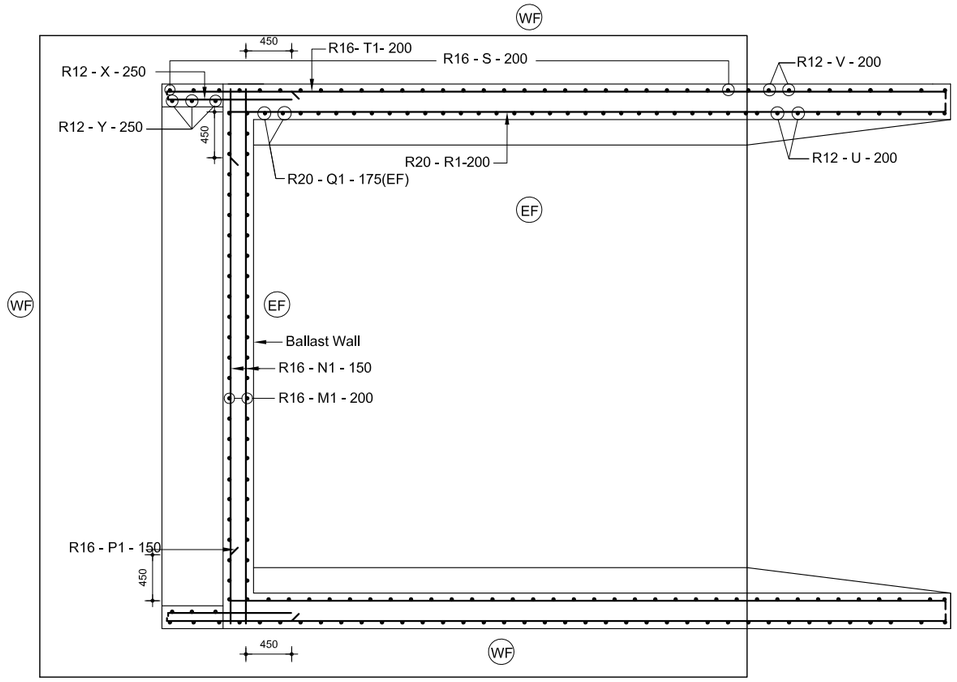


DETAIL "A"
Scale: 1:40

NOTES:

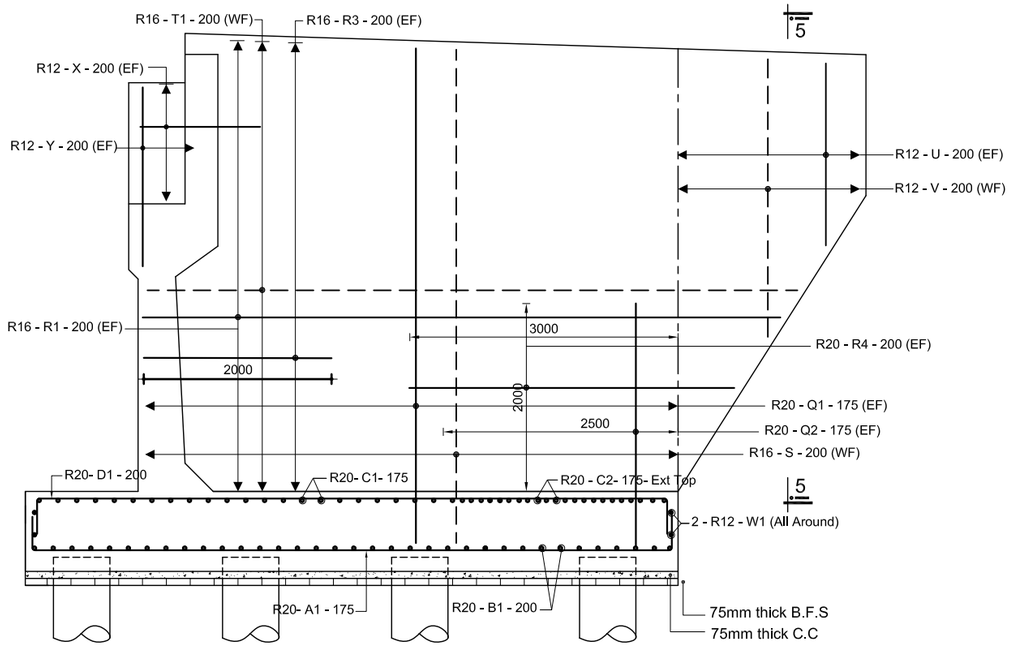
1. Clear cover to main reinforcement bar is to be 50mm. unless otherwise mentioned.
2. 28 days cylinder strength of concrete: f 'c = 25.0N/mm² (3600 psi)
3. Yield strength of mild steel deformed bar fy = 413N/mm² (60000psi)
4. EF = Earth Face WF = Water Face

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	DESIGNED ,DRAWN & CHECKED BY PURAKAUSHAL PROJUKTI LIMITED	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	DRAWING TITLE Reinf. Details of Abutment & Wing wall, Span 30m Abutment Height 5.5m DRAWING NO. AB-40 PAGE NO. P-92



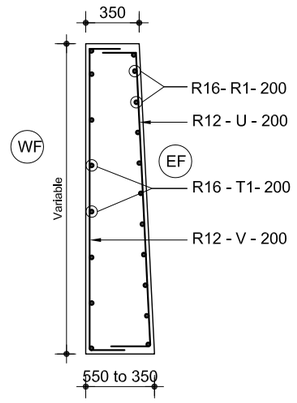
TOP PLAN OF BALLAST WALL & WINGWALL
SHOWING TOP REINFORCEMENT

Scale: 1:60



SECTIONAL ELEVATION OF WINGWALL (SEC. 4 - 4)
SHOWING REINFORCEMENT

Scale: 1:65



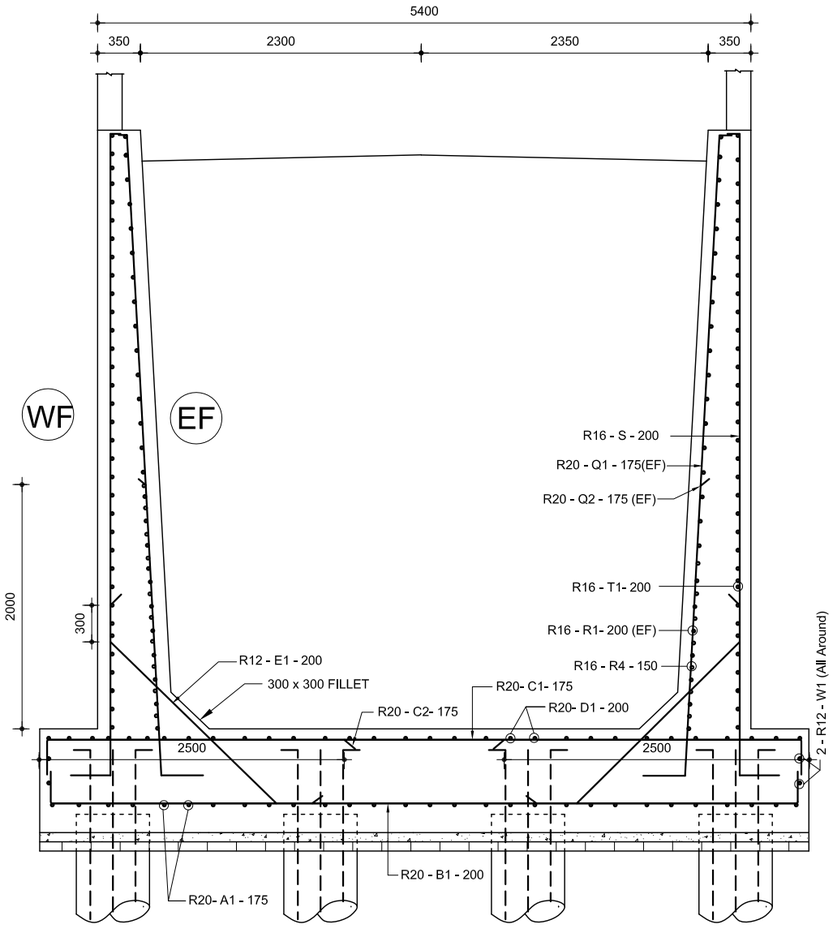
SEC. 5 - 5

Scale: 1:40

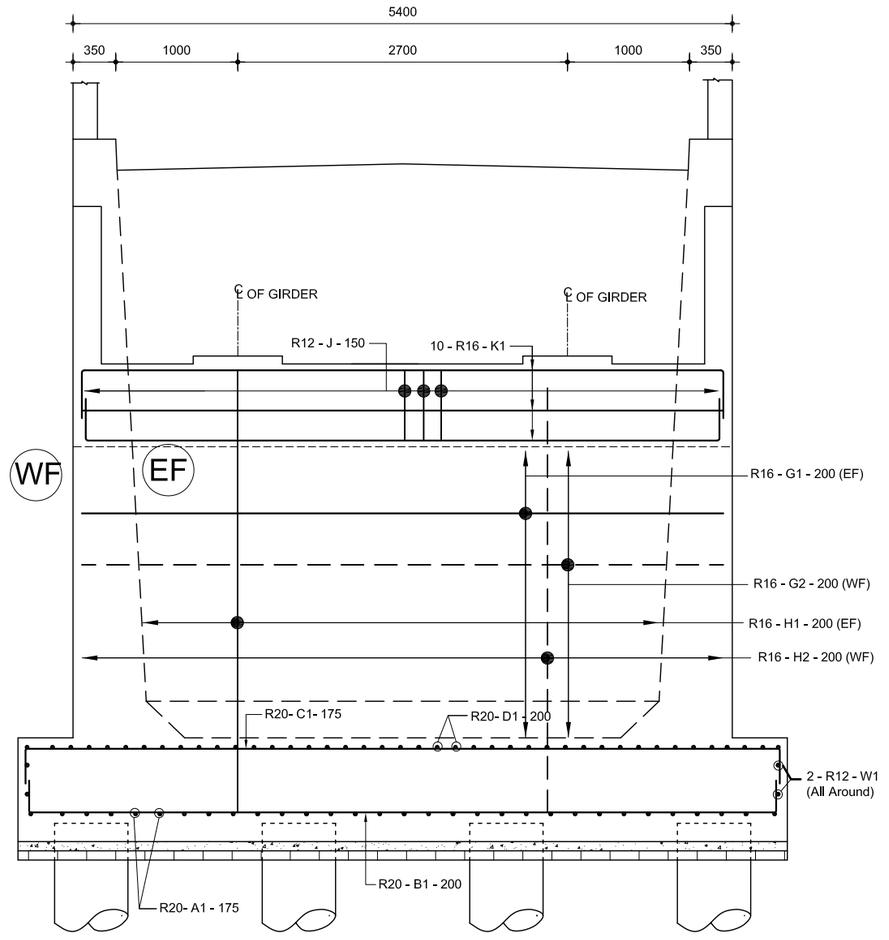
NOTES:

1. Clear cover to main reinforcement bar is to be 50mm. unless otherwise mentioned.
2. 28 days cylinder strength of concrete: f 'c = 25.0N/mm (3600 psi)
3. Yield strength of mild steel deformed bar fy = 413N/mm (60000psi)
4. EF = Earth Face, WF = Water Face

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	DESIGNED ,DRAWN & CHECKED BY		DRAWING TITLE
	PURAKAUSHAL PROJUKTI LIMITED	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	Reinf. Details of Abutment & Wing wall, Span 30m Abutment Height 5.5m DRAWING NO. AB-41 PAGE NO. P-93



CROSS SECTION OF WINGWALL (SEC. 3 - 3)
SHOWING REINFORCEMENT
Scale: 1:50

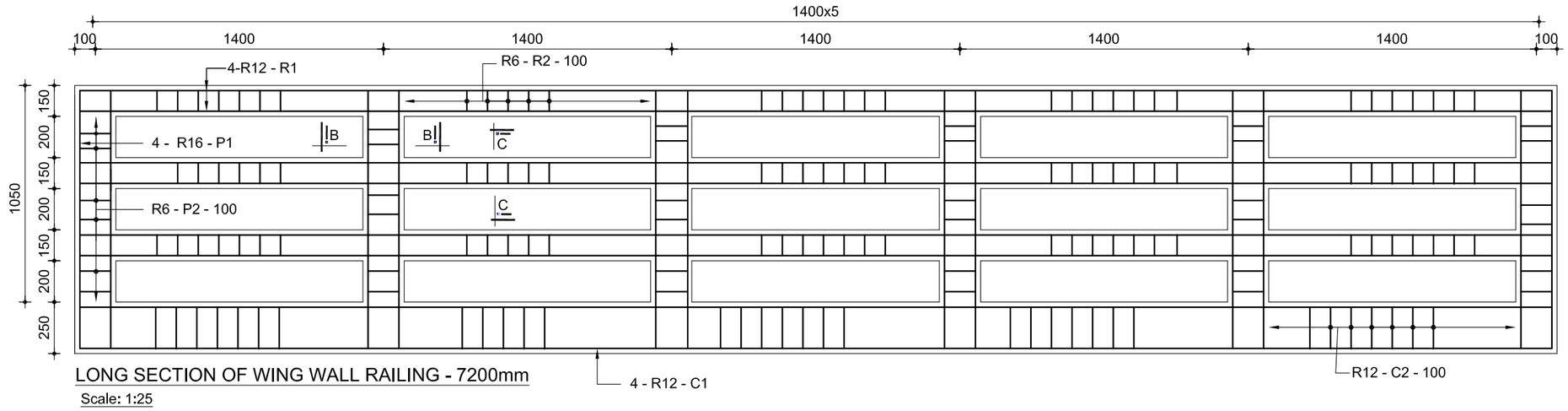


SECTIONAL FRONT ELEVATION OF ABUTMENT (SEC. 2 - 2)
SHOWING REINFORCEMENT
Scale: 1:50

NOTES:

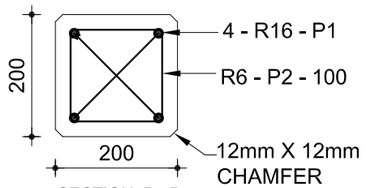
1 Clear cover to main reinforcement bar is to be 50mm. unless otherwise mentioned.
2. 28 days cylinder strength of concrete: f 'c = 25.0N/mm² (3600 psi)
3. Yield strength of mild steel deformed bar fy = 413N/mm² (60000psi)
4. EF = Earth Face, WF = Water Face

	DESIGNED ,DRAWN & CHECKED BY		DRAWING TITLE
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	PURAKAUSHAL PROJUKTI LIMITED	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	Cross Section of Wingwall Showing Reinf. Details, Span 30m Abutment Height 5.5m DRAWING NO. AB-42 PAGE NO. P-94

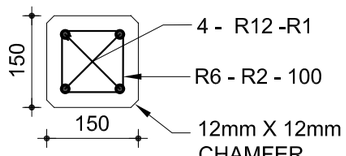


LONG SECTION OF WING WALL RAILING - 7200mm

Scale: 1:25

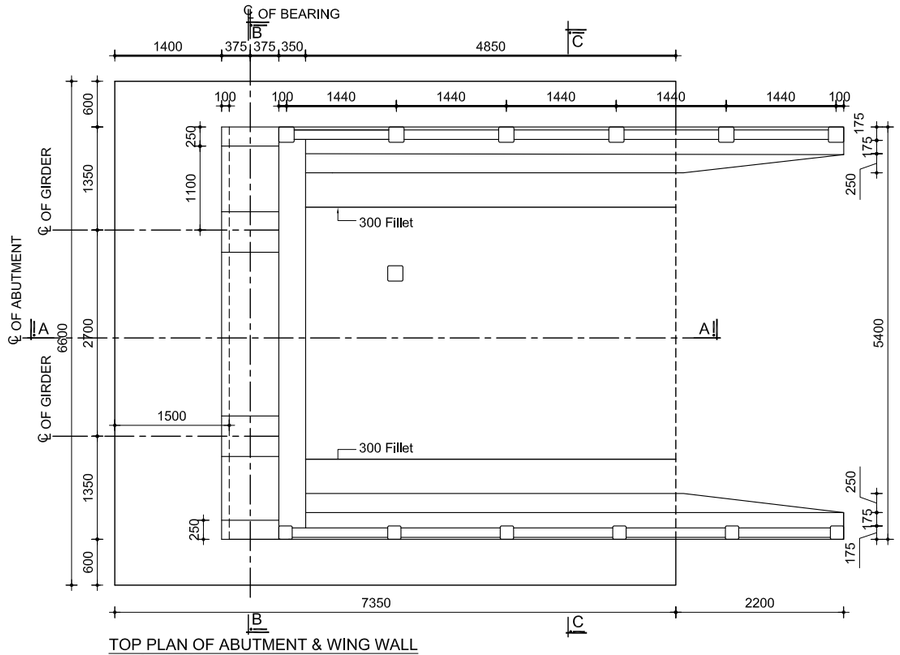


SECTION: B - B
RAIL POST
Scale: 1:10



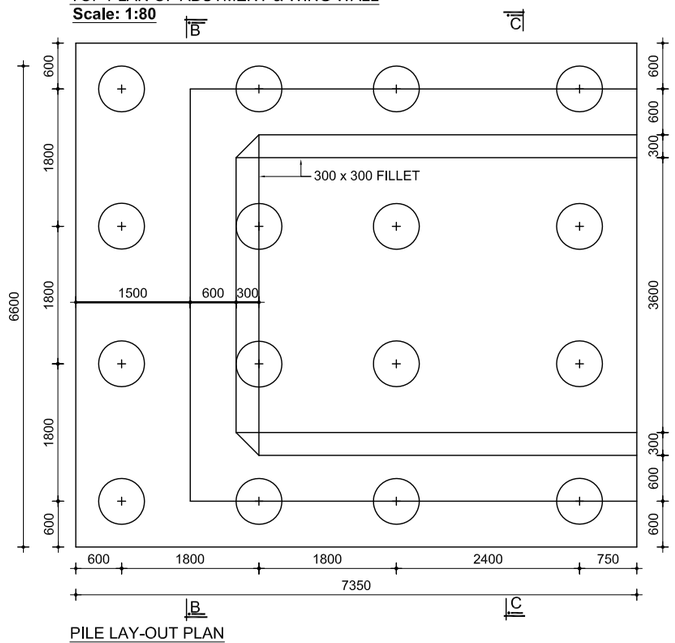
SECTION: C - C
RAIL BAR
Scale: 1:10

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	DESIGNED ,DRAWN & CHECKED BY		DRAWING TITLE
	PURAKAUSHAL PROJUKTI LIMITED	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	Details of Railing on Wing wall, Span 30m Abutment Height 5.5m DRAWING NO. AB-43 PAGE NO. P-95



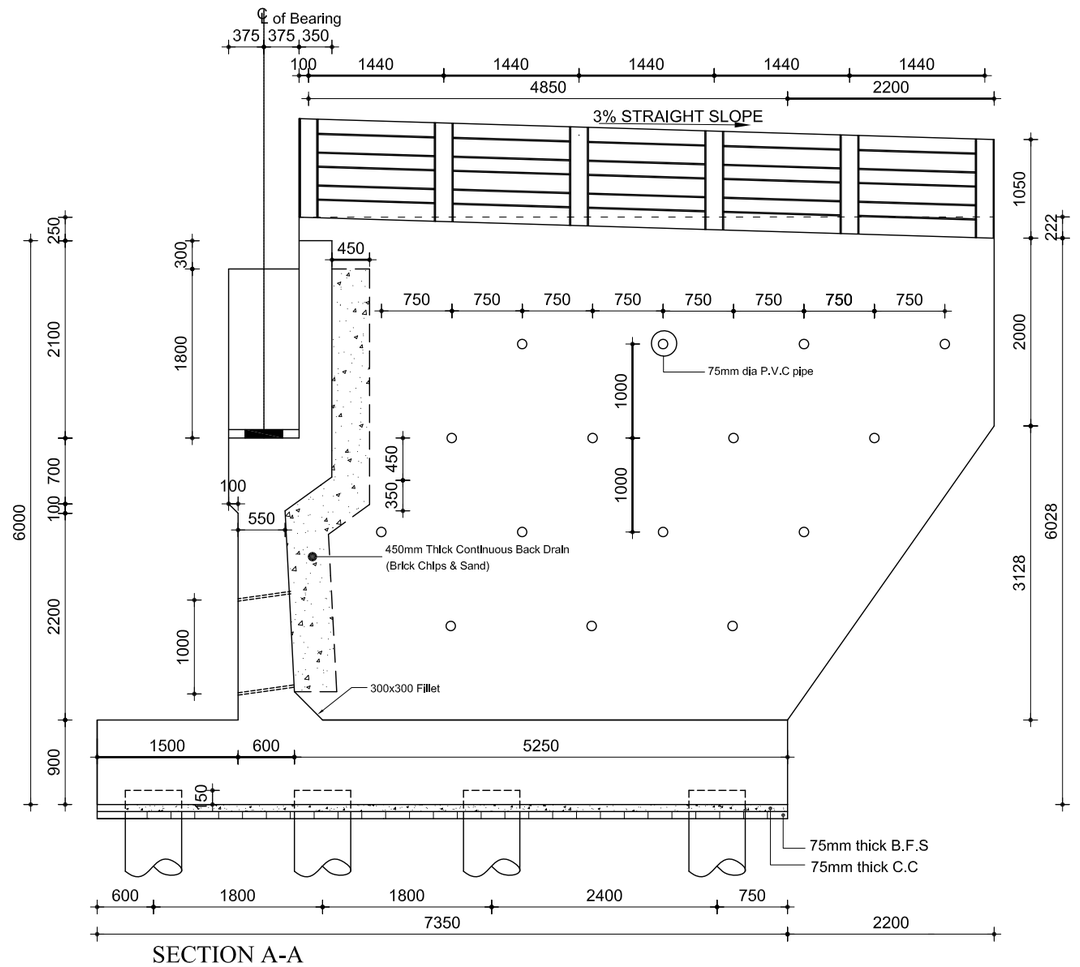
TOP PLAN OF ABUTMENT & WING WALL

Scale: 1:80



PILE LAY-OUT PLAN

Scale: 1:80



SECTION A-A

Scale: 1:65

NOTES:

1. Abutment Details for 20m span.
2. All dimensions are in millimeter unless otherwise mentioned.
3. Clear cover to main reinforcement bar is to be 50mm. unless otherwise mentioned.
4. 28 days cylinder strength of concrete: f 'c = 25.0N/mm² (3600 psi)
5. Yield strength of mild steel deformed bar fy = 413N/mm² (60000psi)

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH

LOCAL GOVERNMENT ENGINEERING DEPARTMENT

DESIGNED ,DRAWN & CHECKED BY

PURAKAUSHAL PROJUKTI LIMITED

House # C10, Road # 4 ,Banasree, Rampura- 1219.
E-maill: pproiltd@yahoo.com

NAME OF PROJECT:

LOCATION:

UPAZILA:

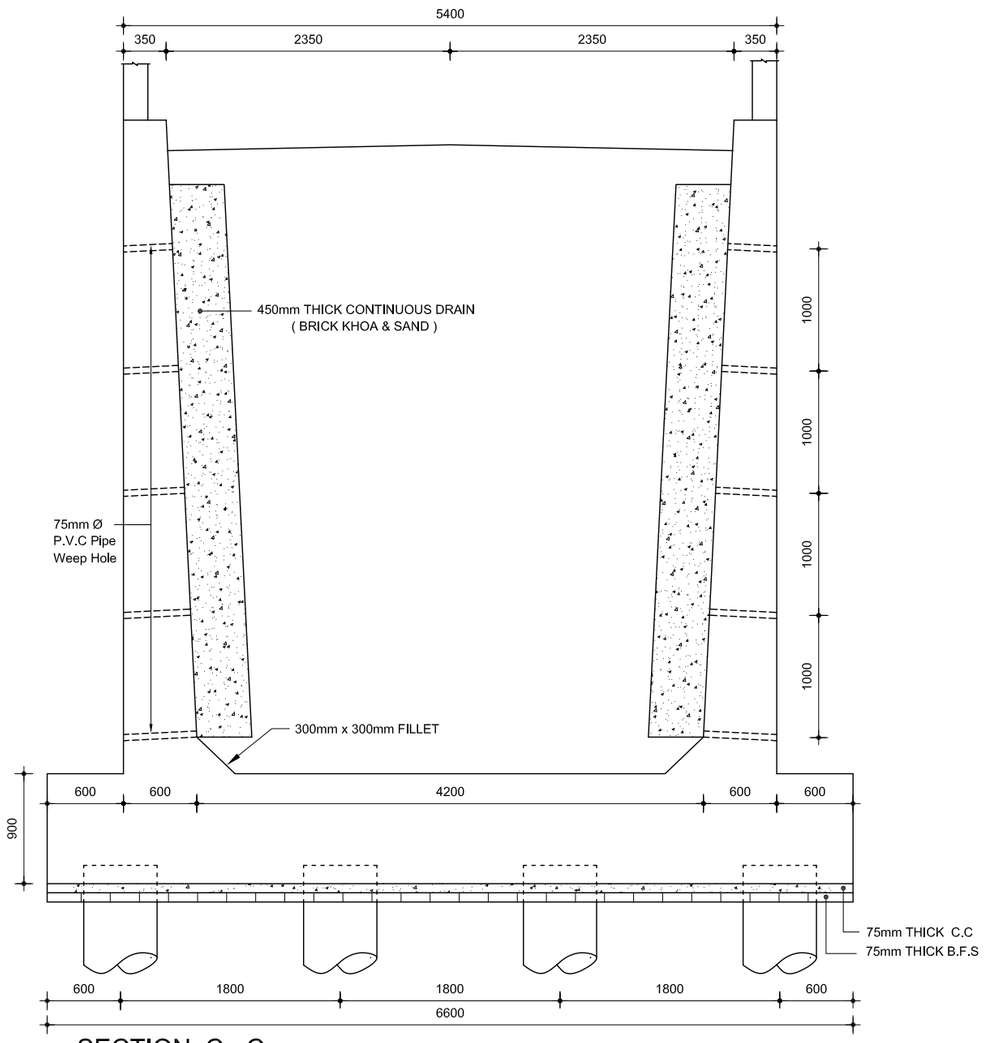
DISTRICT:

DRAWING TITLE

Details of Abutment
Span 30m Abutment Height 6.0m

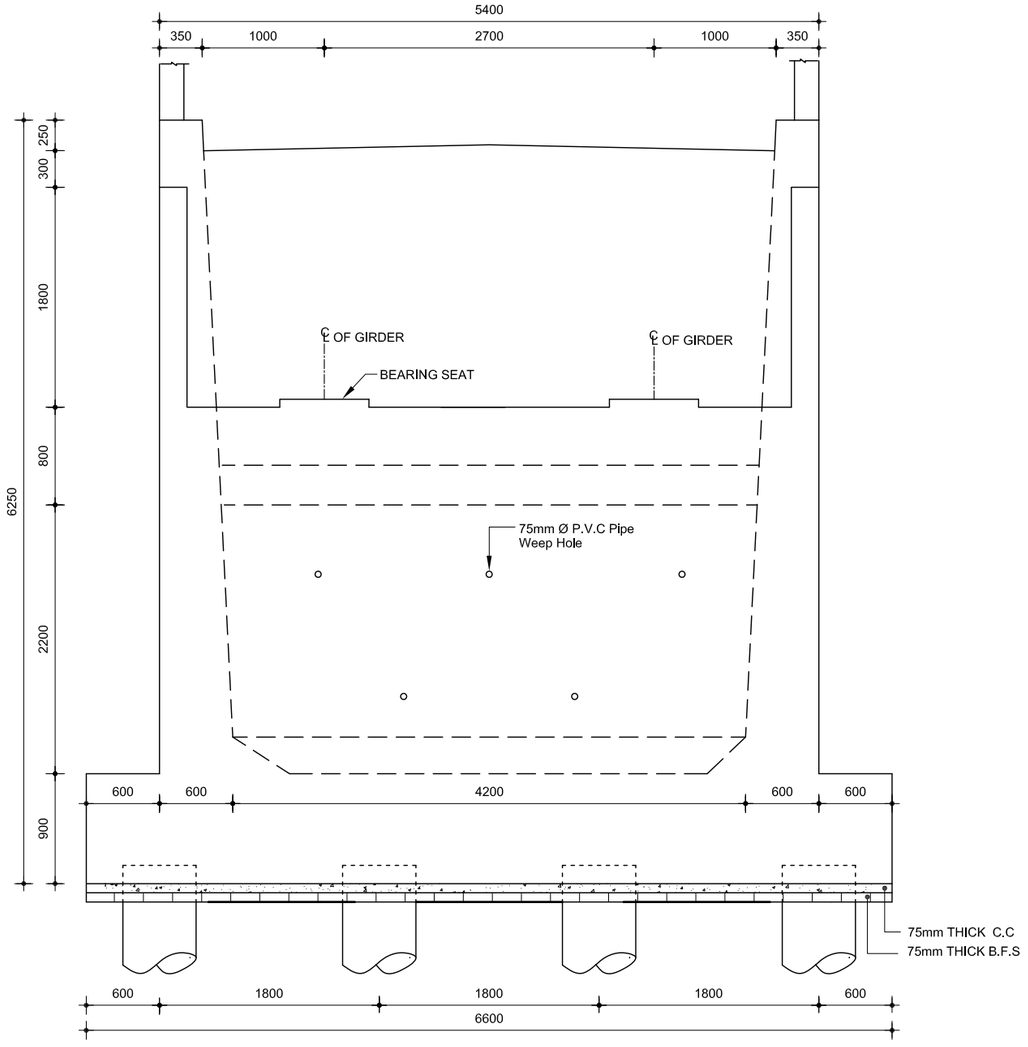
DRAWING NO. AB-44

PAGE NO. P-96



SECTION: C - C

Scale: 1:50



SECTION: B - B

Scale: 1:50

NOTES:

1. All dimensions are in millimeter unless otherwise mentioned.
2. Clear cover to main reinforcement bar is to be 50mm. unless otherwise mentioned.
3. 28 days cylinder strength of concrete: f 'c = 25.0N/mm (3600 psi)
4. Yield strength of mild steel deformed bar fy = 413N/mm (60000psi)

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH

LOCAL GOVERNMENT ENGINEERING DEPARTMENT

DESIGNED ,DRAWN & CHECKED BY

PURAKAUSHAL PROJUKTI LIMITED

House # C10, Road # 4 ,Banasree, Rampura- 1219.
E-maill: pproiltd@yahoo.com

NAME OF PROJECT:

LOCATION:

UPAZILA:

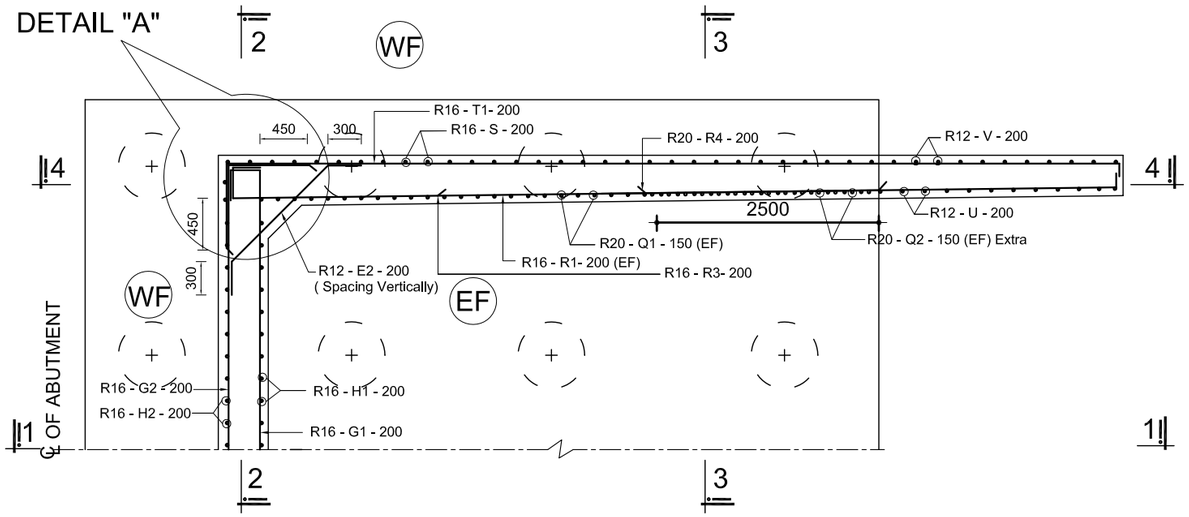
DISTRICT:

DRAWING TITLE

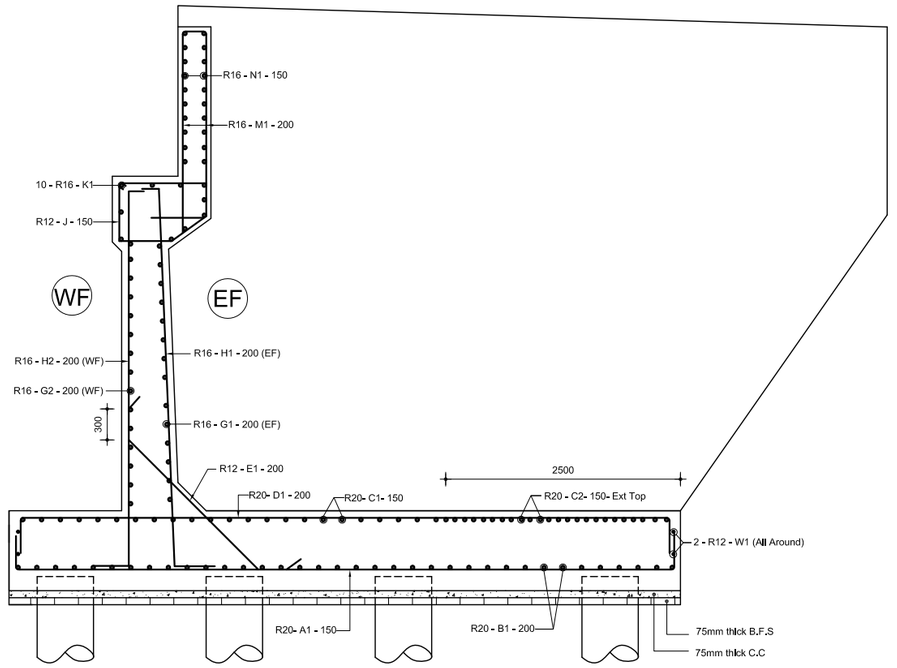
Sectional Elevation of Abutment & Wing wall, Span 30m Abutment Height 6.0m

DRAWING NO. AB-45

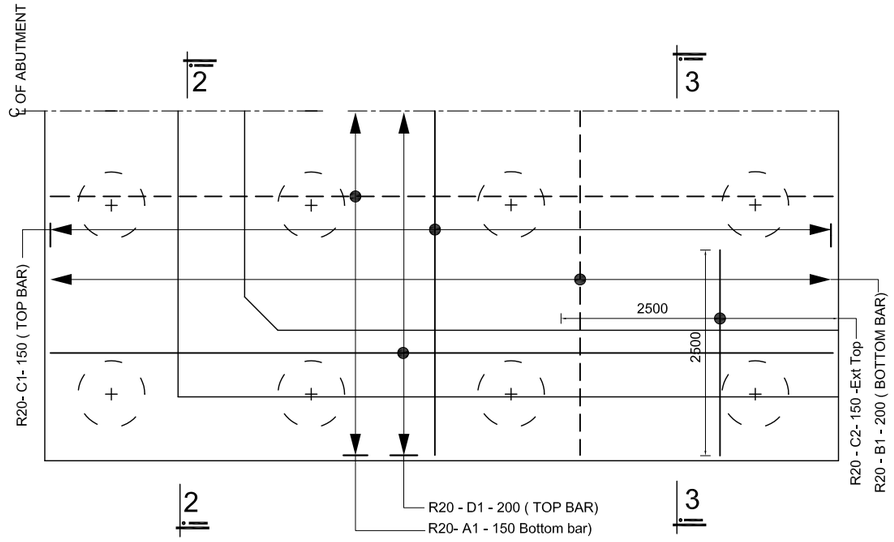
PAGE NO. P-97



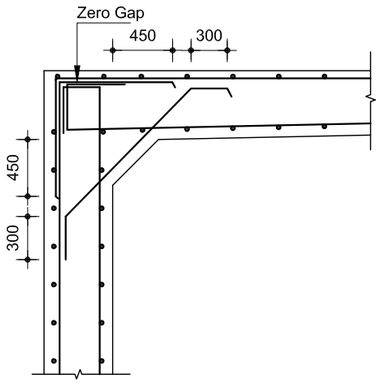
PLAN OF ABUTMENT & WINGWALL
SHOWING REINFORCEMENT
Scale: 1:55



CROSS SECTION OF ABUTMENT (SECTION 1-1)
SHOWING REINFORCEMENT DETAILS
Scale: 1:65



PLAN OF PILE CAP
SHOWING REINFORCEMENT
Scale: 1:55

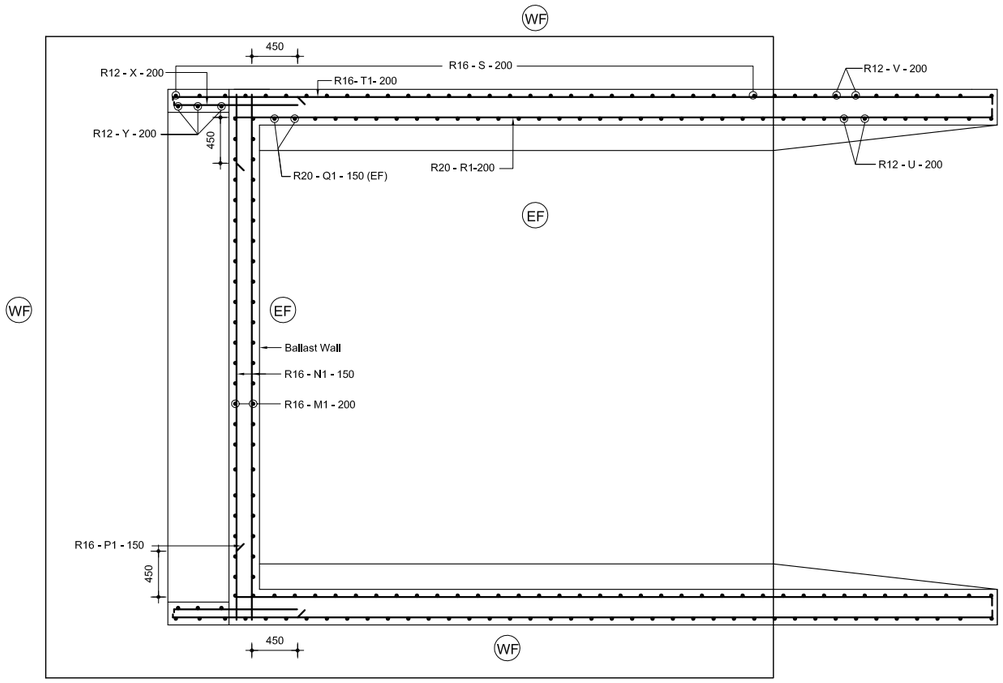


DETAIL "A"
Scale: 1:40

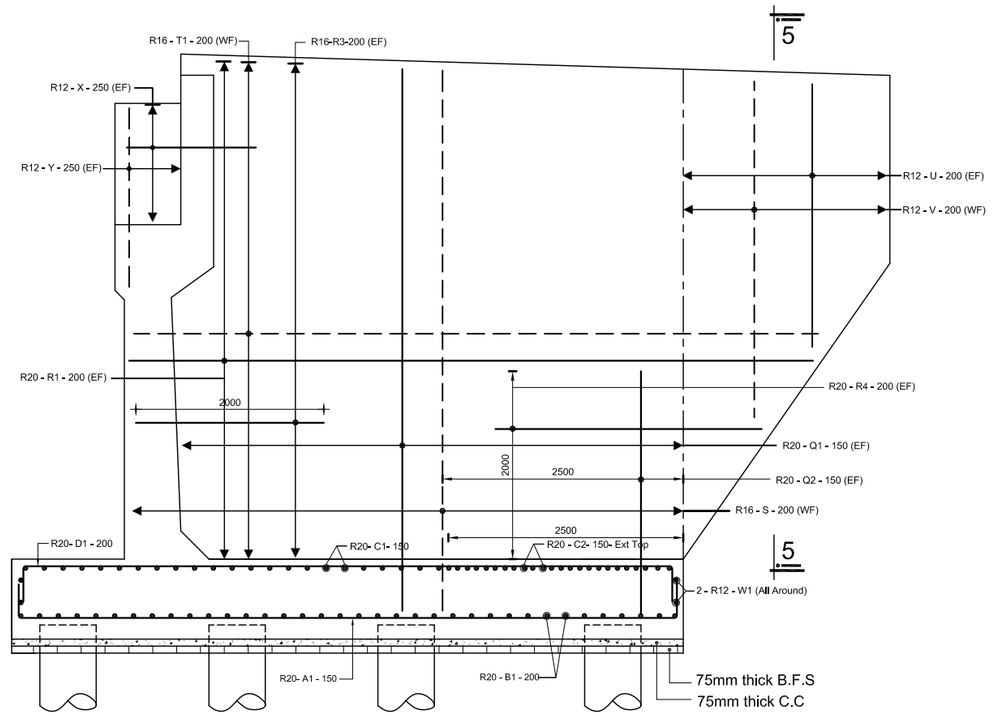
NOTES:

1. Clear cover to main reinforcement bar is to be 50mm. unless otherwise mentioned.
2. 28 days cylinder strength of concrete: f 'c = 25.0N/mm² (3600 psi)
3. Yield strength of mild steel deformed bar fy = 413N/mm² (60000psi)
4. EF = Earth Face WF = Water Face

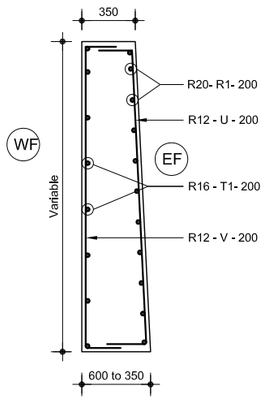
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	DESIGNED ,DRAWN & CHECKED BY PURAKAUSHAL PROJUKTI LIMITED House # C10, Road # 4 ,Banasree, Rampura- 1219. E-maill: pproiltd@yahoo.com	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	DRAWING TITLE Reinf. Details of Abutment & Wing wall, Span 30m Abutment Height 6.0m DRAWING NO. AB-46 PAGE NO. P-98



TOP PLAN OF BALLAST WALL & WINGWALL
SHOWING TOP REINFORCEMENT
Scale: 1:60



SECTIONAL ELEVATION OF WINGWALL (SEC. 4 - 4)
SHOWING REINFORCEMENT
Scale: 1:65

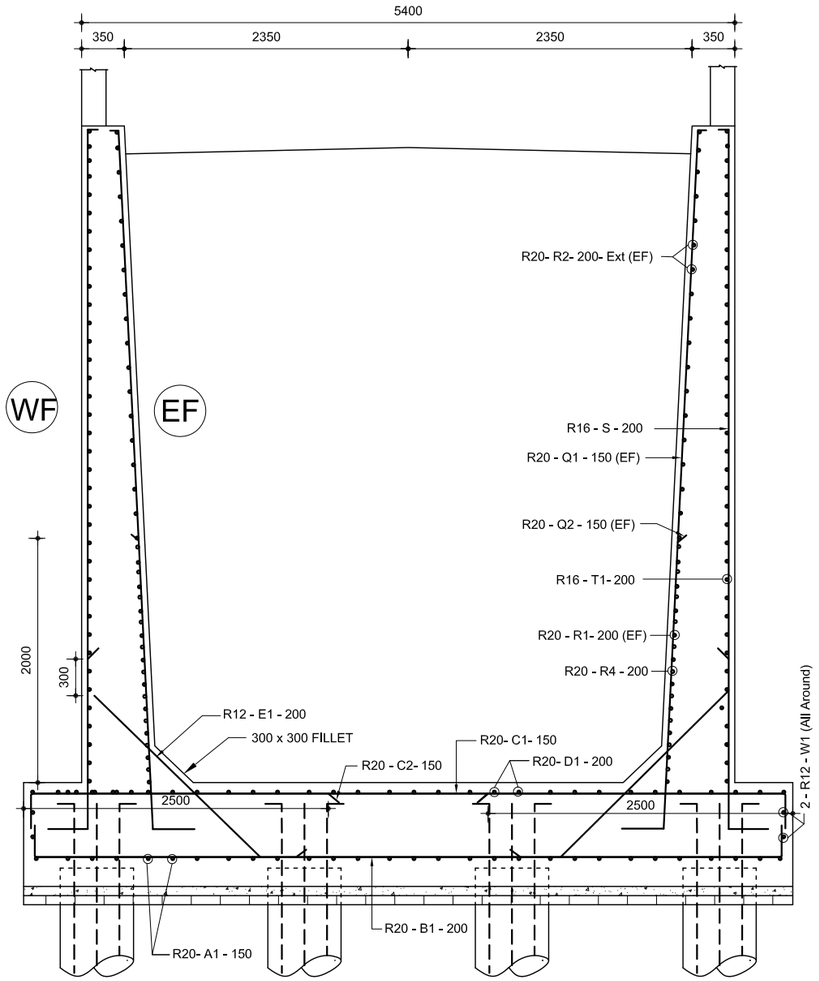


SEC. 5 - 5
Scale: 1:40

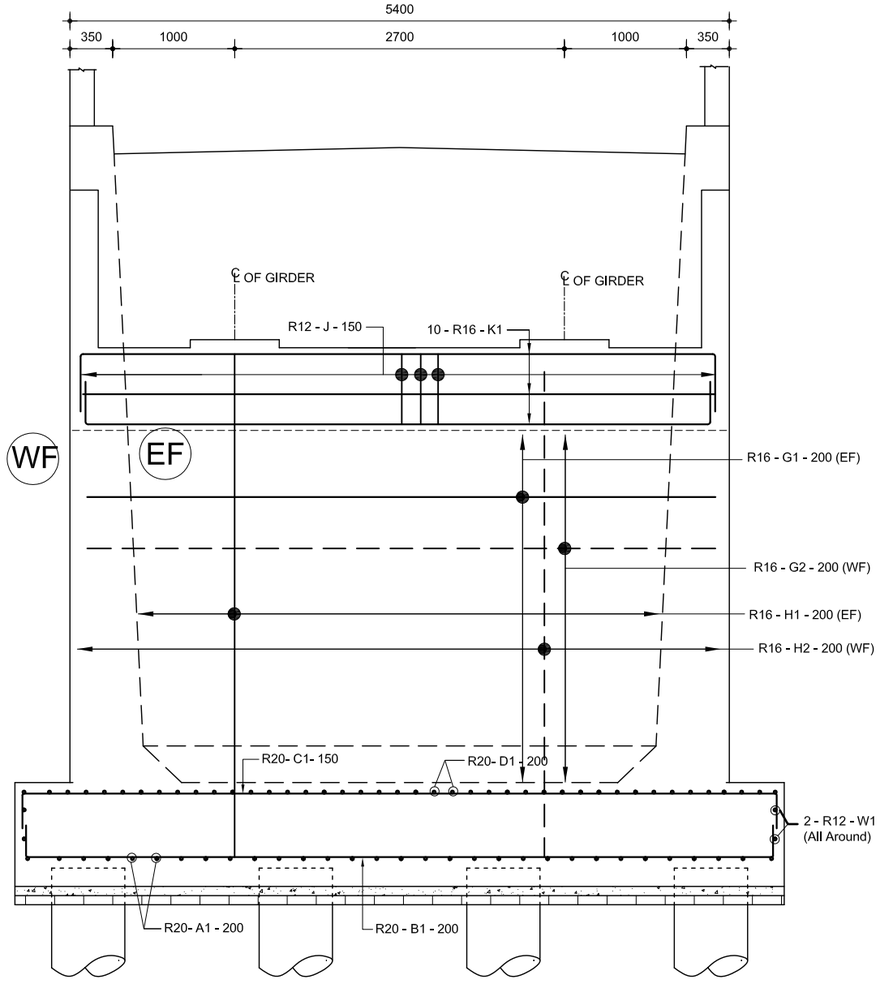
NOTES:

1. Clear cover to main reinforcement bar is to be 50mm. unless otherwise mentioned.
2. 28 days cylinder strength of concrete: f 'c = 25.0N/mm (3600 psi)
3. Yield strength of mild steel deformed bar fy = 413N/mm (60000psi)
4. EF = Earth Face, WF = Water Face

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	DESIGNED ,DRAWN & CHECKED BY		DRAWING TITLE
	PURAKAUSHAL PROJUKTI LIMITED House # C10, Road # 4 ,Banasree, Rampura- 1219. E-maill: pproiltd@yahoo.com	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	Reinf. Details of Abutment & Wing wall, Span 30m Abutment Height 6.0m DRAWING NO. AB-47 PAGE NO. P-99



CROSS SECTION OF WINGWALL (SEC. 3 - 3)
SHOWING REINFORCEMENT
Scale: 1:50

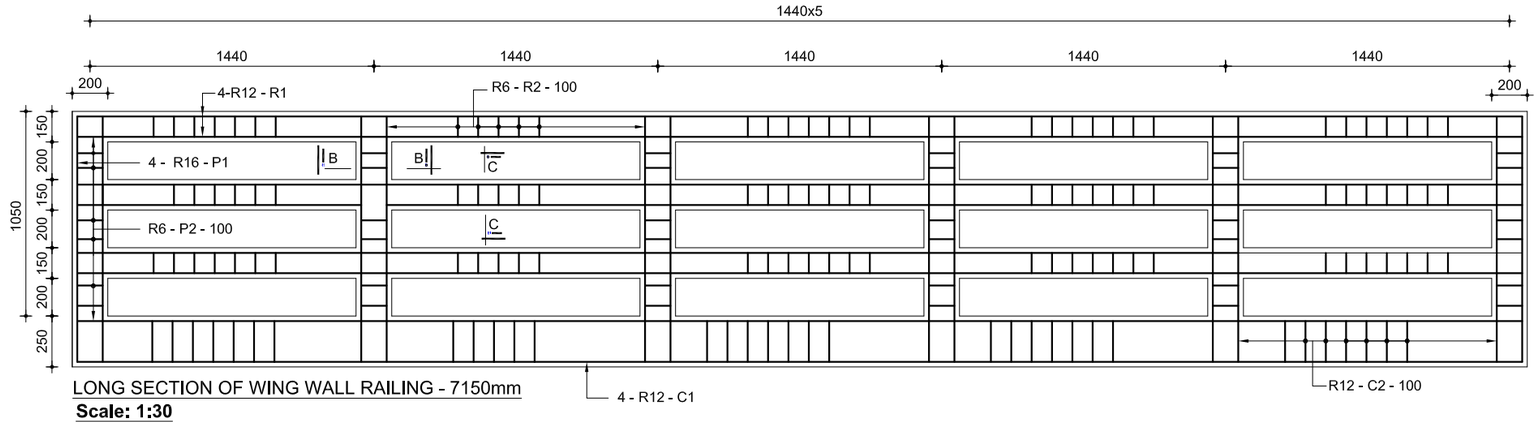


SECTIONAL FRONT ELEVATION OF ABUTMENT (SEC. 2 - 2)
SHOWING REINFORCEMENT
Scale: 1:50

NOTES:

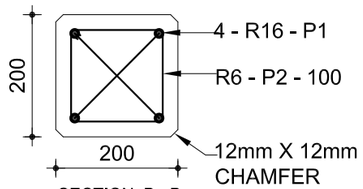
1. Clear cover to main reinforcement bar is to be 50mm. unless otherwise mentioned.
2. 28 days cylinder strength of concrete: f 'c = 25.0N/mm (3600 psi)
3. Yield strength of mild steel deformed bar fy = 413N/mm (60000psi)
4. EF = Earth Face, WF = Water Face

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	DESIGNED ,DRAWN & CHECKED BY PURAKAUSHAL PROJUKTI LIMITED House # C10, Road # 4 ,Banasree, Rampura- 1219. E-maill: pproiltd@yahoo.com	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	DRAWING TITLE Cross Section of Wingwall Showing Reinf. Details, Span 30m Abutment Height 6.0m DRAWING NO. AB-48 PAGE NO. P-100



LONG SECTION OF WING WALL RAILING - 7150mm

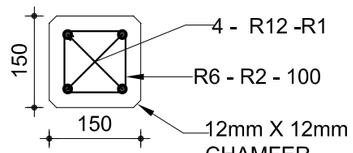
Scale: 1:30



SECTION: B - B

RAIL POST

Scale: 1:10

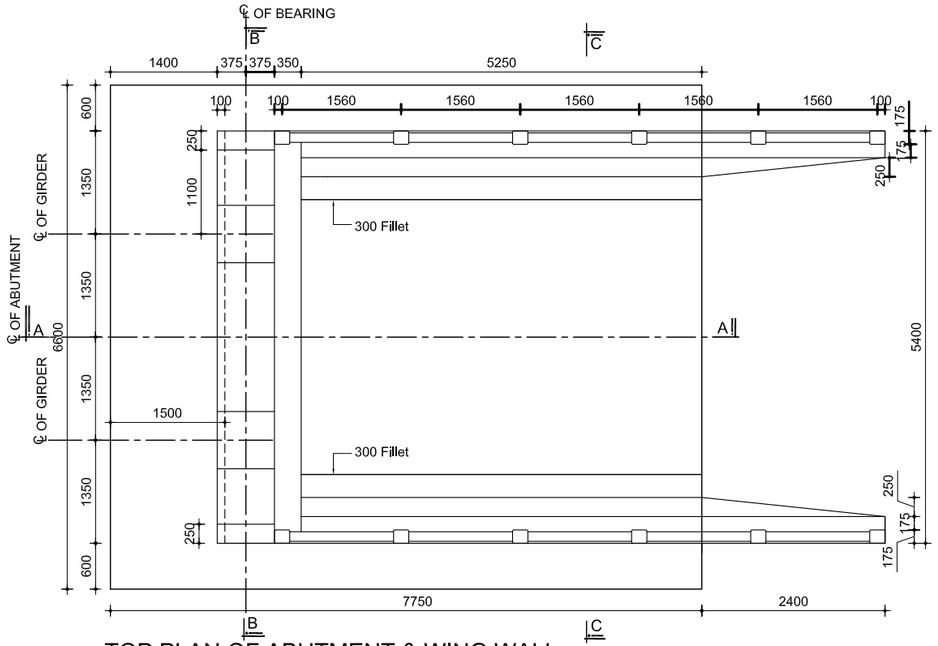


SECTION: C - C

RAIL BAR

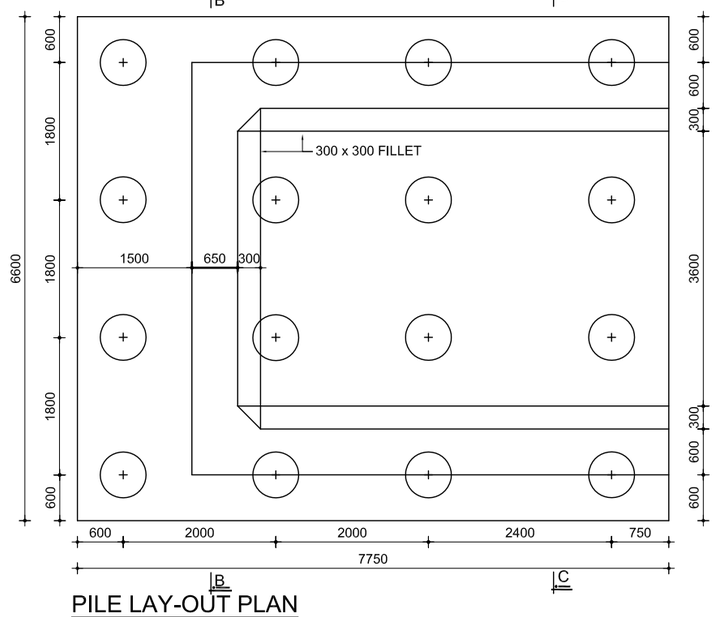
Scale: 1:10

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	DESIGNED ,DRAWN & CHECKED BY PURAKAUSHAL PROJUKTI LIMITED House # C10, Road # 4 ,Banasree, Rampura- 1219. E-maill: pproiltd@yahoo.com	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	DRAWING TITLE Details of Abutment Railing, Span 30m Abutment Height 6.0m DRAWING NO. AB-49 PAGE NO. P-101



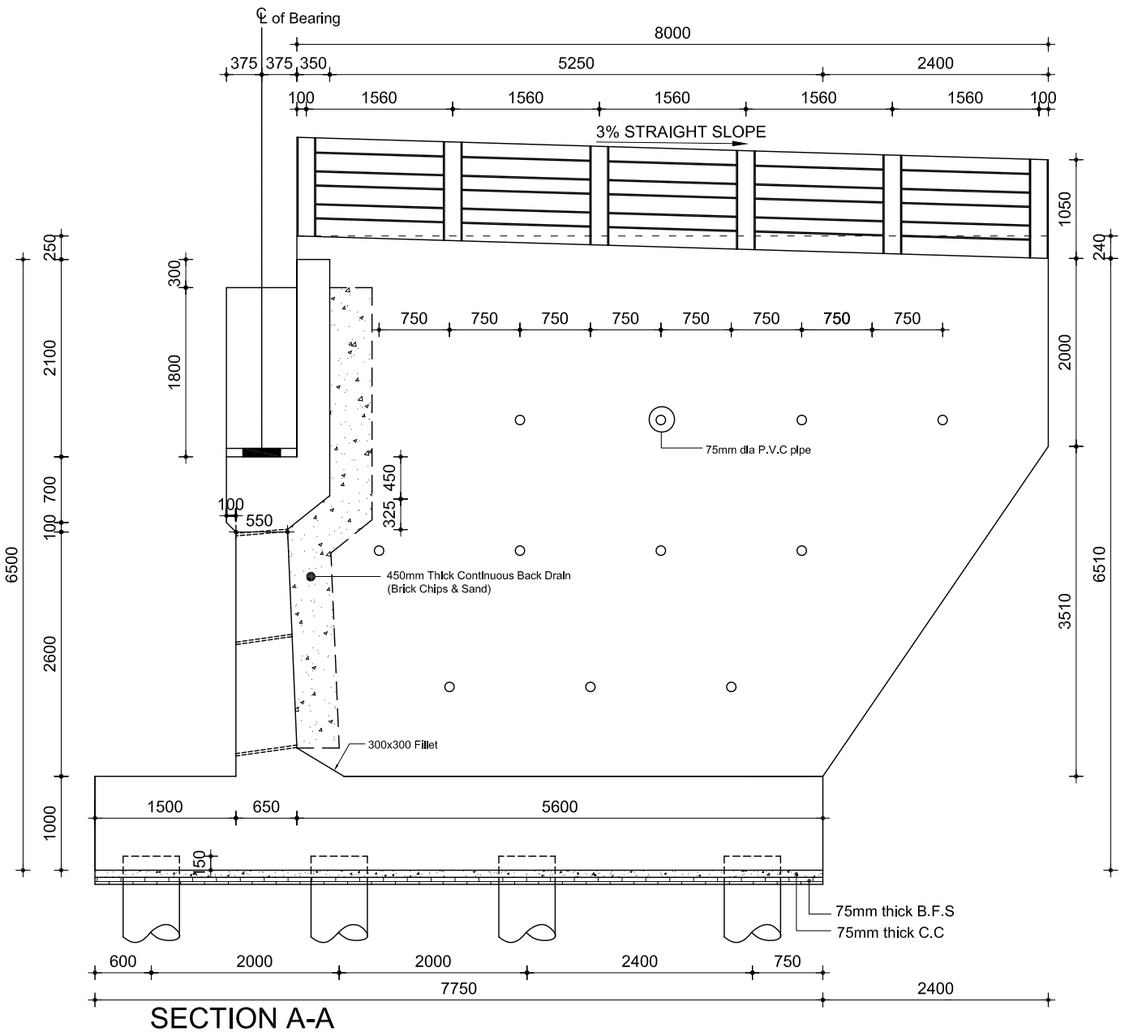
TOP PLAN OF ABUTMENT & WING WALL

Scale: 1:80



PILE LAY-OUT PLAN

Scale: 1:80



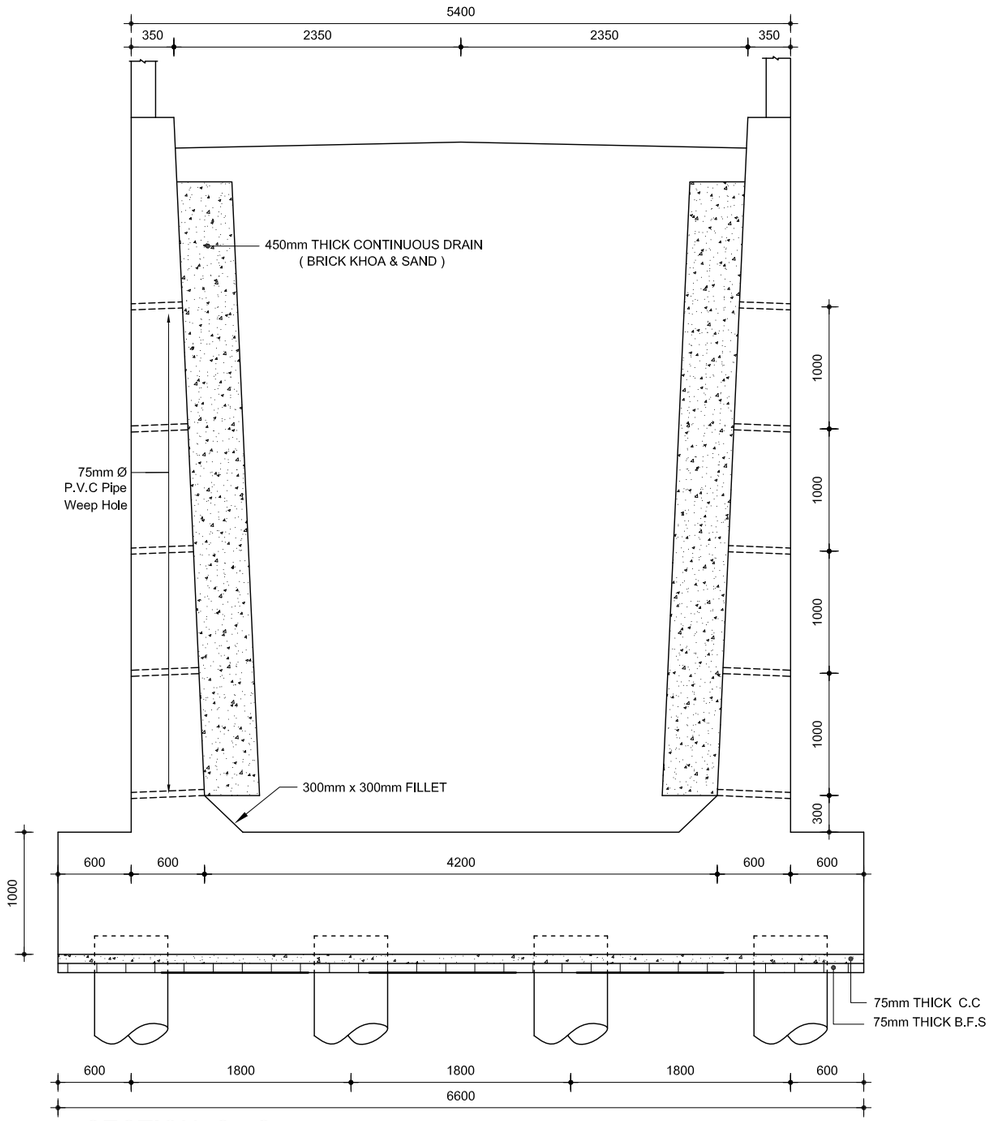
SECTION A-A

Scale: 1:65

NOTES:

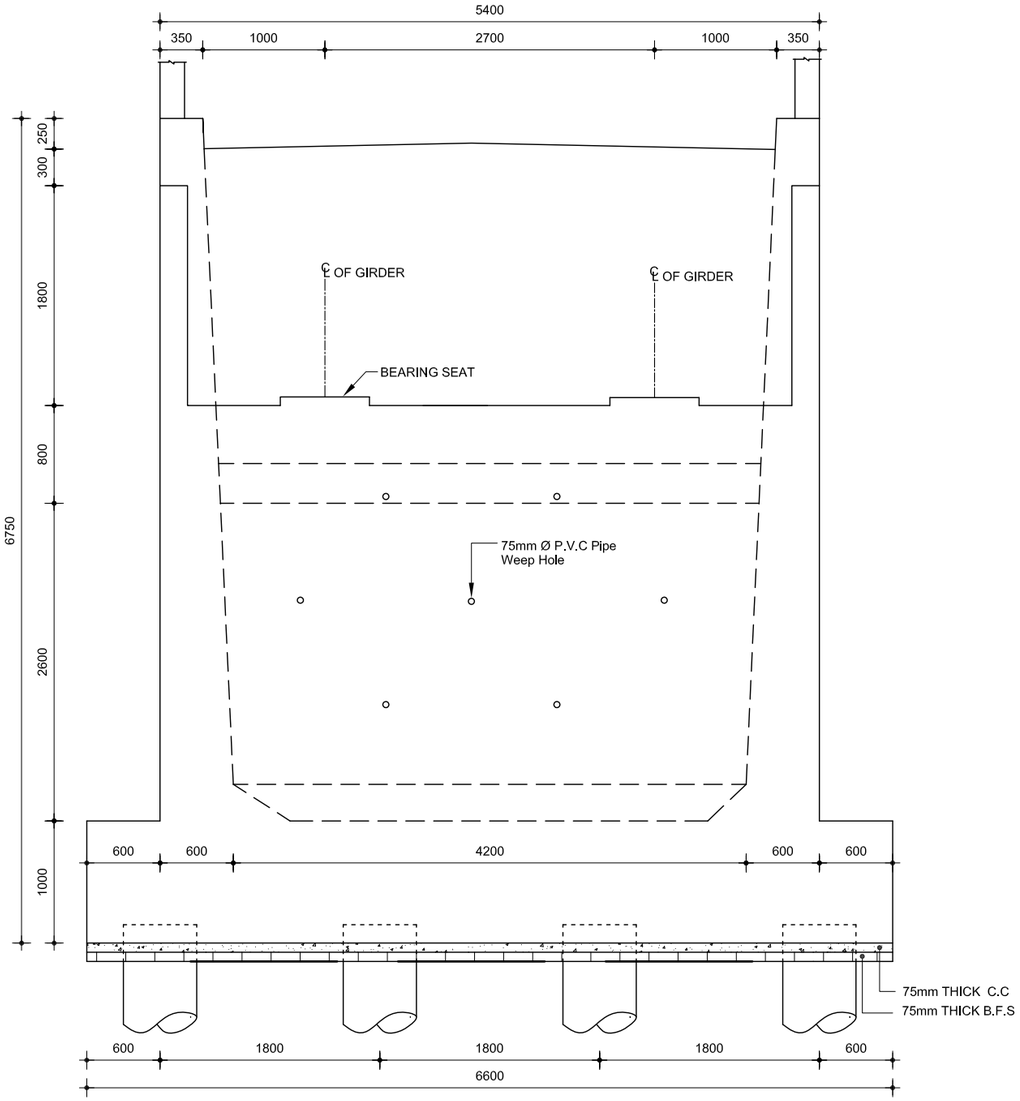
1. Abutment Details for 20m. span.
2. All dimensions are in millimeter unless otherwise mentioned.
3. Clear cover to main reinforcement bar is to be 50mm. unless otherwise mentioned.
4. 28 days cylinder strength of concrete: f 'c = 25.0N/mm² (3600 psi)
5. Yield strength of mild steel deformed bar fy = 413N/mm² (60000psi)

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	DESIGNED ,DRAWN & CHECKED BY PURAKAUSHAL PROJUKTI LIMITED	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	DRAWING TITLE Details of Abutment Span 30m Abutment Height 6.5m DRAWING NO. AB-50 PAGE NO. P-102



SECTION: C - C

Scale: 1:50



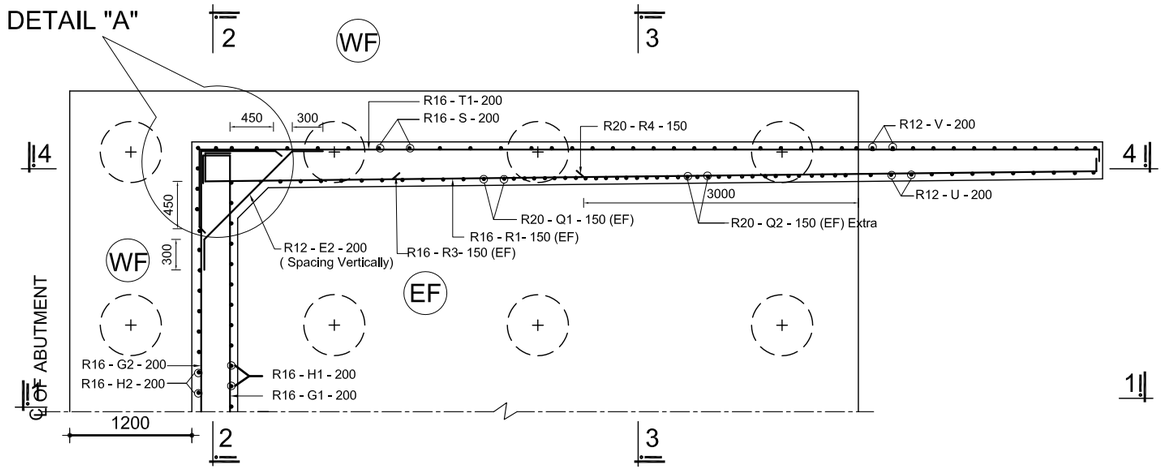
SECTION: B - B

Scale: 1:50

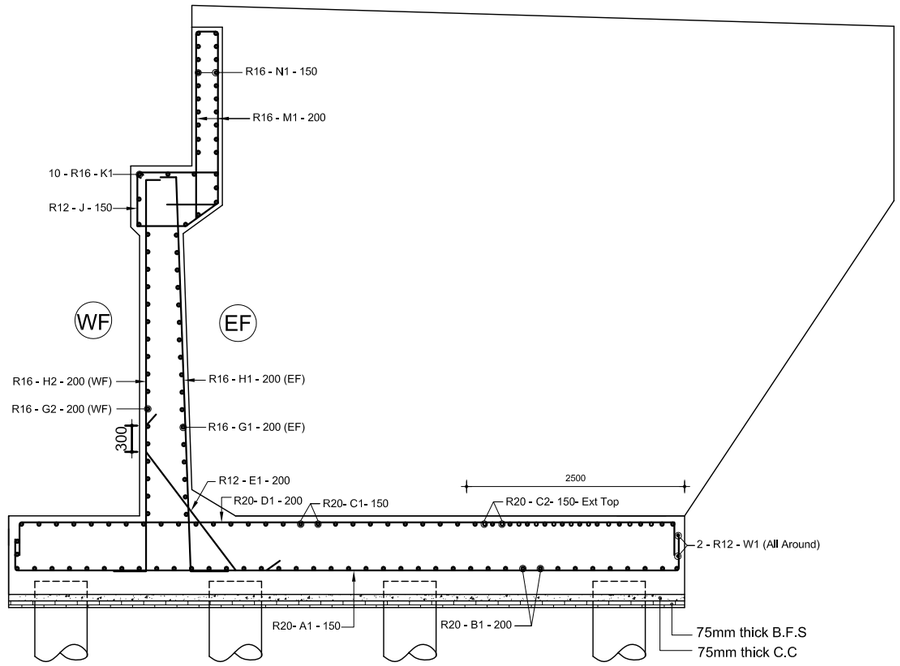
NOTES:

1. All dimensions are in millimeter unless otherwise mentioned.
2. Clear cover to main reinforcement bar is to be 50mm. unless otherwise mentioned.
3. 28 days cylinder strength of concrete: f 'c = 25.0N/mm² (3600 psi)
4. Yield strength of mild steel deformed bar fy = 413N/mm² (60000psi)

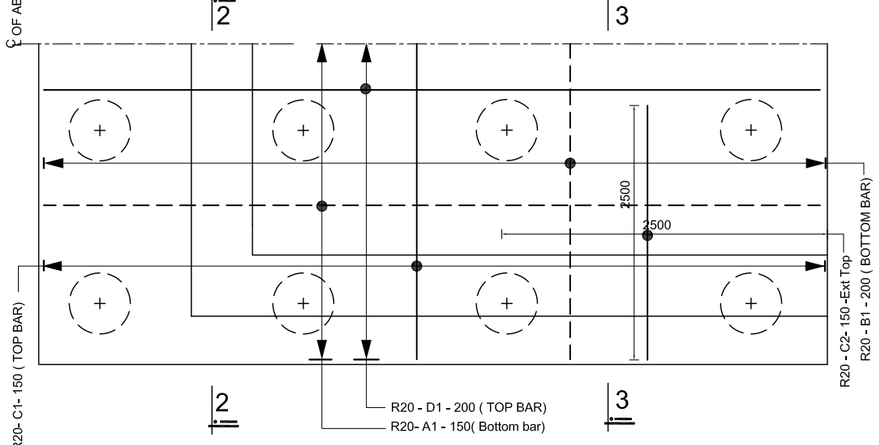
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	DESIGNED ,DRAWN & CHECKED BY PURAKAUSHAL PROJUKTI LIMITED	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	DRAWING TITLE Sectional Elevation of Abutment & Wing wall, Span 30m Abutment Height 6.5m DRAWING NO. AB-51 PAGE NO. P-103



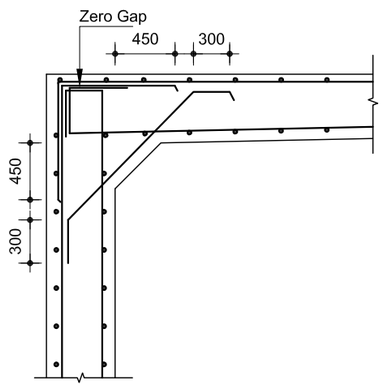
PLAN OF ABUTMENT & WINGWALL
SHOWING REINFORCEMENT
Scale: 1:60



CROSS SECTION OF ABUTMENT (SECTION 1-1)
SHOWING REINFORCEMENT DETAILS
Scale: 1:70



PLAN OF PILE CAP
SHOWING REINFORCEMENT
Scale: 1:60

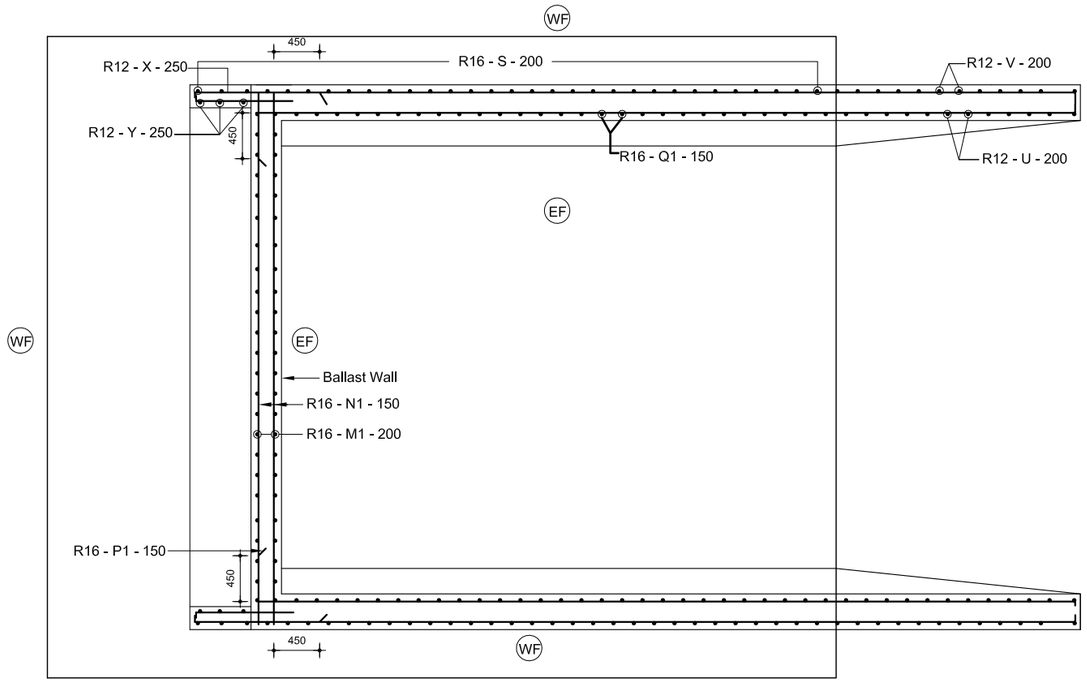


DETAIL "A"
Scale: 1:40

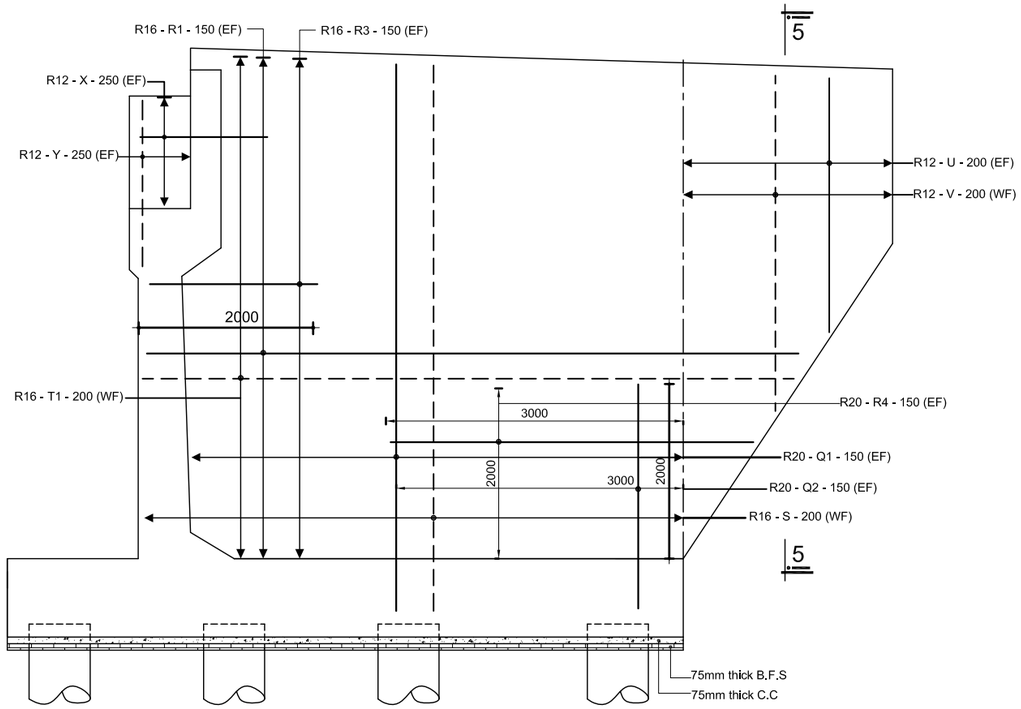
NOTES:

1. Clear cover to main reinforcement bar is to be 50mm. unless otherwise mentioned.
2. 28 days cylinder strength of concrete: f 'c = 25.0N/mm² (3600 psi)
3. Yield strength of mild steel deformed bar fy = 413N/mm² (60000psi)
4. EF = Earth Face WF = Water Face

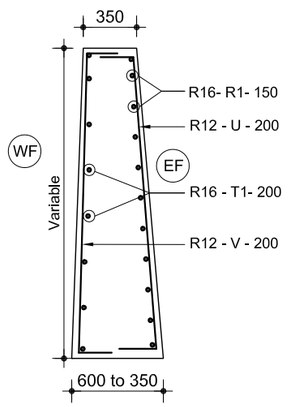
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	DESIGNED ,DRAWN & CHECKED BY		DRAWING TITLE
	PURAKAUSHAL PROJUKTI LIMITED	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	Reinf. Details of Abutment & Wing wall, Span 30m Abutment Height 6.5m DRAWING NO. AB-52 PAGE NO. P-104



TOP PLAN OF BALLAST WALL & WINGWALL
SHOWING TOP REINFORCEMENT
Scale: 1:60



SECTIONAL ELEVATION OF WINGWALL (SEC. 4 - 4)
SHOWING REINFORCEMENT
Scale: 1:70

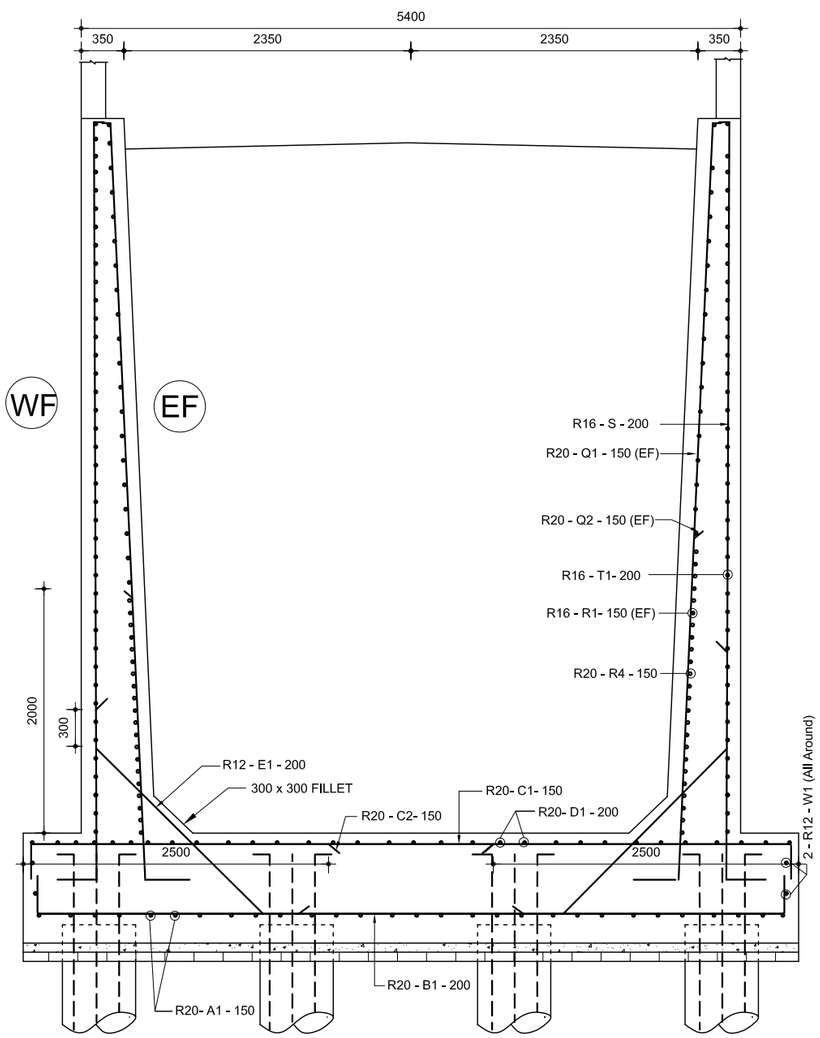


SEC. 5 - 5
Scale: 1:40

NOTES:

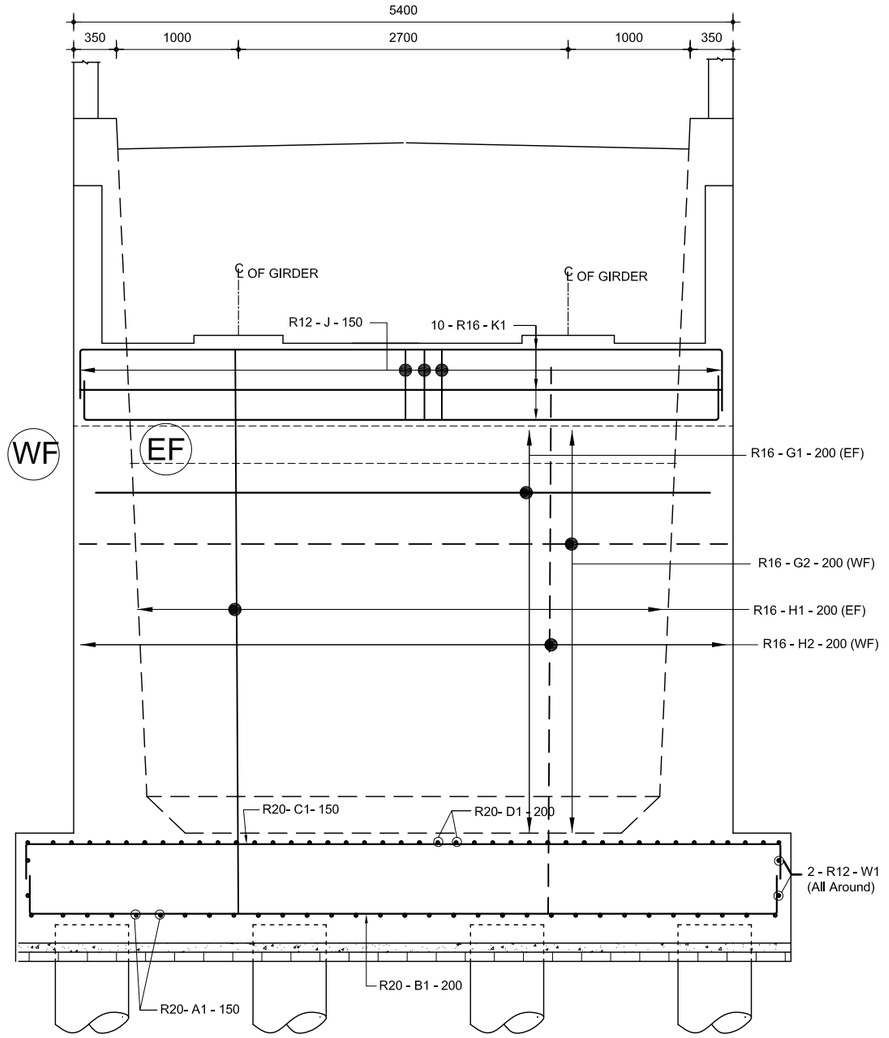
1. Clear cover to main reinforcement bar is to be 50mm. unless otherwise mentioned.
2. 28 days cylinder strength of concrete: f 'c = 25.0N/mm (3600 psi)
3. Yield strength of mild steel deformed bar fy = 413N/mm (60000psi)
4. EF = Earth Face, WF = Water Face

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	DESIGNED ,DRAWN & CHECKED BY		DRAWING TITLE
	PURAKAUSHAL PROJUKTI LIMITED	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	Reinf. Details of Abutment & Wing wall, Span 30m Abutment Height 6.5m DRAWING NO. AB-53 PAGE NO. P-105



CROSS SECTION OF WINGWALL (SEC. 3 - 3)
SHOWING REINFORCEMENT

Scale: 1:50



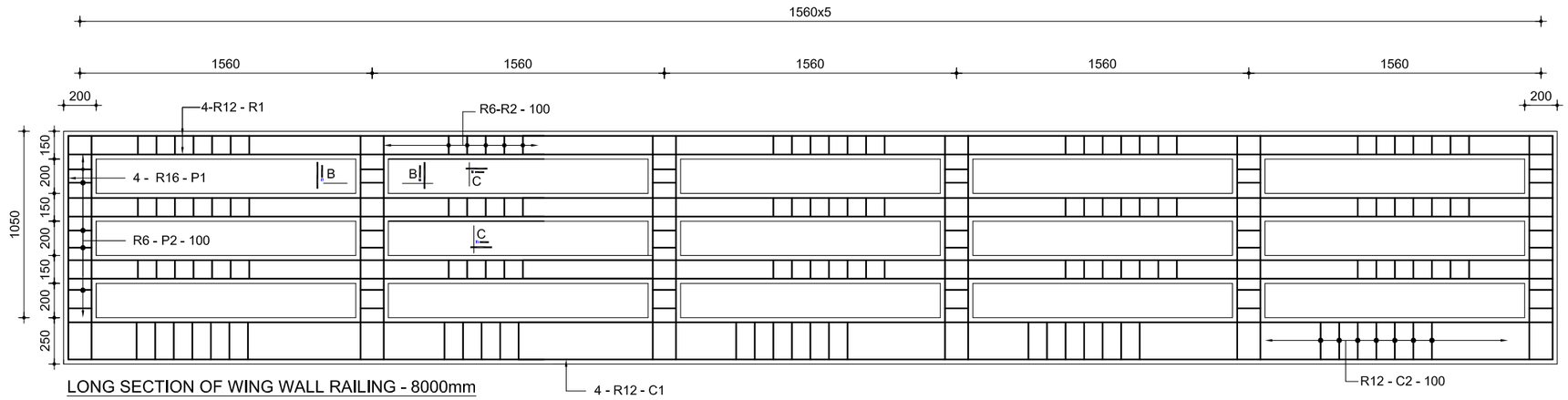
SECTIONAL FRONT ELEVATION OF ABUTMENT (SEC. 2 - 2)
SHOWING REINFORCEMENT

Scale: 1:50

NOTES:

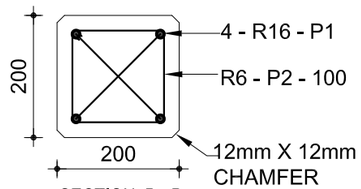
1. Clear cover to main reinforcement bar is to be 50mm. unless otherwise mentioned.
2. 28 days cylinder strength of concrete: f 'c = 25.0N/mm² (3600 psi)
3. Yield strength of mild steel deformed bar fy = 413N/mm² (60000psi)
4. EF = Earth Face, WF = Water Face

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	DESIGNED ,DRAWN & CHECKED BY		DRAWING TITLE
	PURAKAUSHAL PROJUKTI LIMITED	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	Cross Section of Wingwall Showing Reinf. Details, Span 30m Abutment Height 6.5m DRAWING NO. AB-54 PAGE NO. P-106



LONG SECTION OF WING WALL RAILING - 8000mm

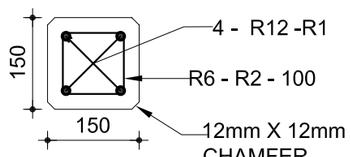
Scale: 1:30



SECTION: B - B

RAIL POST

Scale: 1:10

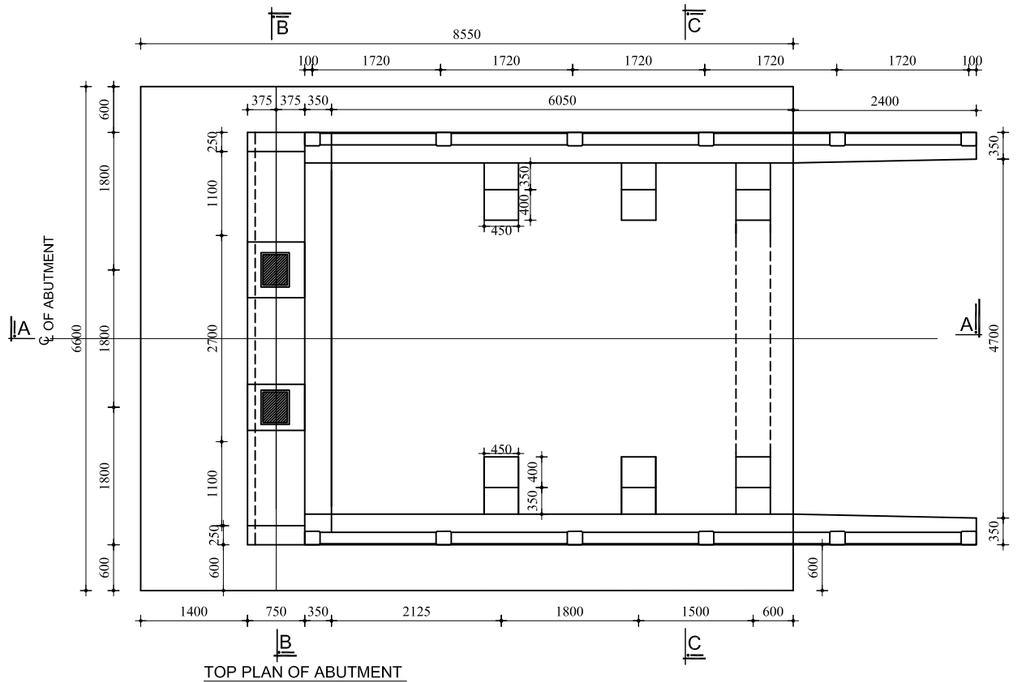


SECTION: C - C

RAIL BAR

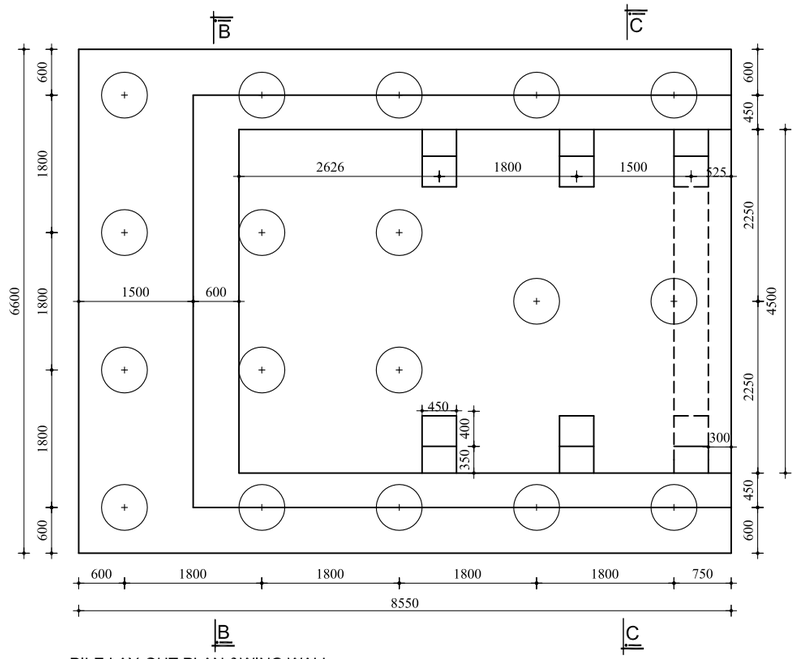
Scale: 1:10

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	DESIGNED ,DRAWN & CHECKED BY		DRAWING TITLE
	PURAKAUSHAL PROJUKTI LIMITED	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	Details of Abutment Railing, Span 30m Abutment Height 6.5m DRAWING NO. AB-55 PAGE NO. P-107



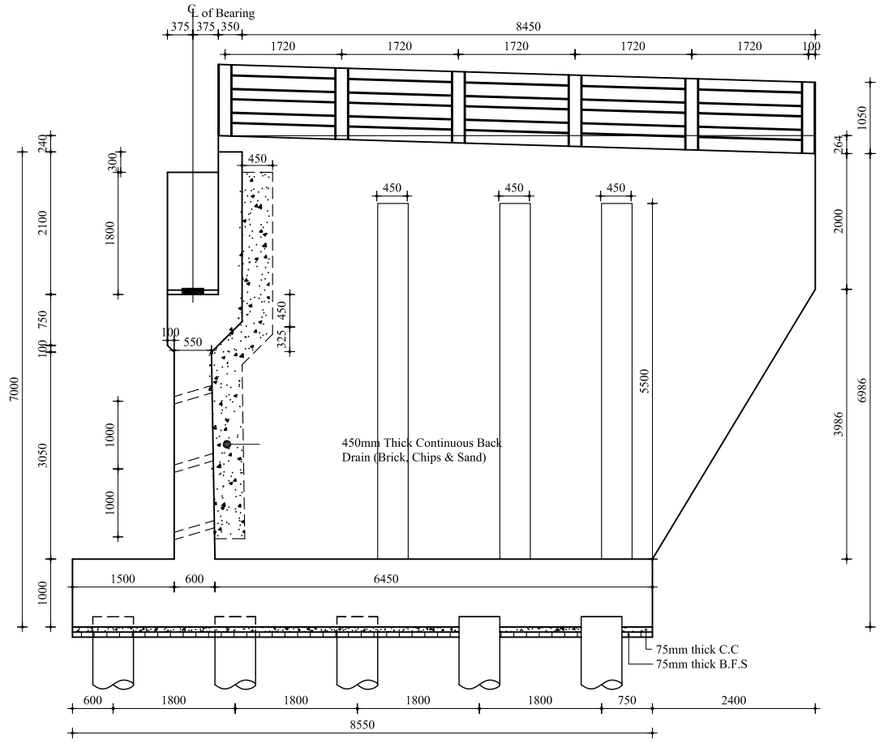
TOP PLAN OF ABUTMENT

Scale: 1:80



PILE LAY-OUT PLAN &WING WALL

Scale: 1:80



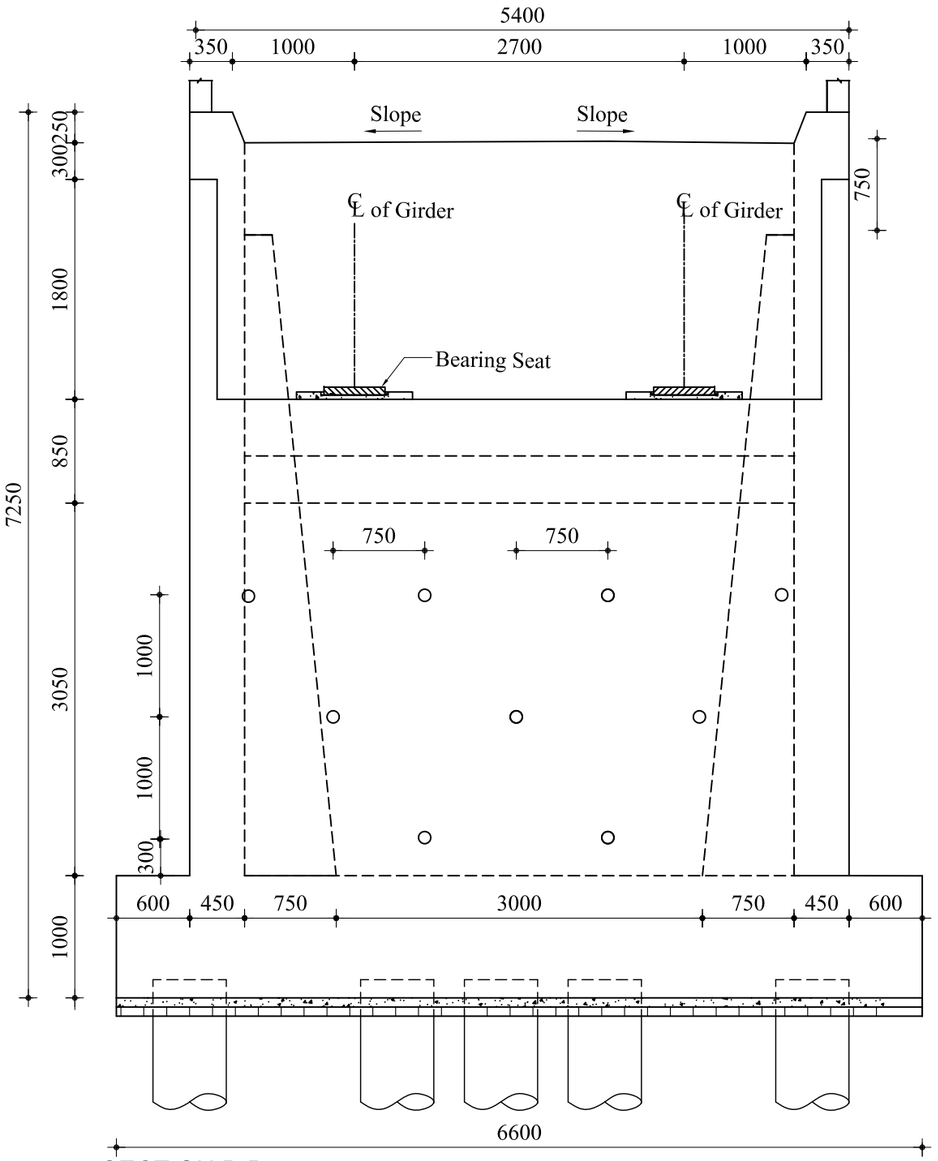
SECTION A-A

Scale: 1:90

NOTES:

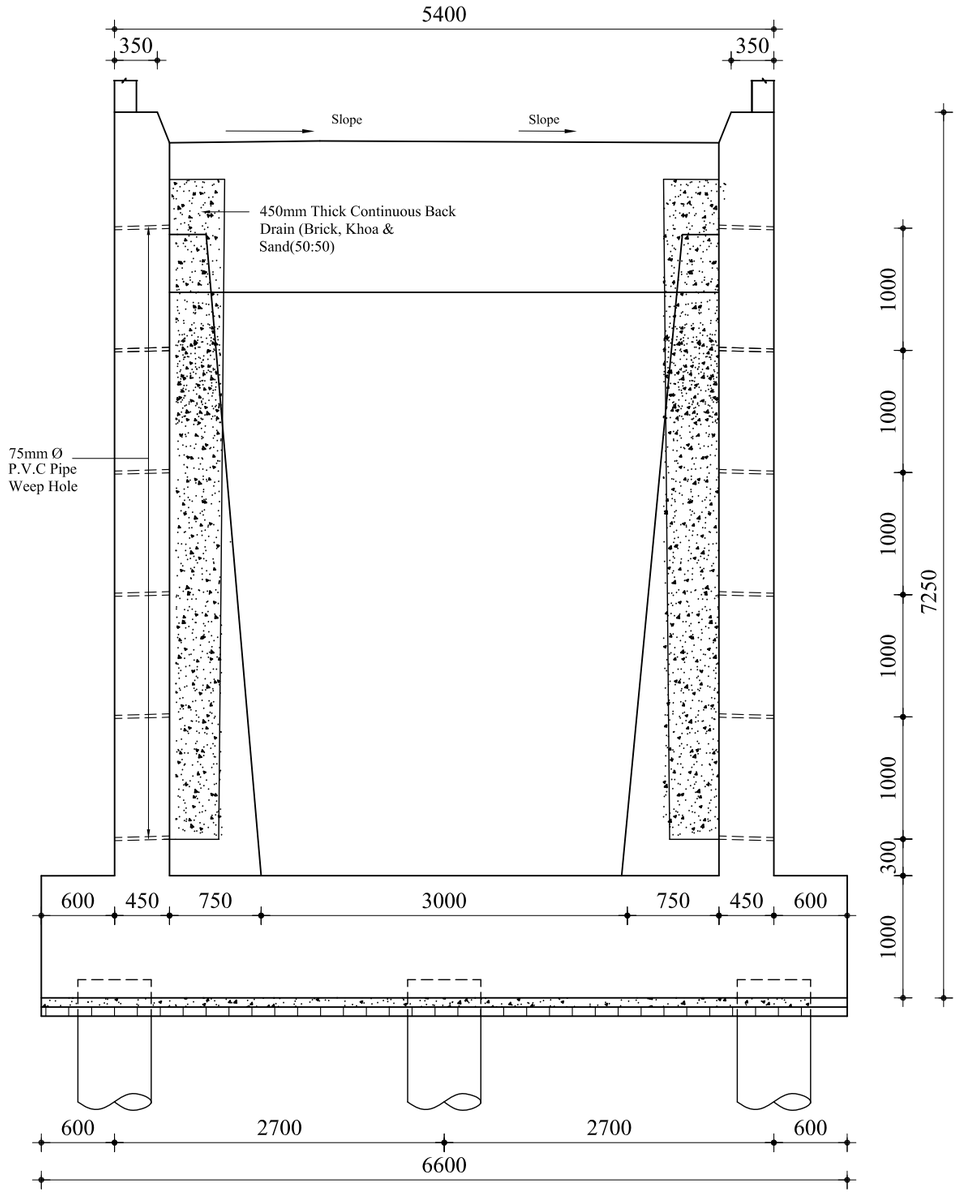
1. Abutment Details for 30m span.
2. All dimensions are in millimeter unless otherwise mentioned.
3. Clear cover to main reinforcement bar is to be 50mm. unless otherwise mentioned.
4. 28 days cylinder strength of concrete: f 'c = 25.0N/mm² (3600 psi)
5. Yield strength of mild steel deformed bar fy = 413N/mm² (60000psi)

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	DESIGNED ,DRAWN & CHECKED BY PURAKAUSHAL PROJUKTI LIMITED House # C10, Road # 4 ,Banasree, Rampura- 1219. E-maill: pproiltd@yahoo.com	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	DRAWING TITLE Details of Abutment Span 30m Abutment Height 7.0m DRAWING NO. AB-56 PAGE NO. P-108



SECTION B-B

Scale: 1:50



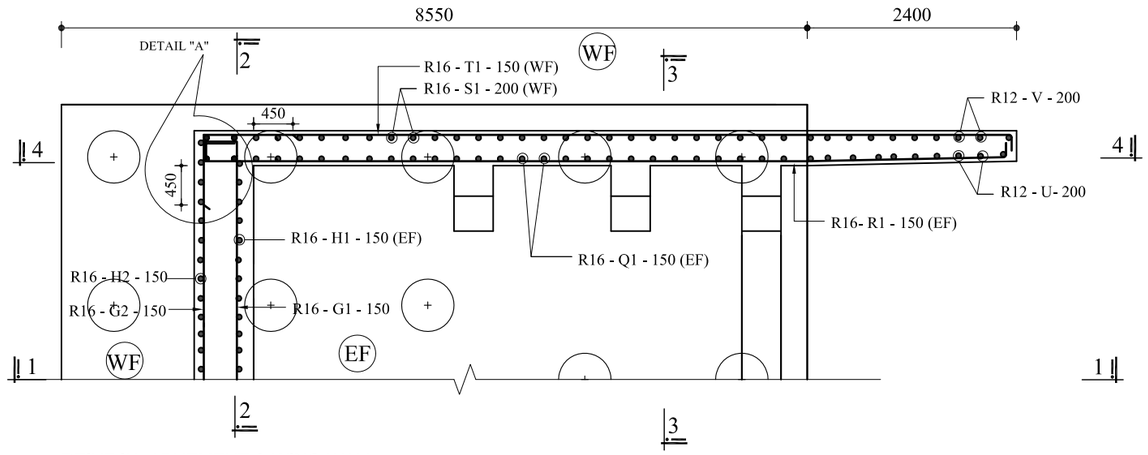
SECTION C-C

Scale: 1:50

NOTES:

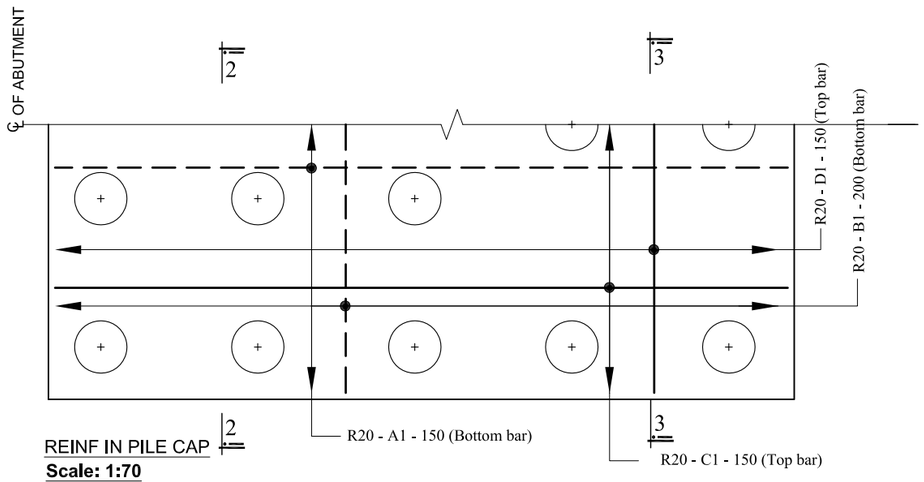
1. All dimensions are in millimeter unless otherwise mentioned.
2. Clear cover to main reinforcement bar is to be 50mm. unless otherwise mentioned.
3. 28 days cylinder strength of concrete: f 'c = 25.0N/mm² (3600 psi)
4. Yield strength of mild steel deformed bar fy = 413N/mm² (60000psi)

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	DESIGNED ,DRAWN & CHECKED BY PURAKAUSHAL PROJUKTI LIMITED House # C10, Road # 4 ,Banasree, Rampura- 1219. E-maill: pproiltd@yahoo.com	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	DRAWING TITLE Sectional Elevation of Abutment & Wing wall, Span 30m Abutment Height 7.0m DRAWING NO. AB-57 PAGE NO. P-109



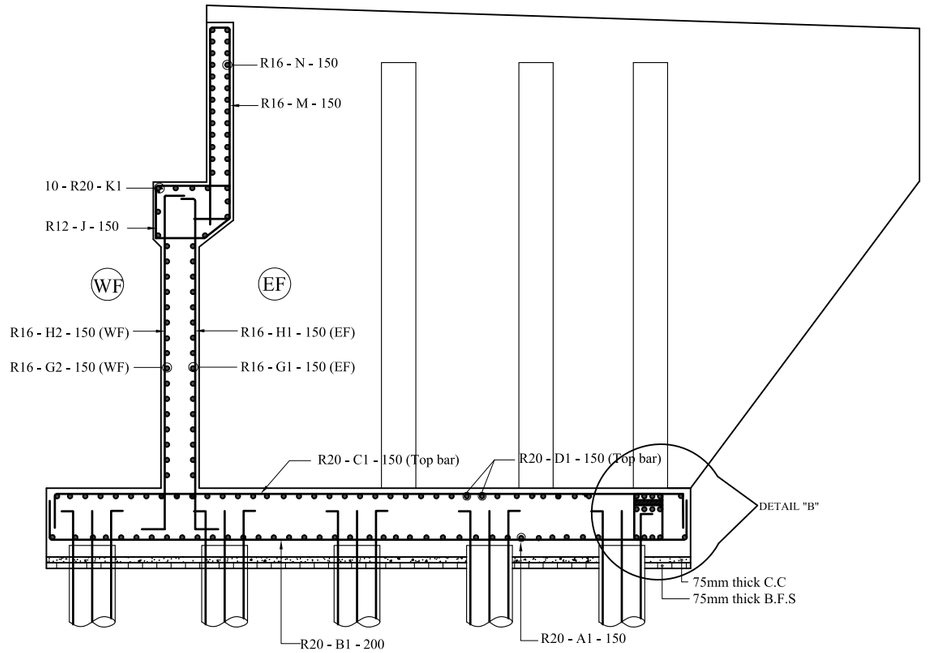
REINF IN ABUTMENT & WING WALL

Scale: 1:70



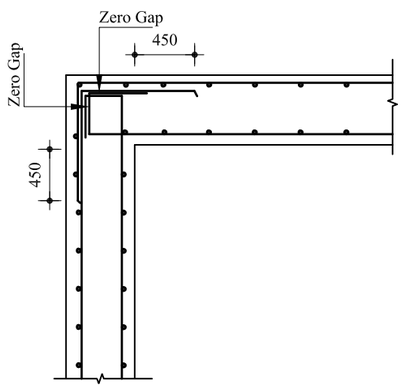
REINF IN PILE CAP

Scale: 1:70



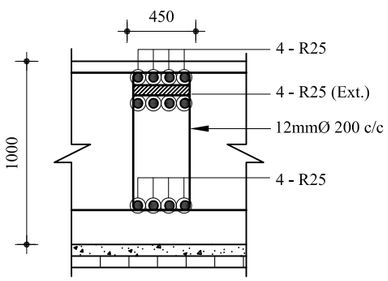
CROSS SECTION OF ABUTMENT (SECTION 1-1)
SHOWING REINFORCEMENT DETAILS

Scale: 1:80



DETAIL "A"

Scale: 1:40



DETAIL "B"

Scale: 1:40

NOTES:

1. All dimensions are in millimeter unless otherwise mentioned.
2. Clear cover to main reinforcement bar is to be 50mm. unless otherwise mentioned.
3. 28 days cylinder strength of concrete: f 'c = 25.0N/mm² (3600 psi)
4. EF = Earth Face WF = Water Face

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH

LOCAL GOVERNMENT ENGINEERING DEPARTMENT

DESIGNED ,DRAWN & CHECKED BY

PURAKAUSHAL PROJUKTI LIMITED

House # C10, Road # 4 ,Banasree, Rampura- 1219.
E-maill: pproiltd@yahoo.com

NAME OF PROJECT:

LOCATION:

UPAZILA:

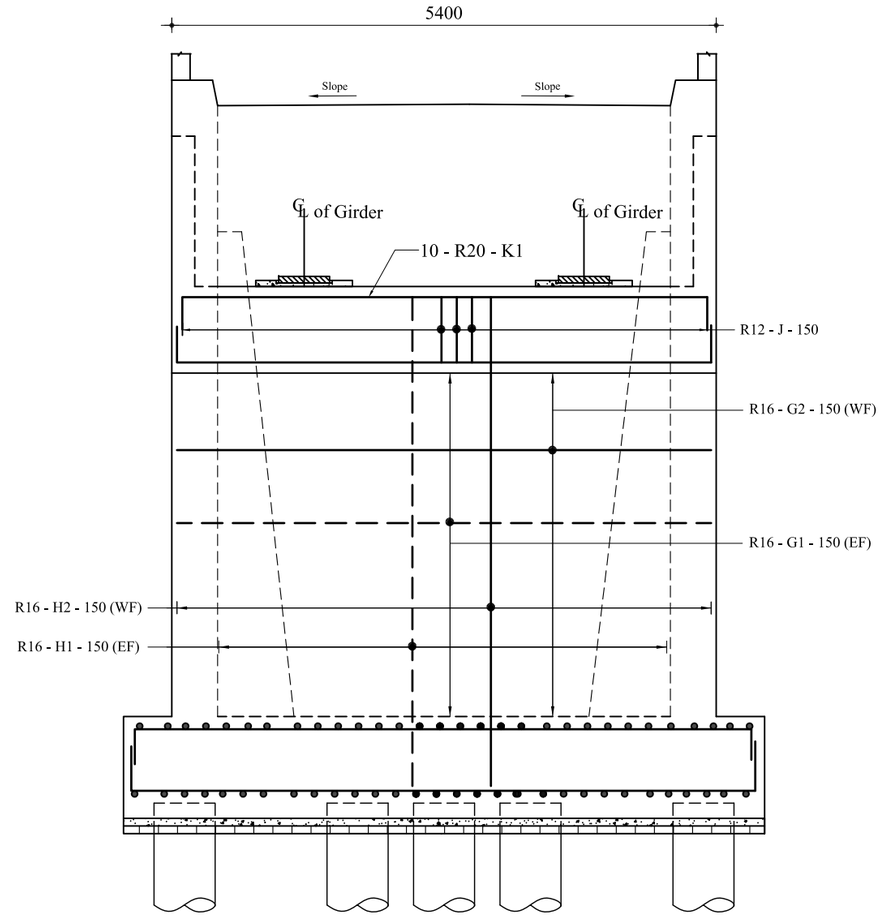
DISTRICT:

DRAWING TITLE

Reinf. Details of Abutment & Wing wall, Span 30m Abutment Height 7m.

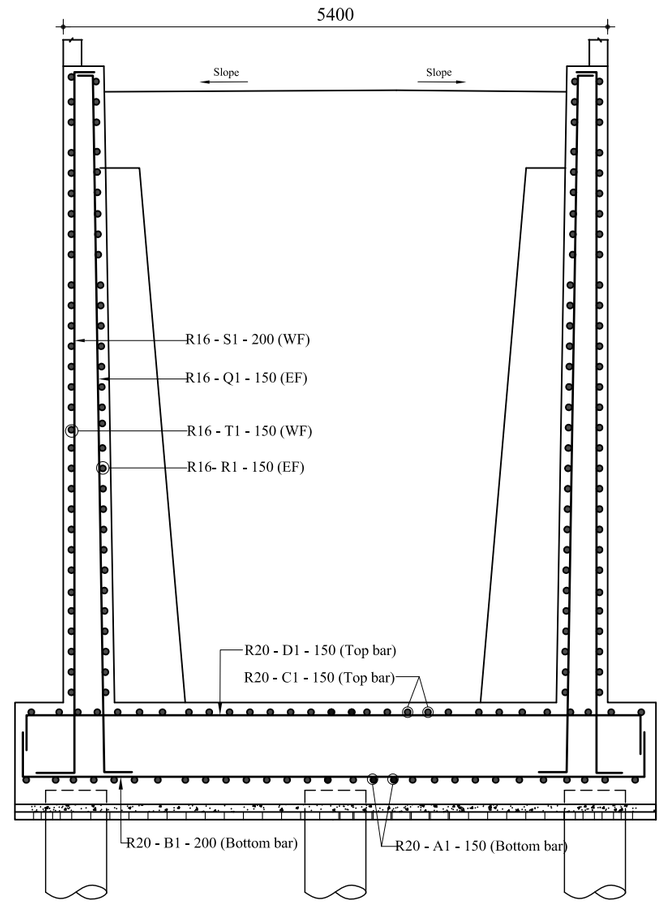
DRAWING NO. AB-58

PAGE NO. P-110



SECTIONAL FRONT ELEVATION OF ABUTMENT (SECTION 2-2)
SHOWING REINFORCEMENT

Scale: 1:60



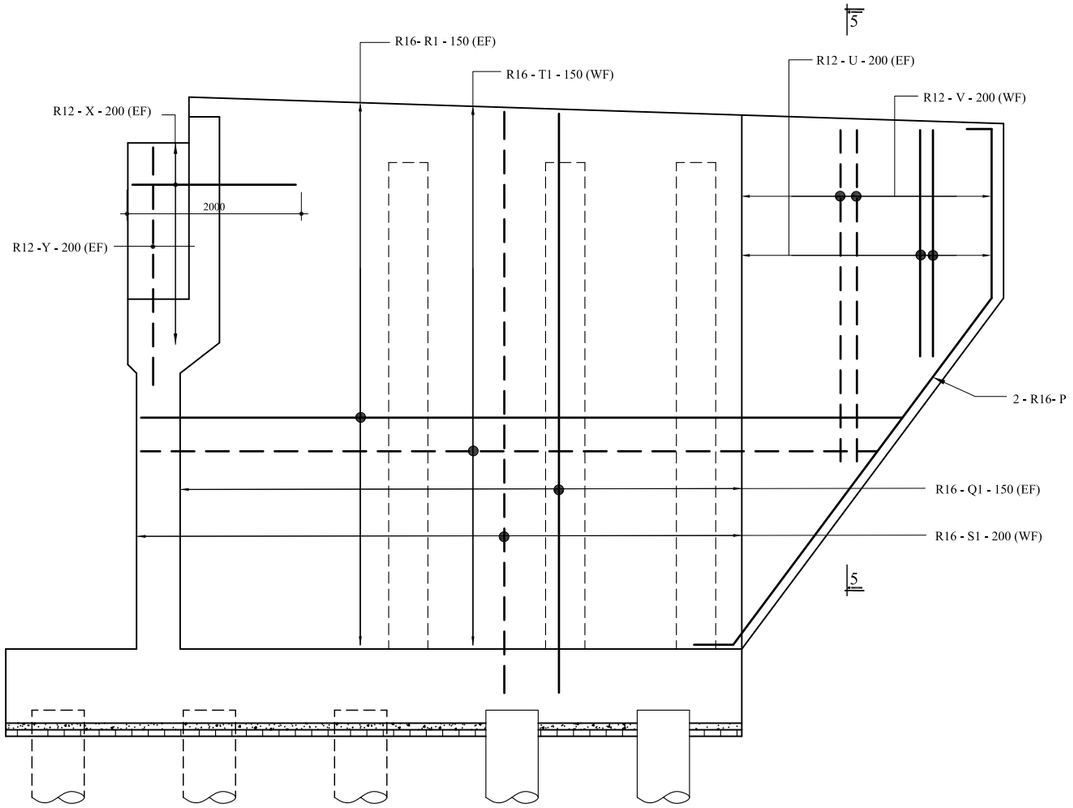
CROSS-SECTION OF WINGWALL (SEC.3-3)
SHOWING REINFORCEMENT

Scale: 1:60

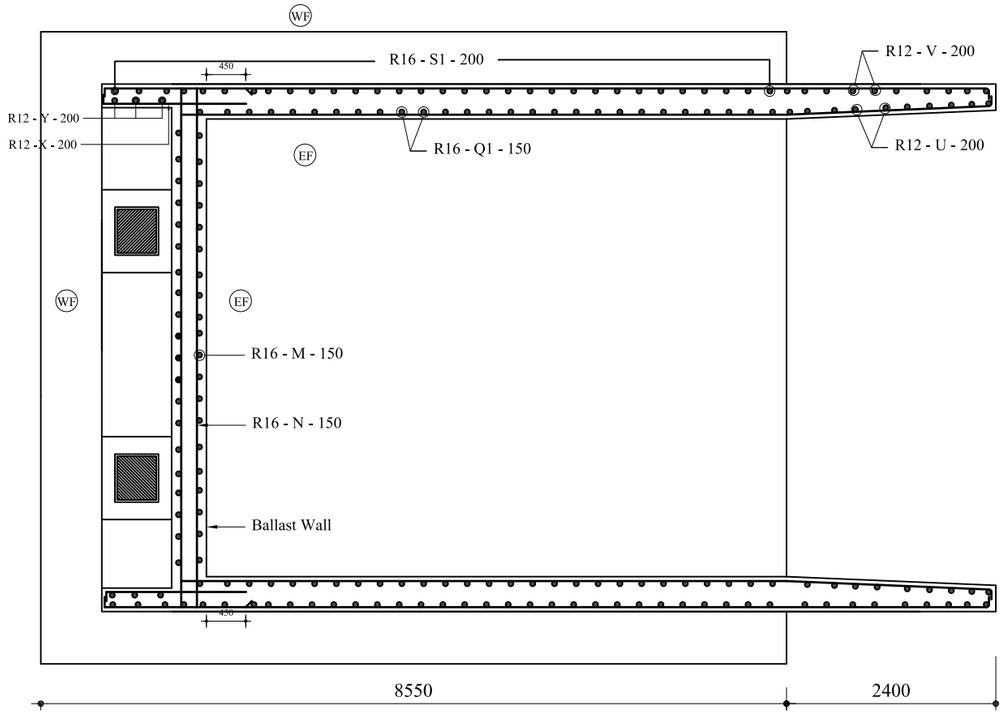
NOTES:

1. All dimensions are in millimeter unless otherwise mentioned.
2. Clear cover to main reinforcement bar is to be 50mm. unless otherwise mentioned.
3. 28 days cylinder strength of concrete: f 'c = 25.0N/mm² (3600 psi)
4. EF = Earth Face, WF = Water Face

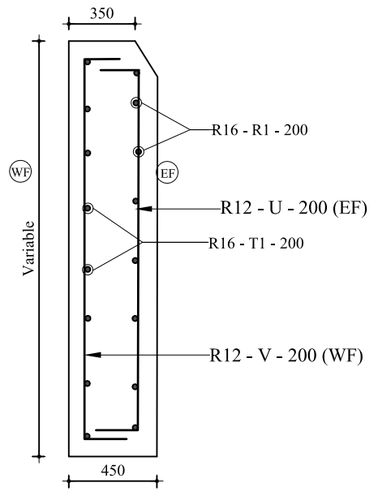
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	DESIGNED ,DRAWN & CHECKED BY PURAKAUSHAL PROJUKTI LIMITED House # C10, Road # 4 ,Banasree, Rampura- 1219. E-maill: pproiltd@yahoo.com	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	DRAWING TITLE Reinf. Details Sectional Elevation of Abutment & Wing wall, Span 30m Abutment Height 7m. DRAWING NO. AB-59 PAGE NO. P-111



SECTIONAL ELEVATION OF WINGWALL (SEC. 4 - 4)
SHOWING REINFORCEMENT
Scale: 1:70



TOP PLAN OF BALLASTWALL & WINGWALL
SHOWING TOP REINFORCEMENT
Scale: 1:70

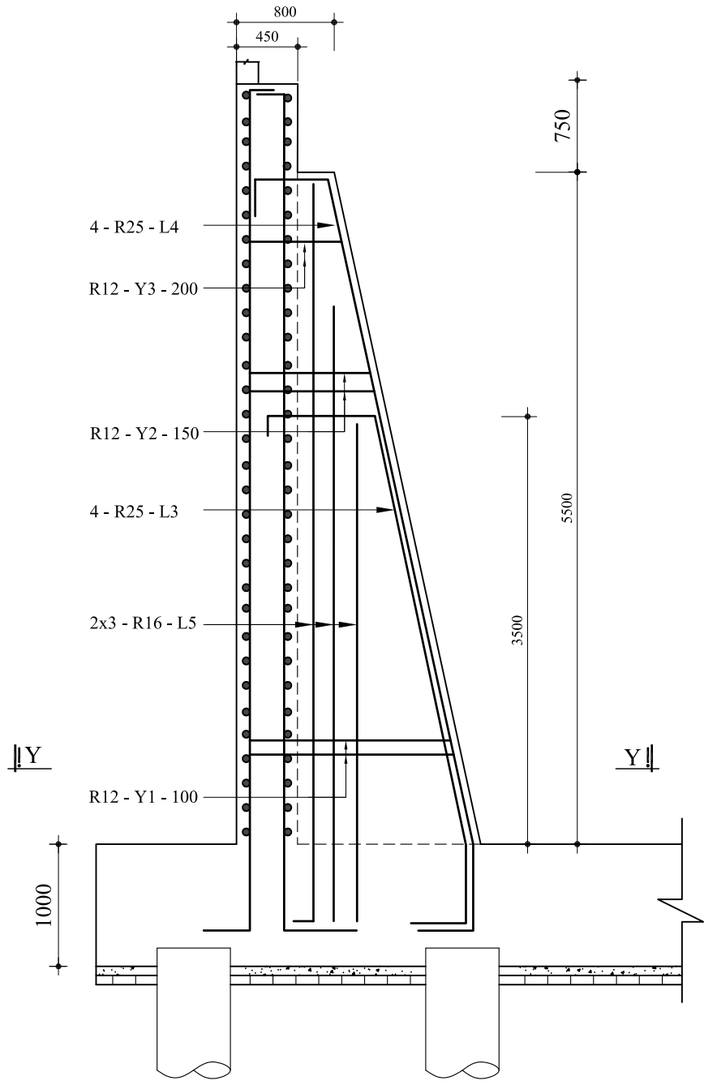


SEC 5-5
Scale: 1:70

NOTES:

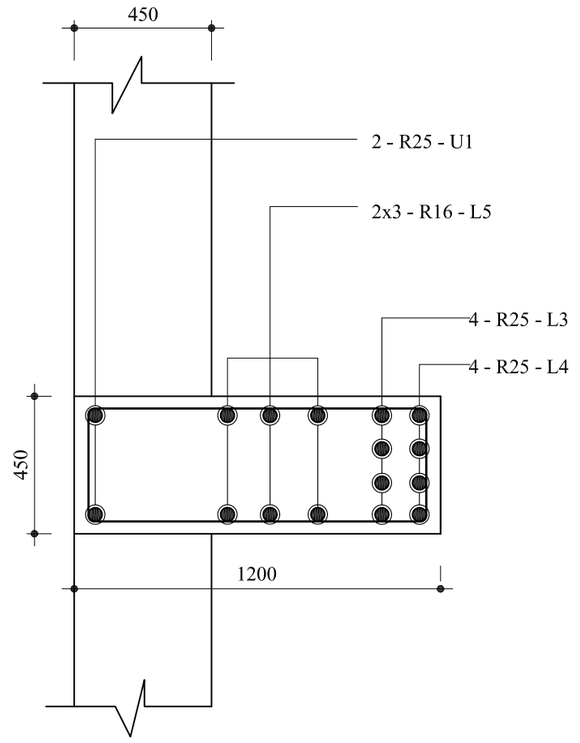
1. All dimensions are in millimeter unless otherwise mentioned.
2. Clear cover to main reinforcement bar is to be 50mm. unless otherwise mentioned.
3. 28 days cylinder strength of concrete: f 'c = 25.0N/mm² (3600 psi)
4. EF = Earth Face WF = Water Face

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	DESIGNED ,DRAWN & CHECKED BY		DRAWING TITLE
	PURAKAUSHAL PROJUKTI LIMITED House # C10, Road # 4 ,Banasree, Rampura- 1219. E-maill: pproiltd@yahoo.com	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	Reinf. Details of Abutment & Wing wall, Span 30m Abutment Height 7.0m. DRAWING NO. AB-60 PAGE NO. P-112



REINF. DETAILS OF WING WALL COUNTER FORT

Scale: 1:50



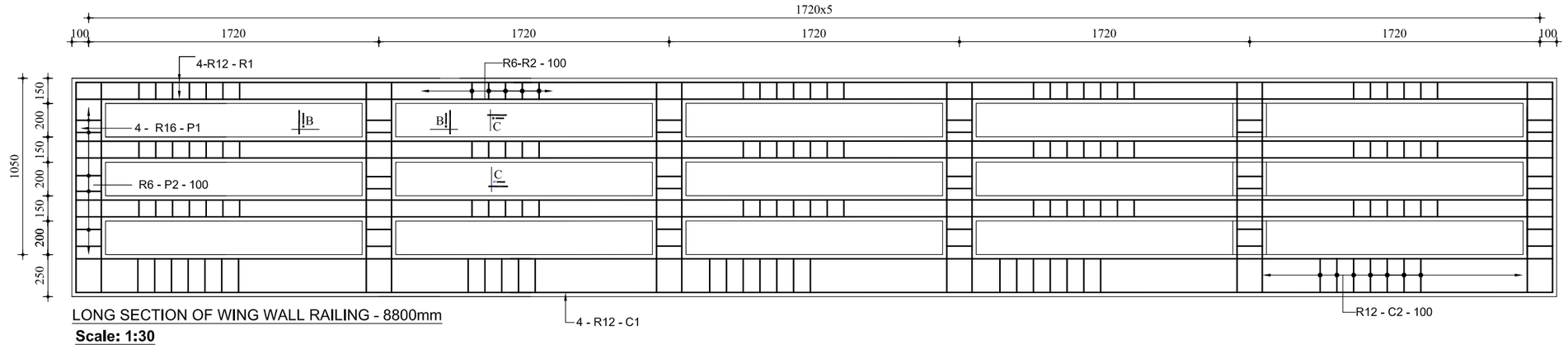
SECTION Y -Y

Scale: 1:20

NOTES:

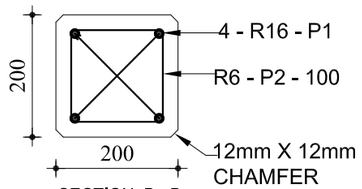
1. All dimensions are in millimeter unless otherwise mentioned.
2. Clear cover to main reinforcement bar is to be 50mm. unless otherwise mentioned.
3. 28 days cylinder strength of concrete: f 'c = 25.0N/mm² (3600 psi)
4. EF = Earth Face WF = Water Face

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	DESIGNED ,DRAWN & CHECKED BY PURAKAUSHAL PROJUKTI LIMITED House # C10, Road # 4 ,Banasree, Rampura- 1219. E-maill: pproiltd@yahoo.com	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	DRAWING TITLE Reinf. Details of Counter fort, Span 30m Abutment Height 7m. DRAWING NO. AB-61 PAGE NO. P-113



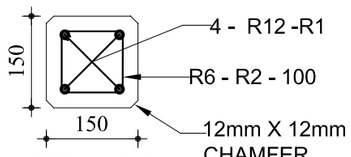
LONG SECTION OF WING WALL RAILING - 8800mm

Scale: 1:30



SECTION: B - B
RAIL POST

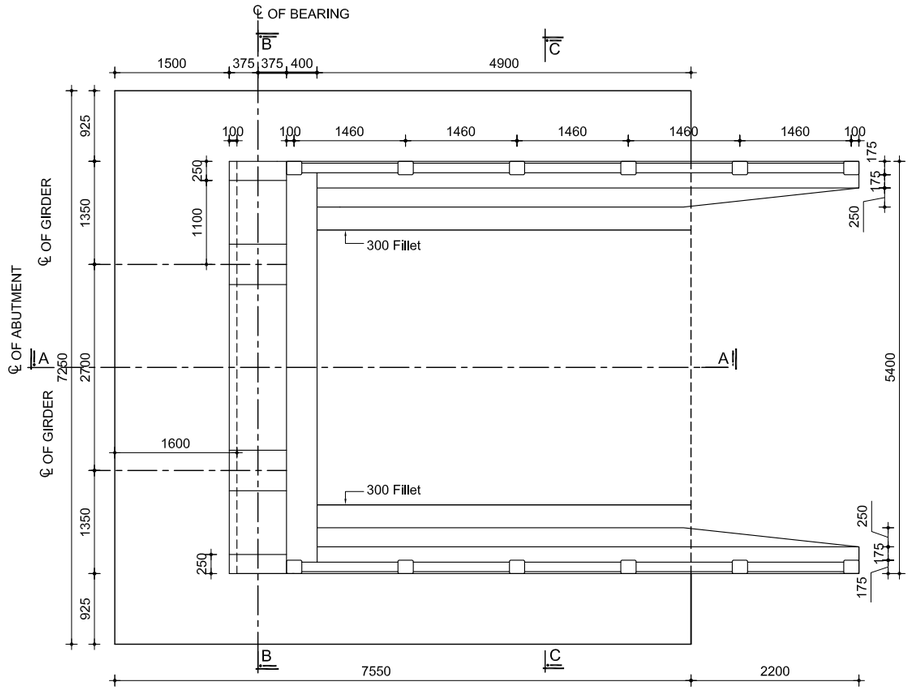
Scale: 1:10



SECTION: C - C
RAIL BAR

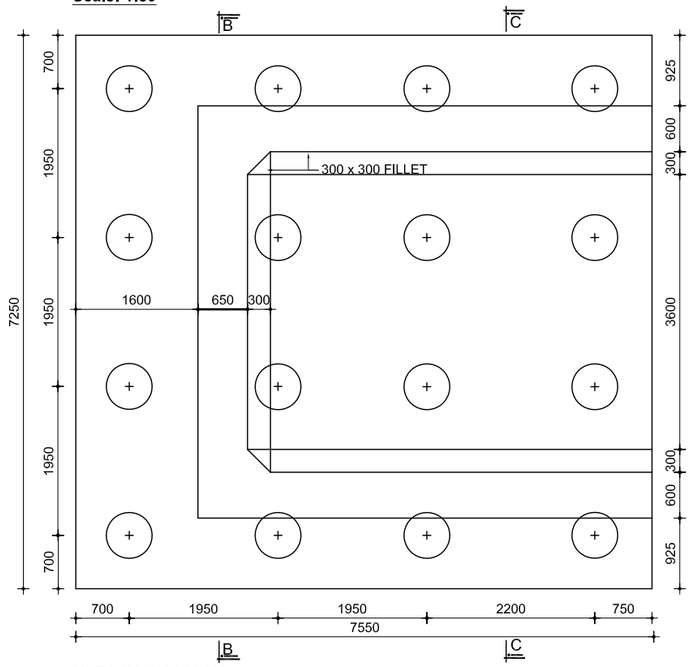
Scale: 1:10

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	DESIGNED ,DRAWN & CHECKED BY PURAKAUSHAL PROJUKTI LIMITED House # C10, Road # 4 ,Banasree, Rampura- 1219. E-maill: pproiltd@yahoo.com	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	DRAWING TITLE Details of Abutment Railing, Span 30m Abutment Height 7m. DRAWING NO. AB-62 PAGE NO. P-114



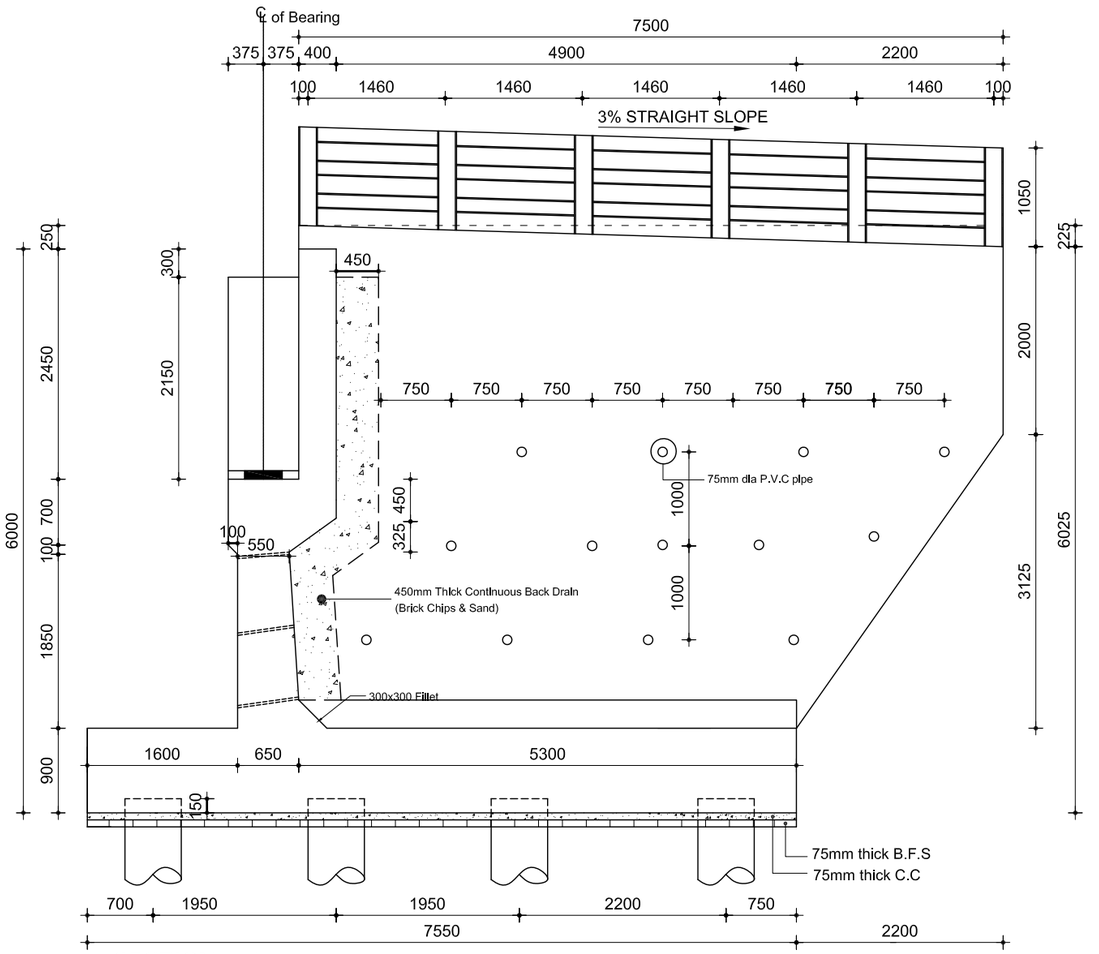
TOP PLAN OF ABUTMENT & WING WALL

Scale: 1:80



PILE LAY-OUT PLAN

Scale: 1:80



SECTION A-A

Scale: 1:65

NOTES:

1. Abutment Details for 20m span.
2. All dimensions are in millimeter unless otherwise mentioned.
3. Clear cover to main reinforcement bar is to be 50mm. unless otherwise mentioned.
4. 28 days cylinder strength of concrete: f 'c = 25.0N/mm² (3600 psi)
5. Yield strength of mild steel deformed bar fy = 413N/mm² (60000psi)

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH

LOCAL GOVERNMENT ENGINEERING DEPARTMENT

DESIGNED ,DRAWN & CHECKED BY

PURAKAUSHAL PROJUKTI LIMITED

House # C10, Road # 4 ,Banasree, Rampura- 1219.
E-maill: pproiltd@yahoo.com

NAME OF PROJECT:

LOCATION:

UPAZILA:

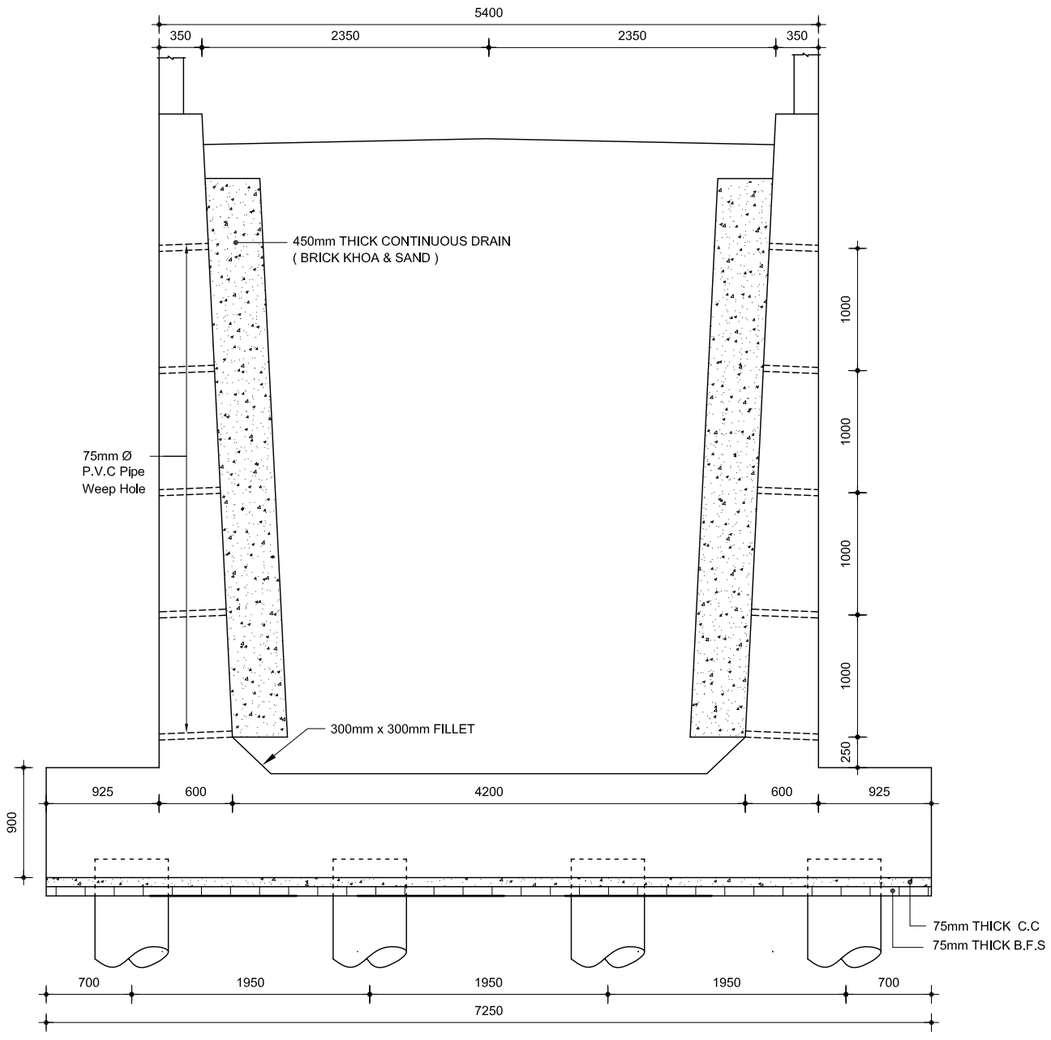
DISTRICT:

DRAWING TITLE

Details of Abutment
Span 35m Abutment Height 6.0m

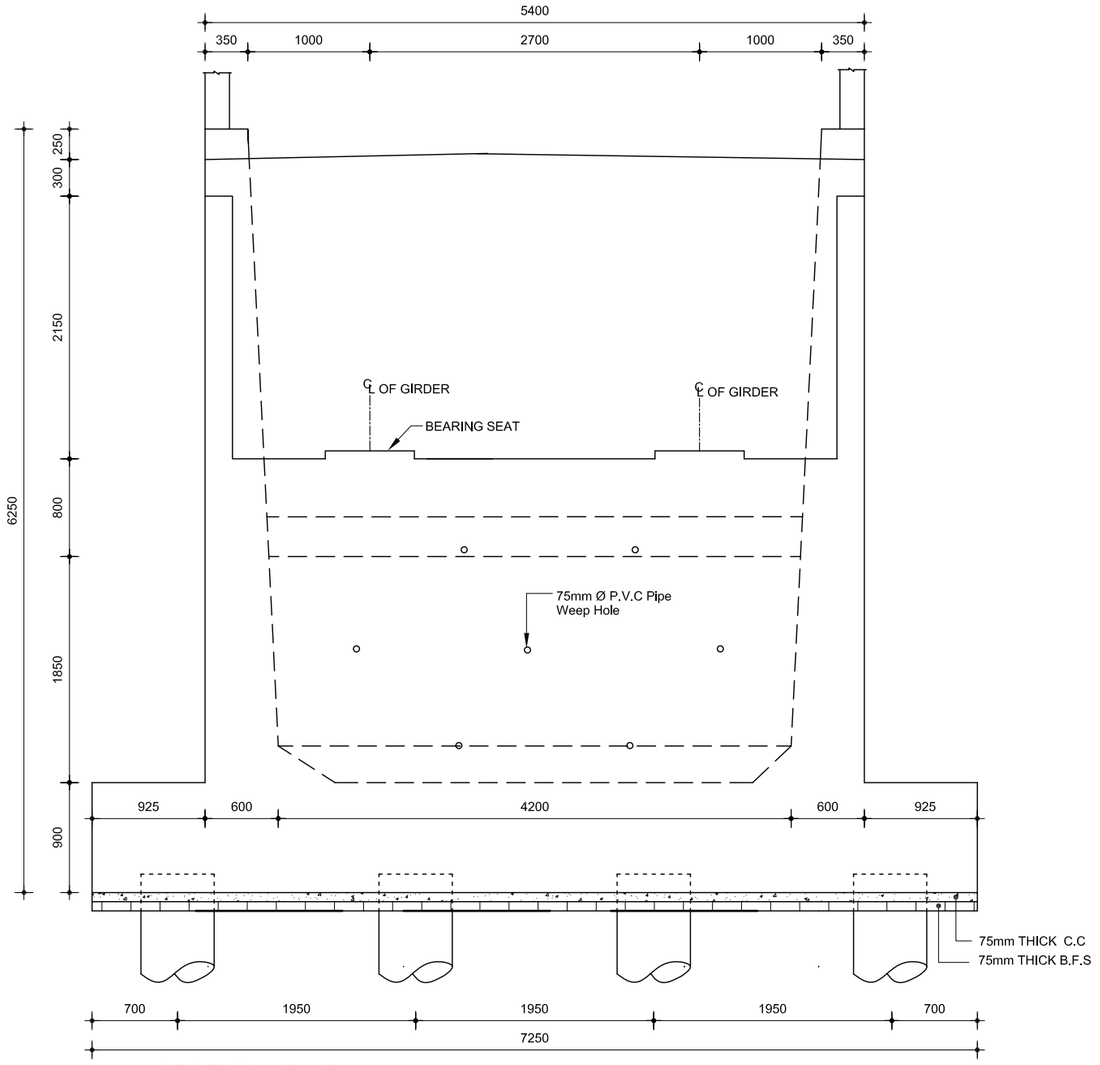
DRAWING NO. AB-63

PAGE NO. P-115



SECTION: C - C

Scale: 1:50



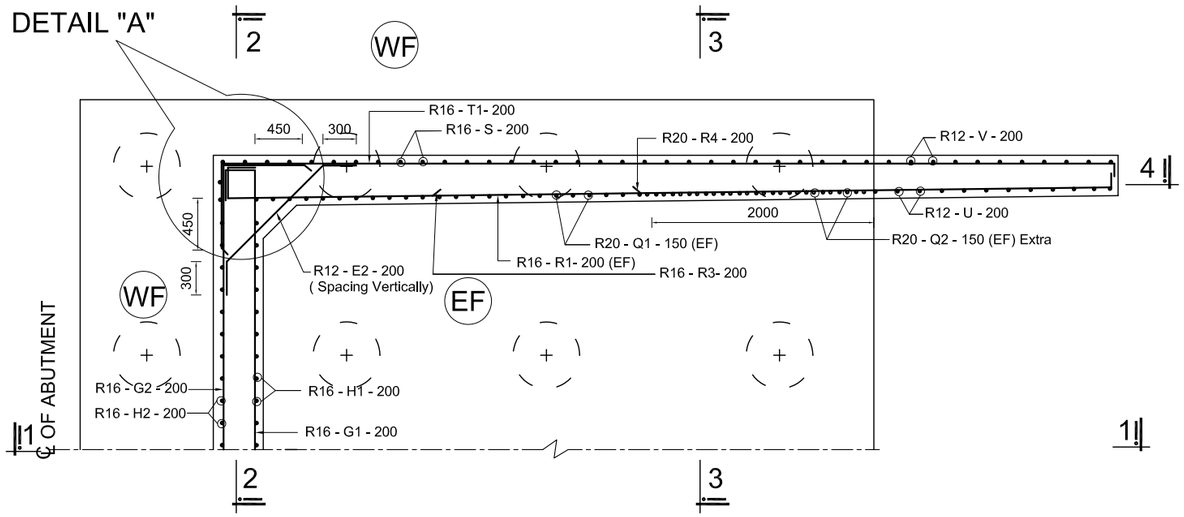
SECTION: B - B

Scale: 1:50

NOTES:

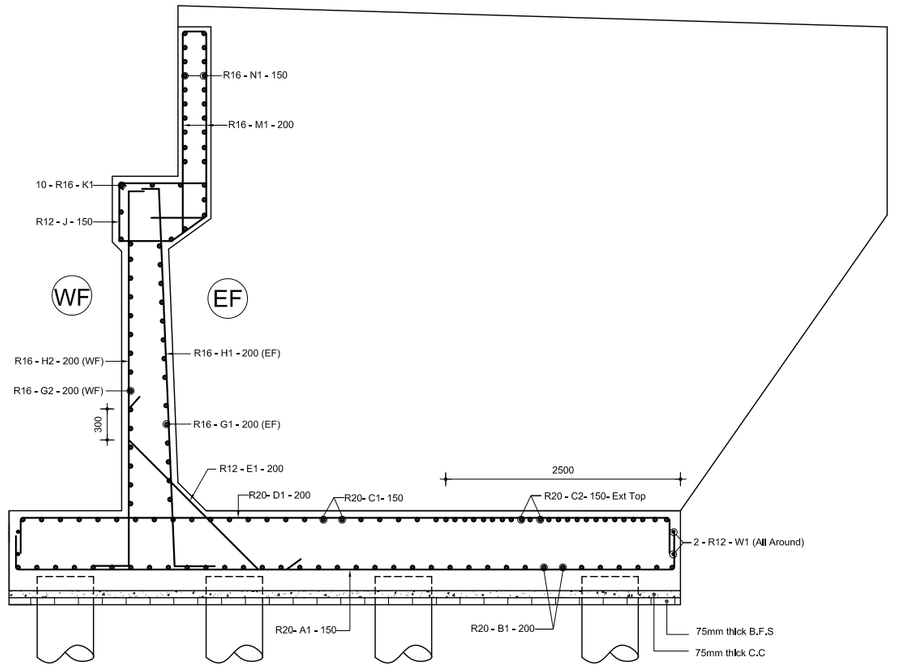
1. All dimensions are in millimeter unless otherwise mentioned.
2. Clear cover to main reinforcement bar is to be 50mm. unless otherwise mentioned.
3. 28 days cylinder strength of concrete: f 'c = 25.0N/mm² (3600 psi)
4. Yield strength of mild steel deformed bar fy = 413N/mm² (60000psi)

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	DESIGNED ,DRAWN & CHECKED BY PURAKAUSHAL PROJUKTI LIMITED House # C10, Road # 4 ,Banasree, Rampura- 1219. E-maill: pproiltd@yahoo.com	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	DRAWING TITLE Sectional Elevation of Abutment & Wing wall, Span 35m Abutment Height 6.0m DRAWING NO. AB-64 PAGE NO. P-116



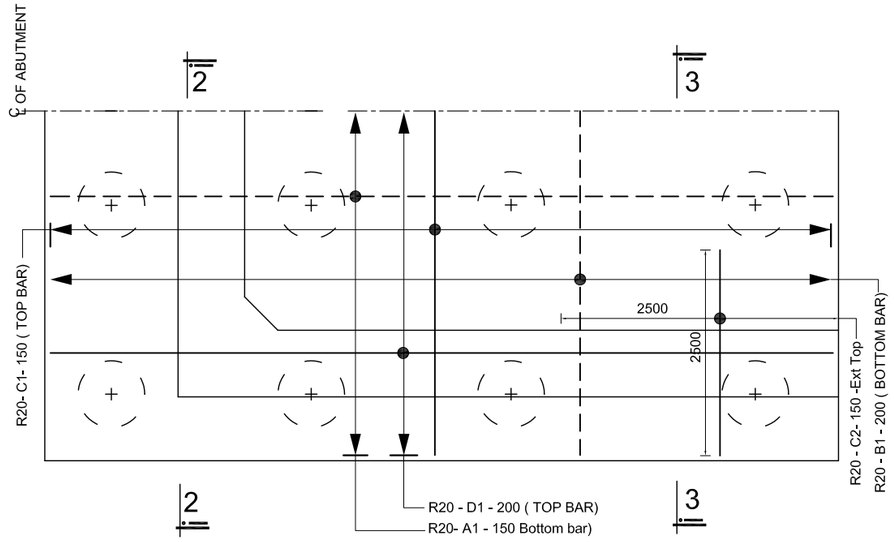
PLAN OF ABUTMENT & WINGWALL
SHOWING REINFORCEMENT

Scale: 1:55



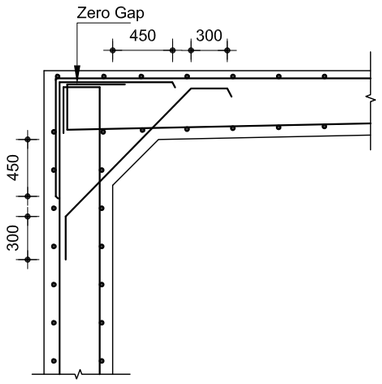
CROSS SECTION OF ABUTMENT (SECTION 1-1)
SHOWING REINFORCEMENT DETAILS

Scale: 1:65



PLAN OF PILE CAP
SHOWING REINFORCEMENT

Scale: 1:55



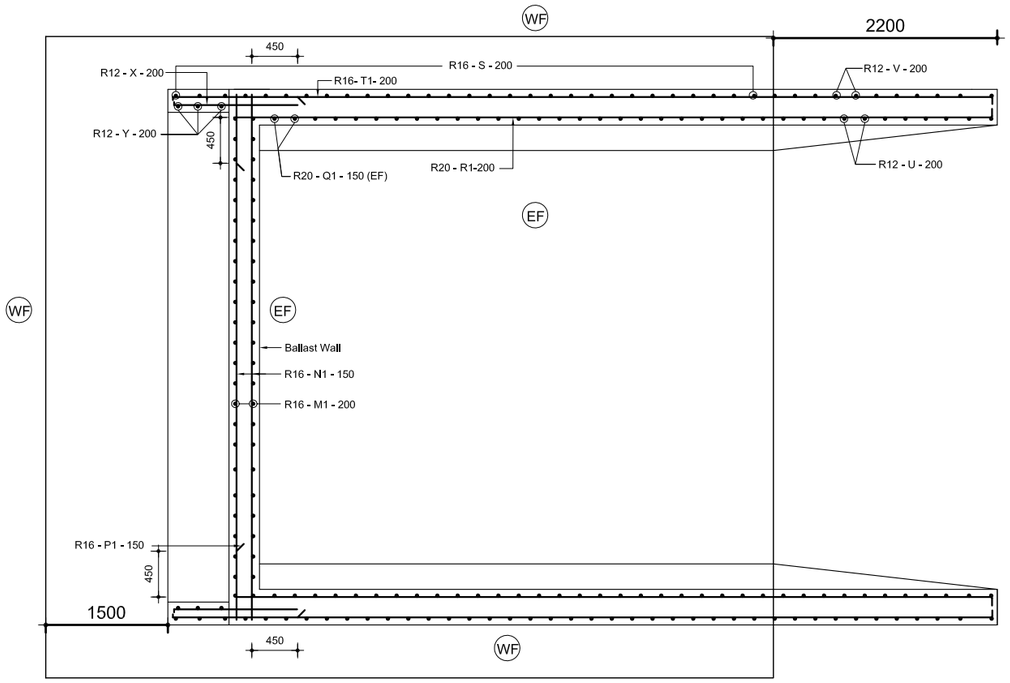
DETAIL "A"

Scale: 1:40

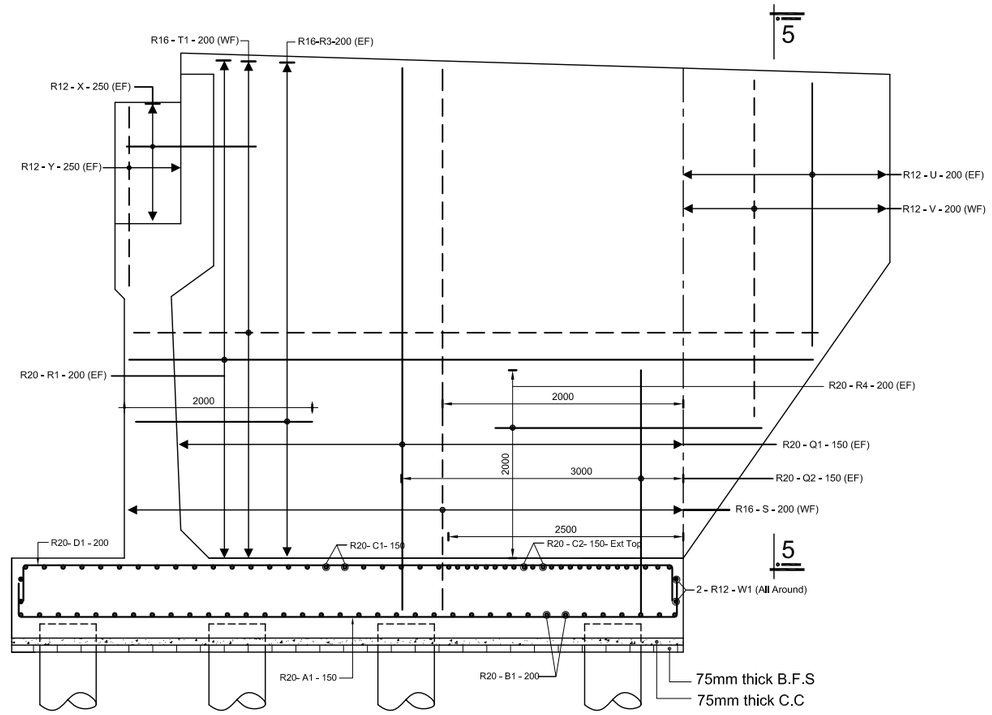
NOTES:

1. Clear cover to main reinforcement bar is to be 50mm. unless otherwise mentioned.
2. 28 days cylinder strength of concrete: f 'c = 25.0N/mm² (3600 psi)
3. Yield strength of mild steel deformed bar fy = 413N/mm² (60000psi)
4. EF = Earth Face WF = Water Face

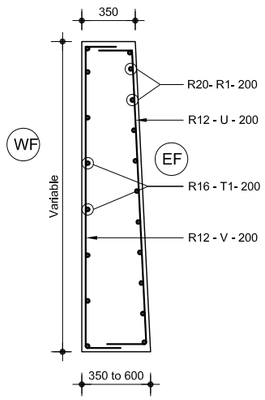
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	DESIGNED ,DRAWN & CHECKED BY PURAKAUSHAL PROJUKTI LIMITED House # C10, Road # 4 ,Banasree, Rampura- 1219. E-maill: pproiltd@yahoo.com	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	DRAWING TITLE Reinf. Details of Abutment & Wing wall, Span 35m Abutment Height 6.0m DRAWING NO. AB-65 PAGE NO. P-117



TOP PLAN OF BALLAST WALL & WINGWALL
SHOWING TOP REINFORCEMENT
Scale: 1:60



SECTIONAL ELEVATION OF WINGWALL (SEC. 4 - 4)
SHOWING REINFORCEMENT
Scale: 1:65

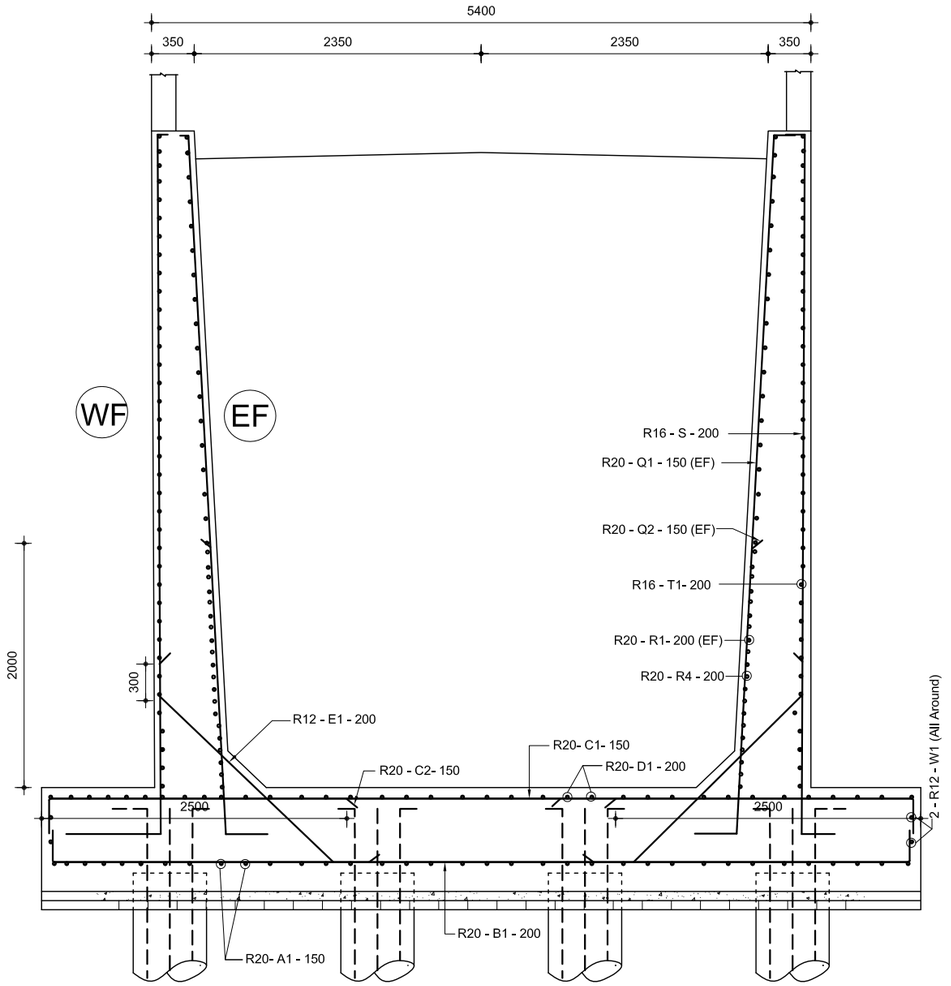


SEC. 5 - 5
Scale: 1:40

NOTES:

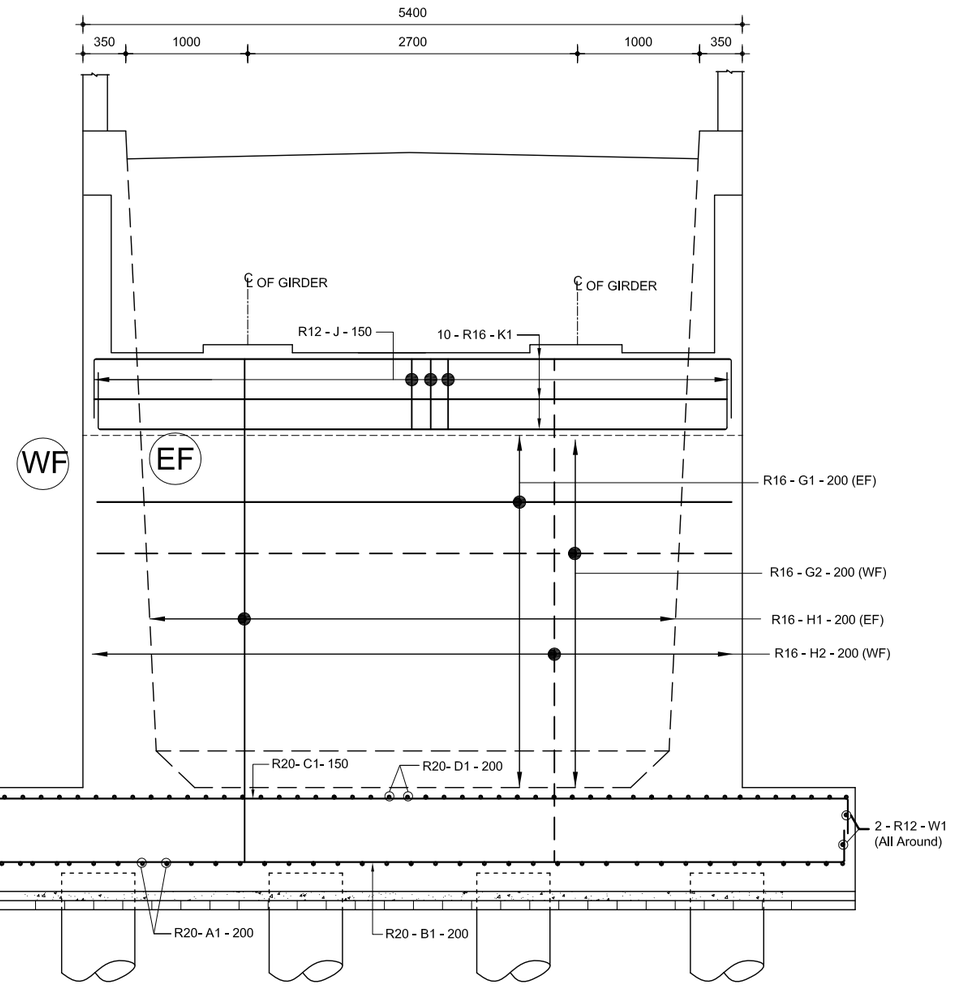
1. Clear cover to main reinforcement bar is to be 50mm. unless otherwise mentioned.
2. 28 days cylinder strength of concrete: f 'c = 25.0N/mm² (3600 psi)
3. Yield strength of mild steel deformed bar fy = 413N/mm² (60000psi)
4. EF = Earth Face, WF = Water Face

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	DESIGNED ,DRAWN & CHECKED BY PURAKAUSHAL PROJUKTI LIMITED House # C10, Road # 4 ,Banasree, Rampura- 1219. E-maill: pproiltd@yahoo.com	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	DRAWING TITLE Reinf. Details of Abutment & Wing wall, Span 35m Abutment Height 6.0m DRAWING NO. AB-66 PAGE NO. P-118



CROSS SECTION OF WINGWALL (SEC. 3 - 3)
SHOWING REINFORCEMENT

Scale: 1:50



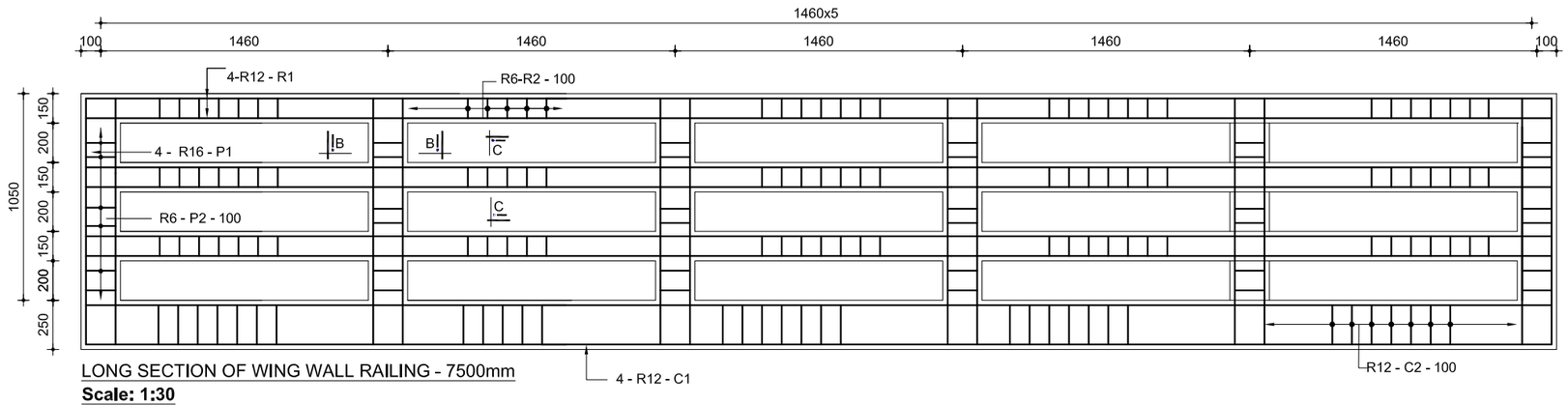
SECTIONAL FRONT ELEVATION OF ABUTMENT (SEC. 2 - 2)
SHOWING REINFORCEMENT

Scale: 1:50

NOTES:

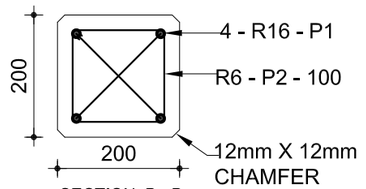
1. Clear cover to main reinforcement bar is to be 50mm. unless otherwise mentioned.
2. 28 days cylinder strength of concrete: f 'c = 25.0N/mm² (3600 psi)
3. Yield strength of mild steel deformed bar fy = 413N/mm² (60000psi)
4. EF = Earth Face, WF = Water Face

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	DESIGNED ,DRAWN & CHECKED BY PURAKAUSHAL PROJUKTI LIMITED House # C10, Road # 4 ,Banasree, Rampura- 1219. E-maill: pproiltd@yahoo.com	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	DRAWING TITLE Cross Section of Wing wall Showing Reinf. Details, Span 35m Abutment Height 6.0m DRAWING NO. AB-67 PAGE NO. P-119



LONG SECTION OF WING WALL RAILING - 7500mm

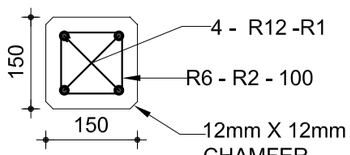
Scale: 1:30



SECTION: B - B

RAIL POST

Scale: 1:10

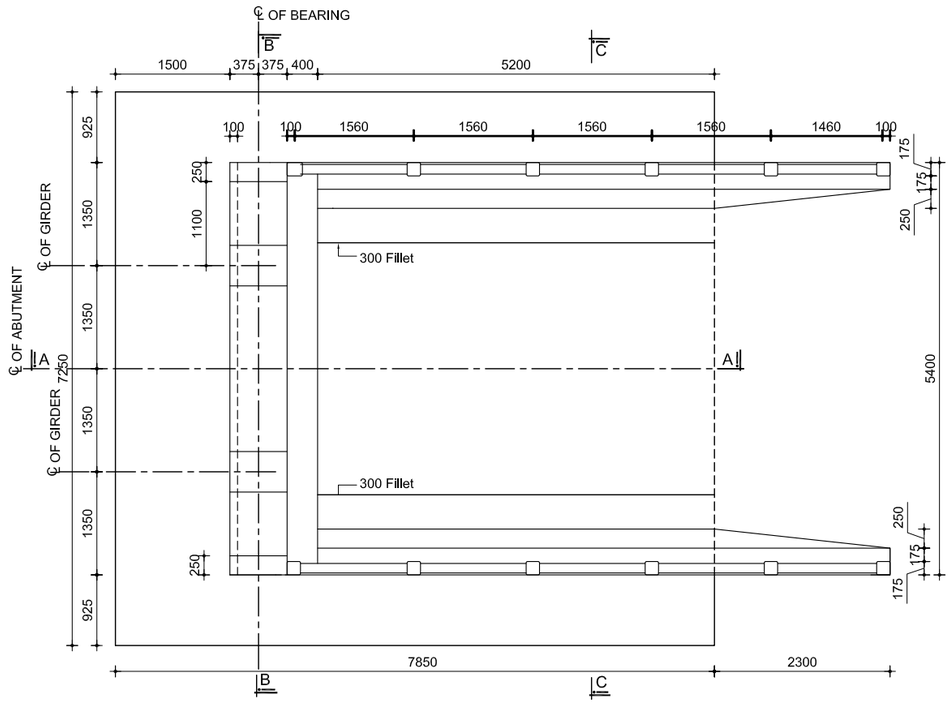


SECTION: C - C

RAIL BAR

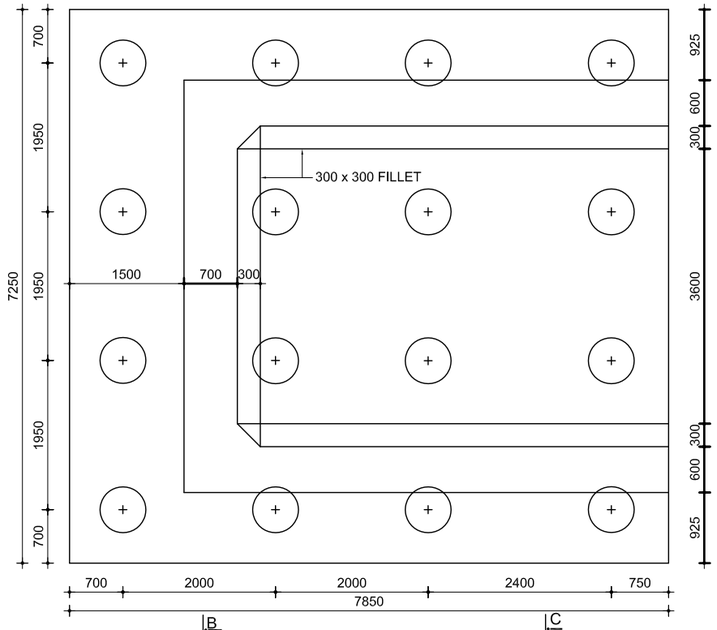
Scale: 1:10

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	DESIGNED ,DRAWN & CHECKED BY PURAKAUSHAL PROJUKTI LIMITED House # C10, Road # 4 ,Banasree, Rampura- 1219. E-maill: pproiltd@yahoo.com	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	DRAWING TITLE Details of Abutment Railing, Span 35m Abutment Height 6.0m DRAWING NO. AB-68 PAGE NO. 120



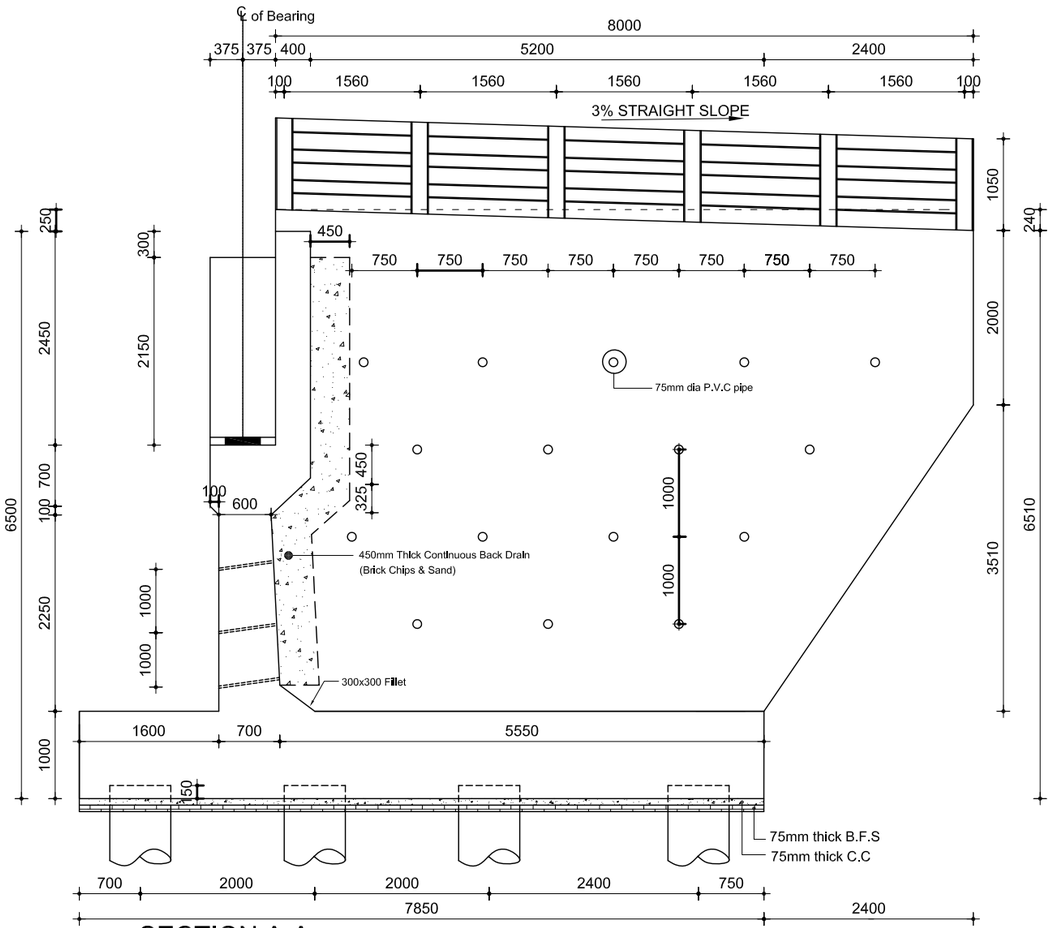
TOP PLAN OF ABUTMENT & WING WALL

Scale: 1:80



PILE LAY-OUT PLAN

Scale: 1:80



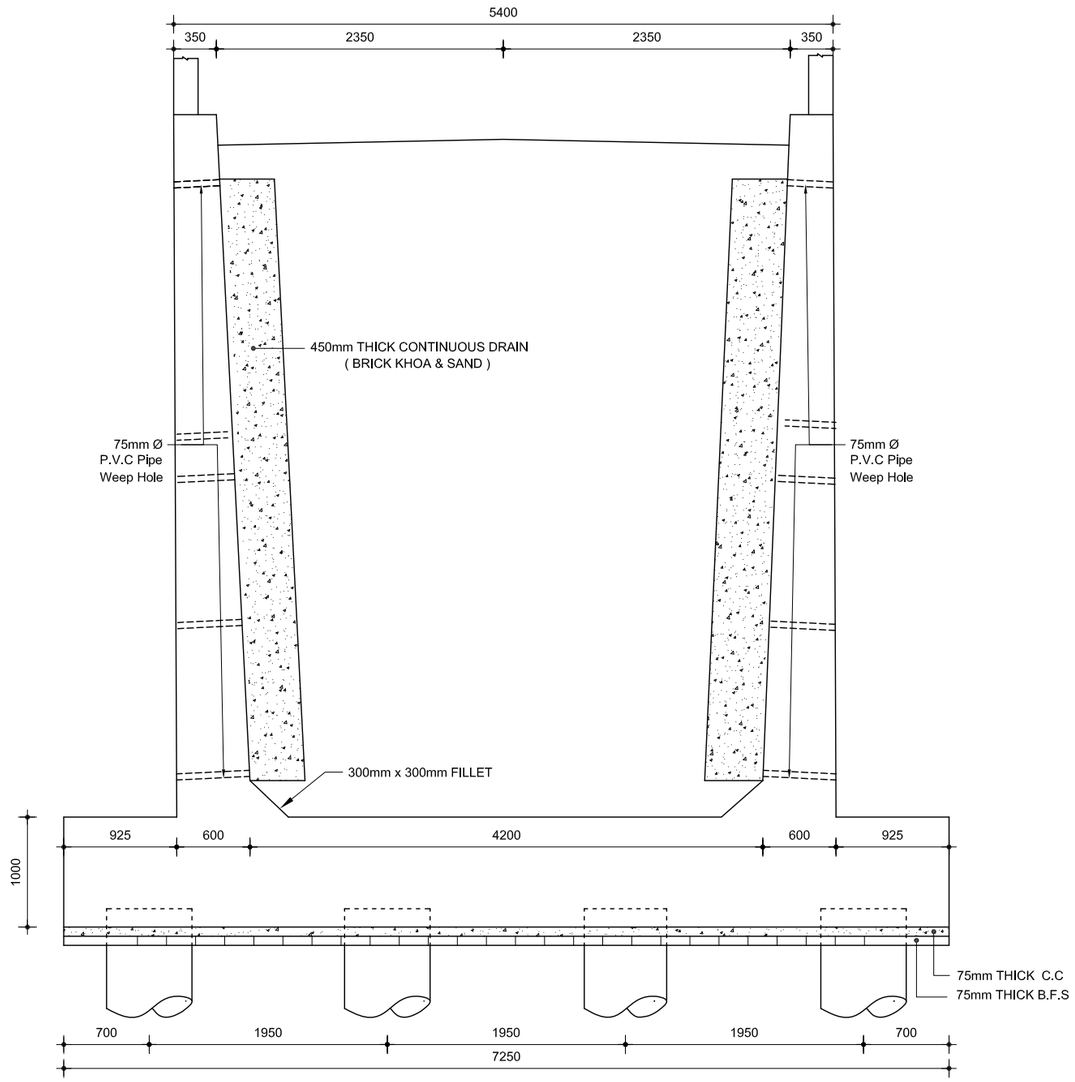
SECTION A-A

Scale: 1:70

NOTES:

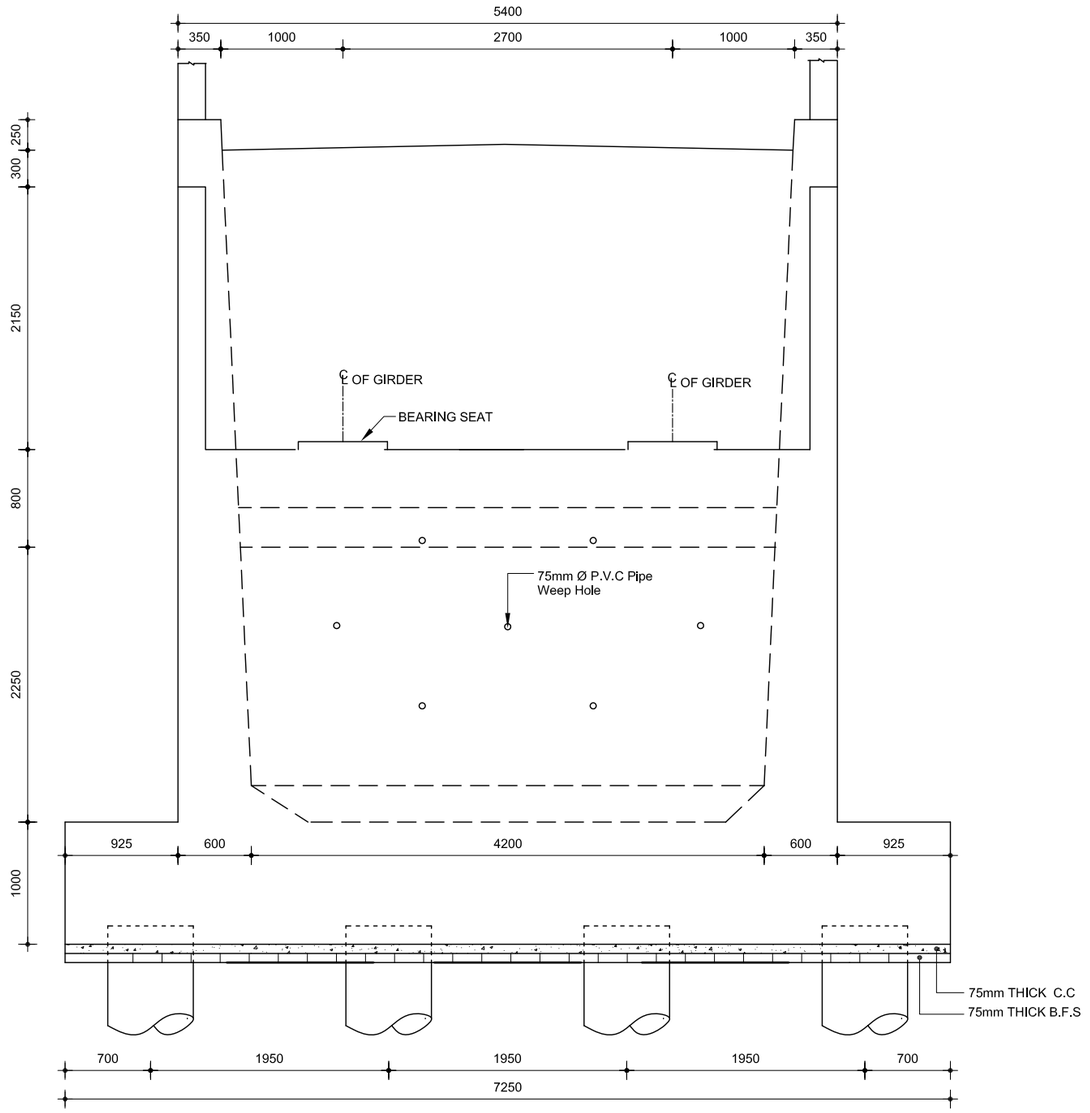
1. Abutment Details for 20m. span.
2. All dimensions are in millimeter unless otherwise mentioned.
3. Clear cover to main reinforcement bar is to be 50mm. unless otherwise mentioned.
4. 28 days cylinder strength of concrete: f 'c = 25.0N/mm² (3600 psi)
5. Yield strength of mild steel deformed bar fy = 413N/mm² (60000psi)

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	DESIGNED ,DRAWN & CHECKED BY		DRAWING TITLE
	PURAKAUSHAL PROJUKTI LIMITED	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	Details of Abutment Span 35m Abutment Height 6.5m DRAWING NO. AB-69 PAGE NO. P-121



SECTION: C - C

Scale: 1:50



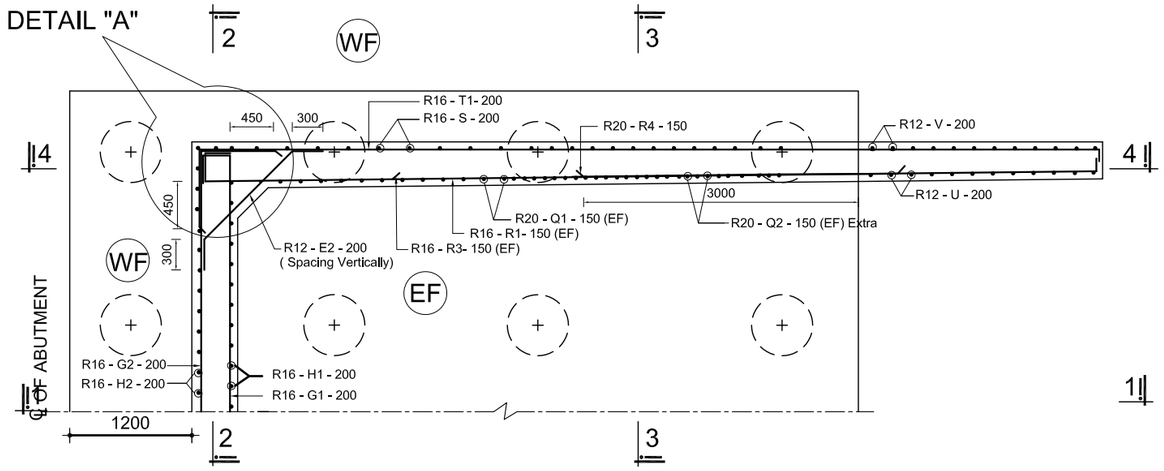
SECTION: B - B

Scale: 1:50

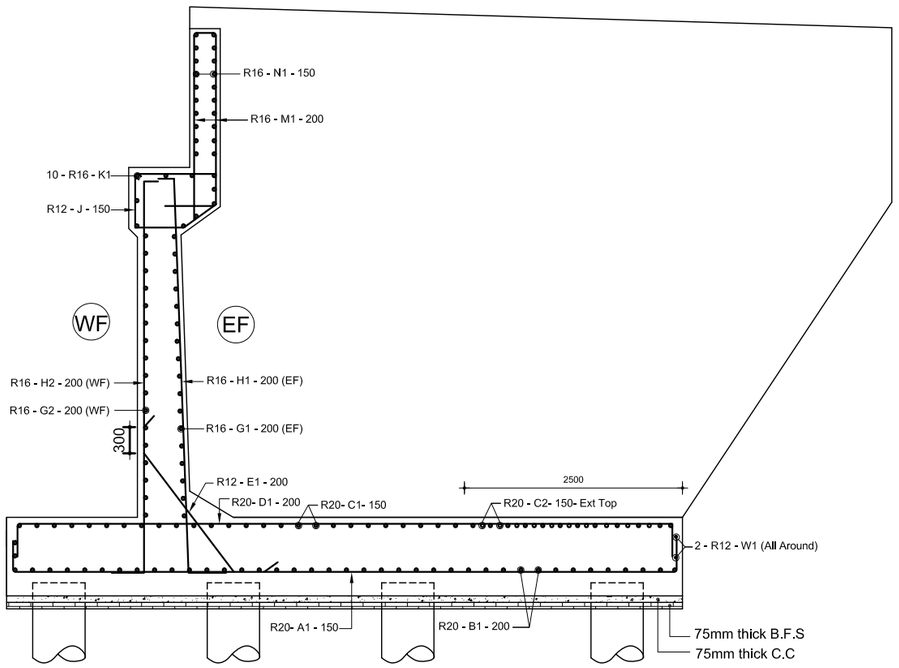
NOTES:

1. All dimensions are in millimeter unless otherwise mentioned.
2. Clear cover to main reinforcement bar is to be 50mm. unless otherwise mentioned.
3. 28 days cylinder strength of concrete: f 'c = 25.0N/mm² (3600 psi)
4. Yield strength of mild steel deformed bar fy = 413N/mm² (60000psi)

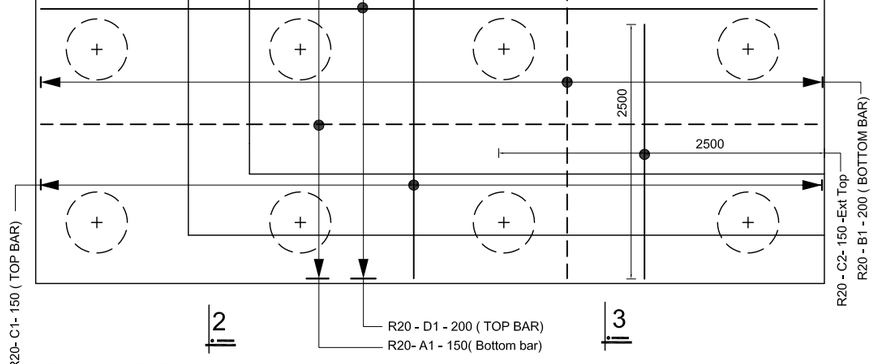
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	DESIGNED ,DRAWN & CHECKED BY PURAKAUSHAL PROJUKTI LIMITED	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	DRAWING TITLE Sectional Elevation of Abutment & Wing wall, Span 35m Abutment Height 6.5m DRAWING NO. AB-70 PAGE NO. P-122



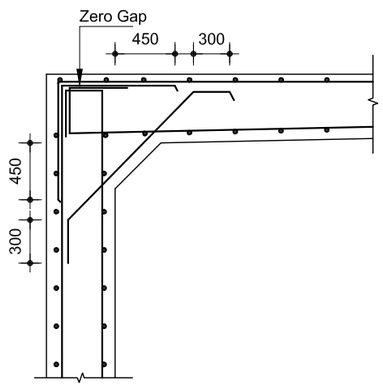
PLAN OF ABUTMENT & WINGWALL
SHOWING REINFORCEMENT
Scale: 1:60



CROSS SECTION OF ABUTMENT (SECTION 1-1)
SHOWING REINFORCEMENT DETAILS
Scale: 1:70



PLAN OF PILE CAP
SHOWING REINFORCEMENT
Scale: 1:60

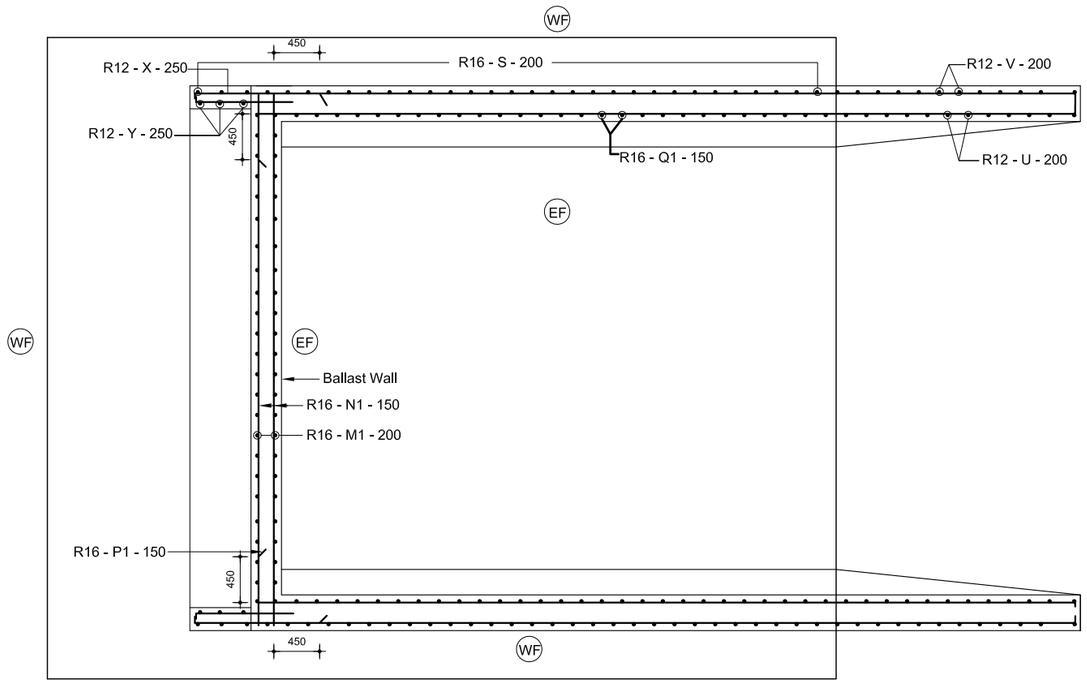


DETAIL "A"
Scale: 1:40

NOTES:

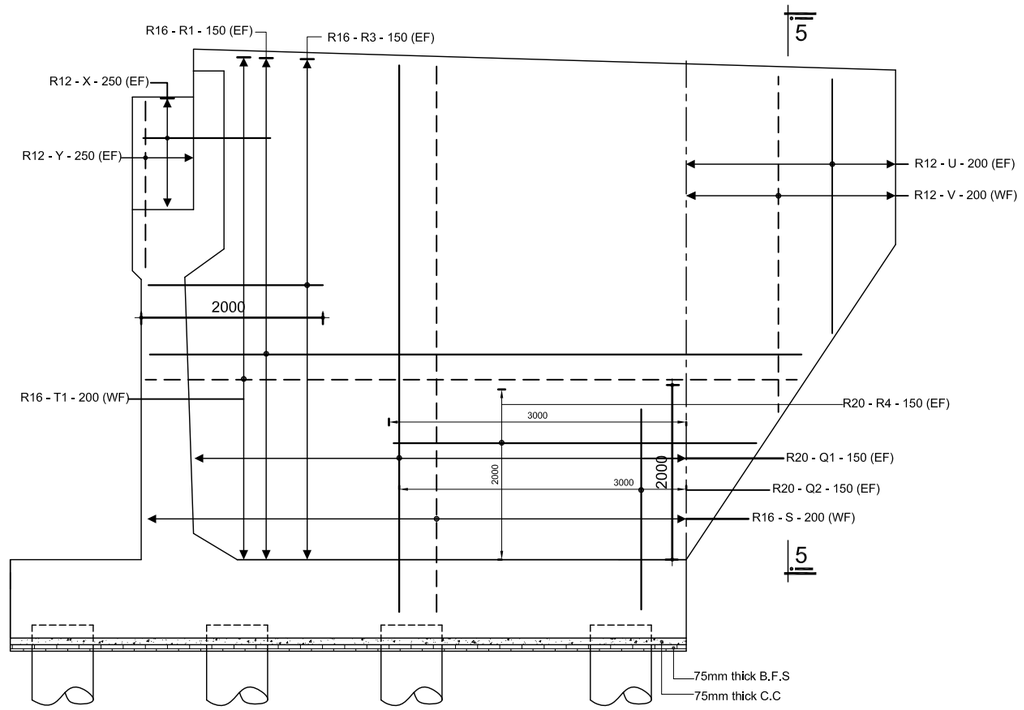
1. Clear cover to main reinforcement bar is to be 50mm. unless otherwise mentioned.
2. 28 days cylinder strength of concrete: f 'c = 25.0N/mm² (3600 psi)
3. Yield strength of mild steel deformed bar fy = 413N/mm² (60000psi)
4. EF = Earth Face WF = Water Face

	DESIGNED ,DRAWN & CHECKED BY		DRAWING TITLE
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	PURAKAUSHAL PROJUKTI LIMITED	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	Reinf. Details of Abutment & Wing wall, Span 35m Abutment Height 6.5m DRAWING NO. AB-71 PAGE NO. P-123



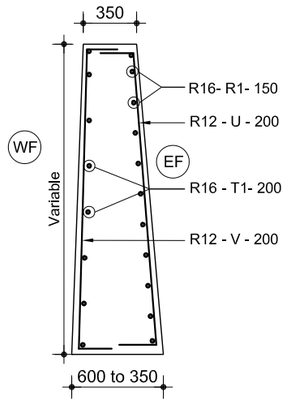
TOP PLAN OF BALLAST WALL & WINGWALL
SHOWING TOP REINFORCEMENT

Scale: 1:60



SECTIONAL ELEVATION OF WINGWALL (SEC. 4 - 4)
SHOWING REINFORCEMENT

Scale: 1:70



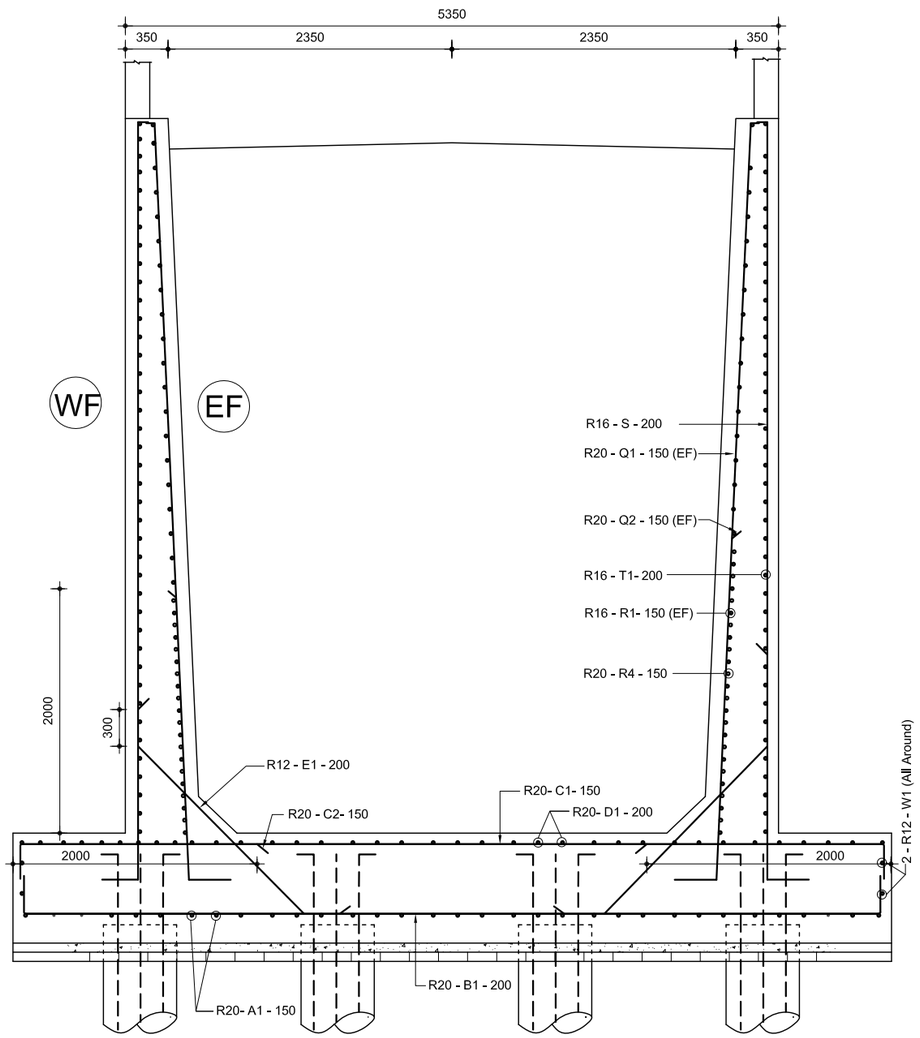
SEC. 5 - 5

Scale: 1:40

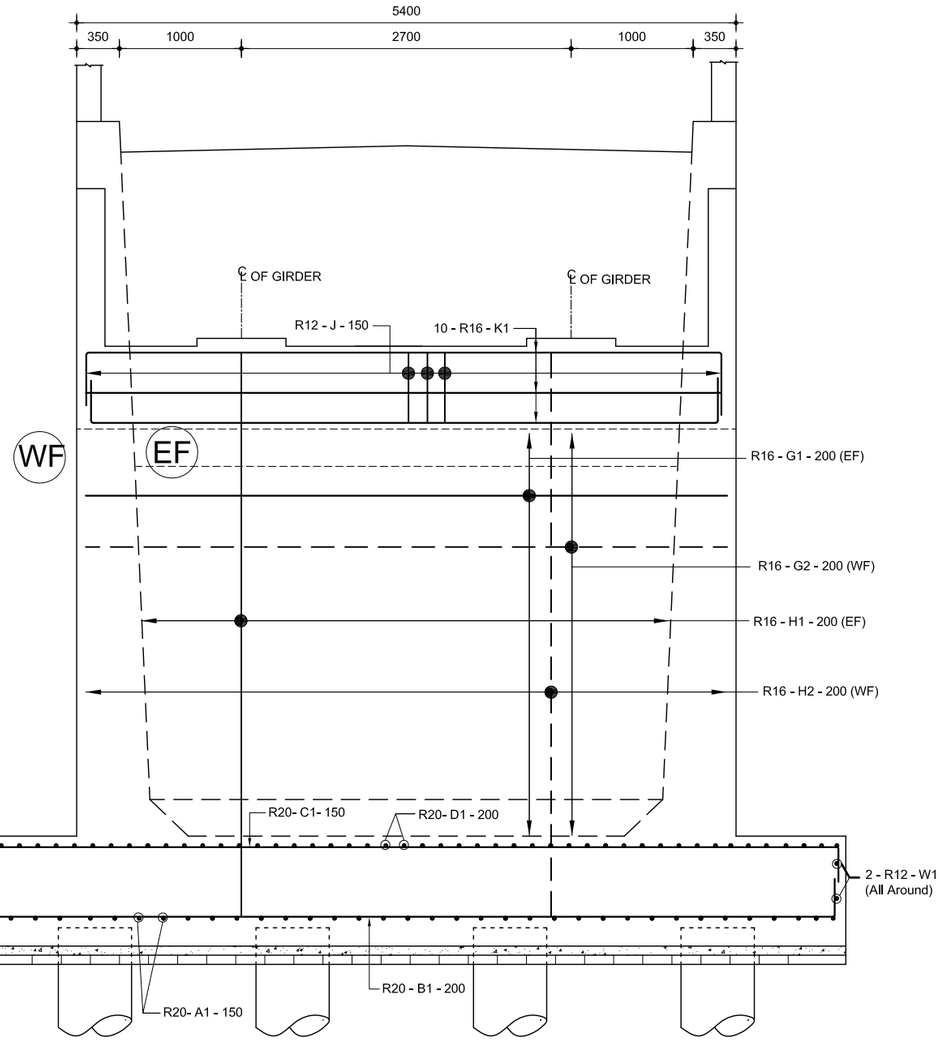
NOTES:

1. Clear cover to main reinforcement bar is to be 50mm. unless otherwise mentioned.
2. 28 days cylinder strength of concrete: f 'c = 25.0N/mm² (3600 psi)
3. Yield strength of mild steel deformed bar fy = 413N/mm² (60000psi)
4. EF = Earth Face, WF = Water Face

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	DESIGNED ,DRAWN & CHECKED BY		DRAWING TITLE
	PURAKAUSHAL PROJUKTI LIMITED	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	Reinf. Details of Abutment & Wing wall, Span 35m Abutment Height 6.5m DRAWING NO. AB-72 PAGE NO. P-124



CROSS SECTION OF WINGWALL (SEC. 3 - 3)
SHOWING REINFORCEMENT
Scale: 1:50

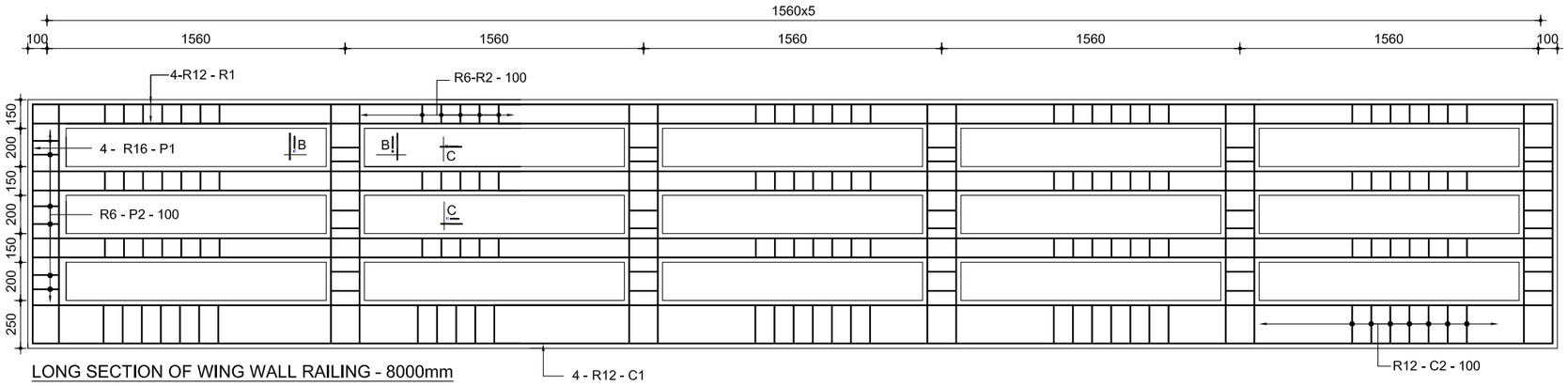


SECTIONAL FRONT ELEVATION OF ABUTMENT (SEC. 2 - 2)
SHOWING REINFORCEMENT
Scale: 1:50

NOTES:

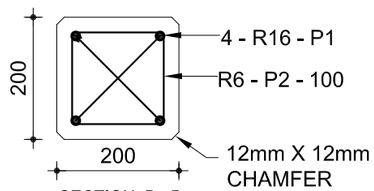
1. Clear cover to main reinforcement bar is to be 50mm. unless otherwise mentioned.
2. 28 days cylinder strength of concrete: f 'c = 25.0N/mm² (3600 psi)
3. Yield strength of mild steel deformed bar fy = 413N/mm² (60000psi)
4. EF = Earth Face, WF = Water Face

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	DESIGNED ,DRAWN & CHECKED BY PURAKAUSHAL PROJUKTI LIMITED	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	DRAWING TITLE Cross Section of Wing wall Showing Reinf. Details, Span 35m Abutment Height 6.5m DRAWING NO. AB-73 PAGE NO. P-125



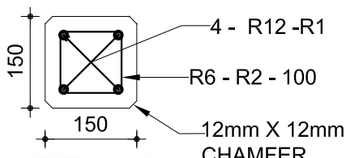
LONG SECTION OF WING WALL RAILING - 8000mm

Scale: 1:30



SECTION: B - B
RAIL POST

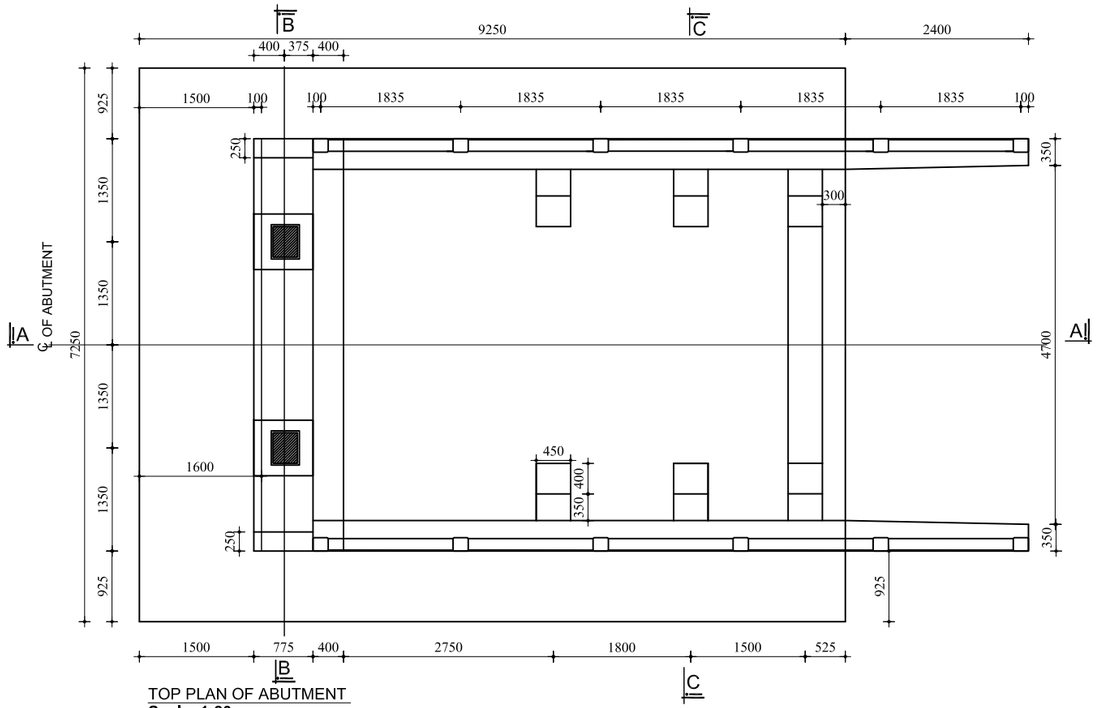
Scale: 1:10



SECTION: C - C
RAIL BAR

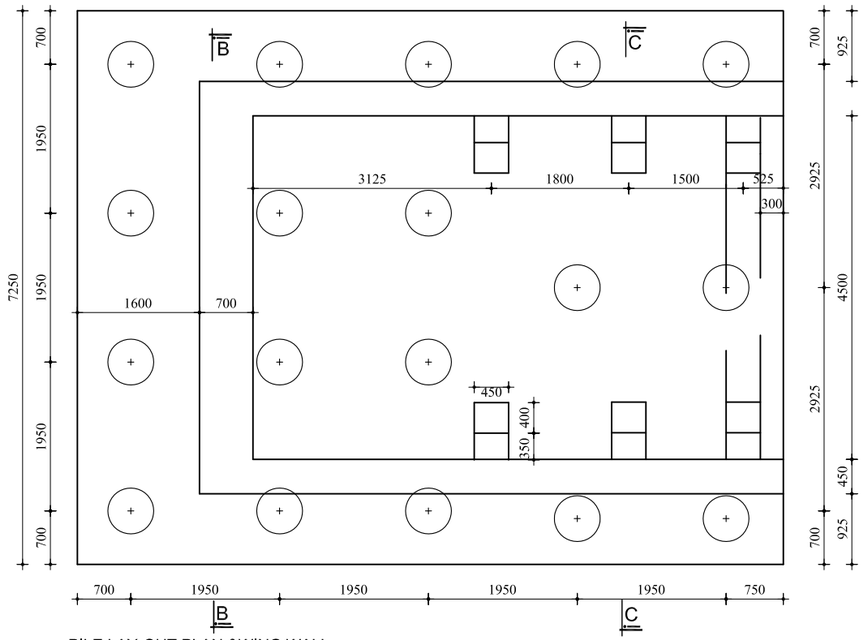
Scale: 1:10

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	DESIGNED ,DRAWN & CHECKED BY		DRAWING TITLE
	PURAKAUSHAL PROJUKTI LIMITED	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	Details of Abutment Railing, Span 35m Abutment Height 6.5m DRAWING NO. AB-74 PAGE NO. P-126



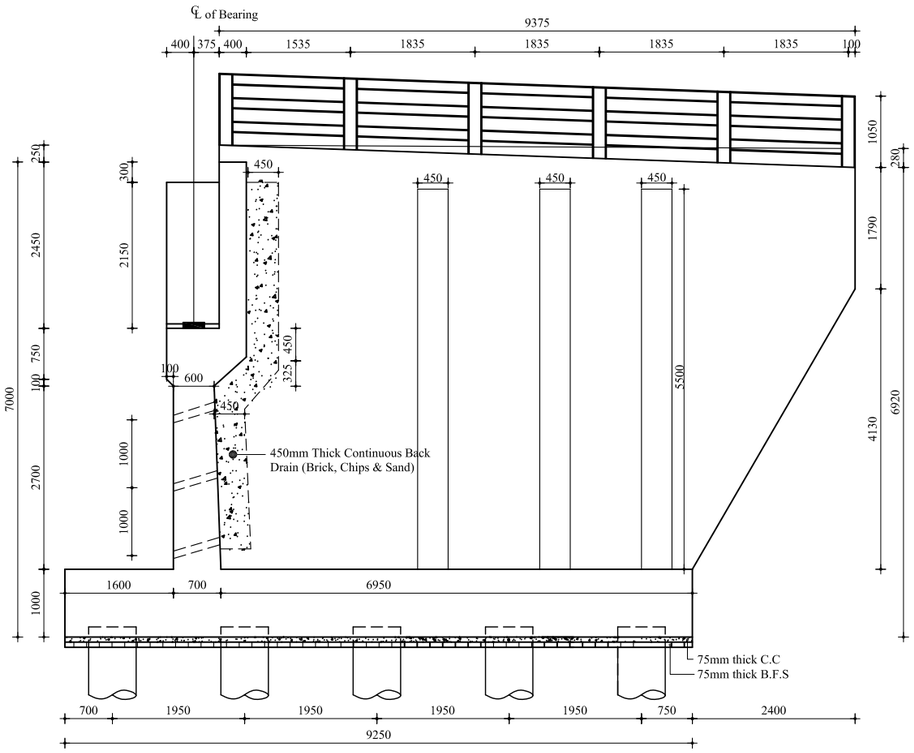
TOP PLAN OF ABUTMENT

Scale: 1:80



PILE LAY-OUT PLAN &WING WALL

Scale: 1:80



SECTION A-A

Scale: 1:90

NOTES:

1. Abutment Details for 35m span.
3. All dimensions are in millimeter unless otherwise mentioned.
4. Clear cover to main reinforcement bar is to be 50mm. unless otherwise mentioned.
5. 28 days cylinder strength of concrete: f 'c = 25.0N/mm² (3600 psi)
6. Yield strength of mild steel deformed bar fy = 413N/mm² (60000psi)

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH

LOCAL GOVERNMENT ENGINEERING DEPARTMENT

DESIGNED ,DRAWN & CHECKED BY

PURAKAUSHAL PROJUKTI LIMITED

House # C10, Road # 4 ,Banasree, Rampura- 1219.
E-maill: pproiltd@yahoo.com

NAME OF PROJECT:

LOCATION:

UPAZILA:

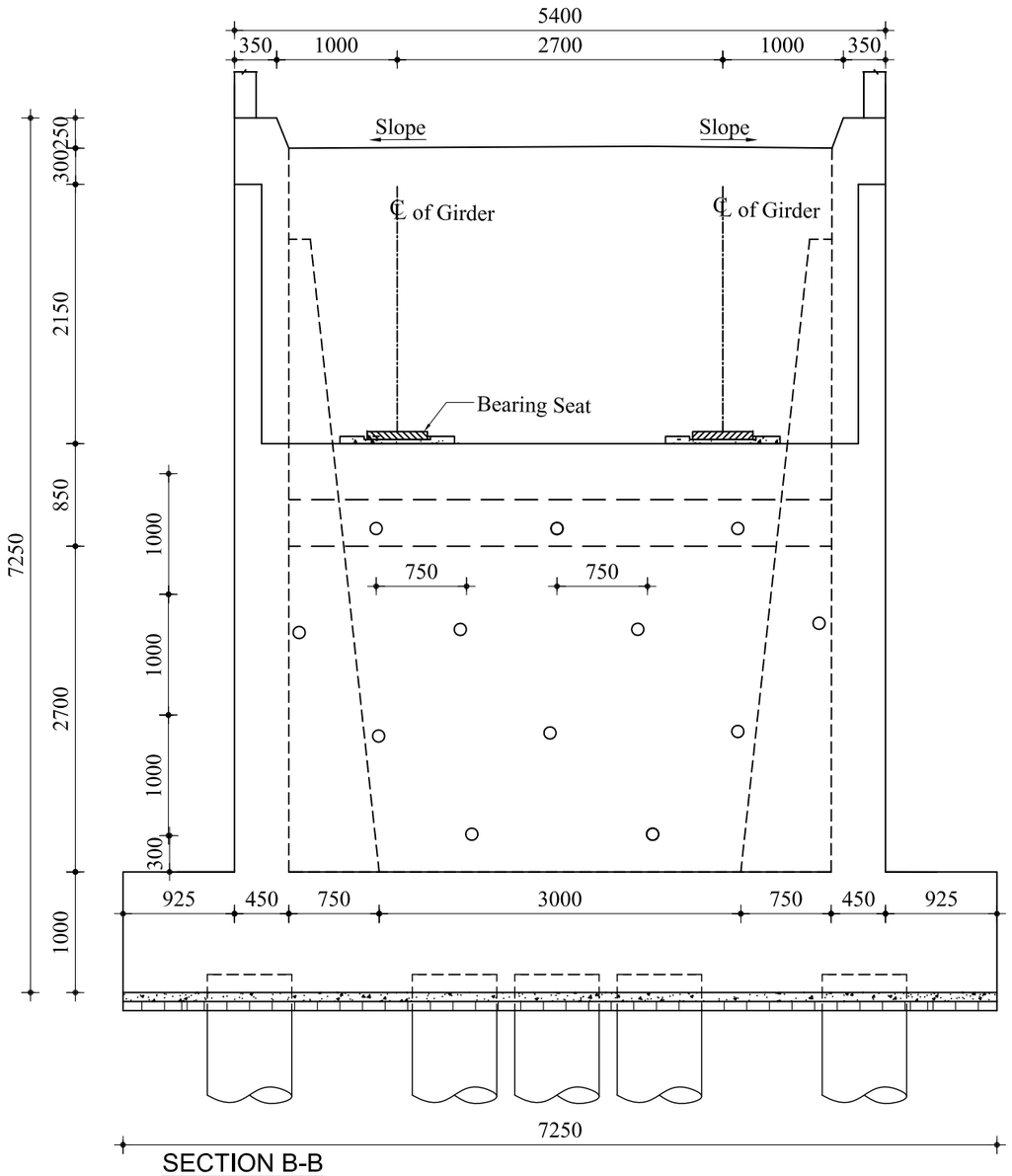
DISTRICT:

DRAWING TITLE

Details of Abutment
Span 35m Abutment Height 7.0m

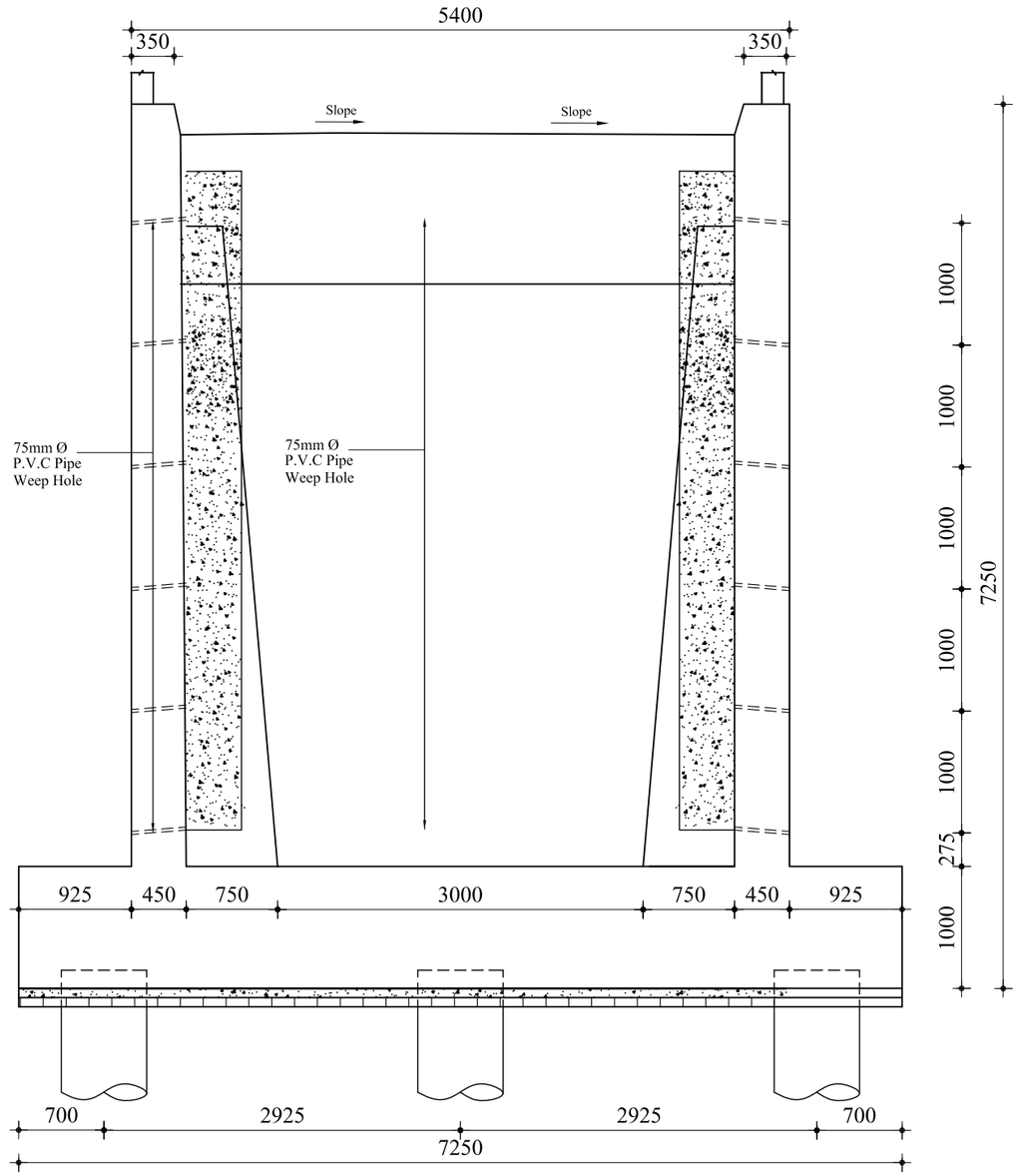
DRAWING NO. AB-75

PAGE NO. P-127



SECTION B-B

Scale: 1:50



SECTION C-C

Scale: 1:50

NOTES:

1. All dimensions are in millimeter unless otherwise mentioned.
2. Clear cover to main reinforcement bar is to be 50mm. unless otherwise mentioned.
3. 28 days cylinder strength of concrete: f 'c = 25.0N/mm² (3600 psi)
4. Yield strength of mild steel deformed bar fy = 413N/mm² (60000psi)

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH

LOCAL GOVERNMENT ENGINEERING DEPARTMENT

DESIGNED ,DRAWN & CHECKED BY

PURAKAUSHAL PROJUKTI LIMITED

House # C10, Road # 4 ,Banasree, Rampura- 1219.
E-maill: pproiltd@yahoo.com

NAME OF PROJECT:

LOCATION:

UPAZILA:

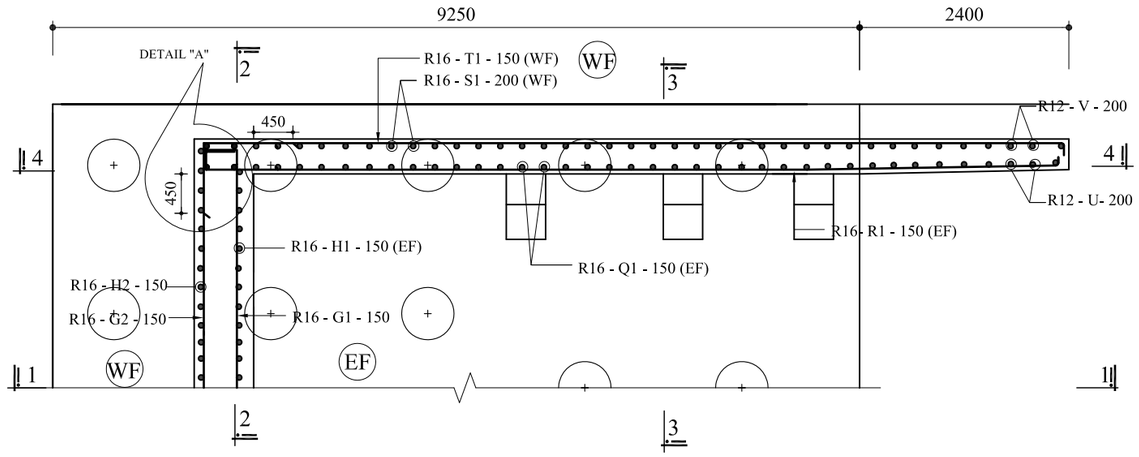
DISTRICT:

DRAWING TITLE

Sectional Elevation of Abutment & Wing wall, Span 35m Abutment Height 7.0m

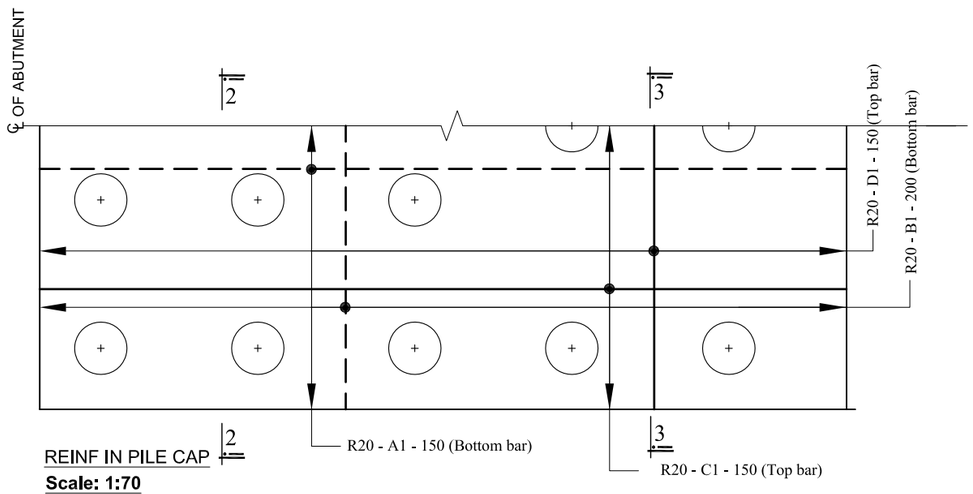
DRAWING NO. AB-76

PAGE NO. P-128



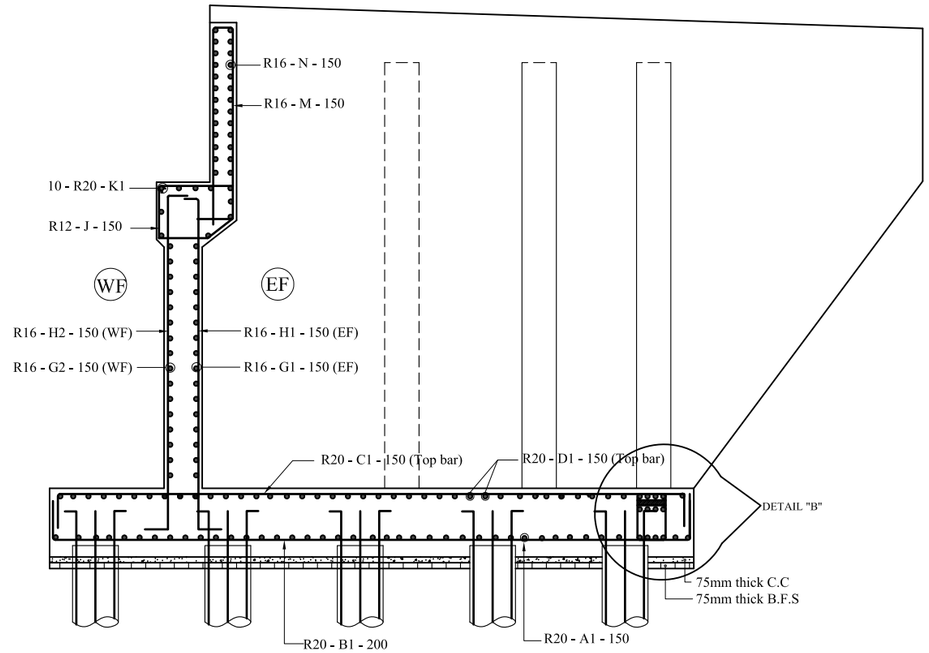
REINF IN ABUTMENT & WING WALL

Scale: 1:70



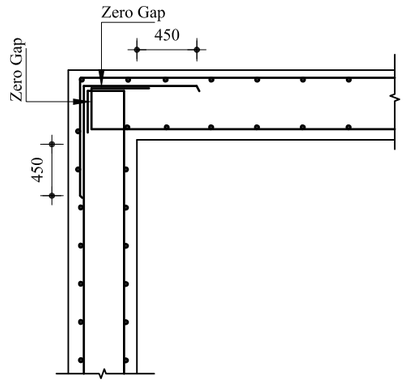
REINF IN PILE CAP

Scale: 1:70



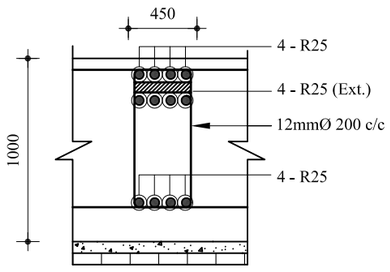
CROSS SECTION OF ABUTMENT (SECTION 1-1)
SHOWING REINFORCEMENT DETAILS

Scale: 1:80



DETAIL "A"

Scale: 1:40



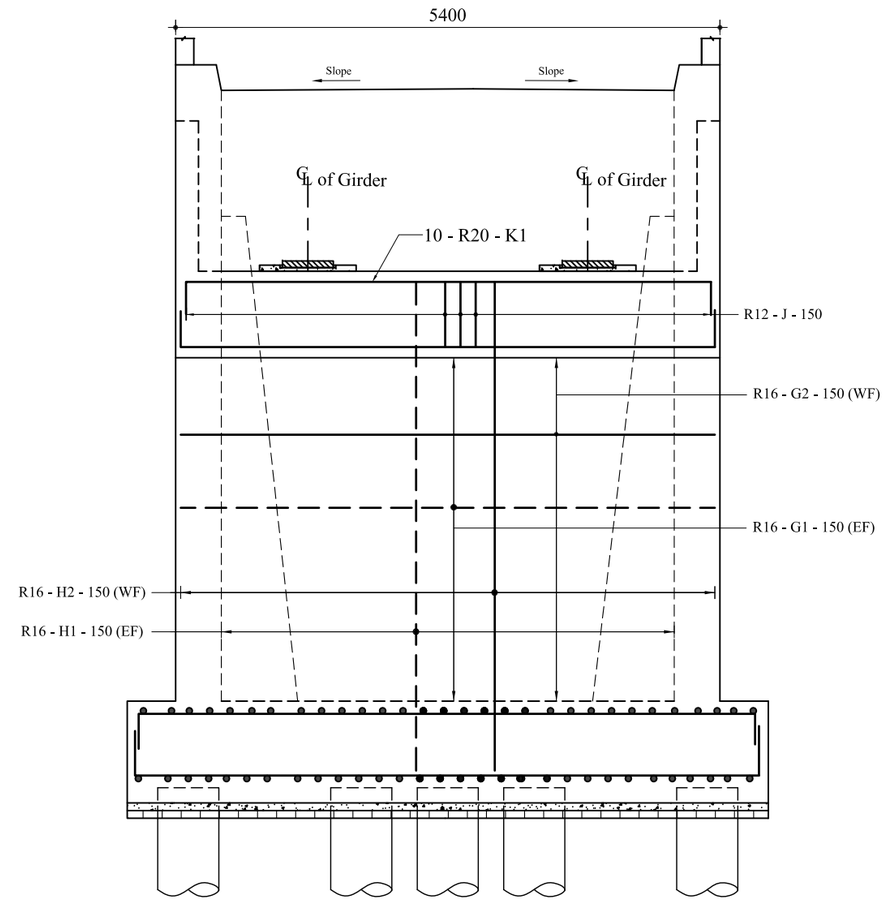
DETAIL "B"

Scale: 1:40

NOTES:

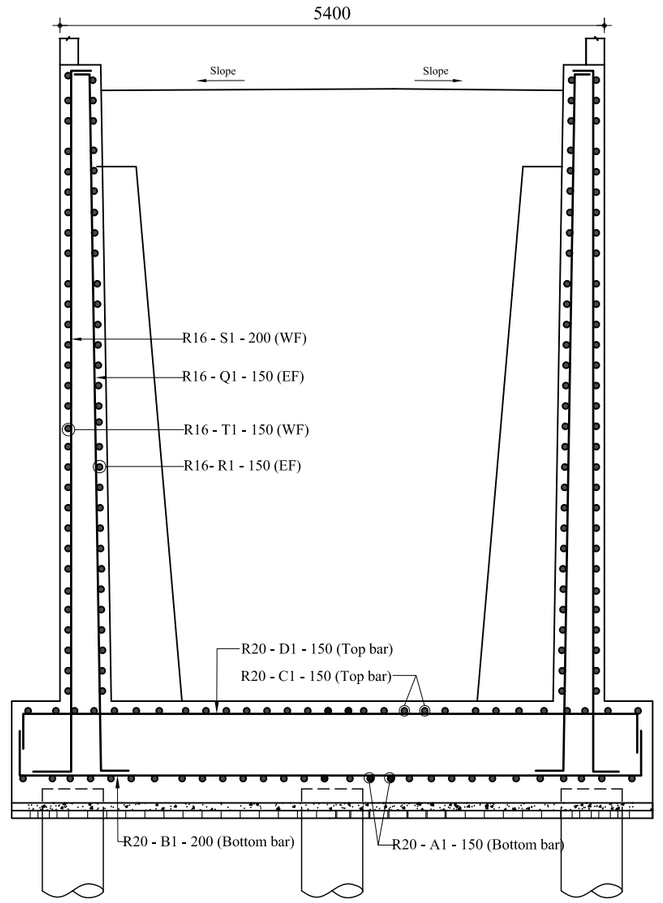
1. All dimensions are in millimeter unless otherwise mentioned.
2. Clear cover to main reinforcement bar is to be 50mm. unless otherwise mentioned.
3. 28 days cylinder strength of concrete: f 'c = 25.0N/mm² (3600 psi)
4. EF = Earth Face WF = Water Face

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	DESIGNED ,DRAWN & CHECKED BY PURAKAUSHAL PROJUKTI LIMITED House # C10, Road # 4 ,Banasree, Rampura- 1219. E-maill: pproiltd@yahoo.com	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	DRAWING TITLE Reinf. Details of Abutment & Wing wall, Span 35m Abutment Height 7m. DRAWING NO. AB-77 PAGE NO. P-129



SECTIONAL FRONT ELEVATION OF ABUTMENT (SECTION 2-2)
SHOWING REINFORCEMENT

Scale: 1:60



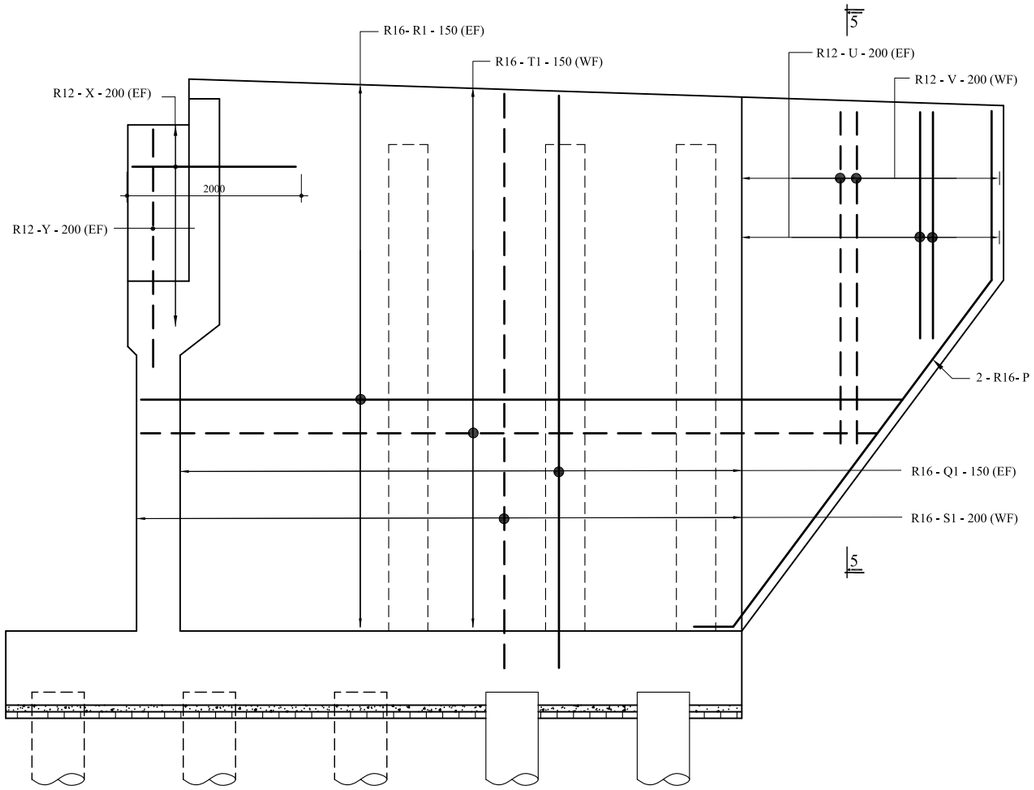
CROSS-SECTION OF WINGWALL (SEC.3-3)
SHOWING REINFORCEMENT

Scale: 1:60

NOTES:

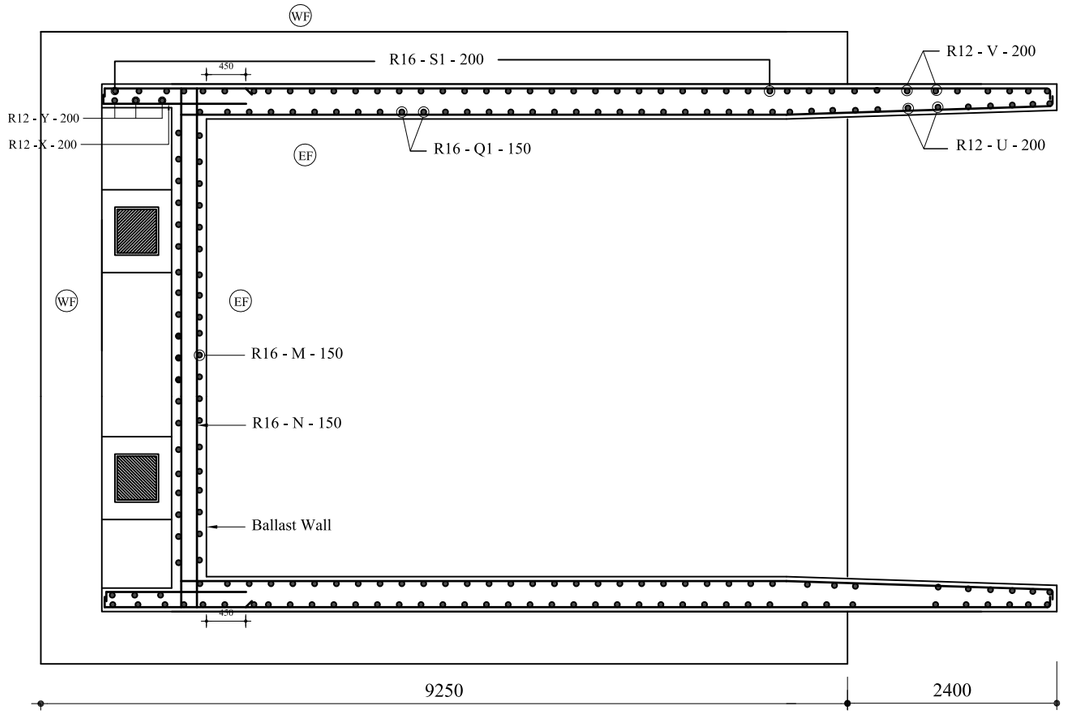
1. All dimensions are in millimeter unless otherwise mentioned.
2. Clear cover to main reinforcement bar is to be 50mm. unless otherwise mentioned.
3. 28 days cylinder strength of concrete: f 'c = 25.0N/mm² (3600 psi)
4. EF = Earth Face, WF = Water Face

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	DESIGNED ,DRAWN & CHECKED BY PURAKAUSHAL PROJUKTI LIMITED House # C10, Road # 4 ,Banasree, Rampura- 1219. E-maill: pproiltd@yahoo.com	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	DRAWING TITLE Reinf. Details Sectional Elevation of Abutment & Wing wall, Span 35m Abutment Height 7m. DRAWING NO. AB-78 PAGE NO. P-130



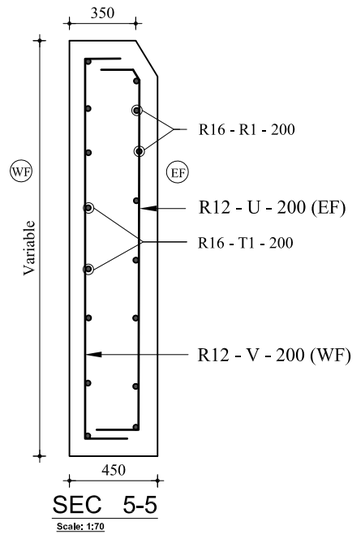
SECTIONAL ELEVATION OF WINGWALL (SEC. 4 - 4)
SHOWING REINFORCEMENT

Scale: 1:70



TOP PLAN OF BALLASTWALL & WINGWALL
SHOWING TOP REINFORCEMENT

Scale: 1:70



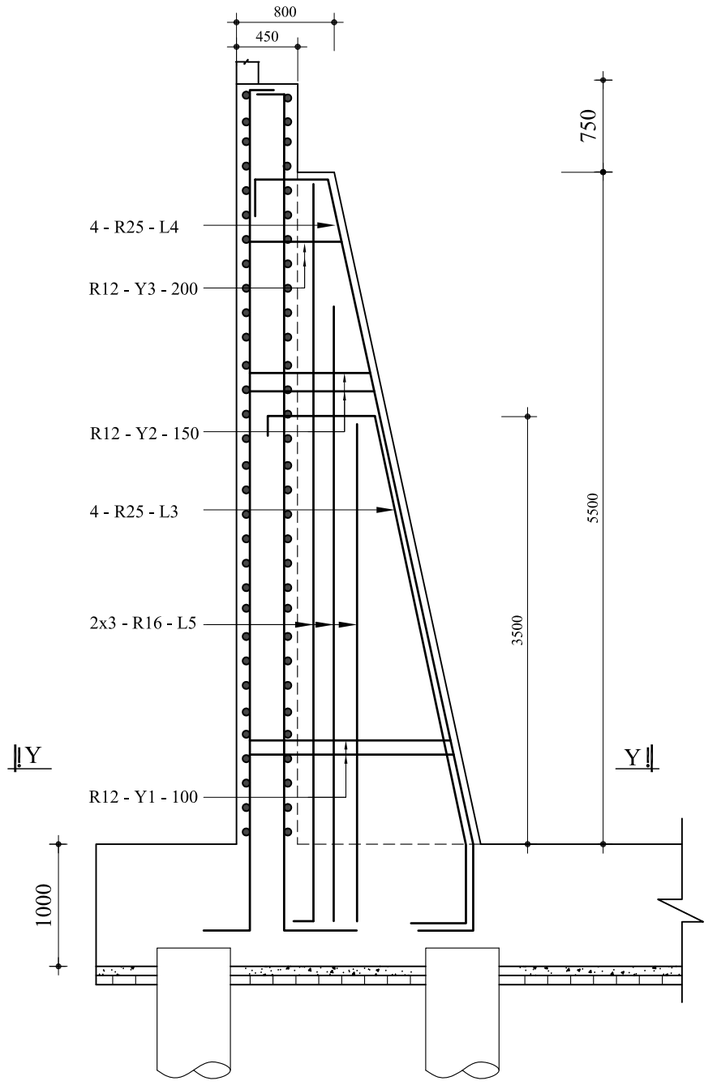
SEC 5-5

Scale: 1:70

NOTES:

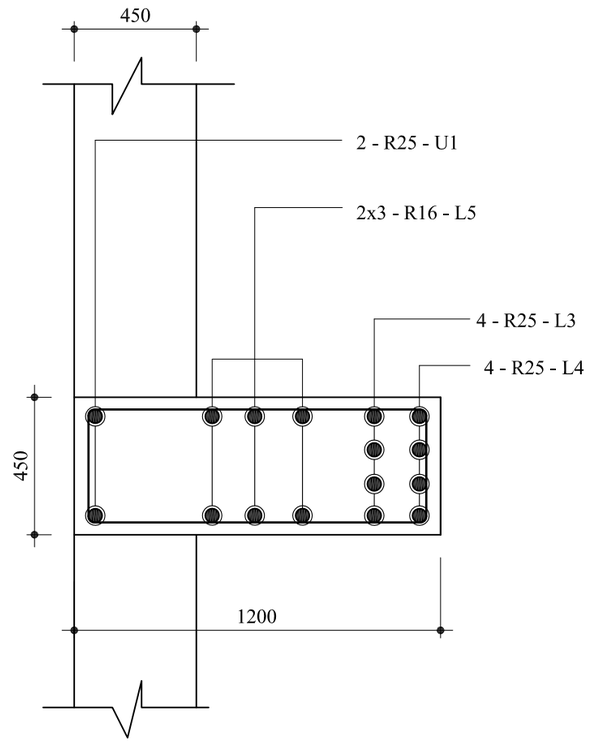
1. All dimensions are in millimeter unless otherwise mentioned.
2. Clear cover to main reinforcement bar is to be 50mm. unless otherwise mentioned.
3. 28 days cylinder strength of concrete: f 'c = 25.0N/mm² (3600 psi)
4. EF = Earth Face WF = Water Face

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	DESIGNED ,DRAWN & CHECKED BY		DRAWING TITLE
	PURAKAUSHAL PROJUKTI LIMITED House # C10, Road # 4 ,Banasree, Rampura- 1219. E-maill: pproiltd@yahoo.com	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	Reinf. Details of Abutment & Wing wall, Span 35m Abutment Height 7.0m. DRAWING NO. AB-79 PAGE NO. P-131



REINF. DETAILS OF WING WALL COUNTER FORT

Scale: 1:50



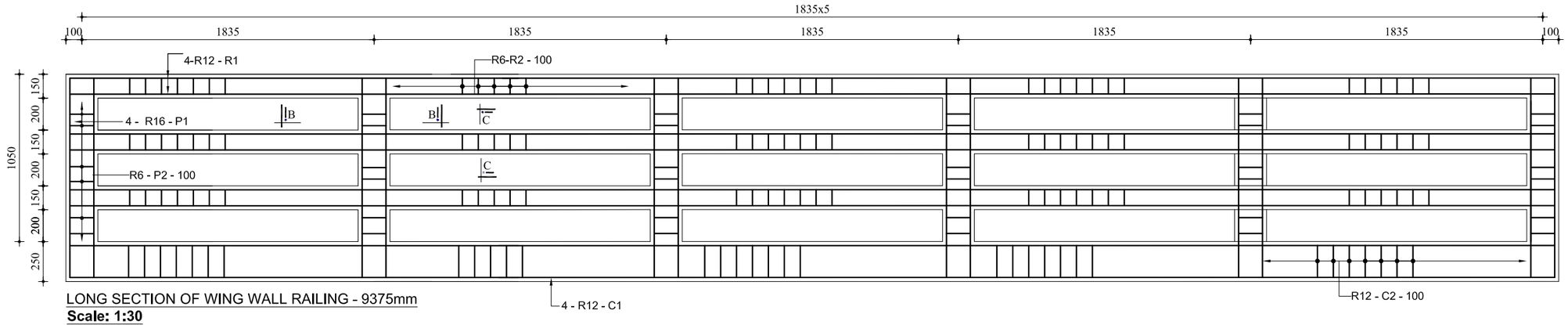
SECTION Y -Y

Scale: 1:20

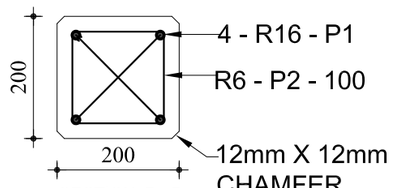
NOTES:

1. All dimensions are in millimeter unless otherwise mentioned.
2. Clear cover to main reinforcement bar is to be 50mm. unless otherwise mentioned.
3. 28 days cylinder strength of concrete: f 'c = 25.0N/mm² (3600 psi)
4. EF = Earth Face WF = Water Face

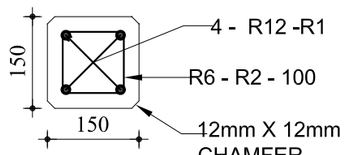
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	DESIGNED ,DRAWN & CHECKED BY PURAKAUSHAL PROJUKTI LIMITED House # C10, Road # 4 ,Banasree, Rampura- 1219. E-maill: pproiltd@yahoo.com	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	DRAWING TITLE Reinf. Details of Counter fort, Span 35m Abutment Height 7m. DRAWING NO. AB-80 PAGE NO. P-132



LONG SECTION OF WING WALL RAILING - 9375mm
Scale: 1:30



SECTION: B - B
RAIL POST
Scale: 1:10



SECTION: C - C
RAIL BAR
Scale: 1:10

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

DESIGNED ,DRAWN & CHECKED BY

PURAKAUSHAL PROJUKTI LIMITED
House # C10, Road # 4 ,Banasree, Rampura- 1219.
E-maill: pproiltd@yahoo.com

NAME OF PROJECT:

LOCATION:

UPAZILA:

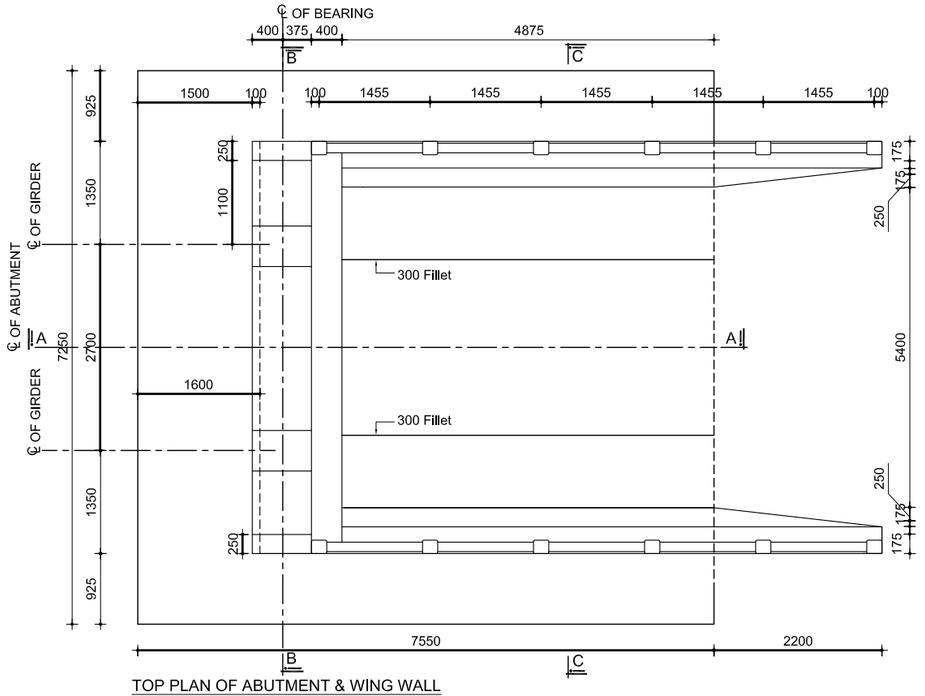
DISTRICT:

DRAWING TITLE

Details of Abutment Railing,
Span 35m Abutment Height 7m.

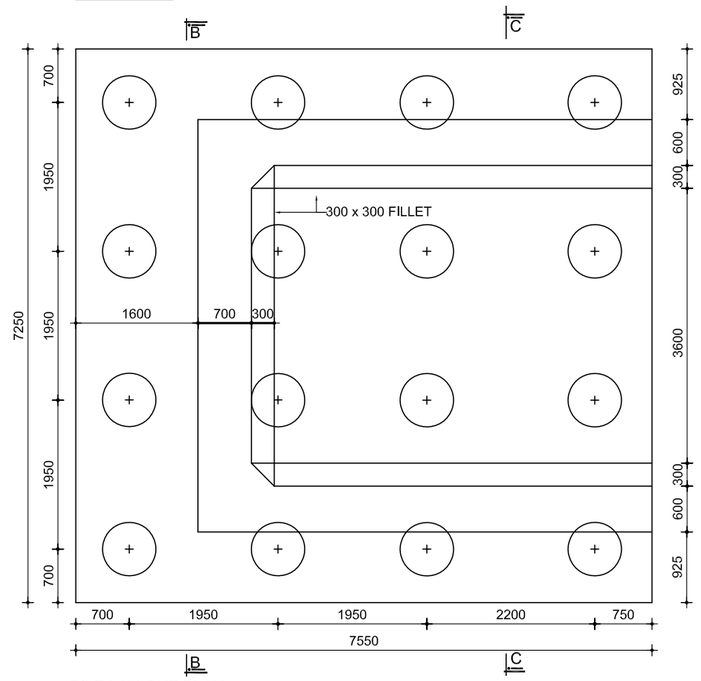
DRAWING NO. AB-81

PAGE NO. P-133



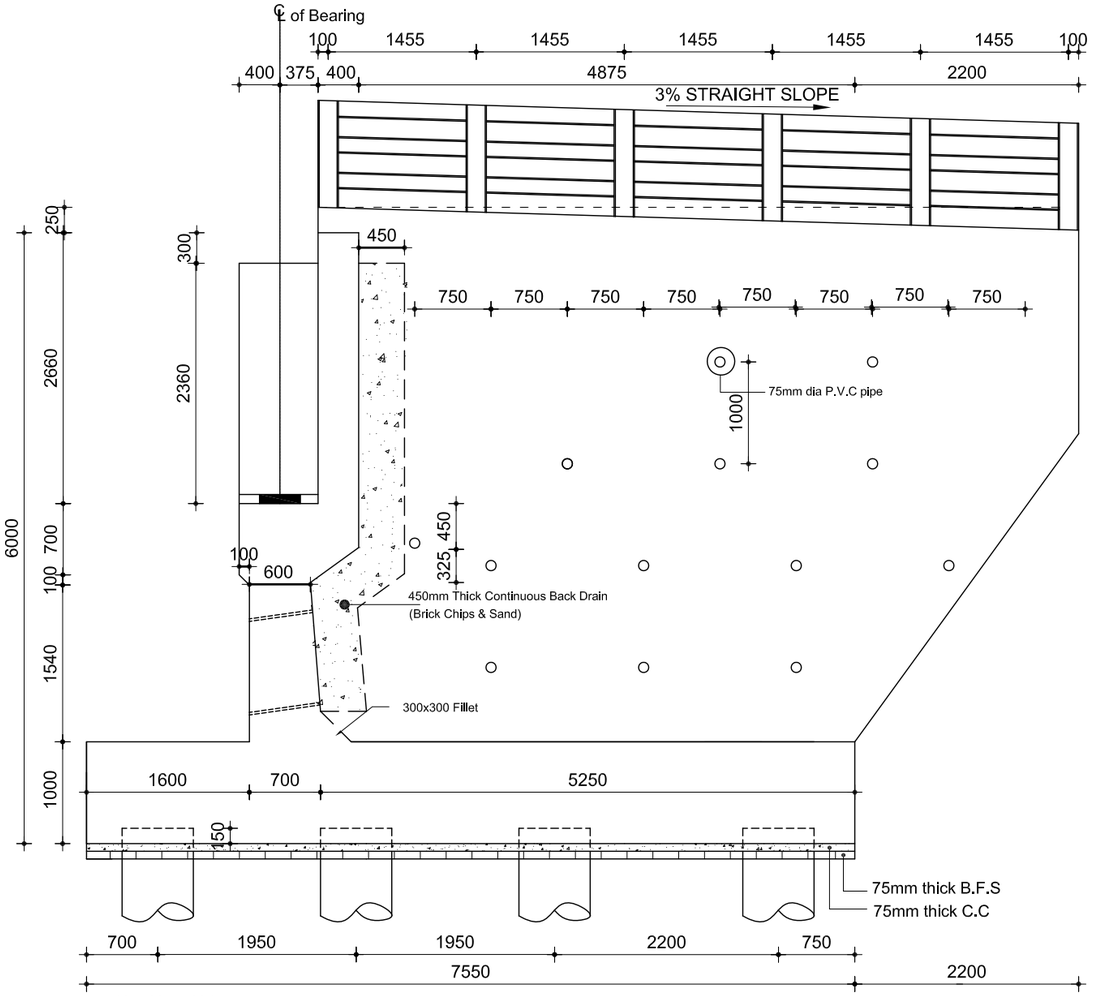
TOP PLAN OF ABUTMENT & WING WALL

Scale: 1:80



PILE LAY-OUT PLAN

Scale: 1:80



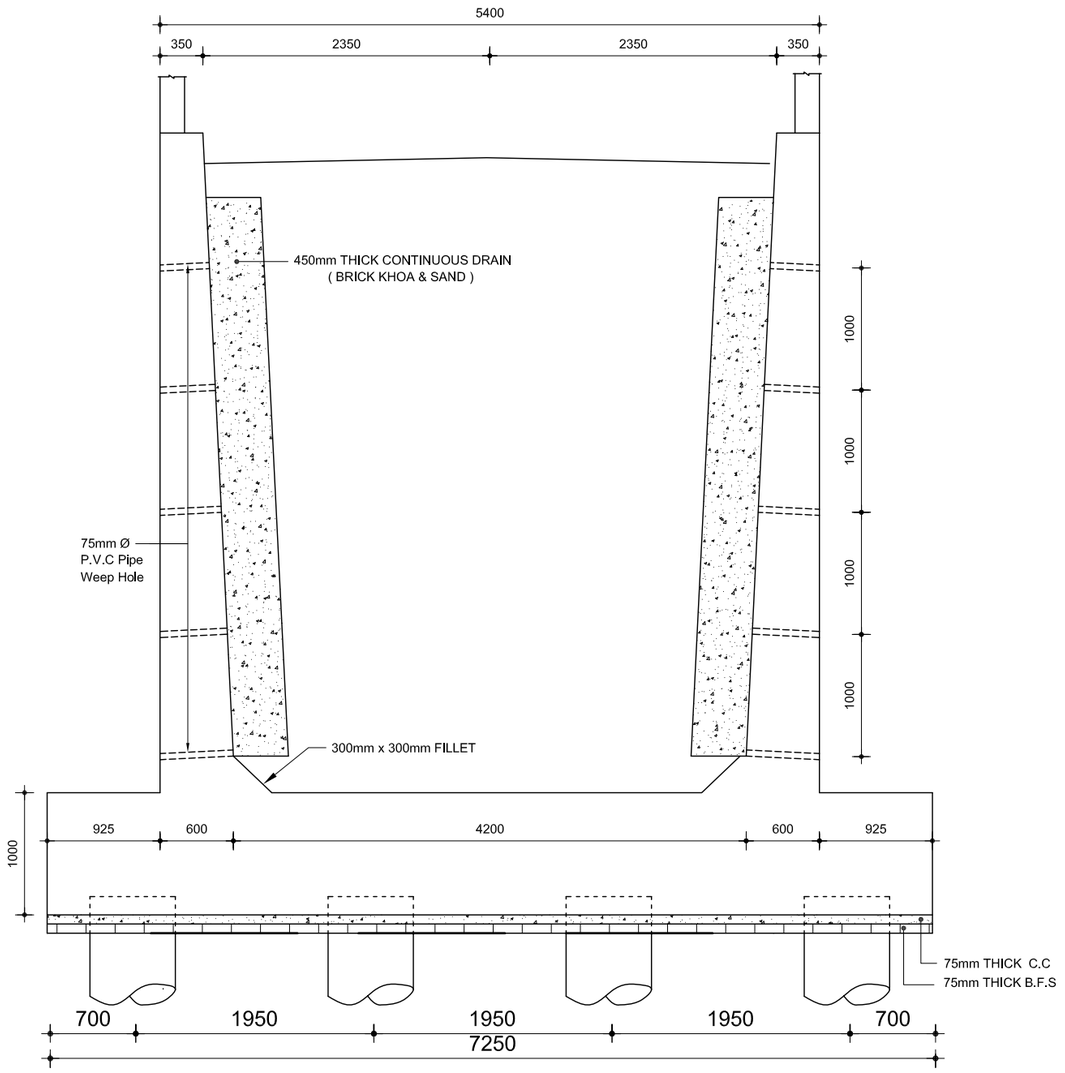
SECTION A-A

Scale: 1:60

NOTES:

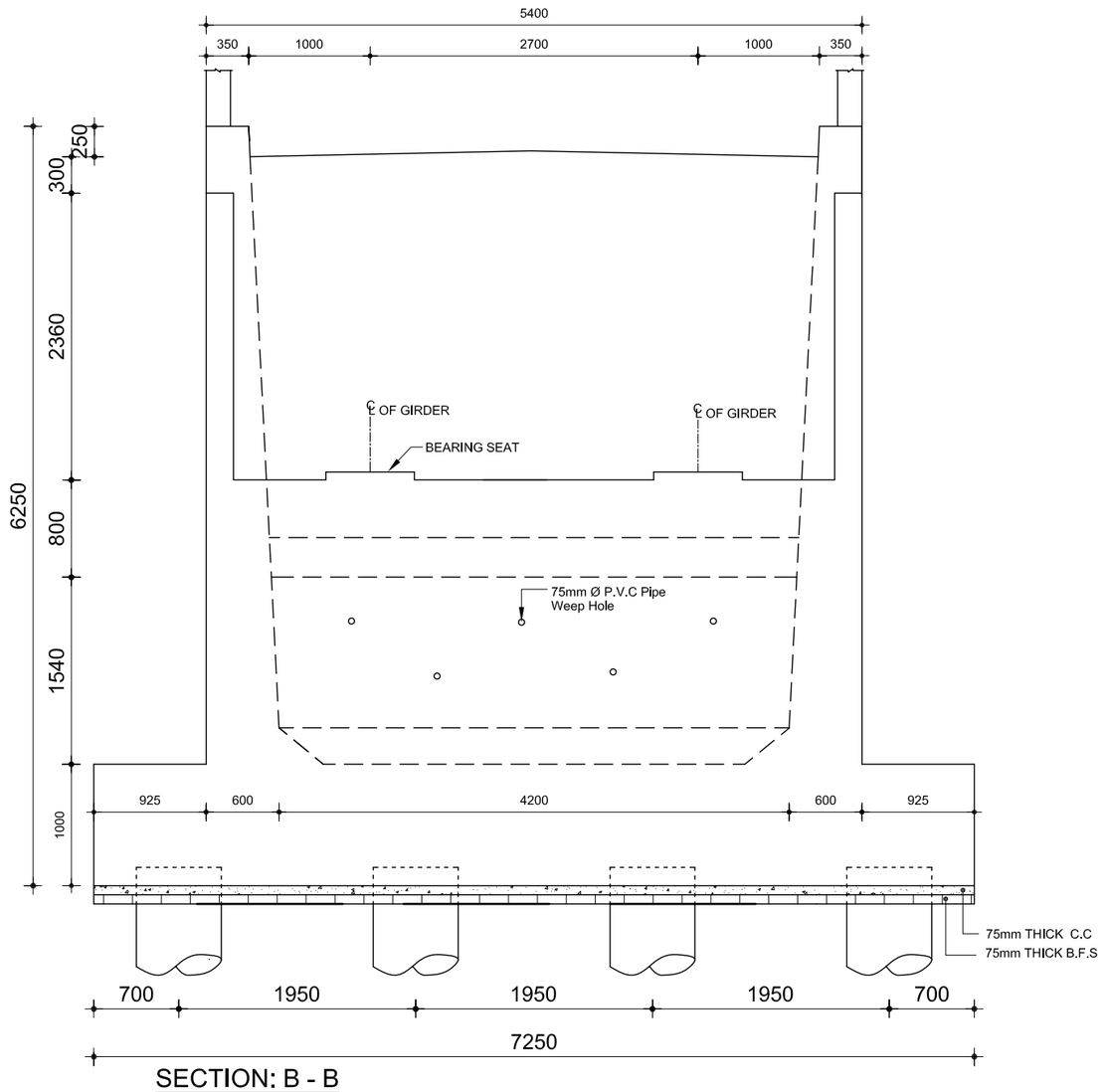
1 All dimensions are in millimeter unless otherwise mentioned.
2. Clear cover to main reinforcement bar is to be 50mm. unless otherwise mentioned.
3 28 days cylinder strength of concrete: f 'c = 25.0N/mm² (3600 psi)
4 Yield strength of mild steel deformed bar fy = 413N/mm² (60000psi)

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	DESIGNED ,DRAWN & CHECKED BY PURAKAUSHAL PROJUKTI LIMITED House # C10, Road # 4 ,Banasree, Rampura- 1219. E-maill: pproiltd@yahoo.com	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	DRAWING TITLE Details of Abutment Span 40m Abutment Height 6.0m DRAWING NO. AB-82 PAGE NO. P-134



SECTION: C - C

Scale: 1:50



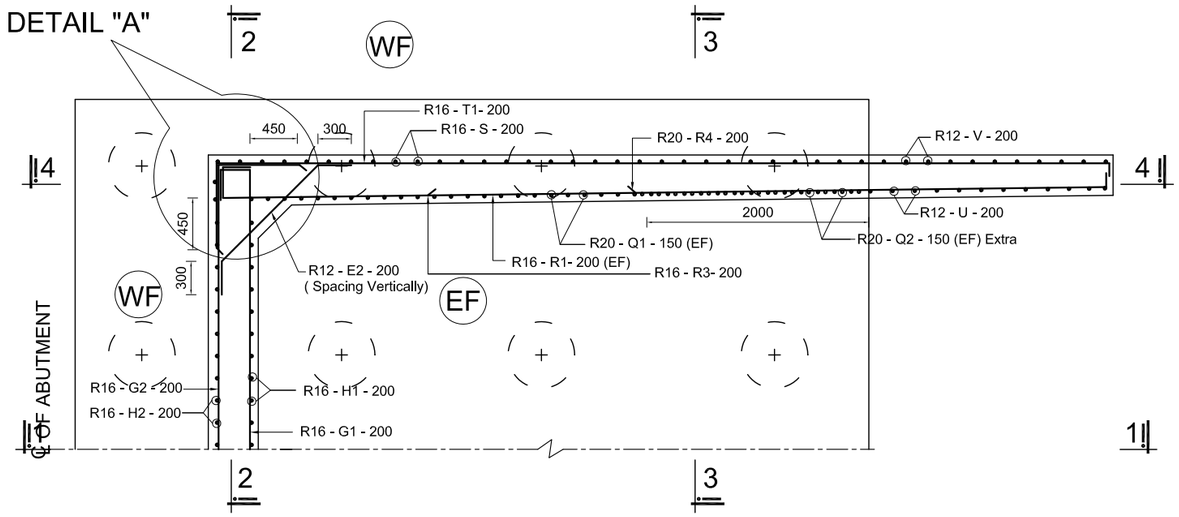
SECTION: B - B

Scale: 1:50

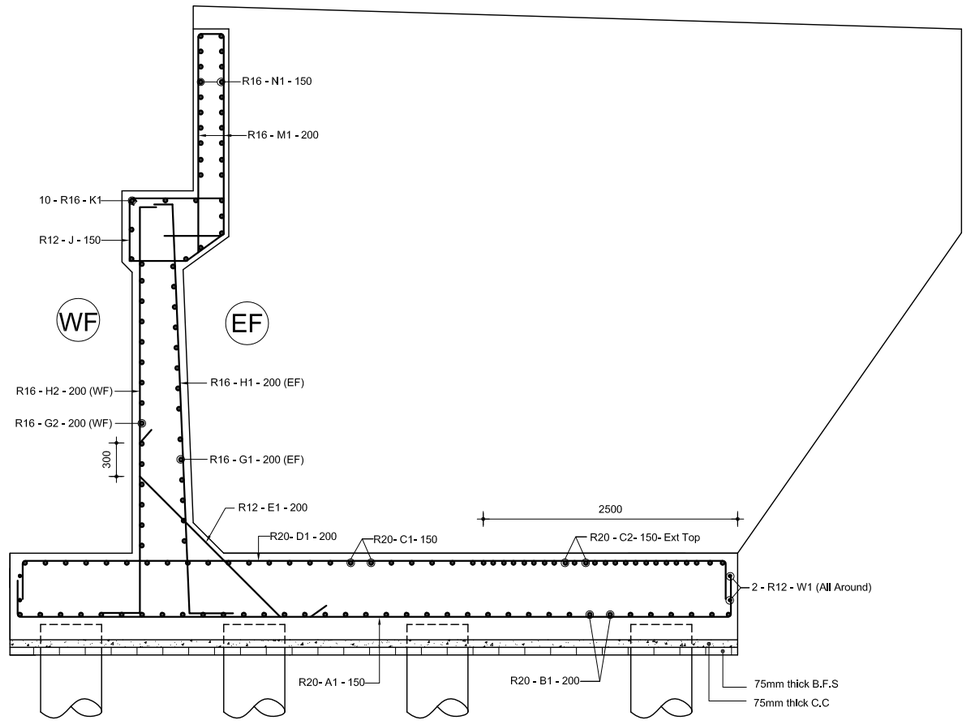
NOTES:

1. All dimensions are in millimeter unless otherwise mentioned.
2. Clear cover to main reinforcement bar is to be 50mm. unless otherwise mentioned.
3. 28 days cylinder strength of concrete: f 'c = 25.0N/mm² (3600 psi)
4. Yield strength of mild steel deformed bar fy = 413N/mm² (60000psi)

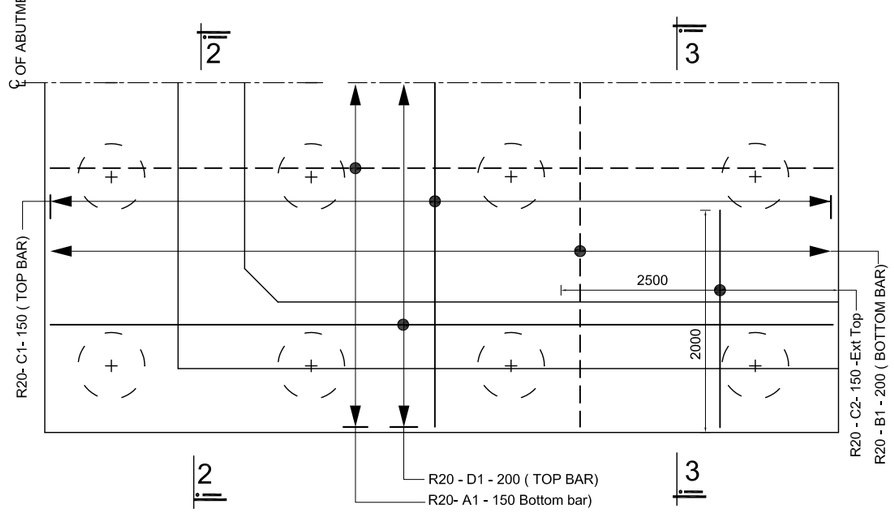
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	DESIGNED ,DRAWN & CHECKED BY PURAKAUSHAL PROJUKTI LIMITED House # C10, Road # 4 ,Banasree, Rampura- 1219. E-maill: pproiltd@yahoo.com	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	DRAWING TITLE Sectional Elevation of Abutment & Wing wall, Span 40m Abutment Height 6.0m DRAWING NO. AB-83 PAGE NO. P-135



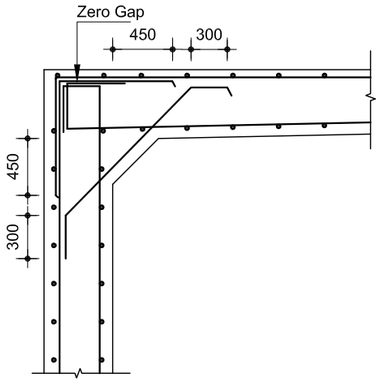
PLAN OF ABUTMENT & WINGWALL
SHOWING REINFORCEMENT
Scale: 1:55



CROSS SECTION OF ABUTMENT (SECTION 1-1)
SHOWING REINFORCEMENT DETAILS
Scale: 1:60



PLAN OF PILE CAP
SHOWING REINFORCEMENT
Scale: 1:55

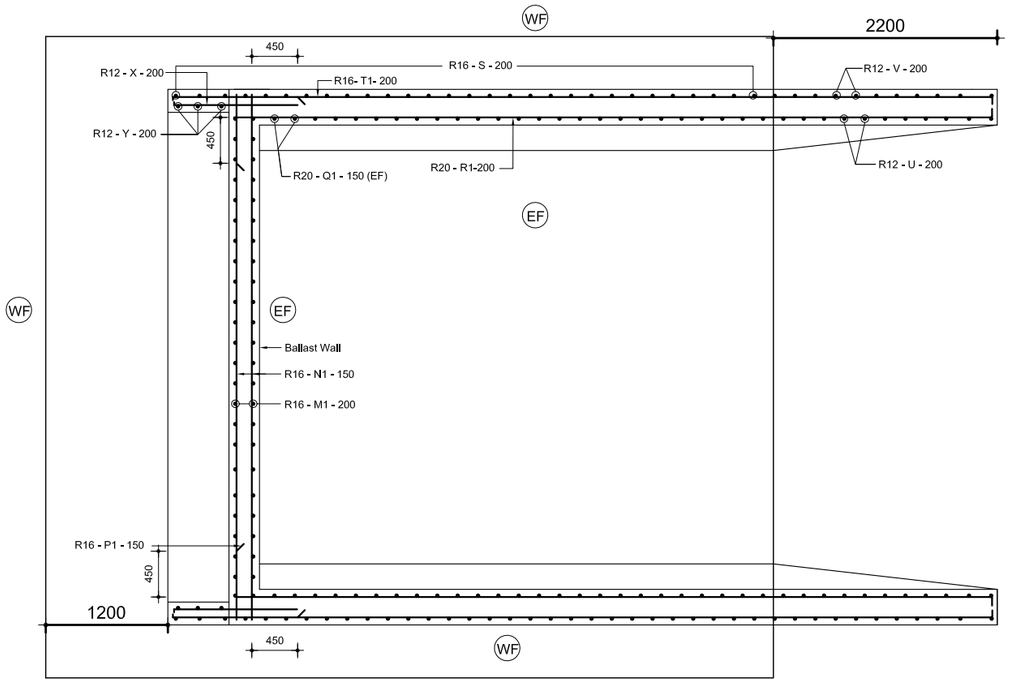


DETAIL "A"
Scale: 1:40

NOTES:

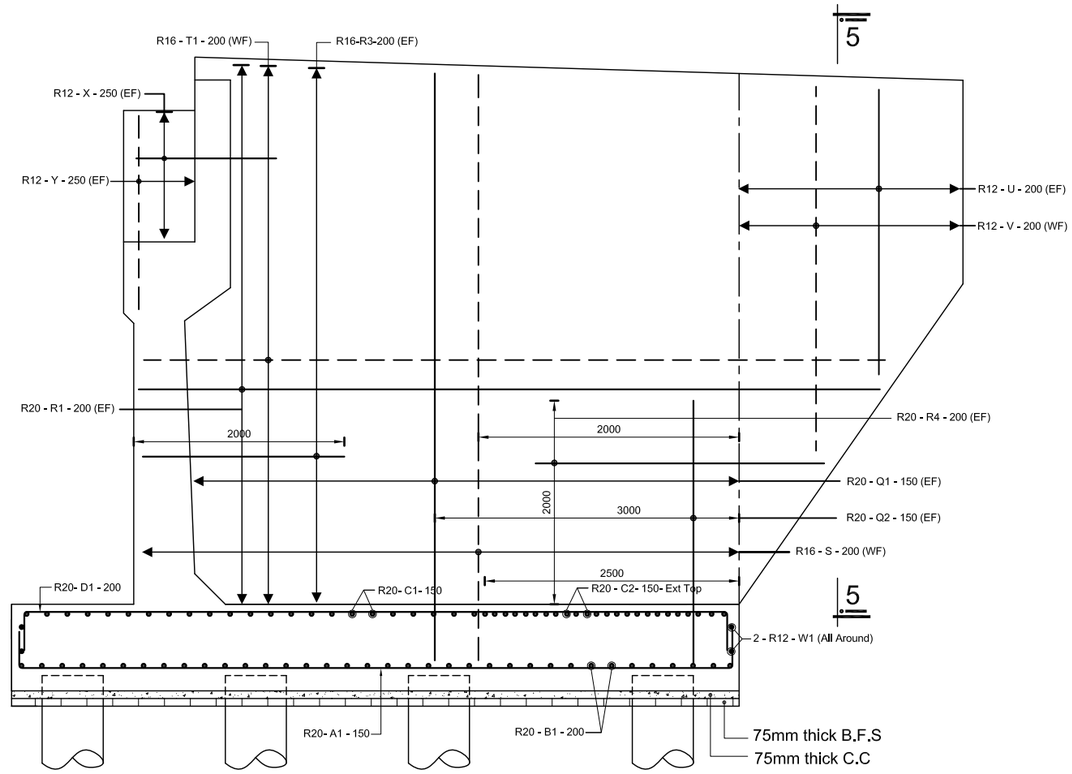
1. Clear cover to main reinforcement bar is to be 50mm. unless otherwise mentioned.
2. 28 days cylinder strength of concrete: f 'c = 25.0N/mm² (3600 psi)
3. Yield strength of mild steel deformed bar fy = 413N/mm² (60000psi)
4. EF = Earth Face WF = Water Face

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	DESIGNED ,DRAWN & CHECKED BY PURAKAUSHAL PROJUKTI LIMITED House # C10, Road # 4 ,Banasree, Rampura- 1219. E-maill: pproiltd@yahoo.com	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	DRAWING TITLE Reinf. Details of Abutment & Wing wall, Span 40m Abutment Height 6.0m DRAWING NO. AB-84 PAGE NO. P-136



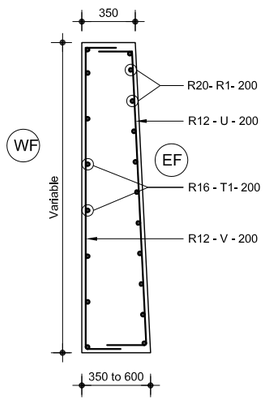
TOP PLAN OF BALLAST WALL & WINGWALL
SHOWING TOP REINFORCEMENT

Scale: 1:60



SECTIONAL ELEVATION OF WINGWALL (SEC. 4 - 4)
SHOWING REINFORCEMENT

Scale: 1:60



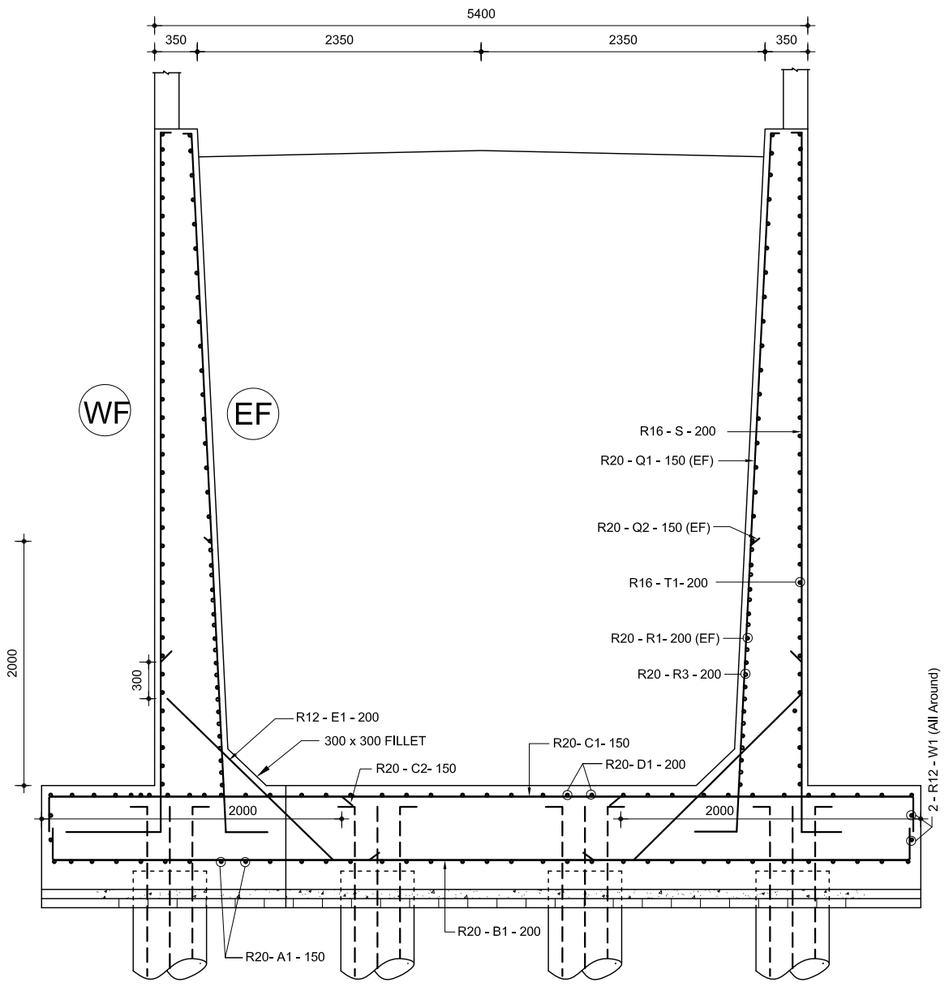
SEC. 5 - 5

Scale: 1:40

NOTES:

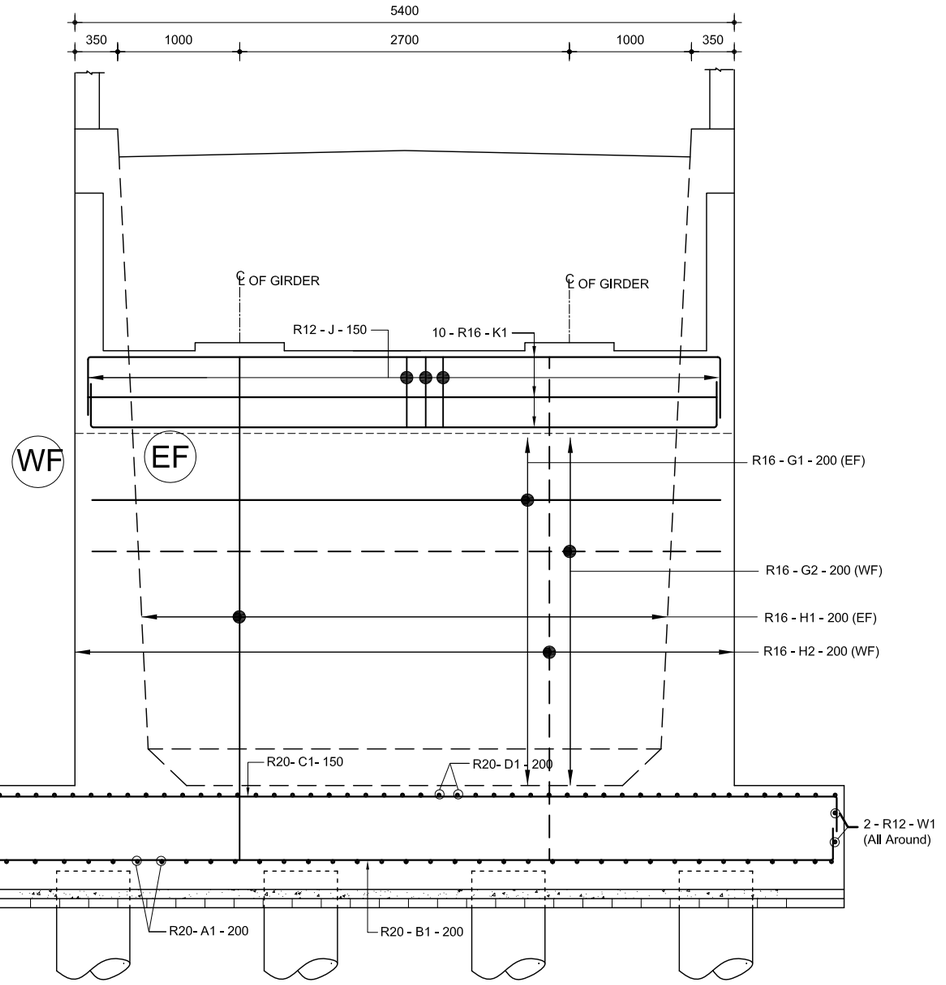
1. Clear cover to main reinforcement bar is to be 50mm. unless otherwise mentioned.
2. 28 days cylinder strength of concrete: f 'c = 25.0N/mm² (3600 psi)
3. Yield strength of mild steel deformed bar fy = 413N/mm² (60000psi)
4. EF = Earth Face, WF = Water Face

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	DESIGNED ,DRAWN & CHECKED BY PURAKAUSHAL PROJUKTI LIMITED House # C10, Road # 4 ,Banasree, Rampura- 1219. E-maill: pproiltd@yahoo.com	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	DRAWING TITLE Reinf. Details of Abutment & Wing wall, Span 40m Abutment Height 6.0m DRAWING NO. AB-85 PAGE NO. P-137



CROSS SECTION OF WINGWALL (SEC. 3 - 3)
SHOWING REINFORCEMENT

Scale: 1:50



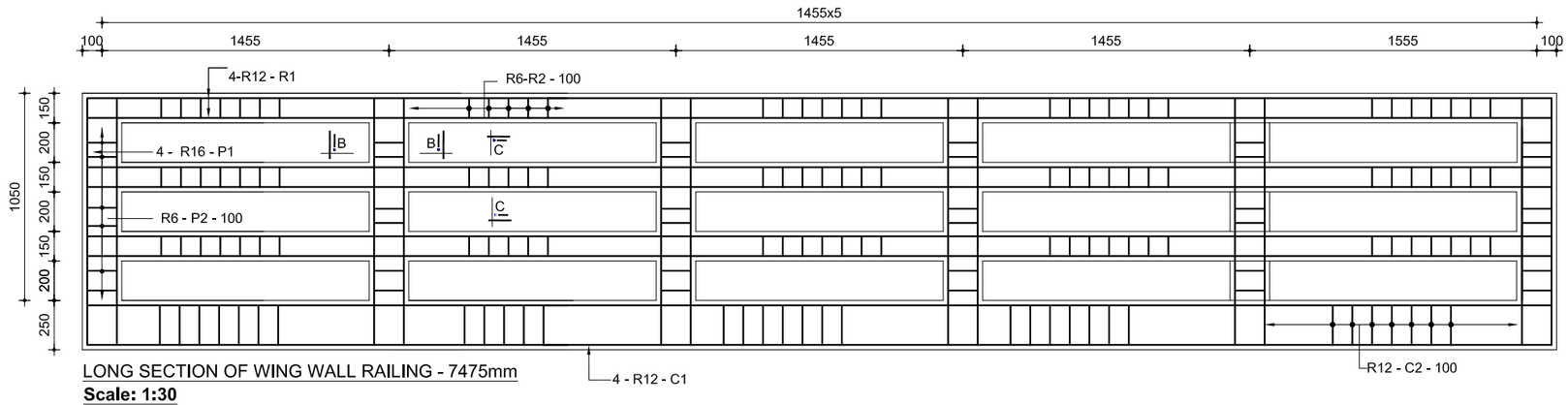
SECTIONAL FRONT ELEVATION OF ABUTMENT (SEC. 2 - 2)
SHOWING REINFORCEMENT

Scale: 1:50

NOTES:

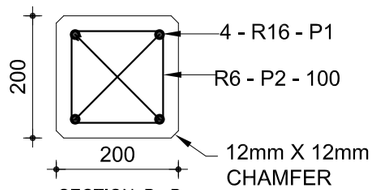
1. Clear cover to main reinforcement bar is to be 50mm. unless otherwise mentioned.
2. 28 days cylinder strength of concrete: f 'c = 25.0N/mm² (3600 psi)
3. Yield strength of mild steel deformed bar fy = 413N/mm² (60000psi)
4. EF = Earth Face, WF = Water Face

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	DESIGNED ,DRAWN & CHECKED BY PURAKAUSHAL PROJUKTI LIMITED House # C10, Road # 4 ,Banasree, Rampura- 1219. E-maill: pproiltd@yahoo.com	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	DRAWING TITLE Cross Section of Wingwall Showing Reinf. Details, Span 40m Abutment Height 6.0m DRAWING NO. AB-86 PAGE NO. P-138



LONG SECTION OF WING WALL RAILING - 7475mm

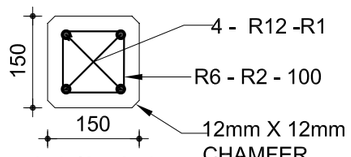
Scale: 1:30



SECTION: B - B

RAIL POST

Scale: 1:10

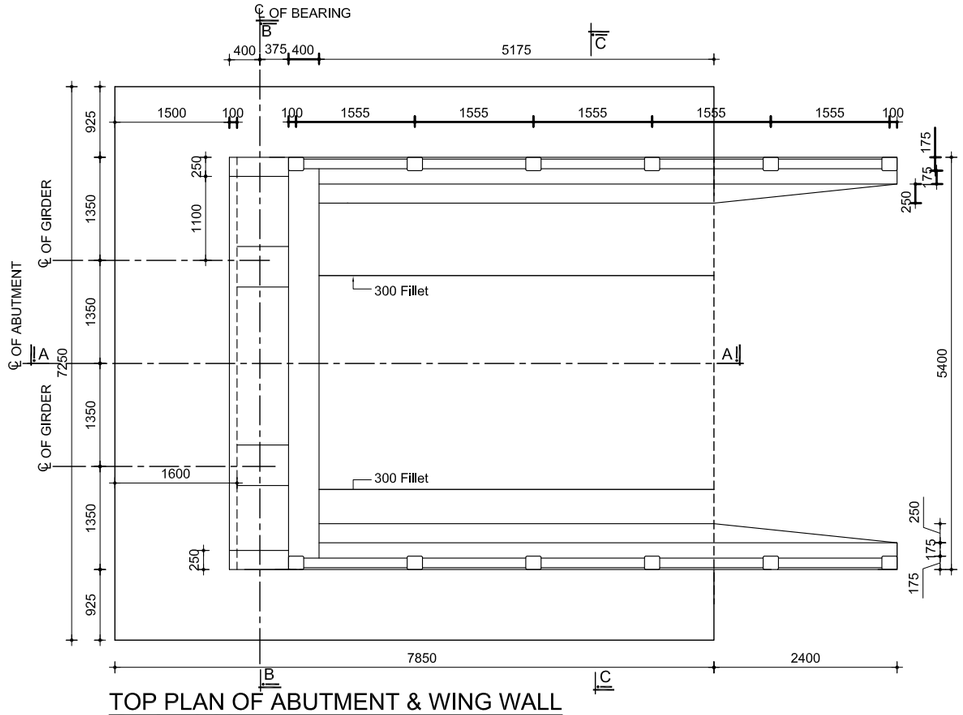


SECTION: C - C

RAIL BAR

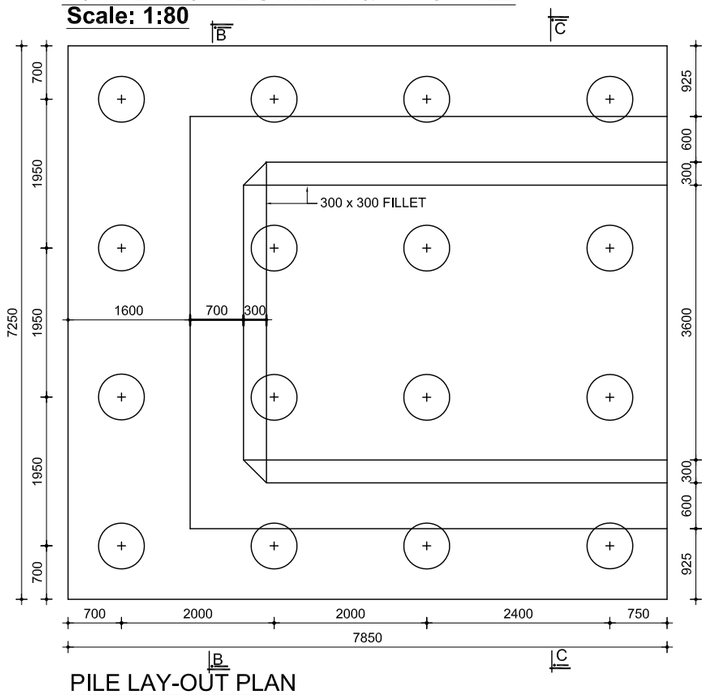
Scale: 1:10

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	DESIGNED ,DRAWN & CHECKED BY PURAKAUSHAL PROJUKTI LIMITED House # C10, Road # 4 ,Banasree, Rampura- 1219. E-maill: pproiltd@yahoo.com	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	DRAWING TITLE Details of Abutment Railing, Span 40m Abutment Height 6.0m DRAWING NO. AB-87 PAGE NO. P-139



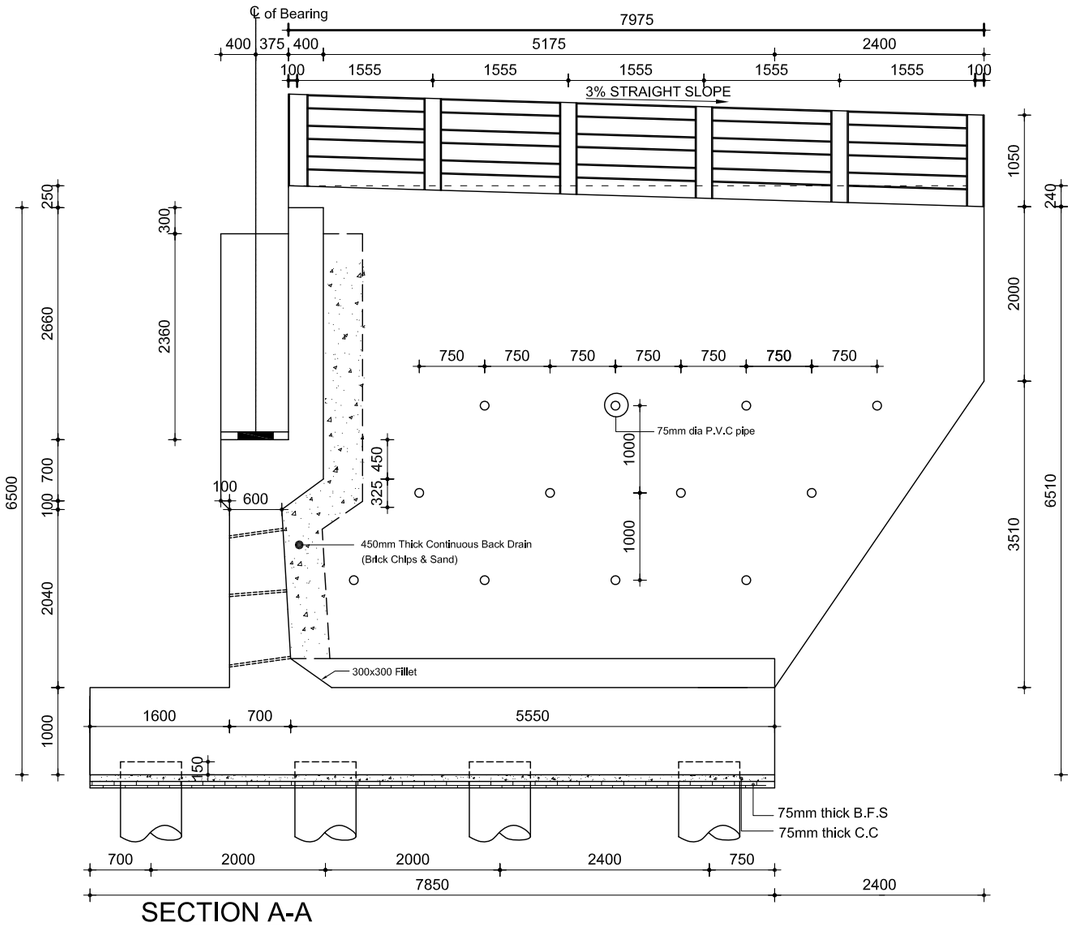
TOP PLAN OF ABUTMENT & WING WALL

Scale: 1:80



PILE LAY-OUT PLAN

Scale: 1:80



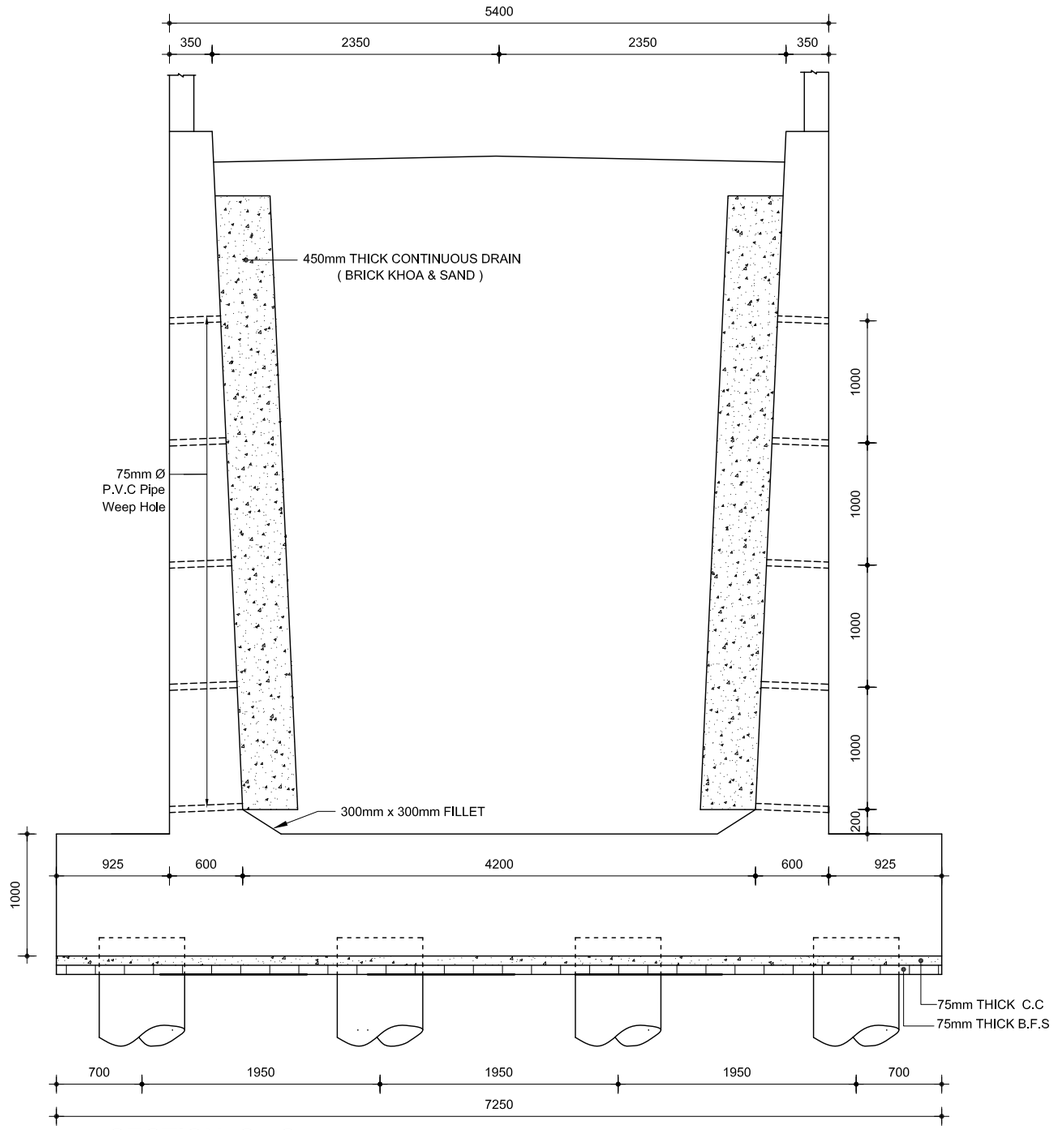
SECTION A-A

Scale: 1:70

NOTES:

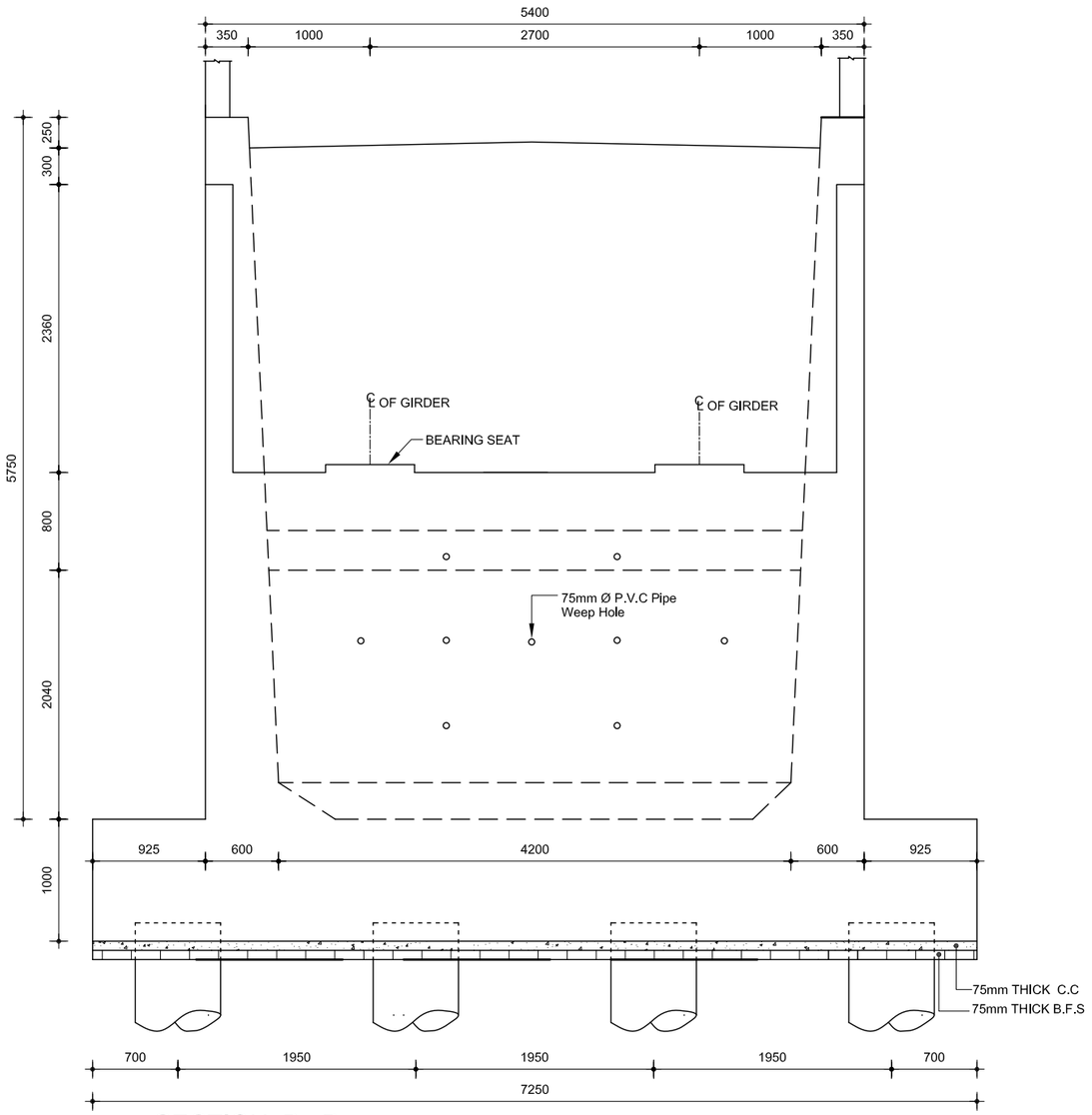
1. Abutment Details for 40m. span.
2. All dimensions are in millimeter unless otherwise mentioned.
3. Clear cover to main reinforcement bar is to be 50mm. unless otherwise mentioned.
4. 28 days cylinder strength of concrete: f 'c = 25.0N/mm² (3600 psi)
5. Yield strength of mild steel deformed bar fy = 413N/mm² (60000psi)

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	DESIGNED ,DRAWN & CHECKED BY PURAKAUSHAL PROJUKTI LIMITED	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	DRAWING TITLE Details of Abutment Span 40m Abutment Height 6.5m DRAWING NO. AB-88 PAGE NO. P-140



SECTION: C - C

Scale: 1:50



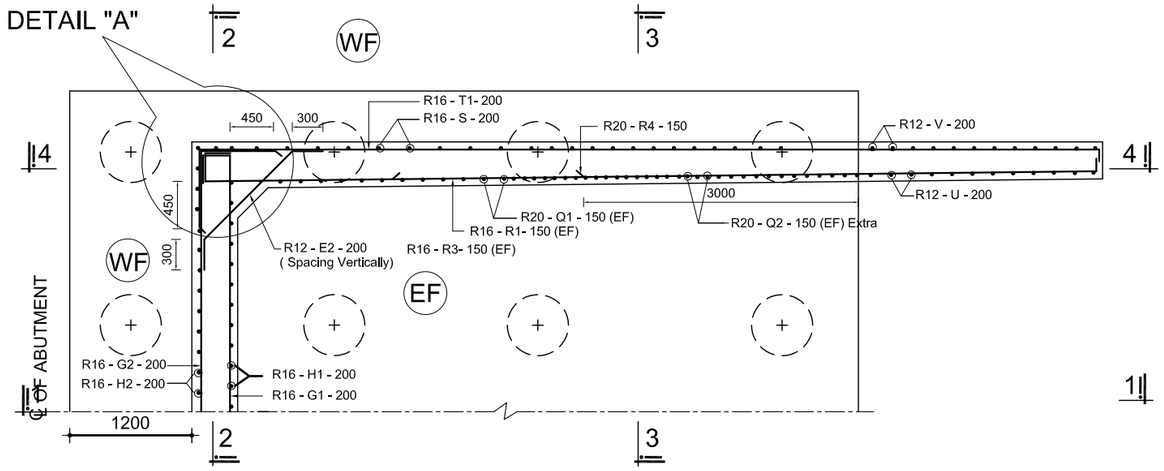
SECTION: B - B

Scale: 1:50

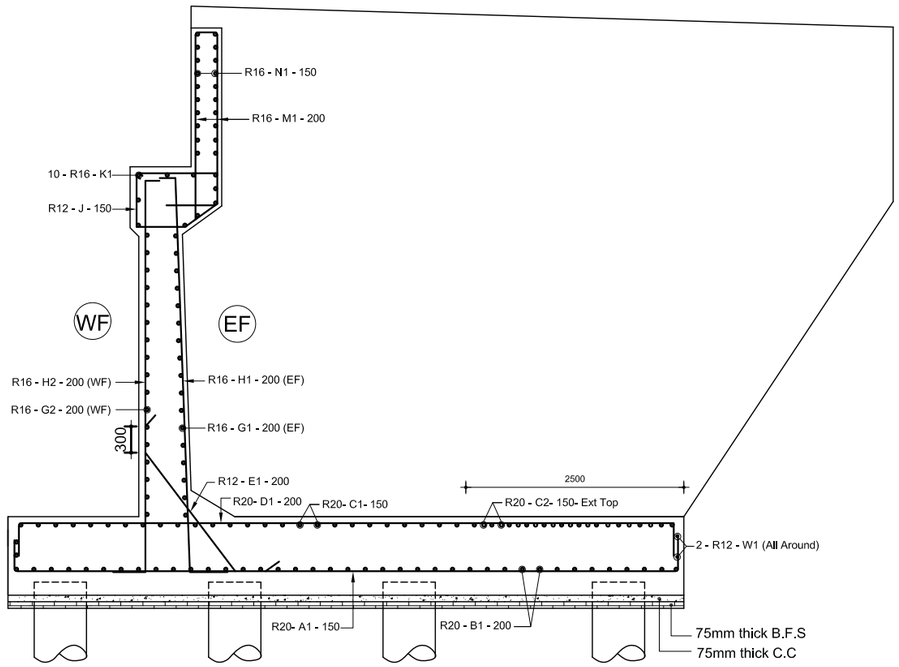
NOTES:

1. All dimensions are in millimeter unless otherwise mentioned.
2. Clear cover to main reinforcement bar is to be 50mm. unless otherwise mentioned.
3. 28 days cylinder strength of concrete: f 'c = 25.0N/mm² (3600 psi)
4. Yield strength of mild steel deformed bar fy = 413N/mm² (60000psi)

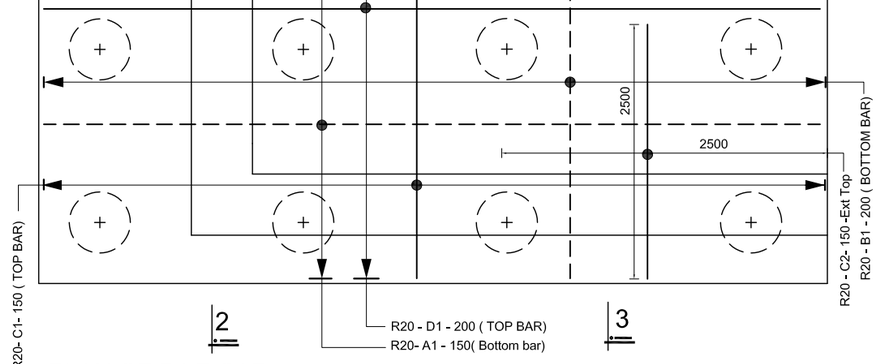
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	DESIGNED ,DRAWN & CHECKED BY PURAKAUSHAL PROJUKTI LIMITED	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	DRAWING TITLE Sectional Elevation of Abutment & Wing wall, Span 40m Abutment Height 6.5m DRAWING NO. AB-89 PAGE NO. P-141



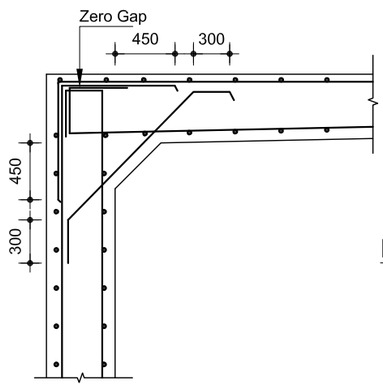
PLAN OF ABUTMENT & WINGWALL
SHOWING REINFORCEMENT
Scale: 1:60



CROSS SECTION OF ABUTMENT (SECTION 1-1)
SHOWING REINFORCEMENT DETAILS
Scale: 1:70



PLAN OF PILE CAP
SHOWING REINFORCEMENT
Scale: 1:60

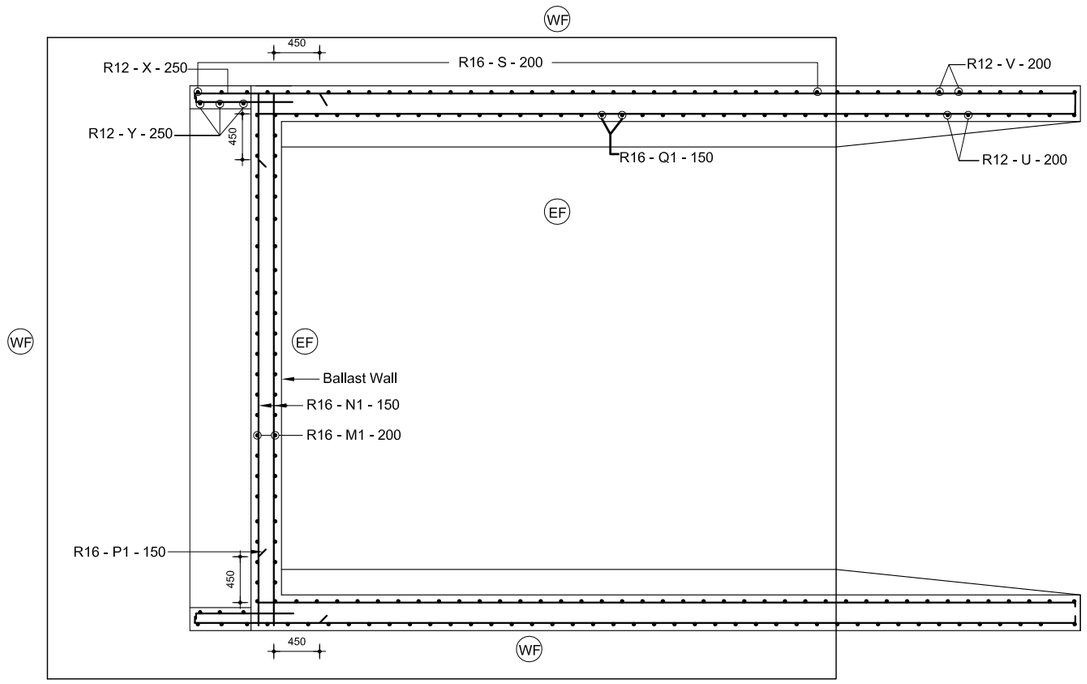


DETAIL "A"
Scale: 1:40

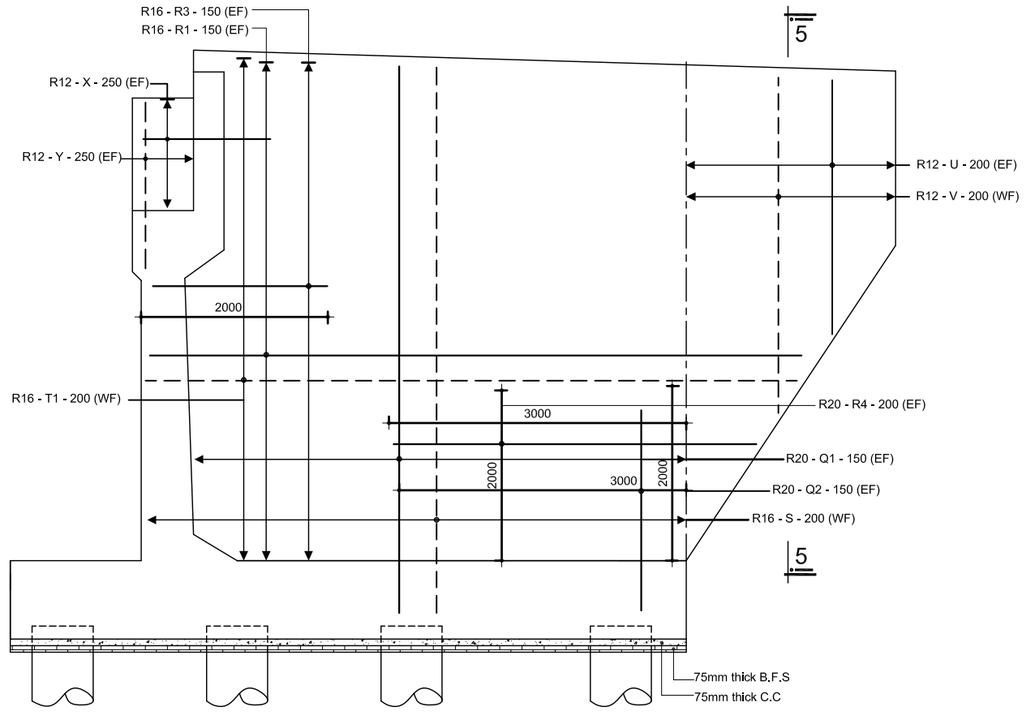
NOTES:

1. Clear cover to main reinforcement bar is to be 50mm. unless otherwise mentioned.
2. 28 days cylinder strength of concrete: f 'c = 25.0N/mm² (3600 psi)
3. Yield strength of mild steel deformed bar fy = 413N/mm² (60000psi)
4. EF = Earth Face WF = Water Face

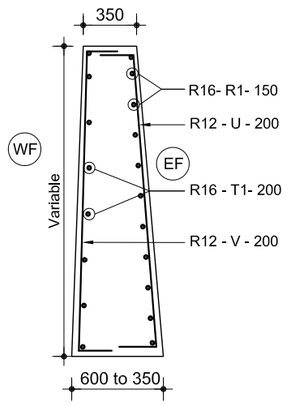
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	DESIGNED ,DRAWN & CHECKED BY		DRAWING TITLE
	PURAKAUSHAL PROJUKTI LIMITED	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	Reinf. Details of Abutment & Wing wall, Span 40m Abutment Height 6.5m DRAWING NO. AB-90 PAGE NO. P-142



TOP PLAN OF BALLAST WALL & WINGWALL
SHOWING TOP REINFORCEMENT
Scale: 1:60



SECTIONAL ELEVATION OF WINGWALL (SEC. 4 - 4)
SHOWING REINFORCEMENT
Scale: 1:70

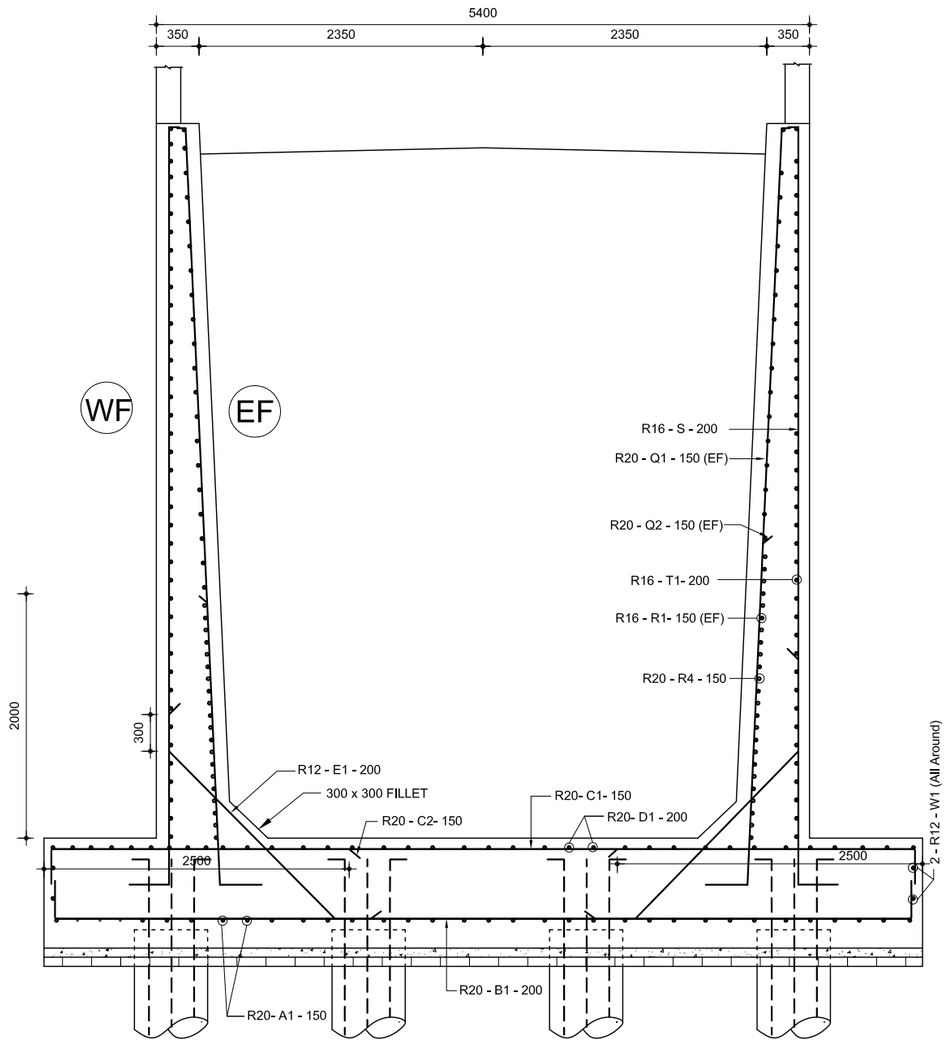


SEC. 5 - 5
Scale: 1:40

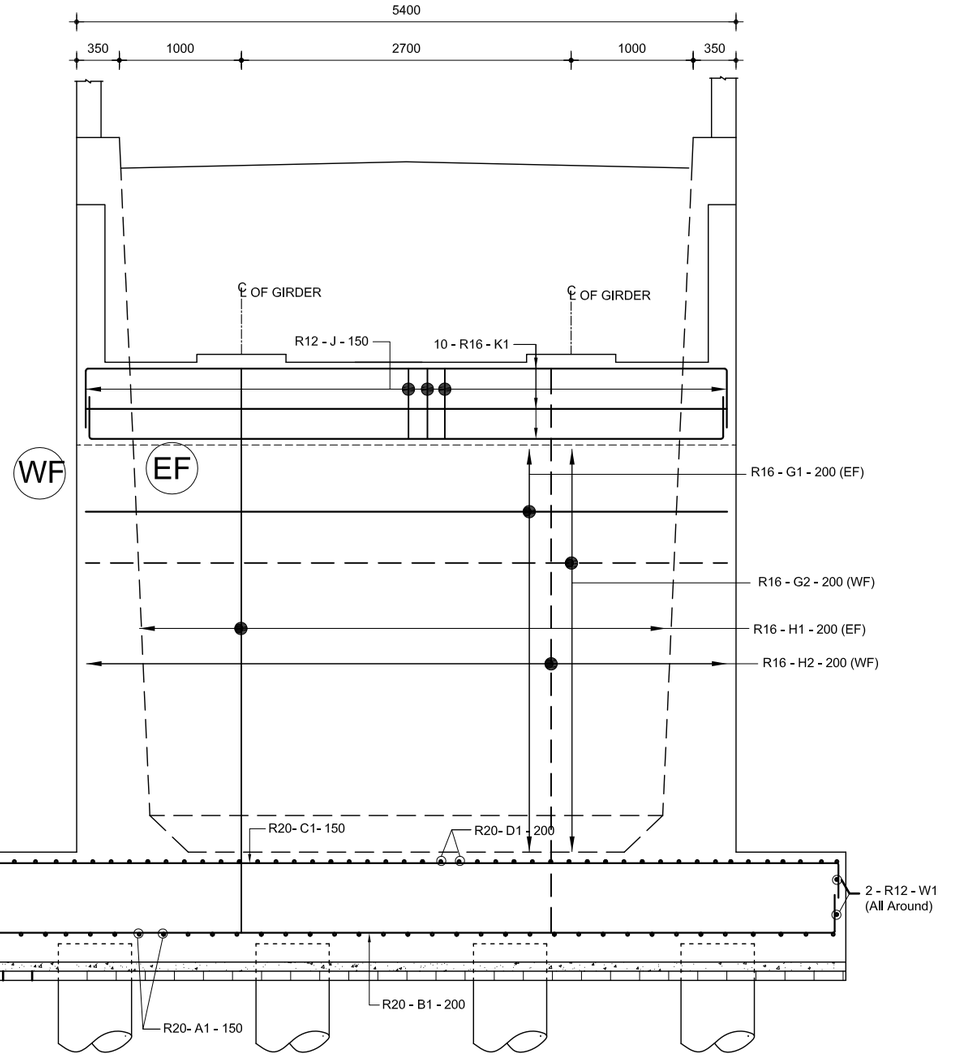
NOTES:

1. Clear cover to main reinforcement bar is to be 50mm. unless otherwise mentioned.
2. 28 days cylinder strength of concrete: f 'c = 25.0N/mm² (3600 psi)
3. Yield strength of mild steel deformed bar fy = 413N/mm² (60000psi)
4. EF = Earth Face, WF = Water Face

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	DESIGNED ,DRAWN & CHECKED BY		DRAWING TITLE
	PURAKAUSHAL PROJUKTI LIMITED	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	Reinf. Details of Abutment & Wing wall, Span 40m Abutment Height 6.5m DRAWING NO. AB-91 PAGE NO. P-143



CROSS SECTION OF WINGWALL (SEC. 3 - 3)
SHOWING REINFORCEMENT
Scale: 1:50

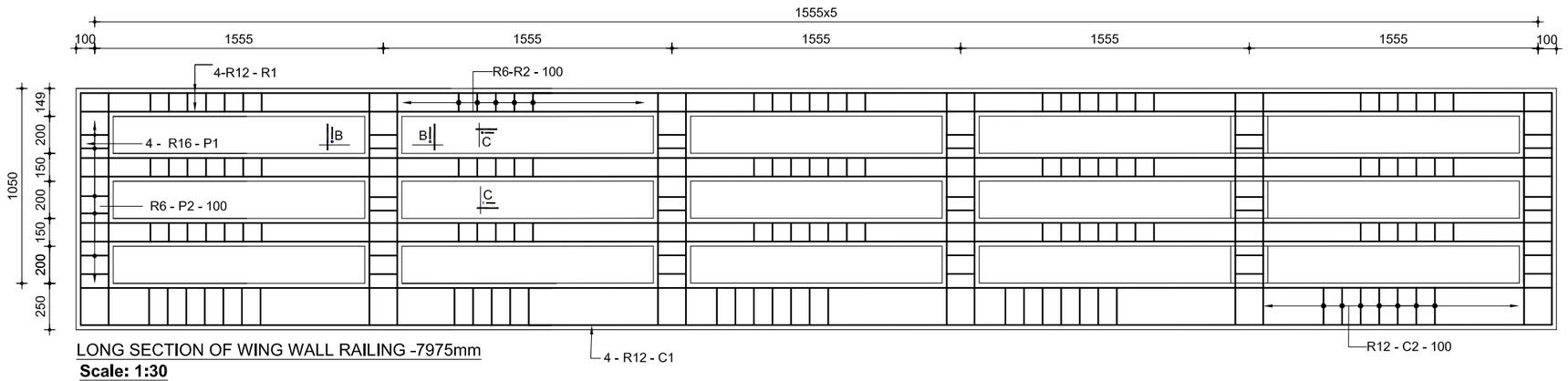


SECTIONAL FRONT ELEVATION OF ABUTMENT (SEC. 2 - 2)
SHOWING REINFORCEMENT
Scale: 1:50

NOTES:

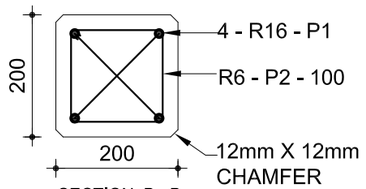
1. Clear cover to main reinforcement bar is to be 50mm. unless otherwise mentioned.
2. 28 days cylinder strength of concrete: f 'c = 25.0N/mm² (3600 psi)
3. Yield strength of mild steel deformed bar fy = 413N/mm² (60000psi)
4. EF = Earth Face, WF = Water Face

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	DESIGNED ,DRAWN & CHECKED BY PURAKAUSHAL PROJUKTI LIMITED	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	DRAWING TITLE Cross Section of Wing wall Showing Reinf. Details, Span 40m Abutment Height 6.5m DRAWING NO. AB-92 PAGE NO. P-144



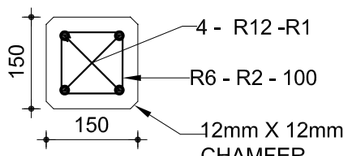
LONG SECTION OF WING WALL RAILING -7975mm

Scale: 1:30



SECTION: B - B
RAIL POST

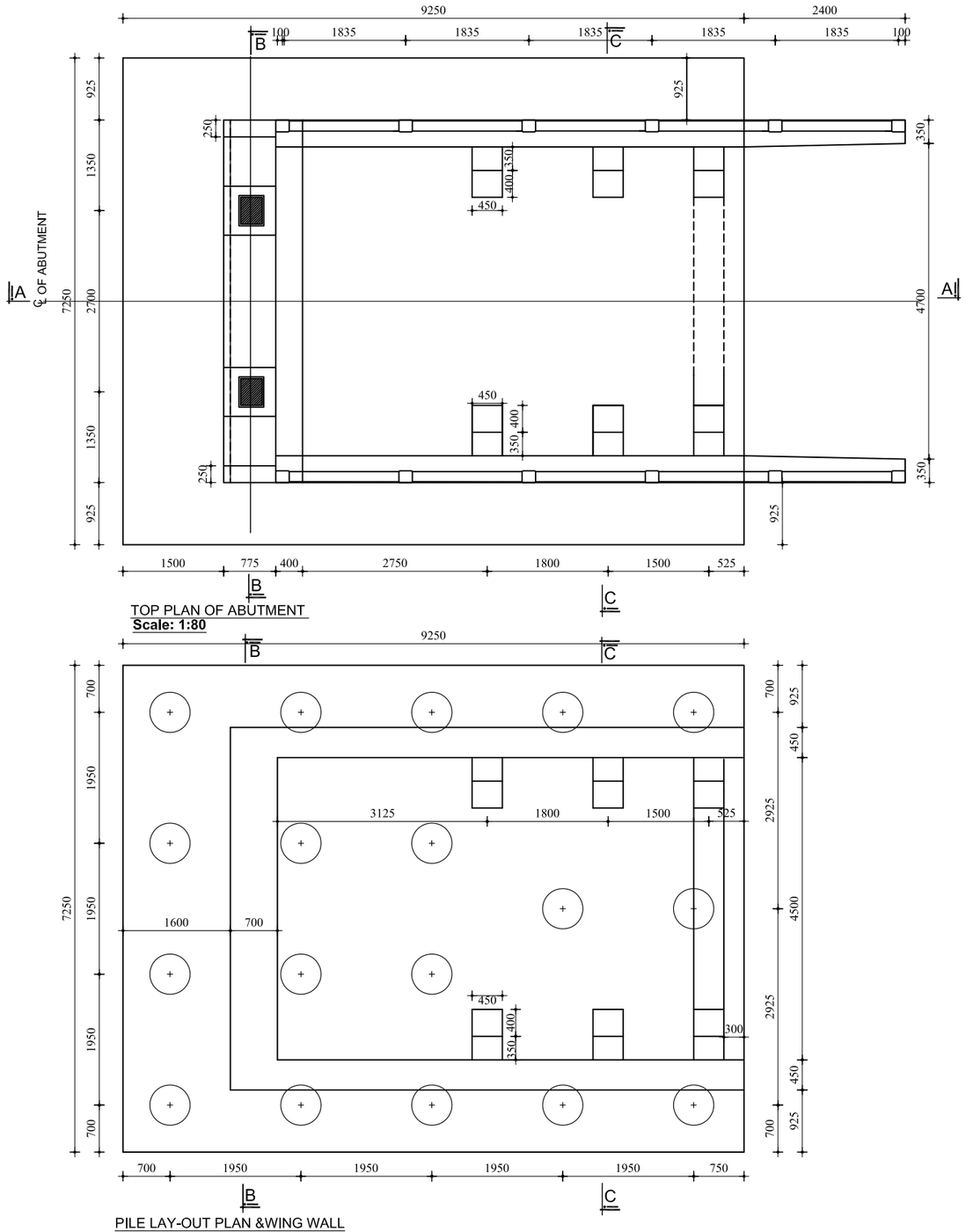
Scale: 1:10



SECTION: C - C
RAIL BAR

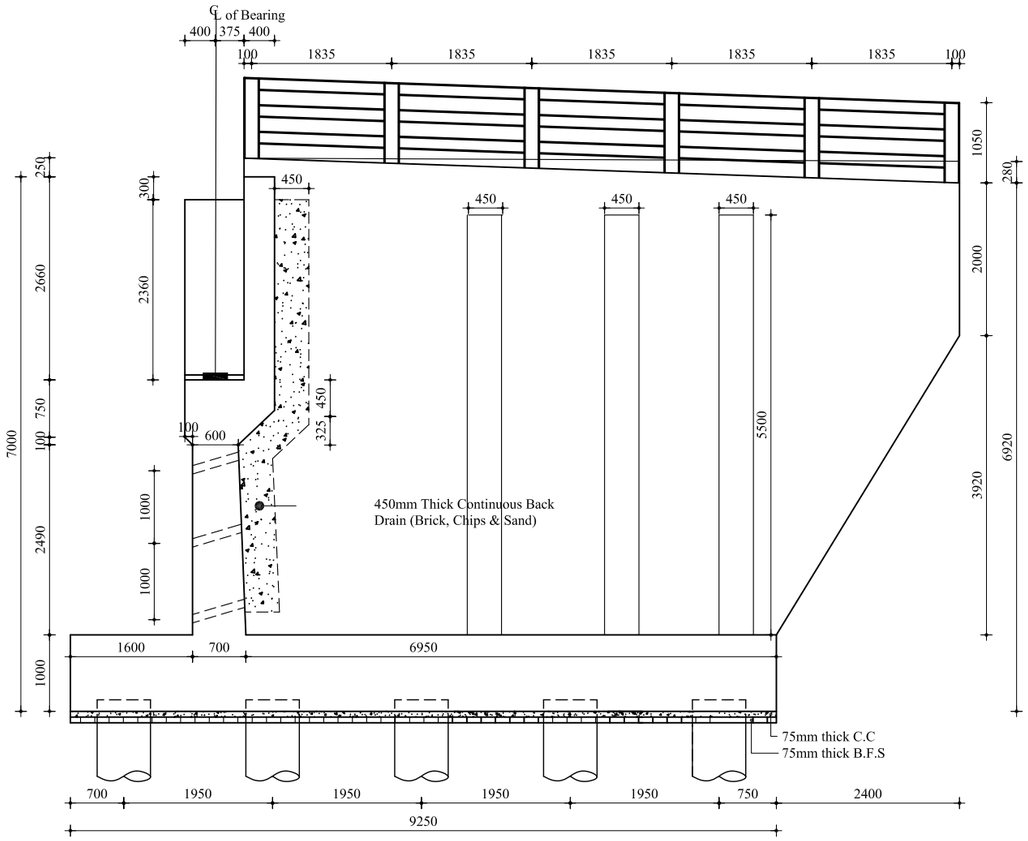
Scale: 1:10

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	DESIGNED ,DRAWN & CHECKED BY		DRAWING TITLE
	PURAKAUSHAL PROJUKTI LIMITED	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	Details of Abutment Railing, Span 40m Abutment Height 6.5m
			DRAWING NO. AB-93
			PAGE NO. P-145



TOP PLAN OF ABUTMENT
Scale: 1:80

PILE LAY-OUT PLAN &WING WALL
Scale: 1:80

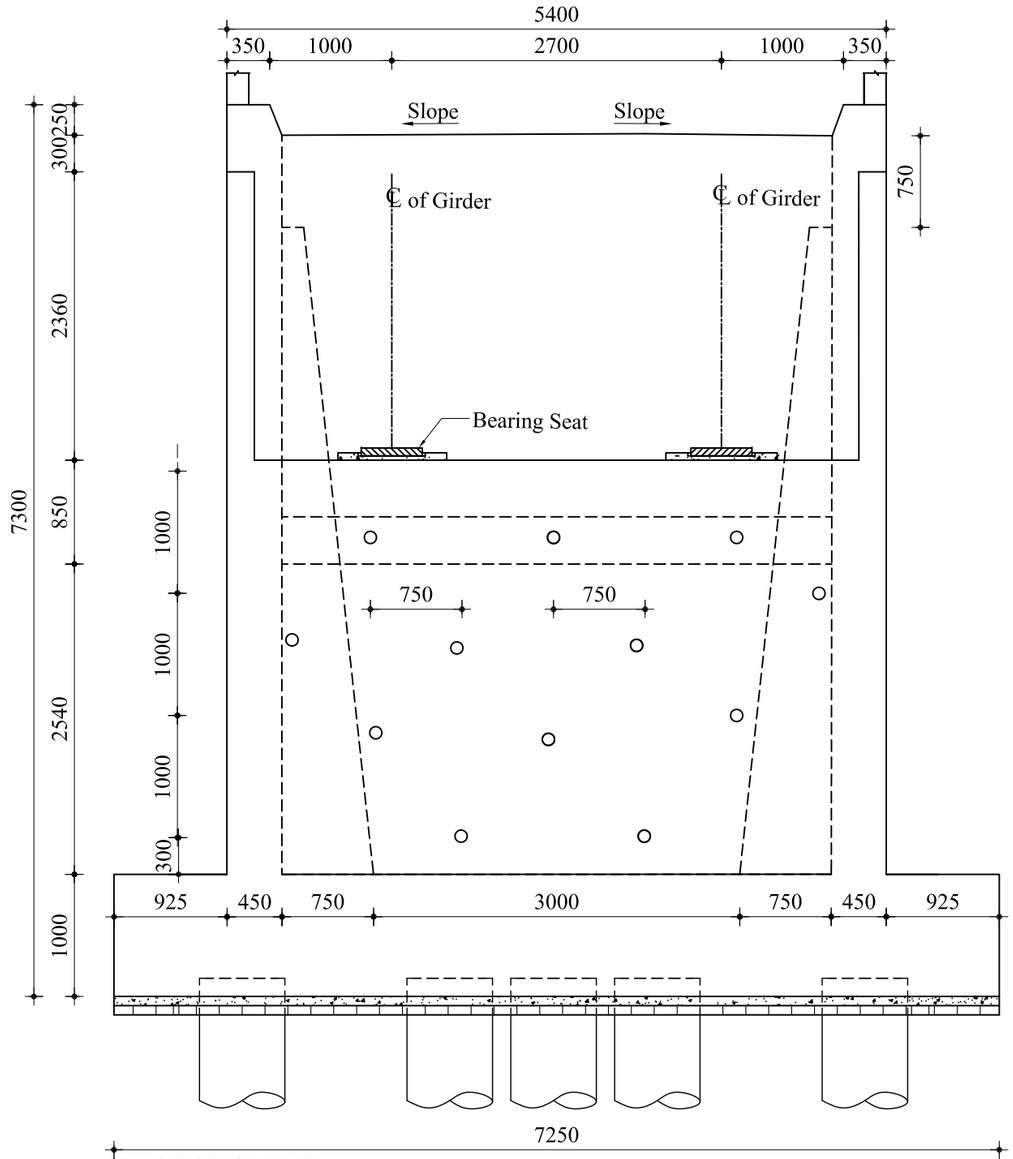


SECTION A-A
Scale: 1:80

NOTES:

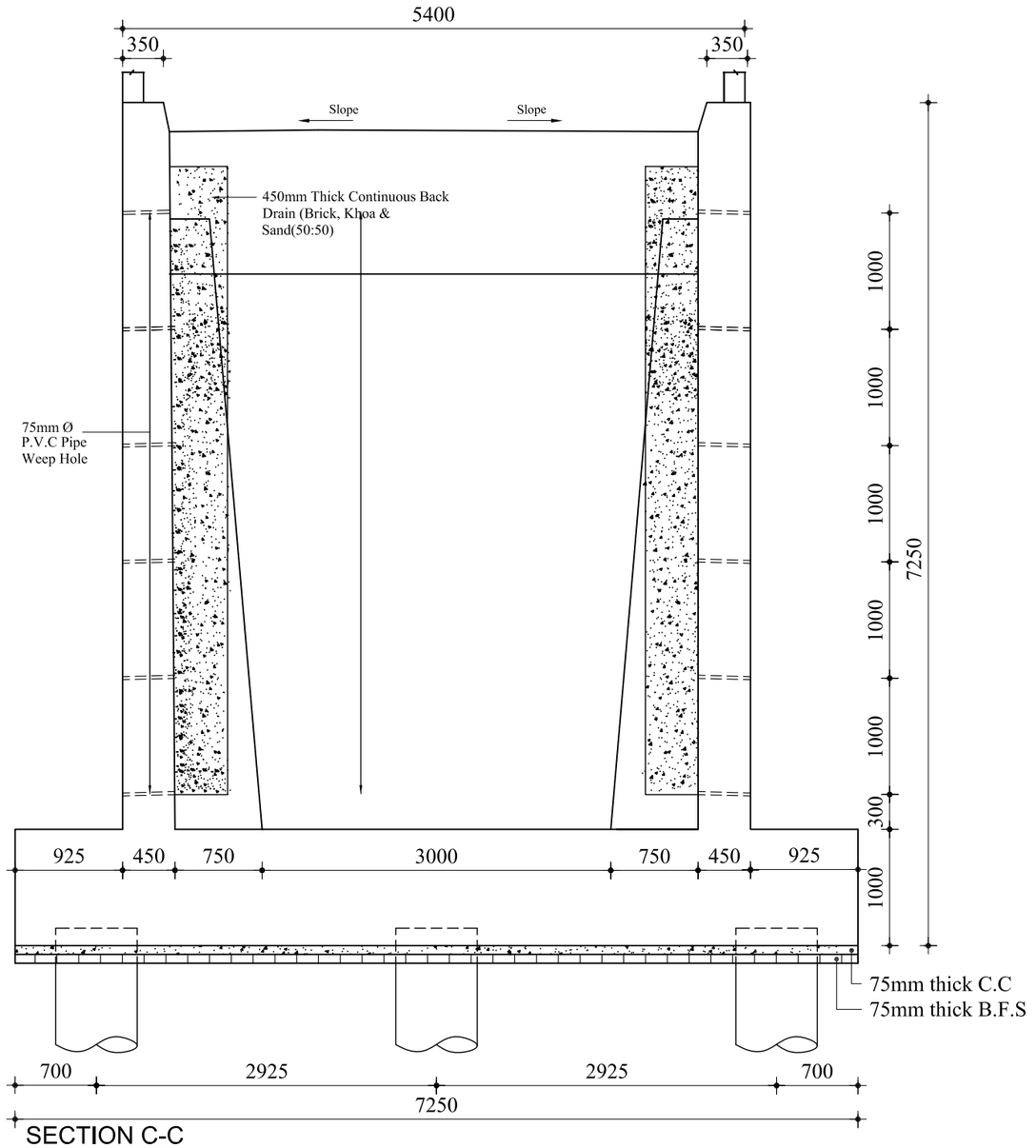
1. Abutment Details for 40m span.
2. All dimensions are in millimeter unless otherwise mentioned.
3. Clear cover to main reinforcement bar is to be 50mm. unless otherwise mentioned.
4. 28 days cylinder strength of concrete: f 'c = 25.0N/mm² (3600 psi)
5. Yield strength of mild steel deformed bar fy = 413N/mm² (60000psi)

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	DESIGNED ,DRAWN & CHECKED BY PURAKAUSHAL PROJUKTI LIMITED House # C10, Road # 4 ,Banasree, Rampura- 1219. E-maill: pproiltd@yahoo.com	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	DRAWING TITLE Details of Abutment Span 40m Abutment Height 7.0m DRAWING NO. AB-94 PAGE NO. P-146



SECTION B-B

Scale: 1:50



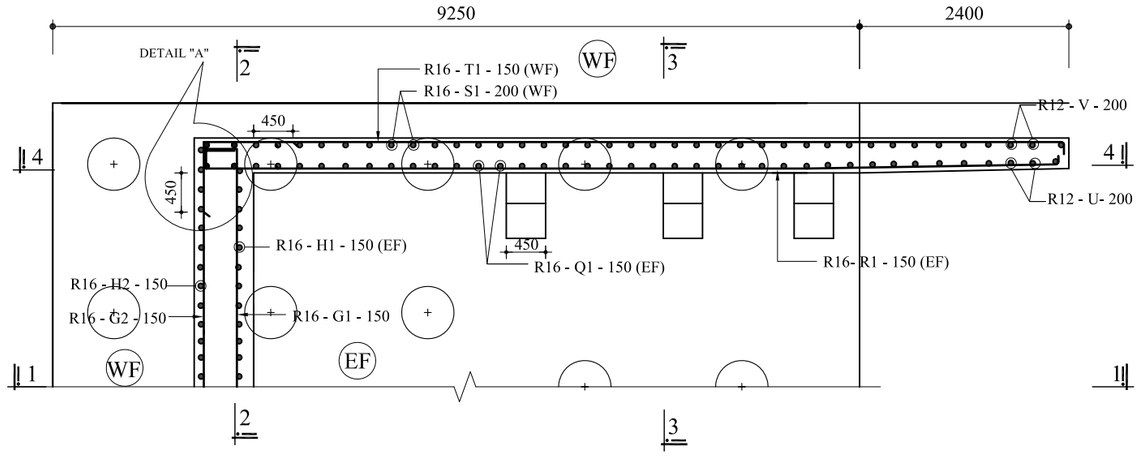
SECTION C-C

Scale: 1:50

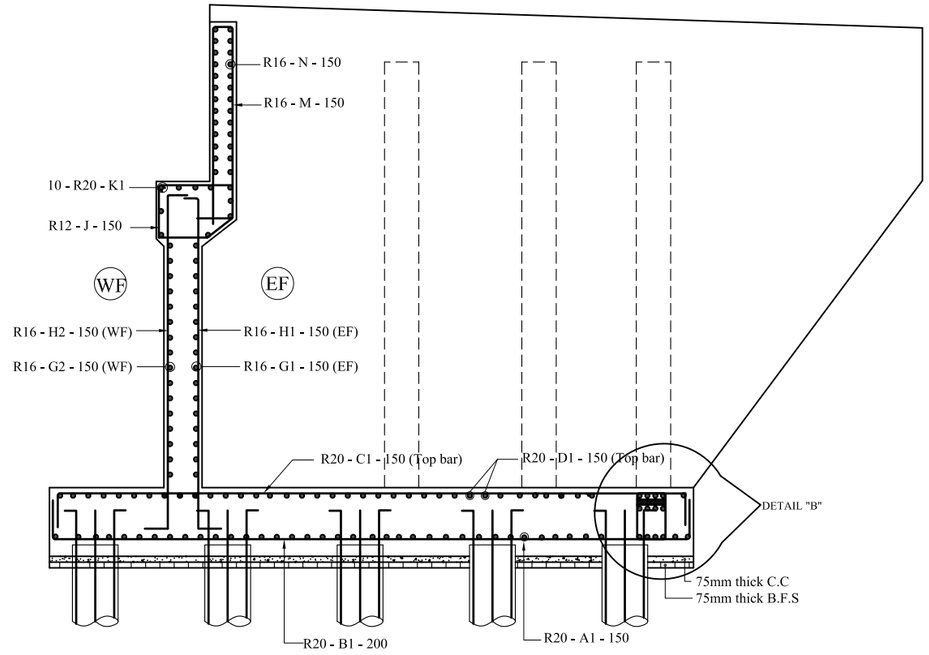
NOTES:

1. All dimensions are in millimeter unless otherwise mentioned.
2. Clear cover to main reinforcement bar is to be 50mm. unless otherwise mentioned.
3. 28 days cylinder strength of concrete: f 'c = 25.0N/mm² (3600 psi)
4. Yield strength of mild steel deformed bar fy = 413N/mm² (60000psi)

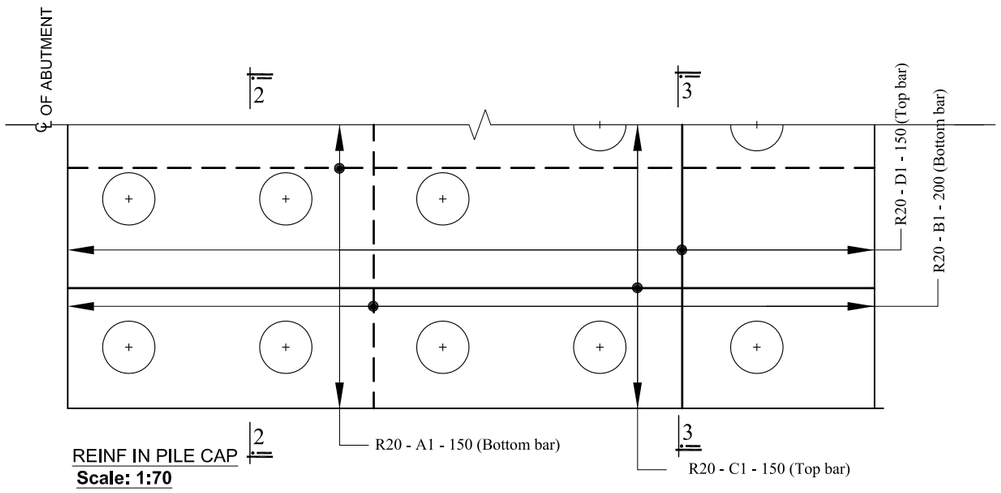
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	DESIGNED ,DRAWN & CHECKED BY PURAKAUSHAL PROJUKTI LIMITED House # C10, Road # 4 ,Banasree, Rampura- 1219. E-maill: pproiltd@yahoo.com	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	DRAWING TITLE Sectional Elevation of Abutment & Wing wall, Span 40m Abutment Height 7.0m DRAWING NO. AB-95 PAGE NO. P-147



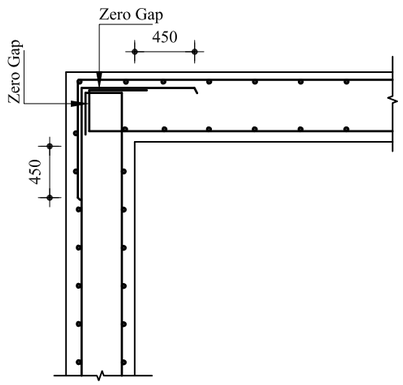
REINF IN ABUTMENT & WING WALL
Scale: 1:70



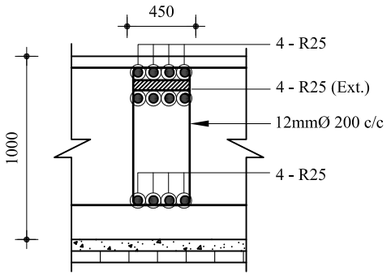
CROSS SECTION OF ABUTMENT (SECTION 1-1)
SHOWING REINFORCEMENT DETAILS
Scale: 1:80



REINF IN PILE CAP
Scale: 1:70



DETAIL "A"
Scale: 1:40

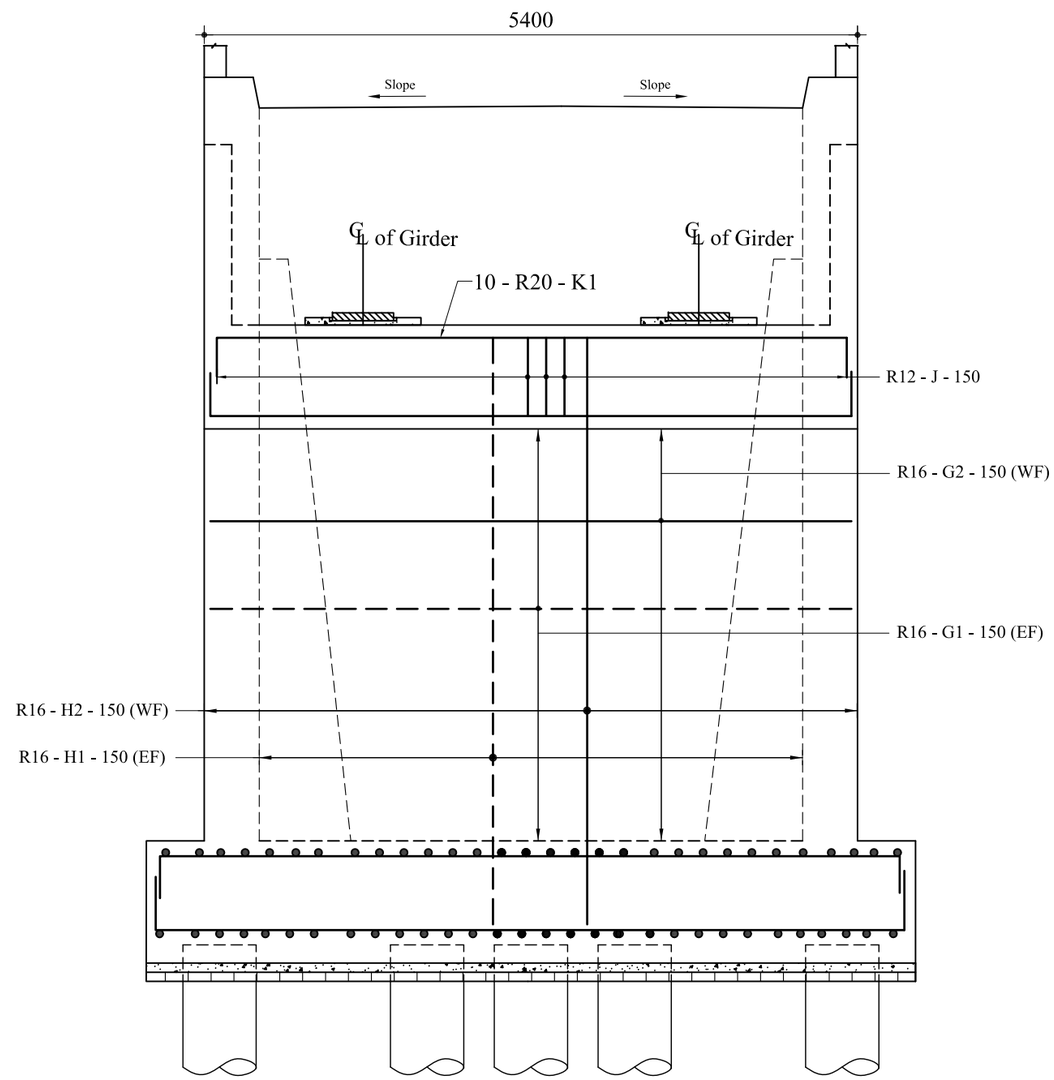


DETAIL "B"
Scale: 1:40

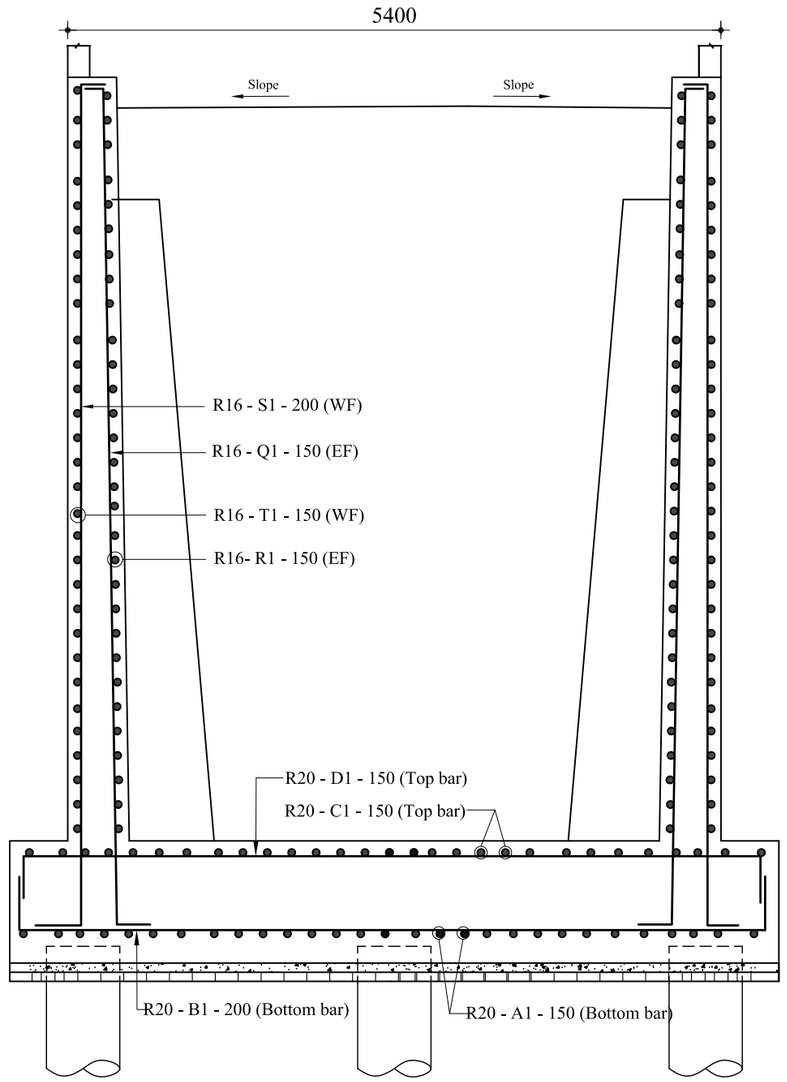
NOTES:

1. All dimensions are in millimeter unless otherwise mentioned.
2. Clear cover to main reinforcement bar is to be 50mm. unless otherwise mentioned.
3. 28 days cylinder strength of concrete: f 'c = 25.0N/mm² (3600 psi)
4. EF = Earth Face WF = Water Face

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	DESIGNED ,DRAWN & CHECKED BY PURAKAUSHAL PROJUKTI LIMITED House # C10, Road # 4 ,Banasree, Rampura- 1219. E-maill: pproiltd@yahoo.com	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	DRAWING TITLE Reinf. Details of Abutment & Wing wall, Span 30m Abutment Height 7m. DRAWING NO. AB-96 PAGE NO. P-148



SECTIONAL FRONT ELEVATION OF ABUTMENT (SECTION 2-2)
SHOWING REINFORCEMENT
Scale: 1:50

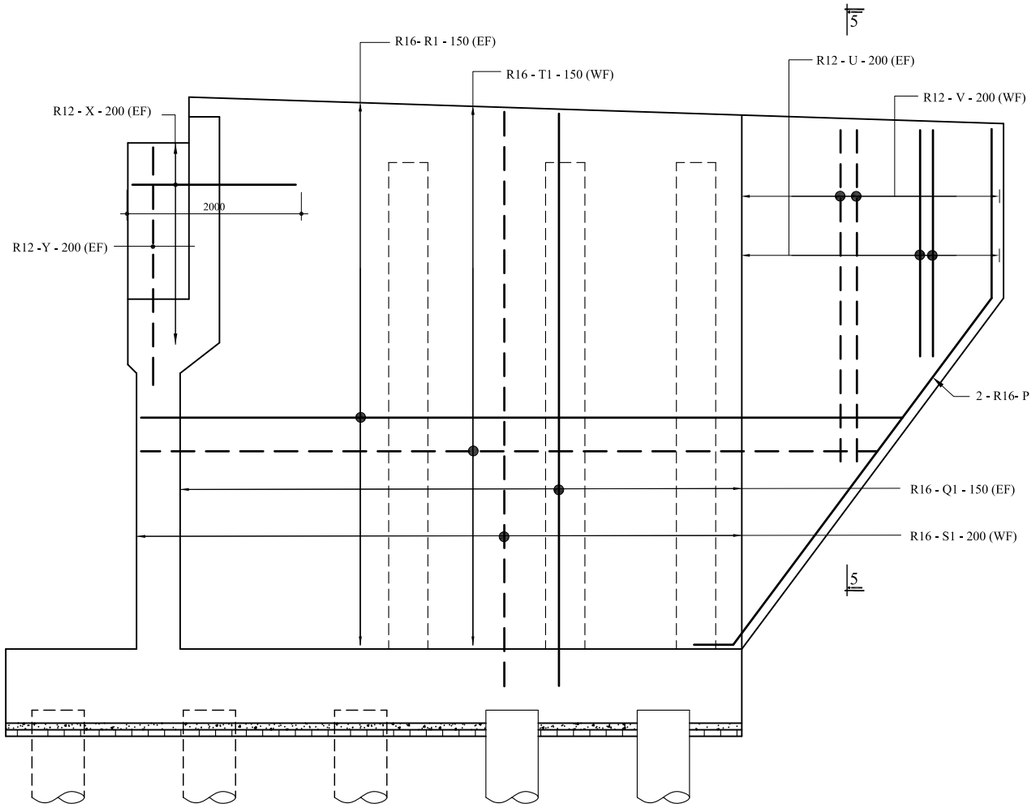


CROSS-SECTION OF WINGWALL (SEC.3-3)
SHOWING REINFORCEMENT
Scale: 1:50

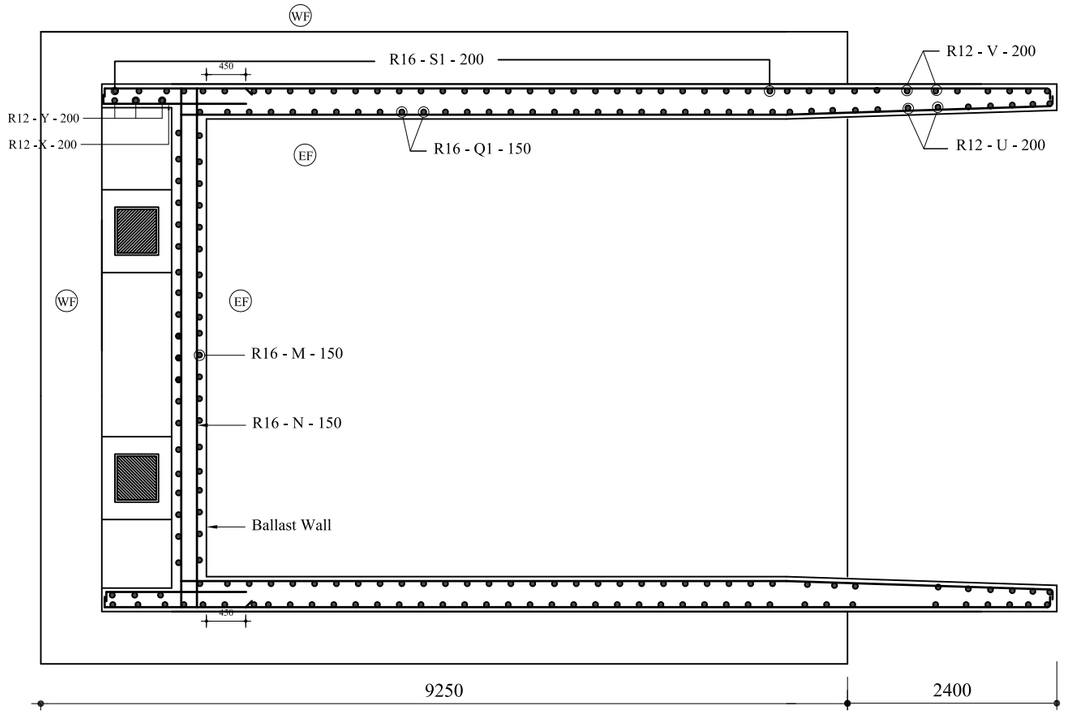
NOTES:

1. All dimensions are in millimeter unless otherwise mentioned.
2. Clear cover to main reinforcement bar is to be 50mm. unless otherwise mentioned.
3. 28 days cylinder strength of concrete: f 'c = 25.0N/mm² (3600 psi)
4. EF = Earth Face, WF = Water Face

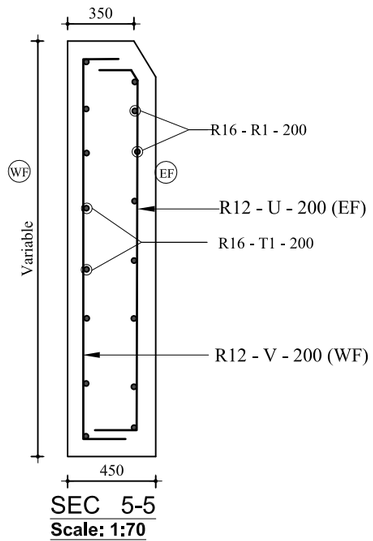
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	DESIGNED ,DRAWN & CHECKED BY PURAKAUSHAL PROJUKTI LIMITED House # C10, Road # 4 ,Banasree, Rampura- 1219. E-maill: pproiltd@yahoo.com	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	DRAWING TITLE Reinf. Details Sectional Elevation of Abutment & Wing wall, Span 30m Abutment Height 7m. DRAWING NO. AB-97 PAGE NO. P-149



SECTIONAL ELEVATION OF WINGWALL (SEC. 4 - 4)
SHOWING REINFORCEMENT
Scale: 1:70



TOP PLAN OF BALLASTWALL & WINGWALL
SHOWING TOP REINFORCEMENT
Scale: 1:70

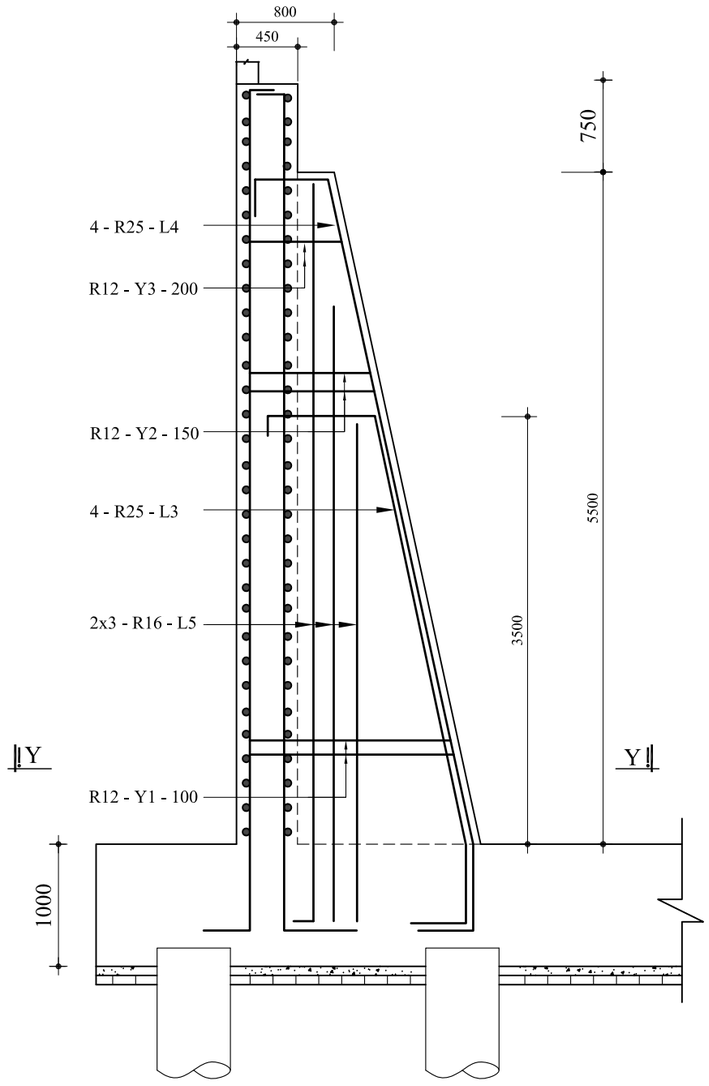


SEC 5-5
Scale: 1:70

NOTES:

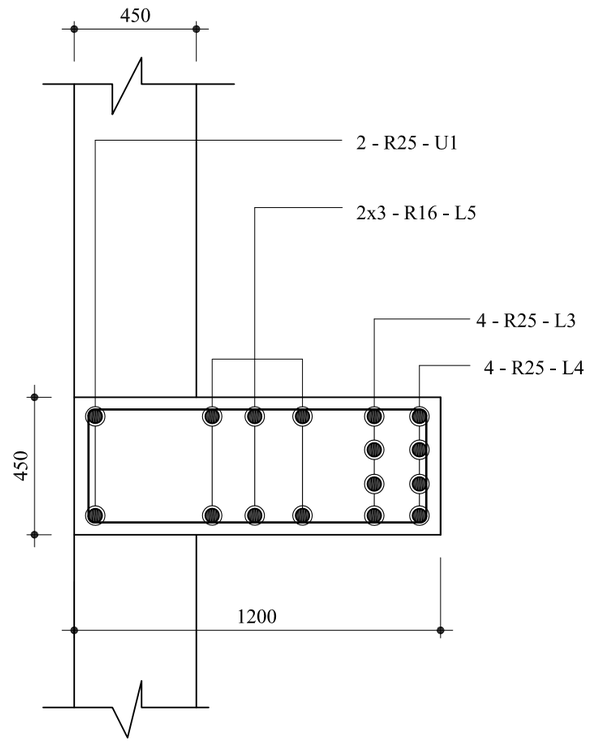
1. All dimensions are in millimeter unless otherwise mentioned.
2. Clear cover to main reinforcement bar is to be 50mm. unless otherwise mentioned.
3. 28 days cylinder strength of concrete: f 'c = 25.0N/mm² (3600 psi)
4. EF = Earth Face WF = Water Face

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	DESIGNED ,DRAWN & CHECKED BY PURAKAUSHAL PROJUKTI LIMITED House # C10, Road # 4 ,Banasree, Rampura- 1219. E-maill: pproiltd@yahoo.com	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	DRAWING TITLE Reinf. Details of Abutment & Wing wall, Span 40m Abutment Height 7.0m. DRAWING NO. AB-98 PAGE NO. P-150



REINF. DETAILS OF WING WALL COUNTER FORT

Scale: 1:50



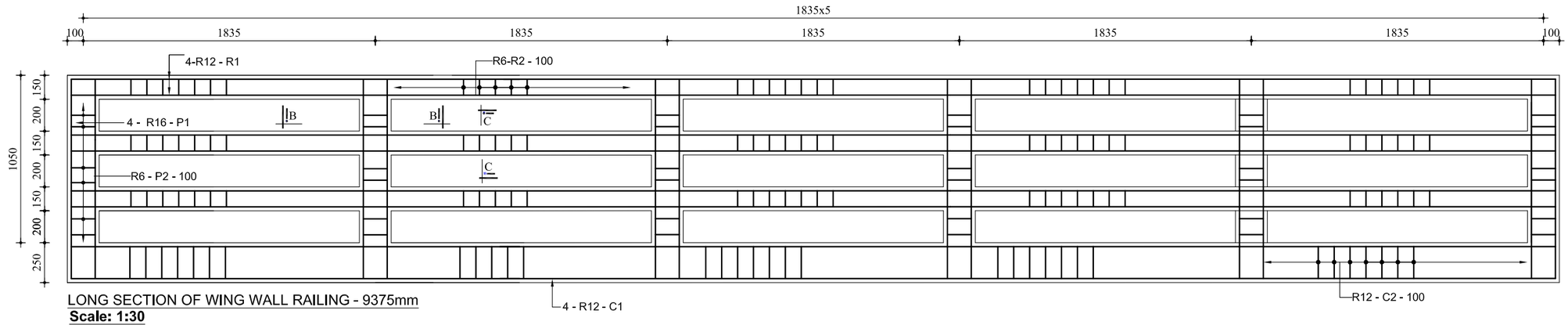
SECTION Y -Y

Scale: 1:20

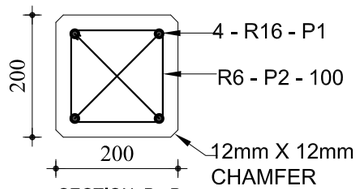
NOTES:

1. All dimensions are in millimeter unless otherwise mentioned.
2. Clear cover to main reinforcement bar is to be 50mm. unless otherwise mentioned.
3. 28 days cylinder strength of concrete: f 'c = 25.0N/mm² (3600 psi)
4. EF = Earth Face WF = Water Face

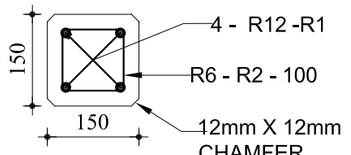
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	DESIGNED ,DRAWN & CHECKED BY PURAKAUSHAL PROJUKTI LIMITED House # C10, Road # 4 ,Banasree, Rampura- 1219. E-maill: pproiltd@yahoo.com	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	DRAWING TITLE Reinf. Details of Counter fort, Span 30m Abutment Height 7m. DRAWING NO. AB-99 PAGE NO. P-151



LONG SECTION OF WING WALL RAILING - 9375mm
Scale: 1:30

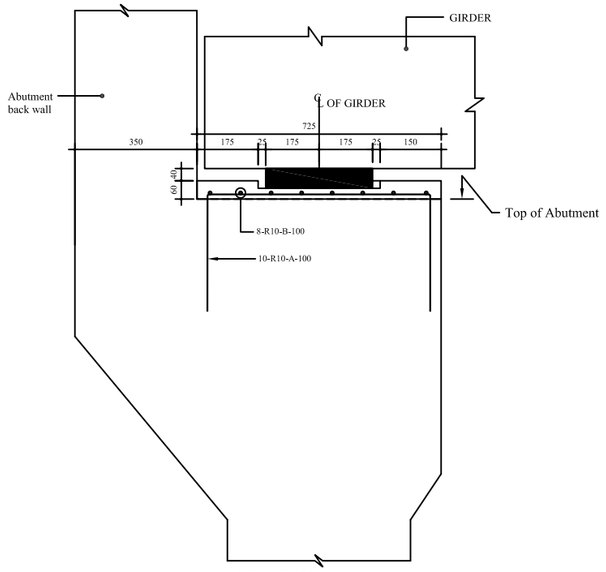


SECTION: B - B
RAIL POST
Scale: 1:10

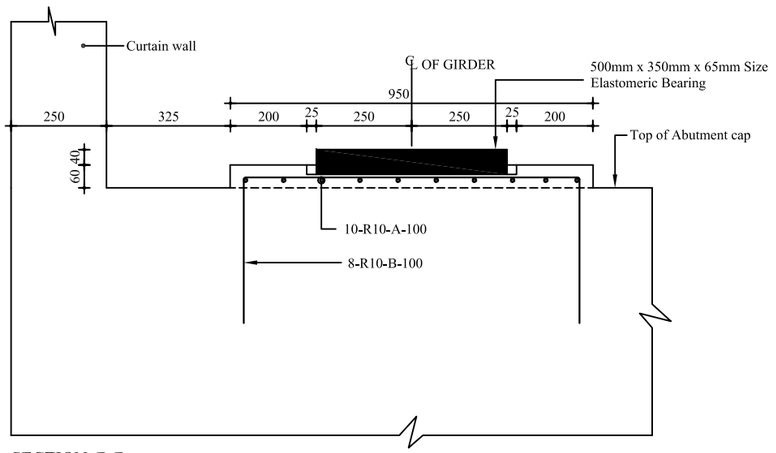


SECTION: C - C
RAIL BAR
Scale: 1:10

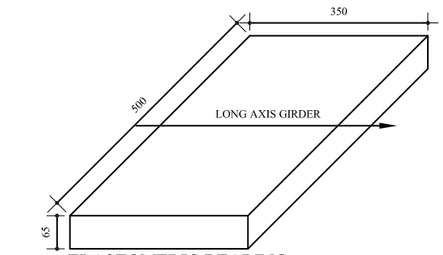
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	DESIGNED ,DRAWN & CHECKED BY PURAKAUSHAL PROJUKTI LIMITED House # C10, Road # 4 ,Banasree, Rampura- 1219. E-maill: pproiltd@yahoo.com	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	DRAWING TITLE Details of Abutment Railing, Span 30m Abutment Height 7m. DRAWING NO. AB-100 PAGE NO. P-152



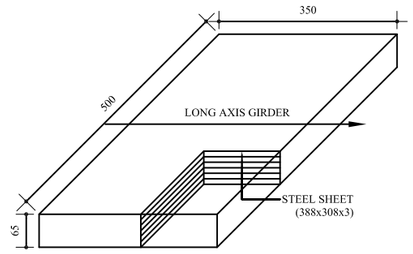
SECTION. A-A
Scale 1:20



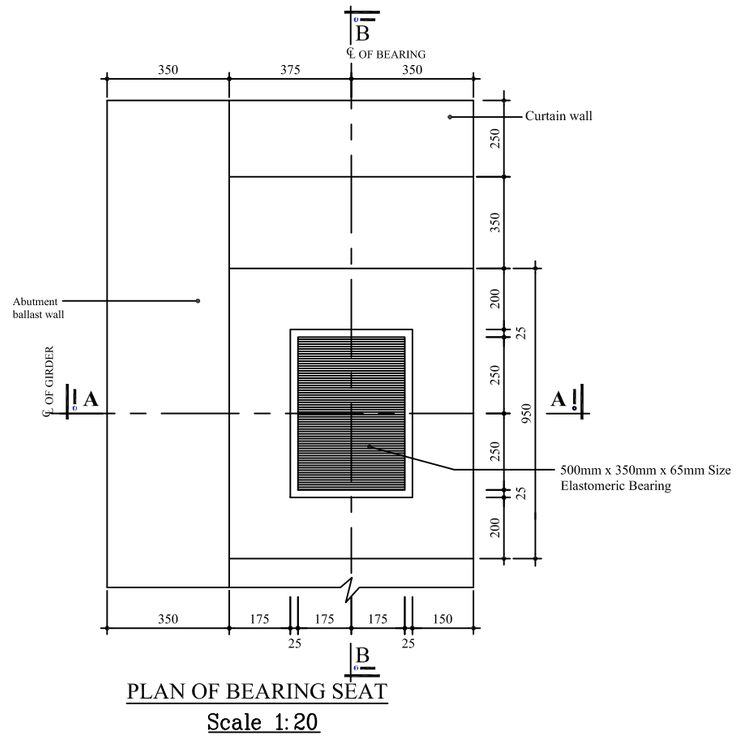
SECTION. B-B
Scale 1:16



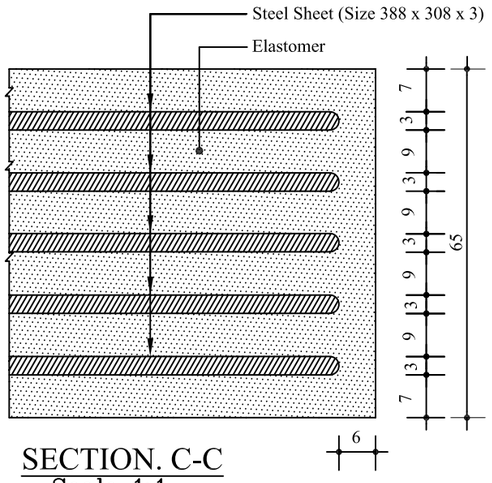
ELASTOMERIC BEARING
ISOMERIC VIEW
Scale 1:12



ELASTOMERIC (NEOPRENE) BEARING
SHOWING STEEL SHEET
Scale 1:12



PLAN OF BEARING SEAT
Scale 1:20



SECTION. C-C
Scale 1:1

NOTES:

1. Elastomeric Bearing 500x350x65mm.
2. All dimensions are in millimetre unless otherwise mentioned.
3. Elastomer hardness 60 ± 5 duro
4. Provide two layer polythene sheet between the elastomeric bearing pad and the girder.
5. Clear cover to top bar of bearing seat is to be 20mm.unless otherwise mentioned.
6. Top of bearing seat is to be adjusted according to the longitudinal slope of girder as shown on the elevation drawing of bridge.

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

DESIGNED ,DRAWN & CHECKED BY

PURAKAUSHAL PROJUKTI LIMITED
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Mobile :01711577016 E-mail:pprojltd@yahoo.com

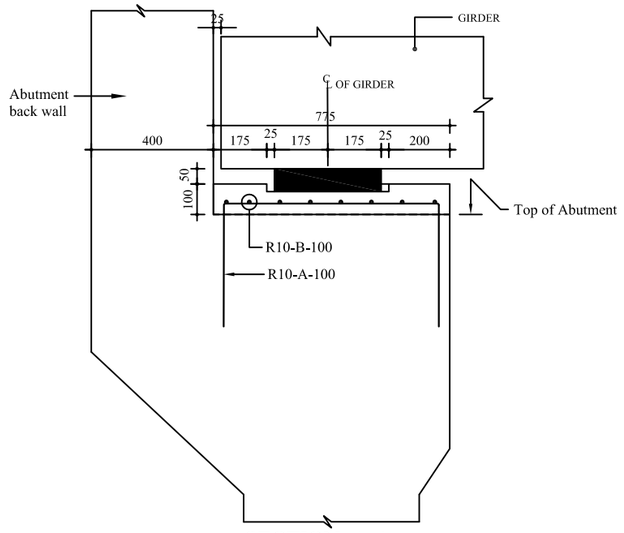
NAME OF PROJECT:
LOCATION:
UPAZILA:
DISTRICT:

DRAWING TITLE

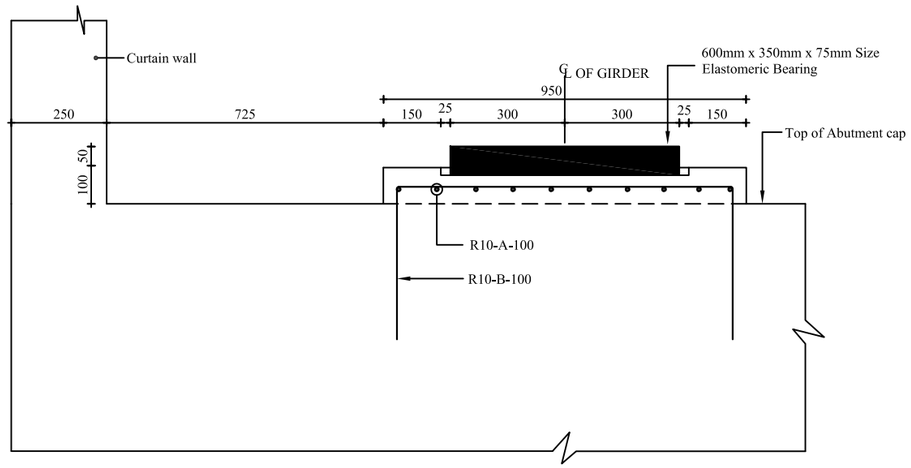
BEARING SEAT FOR SPAN 25m to 30m

DRAWING NO. BS-01

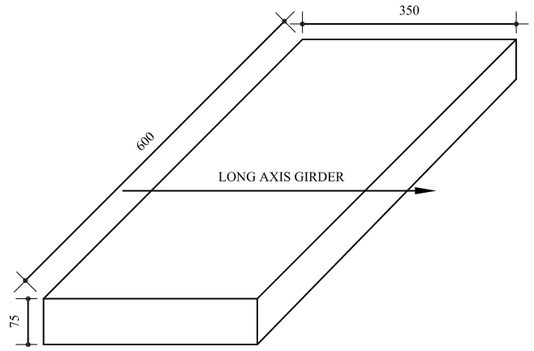
PAGE NO. P-153



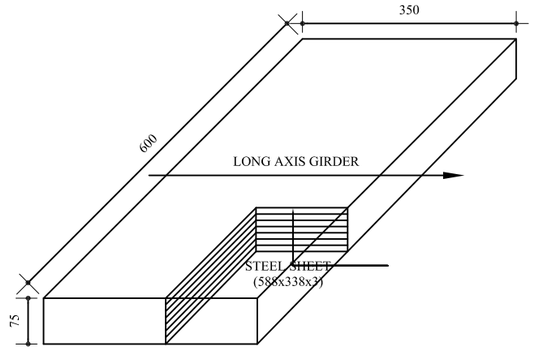
SECTION. A-A
Scale 1:20



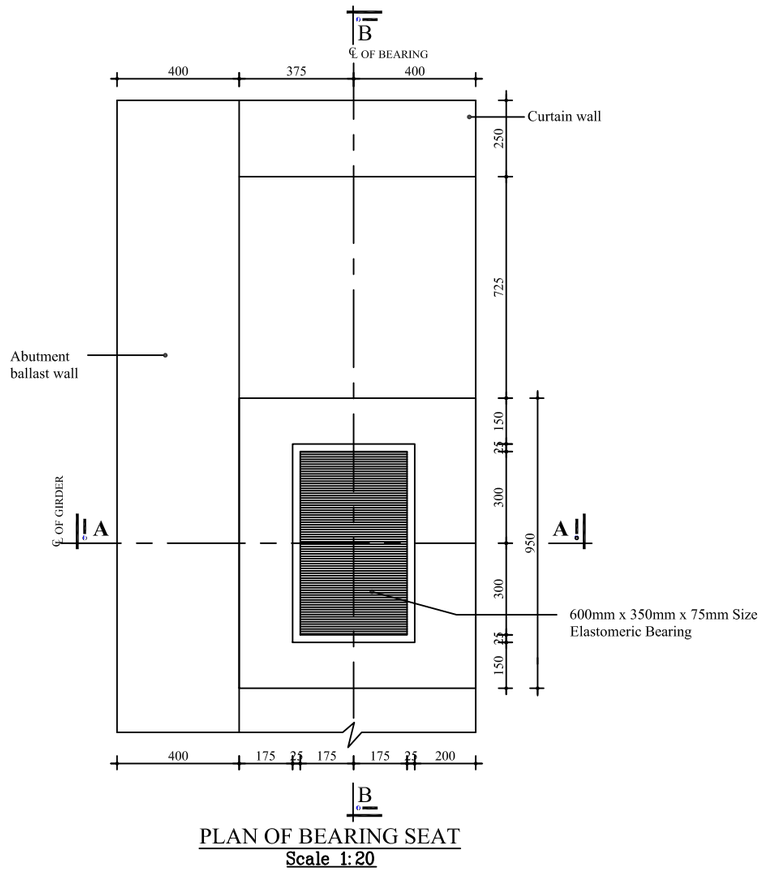
SECTION. B-B
Scale 1:16



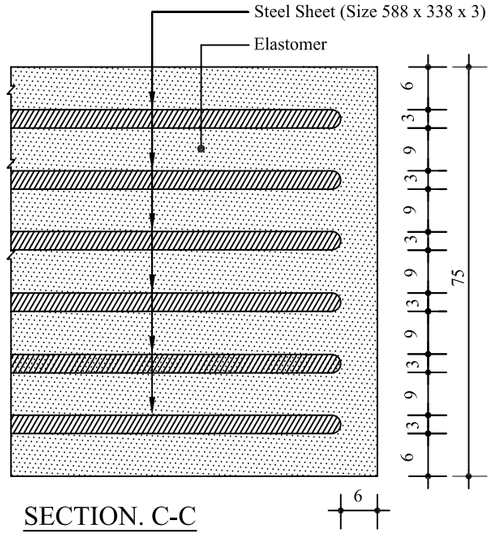
ELASTOMERIC BEARING
ISOMERIC VIEW
Scale 1:10



ELASTOMERIC (NEOPRENE) BEARING
SHOWING STEEL SHEET
Scale 1:10



PLAN OF BEARING SEAT
Scale 1:20



SECTION. C-C
Scale 1:1

NOTES:

1. Size 600 x 350 x 75m for Span Length 35m.
2. All dimensions are in millimetre unless otherwise mentioned.
3. Elastomer hardness 60 ± 5 duro
4. Provide two layer polythene sheet between the elastomeric bearing pad and the girder.
5. Clear cover to top bar of bearing seat is to be 20mm.unless otherwise mentioned.
6. Top of bearing seat is to be adjusted according to the longitudinal slope of girder as shown on the elevation drawing of bridge.

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

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NAME OF PROJECT:

LOCATION:

UPAZILA:

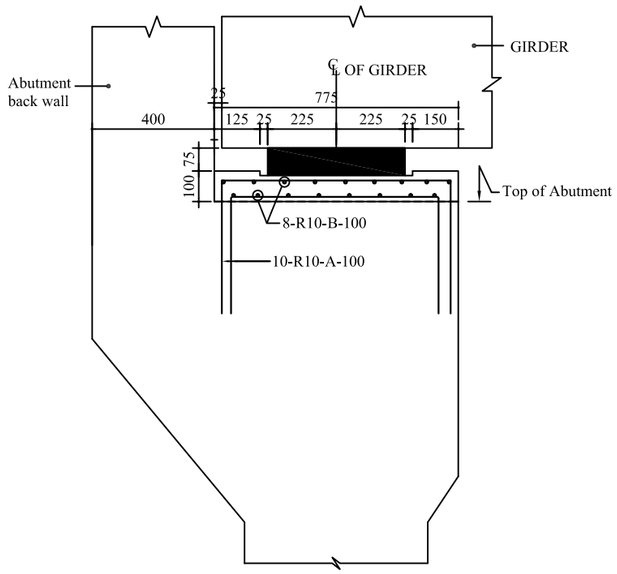
DISTRICT:

DRAWING TITLE

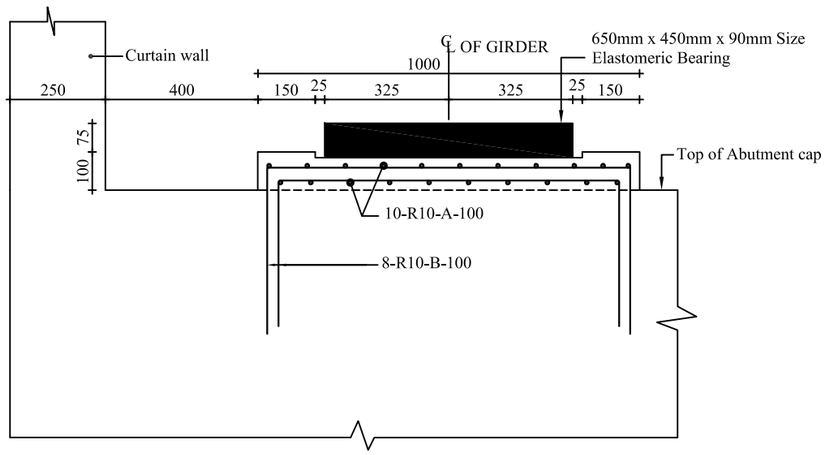
BEARING SEAT FOR SPAN 35m

DRAWING NO. BS-02

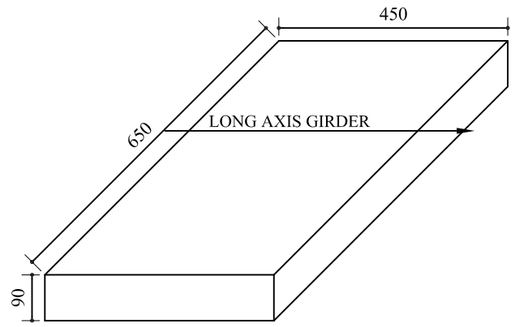
PAGE NO. P-154



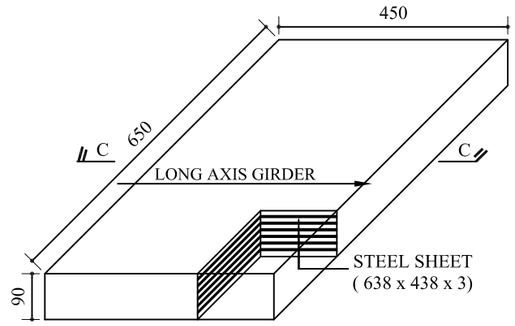
SECTION. A-A
Scale 1:20



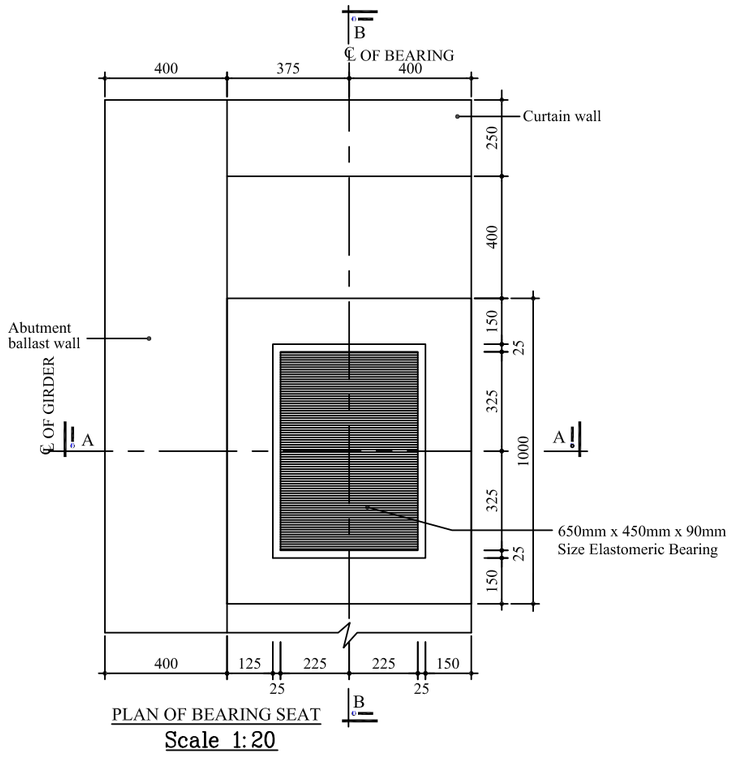
SECTION. B-B
Scale 1:16



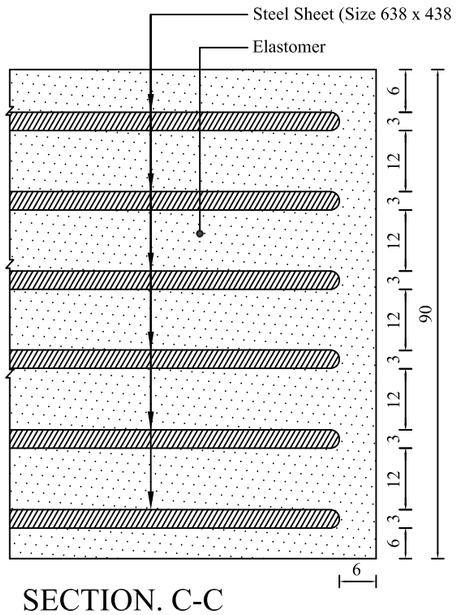
ELASTOMERIC BEARING
ISOMERIC VIEW
Scale 1:12



ELASTOMERIC (NEOPRENE) BEARING
SHOWING STEEL SHEET
Scale 1:12



PLAN OF BEARING SEAT
Scale 1:20



SECTION. C-C
Scale 1:1

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.

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

DESIGNED ,DRAWN & CHECKED BY

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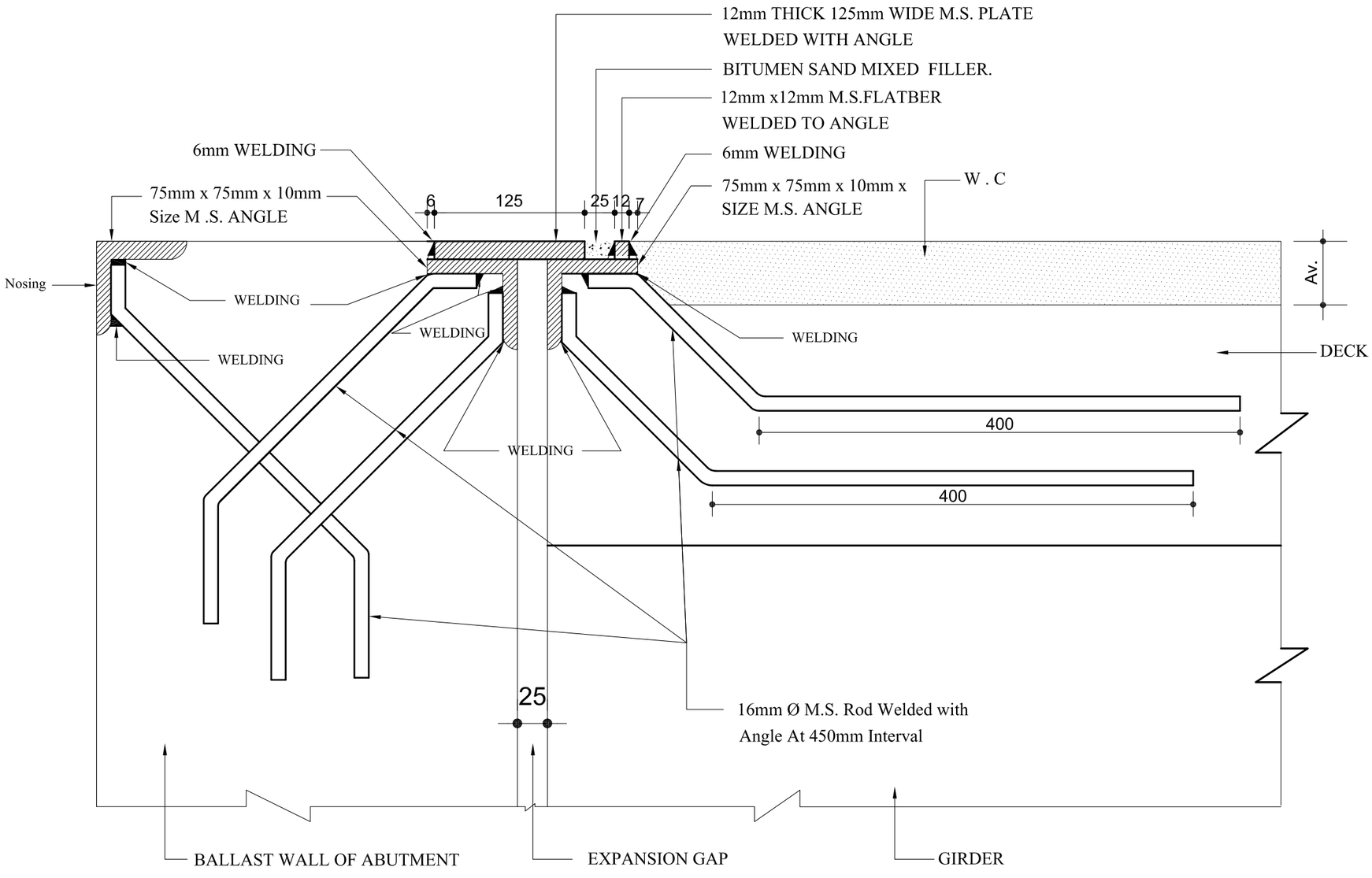
NAME OF PROJECT:
LOCATION:
UPAZILA:
DISTRICT:

DRAWING TITLE

BEARING SEAT FOR
SPAN 40m

DRAWING NO. BS-03

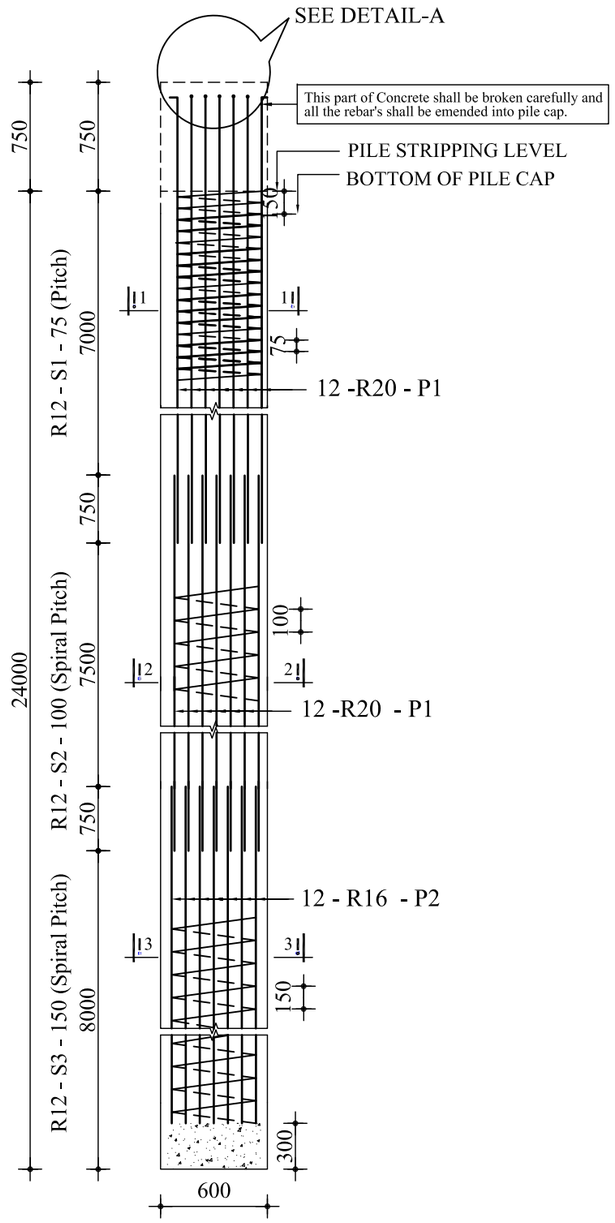
PAGE NO. P-155



EXPANSION JOINT DETAIL OVER ABUTMENT

Scale 1:4

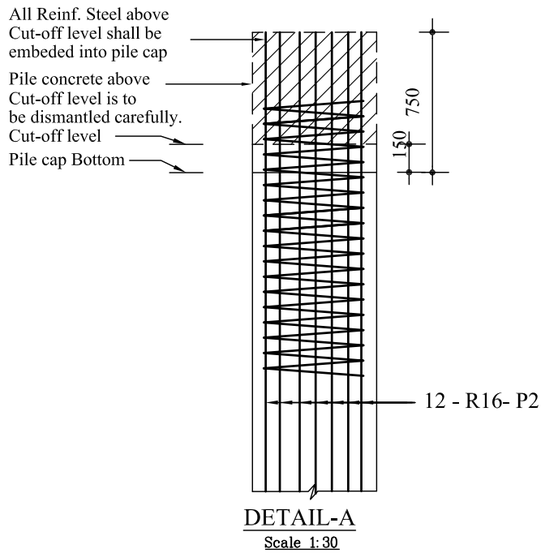
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	DESIGNED ,DRAWN & CHECKED BY PURAKAUSHAL PROJUKTI LIMITED House # 10 .Road # 4 .Banasree. Rampura.Dhaka-1219 Mobile :01711577016 E-mail:pprojltd@yahoo.com	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	DRAWING TITLE EXPANSION JOINT FOR SPAN 25m to 40m DRAWING NO. EX-01 PAGE NO. P-156



REINF. DETAILS OF ABUTMENT PILE

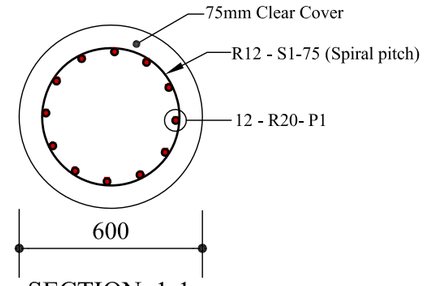
CAST-IN-SITU PILE DETAILS

Scale 1:40



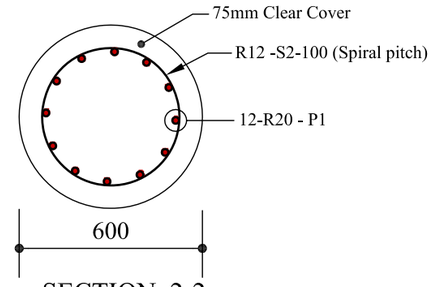
DETAIL-A

Scale 1:30



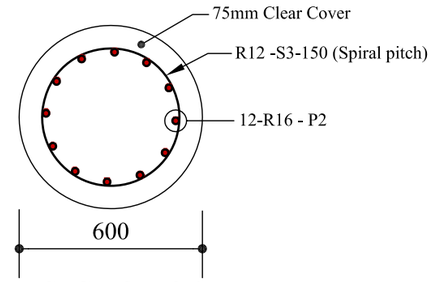
SECTION 1-1

Scale 1:20



SECTION 2-2

Scale 1:20



SECTION 3-3

Scale 1:20

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 N/mm^2 (3600 psi)
3. Yield strength of M.S deformed reinforcement bar fy = 413 N/mm^2 (60000 psi)
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 flowed 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 80 ton for Abutment Pile.
9. Test load shall be 160 ton on service Pile.
10. One pilot pile shall be done as specified for abutment pile & pile capacity is to be confirmed by static pile load test on this pilot pile.

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH

LOCAL GOVERNMENT ENGINEERING DEPARTMENT

DESIGNED ,DRAWN & CHECKED BY

PURAKAUSHAL PROJUKTI LIMITED
House # 10 .Road # 4 .Banasree. Rampura.Dhaka-1219
Mobile :01711577016 E-mail:pprojltd@yahoo.com

NAME OF PROJECT:

LOCATION:

UPAZILA:

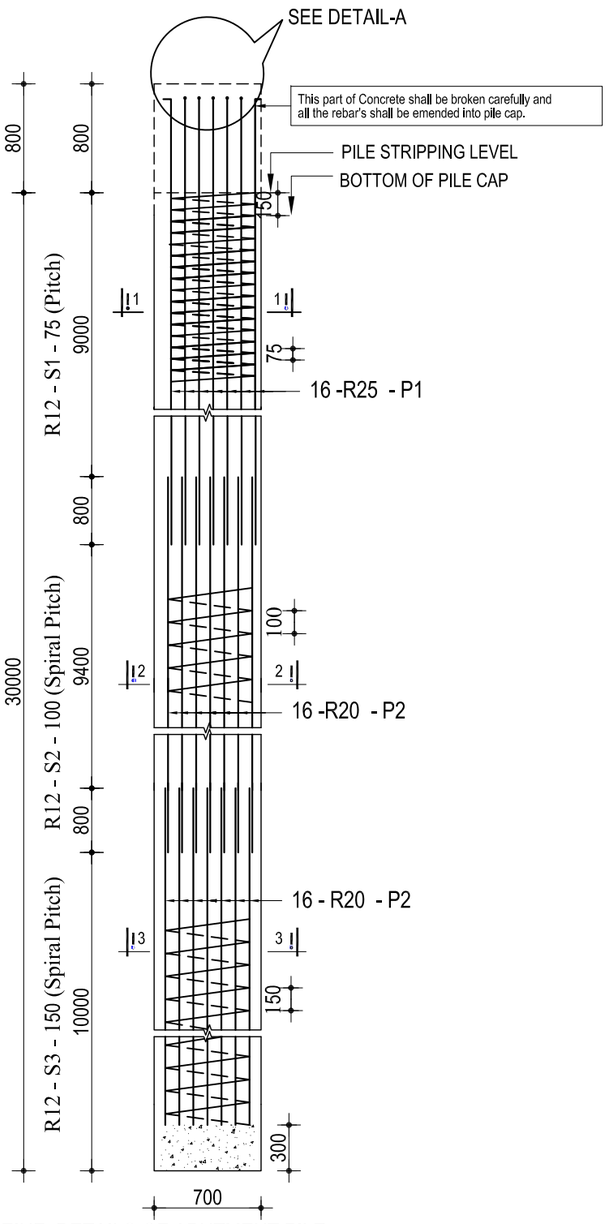
DISTRICT:

DRAWING TITLE

Typical Structural Drawing For 24m Long 600mm Dia Cast-in-situ pile For 5m Abutment & Span 25m

DRAWING NO. PR-01

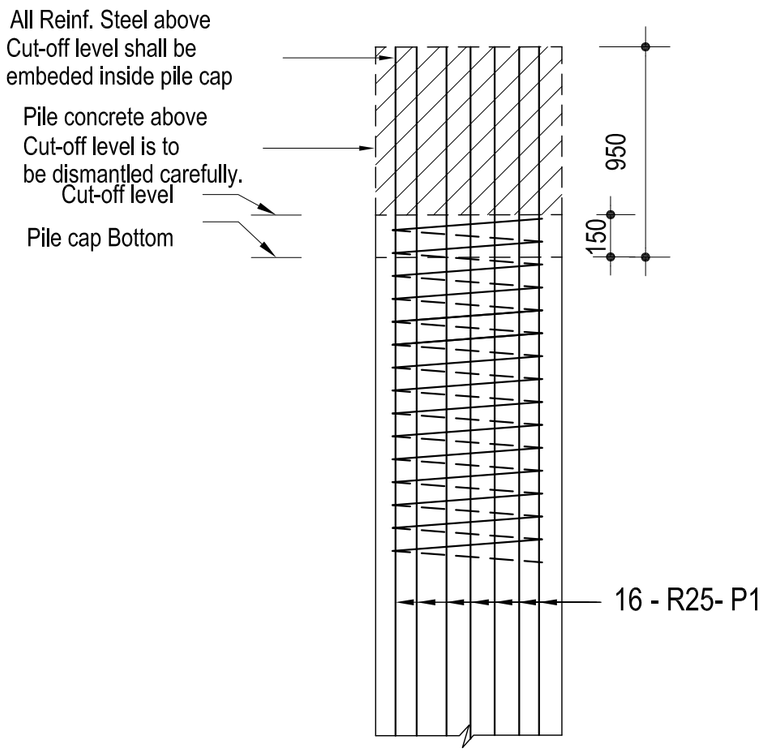
PAGE NO. P-157



REINF. DETAILS OF ABUTMENT PILE

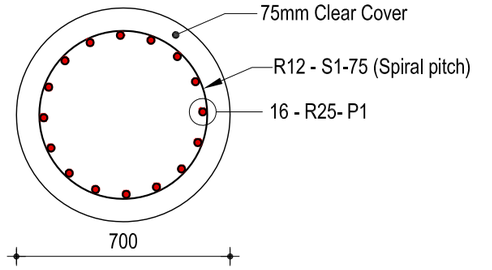
CAST-IN-SITU PILE DETAILS

Scale 1:40



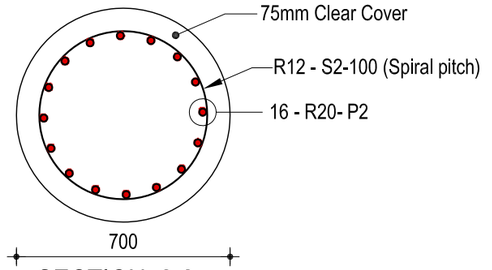
DETAIL-A

Scale 1:20



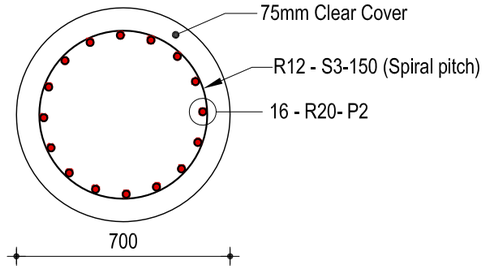
SECTION 1-1

Scale 1:20



SECTION 2-2

Scale 1:20



SECTION 3-3

Scale 1:20

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 N/mm^2 (3600 psi)
3. Yield strength of M.S deformed reinforcement bar fy = 413 N/mm^2 (60000 psi)
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 flowed 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 120 ton for Abutment Pile.
9. Test load shall be 240 ton on service Pile.
10. One pilot pile shall be done as specified for abutment pile & pile capacity is to be confirmed by static pile load test on this pilot pile.

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH **LOCAL GOVERNMENT ENGINEERING DEPARTMENT**	DESIGNED ,DRAWN & CHECKED BY PURAKAUSHAL PROJUKTI LIMITED House # 10 .Road # 4 .Banasree. Rampura.Dhaka-1219 Mobile :01711577016 E-mail:pprojltd@yahoo.com	NAME OF PROJECT: LOCATION: UPAZILA: DISTRICT:	DRAWING TITLE Typical Structural Drawing For 30m Long 700mm Dia Cast-in-situ Pile For 7m Abutment &Span 40m DRAWING NO. RP-02 PAGE NO. P-158

25.0m DECK SLAB.

SHAPE CODE	BAR SHAPE	SPECING	BAR MARK	BAR DIA (mm)	BAR LENGTH (mm)	NO MEMBER	NO OF BARS IN EACH MEMBER	TOTAL NO OF BARS	TOTAL LENGTH (m)	UNIT WEIGHT (kg)	TOTAL WEIGHT (kg)	SHAPE CODE	DIMENSIONS (mm) a	b	c	d	e	f
1	a	125	S1	16	5500	1	201	201	1105.50	1.58	1748.99	4	5300	100	100			
2	b a c	125	S2	16	5500	1	201	201	1105.50	1.58	1748.99	5	5300	100	100			
4	b c a	200	S3	12	25100	1	28	28	702.80	0.89	625.44	5	24900	100	100			
		125	S4	12	25100	1	44	44	1104.40	0.89	982.83	4	24900	100	100			
											SUB TOTAL		5106.24	kg				
											TOTAL=(S.T.X1)		**5106.24**	**kg**				
		WALK WAY																
5	a b c		C1	10	25100	1	8	8	200.80	0.62	124.09	1	24900	100	100			
		200	C2	12	1575	1	126	126	198.45	0.89	176.60	16	225	400	300	300	150	200
			C3	10	350	25	7	175	61.25	0.62	37.85	1	350					
			C4	10	950	25	4	100	95.00	0.62	58.71	1	950					
8	c b d a		C5	10	25100	1	7	7	175.70	0.62	108.58	1	24900	100	100			
		200	C6	12	1375	1	126	126	173.25	0.89	154.18	17	150	300	225	400	100	200
											SUB TOTAL		660.02	kg				
											TOTAL=(S.T.X2)		**1320.05**	**kg**				
		RAILING /DECK SLAB																
16	a f e b d c	S	P1	16	1700	18	4	72	122.40	1.58	193.65	2	1450	200	50			
		100	P2	6	720	18	9	162	116.64	0.22	25.95	8	150	150	150	150		
			R1	12	24900	1	12	12	298.80	0.89	265.91	1	24900					
17	e f b a d c	100	R2	6	520	51	15	765	397.80	0.22	88.50	8	100	100	100	100		
											SUB TOTAL		574.01	kg				
											TOTAL=(S.T.X2)		**1148.01**	**kg**				
											GROSS TOTAL		**7574.30**	**kg**				

30.0m DECK SLAB.

SHAPE CODE	BAR SHAPE	SPECING	BAR MARK	BAR DIA (mm)	BAR LENGTH (mm)	NO MEMBER	NO OF BARS IN EACH MEMBER	TOTAL NO OF BARS	TOTAL LENGTH (m)	UNIT WEIGHT (kg)	TOTAL WEIGHT (kg)	SHAPE CODE	DIMENSIONS (mm) a	b	c	d	e	f
1	a	125	S1	16	5500	1	241	241	1325.50	1.58	2097.05	4	5300	100	100			
2	b a c	125	S1	16	5500	1	241	241	1325.50	1.58	2097.05	5	5300	100	100			
4	b c a	200	S3	12	30100	1	28	28	842.80	0.89	750.02	4	29900	100	100			
		125	S5	12	30100	1	44	44	1324.40	0.89	1178.61	5	29900	100	100			
											SUB TOTAL		6122.73	kg				
											TOTAL=(S.T.X1)		**6122.73**	**kg**				
		WALK WAY																
5	a b c		C1	10	30100	1	8	8	240.80	0.62	148.81	1	29900	100	100			
		200	C2	12	1575	1	151	151	237.83	0.89	211.65	16	225	400	300	300	150	200
			C3	10	350	30	7	210	73.50	0.62	45.42	1	350					
			C4	10	950	30	4	120	114.00	0.62	70.45	1	950					
8	c b d a		C5	10	30100	1	7	7	210.70	0.62	130.21	1	29900	100	100			
		200	C6	12	1375	1	151	151	207.63	0.89	184.77	17	150	300	225	400	100	200
											SUB TOTAL		791.32	kg				
											TOTAL=(S.T.X2)		**1582.63**	**kg**				
		RAILING /DECK SLAB																
16	a f e b d c	S	P1	16	1700	21	4	84	142.80	1.58	225.92	2	1450	200	50			
		100	P2	6	720	21	9	189	136.08	0.22	30.28	8	150	150	150	150		
			R1	12	29900	1	12	12	358.80	0.89	319.30	1	29900					
17	e f b a d c	100	R2	6	520	60	15	900	468.00	0.22	104.12	8	100	100	100	100		
											SUB TOTAL		679.62	kg				
											TOTAL=(S.T.X2)		**1359.24**	**kg**				
											GROSS TOTAL		**9064.60**	**kg**				

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH

LOCAL GOVERNMENT ENGINEERING DEPARTMENT

DESIGNED ,DRAWN & CHECKED BY

PURAKAUSHAL PROJUKTI LIMITED

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E-maill: pproiltd@yahoo.com

NAME OF PROJECT:

LOCATION:

UPAZILA:

DISTRICT:

DRAWING TITLE

Ber Bending Schedule
Deck Slab 25.0m & 30.0m

DRAWING NO.

PAGE NO. P-159

35.0m DECK SLAB.

SHAPE CODE	BAR SHAPE
1	a
2	b a c
4	b c a
5	a b c
8	c b d a
16	a b f e d c
17	e f b a d c

SPECING	BAR MARK	BAR DIA (mm)	BAR LENGTH (mm)	NO MEMBER	NO OF BARS IN EACH MEMBER	TOTAL NO OF BARS	TOTAL LENGTH (m)	UNIT WEIGHT (kg)	TOTAL WEIGHT (kg)	SHAPE CODE	DIMENSIONS (mm) a	b	c	d	e	f
125	S1	16	5500	1	281	281	1545.50	1.58	2445.10	4	5300	100	100			
125	S1	16	5500	1	281	281	1545.50	1.58	2445.10	5	5300	100	100			
200	S3	12	35100	1	28	28	982.80	0.89	874.61	4	34900	100	100			
150	S4	12	35100	1	44	44	1544.40	0.89	1374.39	5	34900	100	100			
								SUB TOTAL	7139.22	kg						
								TOTAL=(S.T.X1)	**7139.22**	**kg**						
WALK WAY																
	C1	10	35100	1	8	8	280.80	0.62	173.53	1	34900	100	100			
200	C2	12	1575	1	176	176	277.20	0.89	246.69	16	225	400	300	300	150	200
	C3	10	350	35	7	245	85.75	0.62	52.99	1	350					
	C4	10	950	35	4	140	133.00	0.62	82.19	1	950					
	C5	10	35100	1	7	7	245.70	0.62	151.84	1	34900	100	100			
200	C6	12	1375	1	176	176	242.00	0.89	215.36	17	150	300	225	400	100	200
								SUB TOTAL	922.61	kg						
								TOTAL=(S.T.X2)	**1845.22**	**kg**						
RAILING /DECK SLAB																
S	P1	16	1700	24	4	96	163.20	1.58	258.20	2	1450	200	50			
100	P2	6	720	24	9	216	155.52	0.22	34.60	8	150	150	150	150		
	R1	12	34900	1	12	12	418.80	0.89	372.70	1	34900					
100	R2	6	520	69	15	1035	538.20	0.22	119.74	8	100	100	100	100		
								SUB TOTAL	785.23	kg						
								TOTAL=(S.T.X2)	**1570.47**	**kg**						
								GROSS TOTAL	**10554.90**	**kg**						

40.0m DECK SLAB.

SHAPE CODE	BAR SHAPE
1	a
2	b a c
4	b c a
5	a b c
8	c b d a
16	a b f e d c
17	e f b a d c

SPECING	BAR MARK	BAR DIA (mm)	BAR LENGTH (mm)	NO MEMBER	NO OF BARS IN EACH MEMBER	TOTAL NO OF BARS	TOTAL LENGTH (m)	UNIT WEIGHT (kg)	TOTAL WEIGHT (kg)	SHAPE CODE	DIMENSIONS (mm) a	b	c	d	e	f
125	S1	16	5500	1	321	321	1765.50	1.58	2793.16	4	5300	100	100			
125	S1	16	5500	1	321	321	1765.50	1.58	2793.16	5	5300	100	100			
200	S3	12	40100	1	28	28	1122.80	0.89	999.20	4	39900	100	100			
125	S4	12	40100	1	44	44	1764.40	0.89	1570.17	5	39900	100	100			
								SUB TOTAL	8155.70	kg						
								TOTAL=(S.T.X1)	**8155.70**	**kg**						
WALK WAY																
	C1	10	40100	1	8	8	320.80	0.62	198.25	1	39900	100	100			
200	C2	12	1575	1	201	176	277.20	0.89	246.69	16	225	400	300	300	150	200
	C3	10	350	40	7	280	98.00	0.62	60.56	1	350					
	C4	10	950	40	4	160	152.00	0.62	93.94	1	950					
	C5	10	40100	1	7	7	280.70	0.62	173.47	1	39900	100	100			
200	C6	12	1375	1	201	201	276.38	0.89	245.95	17	150	300	225	400	100	200
								SUB TOTAL	1018.86	kg						
								TOTAL=(S.T.X2)	**2037.73**	**kg**						
RAILING /DECK SLAB																
S	P1	16	1700	28	4	112	190.40	1.58	301.23	2	1450	200	50			
100	P2	6	720	28	9	252	181.44	0.22	40.37	8	150	150	150	150		
	R1	12	39900	1	12	12	478.80	0.89	426.09	1	39900					
100	R2	6	520	81	15	1215	631.80	0.22	140.56	8	100	100	100	100		
								SUB TOTAL	908.25	kg						
								TOTAL=(S.T.X2)	**1816.50**	**kg**						
								GROSS TOTAL	**12009.93**	**kg**						

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH

LOCAL GOVERNMENT ENGINEERING DEPARTMENT

DESIGNED ,DRAWN & CHECKED BY

PURAKAUSHAL PROJUKTI LIMITED

House # C10, Road # 4 ,Banasree, Rampura- 1219.
E-maill: pproiltd@yahoo.com

NAME OF PROJECT:

LOCATION:

UPAZILA:

DISTRICT:

DRAWING TITLE

Ber Bending Schedule
Deck Slab 35.0m & 40.0m

DRAWING NO.

PAGE NO. P-160

SHAPE CODE	BAR SHAPE
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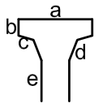
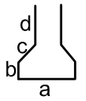
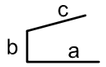
4	
5	
32	
67	
68	
77	
78	
79	

25.00m NON PRE STRESSED REINFORCEMENT GIRDER:

COMPO-NENT	SPEC-ING	BAR MARK	BAR DIA (mm)	BAR LENGTH (mm)	NO MEMBER	NO OF BARS IN EACH MEMBER	TOTAL NO OF BARS	TOTAL LENGTH (m)	UNIT WEIGHT (kg)	TOTAL WEIGHT (kg)	SHAPE CODE	DIMENSIONS (mm)					
												a	b	c	d	F	
25 m GIRDER	300	G1a	12	3580	2	11	22	78.76	0.89	70.09	32	180	2*1550	2*150			
	250	G1b	12	3580	2	14	28	100.24	0.89	89.21	32	180	2*1550	2*150			
	200	G1c	12	3580	2	17	34	121.72	0.89	108.32	32	180	2*1550	2*150			
	150	G1d	12	3825	2	8	16	61.20	0.89	54.46	32	425	2*1550	2*150			
	200	G1e	12	4050	2	8	16	64.80	0.89	57.67	32	650	2*1550	2*150			
	300	G2a	12	2450	2	11	22	53.90	0.89	47.97	68	650	2*200	2*300	2*400		
	250	G2b	12	2450	2	14	28	68.60	0.89	61.05	68	650	2*200	2*300	2*400		
	200	G2c	12	2450	2	17	34	83.30	0.89	74.13	68	650	2*200	2*300	2*400		
	150	G2d	12	2450	2	8	16	39.20	0.89	34.88	68	650	2*200	2*300	2*400		
	200	G2e	12	2250	2	8	16	36.00	0.89	32.04	4	650	800	800			
	300	G3a	12	2720	2	11	22	59.84	0.89	53.25	67	900	2*100	2*310	2*100	2*400	
	250	G3b	12	2720	2	14	28	76.16	0.89	67.78	67	900	2*100	2*310	2*100	2*400	
	200	G3c	12	2720	2	17	34	92.48	0.89	82.30	67	900	2*100	2*310	2*100	2*400	
	150	G3d	12	2720	2	8	16	43.52	0.89	38.73	67	900	2*100	2*310	2*100	2*400	
	200	G3e	12	2300	2	8	16	36.80	0.89	32.75	5	900	700	700			
		G4a	10	21000	2	5	10	210.00	0.62	129.78	1	21000					
		G4b	10	3200	4	5	20	64.00	0.62	39.55	53	1500	1700				
		G5a	10	24900	1	8	8	199.20	0.62	123.11	1	24900					
		G5a	10	24900	1	12	12	298.80	0.62	184.66	1	24900					
		G6	12	2250	4	6	24	54.00	0.89	48.06	77	1800	150	300			
		G7	12	2000	2	4	8	16.00	0.89	14.24	4	1400	300	300			
		M1	12	14850	2	6	12	178.20	0.89	158.58	78	27*550					
		M1	12	8400	2	6	12	100.80	0.89	89.70	78	6*1400					
		S1	12	300	2	10	20	6.00	0.89	5.34	79		250	50			
									SUB TOTAL	1697.64	kg						
									TOTAL=(S.T.X2)	3395.28	kg						
DIAPHRAGM																	
		G15	10	3250	1	12	12	39	0.62	24.10	32	250	2*1350	2*150			
		G16	16	5400	2	9	18	97.2	1.58	153.78	4	5000	200	200			
		C17	16	5400	1	3	3	16.2	1.58	25.63	4	5000	200	200			
									SUB TOTAL	203.51	kg						
									TOTAL=(S.T.X5)	1017.55	kg						
									GROSS TOTAL=	4412.83	kg						

SHAPE CODE	BAR SHAPE
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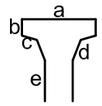
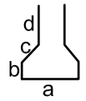
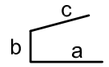
4	
5	
32	
67	
68	
77	
78	
79	

30.00m NON PRE STRESSED REINFORCEMENT GIRDER:

COMPO-NENT	SPEC-ING	BAR MARK	BAR DIA (mm)	BAR LENGTH (mm)	NO MEMBER	NO OF BARS IN EACH MEMBER	TOTAL NO OF BARS	TOTAL LENGTH (m)	UNIT WEIGHT (kg)	TOTAL WEIGHT (kg)	SHAPE CODE	DIMENSIONS (mm)					
												a	b	c	d	F	
30 m GIRDER	300	G1a	12	4180	2	14	28	117.04	0.89	104.16	32	180	2*1850	2*150			
	250	G1b	12	4180	2	16	32	133.76	0.89	119.04	32	180	2*1850	2*150			
	200	G1c	12	4180	2	20	40	167.20	0.89	148.79	32	180	2*1850	2*150			
	150	G1d	12	4425	2	8	16	70.80	0.89	63.01	32	425	2*1850	2*150			
	200	G1e	12	4650	2	9	18	83.70	0.89	74.49	32	650	2*1850	2*150			
	300	G2a	12	2510	2	14	28	70.28	0.89	62.54	68	650	2*200	2*330	2*400		
	250	G2b	12	2510	2	16	32	80.32	0.89	71.48	68	650	2*200	2*330	2*400		
	200	G2c	12	2510	2	20	40	100.40	0.89	89.35	68	650	2*200	2*330	2*400		
	150	G2d	12	2510	2	8	16	40.16	0.89	35.74	68	650	2*200	2*330	2*400		
	200	G2e	12	2320	2	9	18	41.76	0.89	37.16	4	650	835	835			
	300	G3a	12	2820	2	14	28	78.96	0.89	70.27	67	1000	2*100	2*310	2*100	2*400	
	250	G3b	12	2820	2	16	32	90.24	0.89	80.31	67	1000	2*100	2*310	2*100	2*400	
	200	G3c	12	2820	2	20	40	112.80	0.89	100.38	67	1000	2*100	2*310	2*100	2*400	
	150	G3d	12	2820	2	8	16	45.12	0.89	40.15	67	1000	2*100	2*310	2*100	2*400	
	200	G3e	12	2400	2	9	18	43.20	0.89	38.44	5	1000	700	700			
		G4a	10	25000	2	7	14	350.00	0.62	216.30	1	25000					
		G4b	10	3500	4	7	28	98.00	0.62	60.56	53	1800	1700				
		G5a	10	29900	1	10	10	299.00	0.62	184.78	1	29900					
		G5a	10	29900	1	12	12	358.80	0.62	221.74	1	29900					
		G6	12	2450	4	8	32	78.40	0.89	69.77	77	2000	150	300			
		G7	12	2200	2	4	8	17.60	0.89	15.66	4	1600	300	300			
		M1	12	9900	2	6	12	118.80	0.89	105.72	78	18*550					
		M1	12	10200	2	6	12	122.40	0.89	108.93	78	6*1700					
		S1	12	300	2	10	20	6.00	0.89	5.34	79		250	50			
									SUB TOTAL	2124.11	kg						
									TOTAL=(S.T.X2)	4248.22	kg						
DIAPHRAGM																	
		G15	10	3850	1	11	11	42.35	0.62	26.17	32	250	2*1650	2*150			
		G16	16	5400	2	7	14	75.6	1.58	119.61	4	5000	200	200			
		C17	16	5400	1	3	3	16.2	1.58	25.63	4	5000	200	200			
									SUB TOTAL	171.41	kg						
									TOTAL=(S.T.X5)	857.04	kg						
									GROSS TOTAL=	5105.26	kg						

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH

LOCAL GOVERNMENT ENGINEERING DEPARTMENT

DESIGNED ,DRAWN & CHECKED BY

PURAKAUSHAL PROJUKTI LIMITED

House # C10, Road # 4 ,Banasree, Rampura- 1219.
E-maill: pproiltd@yahoo.com

NAME OF PROJECT:

LOCATION:

UPAZILA:

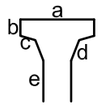
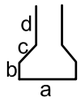
DISTRICT:

DRAWING TITLE

Ber Bending Schedule
PC Girder 25.0m & 30.0m

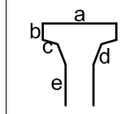
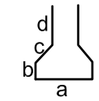
DRAWING NO.

PAGE NO. P-161

SHAPE CODE	BAR SHAPE
1	
4	
5	
32	
67	
68	
77	
78	
79	

35.00m NON PRE STRESSED REINFORCEMENT GIRDER:

COMPONENT	SPECING	BAR MARK	BAR DIA (mm)	BAR LENGTH (mm)	NO MEMBER	NO OF BARS IN EACH MEMBER	TOTAL NO OF BARS	TOTAL LENGTH (m)	UNIT WEIGHT (kg)	TOTAL WEIGHT (kg)	SHAPE CODE	DIMENSIONS (mm)					
												a	b	c	d	F	
35 m GIRDER	300	G1a	12	4780	2	16	32	152.96	0.89	136.12	32	180	2*2150	2*150			
	250	G1b	12	4780	2	19	38	181.64	0.89	161.65	32	180	2*2150	2*150			
	200	G1c	12	4780	2	24	48	229.44	0.89	204.18	32	180	2*2150	2*150			
	150	G1d	12	5015	2	8	16	80.24	0.89	71.41	32	415	2*2150	2*150			
	200	G1e	12	5250	2	12	24	126.00	0.89	112.13	32	650	2*2150	2*150			
	300	G2a	12	2510	2	16	32	80.32	0.89	71.48	68	650	2*200	2*330	2*400		
	250	G2b	12	2510	2	19	38	95.38	0.89	84.88	68	650	2*200	2*330	2*400		
	200	G2c	12	2510	2	24	48	120.48	0.89	107.22	68	650	2*200	2*330	2*400		
	150	G2d	12	2510	2	8	16	40.16	0.89	35.74	68	650	2*200	2*330	2*400		
	200	G2e	12	2320	2	12	24	55.68	0.89	49.55	4	650	835	835			
	300	G3a	12	2820	2	16	32	90.24	0.89	80.31	67	1000	2*100	2*310	2*100	2*400	
	250	G3b	12	2820	2	19	38	107.16	0.89	95.36	67	1000	2*100	2*310	2*100	2*400	
	200	G3c	12	2820	2	24	48	135.36	0.89	120.46	67	1000	2*100	2*310	2*100	2*400	
	150	G3d	12	2820	2	8	16	45.12	0.89	40.15	67	1000	2*100	2*310	2*100	2*400	
	200	G3e	12	2400	2	12	24	57.60	0.89	51.26	5	1000	700	700			
		G4a	10	29400	2	10	20	588.00	0.62	363.38	1	29400					
		G4b	10	3800	4	10	40	152.00	0.62	93.94	53	2100	1700				
		G5a	10	34900	1	8	8	279.20	0.62	172.55	1	34900					
		G5a	10	34900	1	12	12	418.80	0.62	258.82	1	34900					
		G6	12	3050	4	11	44	134.20	0.89	119.43	77	2600	150	300			
		G7	12	2600	2	4	8	20.80	0.89	18.51	4	2000	300	300			
		M1	12	14850	2	6	12	178.20	0.89	158.58	78	27*550					
		M1	12	11700	2	6	12	140.40	0.89	124.94	78	6*1950					
		S1	12	300	2	10	20	6.00	0.89	5.34	79		250	50			
									SUB TOTAL	2737.39	kg						
									TOTAL=(S.T.X2)	5474.77	kg						
DIAPHRAGM																	
		G15	10	4850	1	11	11	53.35	0.62	32.97	32	250	2*2150	2*150			
		G16	16	5400	2	8	16	86.4	1.58	136.69	4	5000	200	200			
		C17	16	5400	1	3	3	16.2	1.58	25.63	4	5000	200	200			
									SUB TOTAL	195.29	kg						
									TOTAL=(S.T.X5)	976.46	kg						
									GROSS TOTAL=	6451.23	kg						

SHAPE CODE	BAR SHAPE
1	
4	
5	
32	
67	
68	
77	
78	
79	

40.00m NON PRE STRESSED REINFORCEMENT GIRDER:

COMPONENT	SPECING	BAR MARK	BAR DIA (mm)	BAR LENGTH (mm)	NO MEMBER	NO OF BARS IN EACH MEMBER	TOTAL NO OF BARS	TOTAL LENGTH (m)	UNIT WEIGHT (kg)	TOTAL WEIGHT (kg)	SHAPE CODE	DIMENSIONS (mm)					
												a	b	c	d	F	
40m GIRDER	300	G1a	12	5200	2	19	38	197.60	0.89	175.85	32	200	2*2350	2*150			
	250	G1b	12	5200	2	22	44	228.80	0.89	203.61	32	200	2*2350	2*150			
	200	G1c	12	5200	2	28	56	291.20	0.89	259.14	32	200	2*2350	2*150			
	150	G1d	12	5425	2	8	16	86.80	0.89	77.25	32	425	2*2350	2*150			
	200	G1e	12	5650	2	12	24	135.60	0.89	120.67	32	650	2*2360	2*150			
	300	G2a	12	2440	2	19	38	92.72	0.89	82.51	68	650	2*175	2*320	2*400		
	250	G2b	12	2440	2	22	44	107.36	0.89	95.54	68	650	2*175	2*320	2*400		
	200	G2c	12	2440	2	28	56	136.64	0.89	121.60	68	650	2*175	2*320	2*400		
	150	G2d	12	2440	2	8	16	39.04	0.89	34.74	68	650	2*175	2*320	2*400		
	200	G2e	12	2250	2	12	24	54.00	0.89	48.06	4	650	800	800			
	300	G3a	12	2820	2	19	38	107.16	0.89	95.36	67	1000	2*100	2*310	2*100	2*400	
	250	G3b	12	2820	2	22	44	124.08	0.89	110.42	67	1000	2*100	2*310	2*100	2*400	
	200	G3c	12	2820	2	28	56	157.92	0.89	140.54	67	1000	2*100	2*310	2*100	2*400	
	150	G3d	12	2820	2	8	16	45.12	0.89	40.15	67	1000	2*100	2*310	2*100	2*400	
	200	G3e	12	2400	2	12	24	57.60	0.89	51.26	5	1000	700	700			
		G4a	10	34400	2	12	24	825.60	0.62	510.22	1	34400					
		G4b	10	3787	4	12	48	181.78	0.62	112.34	53	2260	1527				
		G5a	10	39900	2	12	24	957.60	0.62	591.80	1	39900					
		G6	12	2608	4	13	52	135.62	0.89	120.69	77	2260	148	200			
		G7	12	2800	2	4	8	22.40	0.89	19.93	4	2200	300	300			
		M1	12	14850	2	6	12	178.20	0.89	158.58	78	27*550					
		M1	12	12900	2	6	12	154.80	0.89	137.76	78	6*2150					
		S1	12	355	2	12	24	8.52	0.89	7.58	79		280	75			
									SUB TOTAL	3315.61	kg						
									TOTAL=(S.T.X2)	6631.23	kg						
DIAPHRAGM																	
		G15	10	4850	1	11	11	53.35	0.62	32.97	32	250	2*2150	2*150			
		G16	16	5400	2	8	16	86.4	1.58	136.69	4	5000	200	200			
		C17	16	5400	1	3	3	16.2	1.58	25.63	4	5000	200	200			
									SUB TOTAL	195.29	kg						
									TOTAL=(S.T.X5)	976.46	kg						
									GROSS TOTAL=	7607.68	kg						

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH

LOCAL GOVERNMENT ENGINEERING DEPARTMENT

DESIGNED ,DRAWN & CHECKED BY

PURAKAUSHAL PROJUKTI LIMITED

House # C10, Road # 4 ,Banasree, Rampura- 1219.
E-maill: pproiltd@yahoo.com

NAME OF PROJECT:

LOCATION:

UPAZILA:

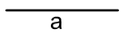
DISTRICT:

DRAWING TITLE

Ber Bending Schedule
PC Girder 35.0m & 40.0m

DRAWING NO.

PAGE NO. P-162

SHAPE CODE	BAR SHAPE
1	
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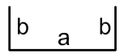
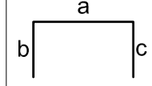
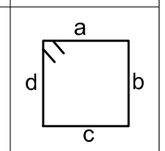
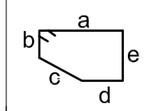
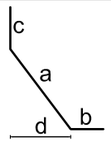
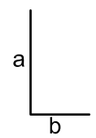
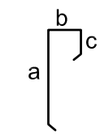
4	
5	
8	
10	
49	
52	
62	

ABUTMENT(5750 x 6000 x 900 AB-5.00 STEM-1300)

SPECING	BAR MARK	BAR DIA (mm)	BAR LENGTH (mm)	NO MEMBER	NO OF BARS IN EACH MEMBER	TOTAL NO OF BARS	TOTAL LENGTH (m)	UNIT WEIGHT (kg)	TOTAL WEIGHT (kg)	SHAPE CODE	DIMENSIONS (mm) a	b	c	d	e
ABUTMENT PILE CAP															
150	A1	20	6650	1	41	41	272.65	2.47	673.99	4	5650	500	500		
200	B1	20	6900	1	30	30	207.00	2.47	511.70	4	5900	500	500		
200	C1	20	6900	1	30	30	207.00	2.47	511.70	5	5900	500	500		
200	C2	20	2500	1	11	11	27.50	2.47	67.98	52	2000	500			
200	D1	20	6650	1	31	31	206.15	2.47	509.60	5	5650	500	500		
	w1	12	5650	1	4	4	22.60	0.89	20.11	1	5650				
	w2	12	5900	1	4	4	23.60	0.89	21.00	1	5900				
								SUB TOTAL	2316.10	kg					
								TOTAL=(S.T.X2)	**4632.19**	**kg**					
ABUTMENT WALL E/F															
200	G1	16	5300	1	8	8	42.40	1.58	67.08	1	5300				
200	H1	16	3200	1	23	23	73.60	1.58	116.44	2	2700	300	200		
200	E1	12	2700	1	23	23	62.10	0.89	55.26	49	2100	300	300		
200	E2	12	1800	1	22	22	39.60	0.89	35.24	49	1200	300	300		
200	E3	16	2750	1	22	22	60.50	1.58	95.72	62	400	1500	850		
								SUB TOTAL	369.74	kg					
								TOTAL=(S.T.X2)	**739.48**	**kg**					
ABUTMENT WALL R/F															
200	G2	16	5300	1	8	8	42.40	1.58	67.08	1	5300				
200	H2	16	3200	1	28	28	89.60	1.58	141.75	2	2700	300	200		
								SUB TOTAL	208.83	kg					
								TOTAL=(S.T.X2)	**417.67**	**kg**					
ABUTMENT CAP & BACK WALL															
200	J	12	2845	1	23	23	65.44	0.89	58.23	10	600	1025	300	280	400
	K1	16	5300	1	10	10	53.00	1.58	83.85	1	5300				
200	M1	12	2700	1	23	23	62.10	0.89	55.26	52	2500	200			
200	M1	12	3100	1	23	23	71.30	0.89	63.45	4	2400	200	500		
150	N1	12	5300	2	12	24	127.20	0.89	113.20	1	5300				
								SUB TOTAL	374.00	kg					
								TOTAL=(S.T.X2)	**747.99**	**kg**					

WING WALL E/F, R/F

200	Q1	20	5300	1	23	23	121.90	2.47	301.34	2	4800	300	200		
200	Q2	20	2550	1	11	11	28.05	2.47	69.34	52	2250	300			
150	R	20	5350	1	19	19	101.65	2.47	251.28	1	5350	av			
150	R	20	5475	1	8	8	43.80	2.47	108.27	1	5475				
200	U	12	3200	1	12	12	38.40	0.89	34.17	4	2700	300	200		
200	X	12	2000	1	10	10	20.00	0.89	17.80	1	2000				
200	Y	12	2500	1	4	4	10.00	0.89	8.90	52	2200	300			
200	E1	12	2700	1	20	20	54.00	0.89	48.06	49	2100	300	300		
200	E3	12	2750	1	20	20	55.00	0.89	48.95	62	400	1500	850		
200	S	16	5300	1	23	23	121.90	1.58	192.86	2	4800	300	200		
200	T1	16	5350	1	15	15	80.25	1.58	126.96	1	5350	av			
200	T1	16	5875	1	8	8	47.00	1.58	74.36	1	5875				
200	V	12	3200	1	12	12	38.40	0.89	34.17	4	2700	300	200		
								SUB TOTAL	1316.45	kg					
								TOTAL=(S.T.X4)	**5265.80**	**kg**					
RAILING / WING WALL															
	P1	16	1850	5	4	20	37.00	1.58	58.54	10	600	975	300	280	400
100	P2	6	720	5	9	45	32.40	0.22	7.21	8	150	150	150	150	
	R1	12	5475	1	12	12	65.70	0.89	58.47	1	5475				
100	R2	6	520	12	14	168	87.38	0.22	19.44	8	100	100	100	100	
								SUB TOTAL	143.65	kg					
								TOTAL=(S.T.X4)	**574.60**	**kg**					
								GROSS-TOTAL	**12377.73**	**kg**					

SHAPE CODE	BAR SHAPE
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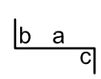
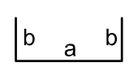
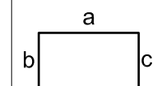
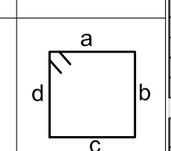
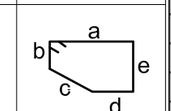
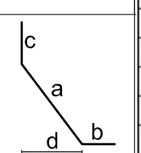
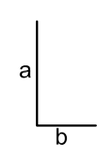
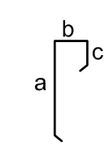
2	
4	
5	
8	
10	
49	
52	
62	

ABUTMENT(5750 x 6600 x 850 AB-5.00 STEM-1650mm)

SPECING	BAR MARK	BAR DIA (mm)	BAR LENGTH (mm)	NO MEMBER	NO OF BARS IN EACH MEMBER	TOTAL NO OF BARS	TOTAL LENGTH (m)	UNIT WEIGHT (kg)	TOTAL WEIGHT (kg)	SHAPE CODE	DIMENSIONS (mm) a	b	c	d	e
ABUTMENT PILE CAP															
150	A1	20	6650	1	45	45	299.25	2.47	739.75	4	5650	500	500		
200	B1	20	7500	1	30	30	225.00	2.47	556.20	4	6500	500	500		
200	C1	20	7500	1	30	30	225.00	2.47	556.20	5	6500	500	500		
200	C2	20	2500	1	11	11	27.50	2.47	67.98	52	2000	500			
200	D1	20	6650	1	34	34	226.10	2.47	558.92	5	5650	500	500		
	w1	12	5650	1	4	4	22.60	0.89	20.11	1	5650				
	w2	12	6500	1	4	4	26.00	0.89	23.14	1	6500				
								SUB TOTAL	2522.30	kg					
								TOTAL=(S.T.X2)	**5044.59**	**kg**					
ABUTMENT WALL E/F															
200	G1	16	5300	1	10	10	53.00	1.58	83.85	1	5300				
200	H1	16	3500	1	23	23	80.50	1.58	127.36	2	3000	300	200		
200	E1	12	2700	1	23	23	62.10	0.89	55.26	49	2100	300	300		
200	E2	12	1800	1	22	22	39.60	0.89	35.24	49	1200	300	300		
200	E3	16	2750	1	22	22	60.50	1.58	95.72	62	400	1500	850		
								SUB TOTAL	397.43	kg					
								TOTAL=(S.T.X2)	**794.86**	**kg**					
ABUTMENT WALL R/F															
200	G2	16	5300	1	10	10	53.00	1.58	83.85	1	5300				
200	H2	16	3500	1	28	28	98.00	1.58	155.04	2	3000	300	200		
								SUB TOTAL	238.89	kg					
								TOTAL=(S.T.X2)	**477.79**	**kg**					
ABUTMENT CAP & BACK WALL															
200	J	12	2815	1	23	23	64.75	0.89	57.62	10	600	975	325	275	400
	K1	16	5300	1	10	10	53.00	1.58	83.85	1	5300				
200	M1	12	2500	1	23	23	57.50	0.89	51.17	52	2200	300			
200	M1	12	2900	1	23	23	66.70	0.89	59.36	4	2100	300	500		
150	N1	12	5300	2	10	20	106.00	0.89	94.33	1	5300				
								SUB TOTAL	346.33	kg					
								TOTAL=(S.T.X2)	**692.66**	**kg**					

WING WALL E/F, R/F

200	Q1	20	5300	1	24	24	127.20	2.47	314.44	2	4800	300	200		
200	Q2	20	3000	1	11	11	33.00	2.47	81.58	52	2700	300			
150	R	20	5450	1	19	19	103.55	2.47	255.98	1	5450	av			
150	R	20	5875	1	8	8	47.00	2.47	116.18	1	5875				
200	U	12	3225	1	13	13	41.93	0.89	37.31	4	2725	300	200		
200	X	12	2000	1	8	8	16.00	0.89	14.24	1	2000				
200	Y	12	2200	1	4	4	8.80	0.89	7.83	52	1900	300			
200	E1	12	2700	1	22	22	59.40	0.89	52.86	49	2100	300	300		
200	E3	12	2750	1	22	22	60.50	0.89	53.84	62	400	1500	850		
200	S	16	5300	1	24	24	127.20	1.58	201.24	2	4800	300	200		
200	T1	16	5450	1	15	15	81.75	1.58	129.34	1	5450	av			
200	T1	16	5875	1	8	8	47.00	1.58	74.36	1	5875				
200	V	12	3225	1	13	13	41.93	0.89	37.31	4	2750	300	200		
								SUB TOTAL	1376.50	kg					
								TOTAL=(S.T.X4)	**5505.99**	**kg**					
RAILING / WING WALL															
	P1	16	1850	5	4	20	37.00	1.58	58.54	10	600	975	300	280	400
100	P2	6	720	5	9	45	32.40	0.22	7.21	8	150	150	150	150	
	R1	12	5875	1	12	12	70.50	0.89	62.74	1	5875				
100	R2	6	520	12	15	180	93.60	0.22	20.82	8	100	100	100	100	
								SUB TOTAL	149.31	kg					
								TOTAL=(S.T.X4)	**597.24**	**kg**					
								GROSS-TOTAL	**13113.12**	**kg**					

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH

LOCAL GOVERNMENT ENGINEERING DEPARTMENT

DESIGNED ,DRAWN & CHECKED BY

PURAKAUSHAL PROJUKTI LIMITED

House # C10, Road # 4 ,Banasree, Rampura- 1219.
E-maill: pproiltd@yahoo.com

NAME OF PROJECT:

LOCATION:

UPAZILA:

DISTRICT:

DRAWING TITLE

Ber Bending Schedule
Abutment Height 5.0m

DRAWING NO.

PAGE NO. P-163

SHAPE CODE	BAR SHAPE
1	a
2	b a c
4	b a b
5	a b c
8	a d b c
10	a b e c d
49	c a d b
52	a b
62	b c a

ABUTMENT(7150 x 6600 x 900 AB-5.50 STEM-1800mm)

SPECING	BAR MARK	BAR DIA (mm)	BAR LENGTH (mm)	NO MEMBER	NO OF BARS IN EACH MEMBER	TOTAL NO OF BARS	TOTAL LENGTH (m)	UNIT WEIGHT (kg)	TOTAL WEIGHT (kg)	SHAPE CODE	DIMENSIONS (mm) a	b	c	d	e
ABUTMENT PILE CAP															
175	A1	20	8050	1	39	39	313.95	2.47	776.08	4	7050	500	500		
200	B1	20	7500	1	37	37	277.50	2.47	685.98	4	6500	500	500		
175	C1	20	7500	1	42	42	315.00	2.47	778.68	5	6500	500	500		
175	C2	20	3750	1	16	16	60.00	2.47	148.32	52	3250	500			
200	D1	20	8050	1	34	34	273.70	2.47	676.59	5	7050	500	500		
	w1	12	7050	1	4	4	28.20	0.89	25.10	1	7050				
	w2	12	6500	1	4	4	26.00	0.89	23.14	1	6500				
								SUB TOTAL	3113.88	kg					
								TOTAL=(S.T.X2)	**6227.77**	**kg**					
ABUTMENT WALL E/F															
200	G1	16	5300	1	10	10	53.00	1.58	83.85	1	5300				
200	H1	16	3700	1	23	23	85.10	1.58	134.64	2	3200	300	200		
200	E1	12	2700	1	23	23	62.10	0.89	55.26	49	2100	300	300		
200	E2	12	1800	1	25	25	45.00	0.89	40.05	49	1200	300	300		
200	E3	16	2750	1	25	25	68.75	1.58	108.77	62	400	1500	850		
								SUB TOTAL	422.56	kg					
								TOTAL=(S.T.X2)	**845.13**	**kg**					
ABUTMENT WALL R/F															
200	G2	16	5300	1	10	10	53.00	1.58	83.85	1	5300				
200	H2	16	3700	1	28	28	103.60	1.58	163.90	2	3200	300	200		
								SUB TOTAL	247.75	kg					
								TOTAL=(S.T.X2)	**495.51**	**kg**					
ABUTMENT CAP & BACK WALL															
150	J	12	2870	1	30	30	86.10	0.89	76.62	10	600	1000	300	280	450
	K1	16	5300	1	10	10	53.00	1.58	83.85	1	5300				
200	M1	16	2800	1	23	23	64.40	1.58	101.89	52	2500	300			
200	M1	16	3200	1	23	23	73.60	1.58	116.44	4	2400	300	500		
150	N1	16	5300	2	15	30	159.00	1.58	251.55	1	5300				
								SUB TOTAL	630.35	kg					
								TOTAL=(S.T.X2)	**1260.70**	**kg**					

WING WALL E/F, R/F

175	Q1	20	5800	1	33	33	191.40	2.47	473.14	2	5300	300	200		
175	Q2	20	3250	1	16	16	52.00	2.47	128.54	52	2750	300			
200	R1	16	6650	1	17	17	113.05	1.58	178.85	1	6650	av			
200	R1	16	7300	1	8	8	58.40	1.58	92.39	1	7300				
200	U	12	3800	1	12	12	45.60	0.89	40.58	4	2950	500	350		
200	X	12	2000	1	10	10	20.00	0.89	17.80	1	2000				
200	Y	12	2200	1	5	5	11.00	0.89	9.79	52	1900	300			
200	E1	12	2700	1	27	27	72.90	0.89	64.88	49	2100	300	300		
200	R3	16	2850	1	24	24	68.40	1.58	108.21	62	500	1500	850		
200	R4	20	2650	1	11	11	29.15	2.47	72.06	1	2650				
200	S	16	5800	1	29	29	168.20	1.58	266.11	2	5300	300	200		
200	T1	16	6650	1	17	17	113.05	1.58	178.85	1	6650	av			
200	T1	16	7300	1	8	8	58.40	1.58	92.39	1	7300				
200	V	12	3800	1	11	11	41.80	0.89	37.20	4	2950	500	350		
								SUB TOTAL	1760.80	kg					
								TOTAL=(S.T.X4)	**7043.20**	**kg**					
RAILING / WING WALL															
	P1	16	1850	6	4	24	44.40	1.58	70.24	2	1600	200	50		
100	P2	6	720	6	9	54	38.88	0.22	8.65	8	150	150	150	150	
	R1	12	7300	1	12	12	87.60	0.89	77.96	1	7300				
100	R2	6	520	15	14	210	109.20	0.22	24.29	8	100	100	100	100	
								SUB TOTAL	181.15	kg					
								TOTAL=(S.T.X4)	**724.58**	**kg**					
								GROSS-TOTAL	**16596.89**	**kg**					

SHAPE CODE	BAR SHAPE
1	a
2	b a c
4	b a b
5	a b c
8	a d b c
10	a b e c d
49	c a d b
52	a b
62	b c a

ABUTMENT(6950 x 6600 x 850 AB-5.50 STEM-2150mm)

SPECING	BAR MARK	BAR DIA (mm)	BAR LENGTH (mm)	NO MEMBER	NO OF BARS IN EACH MEMBER	TOTAL NO OF BARS	TOTAL LENGTH (m)	UNIT WEIGHT (kg)	TOTAL WEIGHT (kg)	SHAPE CODE	DIMENSIONS (mm) a	b	c	d	e
ABUTMENT PILE CAP															
175	A1	20	7850	1	39	39	306.15	2.47	756.86	4	6850	500	500		
200	B1	20	7500	1	36	36	270.00	2.47	667.44	4	6500	500	500		
175	C1	20	7500	1	41	41	307.50	2.47	760.14	5	6500	500	500		
175	C2	20	3700	1	14	14	51.80	2.47	128.05	52	3200	500			
200	D1	20	7850	1	34	34	266.90	2.47	659.78	5	6850	500	500		
	w1	12	6850	1	4	4	27.40	0.89	24.38	1	6850				
	w2	12	6500	1	4	4	26.00	0.89	23.14	1	6500				
								SUB TOTAL	3019.73	kg					
								TOTAL=(S.T.X2)	**6039.46**	**kg**					
ABUTMENT WALL E/F															
200	G1	16	5300	1	12	12	63.60	1.58	100.62	1	5300				
200	H1	16	4000	1	23	23	92.00	1.58	145.55	2	3500	300	200		
200	E1	12	2700	1	23	23	62.10	0.89	55.26	49	2100	300	300		
200	E2	12	1800	1	25	25	45.00	0.89	40.05	49	1200	300	300		
200	E3	16	2750	1	25	25	68.75	1.58	108.77	62	400	1500	850		
								SUB TOTAL	450.25	kg					
								TOTAL=(S.T.X2)	**900.50**	**kg**					
ABUTMENT WALL R/F															
200	G2	16	5300	1	12	12	63.60	1.58	100.62	1	5300				
200	H2	16	4000	1	28	28	112.00	1.58	177.19	2	3500	300	200		
								SUB TOTAL	277.81	kg					
								TOTAL=(S.T.X2)	**555.63**	**kg**					
ABUTMENT CAP & BACK WALL															
150	J	12	2820	1	30	30	84.60	0.89	75.29	10	600	950	300	280	450
	K1	16	5300	1	10	10	53.00	1.58	83.85	1	5300				
200	M1	16	2500	1	23	23	57.50	1.58	90.97	52	2200	300			
200	M1	16	2900	1	23	23	66.70	1.58	105.52	4	2100	300	500		
150	N1	16	5300	2	10	20	106.00	1.58	167.70	1	5300				
								SUB TOTAL	523.33	kg					
								TOTAL=(S.T.X2)	**1046.66**	**kg**					

WING WALL E/F, R/F

175	Q1	20	5800	1	34	34	197.20	2.47	487.48	2	5300	300	200		
175	Q2	20	3000	1	16	16	48.00	2.47	118.66	52	2700	300			
200	R1	16	6650	1	17	17	113.05	1.58	178.85	1	6650	av			
200	R1	16	5050	1	8	8	40.40	1.58	63.92	1	5050				
200	U	12	3575	1	11	11	39.33	0.89	35.00	4	2975	400	200		
200	X	12	2000	1	8	8	16.00	0.89	14.24	1	2000				
200	Y	12	2200	1	4	4	8.80	0.89	7.83	52	1900	300			
200	E1	12	2700	1	27	27	72.90	0.89	64.88	49	2100	300	300		
200	R3	16	2850	1	25	25	71.25	1.58	112.72	62	500	1500	850		
200	R4	20	2650	1	11	11	29.15	2.47	72.06	1	2650				
200	S	16	5800	1	30	30	174.00	1.58	275.28	2	5300	300	200		
200	T1	16	6650	1	17	17	113.05	1.58	178.85	1	6650	av			
200	T1	16	5050	1	8	8	40.40	1.58	63.92	1	5050				
200	V	12	3575	1	11	11	39.33	0.89	35.00	4	2975	400	200		
								SUB TOTAL	1708.68	kg					
								TOTAL=(S.T.X4)	**6834.70**	**kg**					
RAILING / WING WALL															
	P1	16	1850	6	4	24	44.40	1.58	70.24	2	1600	200	50		
100	P2	6	720	6	9	54	38.88	0.22	8.65	8	150	150	150	150	
	R1	12	5050	1	12	12	60.60	0.89	53.93	1	5050				
100	R2	6	520	15	10	150	78.00	0.22	17.35	8	100	100	100	100	
								SUB TOTAL	150.18	kg					
								TOTAL=(S.T.X4)	**600.71**	**kg**					
								GROSS-TOTAL	**15977.67**	**kg**					

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH

LOCAL GOVERNMENT ENGINEERING DEPARTMENT

DESIGNED ,DRAWN & CHECKED BY

PURAKAUSHAL PROJUKTI LIMITED

House # C10, Road # 4 ,Banasree, Rampura- 1219.
E-maill: pproiltd@yahoo.com

NAME OF PROJECT:

LOCATION:

UPAZILA:

DISTRICT:

DRAWING TITLE

Ber Bending Schedule
Abutment Height 5.5m

DRAWING NO.

PAGE NO. P-164

ABUTMENT(7550 x 7250 x 1000 AB-6.00 STEM-1540mm)

SHAPE CODE	BAR SHAPE	SPECING	BAR MARK	BAR DIA (mm)	BAR LENGTH (mm)	NO MEMBER	NO OF BARS IN EACH MEMBER	TOTAL NO OF BARS	TOTAL LENGTH (m)	UNIT WEIGHT (kg)	TOTAL WEIGHT (kg)	SHAPE CODE	DIMENSIONS (mm) a	b	c	d	e
		ABUTMENT PILE CAP															
1	a	150	A1	20	8650	1	49	49	423.85	2.47	1047.76	4	7450	600	600		
		200	B1	20	8350	1	39	39	325.65	2.47	805.01	4	7150	600	600		
		150	C1	20	8350	1	51	51	425.85	2.47	1052.70	5	7150	600	600		
		150	C2	20	3850	1	18	18	69.30	2.47	171.31	52	3250	600			
		200	D1	20	8650	1	37	37	320.05	2.47	791.16	5	7250	600	600		
			w1	12	7450	1	4	4	29.80	0.89	26.52	1	7450				
			w2	12	7150	1	4	4	28.60	0.89	25.45	1	7150				
										SUB TOTAL	3919.91	kg					
										TOTAL=(S.T.X2)	**7839.82**	**kg**					
2	b a c	**ABUTMENT WALL E/F**															
		200	G1	16	5300	1	9	9	47.70	1.58	75.47	1	5300				
		200	H1	16	3640	1	22	22	80.08	1.58	126.69	2	3140	300	200		
		200	E1	12	2700	1	22	22	59.40	0.89	52.86	49	2100	300	300		
		200	E2	12	1800	1	26	26	46.80	0.89	41.65	49	1200	300	300		
		200	E3	16	2850	1	26	26	74.10	1.58	117.23	62	500	1500	850		
										SUB TOTAL	413.90	kg					
										TOTAL=(S.T.X2)	**827.80**	**kg**					
4	b a b	**ABUTMENT WALL R/F**															
		200	G2	16	5300	1	9	9	47.70	1.58	75.47	1	5300				
		200	H2	16	3640	1	28	28	101.92	1.58	161.25	2	3140	300	200		
										SUB TOTAL	236.71	kg					
										TOTAL=(S.T.X2)	**473.42**	**kg**					
5	a b c	**ABUTMENT CAP & BACK WALL**															
		150	J	12	3250	1	29	29	94.25	0.89	83.87	10	700	1100	400	310	500
			K1	16	5300	1	10	10	53.00	1.58	83.85	1	5300				
		200	M1	16	3300	1	22	22	72.60	1.58	114.86	52	3000	300			
		200	M1	16	3700	1	22	22	81.40	1.58	128.78	4	2900	300	500		
		150	N1	16	5300	2	19	38	201.40	1.58	318.63	1	5300				
										SUB TOTAL	730.00	kg					
										TOTAL=(S.T.X2)	**1459.99**	**kg**					
8	a d b c	**WING WALL E/F, R/F**															
		150	Q1	20	6300	1	36	36	226.80	2.47	560.65	2	5800	300	200		
		150	Q2	20	3250	1	18	18	58.50	2.47	144.61	52	2750	300			
		200	R1	20	7000	1	17	17	119.00	2.47	294.17	1	7000	av			
		200	R1	20	7350	1	10	10	73.50	2.47	181.69	1	7350				
		200	U	12	4300	1	12	12	51.60	0.89	45.92	4	3450	500	350		
10	a b e c d	200	X	12	2000	1	13	13	26.00	0.89	23.14	1	2000				
		200	Y	12	3100	1	5	5	15.50	0.89	13.79	52	2800	300			
		200	E1	12	2700	1	28	28	75.60	0.89	67.28	49	2100	300	300		
		200	R3	20	2650	1	11	11	29.15	2.47	72.06	1	2650				
		200	R4	16	2850	1	26	26	74.10	1.58	117.23	62	500	1500	850		
		200	S	16	6300	1	31	31	195.30	1.58	308.98	2	5800	300	200		
		200	T1	16	7000	1	17	17	119.00	1.58	188.27	1	7000	av			
		200	T1	16	7350	1	10	10	73.50	1.58	116.28	1	7350				
49	c a d b	200	V	12	4300	1	12	12	51.60	0.89	45.92	4	3450	500	350		
										SUB TOTAL	2179.99	kg					
										TOTAL=(S.T.X4)	**8719.97**	**kg**					
52	a b	**RAILING / WING WALL**															
			P1	16	1850	6	4	24	44.40	1.58	70.24	2	1600	200	50		
		100	P2	6	720	6	9	54	38.88	0.22	8.65	8	150	150	150	150	
			R1	12	7375	1	12	12	88.50	0.89	78.76	1	7375				
		100	R2	6	520	15	14	210	109.20	0.22	24.29	8	100	100	100	100	
										SUB TOTAL	181.95	kg					
										TOTAL=(S.T.X4)	**727.79**	**kg**					
62	b c a									**GROSS-TOTAL**	**20048.79**	**kg**					

ABUTMENT(7550 x 7250 x 900 AB-6.00 STEM-1850mm)

SHAPE CODE	BAR SHAPE	SPECING	BAR MARK	BAR DIA (mm)	BAR LENGTH (mm)	NO MEMBER	NO OF BARS IN EACH MEMBER	TOTAL NO OF BARS	TOTAL LENGTH (m)	UNIT WEIGHT (kg)	TOTAL WEIGHT (kg)	SHAPE CODE	DIMENSIONS (mm) a	b	c	d	e
		ABUTMENT PILE CAP															
1	a	150	A1	20	8650	1	49	49	423.85	2.47	1047.76	4	7450	600	600		
		200	B1	20	8350	1	39	39	325.65	2.47	805.01	4	7150	600	600		
		150	C1	20	8350	1	51	51	425.85	2.47	1052.70	5	7150	600	600		
		150	C2	20	3850	1	18	18	69.30	2.47	171.31	52	3250	600			
		200	D1	20	8650	1	37	37	320.05	2.47	791.16	5	7250	600	600		
			w1	12	7450	1	4	4	29.80	0.89	26.52	1	7450				
			w2	12	7150	1	4	4	28.60	0.89	25.45	1	7150				
										SUB TOTAL	3919.91	kg					
										TOTAL=(S.T.X2)	**7839.82**	**kg**					
2	b a c	**ABUTMENT WALL E/F**															
		200	G1	16	5300	1	11	11	58.30	1.58	92.24	1	5300				
		200	H1	16	3850	1	22	22	84.70	1.58	134.00	2	3350	300	200		
		200	E1	12	2700	1	22	22	59.40	0.89	52.86	49	2100	300	300		
		200	E2	12	1800	1	27	27	48.60	0.89	43.25	49	1200	300	300		
		200	E3	16	2850	1	27	27	76.95	1.58	121.74	62	500	1500	850		
										SUB TOTAL	444.09	kg					
										TOTAL=(S.T.X2)	**888.18**	**kg**					
4	b a b	**ABUTMENT WALL R/F**															
		200	G2	16	5300	1	11	11	58.30	1.58	92.24	1	5300				
		200	H2	16	3850	1	28	28	107.80	1.58	170.55	2	3350	300	200		
										SUB TOTAL	262.78	kg					
										TOTAL=(S.T.X2)	**525.57**	**kg**					
5	a b c	**ABUTMENT CAP & BACK WALL**															
		150	J	12	3175	1	29	29	92.08	0.89	81.94	10	700	1075	400	310	450
			K1	16	5300	1	10	10	53.00	1.58	83.85	1	5300				
		200	M1	16	3150	1	22	22	69.30	1.58	109.64	52	2850	300			
		200	M1	16	3550	1	22	22	78.10	1.58	123.56	4	2750	300	500		
		150	N1	16	5300	2	18	36	190.80	1.58	301.86	1	5300				
										SUB TOTAL	700.85	kg					
										TOTAL=(S.T.X2)	**1401.70**	**kg**					
8	a d b c	**WING WALL E/F, R/F**															
		150	Q1	20	6300	1	37	37	233.10	2.47	576.22	2	5800	300	200		
		150	Q2	20	3250	1	18	18	58.50	2.47	144.61	52	2750	300			
		200	R1	20	7000	1	17	17	119.00	2.47	294.17	1	7000	av			
		200	R1	20	7375	1	10	10	73.75	2.47	182.31	1	7375				
		200	U	12	4300	1	12	12	51.60	0.89	45.92	4	3450	500	350		
10	a b e c d	200	X	12	2000	1	14	14	28.00	0.89	24.92	1	2000				
		200	Y	12	2850	1	5	5	14.25	0.89	12.68	52	2550	300			
		200	E1	12	2700	1	28	28	75.60	0.89	67.28	49	2100	300	300		
		200	R3	20	2650	1	11	11	29.15	2.47	72.06	1	2650				
		200	R4	16	2850	1	27	27	76.95	1.58	121.74	62	500	1500	850		
		200	S	16	6300	1	31	31	195.30	1.58	308.98	2	5800	300	200		
		200	T1	16	7000	1	17	17	119.00	1.58	188.27	1	7000	av			
		200	T1	16	7375	1	10	10	73.75	1.58	116.68	1	7375				
49	c a d b	200	V	12	4300	1	12	12	51.60	0.89	45.92	4	3450	500	350		
										SUB TOTAL	2201.76	kg					
										TOTAL=(S.T.X4)	**8807.02**	**kg**					
52	a b	**RAILING / WING WALL**															
			P1	16	1850	6	4	24	44.40	1.58	70.24	2	1600	200	50		
		100	P2	6	720	6	9	54	38.88	0.22	8.65	8	150	150	150	150	
			R1	12	7375	1	12	12	88.50	0.89	78.76	1	7375				
		100	R2	6	520	15	14	210	109.20	0.22	24.29	8	100	100	100	100	
										SUB TOTAL	181.95	kg					
										TOTAL=(S.T.X4)	**727.79**	**kg**					
62	b c a									**GROSS-TOTAL**	**20190.08**	**kg**					

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH

LOCAL GOVERNMENT ENGINEERING DEPARTMENT

DESIGNED ,DRAWN & CHECKED BY

PURAKAUSHAL PROJUKTI LIMITED

House # C10, Road # 4 ,Banasree, Rampura- 1219.
E-maill: pproiltd@yahoo.com

NAME OF PROJECT:

LOCATION:

UPAZILA:

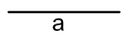
DISTRICT:

DRAWING TITLE

Ber Bending Schedule
Abutment Height 6.0m

DRAWING NO.

PAGE NO. P-165

SHAPE CODE	BAR SHAPE
1	
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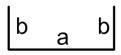
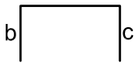
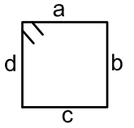
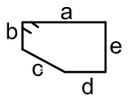
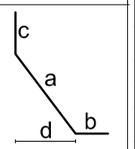
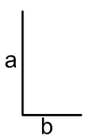
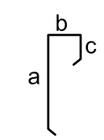
4	
5	
8	
10	
49	
52	
62	

ABUTMENT(7350 x 6600 x 900 AB-6.00 STEM-2200mm)

SPECING	BAR MARK	BAR DIA (mm)	BAR LENGTH (mm)	NO MEMBER	NO OF BARS IN EACH MEMBER	TOTAL NO OF BARS	TOTAL LENGTH (m)	UNIT WEIGHT (kg)	TOTAL WEIGHT (kg)	SHAPE CODE	DIMENSIONS (mm) a	b	c	d	e
ABUTMENT PILE CAP															
150	A1	20	8250	1	45	45	371.25	2.47	917.73	4	7250	500	500		
200	B1	20	7500	1	38	38	285.00	2.47	704.52	4	6500	500	500		
150	C1	20	7500	1	50	50	375.00	2.47	927.00	5	6500	500	500		
150	C2	20	3750	1	18	18	67.50	2.47	166.86	52	3250	500			
200	D1	20	8250	1	34	34	280.50	2.47	693.40	5	7250	500	500		
	w 1	12	7250	1	4	4	29.00	0.89	25.81	1	7250				
	w 2	12	6500	1	4	4	26.00	0.89	23.14	1	6500				
								SUB TOTAL	3458.45	kg					
								TOTAL=(S.T.X2)	**6916.90**	**kg**					
ABUTMENT WALL E/F															
200	G1	16	5300	1	12	12	63.60	1.58	100.62	1	5300				
200	H1	16	4200	1	23	23	96.60	1.58	152.83	2	3700	300	200		
200	E1	12	2700	1	23	23	62.10	0.89	55.26	49	2100	300	300		
200	E2	12	1800	1	27	27	48.60	0.89	43.25	49	1200	300	300		
200	E3	16	2850	1	27	27	76.95	1.58	121.74	62	500	1500	850		
								SUB TOTAL	473.70	kg					
								TOTAL=(S.T.X2)	**947.41**	**kg**					
ABUTMENT WALL R/F															
200	G2	16	5300	1	12	12	63.60	1.58	100.62	1	5300				
200	H2	16	4200	1	28	28	117.60	1.58	186.05	2	3700	300	200		
								SUB TOTAL	286.67	kg					
								TOTAL=(S.T.X2)	**573.35**	**kg**					
ABUTMENT CAP & BACK WALL															
150	J	12	3100	1	29	29	89.90	0.89	80.00	10	700	1000	400	310	450
	K1	16	5300	1	10	10	53.00	1.58	83.85	1	5300				
200	M1	16	2800	1	22	22	61.60	1.58	97.46	52	2500	300			
200	M1	16	3200	1	22	22	70.40	1.58	111.38	4	2400	300	500		
150	N1	16	5300	2	15	30	159.00	1.58	251.55	1	5300				
								SUB TOTAL	624.24	kg					
								TOTAL=(S.T.X2)	**1248.48**	**kg**					
WING WALL E/F, R/F															
150	Q1	20	6300	1	36	36	226.80	2.47	560.65	2	5800	300	200		
150	Q2	20	3250	1	18	18	58.50	2.47	144.61	52	2750	300			
200	R1	20	6850	1	17	17	116.45	2.47	287.86	1	6850	av			
200	R1	20	7300	1	11	11	80.30	2.47	198.50	1	7300				
200	U	12	4300	1	12	12	51.60	0.89	45.92	4	3450	500	350		
200	X	12	2000	1	10	10	20.00	0.89	17.80	1	2000				
200	Y	12	2500	1	5	5	12.50	0.89	11.12	52	2200	300			
200	E1	12	2700	1	28	28	75.60	0.89	67.28	49	2100	300	300		
200	R3	20	2650	1	11	11	29.15	2.47	72.06	1	2650				
200	R4	16	2850	1	27	27	76.95	1.58	121.74	62	500	1500	850		
200	S	16	6300	1	28	28	176.40	1.58	279.08	2	5800	300	200		
200	T1	16	6850	1	17	17	116.45	1.58	184.23	1	6850	av			
200	T1	16	7300	1	11	11	80.30	1.58	127.04	1	7300				
200	V	12	4300	1	12	12	51.60	0.89	45.92	4	3450	500	350		
								SUB TOTAL	2163.82	kg					
								TOTAL=(S.T.X4)	**8655.28**	**kg**					
RAILING / WING WALL															
	P1	16	1850	6	4	24	44.40	1.58	70.24	2	1600	200	50		
100	P2	6	720	6	9	54	38.88	0.22	8.65	8	150	150	150	150	
	R1	12	7300	1	12	12	87.60	0.89	77.96	1	7300				
100	R2	6	520	15	14	210	109.20	0.22	24.29	8	100	100	100	100	
								SUB TOTAL	181.15	kg					
								TOTAL=(S.T.X4)	**724.58**	**kg**					
								GROSS-TOTAL	**19066.00**	**kg**					

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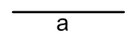
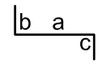
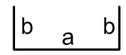
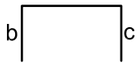
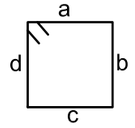
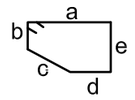
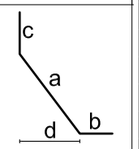
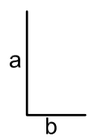
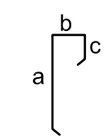
1	
2	
4	
5	
8	
10	
49	
52	
62	

ABUTMENT(7150 x 6600 x 900 AB-6.00 STEM-2550mm)

SPECING	BAR MARK	BAR DIA (mm)	BAR LENGTH (mm)	NO MEMBER	NO OF BARS IN EACH MEMBER	TOTAL NO OF BARS	TOTAL LENGTH (m)	UNIT WEIGHT (kg)	TOTAL WEIGHT (kg)	SHAPE CODE	DIMENSIONS (mm) a	b	c	d	e
ABUTMENT PILE CAP															
150	A1	20	8050	1	45	45	362.25	2.47	895.48	4	7050	500	500		
200	B1	20	7500	1	37	37	277.50	2.47	685.98	4	6500	500	500		
150	C1	20	7500	1	48	48	360.00	2.47	889.92	5	6500	500	500		
150	C2	20	3750	1	18	18	67.50	2.47	166.86	52	3250	500			
200	D1	20	8050	1	34	34	273.70	2.47	676.59	5	7050	500	500		
	w 1	12	7050	1	4	4	28.20	0.89	25.10	1	7050				
	w 2	12	6500	1	4	4	26.00	0.89	23.14	1	6500				
								SUB TOTAL	3363.06	kg					
								TOTAL=(S.T.X2)	**6726.12**	**kg**					
ABUTMENT WALL E/F															
200	G1	16	5300	1	14	14	74.20	1.58	117.39	1	5300				
200	H1	16	4500	1	22	22	99.00	1.58	156.63	2	4000	300	200		
200	E1	12	2700	1	22	22	59.40	0.89	52.86	49	2100	300	300		
200	E2	12	1800	1	27	27	48.60	0.89	43.25	49	1200	300	300		
200	E3	16	2850	1	27	27	76.95	1.58	121.74	62	500	1500	850		
								SUB TOTAL	491.87	kg					
								TOTAL=(S.T.X2)	**983.74**	**kg**					
ABUTMENT WALL R/F															
200	G2	16	5300	1	14	14	74.20	1.58	117.39	1	5300				
200	H2	16	4500	1	28	28	126.00	1.58	199.34	2	4000	300	200		
								SUB TOTAL	316.73	kg					
								TOTAL=(S.T.X2)	**633.46**	**kg**					
ABUTMENT CAP & BACK WALL															
150	J	12	3000	1	29	29	87.00	0.89	77.42	10	700	950	400	310	400
	K1	16	5300	1	10	10	53.00	1.58	83.85	1	5300				
200	M1	16	2500	1	22	22	55.00	1.58	87.01	52	2200	300			
200	M1	16	2900	1	22	22	63.80	1.58	100.94	4	2100	300	500		
150	N1	16	5300	2	10	20	106.00	1.58	167.70	1	5300				
								SUB TOTAL	516.92	kg					
								TOTAL=(S.T.X2)	**1033.85**	**kg**					
WING WALL E/F, R/F															
150	Q1	20	6300	1	37	37	233.10	2.47	576.22	2	5800	300	200		
150	Q2	20	3250	1	18	18	58.50	2.47	144.61	52	2750	300			
200	R1	20	7000	1	17	17	119.00	2.47	294.17	1	7000	av			
200	R1	20	7450	1	10	10	74.50	2.47	184.16	1	7450				
200	U	12	4175	1	12	12	50.10	0.89	44.58	4	3475	500	200		
200	X	12	2000	1	9	9	18.00	0.89	16.02	1	2000				
200	Y	12	2200	1	4	4	8.80	0.89	7.83	52	1900	300			
200	E1	12	2700	1	28	28	75.60	0.89	67.28	49	2100	300	300		
200	R3	20	2700	1	11	11	29.70	2.47	73.42	1	2700				
200	R4	16	2850	1	27	27	76.95	1.58	121.74	62	500	1500	850		
200	S	16	6300	1	31	31	195.30	1.58	308.98	2	5800	300	200		
200	T1	16	7000	1	17	17	119.00	1.58	188.27	1	7000	av			
200	T1	16	7450	1	10	10	74.50	1.58	117.86	1	7450				
200	V	12	4175	1	12	12	50.10	0.89	44.58	4	3475	500	200		
								SUB TOTAL	2189.74	kg					
								TOTAL=(S.T.X4)	**8758.95**	**kg**					
RAILING / WING WALL															
	P1	16	1850	6	4	24	44.40	1.58	70.24	2	1600	200	50		
100	P2	6	720	6	9	54	38.88	0.22	8.65	8	150	150	150	150	
	R1	12	7450	1	12	12	89.40	0.89	79.56	1	7450				
100	R2	6	520	15	14	210	109.20	0.22	24.29	8	100	100	100	100	
								SUB TOTAL	182.75	kg					
								TOTAL=(S.T.X4)	**730.99**	**kg**					
								GROSS-TOTAL	**18867.12**	**kg**					

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH

LOCAL GOVERNMENT ENGINEERING DEPARTMENT

DESIGNED ,DRAWN & CHECKED BY

PURAKAUSHAL PROJUKTI LIMITED

House # C10, Road # 4 ,Banasree, Rampura- 1219.
E-maill: pproiltd@yahoo.com

NAME OF PROJECT:

LOCATION:

UPAZILA:

DISTRICT:

DRAWING TITLE

Ber Bending Schedule
Abutment Height 6.0m

DRAWING NO.

PAGE NO. P-166

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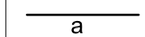
1	
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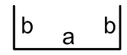
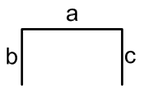
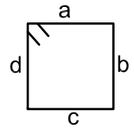
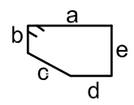
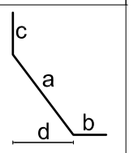
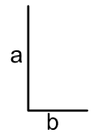
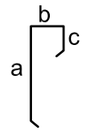
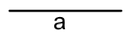
4	
5	
8	
10	
49	
52	
62	

ABUTMENT(7850 x 7250 x 1000 AB-6.5 STEM-2040mm)

SPECING	BAR MARK	BAR DIA (mm)	BAR LENGTH (mm)	NO MEMBER	NO OF BARS IN EACH MEMBER	TOTAL NO OF BARS	TOTAL LENGTH (m)	UNIT WEIGHT (kg)	TOTAL WEIGHT (kg)	SHAPE CODE	DIMENSIONS (mm) a	b	c	d	e
ABUTMENT PILE CAP															
150	A1	20	8950	1	49	49	438.55	2.47	1084.10	4	7750	600	600		
200	B1	20	8350	1	40	40	334.00	2.47	825.65	4	7150	600	600		
150	C1	20	8350	1	53	53	442.55	2.47	1093.98	5	7150	600	600		
150	C2	20	3950	1	18	18	71.10	2.47	175.76	52	3350	600			
200	D1	20	8950	1	37	37	331.15	2.47	818.60	5	7250	600	600		
	w 1	12	7750	1	4	4	31.00	0.89	27.59	1	7750				
	w 2	12	7150	1	4	4	28.60	0.89	25.45	1	7150				
								SUB TOTAL	4051.13	kg					
								TOTAL=(S.T.X2)	**8102.26**	**kg**					
ABUTMENT WALL E/F															
200	G1	16	5300	1	11	11	58.30	1.58	92.24	1	5300				
200	H1	16	4140	1	22	22	91.08	1.58	144.10	2	3640	300	200		
200	E1	12	2800	1	22	22	61.60	0.89	54.82	49	2200	300	300		
200	E2	12	1900	1	29	29	55.10	0.89	49.03	49	1300	300	300		
200	E3	16	2950	1	29	29	85.55	1.58	135.35	62	600	1500	850		
								SUB TOTAL	475.53	kg					
								TOTAL=(S.T.X2)	**951.06**	**kg**					
ABUTMENT WALL R/F															
200	G2	16	5300	1	11	11	58.30	1.58	92.24	1	5300				
200	H2	16	4140	1	28	28	115.92	1.58	183.39	2	3640	300	200		
								SUB TOTAL	275.63	kg					
								TOTAL=(S.T.X2)	**551.26**	**kg**					
ABUTMENT CAP & BACK WALL															
150	J	12	3250	1	29	29	94.25	0.89	83.87	10	700	1100	400	310	500
	K1	16	5300	1	10	10	53.00	1.58	83.85	1	5300				
200	M1	16	3360	1	22	22	73.92	1.58	116.95	52	3060	300			
200	M1	16	3760	1	22	22	82.72	1.58	130.87	4	2960	300	500		
150	N1	16	5300	2	19	38	201.40	1.58	318.63	1	5300				
								SUB TOTAL	734.17	kg					
								TOTAL=(S.T.X2)	**1468.35**	**kg**					
WING WALL E/F, R/F															
150	Q1	20	6800	1	38	38	258.40	2.47	638.76	2	6300	300	200		
150	Q2	20	3150	1	21	21	66.15	2.47	163.52	52	2850	300			
150	R1	16	7350	1	25	25	183.75	1.58	290.71	1	7350	av			
150	R1	16	7850	1	14	14	109.90	1.58	173.87	1	7850				
200	U	12	4800	1	13	13	62.40	0.89	55.53	4	3900	600	300		
200	X	12	2000	1	15	15	30.00	0.89	26.70	1	2000				
200	Y	12	3300	1	5	5	16.50	0.89	14.68	52	3000	300			
200	E1	12	2800	1	29	29	81.20	0.89	72.26	49	2200	300	300		
200	R3	16	2950	1	29	29	85.55	1.58	135.35	62	600	1500	850		
200	R4	20	3650	1	11	11	40.15	2.47	99.25	1	3650				
200	S	16	6800	1	32	32	217.60	1.58	344.26	2	5800	300	200		
200	T1	16	7350	1	19	19	139.65	1.58	220.94	1	7350	av			
200	T1	16	7850	1	14	14	109.90	1.58	173.87	1	7850				
200	V	12	4800	1	13	13	62.40	0.89	55.53	4	3900	600	300		
								SUB TOTAL	2465.24	kg					
								TOTAL=(S.T.X4)	**9860.95**	**kg**					
RAILING / WING WALL															
	P1	16	1850	6	4	24	44.40	1.58	70.24	2	1600	200	50		
100	P2	6	720	6	9	54	38.88	0.22	8.65	8	150	150	150	150	
	R1	12	7850	1	12	12	94.20	0.89	83.83	1	7850				
100	F2	6	520	15	14	210	109.20	0.22	24.29	8	100	100	100	100	
								SUB TOTAL	187.02	kg					
								TOTAL=(S.T.X4)	**748.08**	**kg**					
								GROSS-TOTAL	**21681.95**	**kg**					

SHAPE CODE	BAR SHAPE
1	
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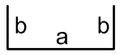
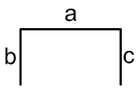
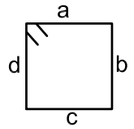
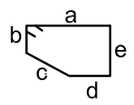
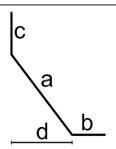
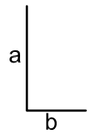
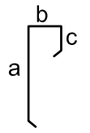
4	
5	
8	
10	
49	
52	
62	

ABUTMENT(7850 x 7250 x 1000 AB-6.50 STEM-2250mm)

SPECING	BAR MARK	BAR DIA (mm)	BAR LENGTH (mm)	NO MEMBER	NO OF BARS IN EACH MEMBER	TOTAL NO OF BARS	TOTAL LENGTH (m)	UNIT WEIGHT (kg)	TOTAL WEIGHT (kg)	SHAPE CODE	DIMENSIONS (mm) a	b	c	d	e
ABUTMENT PILE CAP															
150	A1	20	8950	1	49	49	438.55	2.47	1084.10	4	7750	600	600		
200	B1	20	8350	1	40	40	334.00	2.47	825.65	4	7150	600	600		
150	C1	20	8350	1	53	53	442.55	2.47	1093.98	5	7150	600	600		
150	C2	20	3950	1	18	18	71.10	2.47	175.76	52	3350	600			
200	D1	20	8950	1	37	37	331.15	2.47	818.60	5	7250	600	600		
	w 1	12	7750	1	4	4	31.00	0.89	27.59	1	7750				
	w 2	12	7150	1	4	4	28.60	0.89	25.45	1	7150				
								SUB TOTAL	4051.13	kg					
								TOTAL=(S.T.X2)	**8102.26**	**kg**					
ABUTMENT WALL E/F															
200	G1	16	5300	1	13	13	68.90	1.58	109.01	1	5300				
200	H1	16	4350	1	22	22	95.70	1.58	151.41	2	3850	300	200		
200	E1	12	2800	1	22	22	61.60	0.89	54.82	49	2200	300	300		
200	E2	12	1900	1	29	29	55.10	0.89	49.03	49	1300	300	300		
200	E3	16	2950	1	29	29	85.55	1.58	135.35	62	600	1500	850		
								SUB TOTAL	499.61	kg					
								TOTAL=(S.T.X2)	**999.22**	**kg**					
ABUTMENT WALL R/F															
200	G2	16	5300	1	11	11	58.30	1.58	92.24	1	5300				
200	H2	16	4350	1	28	28	121.80	1.58	192.70	2	3850	300	200		
								SUB TOTAL	284.93	kg					
								TOTAL=(S.T.X2)	**569.87**	**kg**					
ABUTMENT CAP & BACK WALL															
150	J	12	3250	1	29	29	94.25	0.89	83.87	10	700	1100	400	310	500
	K1	16	5300	1	10	10	53.00	1.58	83.85	1	5300				
200	M1	16	3150	1	22	22	69.30	1.58	109.64	52	2850	300			
200	M1	16	3550	1	22	22	78.10	1.58	123.56	4	2750	300	500		
150	N1	16	5300	2	14	28	148.40	1.58	234.78	1	5300				
								SUB TOTAL	635.70	kg					
								TOTAL=(S.T.X2)	**1271.41**	**kg**					
WING WALL E/F, R/F															
150	Q1	20	6800	1	38	38	258.40	2.47	638.76	2	6300	300	200		
150	Q2	20	3150	1	21	21	66.15	2.47	163.52	52	2850	300			
150	R1	16	7350	1	25	25	183.75	1.58	290.71	1	7350	av			
150	R1	16	7875	1	14	14	110.25	1.58	174.42	1	7875				
200	U	12	4800	1	13	13	62.40	0.89	55.53	4	3900	600	300		
200	X	12	2000	1	14	14	28.00	0.89	24.92	1	2000				
200	Y	12	3300	1	5	5	16.50	0.89	14.68	52	3000	300			
200	E1	12	2800	1	29	29	81.20	0.89	72.26	49	2200	300	300		
200	R3	16	2950	1	29	29	85.55	1.58	135.35	62	600	1500	850		
200	R4	20	3650	1	11	11	40.15	2.47	99.25	1	3650				
200	S	16	6800	1	32	32	217.60	1.58	344.26	2	5800	300	200		
200	T1	16	7350	1	19	19	139.65	1.58	220.94	1	7350	av			
200	T1	16	7875	1	14	14	110.25	1.58	174.42	1	7875				
200	V	12	4800	1	13	13	62.40	0.89	55.53	4	3900	600	300		
								SUB TOTAL	2464.56	kg					
								TOTAL=(S.T.X4)	**9858.26**	**kg**					
RAILING / WING WALL															
	P1	16	1850	6	4	24	44.40	1.58	70.24	2	1600	200	50		
100	P2	6	720	6	9	54	38.88	0.22	8.65	8	150	150	150	150	
	R1	12	7875	1	12	12	94.50	0.89	84.10	1	7875				
100	R2	6	520	15	14	210	109.20	0.22	24.29	8	100	100	100	100	
								SUB TOTAL	187.29	kg					
								TOTAL=(S.T.X4)	**749.15**	**kg**					
								GROSS-TOTAL	**21550.16**	**kg**					

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH

LOCAL GOVERNMENT ENGINEERING DEPARTMENT

DESIGNED ,DRAWN & CHECKED BY

PURAKAUSHAL PROJUKTI LIMITED

House # C10, Road # 4 ,Banasree, Rampura- 1219.
E-maill: pproiltd@yahoo.com

NAME OF PROJECT:

LOCATION:

UPAZILA:

DISTRICT:

DRAWING TITLE

Ber Bending Schedule
Abutment Height 6.5m

DRAWING NO.

PAGE NO. P-167

ABUTMENT(7750 x 6600 x 1000 AB-6.50 STEM-2600mm)

SHAPE CODE	BAR SHAPE	SPECING	BAR MARK	BAR DIA (mm)	BAR LENGTH (mm)	NO MEMBER	NO OF BARS IN EACH MEMBER	TOTAL NO OF BARS	TOTAL LENGTH (m)	UNIT WEIGHT (kg)	TOTAL WEIGHT (kg)	SHAPE CODE	DIMENSIONS (mm) a	b	c	d	e
		ABUTMENT PILE CAP															
1	a	150	A1	20	8850	1	45	45	398.25	2.47	984.47	4	7650	600	600		
		200	B1	20	7700	1	40	40	308.00	2.47	761.38	4	6500	600	600		
		150	C1	20	7700	1	52	52	400.40	2.47	989.79	5	6500	600	600		
		150	C2	20	3950	1	18	18	71.10	2.47	175.76	52	3350	600			
		200	D1	20	8850	1	34	34	300.90	2.47	743.82	5	7650	600	600		
2	b a c		w 1	12	7650	1	4	4	30.60	0.89	27.23	1	7650				
			w 2	12	6500	1	4	4	26.00	0.89	23.14	1	6500				
											SUB TOTAL		3705.59	kg			
											TOTAL=(S.T.X2)		**7411.18**	**kg**			
		ABUTMENT WALL E/F															
4	b a b	200	G1	16	5300	1	14	14	74.20	1.58	117.39	1	5300				
		200	H1	16	4700	1	22	22	103.40	1.58	163.59	2	4200	300	200		
		200	E1	12	2800	1	22	22	61.60	0.89	54.82	49	2200	300	300		
		200	E2	12	1900	1	29	29	55.10	0.89	49.03	49	1300	300	300		
		200	E3	16	2950	1	29	29	85.55	1.58	135.35	62	600	1500	850		
											SUB TOTAL		520.18	kg			
											TOTAL=(S.T.X2)		**1040.36**	**kg**			
		ABUTMENT WALL R/F															
5	a b c	200	G2	16	5300	1	14	14	74.20	1.58	117.39	1	5300				
		200	H2	16	4700	1	28	28	131.60	1.58	208.20	2	4200	300	200		
											SUB TOTAL		325.59	kg			
											TOTAL=(S.T.X2)		**651.18**	**kg**			
		ABUTMENT CAP & BACK WALL															
8	a d b c	150	J	12	3100	1	29	29	89.90	0.89	80.00	10	700	1000	400	310	450
			K1	16	5300	1	10	10	53.00	1.58	83.85	1	5300				
		200	M1	16	2800	1	22	22	61.60	1.58	97.46	52	2500	300			
		200	M1	16	3200	1	22	22	70.40	1.58	111.38	4	2400	300	500		
		150	N1	16	5300	2	15	30	159.00	1.58	251.55	1	5300				
											SUB TOTAL		624.24	kg			
											TOTAL=(S.T.X2)		**1248.48**	**kg**			
		WING WALL E/F, R/F															
10	a b e c d	150	Q1	20	6800	1	39	39	265.20	2.47	655.57	2	6300	300	200		
		150	Q2	20	3150	1	21	21	66.15	2.47	163.52	52	2850	300			
		150	R1	16	7350	1	25	25	183.75	1.58	290.71	1	7350	av			
		150	R1	16	7900	1	14	14	110.60	1.58	174.98	1	7900				
49	c a d b	200	U	12	4550	1	13	13	59.15	0.89	52.64	4	3650	600	300		
		250	X	12	2000	1	12	12	24.00	0.89	21.36	1	2000				
		250	Y	12	2500	1	4	4	10.00	0.89	8.90	52	2200	300			
		200	E1	12	2800	1	29	29	81.20	0.89	72.26	49	2200	300	300		
		150	R3	16	2950	1	38	38	112.10	1.58	177.35	62	600	1500	850		
		200	R4	20	3650	1	11	11	40.15	2.47	99.25	1	3650				
		200	S	16	6800	1	32	32	217.60	1.58	344.26	2	6300	300	200		
		200	T1	16	7350	1	19	19	139.65	1.58	220.94	1	7350	av			
		200	T1	16	7900	1	10	10	79.00	1.58	124.98	1	7900				
52	a b	200	V	12	4550	1	13	13	59.15	0.89	52.64	4	3650	600	300		
											SUB TOTAL		2459.36	kg			
											TOTAL=(S.T.X4)		**9837.45**	**kg**			
		RAILING / WING WALL															
62	b c a		P1	16	1850	6	4	24	44.40	1.58	70.24	2	1600	200	50		
		100	P2	6	720	6	9	54	38.88	0.22	8.65	8	150	150	150	150	
			R1	12	7900	1	12	12	94.80	0.89	84.36	1	7900				
		100	R2	6	520	15	14	210	109.20	0.22	24.29	8	100	100	100	100	
											SUB TOTAL		187.55	kg			
											TOTAL=(S.T.X4)		**750.21**	**kg**			
											GROSS-TOTAL		**20938.87**	**kg**			

ABUTMENT(7750 x 6600 x 1000 AB-6.50 STEM-3000mm)

SHAPE CODE	BAR SHAPE	SPECING	BAR MARK	BAR DIA (mm)	BAR LENGTH (mm)	NO MEMBER	NO OF BARS IN EACH MEMBER	TOTAL NO OF BARS	TOTAL LENGTH (m)	UNIT WEIGHT (kg)	TOTAL WEIGHT (kg)	SHAPE CODE	DIMENSIONS (mm) a	b	c	d	e
		ABUTMENT PILE CAP															
1	a	150	A1	20	8850	1	45	45	398.25	2.47	984.47	4	7650	600	600		
		200	B1	20	7700	1	40	40	308.00	2.47	761.38	4	6500	600	600		
		150	C1	20	7700	1	52	52	400.40	2.47	989.79	5	6500	600	600		
		150	C2	20	3950	1	18	18	71.10	2.47	175.76	52	3350	600			
		200	D1	20	8850	1	34	34	300.90	2.47	743.82	5	7650	600	600		
2	b a c		w 1	12	7650	1	4	4	30.60	0.89	27.23	1	7650				
			w 2	12	6500	1	4	4	26.00	0.89	23.14	1	6500				
											SUB TOTAL		3705.59	kg			
											TOTAL=(S.T.X2)		**7411.18**	**kg**			
		ABUTMENT WALL E/F															
4	b a b	200	G1	16	5300	1	16	16	84.80	1.58	134.16	1	5300				
		200	H1	16	5000	1	22	22	110.00	1.58	174.03	2	4500	300	200		
		200	E1	12	2800	1	22	22	61.60	0.89	54.82	49	2200	300	300		
		200	E2	12	1900	1	29	29	55.10	0.89	49.03	49	1300	300	300		
		200	E3	16	2950	1	29	29	85.55	1.58	135.35	62	600	1500	850		
											SUB TOTAL		547.39	kg			
											TOTAL=(S.T.X2)		**1094.78**	**kg**			
		ABUTMENT WALL R/F															
5	a b c	200	G2	16	5300	1	16	16	84.80	1.58	134.16	1	5300				
		200	H2	16	5000	1	28	28	140.00	1.58	221.49	2	4500	300	200		
											SUB TOTAL		355.65	kg			
											TOTAL=(S.T.X2)		**711.30**	**kg**			
		ABUTMENT CAP & BACK WALL															
8	a d b c	150	J	12	3000	1	29	29	87.00	0.89	77.42	10	700	950	400	310	400
			K1	16	5300	1	10	10	53.00	1.58	83.85	1	5300				
		200	M1	16	2500	1	22	22	55.00	1.58	87.01	52	2200	300			
		200	M1	16	2900	1	22	22	63.80	1.58	100.94	4	2100	300	500		
		150	N1	16	5300	2	10	20	106.00	1.58	167.70	1	5300				
											SUB TOTAL		516.92	kg			
											TOTAL=(S.T.X2)		**1033.85**	**kg**			
		WING WALL E/F, R/F															
10	a b e c d	150	Q1	20	6800	1	39	39	265.20	2.47	655.57	2	6300	300	200		
		150	Q2	20	3150	1	21	21	66.15	2.47	163.52	52	2850	300			
		150	R1	16	7350	1	25	25	183.75	1.58	290.71	1	7350	av			
		150	R1	16	7950	1	14	14	111.30	1.58	176.09	1	7950				
49	c a d b	200	U	12	4550	1	13	13	59.15	0.89	52.64	4	3650	600	300		
		250	X	12	2000	1	9	9	18.00	0.89	16.02	1	2000				
		250	Y	12	2200	1	4	4	8.80	0.89	7.83	52	1900	300			
		200	E1	12	2800	1	30	30	84.00	0.89	74.75	49	2200	300	300		
		150	R3	16	2950	1	38	38	112.10	1.58	177.35	62	600	1500	850		
		200	R4	20	3650	1	11	11	40.15	2.47	99.25	1	3650				
		200	S	16	6800	1	32	32	217.60	1.58	344.26	2	6300	300	200		
		200	T1	16	7350	1	19	19	139.65	1.58	220.94	1	7350	av			
		200	T1	16	7950	1	10	10	79.50	1.58	125.78	1	7950				
52	a b	200	V	12	4550	1	13	13	59.15	0.89	52.64	4	3650	600	300		
											SUB TOTAL		2457.35	kg			
											TOTAL=(S.T.X4)		**9829.38**	**kg**			
		RAILING / WING WALL															
62	b c a		P1	16	1850	6	4	24	44.40	1.58	70.24	2	1600	200	50		
		100	P2	6	720	6	9	54	38.88	0.22	8.65	8	150	150	150	150	
			R1	12	7950	1	12	12	95.40	0.89	84.90	1	7950				
		100	R2	6	520	15	14	210	109.20	0.22	24.29	8	100	100	100	100	
											SUB TOTAL		188.09	kg			
											TOTAL=(S.T.X4)		**752.35**	**kg**			
											GROSS-TOTAL		**20832.85**	**kg**			

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH

LOCAL GOVERNMENT ENGINEERING DEPARTMENT

DESIGNED ,DRAWN & CHECKED BY

PURAKAUSHAL PROJUKTI LIMITED

House # C10, Road # 4 ,Banasree, Rampura- 1219.
E-maill: pproiltd@yahoo.com

NAME OF PROJECT:

LOCATION:

UPAZILA:

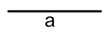
DISTRICT:

DRAWING TITLE

Ber Bending Schedule
Abutment Height 6.5m

DRAWING NO.

PAGE NO. P-168

SHAPE CODE	BAR SHAPE
1	
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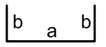
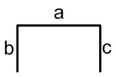
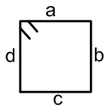
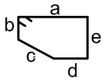
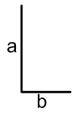
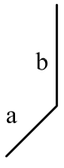
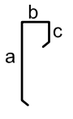
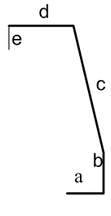
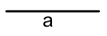
4	
5	
8	
10	
52	
54	
62	
76	

ABUTMENT(9250 x 7250 x 1000 AB-7.00 STEM-2490mm)

SPECING	BAR MARK	BAR DIA (mm)	BAR LENGTH (mm)	NO MEMBER	NO OF BARS IN EACH MEMBER	TOTAL NO OF BARS	TOTAL LENGTH (m)	UNIT WEIGHT (kg)	TOTAL WEIGHT (kg)	SHAPE CODE	DIMENSIONS (mm) a	b	c	d	e
ABUTMENT PILE CAP															
150	A1	20	10350	1	49	49	507.15	2.47	1253.67	4	9150	600	600		
200	B1	20	8350	1	47	47	392.45	2.47	970.14	4	7150	600	600		
150	C1	20	10350	1	62	62	641.70	2.47	1586.28	5	9150	600	600		
150	D1	20	8350	1	49	49	409.15	2.47	1011.42	5	7150	600	600		
	w1	12	9150	1	4	4	36.60	0.89	32.57	1	9150				
	w2	12	7150	1	4	4	28.60	0.89	25.45	1	7150				
								SUB TOTAL	4879.54	kg					
								TOTAL=(S.T.X2)	**9759.07**	**kg**					
ABUTMENT PILE CAP BEAM															
		25	8150	1	4	4	32.60	3.86	125.92	4	7150	500	500		
	EXT	25	8150	1	4	4	32.60	3.86	125.92	5	7150	500	500		
		25	8150	1	4	4	32.60	3.86	125.92	5	7150	500	500		
200		12	2540	1	37	37	93.98	0.89	83.63	8	350	800	350	800	
								SUB TOTAL	461.39	kg					
								TOTAL=(S.T.X2)	**922.77**	**kg**					
ABUTMENT WALL E/F															
150	G1	16	5300	1	18	18	95.40	1.58	150.93	1	5300				
150	H1	16	4640	1	37	37	171.68	1.58	271.61	2	4140	300	200		
150	E3	16	2950	1	41	41	120.95	1.58	191.35	62	600	1500	850		
								SUB TOTAL	613.89	kg					
								TOTAL=(S.T.X2)	**1227.79**	**kg**					
ABUTMENT WALL R/F															
150	G2	16	5300	1	18	18	95.40	1.58	150.93	1	5300				
150	H2	16	4640	1	37	37	171.68	1.58	271.61	2	4140	300	200		
								SUB TOTAL	422.54	kg					
								TOTAL=(S.T.X2)	**845.08**	**kg**					
ABUTMENT CAP & BACK WALL															
150	J	12	3350	1	31	31	103.85	0.89	92.42	10	750	1100	400	360	500
	K1	20	5300	1	10	10	53.00	2.47	131.02	1	5300				
150	M1	16	3340	1	31	31	103.54	1.58	163.81	52	3040	300			
150	M1	16	3740	1	31	31	115.94	1.58	183.43	4	2940	300	500		
150	N1	16	5300	2	15	30	159.00	1.58	251.55	1	5300				
								SUB TOTAL	822.22	kg					
								TOTAL=(S.T.X2)	**1644.44**	**kg**					
WING WALL E/F, R/F															
150	Q1	16	7300	1	48	48	350.40	1.58	554.36	2	6800	300	200		
150	R1	16	8750	1	28	28	245.00	1.58	387.61	1	8750	av			
150	R1	16	9500	1	14	14	133.00	1.58	210.42	1	9500				
200	U	12	4800	1	13	13	62.40	0.89	55.53	4	3900	600	300		
200	X	12	2000	1	13	13	26.00	0.89	23.14	1	2000				
200	Y	12	3300	1	5	5	16.50	0.89	14.68	52	3000	300			
150	R3	16	2950	1	41	41	120.95	1.58	191.35	62	600	1500	850		
200	S	16	7300	1	39	39	284.70	1.58	450.42	2	6800	300	200		
200	T1	16	8750	1	21	21	183.75	1.58	290.71	1	8750	av			
200	T1	16	9500	1	10	10	95.00	1.58	150.30	1	9500				
200	V	12	4800	1	13	13	62.40	0.89	55.53	4	3900	600	300		
								SUB TOTAL	2384.05	kg					
								TOTAL=(S.T.X4)	**9536.18**	**kg**					
COUNTER FORT/ WING WALL															
	L3	25	5950	1	4	4	23.80	3.86	91.93	76	300	850	3500	1000	300
	L4	25	7750	1	4	4	31.00	3.86	119.74	76	300	850	5500	800	300
	L5	16	3700	1	2	2	7.40	1.58	11.71	52	3400	300			
	L5	16	4700	1	2	2	9.40	1.58	14.87	52	4400	300			
	L5	16	6700	1	2	2	13.40	1.58	21.20	52	6400	300			
	U	25	6700	1	2	2	13.40	3.86	51.76	52	6400	300			
100	Y	12	2740	1	38	38	104.12	0.89	92.66	8	2740	av			
								SUB TOTAL	403.86	kg					
								TOTAL=(S.T.X12)	**4846.32**	**kg**					
RAILING / WING WALL															
	P1	16	1850	6	4	24	44.40	1.58	70.24	2	1600	200	50		
100	P2	6	720	6	9	54	38.88	0.22	8.65	8	150	150	150	150	
	R1	12	9500	1	12	12	114.00	0.89	101.45	1	9500				
100	R2	6	520	15	19	285	148.20	0.22	32.97	8	100	100	100	100	
								SUB TOTAL	213.32	kg					
								TOTAL=(S.T.X4)	**853.27**	**kg**					
								GROSS-TOTAL	**29634.93**	**kg**					

SHAPE CODE	BAR SHAPE
1	
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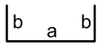
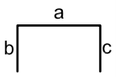
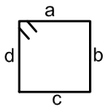
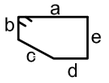
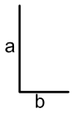
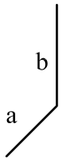
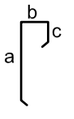
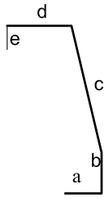
4	
5	
8	
10	
52	
54	
62	
76	

ABUTMENT(9250 x 7250 x 1000 AB-7.00 STEM-2700mm)

SPECING	BAR MARK	BAR DIA (mm)	BAR LENGTH (mm)	NO MEMBER	NO OF BARS IN EACH MEMBER	TOTAL NO OF BARS	TOTAL LENGTH (m)	UNIT WEIGHT (kg)	TOTAL WEIGHT (kg)	SHAPE CODE	DIMENSIONS (mm) a	b	c	d	e
ABUTMENT PILE CAP															
150	A1	20	10350	1	49	49	507.15	2.47	1253.67	4	9150	600	600		
200	B1	20	8350	1	47	47	392.45	2.47	970.14	4	7150	600	600		
150	C1	20	10350	1	62	62	641.70	2.47	1586.28	5	9150	600	600		
150	D1	20	8350	1	49	49	409.15	2.47	1011.42	5	7150	600	600		
	w1	12	9150	1	4	4	36.60	0.89	32.57	1	9150				
	w2	12	7150	1	4	4	28.60	0.89	25.45	1	7150				
								SUB TOTAL	4879.54	kg					
								TOTAL=(S.T.X2)	**9759.07**	**kg**					
ABUTMENT PILE CAP BEAM															
		25	8150	1	4	4	32.60	3.86	125.92	4	7150	500	500		
	EXT	25	8150	1	4	4	32.60	3.86	125.92	5	7150	500	500		
		25	8150	1	4	4	32.60	3.86	125.92	5	7150	500	500		
200		12	2540	1	37	37	93.98	0.89	83.63	8	350	800	350	800	
								SUB TOTAL	461.39	kg					
								TOTAL=(S.T.X2)	**922.77**	**kg**					
ABUTMENT WALL E/F															
150	G1	16	5300	1	19	19	100.70	1.58	159.32	1	5300				
150	H1	16	4850	1	37	37	179.45	1.58	283.90	2	4350	300	200		
150	E3	16	2950	1	41	41	120.95	1.58	191.35	62	600	1500	850		
								SUB TOTAL	634.57	kg					
								TOTAL=(S.T.X2)	**1269.14**	**kg**					
ABUTMENT WALL R/F															
150	G2	16	5300	1	19	19	100.70	1.58	159.32	1	5300				
150	H2	16	4850	1	37	37	179.45	1.58	283.90	2	4350	300	200		
								SUB TOTAL	443.22	kg					
								TOTAL=(S.T.X2)	**886.44**	**kg**					
ABUTMENT CAP & BACK WALL															
150	J	12	3350	1	31	31	103.85	0.89	92.42	10	750	1100	400	360	500
	K1	20	5300	1	10	10	53.00	2.47	131.02	1	5300				
150	M1	16	3150	1	31	31	97.65	1.58	154.49	52	2850	300			
150	M1	16	3550	1	31	31	110.05	1.58	174.11	4	2750	300	500		
150	N1	16	5300	2	18	36	190.80	1.58	301.86	1	5300				
								SUB TOTAL	853.89	kg					
								TOTAL=(S.T.X2)	**1707.79**	**kg**					
WING WALL E/F, R/F															
150	Q1	16	7300	1	48	48	350.40	1.58	554.36	2	6800	300	200		
150	R1	16	8750	1	29	29	253.75	1.58	401.45	1	8750	av			
150	R1	16	9550	1	12	12	114.60	1.58	181.31	1	9550				
200	U	12	4795	1	13	13	62.34	0.89	55.47	4	3795	600	300		
200	X	12	2000	1	12	12	24.00	0.89	21.36	1	2000				
200	Y	12	2850	1	5	5	14.25	0.89	12.68	52	2550	300			
150	R3	16	2950	1	41	41	120.95	1.58	191.35	62	600	1500	850		
200	S	16	7300	1	39	39	284.70	1.58	450.42	2	6800	300	200		
150	T1	16	8750	1	29	29	253.75	1.58	401.45	1	8750	av			
150	T1	16	9550	1	12	12	114.60	1.58	181.31	1	9550				
200	V	12	4695	1	13	13	61.04	0.89	54.32	4	3795	600	300		
	P	16	7690	1	2	2	15.38	1.58	24.33	54	5600	1790	300		
								SUB TOTAL	2529.81	kg					
								TOTAL=(S.T.X4)	**10119.24**	**kg**					
COUNTER FORT/ WING WALL															
	L3	25	5950	1	4	4	23.80	3.86	91.93	76	300	850	3500	1000	300
	L4	25	7750	1	4	4	31.00	3.86	119.74	76	300	850	5500	800	300
	L5	16	3700	1	2	2	7.40	1.58	11.71	52	3400	300			
	L5	16	4700	1	2	2	9.40	1.58	14.87	52	4400	300			
	L5	16	6700	1	2	2	13.40	1.58	21.20	52	6400	300			
	U	25	6700	1	2	2	13.40	3.86	51.76	52	6400	300			
100	Y	12	2740	1	38	38	104.12	0.89	92.66	8	2740	av			
								SUB TOTAL	403.86	kg					
								TOTAL=(S.T.X12)	**4846.32**	**kg**					
RAILING / WING WALL															
	P1	16	1850	6	4	24	44.40	1.58	70.24	2	1600	200	50		
100	P2	6	720	6	9	54	38.88	0.22	8.65	8	150	150	150	150	
	R1	12	9550	1	12	12	114.60	0.89	101.98	1	9550				
100	R2	6	520	15	19	285	148.20	0.22	32.97	8	100	100	100	100	
								SUB TOTAL	213.85	kg					
								TOTAL=(S.T.X4)	**855.40**	**kg**					
								GROSS-TOTAL	**30366.18**	**kg**					

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH

LOCAL GOVERNMENT ENGINEERING DEPARTMENT

DESIGNED ,DRAWN & CHECKED BY

PURAKAUSHAL PROJUKTI LIMITED

House # C10, Road # 4 ,Banasree, Rampura- 1219.
E-maill: pproiltd@yahoo.com

NAME OF PROJECT:

LOCATION:

UPAZILA:

DISTRICT:

DRAWING TITLE

Ber Bending Schedule
Abutment Height 7.0m

DRAWING NO.

PAGE NO. P-169

ABUTMENT(8550 x 6600 x 1000 AB-7.00 STEM-3050mm)

SHAPE CODE	BAR SHAPE	SPECING	BAR MARK	BAR DIA (mm)	BAR LENGTH (mm)	NO MEMBER	NO OF BARS IN EACH MEMBER	TOTAL NO OF BARS	TOTAL LENGTH (m)	UNIT WEIGHT (kg)	TOTAL WEIGHT (kg)	SHAPE CODE	DIMENSIONS (mm) a	b	c	d	e
		ABUTMENT PILE CAP															
1	a	150	A1	20	9650	1	45	45	434.25	2.47	1073.47	4	8450	600	600		
		200	B1	20	7700	1	44	44	338.80	2.47	837.51	4	6500	600	600		
		150	C1	20	9650	1	45	45	434.25	2.47	1073.47	5	8450	600	600		
		150	D1	20	7700	1	58	58	446.60	2.47	1104.00	5	6500	600	600		
			w 1	12	8450	1	4	4	33.80	0.89	30.08	1	8450				
			w 2	12	6500	1	4	4	26.00	0.89	23.14	1	6500				
										SUB TOTAL	4141.66	kg					
										TOTAL=(S.T.X2)	**8283.32**	**kg**					
2	b a c	**ABUTMENT PILE CAP BEAM**															
				25	7500	1	4	4	30.00	3.86	115.88	4	6500	500	500		
			EXT	25	7500	1	4	4	30.00	3.86	115.88	5	6500	500	500		
				25	7500	1	4	4	30.00	3.86	115.88	5	6500	500	500		
		200		12	2540	1	34	34	86.36	0.89	76.85	8	350	800	350	800	
										SUB TOTAL	424.48	kg					
										TOTAL=(S.T.X2)	**848.96**	**kg**					
4	b a b	**ABUTMENT WALL E/F**															
		150	G1	16	5300	1	22	22	116.60	1.58	184.47	1	5300				
		150	H1	16	5200	1	37	37	192.40	1.58	304.39	2	4700	300	200		
		150	E3	16	2950	1	41	41	120.95	1.58	191.35	62	600	1500	850		
										SUB TOTAL	680.22	kg					
										TOTAL=(S.T.X2)	**1360.43**	**kg**					
5	a b c	**ABUTMENT WALL R/F**															
		150	G2	16	5300	1	22	22	116.60	1.58	184.47	1	5300				
		150	H2	16	5200	1	37	37	192.40	1.58	304.39	2	4700	300	200		
										SUB TOTAL	488.86	kg					
										TOTAL=(S.T.X2)	**977.73**	**kg**					
8	a d b c	**ABUTMENT CAP & BACK WALL**															
		150	J	12	3200	1	31	31	99.20	0.89	88.28	10	750	1000	400	360	450
			K1	20	5300	1	10	10	53.00	2.47	131.02	1	5300				
		150	M1	16	2800	1	31	31	86.80	1.58	137.32	52	2500	300			
		150	M1	16	3200	1	31	31	99.20	1.58	156.94	4	2400	300	500		
		150	N1	16	5300	2	15	30	159.00	1.58	251.55	1	5300				
										SUB TOTAL	765.11	kg					
										TOTAL=(S.T.X2)	**1530.23**	**kg**					
10	a b e c d	**WING WALL E/F, R/F**															
		150	Q1	16	7300	1	44	44	321.20	1.58	508.16	2	6800	300	200		
		150	R1	16	8150	1	28	28	228.20	1.58	361.03	1	8150	av			
		150	R1	16	8700	1	14	14	121.80	1.58	192.70	1	8700				
		200	U	12	4600	1	13	13	59.80	0.89	53.22	4	3900	500	200		
		200	X	12	2000	1	12	12	24.00	0.89	21.36	1	2000				
		200	Y	12	2800	1	5	5	14.00	0.89	12.46	52	2500	300			
		150	R3	16	2950	1	41	41	120.95	1.58	191.35	62	600	1500	850		
		200	S	16	7300	1	36	36	262.80	1.58	415.77	2	6800	300	200		
		150	T1	16	8150	1	28	28	228.20	1.58	361.03	1	8150	av			
		150	T1	16	8700	1	14	14	121.80	1.58	192.70	1	8700				
		200	V	12	4600	1	13	13	59.80	0.89	53.22	4	3900	500	200		
			P	16	7690	1	2	2	15.38	1.58	24.33	54	5600	1790	300		
										SUB TOTAL	2387.33	kg					
										TOTAL=(S.T.X4)	**9549.31**	**kg**					
52	a b	**COUNTER FORT/ WING WALL**															
			L3	25	5950	1	4	4	23.80	3.86	91.93	76	300	850	3500	1000	300
			L4	25	7750	1	4	4	31.00	3.86	119.74	76	300	850	5500	800	300
			L5	16	3700	1	2	2	7.40	1.58	11.71	52	3400	300			
			L5	16	4700	1	2	2	9.40	1.58	14.87	52	4400	300			
			L5	16	6700	1	2	2	13.40	1.58	21.20	52	6400	300			
			U	25	6700	1	2	2	13.40	3.86	51.76	52	6400	300			
		100	Y	12	2740	1	38	38	104.12	0.89	92.66	8	2740	av			
										SUB TOTAL	403.86	kg					
										TOTAL=(S.T.X12)	**4846.32**	**kg**					
54	b a	**RAILING / WING WALL**															
			P1	16	1850	6	4	24	44.40	1.58	70.24	2	1600	200	50		
		100	P2	6	720	6	9	54	38.88	0.22	8.65	8	150	150	150	150	
			R1	12	8700	1	12	12	104.40	0.89	92.91	1	8700				
		100	R2	6	520	15	17	255	132.60	0.22	29.50	8	100	100	100	100	
										SUB TOTAL	201.30	kg					
										TOTAL=(S.T.X4)	**805.21**	**kg**					
62	b c a									GROSS-TOTAL	**28201.49**	**kg**					
76	d e c b a																

ABUTMENT(8550 x 6600 x 1000 AB-7.00 STEM-3400mm)

SHAPE CODE	BAR SHAPE	SPECING	BAR MARK	BAR DIA (mm)	BAR LENGTH (mm)	NO MEMBER	NO OF BARS IN EACH MEMBER	TOTAL NO OF BARS	TOTAL LENGTH (m)	UNIT WEIGHT (kg)	TOTAL WEIGHT (kg)	SHAPE CODE	DIMENSIONS (mm) a	b	c	d	e
		ABUTMENT PILE CAP															
1	a	150	A1	20	9650	1	45	45	434.25	2.47	1073.47	4	8450	600	600		
		200	B1	20	7700	1	44	44	338.80	2.47	837.51	4	6500	600	600		
		150	C1	20	9650	1	45	45	434.25	2.47	1073.47	5	8450	600	600		
		150	D1	20	7700	1	58	58	446.60	2.47	1104.00	5	6500	600	600		
			w 1	12	8450	1	4	4	33.80	0.89	30.08	1	8450				
			w 2	12	6500	1	4	4	26.00	0.89	23.14	1	6500				
										SUB TOTAL	4141.66	kg					
										TOTAL=(S.T.X2)	**8283.32**	**kg**					
2	b a c	**ABUTMENT PILE CAP BEAM**															
				25	7500	1	4	4	30.00	3.86	115.88	4	6500	500	500		
			EXT	25	7500	1	4	4	30.00	3.86	115.88	5	6500	500	500		
				25	7500	1	4	4	30.00	3.86	115.88	5	6500	500	500		
		200		12	2540	1	34	34	86.36	0.89	76.85	8	350	800	350	800	
										SUB TOTAL	424.48	kg					
										TOTAL=(S.T.X2)	**848.96**	**kg**					
4	b a b	**ABUTMENT WALL E/F**															
		150	G1	16	5300	1	24	24	127.20	1.58	201.24	1	5300				
		150	H1	16	5500	1	37	37	203.50	1.58	321.95	2	5000	300	200		
		150	E3	16	2950	1	41	41	120.95	1.58	191.35	62	600	1500	850		
										SUB TOTAL	714.55	kg					
										TOTAL=(S.T.X2)	**1429.09**	**kg**					
5	a b c	**ABUTMENT WALL R/F**															
		150	G2	16	5300	1	24	24	127.20	1.58	201.24	1	5300				
		150	H2	16	5500	1	37	37	203.50	1.58	321.95	2	5000	300	200		
										SUB TOTAL	523.19	kg					
										TOTAL=(S.T.X2)	**1046.39**	**kg**					
8	a d b c	**ABUTMENT CAP & BACK WALL**															
		150	J	12	3000	1	32	32	96.00	0.89	85.43	10	700	950	400	310	400
			K1	20	5300	1	10	10	53.00	2.47	131.02	1	5300				
		150	M1	16	2500	1	32	32	80.00	1.58	126.57	52	2200	300			
		150	M1	16	2900	1	32	32	92.80	1.58	146.82	4	2100	300	500		
		150	N1	16	5300	2	13	26	137.80	1.58	218.01	1	5300				
										SUB TOTAL	707.84	kg					
										TOTAL=(S.T.X2)	**1415.68**	**kg**					
10	a b e c d	**WING WALL E/F, R/F**															
		150	Q1	16	7300	1	44	44	321.20	1.58	508.16	2	6800	300	200		
		150	R1	16	8150	1	28	28	228.20	1.58	361.03	1	8150	av			
		150	R1	16	8400	1	14	14	117.60	1.58	186.05	1	8400				
		200	U	12	4600	1	13	13	59.80	0.89	53.22	4	3900	500	200		
		200	X	12	2000	1	12	12	24.00	0.89	21.36	1	2000				
		200	Y	12	2800	1	4	4	11.20	0.89	9.97	52	2500	300			
		150	R3	16	2950	1	41	41	120.95	1.58	191.35	62	600	1500	850		
		200	S	16	7300	1	34	34	248.20	1.58	392.67	2	6800	300	200		
		150	T1	16	8150	1	28	28	228.20	1.58	361.03	1	8150	av			
		150	T1	16	8700	1	14	14	121.80	1.58	192.70	1	8700				
		200	V	12	4600	1	13	13	59.80	0.89	53.22	4	3900	500	200		
			P	16	7690	1	2	2	15.38	1.58	24.33	54	5600	1790	300		
										SUB TOTAL	2355.09	kg					
										TOTAL=(S.T.X4)	**9420.37**	**kg**					
52	a b	**COUNTER FORT/ WING WALL**															
			L3	25	5950	1	4	4	23.80	3.86	91.93	76	300	850	3500	1000	300
			L4	25	7750	1	4	4	31.00	3.86	119.74	76	300	850	5500	800	300
			L5	16	3700	1	2	2	7.40	1.58	11.71	52	3400	300			
			L5	16	4700	1	2	2	9.40	1.58	14.87	52	4400	300			
			L5	16	6700	1	2	2	13.40	1.58	21.20	52	6400	300			
			U	25	6700	1	2	2	13.40	3.86	51.76	52	6400	300			
		100	Y	12	2740	1	38	38	104.12	0.89	92.66	8	2740	av			
										SUB TOTAL	403.86	kg					
										TOTAL=(S.T.X12)	**4846.32**	**kg**					
54	b a	**RAILING / WING WALL**															
			P1	16	1850	6	4	24	44.40	1.58	70.24	2	1600	200	50		
		100	P2	6	720	6	9	54	38.88	0.22	8.65	8	150	150	150	150	
			R1	12	8400	1	12	12	100.80	0.89	89.70	1	8400				
		100	R2	6	520	15	17	255	132.60	0.22	29.50	8	100	100	100	100	
										SUB TOTAL	198.10	kg					
										TOTAL=(S.T.X4)	**792.40**	**kg**					
62	b c a									GROSS-TOTAL	**28082.52**	**kg**					
76	d e c b a																

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH

LOCAL GOVERNMENT ENGINEERING DEPARTMENT

DESIGNED ,DRAWN & CHECKED BY

PURAKAUSHAL PROJUKTI LIMITED

House # C10, Road # 4 ,Banasree, Rampura- 1219.
E-maill: pproiltd@yahoo.com

NAME OF PROJECT:

LOCATION:

UPAZILA:

DISTRICT:

DRAWING TITLE

Ber Bending Schedule
Abutment Height 7.0m

DRAWING NO.

PAGE NO. P-170

SHAPE CODE	BAR SHAPE
5	a b ⌐ c

BEARING SEAT(350X500X65mm)

ABUTMENT	100	A	10	1600	1	9	9	14.40	0.62	8.90	5	600	500	500			
	100	B	10	1850	1	7	7	12.95	0.62	8.00	5	850	500	500			
										SUB TOTAL		16.90	kg				
										TOTAL=(S.T.X4)		**67.61**	**kg**				
										GROSS- TOTAL		**67.61**	**kg**				

SHAPE CODE	BAR SHAPE
5	a b ⌐ c

BEARING SEAT(350X600X75mm)

ABUTMENT	100	A	10	1700	1	9	9	15.30	0.62	9.46	5	700	500	500			
	100	B	10	1850	1	7	7	12.95	0.62	8.00	5	850	500	500			
										SUB TOTAL		17.46	kg				
										TOTAL=(S.T.X4)		**69.83**	**kg**				
										GROSS- TOTAL		**69.83**	**kg**				

SHAPE CODE	BAR SHAPE
5	a b ⌐ c

BEARING SEAT(450X650X90mm)

ABUTMENT	100	A	10	1700	2	10	20	34.00	0.62	21.01	5	700	500	500			
	100	B	10	1800	2	8	16	28.80	0.62	17.80	5	900	500	500			
										SUB TOTAL		38.81	kg				
										TOTAL=(S.T.X4)		**155.24**	**kg**				
										GROSS- TOTAL		**155.24**	**kg**				

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH

LOCAL GOVERNMENT ENGINEERING DEPARTMENT

DESIGNED ,DRAWN & CHECKED BY

PURAKAUSHAL PROJUKTI LIMITED

House # C10, Road # 4 ,Banasree, Rampura- 1219.
E-maill: pproiltd@yahoo.com

NAME OF PROJECT:

LOCATION:

UPAZILA:

DISTRICT:

DRAWING TITLE

Ber Bending Schedule
Bearing Seat

DRAWING NO.

PAGE NO. P-171

SHAPE CODE	BAR SHAPE
1	a
27	a, b, c
52	a, b

ABUTMENT PILE- 24.0m Long, 600mm Dia.

SPECING	BAR MARK	BAR DIA (mm)	BAR LENGTH (mm)	NO MEMBER	NO OF BARS IN EACH MEMBER	TOTAL NO OF BARS	TOTAL LENGTH (m)	UNIT WEIGHT (kg)	TOTAL WEIGHT (kg)	SHAPE CODE	DIMENSIONS (mm)		
											a	b	c
	P1	20	8700	1	12	12	104.40	2.47	258.08	52	8500	200	
	P1	20	9000	1	12	12	108.00	2.47	266.98	1	9000		
	P2	16	8450	1	12	12	101.40	1.58	160.42	1	8450		
75	S1	12	1425	1	105	105	149.63	0.89	133.15	27		75	1350
100	S2	12	1450	1	83	83	120.35	0.89	107.10	27		100	1350
150	S3	12	1515	1	52	52	78.78	0.89	70.11	27		150	1365
								SUB TOTAL	995.84	kg			
								TOTAL=(S.T.X1)	**995.84**	**kg**			
								GROSS- TOTAL	**995.84**	**kg**			

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

DESIGNED ,DRAWN & CHECKED BY

PURAKAUSHAL PROJUKTI LIMITED
House # C10, Road # 4 ,Banasree, Rampura- 1219.
E-maill: pproiltd@yahoo.com

NAME OF PROJECT:
LOCATION:
UPAZILA:
DISTRICT:

DRAWING TITLE

Ber Bending Schedule
Pile Length 24.0m

DRAWING NO.

SHAPE CODE	BAR SHAPE
1	a
27	c, b, b
52	b, a

ABUTMENT PILE- 30.0m Long, 700mm Dia.

SPECING	BAR MARK	BAR DIA (mm)	BAR LENGTH (mm)	NO MEMBER	NO OF BARS IN EACH MEMBER	TOTAL NO OF BARS	TOTAL LENGTH (m)	UNIT WEIGHT (kg)	TOTAL WEIGHT (kg)	SHAPE CODE	DIMENSIONS (mm)		
											a	b	c
	P1	25	10800	1	16	16	172.80	3.86	667.44	52	10600	200	
	P2	20	11000	1	16	16	176.00	2.47	435.07	1	11000		
	P2	20	10500	1	16	16	168.00	2.47	415.30	1	10500		
75	S1	12	1725	1	129	129	222.53	0.89	198.03	27		75	1650
100	S2	12	1765	1	102	102	180.03	0.89	160.21	27		100	1665
100	S2	12	1765	1	97	97	171.21	0.89	152.36	27		100	1665
								SUB TOTAL	2028.41	kg			
								TOTAL=(S.T.X1)	**2028.41**	**kg**			
								GROSS- TOTAL	**2028.41**	**kg**			

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

DESIGNED ,DRAWN & CHECKED BY

PURAKAUSHAL PROJUKTI LIMITED
House # C10, Road # 4 ,Banasree, Rampura- 1219.
E-maill: pproiltd@yahoo.com

NAME OF PROJECT:
LOCATION:
UPAZILA:
DISTRICT:

DRAWING TITLE

Ber Bending Schedule
Pile Length 30.0m

DRAWING NO.

PAGE NO. P-173

Bill of Quantities (BOQ)

Name of Project :

Name of Work : Detail Estimate of 25.00m Long Deck Slab (Typical)

Package Number :

SL. No.	(Item Code) Description of Item of Works	Unit	Quantity	Quoted Unit Rates (Tk)		Total Amount In Figure (in Tk)
				In Figure	In Words	
1	2	3	4	5	6	7
1.	(4.2.04.03.1) Reinforced Cement Concrete work in deck slab (including cantilever), side walk, curb, wheel guard, etc. in bridge with stone chips (Preferably stone chips from Madhyapara, Dinajpur), sand (minimum FM 1.80) and cement having minimum 28 days ultimate cylinder crushing strength of 250kg/cm2 (suggested mix proportion 1:1.5:3) excluding cost of reinforcement and its fabrication but including cost of all other materials, shuttering, casting, curing for 28 days and all incidental charges, etc. complete in all respect as per design, drawing and direction of the E-I-C. Up to height 5m	cum	35.602			
2.	(4.2.05.04) Reinforced Cement Concrete work in railing and rail post with stone chips (Preferably stone chips from Madhyapara, Dinajpur), sand (minimum FM 1.80) and cement having minimum 28 days ultimate cylinder crushing strength of 250kg/cm2 (suggested mix proportion 1:1.5:3) excluding cost of reinforcement and its fabrication but including cost of all other materials, shuttering, casting, curing for 28 days and all incidental charges, etc. complete in all respect as per design, drawing and direction of the E-I-C.	cum	4.404			
3.	(4.2.09) Providing 50mm average thick wearing course (1:1.5:3) on deck slab of bridge with cement, sand (minimum FM 1.80) and 6mm down graded boulder chips, mixing concrete, laying cost of all materials, labour and transportation to the site, etc. all complete as per direction of the E-I-C.	cum	4.625			
4.	(4.3.01.04) Providing rainwater down pipe including placing in position and cost of all materials as per drawing and direction of the E-I-C. 75mm PVC pipe	m	10.000			
5.	(4.3.04) Providing nosing with MS angles (75mmx75mmx6mm) etc. including cost of all materials, welding, carrying, etc. all complete as per design, drawing and direction of the E-I-C.	kg	101.600			
6.	(4.3.05) Providing expansion joints between the breast walls (abutment top wall) and girders or in between the girders with steel sheet and filling the gap with sand and bitumen (80/100) as per design, drawing and direction of the E-I-C.	kg	321.200			
7.	(4.2.06.03) Supplying and fabrication of M.S High strength deformed bar/ Twisted bar reinforcement of required size and length for all types of RCC work including straightening the rod, removing ruts, cleaning, cutting, hooking, bending, binding with supply of 22 B.W.G. GI wire, placing in position, including lapping, spacing and securing them in position by concrete blocks (1:1), metal chairs, etc. complete including cost of all materials, labour, local handling, laboratory test, incidentals necessary to complete the work as per specifications, drawings and direction of the Engineer. Laboratory test for physical property, strength, elongation% & bend to be performed as per ASTM. (Measurement will be based on standard weight of 490 lbs./ft3 Chairs, laps and separators will not be measures for payment. The cost of these will be included in the unit rate). High strength deformed bar (grade 60, billet)	kg	7574.000			
Total Price of the Tender						

The total price of our Tender is: Tk: [Insert value in figures] [Insert value in Words]

Signature of the Tenderer

This Bill of Quantity contains _____ correction(s) duly initialed and signed by the authorized person of the Tenderer.

Bill of Quantities (BOQ)

Name of Project :

Name of Work : Detail Estimate of 30.00m Long Deck Slab (Typical)

Package Number :

SL. No.	(Item Code) Description of Item of Works	Unit	Quantity	Quoted Unit Rates (Tk)		Total Amount In Figure (in Tk)
				In Figure	In Words	
1	2	3	4	5	6	7
1.	(4.2.04.03.1) Reinforced Cement Concrete work in deck slab (including cantilever), side walk, curb, wheel guard, etc. in bridge with stone chips (Preferably stone chips from Madhyapara, Dinajpur), sand (minimum FM 1.80) and cement having minimum 28 days ultimate cylinder crushing strength of 250kg/cm2 (suggested mix proportion 1:1.5:3) excluding cost of reinforcement and its fabrication but including cost of all other materials, shuttering, casting, curing for 28 days and all incidental charges, etc. complete in all respect as per design, drawing and direction of the E-I-C. Up to height 5m	cum	42.720			
2.	(4.2.05.04) Reinforced Cement Concrete work in railing and rail post with stone chips (Preferably stone chips from Madhyapara, Dinajpur), sand (minimum FM 1.80) and cement having minimum 28 days ultimate cylinder crushing strength of 250kg/cm2 (suggested mix proportion 1:1.5:3) excluding cost of reinforcement and its fabrication but including cost of all other materials, shuttering, casting, curing for 28 days and all incidental charges, etc. complete in all respect as per design, drawing and direction of the E-I-C.	cum	5.250			
3.	(4.2.09) Providing 50mm average thick wearing course (1:1.5:3) on deck slab of bridge with cement, sand (minimum FM 1.80) and 6mm down graded boulder chips, mixing concrete, laying cost of all materials, labour and transportation to the site, etc. all complete as per direction of the E-I-C.	cum	5.550			
4.	(4.3.01.04) Providing rainwater down pipe including placing in position and cost of all materials as per drawing and direction of the E-I-C. 75mm PVC pipe	m	12.000			
5.	(4.3.04) Providing nosing with MS angles (75mmx75mmx6mm) etc. including cost of all materials, welding, carrying, etc. all complete as per design, drawing and direction of the E-I-C.	kg	101.600			
6.	(4.3.05) Providing expansion joints between the breast walls (abutment top wall) and girders or in between the girders with steel sheet and filling the gap with sand and bitumen (80/100) as per design, drawing and direction of the E-I-C.	kg	321.200			
7.	(4.2.06.03) Supplying and fabrication of M.S High strength deformed bar/ Twisted bar reinforcement of required size and length for all types of RCC work including straightening the rod, removing ruts, cleaning, cutting, hooking, bending, binding with supply of 22 B.W.G. GI wire, placing in position, including lapping, spacing and securing them in position by concrete blocks (1:1), metal chairs, etc. complete including cost of all materials, labour, local handling, laboratory test, incidentals necessary to complete the work as per specifications, drawings and direction of the Engineer. Laboratory test for physical property, strength, elongation% & bend to be performed as per ASTM. (Measurement will be based on standard weight of 490 lbs./ft3 Chairs, laps and separators will not be measures for payment. The cost of these will be included in the unit rate). High strength deformed bar (grade 60, billet)	kg	9065.000			
Total Price of the Tender						

The total price of our Tender is: Tk: [Insert value in figures] [Insert value in Words]

Signature of the Tenderer

This Bill of Quantity contains _____ correction(s) duly initialed and signed by the authorized person of the Tenderer.

Bill of Quantities (BOQ)

Name of Project :

Name of Work : Detail Estimate of 35.00m Long Deck Slab (Typical)

Package Number :

SL. No.	(Item Code) Description of Item of Works	Unit	Quantity	Quoted Unit Rates (Tk)		Total Amount In Figure (in Tk)
				In Figure	In Words	
1	2	3	4	5	6	7
1.	(4.2.04.03.1) Reinforced Cement Concrete work in deck slab (including cantilever), side walk, curb, wheel guard, etc. in bridge with stone chips (Preferably stone chips from Madhyapara, Dinajpur), sand (minimum FM 1.80) and cement having minimum 28 days ultimate cylinder crushing strength of 250kg/cm2 (suggested mix proportion 1:1.5:3) excluding cost of reinforcement and its fabrication but including cost of all other materials, shuttering, casting, curing for 28 days and all incidental charges, etc. complete in all respect as per design, drawing and direction of the E-I-C. Up to height 5m	cum	49.842			
2.	(4.2.05.04) Reinforced Cement Concrete work in railing and rail post with stone chips (Preferably stone chips from Madhyapara, Dinajpur), sand (minimum FM 1.80) and cement having minimum 28 days ultimate cylinder crushing strength of 250kg/cm2 (suggested mix proportion 1:1.5:3) excluding cost of reinforcement and its fabrication but including cost of all other materials, shuttering, casting, curing for 28 days and all incidental charges, etc. complete in all respect as per design, drawing and direction of the E-I-C.	cum	6.096			
3.	(4.2.09) Providing 50mm average thick wearing course (1:1.5:3) on deck slab of bridge with cement, sand (minimum FM 1.80) and 6mm down graded boulder chips, mixing concrete, laying cost of all materials, labour and transportation to the site, etc. all complete as per direction of the E-I-C.	cum	6.475			
4.	(4.3.01.04) Providing rainwater down pipe including placing in position and cost of all materials as per drawing and direction of the E-I-C. 75mm PVC pipe	m	15.000			
5.	(4.3.04) Providing nosing with MS angles (75mmx75mmx6mm) etc. including cost of all materials, welding, carrying, etc. all complete as per design, drawing and direction of the E-I-C.	kg	101.600			
6.	(4.3.05) Providing expansion joints between the breast walls (abutment top wall) and girders or in between the girders with steel sheet and filling the gap with sand and bitumen (80/100) as per design, drawing and direction of the E-I-C.	kg	321.200			
7.	(4.2.06.03) Supplying and fabrication of M.S High strength deformed bar/ Twisted bar reinforcement of required size and length for all types of RCC work including straightening the rod, removing ruts, cleaning, cutting, hooking, bending, binding with supply of 22 B.W.G. GI wire, placing in position, including lapping, spacing and securing them in position by concrete blocks (1:1), metal chairs, etc. complete including cost of all materials, labour, local handling, laboratory test, incidentals necessary to complete the work as per specifications, drawings and direction of the Engineer. Laboratory test for physical property, strength, elongation% & bend to be performed as per ASTM. (Measurement will be based on standard weight of 490 lbs./ft3 Chairs, laps and separators will not be measures for payment. The cost of these will be included in the unit rate). High strength deformed bar (grade 60, billet)	kg	10555.000			
Total Price of the Tender						

The total price of our Tender is: Tk: [Insert value in figures] [Insert value in Words]

Signature of the Tenderer

This Bill of Quantity contains _____ correction(s) duly initialed and signed by the authorized person of the Tenderer.

Bill of Quantities (BOQ)

Name of Project :

Name of Work : Detail Estimate of 40.00m Long Deck Slab (Typical)

Package Number :

SL. No.	(Item Code) Description of Item of Works	Unit	Quantity	Quoted Unit Rates (Tk)		Total Amount In Figure (in Tk)
				In Figure	In Words	
1	2	3	4	5	6	7
1.	(4.2.04.03.1) Reinforced Cement Concrete work in deck slab (including cantilever), side walk, curb, wheel guard, etc. in bridge with stone chips (Preferably stone chips from Madhyapara, Dinajpur), sand (minimum FM 1.80) and cement having minimum 28 days ultimate cylinder crushing strength of 250kg/cm2 (suggested mix proportion 1:1.5:3) excluding cost of reinforcement and its fabrication but including cost of all other materials, shuttering, casting, curing for 28 days and all incidental charges, etc. complete in all respect as per design, drawing and direction of the E-I-C. Up to height 5m	cum	56.960			
2.	(4.2.05.04) Reinforced Cement Concrete work in railing and rail post with stone chips (Preferably stone chips from Madhyapara, Dinajpur), sand (minimum FM 1.80) and cement having minimum 28 days ultimate cylinder crushing strength of 250kg/cm2 (suggested mix proportion 1:1.5:3) excluding cost of reinforcement and its fabrication but including cost of all other materials, shuttering, casting, curing for 28 days and all incidental charges, etc. complete in all respect as per design, drawing and direction of the E-I-C.	cum	6.996			
3.	(4.2.09) Providing 50mm average thick wearing course (1:1.5:3) on deck slab of bridge with cement, sand (minimum FM 1.80) and 6mm down graded boulder chips, mixing concrete, laying cost of all materials, labour and transportation to the site, etc. all complete as per direction of the E-I-C.	cum	7.400			
4.	(4.3.01.04) Providing rainwater down pipe including placing in position and cost of all materials as per drawing and direction of the E-I-C. 75mm PVC pipe	m	18.000			
5.	(4.3.04) Providing nosing with MS angles (75mmx75mmx6mm) etc. including cost of all materials, welding, carrying, etc. all complete as per design, drawing and direction of the E-I-C.	kg	101.600			
6.	(4.3.05) Providing expansion joints between the breast walls (abutment top wall) and girders or in between the girders with steel sheet and filling the gap with sand and bitumen (80/100) as per design, drawing and direction of the E-I-C.	kg	321.200			
7.	(4.2.06.03) Supplying and fabrication of M.S High strength deformed bar/ Twisted bar reinforcement of required size and length for all types of RCC work including straightening the rod, removing ruts, cleaning, cutting, hooking, bending, binding with supply of 22 B.W.G. GI wire, placing in position, including lapping, spacing and securing them in position by concrete blocks (1:1), metal chairs, etc. complete including cost of all materials, labour, local handling, laboratory test, incidentals necessary to complete the work as per specifications, drawings and direction of the Engineer. Laboratory test for physical property, strength, elongation% & bend to be performed as per ASTM. (Measurement will be based on standard weight of 490 lbs./ft3 Chairs, laps and separators will not be measures for payment. The cost of these will be included in the unit rate). High strength deformed bar (grade 60, billet)	kg	12010.000			
Total Price of the Tender						

The total price of our Tender is: Tk: [Insert value in figures] [Insert value in Words]

Signature of the Tenderer

This Bill of Quantity contains _____ correction(s) duly initialed and signed by the authorized person of the Tenderer.

Bill of Quantities (BOQ)

Name of Project :

Name of Work : Detail estimate of 25.00m long prestressed Girder (Typical)

Package Number :

SL. No.	(Item Code) Description of Item of Works	Unit	Quantity	Quoted Unit Rates (Tk)		Total Amount In Figure (in Tk)
				In Figure	In Words	
1	2	3	4	5	6	7
1.	(4.2.07.01) Providing and laying Cement Concrete in Pre-stressed Concrete works with 20mm down well graded crushed stone chips (Preferably stone chips from Madhyapara, Dinajpur), (from best quality boulders), coarse sand (minimum FM 2.80) and cement (admixture in addition) having minimum ultimate cylinder crushing strength of 350kg/cm2 at 28 days including form work, sheath, necessary ramming, vibrating, curing, finishing & launching, shifting, placing in position etc. complete in conformity with drawings, specifications & direction of the E-I-C. Height upto 5m	cum	39.308			
2.	(4.2.02.01.03) Reinforced Cement Concrete work (1:1.5:3) in girders, cross girders, beams, ribs, fillets, etc. in bridge with 20mm down well graded stone chips (Preferably stone chips from Madhyapara, Dinajpur), sand (minimum FM 1.80) and cement having minimum 28 days ultimate cylinder crushing strength of 250kg/cm2 excluding cost of reinforcement and its fabrication but including cost of all other materials, shuttering, propping, casting, curing for 28 days and all incidental charges, etc. complete in all respect as per design requirement, drawing and direction of the E-I-C. Height up to 5 m	cum	4.945			
3.	(4.2.08) Providing and laying of 7-ply un-coated HT strand conform to AASHTO-M203 (Grade-270, low relaxation type) having minimum ultimate tensile strength 270 ksi of required size as per design including supplying, fabrication, placing in position, providing corrugated galvanized steel sheathing duct of required size (Thickness 0.30mm, Minimum internal dia 75mm), steel anchorage with gripping accessories, spacers, properly tensioning with approved jacks, Blocking with proper pressure, measuring and recording elongation and force, grouting the duct with non-shrinkable cement grout with non-shrinkage (approved) admixture after satisfactory tensioning & anchorage, cutting the excess HT strand, providing patch concrete at recess end with epoxy coating, all materials, labors, equipment, tools etc. all complete as per design, drawing and direction of the E-I-C.	tonne	1.572			
4.	(4.2.06.03) Supplying and fabrication of M.S High strength deformed bar/ Twisted bar reinforcement of required size and length for all types of RCC work including straightening the rod, removing ruts, cleaning, cutting, hooking, bending, binding with supply of 22 B.W.G. GI wire, placing in position, including lapping, spacing and securing them in position by concrete blocks (1:1), metal chairs, etc. complete including cost of all materials, labour, local handling, laboratory test, incidentals necessary to complete the work as per specifications, drawings and direction of the Engineer. Laboratory test for physical property, strength, elongation% & bend to be performed as per ASTM. (Measurement will be based on standard weight of 490 lbs./ft3 Chairs, laps and separators will not be measures for payment. The cost of these will be included in the unit rate) High strength deformed bar (grade 60, billet)	kg	4412.000			
Total Price of the Tender						

The total price of our Tender is: Tk: [Insert value in figures] [Insert value in Words]

_____

Signature of the Tenderer

This Bill of Quantity contains _____ correction(s) duly initialed and signed by the authorized person of the Tenderer.

Bill of Quantities (BOQ)

Name of Project :

Name of Work : Detail estimate of 30.00m long prestressed Girder (Typical)

Package Number :

SL. No.	(Item Code) Description of Item of Works	Unit	Quantity	Quoted Unit Rates (Tk)		Total Amount In Figure (in Tk)
				In Figure	In Words	
1	2	3	4	5	6	7
1.	(4.2.07.01) Providing and laying Cement Concrete in Pre-stressed Concrete works with 20mm down well graded crushed stone chips (Preferably stone chips from Madhyapara, Dinajpur), (from best quality boulders), coarse sand (minimum FM 2.80) and cement (admixture in addition) having minimum ultimate cylinder crushing strength of 350kg/cm2 at 28 days including form work, sheath, necessary ramming, vibrating, curing, finishing & launching, shifting, placing in position etc. complete in conformity with drawings, specifications & direction of the E-I-C. Height upto 5m	cum	56.316			
2.	(4.2.02.01.03) Reinforced Cement Concrete work (1:1.5:3) in girders, cross girders, beams, ribs, fillets, etc. in bridge with 20mm down well graded stone chips (Preferably stone chips from Madhyapara, Dinajpur), sand (minimum FM 1.80) and cement having minimum 28 days ultimate cylinder crushing strength of 250kg/cm2 excluding cost of reinforcement and its fabrication but including cost of all other materials, shuttering, propping, casting, curing for 28 days and all incidental charges, etc. complete in all respect as per design requirement, drawing and direction of the E-I-C. Height up to 5 m	cum	6.185			
3.	(4.2.08) Providing and laying of 7-ply un-coated HT strand conform to AASHTO-M203 (Grade-270, low relaxation type) having minimum ultimate tensile strength 270 ksi of required size as per design including supplying, fabrication, placing in position, providing corrugated galvanized steel sheathing duct of required size (Thickness 0.30mm, Minimum internal dia 75mm), steel anchorage with gripping accessories, spacers, properly tensioning with approved jacks, Blocking with proper pressure, measuring and recording elongation and force, grouting the duct with non-shrinkable cement grout with non-shrinkage (approved) admixture after satisfactory tensioning & anchorage, cutting the excess HT strand, providing patch concrete at recess end with epoxy coating, all materials, labors, equipment, tools etc. all complete as per design, drawing and direction of the E-I-C.	tonne	2.470			
4.	(4.2.06.03) Supplying and fabrication of M.S High strength deformed bar/ Twisted bar reinforcement of required size and length for all types of RCC work including straightening the rod, removing ruts, cleaning, cutting, hooking, bending, binding with supply of 22 B.W.G. GI wire, placing in position, including lapping, spacing and securing them in position by concrete blocks (1:1), metal chairs, etc. complete including cost of all materials, labour, local handling, laboratory test, incidentals necessary to complete the work as per specifications, drawings and direction of the Engineer. Laboratory test for physical property, strength, elongation% & bend to be performed as per ASTM. (Measurement will be based on standard weight of 490 lbs./ft3 Chairs, laps and separators will not be measures for payment. The cost of these will be included in the unit rate) High strength deformed bar (grade 60, billet)	kg	5105.000			
Total Price of the Tender						

The total price of our Tender is: Tk: [Insert value in figures] [Insert value in Words]

_____

Signature of the Tenderer

This Bill of Quantity contains _____ correction(s) duly initialed and signed by the authorized person of the Tenderer.

Bill of Quantities (BOQ)

Name of Project :

Name of Work : Detail estimate of 35.00m long prestressed Girder (Typical)

Package Number :

SL. No.	(Item Code) Description of Item of Works	Unit	Quantity	Quoted Unit Rates (Tk)		Total Amount In Figure (in Tk)
				In Figure	In Words	
1	2	3	4	5	6	7
1.	(4.2.07.01) Providing and laying Cement Concrete in Pre-stressed Concrete works with 20mm down well graded crushed stone chips (Preferably stone chips from Madhyapara, Dinajpur), (from best quality boulders), coarse sand (minimum FM 2.80) and cement (admixture in addition) having minimum ultimate cylinder crushing strength of 350kg/cm2 at 28 days including form work, sheath, necessary ramming, vibrating, curing, finishing & launching, shifting, placing in position etc. complete in conformity with drawings, specifications & direction of the E-I-C. Height upto 5m	cum	72.732			
2.	(4.2.02.01.03) Reinforced Cement Concrete work (1:1.5:3) in girders, cross girders, beams, ribs, fillets, etc. in bridge with 20mm down well graded stone chips (Preferably stone chips from Madhyapara, Dinajpur), sand (minimum FM 1.80) and cement having minimum 28 days ultimate cylinder crushing strength of 250kg/cm2 excluding cost of reinforcement and its fabrication but including cost of all other materials, shuttering, propping, casting, curing for 28 days and all incidental charges, etc. complete in all respect as per design requirement, drawing and direction of the E-I-C. Height up to 5 m	cum	7.390			
3.	(4.2.08) Providing and laying of 7-ply un-coated HT strand conform to AASHTO-M203 (Grade-270, low relaxation type) having minimum ultimate tensile strength 270 ksi of required size as per design including supplying, fabrication, placing in position, providing corrugated galvanized steel sheathing duct of required size (Thickness 0.30mm, Minimum internal dia 75mm), steel anchorage with gripping accessories, spacers, properly tensioning with approved jacks, Blocking with proper pressure, measuring and recording elongation and force, grouting the duct with non-shrinkable cement grout with non-shrinkage (approved) admixture after satisfactory tensioning & anchorage, cutting the excess HT strand, providing patch concrete at recess end with epoxy coating, all materials, labors, equipment, tools etc. all complete as per design, drawing and direction of the E-I-C.	tonne	3.556			
4.	(4.2.06.03) Supplying and fabrication of M.S High strength deformed bar/ Twisted bar reinforcement of required size and length for all types of RCC work including straightening the rod, removing ruts, cleaning, cutting, hooking, bending, binding with supply of 22 B.W.G. GI wire, placing in position, including lapping, spacing and securing them in position by concrete blocks (1:1), metal chairs, etc. complete including cost of all materials, labour, local handling, laboratory test, incidentals necessary to complete the work as per specifications, drawings and direction of the Engineer. Laboratory test for physical property, strength, elongation% & bend to be performed as per ASTM. (Measurement will be based on standard weight of 490 lbs./ft3 Chairs, laps and separators will not be measures for payment. The cost of these will be included in the unit rate) High strength deformed bar (grade 60, billet)	kg	6451.000			
Total Price of the Tender						

The total price of our Tender is: Tk: [Insert value in figures] [Insert value in Words]

_____

Signature of the Tenderer

This Bill of Quantity contains _____ correction(s) duly initialed and signed by the authorized person of the Tenderer.

Bill of Quantities (BOQ)

Name of Project :

Name of Work : Detail estimate of 40.00m long prestressed Girder (Typical)

Package Number :

SL. No.	(Item Code) Description of Item of Works	Unit	Quantity	Quoted Unit Rates (Tk)		Total Amount In Figure (in Tk)
				In Figure	In Words	
1	2	3	4	5	6	7
1.	(4.2.07.01) Providing and laying Cement Concrete in Pre-stressed Concrete works with 20mm down well graded crushed stone chips (Preferably stone chips from Madhyapara, Dinajpur), (from best quality boulders), coarse sand (minimum FM 2.80) and cement (admixture in addition) having minimum ultimate cylinder crushing strength of 350kg/cm2 at 28 days including form work, sheath, necessary ramming, vibrating, curing, finishing & launching, shifting, placing in position etc. complete in conformity with drawings, specifications & direction of the E-I-C. Height upto 5m	cum	90.562			
2.	(4.2.02.01.03) Reinforced Cement Concrete work (1:1.5:3) in girders, cross girders, beams, ribs, fillets, etc. in bridge with 20mm down well graded stone chips (Preferably stone chips from Madhyapara, Dinajpur), sand (minimum FM 1.80) and cement having minimum 28 days ultimate cylinder crushing strength of 250kg/cm2 excluding cost of reinforcement and its fabrication but including cost of all other materials, shuttering, propping, casting, curing for 28 days and all incidental charges, etc. complete in all respect as per design requirement, drawing and direction of the E-I-C. Height up to 5 m	cum	8.325			
3.	(4.2.08) Providing and laying of 7-ply un-coated HT strand conform to AASHTO-M203 (Grade-270, low relaxation type) having minimum ultimate tensile strength 270 ksi of required size as per design including supplying, fabrication, placing in position, providing corrugated galvanized steel sheathing duct of required size (Thickness 0.30mm, Minimum internal dia 75mm), steel anchorage with gripping accessories, spacers, properly tensioning with approved jacks, Blocking with proper pressure, measuring and recording elongation and force, grouting the duct with non-shrinkable cement grout with non-shrinkage (approved) admixture after satisfactory tensioning & anchorage, cutting the excess HT strand, providing patch concrete at recess end with epoxy coating, all materials, labors, equipment, tools etc. all complete as per design, drawing and direction of the E-I-C.	tonne	4.828			
4.	(4.2.06.03) Supplying and fabrication of M.S High strength deformed bar/ Twisted bar reinforcement of required size and length for all types of RCC work including straightening the rod, removing ruts, cleaning, cutting, hooking, bending, binding with supply of 22 B.W.G. GI wire, placing in position, including lapping, spacing and securing them in position by concrete blocks (1:1), metal chairs, etc. complete including cost of all materials, labour, local handling, laboratory test, incidentals necessary to complete the work as per specifications, drawings and direction of the Engineer. Laboratory test for physical property, strength, elongation% & bend to be performed as per ASTM. (Measurement will be based on standard weight of 490 lbs./ft3 Chairs, laps and separators will not be measures for payment. The cost of these will be included in the unit rate) High strength deformed bar (grade 60, billet)	kg	7608.000			
Total Price of the Tender						

The total price of our Tender is: Tk: [Insert value in figures] [Insert value in Words]

_____

Signature of the Tenderer

This Bill of Quantity contains _____ correction(s) duly initialed and signed by the authorized person of the Tenderer.

Bill of Quantities (BOQ)

Name of Project :

Name of Work : Detail Estimate of 5.00m Height Abutment.(Base-5750x6000x900, Stem-1300) (Typical)

Package Number :

SL. No.	(Item Code) Description of Item of Works	Unit	Quantity	Quoted Unit Rates (Tk)		Total Amount In Figure (in Tk)
				In Figure	In Words	
1	2	3	4	5	6	7
1.	(4.1.04) Earth work in excavation in foundation trenches in all sorts of rocky, gravelly, slushy or organic type, up to a depth of 2m to the lines, grades and elevation as shown on the drawing, removing boulders, logs and other objectionable materials, clearing all loose materials, disposing of all excavated materials to a safe distance designated by the E-I-C for an initial lead of 20m, and cut to a firm surface including bailing out water, removal of spoils to a safe distance, back filling of sites of trenches up to original level, shoring if necessary etc. all complete as per requirement and instruction of the E-I-C. Back-filled materials shall be compacted to a density comparable with the adjacent undisturbed material.	cum	315.00			
2.	(4.1.07) Pumping and bailing out water/de-watering of work site including supply, operation and maintenance of requisite number of water pumps. It should be carried out in such a manner as to preclude possibilities of the movement of water through or alongside any concrete being placed, etc. all complete as per direction of E-I-C.	LS	2.0			
3.	(4.1.09) Single layer brick flat soling with 1st class or picked jhama kiln burnt bricks in foundation, filling the interstices tightly with sand of minimum FM 0.50, watering, leveling, dressing, etc. all complete as per instruction of the E-I-C.	sqm	68.434			
4.	(4.1.10.01.1) Cement concrete work in foundation with Portland cement, sand (minimum FM 1.80) and 1st class/picked jhama brick chips 20mm down graded (LAA value not exceeding 40), including shuttering, mixing by concrete mixer machine, casting, laying compacting and curing for the requisite period breaking bricks into chips etc. all complete as per direction of the E-I-C. Cylinder crushing strength of concrete should not be less than 105kg/cm2 at 28 days of curing (Suggested Mix Proportion 1:3:6). Additional quantity of cement to be added if required to attain the strength at the contractors own cost.	cum	5.134			
5.	(4.1.10.02.3) Reinforced cement concrete work in well caps, pile caps, bearing sheets, abutment base, etc. with Portland cement, sand (minimum FM 1.80) and 20mm down well graded crushed stone chips (Preferably stone chips from Madhyapara, Dinajpur), (LAA value not exceeding 30), including shuttering, mixing by concrete mixer machine casting, laying, compacting and curing, for 28 days, breaking stone boulders into chips etc. all complete as per direction of the E-I-C but excluding cost of reinforcement. Cylinder crushing strength of concrete should not be less than 250kg/cm2 at 28 days of curing (suggested mix proportion 1:1.5:3). Additional quantity of cement to be added if required to attain the strength at the contractor's own cost.	cum	62.100			
6.	(4.2.01.03.1) Reinforced Cement Concrete work in diaphragm walls, wing walls, piers, columns, abutments of bridges and vertical members of box culverts with 20mm down graded stone chips (Preferably stone chips from Madhyapara, Dinajpur), (LAA value not exceeding 30), sand (minimum FM 1.80) and cement having minimum 28 days ultimate cylinder crushing strength of 250kg/cm2 (suggested mix proportion 1:1.5:3). excluding cost of reinforcement and its fabrication but including cost of all other materials, shuttering, casting, curing for 28 days and all incidental charges, etc. complete in all respect as per design, drawing and direction of the E-I-C Upto 5m	cum	60.290			

SL. No.	(Item Code) Description of Item of Works	Unit	Quantity	Quoted Unit Rates (Tk)		Total Amount In Figure (in Tk)
				In Figure	In Words	
1	2	3	4	5	6	7
7.	(4.3.01.03) Providing rainwater down pipe including placing in position and cost of all materials as per drawing and direction of the E-I-C. 50mm PVC pipe	m	24.00			
8.	(4.3.14) Back filling of abutment with 50:50 best quality picked jhama brick khoa & sand of min. FM 1.00 of 450mm width, in layers of 150mm thickness free from dust impurities etc. including compacting using steel or concrete drop hammer (durmus), watering & dressing and including supply & cost of all materials, carrying and labour, arranging and supplying of steel/concrete hammer and other tools required to work site etc. al complete as per direction of the E-I-C. Payment to be made for the compacted volume only for a compaction of 90% of the maximum dry density.	cum	40.960			
9.	(4.2.05.04) Reinforced Cement Concrete work in railing and rail post with stone chips (Preferably stone chips from Madhyapara, Dinajpur), sand (minimum FM 1.80) and cement having minimum 28 days ultimate cylinder crushing strength of 250kg/cm2 (suggested mix proportion 1:1.5:3) excluding cost of reinforcement and its fabrication but including cost of all other materials, shuttering, casting, curing for 28 days and all incidental charges, etc. complete in all respect as per design, drawing and direction of the E-I-C.	cum	2.076			
10.	(4.2.06.03) Supplying and fabrication of M.S High strength deformed bar/ Twisted bar reinforcement of required size and length for all types of RCC work including straightening the rod, removing ruts, cleaning, cutting, hooking, bending, binding with supply of 22 B.W.G. GI wire, placing in position, including lapping, spacing and securing them in position by concrete blocks (1:1), metal chairs, etc. complete including cost of all materials, labour, local handling, laboratory test, incidentals necessary to complete the work as per specifications, drawings and direction of the Engineer. Laboratory test for physical property, strength, elongation% & bend to be performed as per ASTM. (Measurement will be based on standard weight of 490 lbs./ft3 Chairs, laps and separators will not be measures for payment. The cost of these will be included in the unit rate) High strength deformed bar (grade 60, billet)	kg	13113.000			
Total Price of the Tender						

The total price of our Tender is:

Tk:

[Insert value in figures] [Insert value in Words]

_____

Signature of the Tenderer

This Bill of Quantity contains _____ correction(s) duly initialed and signed by the authorized person of the Tenderer.

Bill of Quantities (BOQ)

Name of Project :

Name of Work : Detail Estimate of 5.00m Height Abutment.(Base-5750x6600x850, Stem-1650) (Typical)

Package Number :

SL. No.	(Item Code) Description of Item of Works	Unit	Quantity	Quoted Unit Rates (Tk)		Total Amount In Figure (in Tk)
				In Figure	In Words	
1	2	3	4	5	6	7
1.	(4.1.04) Earth work in excavation in foundation trenches in all sorts of rocky, gravelly, slushy or organic type, up to a depth of 2m to the lines, grades and elevation as shown on the drawing, removing boulders, logs and other objectionable materials, clearing all loose materials, disposing of all excavated materials to a safe distance designated by the E-I-C for an initial lead of 20m, and cut to a firm surface including bailing out water, removal of spoils to a safe distance, back filling of sites of trenches up to original level, shoring if necessary etc. all complete as per requirement and instruction of the E-I-C. Back-filled materials shall be compacted to a density comparable with the adjacent undisturbed material.	cum	337.750			
2.	(4.1.07) Pumping and bailing out water/de-watering of work site including supply, operation and maintenance of requisite number of water pumps. It should be carried out in such a manner as to preclude possibilities of the movement of water through or alongside any concrete being placed, etc. all complete as per direction of E-I-C.	LS	2.0			
3.	(4.1.09) Single layer brick flat soling with 1st class or picked jhama kiln burnt bricks in foundation, filling the interstices tightly with sand of minimum FM 0.50, watering, leveling, dressing, etc. all complete as per instruction of the E-I-C.	sqm	75.334			
4.	(4.1.10.01.1) Cement concrete work in foundation with Portland cement, sand (minimum FM 1.80) and 1st class/picked jhama brick chips 20mm down graded (LAA value not exceeding 40), including shuttering, mixing by concrete mixer machine, casting, laying compacting and curing for the requisite period breaking bricks into chips etc. all complete as per direction of the E-I-C. Cylinder crushing strength of concrete should not be less than 105kg/cm2 at 28 days of curing (Suggested Mix Proportion 1:3:6). Additional quantity of cement to be added if required to attain the strength at the contractors own cost.	cum	5.650			
5.	(4.1.10.02.3) Reinforced cement concrete work in well caps, pile caps, bearing sheets, abutment base, etc. with Portland cement, sand (minimum FM 1.80) and 20mm down well graded crushed stone chips (Preferably stone chips from Madhyapara, Dinajpur), (LAA value not exceeding 30), including shuttering, mixing by concrete mixer machine casting, laying, compacting and curing, for 28 days, breaking stone boulders into chips etc. all complete as per direction of the E-I-C but excluding cost of reinforcement. Cylinder crushing strength of concrete should not be less than 250kg/cm2 at 28 days of curing (suggested mix proportion 1:1.5:3). Additional quantity of cement to be added if required to attain the strength at the contractor's own cost.	cum	64.516			
6.	(4.2.01.03.1) Reinforced Cement Concrete work in diaphragm walls, wing walls, piers, columns, abutments of bridges and vertical members of box culverts with 20mm down graded stone chips (Preferably stone chips from Madhyapara, Dinajpur), (LAA value not exceeding 30), sand (minimum FM 1.80) and cement having minimum 28 days ultimate cylinder crushing strength of 250kg/cm2 (suggested mix proportion 1:1.5:3). excluding cost of reinforcement and its fabrication but including cost of all other materials, shuttering, casting, curing for 28 days and all incidental charges, etc. complete in all respect as per design, drawing and direction of the E-I-C Upto 5m	cum	60.410			

SL. No.	(Item Code) Description of Item of Works	Unit	Quantity	Quoted Unit Rates (Tk)		Total Amount In Figure (in Tk)
				In Figure	In Words	
1	2	3	4	5	6	7
7.	(4.3.01.03) Providing rainwater down pipe including placing in position and cost of all materials as per drawing and direction of the E-I-C. 50mm PVC pipe	m	24.00			
8.	(4.3.14) Back filling of abutment with 50:50 best quality picked jhama brick khoa & sand of min. FM 1.00 of 450mm width, in layers of 150mm thickness free from dust impurities etc. including compacting using steel or concrete drop hammer (durmus), watering & dressing and including supply & cost of all materials, carrying and labour, arranging and supplying of steel/concrete hammer and other tools required to work site etc. al complete as per direction of the E-I-C. Payment to be made for the compacted volume only for a compaction of 90% of the maximum dry density.	cum	43.326			
9.	(4.2.05.04) Reinforced Cement Concrete work in railing and rail post with stone chips (Preferably stone chips from Madhyapara, Dinajpur), sand (minimum FM 1.80) and cement having minimum 28 days ultimate cylinder crushing strength of 250kg/cm2 (suggested mix proportion 1:1.5:3) excluding cost of reinforcement and its fabrication but including cost of all other materials, shuttering, casting, curing for 28 days and all incidental charges, etc. complete in all respect as per design, drawing and direction of the E-I-C.	cum	2.184			
10.	(4.2.06.03) Supplying and fabrication of M.S High strength deformed bar/ Twisted bar reinforcement of required size and length for all types of RCC work including straightening the rod, removing ruts, cleaning, cutting, hooking, bending, binding with supply of 22 B.W.G. GI wire, placing in position, including lapping, spacing and securing them in position by concrete blocks (1:1), metal chairs, etc. complete including cost of all materials, labour, local handling, laboratory test, incidentals necessary to complete the work as per specifications, drawings and direction of the Engineer. Laboratory test for physical property, strength, elongation% & bend to be performed as per ASTM. (Measurement will be based on standard weight of 490 lbs./ft3 Chairs, laps and separators will not be measures for payment. The cost of these will be included in the unit rate) High strength deformed bar (grade 60, billet)	kg	12378.000			
Total Price of the Tender						

The total price of our Tender is:

Tk:

[Insert value in figures] [Insert value in Words]

_____

Signature of the Tenderer

This Bill of Quantity contains _____ correction(s) duly initialed and signed by the authorized person of the Tenderer.

Bill of Quantities (BOQ)

Name of Project :

Name of Work : Detail Estimate of 5.500m Height Abutment.(Base-7150x6600x900, Stem-1800) (Typical)

Package Number :

SL. No.	(Item Code) Description of Item of Works	Unit	Quantity	Quoted Unit Rates (Tk)		Total Amount In Figure (in Tk)
				In Figure	In Words	
1	2	3	4	5	6	7
1.	(4.1.04) Earth work in excavation in foundation trenches in all sorts of rocky, gravelly, slushy or organic type, up to a depth of 2m to the lines, grades and elevation as shown on the drawing, removing boulders, logs and other objectionable materials, clearing all loose materials, disposing of all excavated materials to a safe distance designated by the E-I-C for an initial lead of 20m, and cut to a firm surface including bailing out water, removal of spoils to a safe distance, back filling of sites of trenches up to original level, shoring if necessary etc. all complete as per requirement and instruction of the E-I-C. Back-filled materials shall be compacted to a density comparable with the adjacent undisturbed material.	cum	389.760			
2.	(4.1.07) Pumping and bailing out water/de-watering of work site including supply, operation and maintenance of requisite number of water pumps. It should be carried out in such a manner as to preclude possibilities of the movement of water through or alongside any concrete being placed, etc. all complete as per direction of E-I-C.	LS	2.0			
3.	(4.1.09) Single layer brick flat soling with 1st class or picked jhama kiln burnt bricks in foundation, filling the interstices tightly with sand of minimum FM 0.50, watering, leveling, dressing, etc. all complete as per instruction of the E-I-C.	sqm	93.814			
4.	(4.1.10.01.1) Cement concrete work in foundation with Portland cement, sand (minimum FM 1.80) and 1st class/picked jhama brick chips 20mm down graded (LAA value not exceeding 40), including shuttering, mixing by concrete mixer machine, casting, laying compacting and curing for the requisite period breaking bricks into chips etc. all complete as per direction of the E-I-C. Cylinder crushing strength of concrete should not be less than 105kg/cm2 at 28 days of curing (Suggested Mix Proportion 1:3:6). Additional quantity of cement to be added if required to attain the strength at the contractors own cost.	cum	7.036			
5.	(4.1.10.02.3) Reinforced cement concrete work in well caps, pile caps, bearing sheets, abutment base, etc. with Portland cement, sand (minimum FM 1.80) and 20mm down well graded crushed stone chips (Preferably stone chips from Madhyapara, Dinajpur), (LAA value not exceeding 30), including shuttering, mixing by concrete mixer machine casting, laying, compacting and curing, for 28 days, breaking stone boulders into chips etc. all complete as per direction of the E-I-C but excluding cost of reinforcement. Cylinder crushing strength of concrete should not be less than 250kg/cm2 at 28 days of curing (suggested mix proportion 1:1.5:3). Additional quantity of cement to be added if required to attain the strength at the contractor's own cost.	cum	84.942			
6.	(4.2.01.03.1) Reinforced Cement Concrete work in diaphragm walls, wing walls, piers, columns, abutments of bridges and vertical members of box culverts with 20mm down graded stone chips (Preferably stone chips from Madhyapara, Dinajpur), (LAA value not exceeding 30), sand (minimum FM 1.80) and cement having minimum 28 days ultimate cylinder crushing strength of 250kg/cm2 (suggested mix proportion 1:1.5:3). excluding cost of reinforcement and its fabrication but including cost of all other materials, shuttering, casting, curing for 28 days and all incidental charges, etc. complete in all respect as per design, drawing and direction of the E-I-C Upto 5m	cum	84.152			

SL. No.	(Item Code) Description of Item of Works	Unit	Quantity	Quoted Unit Rates (Tk)		Total Amount In Figure (in Tk)
				In Figure	In Words	
1	2	3	4	5	6	7
7.	(4.3.01.03) Providing rainwater down pipe including placing in position and cost of all materials as per drawing and direction of the E-I-C. 50mm PVC pipe	m	24.000			
8.	(4.3.14) Back filling of abutment with 50:50 best quality picked jhama brick khoa & sand of min. FM 1.00 of 450mm width, in layers of 150mm thickness free from dust impurities etc. including compacting using steel or concrete drop hammer (durmus), watering & dressing and including supply & cost of all materials, carrying and labour, arranging and supplying of steel/concrete hammer and other tools required to work site etc. al complete as per direction of the E-I-C. Payment to be made for the compacted volume only for a compaction of 90% of the maximum dry density.	cum	54.676			
9.	(4.2.05.04) Reinforced Cement Concrete work in railing and rail post with stone chips (Preferably stone chips from Madhyapara, Dinajpur), sand (minimum FM 1.80) and cement having minimum 28 days ultimate cylinder crushing strength of 250kg/cm2 (suggested mix proportion 1:1.5:3) excluding cost of reinforcement and its fabrication but including cost of all other materials, shuttering, casting, curing for 28 days and all incidental charges, etc. complete in all respect as per design, drawing and direction of the E-I-C.	cum	2.688			
10.	(4.2.06.03) Supplying and fabrication of M.S High strength deformed bar/ Twisted bar reinforcement of required size and length for all types of RCC work including straightening the rod, removing ruts, cleaning, cutting, hooking, bending, binding with supply of 22 B.W.G. GI wire, placing in position, including lapping, spacing and securing them in position by concrete blocks (1:1), metal chairs, etc. complete including cost of all materials, labour, local handling, laboratory test, incidentals necessary to complete the work as per specifications, drawings and direction of the Engineer. Laboratory test for physical property, strength, elongation% & bend to be performed as per ASTM. (Measurement will be based on standard weight of 490 lbs./ft3 Chairs, laps and separators will not be measures for payment. The cost of these will be included in the unit rate) High strength deformed bar (grade 60, billet)	kg	16597.000			
Total Price of the Tender						

The total price of our Tender is:

Tk:

[Insert value in figures] [Insert value in Words]

_____

Signature of the Tenderer

This Bill of Quantity contains _____ correction(s) duly initialed and signed by the authorized person of the Tenderer.

Bill of Quantities (BOQ)

Name of Project :

Name of Work : Detail Estimate of 5.500m Height Abutment.(Base-6950x6600x850, Stem-2150) (Typical)

Package Number :

SL. No.	(Item Code) Description of Item of Works	Unit	Quantity	Quoted Unit Rates (Tk)		Total Amount In Figure (in Tk)
				In Figure	In Words	
1	2	3	4	5	6	7
1.	(4.1.04) Earth work in excavation in foundation trenches in all sorts of rocky, gravelly, slushy or organic type, up to a depth of 2m to the lines, grades and elevation as shown on the drawing, removing boulders, logs and other objectionable materials, clearing all loose materials, disposing of all excavated materials to a safe distance designated by the E-I-C for an initial lead of 20m, and cut to a firm surface including bailing out water, removal of spoils to a safe distance, back filling of sites of trenches up to original level, shoring if necessary etc. all complete as per requirement and instruction of the E-I-C. Back-filled materials shall be compacted to a density comparable with the adjacent undisturbed material.	cum	382.080			
2.	(4.1.07) Pumping and bailing out water/de-watering of work site including supply, operation and maintenance of requisite number of water pumps. It should be carried out in such a manner as to preclude possibilities of the movement of water through or alongside any concrete being placed, etc. all complete as per direction of E-I-C.	LS	2.0			
3.	(4.1.09) Single layer brick flat soling with 1st class or picked jhama kiln burnt bricks in foundation, filling the interstices tightly with sand of minimum FM 0.50, watering, leveling, dressing, etc. all complete as per instruction of the E-I-C.	sqm	91.174			
4.	(4.1.10.01.1) Cement concrete work in foundation with Portland cement, sand (minimum FM 1.80) and 1st class/picked jhama brick chips 20mm down graded (LAA value not exceeding 40), including shuttering, mixing by concrete mixer machine, casting, laying compacting and curing for the requisite period breaking bricks into chips etc. all complete as per direction of the E-I-C. Cylinder crushing strength of concrete should not be less than 105kg/cm2 at 28 days of curing (Suggested Mix Proportion 1:3:6). Additional quantity of cement to be added if required to attain the strength at the contractors own cost.	cum	6.838			
5.	(4.1.10.02.3) Reinforced cement concrete work in well caps, pile caps, bearing sheets, abutment base, etc. with Portland cement, sand (minimum FM 1.80) and 20mm down well graded crushed stone chips (Preferably stone chips from Madhyapara, Dinajpur), (LAA value not exceeding 30), including shuttering, mixing by concrete mixer machine casting, laying, compacting and curing, for 28 days, breaking stone boulders into chips etc. all complete as per direction of the E-I-C but excluding cost of reinforcement. Cylinder crushing strength of concrete should not be less than 250kg/cm2 at 28 days of curing (suggested mix proportion 1:1.5:3). Additional quantity of cement to be added if required to attain the strength at the contractor's own cost.	cum	77.980			
6.	(4.2.01.03.1) Reinforced Cement Concrete work in diaphragm walls, wing walls, piers, columns, abutments of bridges and vertical members of box culverts with 20mm down graded stone chips (Preferably stone chips from Madhyapara, Dinajpur), (LAA value not exceeding 30), sand (minimum FM 1.80) and cement having minimum 28 days ultimate cylinder crushing strength of 250kg/cm2 (suggested mix proportion 1:1.5:3). excluding cost of reinforcement and its fabrication but including cost of all other materials, shuttering, casting, curing for 28 days and all incidental charges, etc. complete in all respect as per design, drawing and direction of the E-I-C Upto 5m	cum	80.834			

SL. No.	(Item Code) Description of Item of Works	Unit	Quantity	Quoted Unit Rates (Tk)		Total Amount In Figure (in Tk)
				In Figure	In Words	
1	2	3	4	5	6	7
7.	(4.3.01.03) Providing rainwater down pipe including placing in position and cost of all materials as per drawing and direction of the E-I-C. 50mm PVC pipe	m	24.000			
8.	(4.3.14) Back filling of abutment with 50:50 best quality picked jhama brick khoa & sand of min. FM 1.00 of 450mm width, in layers of 150mm thickness free from dust impurities etc. including compacting using steel or concrete drop hammer (durmus), watering & dressing and including supply & cost of all materials, carrying and labour, arranging and supplying of steel/concrete hammer and other tools required to work site etc. al complete as per direction of the E-I-C. Payment to be made for the compacted volume only for a compaction of 90% of the maximum dry density.	cum	55.890			
9.	(4.2.05.04) Reinforced Cement Concrete work in railing and rail post with stone chips (Preferably stone chips from Madhyapara, Dinajpur), sand (minimum FM 1.80) and cement having minimum 28 days ultimate cylinder crushing strength of 250kg/cm2 (suggested mix proportion 1:1.5:3) excluding cost of reinforcement and its fabrication but including cost of all other materials, shuttering, casting, curing for 28 days and all incidental charges, etc. complete in all respect as per design, drawing and direction of the E-I-C.	cum	2.076			
10.	(4.2.06.03) Supplying and fabrication of M.S High strength deformed bar/ Twisted bar reinforcement of required size and length for all types of RCC work including straightening the rod, removing ruts, cleaning, cutting, hooking, bending, binding with supply of 22 B.W.G. GI wire, placing in position, including lapping, spacing and securing them in position by concrete blocks (1:1), metal chairs, etc. complete including cost of all materials, labour, local handling, laboratory test, incidentals necessary to complete the work as per specifications, drawings and direction of the Engineer. Laboratory test for physical property, strength, elongation% & bend to be performed as per ASTM. (Measurement will be based on standard weight of 490 lbs./ft3 Chairs, laps and separators will not be measures for payment. The cost of these will be included in the unit rate) High strength deformed bar (grade 60, billet)	kg	15978.00			
Total Price of the Tender						

The total price of our Tender is:

Tk:

[Insert value in figures] [Insert value in Words]

_____

Signature of the Tenderer

This Bill of Quantity contains _____ correction(s) duly initialed and signed by the authorized person of the Tenderer.

Bill of Quantities (BOQ)

Name of Project :

Name of Work : Detail Estimate of 6.00m Height Abutment.(Base-7550x7250x1000, Stem-1540) (Typical)

Package Number :

SL. No.	(Item Code) Description of Item of Works	Unit	Quantity	Quoted Unit Rates (Tk)		Total Amount In Figure (in Tk)
				In Figure	In Words	
1	2	3	4	5	6	7
1.	(4.1.04) Earth work in excavation in foundation trenches in all sorts of rocky, gravelly, slushy or organic type, up to a depth of 2m to the lines, grades and elevation as shown on the drawing, removing boulders, logs and other objectionable materials, clearing all loose materials, disposing of all excavated materials to a safe distance designated by the E-I-C for an initial lead of 20m, and cut to a firm surface including bailing out water, removal of spoils to a safe distance, back filling of sites of trenches up to original level, shoring if necessary etc. all complete as per requirement and instruction of the E-I-C. Back-filled materials shall be compacted to a density comparable with the adjacent undisturbed material.	cum	432.550			
2.	(4.1.07) Pumping and bailing out water/de-watering of work site including supply, operation and maintenance of requisite number of water pumps. It should be carried out in such a manner as to preclude possibilities of the movement of water through or alongside any concrete being placed, etc. all complete as per direction of E-I-C.	LS	2.0			
3.	(4.1.09) Single layer brick flat soling with 1st class or picked jhama kiln burnt bricks in foundation, filling the interstices tightly with sand of minimum FM 0.50, watering, leveling, dressing, etc. all complete as per instruction of the E-I-C.	sqm	108.910			
4.	(4.1.10.01.1) Cement concrete work in foundation with Portland cement, sand (minimum FM 1.80) and 1st class/picked jhama brick chips 20mm down graded (LAA value not exceeding 40), including shuttering, mixing by concrete mixer machine, casting, laying compacting and curing for the requisite period breaking bricks into chips etc. all complete as per direction of the E-I-C. Cylinder crushing strength of concrete should not be less than 105kg/cm2 at 28 days of curing (Suggested Mix Proportion 1:3:6). Additional quantity of cement to be added if required to attain the strength at the contractors own cost.	cum	8.168			
5.	(4.1.10.02.3) Reinforced cement concrete work in well caps, pile caps, bearing sheets, abutment base, etc. with Portland cement, sand (minimum FM 1.80) and 20mm down well graded crushed stone chips (Preferably stone chips from Madhyapara, Dinajpur), (LAA value not exceeding 30), including shuttering, mixing by concrete mixer machine casting, laying, compacting and curing, for 28 days, breaking stone boulders into chips etc. all complete as per direction of the E-I-C but excluding cost of reinforcement. Cylinder crushing strength of concrete should not be less than 250kg/cm2 at 28 days of curing (suggested mix proportion 1:1.5:3). Additional quantity of cement to be added if required to attain the strength at the contractor's own cost.	cum	109.476			
6.	(4.2.01.03.1) Reinforced Cement Concrete work in diaphragm walls, wing walls, piers, columns, abutments of bridges and vertical members of box culverts with 20mm down graded stone chips (Preferably stone chips from Madhyapara, Dinajpur), (LAA value not exceeding 30), sand (minimum FM 1.80) and cement having minimum 28 days ultimate cylinder crushing strength of 250kg/cm2 (suggested mix proportion 1:1.5:3). excluding cost of reinforcement and its fabrication but including cost of all other materials, shuttering, casting, curing for 28 days and all incidental charges, etc. complete in all respect as per design, drawing and direction of the E-I-C Upto 5m	cum	97.262			

SL. No.	(Item Code) Description of Item of Works	Unit	Quantity	Quoted Unit Rates (Tk)		Total Amount In Figure (in Tk)
				In Figure	In Words	
1	2	3	4	5	6	7
7.	(4.3.01.03) Providing rainwater down pipe including placing in position and cost of all materials as per drawing and direction of the E-I-C. 50mm PVC pipe	m	50.000			
8.	(4.3.14) Back filling of abutment with 50:50 best quality picked jhama brick khoa & sand of min. FM 1.00 of 450mm width, in layers of 150mm thickness free from dust impurities etc. including compacting using steel or concrete drop hammer (durmus), watering & dressing and including supply & cost of all materials, carrying and labour, arranging and supplying of steel/concrete hammer and other tools required to work site etc. al complete as per direction of the E-I-C. Payment to be made for the compacted volume only for a compaction of 90% of the maximum dry density.	cum	62.100			
9.	(4.2.05.04) Reinforced Cement Concrete work in railing and rail post with stone chips (Preferably stone chips from Madhyapara, Dinajpur), sand (minimum FM 1.80) and cement having minimum 28 days ultimate cylinder crushing strength of 250kg/cm2 (suggested mix proportion 1:1.5:3) excluding cost of reinforcement and its fabrication but including cost of all other materials, shuttering, casting, curing for 28 days and all incidental charges, etc. complete in all respect as per design, drawing and direction of the E-I-C.	cum	2.700			
10.	(4.2.06.03) Supplying and fabrication of M.S High strength deformed bar/ Twisted bar reinforcement of required size and length for all types of RCC work including straightening the rod, removing ruts, cleaning, cutting, hooking, bending, binding with supply of 22 B.W.G. GI wire, placing in position, including lapping, spacing and securing them in position by concrete blocks (1:1), metal chairs, etc. complete including cost of all materials, labour, local handling, laboratory test, incidentals necessary to complete the work as per specifications, drawings and direction of the Engineer. Laboratory test for physical property, strength, elongation% & bend to be performed as per ASTM. (Measurement will be based on standard weight of 490 lbs./ft3 Chairs, laps and separators will not be measures for payment. The cost of these will be included in the unit rate) High strength deformed bar (grade 60, billet)	kg	20049.000			
Total Price of the Tender						

The total price of our Tender is:

Tk:

[Insert value in figures] [Insert value in Words]

_____

Signature of the Tenderer

This Bill of Quantity contains _____ correction(s) duly initialed and signed by the authorized person of the Tenderer.

Bill of Quantities (BOQ)

Name of Project :

Name of Work : Detail Estimate of 6.00m Height Abutment.(Base-7550x7250x900, Stem-1850) (Typical)

Package Number :

SL. No.	(Item Code) Description of Item of Works	Unit	Quantity	Quoted Unit Rates (Tk)		Total Amount In Figure (in Tk)
				In Figure	In Words	
1	2	3	4	5	6	7
1.	(4.1.04) Earth work in excavation in foundation trenches in all sorts of rocky, gravelly, slushy or organic type, up to a depth of 2m to the lines, grades and elevation as shown on the drawing, removing boulders, logs and other objectionable materials, clearing all loose materials, disposing of all excavated materials to a safe distance designated by the E-I-C for an initial lead of 20m, and cut to a firm surface including bailing out water, removal of spoils to a safe distance, back filling of sites of trenches up to original level, shoring if necessary etc. all complete as per requirement and instruction of the E-I-C. Back-filled materials shall be compacted to a density comparable with the adjacent undisturbed material.	cum	432.550			
2.	(4.1.07) Pumping and bailing out water/de-watering of work site including supply, operation and maintenance of requisite number of water pumps. It should be carried out in such a manner as to preclude possibilities of the movement of water through or alongside any concrete being placed, etc. all complete as per direction of E-I-C.	LS	2.0			
3.	(4.1.09) Single layer brick flat soling with 1st class or picked jhama kiln burnt bricks in foundation, filling the interstices tightly with sand of minimum FM 0.50, watering, leveling, dressing, etc. all complete as per instruction of the E-I-C.	sqm	108.910			
4.	(4.1.10.01.1) Cement concrete work in foundation with Portland cement, sand (minimum FM 1.80) and 1st class/picked jhama brick chips 20mm down graded (LAA value not exceeding 40), including shuttering, mixing by concrete mixer machine, casting, laying compacting and curing for the requisite period breaking bricks into chips etc. all complete as per direction of the E-I-C. Cylinder crushing strength of concrete should not be less than 105kg/cm2 at 28 days of curing (Suggested Mix Proportion 1:3:6). Additional quantity of cement to be added if required to attain the strength at the contractors own cost.	cum	8.168			
5.	(4.1.10.02.3) Reinforced cement concrete work in well caps, pile caps, bearing sheets, abutment base, etc. with Portland cement, sand (minimum FM 1.80) and 20mm down well graded crushed stone chips (Preferably stone chips from Madhyapara, Dinajpur), (LAA value not exceeding 30), including shuttering, mixing by concrete mixer machine casting, laying, compacting and curing, for 28 days, breaking stone boulders into chips etc. all complete as per direction of the E-I-C but excluding cost of reinforcement. Cylinder crushing strength of concrete should not be less than 250kg/cm2 at 28 days of curing (suggested mix proportion 1:1.5:3). Additional quantity of cement to be added if required to attain the strength at the contractor's own cost.	cum	98.528			
6.	(4.2.01.03.1) Reinforced Cement Concrete work in diaphragm walls, wing walls, piers, columns, abutments of bridges and vertical members of box culverts with 20mm down graded stone chips (Preferably stone chips from Madhyapara, Dinajpur), (LAA value not exceeding 30), sand (minimum FM 1.80) and cement having minimum 28 days ultimate cylinder crushing strength of 250kg/cm2 (suggested mix proportion 1:1.5:3). excluding cost of reinforcement and its fabrication but including cost of all other materials, shuttering, casting, curing for 28 days and all incidental charges, etc. complete in all respect as per design, drawing and direction of the E-I-C Upto 5m	cum	98.538			

SL. No.	(Item Code) Description of Item of Works	Unit	Quantity	Quoted Unit Rates (Tk)		Total Amount In Figure (in Tk)
				In Figure	In Words	
1	2	3	4	5	6	7
7.	(4.3.01.03) Providing rainwater down pipe including placing in position and cost of all materials as per drawing and direction of the E-I-C. 50mm PVC pipe	m	50.000			
8.	(4.3.14) Back filling of abutment with 50:50 best quality picked jhama brick khoa & sand of min. FM 1.00 of 450mm width, in layers of 150mm thickness free from dust impurities etc. including compacting using steel or concrete drop hammer (durmus), watering & dressing and including supply & cost of all materials, carrying and labour, arranging and supplying of steel/concrete hammer and other tools required to work site etc. al complete as per direction of the E-I-C. Payment to be made for the compacted volume only for a compaction of 90% of the maximum dry density.	cum	62.550			
9.	(4.2.05.04) Reinforced Cement Concrete work in railing and rail post with stone chips (Preferably stone chips from Madhyapara, Dinajpur), sand (minimum FM 1.80) and cement having minimum 28 days ultimate cylinder crushing strength of 250kg/cm2 (suggested mix proportion 1:1.5:3) excluding cost of reinforcement and its fabrication but including cost of all other materials, shuttering, casting, curing for 28 days and all incidental charges, etc. complete in all respect as per design, drawing and direction of the E-I-C.	cum	2.700			
10.	(4.2.06.03) Supplying and fabrication of M.S High strength deformed bar/ Twisted bar reinforcement of required size and length for all types of RCC work including straightening the rod, removing ruts, cleaning, cutting, hooking, bending, binding with supply of 22 B.W.G. GI wire, placing in position, including lapping, spacing and securing them in position by concrete blocks (1:1), metal chairs, etc. complete including cost of all materials, labour, local handling, laboratory test, incidentals necessary to complete the work as per specifications, drawings and direction of the Engineer. Laboratory test for physical property, strength, elongation% & bend to be performed as per ASTM. (Measurement will be based on standard weight of 490 lbs./ft3 Chairs, laps and separators will not be measures for payment. The cost of these will be included in the unit rate) High strength deformed bar (grade 60, billet)	kg	20190.000			
Total Price of the Tender						

The total price of our Tender is:

Tk:

[Insert value in figures] [Insert value in Words]

_____

Signature of the Tenderer

This Bill of Quantity contains _____ correction(s) duly initialed and signed by the authorized person of the Tenderer.

Bill of Quantities (BOQ)

Name of Project :

Name of Work : Detail Estimate of 6.00m Height Abutment.(Base-7350x6600x900, Stem-2200) (Typical)

Package Number :

SL. No.	(Item Code) Description of Item of Works	Unit	Quantity	Quoted Unit Rates (Tk)		Total Amount In Figure (in Tk)
				In Figure	In Words	
1	2	3	4	5	6	7
1.	(4.1.04) Earth work in excavation in foundation trenches in all sorts of rocky, gravelly, slushy or organic type, up to a depth of 2m to the lines, grades and elevation as shown on the drawing, removing boulders, logs and other objectionable materials, clearing all loose materials, disposing of all excavated materials to a safe distance designated by the E-I-C for an initial lead of 20m, and cut to a firm surface including bailing out water, removal of spoils to a safe distance, back filling of sites of trenches up to original level, shoring if necessary etc. all complete as per requirement and instruction of the E-I-C. Back-filled materials shall be compacted to a density comparable with the adjacent undisturbed material.	cum	397.440			
2.	(4.1.07) Pumping and bailing out water/de-watering of work site including supply, operation and maintenance of requisite number of water pumps. It should be carried out in such a manner as to preclude possibilities of the movement of water through or alongside any concrete being placed, etc. all complete as per direction of E-I-C.	LS	2.0			
3.	(4.1.09) Single layer brick flat soling with 1st class or picked jhama kiln burnt bricks in foundation, filling the interstices tightly with sand of minimum FM 0.50, watering, leveling, dressing, etc. all complete as per instruction of the E-I-C.	sqm	96.454			
4.	(4.1.10.01.1) Cement concrete work in foundation with Portland cement, sand (minimum FM 1.80) and 1st class/picked jhama brick chips 20mm down graded (LAA value not exceeding 40), including shuttering, mixing by concrete mixer machine, casting, laying compacting and curing for the requisite period breaking bricks into chips etc. all complete as per direction of the E-I-C. Cylinder crushing strength of concrete should not be less than 105kg/cm2 at 28 days of curing (Suggested Mix Proportion 1:3:6). Additional quantity of cement to be added if required to attain the strength at the contractors own cost.	cum	7.234			
5.	(4.1.10.02.3) Reinforced cement concrete work in well caps, pile caps, bearing sheets, abutment base, etc. with Portland cement, sand (minimum FM 1.80) and 20mm down well graded crushed stone chips (Preferably stone chips from Madhyapara, Dinajpur), (LAA value not exceeding 30), including shuttering, mixing by concrete mixer machine casting, laying, compacting and curing, for 28 days, breaking stone boulders into chips etc. all complete as per direction of the E-I-C but excluding cost of reinforcement. Cylinder crushing strength of concrete should not be less than 250kg/cm2 at 28 days of curing (suggested mix proportion 1:1.5:3). Additional quantity of cement to be added if required to attain the strength at the contractor's own cost.	cum	87.318			
6.	(4.2.01.03.1) Reinforced Cement Concrete work in diaphragm walls, wing walls, piers, columns, abutments of bridges and vertical members of box culverts with 20mm down graded stone chips (Preferably stone chips from Madhyapara, Dinajpur), (LAA value not exceeding 30), sand (minimum FM 1.80) and cement having minimum 28 days ultimate cylinder crushing strength of 250kg/cm2 (suggested mix proportion 1:1.5:3). excluding cost of reinforcement and its fabrication but including cost of all other materials, shuttering, casting, curing for 28 days and all incidental charges, etc. complete in all respect as per design, drawing and direction of the E-I-C Upto 5m	cum	95.908			

SL. No.	(Item Code) Description of Item of Works	Unit	Quantity	Quoted Unit Rates (Tk)		Total Amount In Figure (in Tk)
				In Figure	In Words	
1	2	3	4	5	6	7
7.	(4.3.01.03) Providing rainwater down pipe including placing in position and cost of all materials as per drawing and direction of the E-I-C. 50mm PVC pipe	m	50.000			
8.	(4.3.14) Back filling of abutment with 50:50 best quality picked jhama brick khoa & sand of min. FM 1.00 of 450mm width, in layers of 150mm thickness free from dust impurities etc. including compacting using steel or concrete drop hammer (durmus), watering & dressing and including supply & cost of all materials, carrying and labour, arranging and supplying of steel/concrete hammer and other tools required to work site etc. al complete as per direction of the E-I-C. Payment to be made for the compacted volume only for a compaction of 90% of the maximum dry density.	cum	62.100			
9.	(4.2.05.04) Reinforced Cement Concrete work in railing and rail post with stone chips (Preferably stone chips from Madhyapara, Dinajpur), sand (minimum FM 1.80) and cement having minimum 28 days ultimate cylinder crushing strength of 250kg/cm2 (suggested mix proportion 1:1.5:3) excluding cost of reinforcement and its fabrication but including cost of all other materials, shuttering, casting, curing for 28 days and all incidental charges, etc. complete in all respect as per design, drawing and direction of the E-I-C.	cum	2.688			
10.	(4.2.06.03) Supplying and fabrication of M.S High strength deformed bar/ Twisted bar reinforcement of required size and length for all types of RCC work including straightening the rod, removing ruts, cleaning, cutting, hooking, bending, binding with supply of 22 B.W.G. GI wire, placing in position, including lapping, spacing and securing them in position by concrete blocks (1:1), metal chairs, etc. complete including cost of all materials, labour, local handling, laboratory test, incidentals necessary to complete the work as per specifications, drawings and direction of the Engineer. Laboratory test for physical property, strength, elongation% & bend to be performed as per ASTM. (Measurement will be based on standard weight of 490 lbs./ft3 Chairs, laps and separators will not be measures for payment. The cost of these will be included in the unit rate) High strength deformed bar (grade 60, billet)	kg	19066.000			
Total Price of the Tender						

The total price of our Tender is:

Tk:

[Insert value in figures] [Insert value in Words]

_____

Signature of the Tenderer

This Bill of Quantity contains _____ correction(s) duly initialed and signed by the authorized person of the Tenderer.

Bill of Quantities (BOQ)

Name of Project :

Name of Work : Detail Estimate of 6.00m Height Abutment.(Base-7150x6600x850, Stem-2550) (Typical)

Package Number :

SL. No.	(Item Code) Description of Item of Works	Unit	Quantity	Quoted Unit Rates (Tk)		Total Amount In Figure (in Tk)
				In Figure	In Words	
1	2	3	4	5	6	7
1.	(4.1.04) Earth work in excavation in foundation trenches in all sorts of rocky, gravelly, slushy or organic type, up to a depth of 2m to the lines, grades and elevation as shown on the drawing, removing boulders, logs and other objectionable materials, clearing all loose materials, disposing of all excavated materials to a safe distance designated by the E-I-C for an initial lead of 20m, and cut to a firm surface including bailing out water, removal of spoils to a safe distance, back filling of sites of trenches up to original level, shoring if necessary etc. all complete as per requirement and instruction of the E-I-C. Back-filled materials shall be compacted to a density comparable with the adjacent undisturbed material.	cum	389.760			
2.	(4.1.07) Pumping and bailing out water/de-watering of work site including supply, operation and maintenance of requisite number of water pumps. It should be carried out in such a manner as to preclude possibilities of the movement of water through or alongside any concrete being placed, etc. all complete as per direction of E-I-C.	LS	2.0			
3.	(4.1.09) Single layer brick flat soling with 1st class or picked jhama kiln burnt bricks in foundation, filling the interstices tightly with sand of minimum FM 0.50, watering, leveling, dressing, etc. all complete as per instruction of the E-I-C.	sqm	93.814			
4.	(4.1.10.01.1) Cement concrete work in foundation with Portland cement, sand (minimum FM 1.80) and 1st class/picked jhama brick chips 20mm down graded (LAA value not exceeding 40), including shuttering, mixing by concrete mixer machine, casting, laying compacting and curing for the requisite period breaking bricks into chips etc. all complete as per direction of the E-I-C. Cylinder crushing strength of concrete should not be less than 105kg/cm2 at 28 days of curing (Suggested Mix Proportion 1:3:6). Additional quantity of cement to be added if required to attain the strength at the contractors own cost.	cum	7.036			
5.	(4.1.10.02.3) Reinforced cement concrete work in well caps, pile caps, bearing sheets, abutment base, etc. with Portland cement, sand (minimum FM 1.80) and 20mm down well graded crushed stone chips (Preferably stone chips from Madhyapara, Dinajpur), (LAA value not exceeding 30), including shuttering, mixing by concrete mixer machine casting, laying, compacting and curing, for 28 days, breaking stone boulders into chips etc. all complete as per direction of the E-I-C but excluding cost of reinforcement. Cylinder crushing strength of concrete should not be less than 250kg/cm2 at 28 days of curing (suggested mix proportion 1:1.5:3). Additional quantity of cement to be added if required to attain the strength at the contractor's own cost.	cum	80.224			
6.	(4.2.01.03.1) Reinforced Cement Concrete work in diaphragm walls, wing walls, piers, columns, abutments of bridges and vertical members of box culverts with 20mm down graded stone chips (Preferably stone chips from Madhyapara, Dinajpur), (LAA value not exceeding 30), sand (minimum FM 1.80) and cement having minimum 28 days ultimate cylinder crushing strength of 250kg/cm2 (suggested mix proportion 1:1.5:3). excluding cost of reinforcement and its fabrication but including cost of all other materials, shuttering, casting, curing for 28 days and all incidental charges, etc. complete in all respect as per design, drawing and direction of the E-I-C Upto 5m	cum	97.524			

SL. No.	(Item Code) Description of Item of Works	Unit	Quantity	Quoted Unit Rates (Tk)		Total Amount In Figure (in Tk)
				In Figure	In Words	
1	2	3	4	5	6	7
7.	(4.3.01.03) Providing rainwater down pipe including placing in position and cost of all materials as per drawing and direction of the E-I-C. 50mm PVC pipe	m	50.000			
8.	(4.3.14) Back filling of abutment with 50:50 best quality picked jhama brick khoa & sand of min. FM 1.00 of 450mm width, in layers of 150mm thickness free from dust impurities etc. including compacting using steel or concrete drop hammer (durmus), watering & dressing and including supply & cost of all materials, carrying and labour, arranging and supplying of steel/concrete hammer and other tools required to work site etc. al complete as per direction of the E-I-C. Payment to be made for the compacted volume only for a compaction of 90% of the maximum dry density.	cum	63.000			
9.	(4.2.05.04) Reinforced Cement Concrete work in railing and rail post with stone chips (Preferably stone chips from Madhyapara, Dinajpur), sand (minimum FM 1.80) and cement having minimum 28 days ultimate cylinder crushing strength of 250kg/cm2 (suggested mix proportion 1:1.5:3) excluding cost of reinforcement and its fabrication but including cost of all other materials, shuttering, casting, curing for 28 days and all incidental charges, etc. complete in all respect as per design, drawing and direction of the E-I-C.	cum	2.724			
10.	(4.2.06.03) Supplying and fabrication of M.S High strength deformed bar/ Twisted bar reinforcement of required size and length for all types of RCC work including straightening the rod, removing ruts, cleaning, cutting, hooking, bending, binding with supply of 22 B.W.G. GI wire, placing in position, including lapping, spacing and securing them in position by concrete blocks (1:1), metal chairs, etc. complete including cost of all materials, labour, local handling, laboratory test, incidentals necessary to complete the work as per specifications, drawings and direction of the Engineer. Laboratory test for physical property, strength, elongation% & bend to be performed as per ASTM. (Measurement will be based on standard weight of 490 lbs./ft3 Chairs, laps and separators will not be measures for payment. The cost of these will be included in the unit rate) High strength deformed bar (grade 60, billet)	kg	18867.000			
Total Price of the Tender						

The total price of our Tender is:

Tk:

[Insert value in figures] [Insert value in Words]

_____

Signature of the Tenderer

This Bill of Quantity contains _____ correction(s) duly initialed and signed by the authorized person of the Tenderer.

Bill of Quantities (BOQ)

Name of Project :

Name of Work : Detail Estimate of 6.50m Height Abutment.(Base-7850x7250x1000, Stem-2040) (Typical)

Package Number :

SL. No.	(Item Code) Description of Item of Works	Unit	Quantity	Quoted Unit Rates (Tk)		Total Amount In Figure (in Tk)
				In Figure	In Words	
1	2	3	4	5	6	7
1.	(4.1.04) Earth work in excavation in foundation trenches in all sorts of rocky, gravelly, slushy or organic type, up to a depth of 2m to the lines, grades and elevation as shown on the drawing, removing boulders, logs and other objectionable materials, clearing all loose materials, disposing of all excavated materials to a safe distance designated by the E-I-C for an initial lead of 20m, and cut to a firm surface including bailing out water, removal of spoils to a safe distance, back filling of sites of trenches up to original level, shoring if necessary etc. all complete as per requirement and instruction of the E-I-C. Back-filled materials shall be compacted to a density comparable with the adjacent undisturbed material.	cum	444.850			
2.	(4.1.07) Pumping and bailing out water/de-watering of work site including supply, operation and maintenance of requisite number of water pumps. It should be carried out in such a manner as to preclude possibilities of the movement of water through or alongside any concrete being placed, etc. all complete as per direction of E-I-C.	LS	2.0			
3.	(4.1.09) Single layer brick flat soling with 1st class or picked jhama kiln burnt bricks in foundation, filling the interstices tightly with sand of minimum FM 0.50, watering, leveling, dressing, etc. all complete as per instruction of the E-I-C.	sqm	113.260			
4.	(4.1.10.01.1) Cement concrete work in foundation with Portland cement, sand (minimum FM 1.80) and 1st class/picked jhama brick chips 20mm down graded (LAA value not exceeding 40), including shuttering, mixing by concrete mixer machine, casting, laying compacting and curing for the requisite period breaking bricks into chips etc. all complete as per direction of the E-I-C. Cylinder crushing strength of concrete should not be less than 105kg/cm2 at 28 days of curing (Suggested Mix Proportion 1:3:6). Additional quantity of cement to be added if required to attain the strength at the contractors own cost.	cum	8.494			
5.	(4.1.10.02.3) Reinforced cement concrete work in well caps, pile caps, bearing sheets, abutment base, etc. with Portland cement, sand (minimum FM 1.80) and 20mm down well graded crushed stone chips (Preferably stone chips from Madhyapara, Dinajpur), (LAA value not exceeding 30), including shuttering, mixing by concrete mixer machine casting, laying, compacting and curing, for 28 days, breaking stone boulders into chips etc. all complete as per direction of the E-I-C but excluding cost of reinforcement. Cylinder crushing strength of concrete should not be less than 250kg/cm2 at 28 days of curing (suggested mix proportion 1:1.5:3). Additional quantity of cement to be added if required to attain the strength at the contractor's own cost.	cum	113.826			
6.	(4.2.01.03.1) Reinforced Cement Concrete work in diaphragm walls, wing walls, piers, columns, abutments of bridges and vertical members of box culverts with 20mm down graded stone chips (Preferably stone chips from Madhyapara, Dinajpur), (LAA value not exceeding 30), sand (minimum FM 1.80) and cement having minimum 28 days ultimate cylinder crushing strength of 250kg/cm2 (suggested mix proportion 1:1.5:3). excluding cost of reinforcement and its fabrication but including cost of all other materials, shuttering, casting, curing for 28 days and all incidental charges, etc. complete in all respect as per design, drawing and direction of the E-I-C Upto 5m	cum	111.336			

SL. No.	(Item Code) Description of Item of Works	Unit	Quantity	Quoted Unit Rates (Tk)		Total Amount In Figure (in Tk)
				In Figure	In Words	
1	2	3	4	5	6	7
7.	(4.3.01.03) Providing rainwater down pipe including placing in position and cost of all materials as per drawing and direction of the E-I-C. 50mm PVC pipe	m	62.000			
8.	(4.3.14) Back filling of abutment with 50:50 best quality picked jhama brick khoa & sand of min. FM 1.00 of 450mm width, in layers of 150mm thickness free from dust impurities etc. including compacting using steel or concrete drop hammer (durmus), watering & dressing and including supply & cost of all materials, carrying and labour, arranging and supplying of steel/concrete hammer and other tools required to work site etc. al complete as per direction of the E-I-C. Payment to be made for the compacted volume only for a compaction of 90% of the maximum dry density.	cum	71.280			
9.	(4.2.05.04) Reinforced Cement Concrete work in railing and rail post with stone chips (Preferably stone chips from Madhyapara, Dinajpur), sand (minimum FM 1.80) and cement having minimum 28 days ultimate cylinder crushing strength of 250kg/cm2 (suggested mix proportion 1:1.5:3) excluding cost of reinforcement and its fabrication but including cost of all other materials, shuttering, casting, curing for 28 days and all incidental charges, etc. complete in all respect as per design, drawing and direction of the E-I-C.	cum	2.832			
10.	(4.2.06.03) Supplying and fabrication of M.S High strength deformed bar/ Twisted bar reinforcement of required size and length for all types of RCC work including straightening the rod, removing ruts, cleaning, cutting, hooking, bending, binding with supply of 22 B.W.G. GI wire, placing in position, including lapping, spacing and securing them in position by concrete blocks (1:1), metal chairs, etc. complete including cost of all materials, labour, local handling, laboratory test, incidentals necessary to complete the work as per specifications, drawings and direction of the Engineer. Laboratory test for physical property, strength, elongation% & bend to be performed as per ASTM. (Measurement will be based on standard weight of 490 lbs./ft3 Chairs, laps and separators will not be measures for payment. The cost of these will be included in the unit rate) High strength deformed bar (grade 60, billet)	kg	21682.000			
Total Price of the Tender						

The total price of our Tender is:

Tk:

[Insert value in figures] [Insert value in Words]

_____

Signature of the Tenderer

This Bill of Quantity contains _____ correction(s) duly initialed and signed by the authorized person of the Tenderer.

Bill of Quantities (BOQ)

Name of Project :

Name of Work : Detail Estimate of 6.50m Height Abutment.(Base-7850x7250x1000, Stem-2250) (Typical)

Package Number :

SL. No.	(Item Code) Description of Item of Works	Unit	Quantity	Quoted Unit Rates (Tk)		Total Amount In Figure (in Tk)
				In Figure	In Words	
1	2	3	4	5	6	7
1.	(4.1.04) Earth work in excavation in foundation trenches in all sorts of rocky, gravelly, slushy or organic type, up to a depth of 2m to the lines, grades and elevation as shown on the drawing, removing boulders, logs and other objectionable materials, clearing all loose materials, disposing of all excavated materials to a safe distance designated by the E-I-C for an initial lead of 20m, and cut to a firm surface including bailing out water, removal of spoils to a safe distance, back filling of sites of trenches up to original level, shoring if necessary etc. all complete as per requirement and instruction of the E-I-C. Back-filled materials shall be compacted to a density comparable with the adjacent undisturbed material.	cum	444.850			
2.	(4.1.07) Pumping and bailing out water/de-watering of work site including supply, operation and maintenance of requisite number of water pumps. It should be carried out in such a manner as to preclude possibilities of the movement of water through or alongside any concrete being placed, etc. all complete as per direction of E-I-C.	LS	2.0			
3.	(4.1.09) Single layer brick flat soling with 1st class or picked jhama kiln burnt bricks in foundation, filling the interstices tightly with sand of minimum FM 0.50, watering, leveling, dressing, etc. all complete as per instruction of the E-I-C.	sqm	113.260			
4.	(4.1.10.01.1) Cement concrete work in foundation with Portland cement, sand (minimum FM 1.80) and 1st class/picked jhama brick chips 20mm down graded (LAA value not exceeding 40), including shuttering, mixing by concrete mixer machine, casting, laying compacting and curing for the requisite period breaking bricks into chips etc. all complete as per direction of the E-I-C. Cylinder crushing strength of concrete should not be less than 105kg/cm2 at 28 days of curing (Suggested Mix Proportion 1:3:6). Additional quantity of cement to be added if required to attain the strength at the contractors own cost.	cum	8.494			
5.	(4.1.10.02.3) Reinforced cement concrete work in well caps, pile caps, bearing sheets, abutment base, etc. with Portland cement, sand (minimum FM 1.80) and 20mm down well graded crushed stone chips (Preferably stone chips from Madhyapara, Dinajpur), (LAA value not exceeding 30), including shuttering, mixing by concrete mixer machine casting, laying, compacting and curing, for 28 days, breaking stone boulders into chips etc. all complete as per direction of the E-I-C but excluding cost of reinforcement. Cylinder crushing strength of concrete should not be less than 250kg/cm2 at 28 days of curing (suggested mix proportion 1:1.5:3). Additional quantity of cement to be added if required to attain the strength at the contractor's own cost.	cum	113.826			
6.	(4.2.01.03.1) Reinforced Cement Concrete work in diaphragm walls, wing walls, piers, columns, abutments of bridges and vertical members of box culverts with 20mm down graded stone chips (Preferably stone chips from Madhyapara, Dinajpur), (LAA value not exceeding 30), sand (minimum FM 1.80) and cement having minimum 28 days ultimate cylinder crushing strength of 250kg/cm2 (suggested mix proportion 1:1.5:3). excluding cost of reinforcement and its fabrication but including cost of all other materials, shuttering, casting, curing for 28 days and all incidental charges, etc. complete in all respect as per design, drawing and direction of the E-I-C Upto 5m	cum	111.424			

SL. No.	(Item Code) Description of Item of Works	Unit	Quantity	Quoted Unit Rates (Tk)		Total Amount In Figure (in Tk)
				In Figure	In Words	
1	2	3	4	5	6	7
7.	(4.3.01.03) Providing rainwater down pipe including placing in position and cost of all materials as per drawing and direction of the E-I-C. 50mm PVC pipe	m	62.000			
8.	(4.3.14) Back filling of abutment with 50:50 best quality picked jhama brick khoa & sand of min. FM 1.00 of 450mm width, in layers of 150mm thickness free from dust impurities etc. including compacting using steel or concrete drop hammer (durmus), watering & dressing and including supply & cost of all materials, carrying and labour, arranging and supplying of steel/concrete hammer and other tools required to work site etc. al complete as per direction of the E-I-C. Payment to be made for the compacted volume only for a compaction of 90% of the maximum dry density.	cum	71.280			
9.	(4.2.05.04) Reinforced Cement Concrete work in railing and rail post with stone chips (Preferably stone chips from Madhyapara, Dinajpur), sand (minimum FM 1.80) and cement having minimum 28 days ultimate cylinder crushing strength of 250kg/cm2 (suggested mix proportion 1:1.5:3) excluding cost of reinforcement and its fabrication but including cost of all other materials, shuttering, casting, curing for 28 days and all incidental charges, etc. complete in all respect as per design, drawing and direction of the E-I-C.	cum	2.832			
10.	(4.2.06.03) Supplying and fabrication of M.S High strength deformed bar/ Twisted bar reinforcement of required size and length for all types of RCC work including straightening the rod, removing ruts, cleaning, cutting, hooking, bending, binding with supply of 22 B.W.G. GI wire, placing in position, including lapping, spacing and securing them in position by concrete blocks (1:1), metal chairs, etc. complete including cost of all materials, labour, local handling, laboratory test, incidentals necessary to complete the work as per specifications, drawings and direction of the Engineer. Laboratory test for physical property, strength, elongation% & bend to be performed as per ASTM. (Measurement will be based on standard weight of 490 lbs./ft3 Chairs, laps and separators will not be measures for payment. The cost of these will be included in the unit rate) High strength deformed bar (grade 60, billet)	kg	21550.000			
Total Price of the Tender						

The total price of our Tender is:

Tk:

[Insert value in figures] [Insert value in Words]

_____

Signature of the Tenderer

This Bill of Quantity contains _____ correction(s) duly initialed and signed by the authorized person of the Tenderer.

Bill of Quantities (BOQ)

Name of Project :

Name of Work : Detail Estimate of 6.50m Height Abutment.(Base-7750x6600x1000, Stem-2600) (Typical)

Package Number :

SL. No.	(Item Code) Description of Item of Works	Unit	Quantity	Quoted Unit Rates (Tk)		Total Amount In Figure (in Tk)
				In Figure	In Words	
1	2	3	4	5	6	7
1.	(4.1.04) Earth work in excavation in foundation trenches in all sorts of rocky, gravelly, slushy or organic type, up to a depth of 2m to the lines, grades and elevation as shown on the drawing, removing boulders, logs and other objectionable materials, clearing all loose materials, disposing of all excavated materials to a safe distance designated by the E-I-C for an initial lead of 20m, and cut to a firm surface including bailing out water, removal of spoils to a safe distance, back filling of sites of trenches up to original level, shoring if necessary etc. all complete as per requirement and instruction of the E-I-C. Back-filled materials shall be compacted to a density comparable with the adjacent undisturbed material.	cum	412.800			
2.	(4.1.07) Pumping and bailing out water/de-watering of work site including supply, operation and maintenance of requisite number of water pumps. It should be carried out in such a manner as to preclude possibilities of the movement of water through or alongside any concrete being placed, etc. all complete as per direction of E-I-C.	LS	2.0			
3.	(4.1.09) Single layer brick flat soling with 1st class or picked jhama kiln burnt bricks in foundation, filling the interstices tightly with sand of minimum FM 0.50, watering, leveling, dressing, etc. all complete as per instruction of the E-I-C.	sqm	101.734			
4.	(4.1.10.01.1) Cement concrete work in foundation with Portland cement, sand (minimum FM 1.80) and 1st class/picked jhama brick chips 20mm down graded (LAA value not exceeding 40), including shuttering, mixing by concrete mixer machine, casting, laying compacting and curing for the requisite period breaking bricks into chips etc. all complete as per direction of the E-I-C. Cylinder crushing strength of concrete should not be less than 105kg/cm2 at 28 days of curing (Suggested Mix Proportion 1:3:6). Additional quantity of cement to be added if required to attain the strength at the contractors own cost.	cum	7.630			
5.	(4.1.10.02.3) Reinforced cement concrete work in well caps, pile caps, bearing sheets, abutment base, etc. with Portland cement, sand (minimum FM 1.80) and 20mm down well graded crushed stone chips (Preferably stone chips from Madhyapara, Dinajpur), (LAA value not exceeding 30), including shuttering, mixing by concrete mixer machine casting, laying, compacting and curing, for 28 days, breaking stone boulders into chips etc. all complete as per direction of the E-I-C but excluding cost of reinforcement. Cylinder crushing strength of concrete should not be less than 250kg/cm2 at 28 days of curing (suggested mix proportion 1:1.5:3). Additional quantity of cement to be added if required to attain the strength at the contractor's own cost.	cum	102.300			
6.	(4.2.01.03.1) Reinforced Cement Concrete work in diaphragm walls, wing walls, piers, columns, abutments of bridges and vertical members of box culverts with 20mm down graded stone chips (Preferably stone chips from Madhyapara, Dinajpur), (LAA value not exceeding 30), sand (minimum FM 1.80) and cement having minimum 28 days ultimate cylinder crushing strength of 250kg/cm2 (suggested mix proportion 1:1.5:3). excluding cost of reinforcement and its fabrication but including cost of all other materials, shuttering, casting, curing for 28 days and all incidental charges, etc. complete in all respect as per design, drawing and direction of the E-I-C Upto 5m	cum	109.544			

SL. No.	(Item Code) Description of Item of Works	Unit	Quantity	Quoted Unit Rates (Tk)		Total Amount In Figure (in Tk)
				In Figure	In Words	
1	2	3	4	5	6	7
7.	(4.3.01.03) Providing rainwater down pipe including placing in position and cost of all materials as per drawing and direction of the E-I-C. 50mm PVC pipe	m	62.000			
8.	(4.3.14) Back filling of abutment with 50:50 best quality picked jhama brick khoa & sand of min. FM 1.00 of 450mm width, in layers of 150mm thickness free from dust impurities etc. including compacting using steel or concrete drop hammer (durmus), watering & dressing and including supply & cost of all materials, carrying and labour, arranging and supplying of steel/concrete hammer and other tools required to work site etc. al complete as per direction of the E-I-C. Payment to be made for the compacted volume only for a compaction of 90% of the maximum dry density.	cum	71.776			
9.	(4.2.05.04) Reinforced Cement Concrete work in railing and rail post with stone chips (Preferably stone chips from Madhyapara, Dinajpur), sand (minimum FM 1.80) and cement having minimum 28 days ultimate cylinder crushing strength of 250kg/cm2 (suggested mix proportion 1:1.5:3) excluding cost of reinforcement and its fabrication but including cost of all other materials, shuttering, casting, curing for 28 days and all incidental charges, etc. complete in all respect as per design, drawing and direction of the E-I-C.	cum	2.844			
10.	(4.2.06.03) Supplying and fabrication of M.S High strength deformed bar/ Twisted bar reinforcement of required size and length for all types of RCC work including straightening the rod, removing ruts, cleaning, cutting, hooking, bending, binding with supply of 22 B.W.G. GI wire, placing in position, including lapping, spacing and securing them in position by concrete blocks (1:1), metal chairs, etc. complete including cost of all materials, labour, local handling, laboratory test, incidentals necessary to complete the work as per specifications, drawings and direction of the Engineer. Laboratory test for physical property, strength, elongation% & bend to be performed as per ASTM. (Measurement will be based on standard weight of 490 lbs./ft3 Chairs, laps and separators will not be measures for payment. The cost of these will be included in the unit rate) High strength deformed bar (grade 60, billet)	kg	20939.000			
Total Price of the Tender						

The total price of our Tender is:

Tk:

[Insert value in figures] [Insert value in Words]

_____

Signature of the Tenderer

This Bill of Quantity contains _____ correction(s) duly initialed and signed by the authorized person of the Tenderer.

Bill of Quantities (BOQ)

Name of Project :

Name of Work : Detail Estimate of 6.50m Height Abutment.(Base-7750x6600x900, Stem-3000) (Typical)

Package Number :

SL. No.	(Item Code) Description of Item of Works	Unit	Quantity	Quoted Unit Rates (Tk)		Total Amount In Figure (in Tk)
				In Figure	In Words	
1	2	3	4	5	6	7
1.	(4.1.04) Earth work in excavation in foundation trenches in all sorts of rocky, gravelly, slushy or organic type, up to a depth of 2m to the lines, grades and elevation as shown on the drawing, removing boulders, logs and other objectionable materials, clearing all loose materials, disposing of all excavated materials to a safe distance designated by the E-I-C for an initial lead of 20m, and cut to a firm surface including bailing out water, removal of spoils to a safe distance, back filling of sites of trenches up to original level, shoring if necessary etc. all complete as per requirement and instruction of the E-I-C. Back-filled materials shall be compacted to a density comparable with the adjacent undisturbed material.	cum	412.800			
2.	(4.1.07) Pumping and bailing out water/de-watering of work site including supply, operation and maintenance of requisite number of water pumps. It should be carried out in such a manner as to preclude possibilities of the movement of water through or alongside any concrete being placed, etc. all complete as per direction of E-I-C.	LS	2.0			
3.	(4.1.09) Single layer brick flat soling with 1st class or picked jhama kiln burnt bricks in foundation, filling the interstices tightly with sand of minimum FM 0.50, watering, leveling, dressing, etc. all complete as per instruction of the E-I-C.	sqm	101.734			
4.	(4.1.10.01.1) Cement concrete work in foundation with Portland cement, sand (minimum FM 1.80) and 1st class/picked jhama brick chips 20mm down graded (LAA value not exceeding 40), including shuttering, mixing by concrete mixer machine, casting, laying compacting and curing for the requisite period breaking bricks into chips etc. all complete as per direction of the E-I-C. Cylinder crushing strength of concrete should not be less than 105kg/cm2 at 28 days of curing (Suggested Mix Proportion 1:3:6). Additional quantity of cement to be added if required to attain the strength at the contractors own cost.	cum	7.630			
5.	(4.1.10.02.3) Reinforced cement concrete work in well caps, pile caps, bearing sheets, abutment base, etc. with Portland cement, sand (minimum FM 1.80) and 20mm down well graded crushed stone chips (Preferably stone chips from Madhyapara, Dinajpur), (LAA value not exceeding 30), including shuttering, mixing by concrete mixer machine casting, laying, compacting and curing, for 28 days, breaking stone boulders into chips etc. all complete as per direction of the E-I-C but excluding cost of reinforcement. Cylinder crushing strength of concrete should not be less than 250kg/cm2 at 28 days of curing (suggested mix proportion 1:1.5:3). Additional quantity of cement to be added if required to attain the strength at the contractor's own cost.	cum	92.070			
6.	(4.2.01.03.1) Reinforced Cement Concrete work in diaphragm walls, wing walls, piers, columns, abutments of bridges and vertical members of box culverts with 20mm down graded stone chips (Preferably stone chips from Madhyapara, Dinajpur), (LAA value not exceeding 30), sand (minimum FM 1.80) and cement having minimum 28 days ultimate cylinder crushing strength of 250kg/cm2 (suggested mix proportion 1:1.5:3). excluding cost of reinforcement and its fabrication but including cost of all other materials, shuttering, casting, curing for 28 days and all incidental charges, etc. complete in all respect as per design, drawing and direction of the E-I-C Upto 5m	cum	110.342			

SL. No.	(Item Code) Description of Item of Works	Unit	Quantity	Quoted Unit Rates (Tk)		Total Amount In Figure (in Tk)
				In Figure	In Words	
1	2	3	4	5	6	7
7.	(4.3.01.03) Providing rainwater down pipe including placing in position and cost of all materials as per drawing and direction of the E-I-C. 50mm PVC pipe	m	124.000			
8.	(4.3.14) Back filling of abutment with 50:50 best quality picked jhama brick khoa & sand of min. FM 1.00 of 450mm width, in layers of 150mm thickness free from dust impurities etc. including compacting using steel or concrete drop hammer (durmus), watering & dressing and including supply & cost of all materials, carrying and labour, arranging and supplying of steel/concrete hammer and other tools required to work site etc. al complete as per direction of the E-I-C. Payment to be made for the compacted volume only for a compaction of 90% of the maximum dry density.	cum	72.270			
9.	(4.2.05.04) Reinforced Cement Concrete work in railing and rail post with stone chips (Preferably stone chips from Madhyapara, Dinajpur), sand (minimum FM 1.80) and cement having minimum 28 days ultimate cylinder crushing strength of 250kg/cm2 (suggested mix proportion 1:1.5:3) excluding cost of reinforcement and its fabrication but including cost of all other materials, shuttering, casting, curing for 28 days and all incidental charges, etc. complete in all respect as per design, drawing and direction of the E-I-C.	cum	2.856			
10.	(4.2.06.03) Supplying and fabrication of M.S High strength deformed bar/ Twisted bar reinforcement of required size and length for all types of RCC work including straightening the rod, removing ruts, cleaning, cutting, hooking, bending, binding with supply of 22 B.W.G. GI wire, placing in position, including lapping, spacing and securing them in position by concrete blocks (1:1), metal chairs, etc. complete including cost of all materials, labour, local handling, laboratory test, incidentals necessary to complete the work as per specifications, drawings and direction of the Engineer. Laboratory test for physical property, strength, elongation% & bend to be performed as per ASTM. (Measurement will be based on standard weight of 490 lbs./ft3 Chairs, laps and separators will not be measures for payment. The cost of these will be included in the unit rate) High strength deformed bar (grade 60, billet)	kg	20833.000			
Total Price of the Tender						

The total price of our Tender is:

Tk:

[Insert value in figures] [Insert value in Words]

_____

Signature of the Tenderer

This Bill of Quantity contains _____ correction(s) duly initialed and signed by the authorized person of the Tenderer.

Bill of Quantities (BOQ)

Name of Project :

Name of Work : Detail Estimate of 7.00m Height Abutment.(Base-9250x7250x1000,Stem-2490) (Typical)

Package Number :

SL. No.	(Item Code) Description of Item of Works	Unit	Quantity	Quoted Unit Rates (Tk)		Total Amount In Figure (in Tk)
				In Figure	In Words	
1	2	3	4	5	6	7
1.	(4.1.04) Earth work in excavation in foundation trenches in all sorts of rocky, gravelly, slushy or organic type, up to a depth of 2m to the lines, grades and elevation as shown on the drawing, removing boulders, logs and other objectionable materials, clearing all loose materials, disposing of all excavated materials to a safe distance designated by the E-I-C for an initial lead of 20m, and cut to a firm surface including bailing out water, removal of spoils to a safe distance, back filling of sites of trenches up to original level, shoring if necessary etc. all complete as per requirement and instruction of the E-I-C. Back-filled materials shall be compacted to a density comparable with the adjacent undisturbed material.	cum	502.250			
2.	(4.1.07) Pumping and bailing out water/de-watering of work site including supply, operation and maintenance of requisite number of water pumps. It should be carried out in such a manner as to preclude possibilities of the movement of water through or alongside any concrete being placed, etc. all complete as per direction of E-I-C.	LS	2.0			
3.	(4.1.09) Single layer brick flat soling with 1st class or picked jhama kiln burnt bricks in foundation, filling the interstices tightly with sand of minimum FM 0.50, watering, leveling, dressing, etc. all complete as per instruction of the E-I-C.	sqm	133.560			
4.	(4.1.10.01.1) Cement concrete work in foundation with Portland cement, sand (minimum FM 1.80) and 1st class/picked jhama brick chips 20mm down graded (LAA value not exceeding 40), including shuttering, mixing by concrete mixer machine, casting, laying compacting and curing for the requisite period breaking bricks into chips etc. all complete as per direction of the E-I-C. Cylinder crushing strength of concrete should not be less than 105kg/cm2 at 28 days of curing (Suggested Mix Proportion 1:3:6). Additional quantity of cement to be added if required to attain the strength at the contractors own cost.	cum	10.018			
5.	(4.1.10.02.3) Reinforced cement concrete work in well caps, pile caps, bearing sheets, abutment base, etc. with Portland cement, sand (minimum FM 1.80) and 20mm down well graded crushed stone chips (Preferably stone chips from Madhyapara, Dinajpur), (LAA value not exceeding 30), including shuttering, mixing by concrete mixer machine casting, laying, compacting and curing, for 28 days, breaking stone boulders into chips etc. all complete as per direction of the E-I-C but excluding cost of reinforcement. Cylinder crushing strength of concrete should not be less than 250kg/cm2 at 28 days of curing (suggested mix proportion 1:1.5:3). Additional quantity of cement to be added if required to attain the strength at the contractor's own cost.	cum	134.126			
6.	(4.2.01.03.1) Reinforced Cement Concrete work in diaphragm walls, wing walls, piers, columns, abutments of bridges and vertical members of box culverts with 20mm down graded stone chips (Preferably stone chips from Madhyapara, Dinajpur), (LAA value not exceeding 30), sand (minimum FM 1.80) and cement having minimum 28 days ultimate cylinder crushing strength of 250kg/cm2 (suggested mix proportion 1:1.5:3). excluding cost of reinforcement and its fabrication but including cost of all other materials, shuttering, casting, curing for 28 days and all incidental charges, etc. complete in all respect as per design, drawing and direction of the E-I-C Upto 5m	cum	139.520			

SL. No.	(Item Code) Description of Item of Works	Unit	Quantity	Quoted Unit Rates (Tk)		Total Amount In Figure (in Tk)
				In Figure	In Words	
1	2	3	4	5	6	7
7.	(4.3.01.03) Providing rainwater down pipe including placing in position and cost of all materials as per drawing and direction of the E-I-C. 50mm PVC pipe	m	62.000			
8.	(4.3.14) Back filling of abutment with 50:50 best quality picked jhama brick khoa & sand of min. FM 1.00 of 450mm width, in layers of 150mm thickness free from dust impurities etc. including compacting using steel or concrete drop hammer (durmus), watering & dressing and including supply & cost of all materials, carrying and labour, arranging and supplying of steel/concrete hammer and other tools required to work site etc. al complete as per direction of the E-I-C. Payment to be made for the compacted volume only for a compaction of 90% of the maximum dry density.	cum	94.500			
9.	(4.2.05.04) Reinforced Cement Concrete work in railing and rail post with stone chips (Preferably stone chips from Madhyapara, Dinajpur), sand (minimum FM 1.80) and cement having minimum 28 days ultimate cylinder crushing strength of 250kg/cm2 (suggested mix proportion 1:1.5:3) excluding cost of reinforcement and its fabrication but including cost of all other materials, shuttering, casting, curing for 28 days and all incidental charges, etc. complete in all respect as per design, drawing and direction of the E-I-C.	cum	3.276			
10.	(4.2.06.03) Supplying and fabrication of M.S High strength deformed bar/ Twisted bar reinforcement of required size and length for all types of RCC work including straightening the rod, removing ruts, cleaning, cutting, hooking, bending, binding with supply of 22 B.W.G. GI wire, placing in position, including lapping, spacing and securing them in position by concrete blocks (1:1), metal chairs, etc. complete including cost of all materials, labour, local handling, laboratory test, incidentals necessary to complete the work as per specifications, drawings and direction of the Engineer. Laboratory test for physical property, strength, elongation% & bend to be performed as per ASTM. (Measurement will be based on standard weight of 490 lbs./ft3 Chairs, laps and separators will not be measures for payment. The cost of these will be included in the unit rate) High strength deformed bar (grade 60, billet)	kg	29635.000			
Total Price of the Tender						

The total price of our Tender is:

Tk:

[Insert value in figures] [Insert value in Words]

_____

Signature of the Tenderer

This Bill of Quantity contains _____ correction(s) duly initialed and signed by the authorized person of the Tenderer.

Bill of Quantities (BOQ)

Name of Project :

Name of Work : Detail Estimate of 7.00m Height Abutment.(Base-9250x7250x1000,Stem-2700) (Typical)

Package Number :

SL. No.	(Item Code) Description of Item of Works	Unit	Quantity	Quoted Unit Rates (Tk)		Total Amount In Figure (in Tk)
				In Figure	In Words	
1	2	3	4	5	6	7
1.	(4.1.04) Earth work in excavation in foundation trenches in all sorts of rocky, gravelly, slushy or organic type, up to a depth of 2m to the lines, grades and elevation as shown on the drawing, removing boulders, logs and other objectionable materials, clearing all loose materials, disposing of all excavated materials to a safe distance designated by the E-I-C for an initial lead of 20m, and cut to a firm surface including bailing out water, removal of spoils to a safe distance, back filling of sites of trenches up to original level, shoring if necessary etc. all complete as per requirement and instruction of the E-I-C. Back-filled materials shall be compacted to a density comparable with the adjacent undisturbed material.	cum	502.250			
2.	(4.1.07) Pumping and bailing out water/de-watering of work site including supply, operation and maintenance of requisite number of water pumps. It should be carried out in such a manner as to preclude possibilities of the movement of water through or alongside any concrete being placed, etc. all complete as per direction of E-I-C.	LS	2.0			
3.	(4.1.09) Single layer brick flat soling with 1st class or picked jhama kiln burnt bricks in foundation, filling the interstices tightly with sand of minimum FM 0.50, watering, leveling, dressing, etc. all complete as per instruction of the E-I-C.	sqm	133.560			
4.	(4.1.10.01.1) Cement concrete work in foundation with Portland cement, sand (minimum FM 1.80) and 1st class/picked jhama brick chips 20mm down graded (LAA value not exceeding 40), including shuttering, mixing by concrete mixer machine, casting, laying compacting and curing for the requisite period breaking bricks into chips etc. all complete as per direction of the E-I-C. Cylinder crushing strength of concrete should not be less than 105kg/cm2 at 28 days of curing (Suggested Mix Proportion 1:3:6). Additional quantity of cement to be added if required to attain the strength at the contractors own cost.	cum	10.018			
5.	(4.1.10.02.3) Reinforced cement concrete work in well caps, pile caps, bearing sheets, abutment base, etc. with Portland cement, sand (minimum FM 1.80) and 20mm down well graded crushed stone chips (Preferably stone chips from Madhyapara, Dinajpur), (LAA value not exceeding 30), including shuttering, mixing by concrete mixer machine casting, laying, compacting and curing, for 28 days, breaking stone boulders into chips etc. all complete as per direction of the E-I-C but excluding cost of reinforcement. Cylinder crushing strength of concrete should not be less than 250kg/cm2 at 28 days of curing (suggested mix proportion 1:1.5:3). Additional quantity of cement to be added if required to attain the strength at the contractor's own cost.	cum	134.126			
6.	(4.2.01.03.1) Reinforced Cement Concrete work in diaphragm walls, wing walls, piers, columns, abutments of bridges and vertical members of box culverts with 20mm down graded stone chips (Preferably stone chips from Madhyapara, Dinajpur), (LAA value not exceeding 30), sand (minimum FM 1.80) and cement having minimum 28 days ultimate cylinder crushing strength of 250kg/cm2 (suggested mix proportion 1:1.5:3). excluding cost of reinforcement and its fabrication but including cost of all other materials, shuttering, casting, curing for 28 days and all incidental charges, etc. complete in all respect as per design, drawing and direction of the E-I-C Upto 5m	cum	139.426			

SL. No.	(Item Code) Description of Item of Works	Unit	Quantity	Quoted Unit Rates (Tk)		Total Amount In Figure (in Tk)
				In Figure	In Words	
1	2	3	4	5	6	7
7.	(4.3.01.03) Providing rainwater down pipe including placing in position and cost of all materials as per drawing and direction of the E-I-C. 50mm PVC pipe	m	62.000			
8.	(4.3.14) Back filling of abutment with 50:50 best quality picked jhama brick khoa & sand of min. FM 1.00 of 450mm width, in layers of 150mm thickness free from dust impurities etc. including compacting using steel or concrete drop hammer (durmus), watering & dressing and including supply & cost of all materials, carrying and labour, arranging and supplying of steel/concrete hammer and other tools required to work site etc. al complete as per direction of the E-I-C. Payment to be made for the compacted volume only for a compaction of 90% of the maximum dry density.	cum	94.500			
9.	(4.2.05.04) Reinforced Cement Concrete work in railing and rail post with stone chips (Preferably stone chips from Madhyapara, Dinajpur), sand (minimum FM 1.80) and cement having minimum 28 days ultimate cylinder crushing strength of 250kg/cm2 (suggested mix proportion 1:1.5:3) excluding cost of reinforcement and its fabrication but including cost of all other materials, shuttering, casting, curing for 28 days and all incidental charges, etc. complete in all respect as per design, drawing and direction of the E-I-C.	cum	3.336			
10.	(4.2.06.03) Supplying and fabrication of M.S High strength deformed bar/ Twisted bar reinforcement of required size and length for all types of RCC work including straightening the rod, removing ruts, cleaning, cutting, hooking, bending, binding with supply of 22 B.W.G. GI wire, placing in position, including lapping, spacing and securing them in position by concrete blocks (1:1), metal chairs, etc. complete including cost of all materials, labour, local handling, laboratory test, incidentals necessary to complete the work as per specifications, drawings and direction of the Engineer. Laboratory test for physical property, strength, elongation% & bend to be performed as per ASTM. (Measurement will be based on standard weight of 490 lbs./ft3 Chairs, laps and separators will not be measures for payment. The cost of these will be included in the unit rate) High strength deformed bar (grade 60, billet)	kg	30366.000			
Total Price of the Tender						

The total price of our Tender is:

Tk:

[Insert value in figures] [Insert value in Words]

_____

Signature of the Tenderer

This Bill of Quantity contains _____ correction(s) duly initialed and signed by the authorized person of the Tenderer.

Bill of Quantities (BOQ)

Name of Project :

Name of Work : Detail Estimate of 7.00m Height Abutment.(Base-8550x6600x1000,Stem-3050) (Typical)

Package Number :

SL. No.	(Item Code) Description of Item of Works	Unit	Quantity	Quoted Unit Rates (Tk)		Total Amount In Figure (in Tk)
				In Figure	In Words	
1	2	3	4	5	6	7
1.	(4.1.04) Earth work in excavation in foundation trenches in all sorts of rocky, gravelly, slushy or organic type, up to a depth of 2m to the lines, grades and elevation as shown on the drawing, removing boulders, logs and other objectionable materials, clearing all loose materials, disposing of all excavated materials to a safe distance designated by the E-I-C for an initial lead of 20m, and cut to a firm surface including bailing out water, removal of spoils to a safe distance, back filling of sites of trenches up to original level, shoring if necessary etc. all complete as per requirement and instruction of the E-I-C. Back-filled materials shall be compacted to a density comparable with the adjacent undisturbed material.	cum	443.520			
2.	(4.1.07) Pumping and bailing out water/de-watering of work site including supply, operation and maintenance of requisite number of water pumps. It should be carried out in such a manner as to preclude possibilities of the movement of water through or alongside any concrete being placed, etc. all complete as per direction of E-I-C.	LS	2.0			
3.	(4.1.09) Single layer brick flat soling with 1st class or picked jhama kiln burnt bricks in foundation, filling the interstices tightly with sand of minimum FM 0.50, watering, leveling, dressing, etc. all complete as per instruction of the E-I-C.	sqm	112.294			
4.	(4.1.10.01.1) Cement concrete work in foundation with Portland cement, sand (minimum FM 1.80) and 1st class/picked jhama brick chips 20mm down graded (LAA value not exceeding 40), including shuttering, mixing by concrete mixer machine, casting, laying compacting and curing for the requisite period breaking bricks into chips etc. all complete as per direction of the E-I-C. Cylinder crushing strength of concrete should not be less than 105kg/cm2 at 28 days of curing (Suggested Mix Proportion 1:3:6). Additional quantity of cement to be added if required to attain the strength at the contractors own cost.	cum	8.422			
5.	(4.1.10.02.3) Reinforced cement concrete work in well caps, pile caps, bearing sheets, abutment base, etc. with Portland cement, sand (minimum FM 1.80) and 20mm down well graded crushed stone chips (Preferably stone chips from Madhyapara, Dinajpur), (LAA value not exceeding 30), including shuttering, mixing by concrete mixer machine casting, laying, compacting and curing, for 28 days, breaking stone boulders into chips etc. all complete as per direction of the E-I-C but excluding cost of reinforcement. Cylinder crushing strength of concrete should not be less than 250kg/cm2 at 28 days of curing (suggested mix proportion 1:1.5:3). Additional quantity of cement to be added if required to attain the strength at the contractor's own cost.	cum	112.860			
6.	(4.2.01.03.1) Reinforced Cement Concrete work in diaphragm walls, wing walls, piers, columns, abutments of bridges and vertical members of box culverts with 20mm down graded stone chips (Preferably stone chips from Madhyapara, Dinajpur), (LAA value not exceeding 30), sand (minimum FM 1.80) and cement having minimum 28 days ultimate cylinder crushing strength of 250kg/cm2 (suggested mix proportion 1:1.5:3). excluding cost of reinforcement and its fabrication but including cost of all other materials, shuttering, casting, curing for 28 days and all incidental charges, etc. complete in all respect as per design, drawing and direction of the E-I-C Upto 5m	cum	130.720			

SL. No.	(Item Code) Description of Item of Works	Unit	Quantity	Quoted Unit Rates (Tk)		Total Amount In Figure (in Tk)
				In Figure	In Words	
1	2	3	4	5	6	7
7.	(4.3.01.03) Providing rainwater down pipe including placing in position and cost of all materials as per drawing and direction of the E-I-C. 50mm PVC pipe	m	62.000			
8.	(4.3.14) Back filling of abutment with 50:50 best quality picked jhama brick khoa & sand of min. FM 1.00 of 450mm width, in layers of 150mm thickness free from dust impurities etc. including compacting using steel or concrete drop hammer (durmus), watering & dressing and including supply & cost of all materials, carrying and labour, arranging and supplying of steel/concrete hammer and other tools required to work site etc. al complete as per direction of the E-I-C. Payment to be made for the compacted volume only for a compaction of 90% of the maximum dry density.	cum	94.500			
9.	(4.2.05.04) Reinforced Cement Concrete work in railing and rail post with stone chips (Preferably stone chips from Madhyapara, Dinajpur), sand (minimum FM 1.80) and cement having minimum 28 days ultimate cylinder crushing strength of 250kg/cm2 (suggested mix proportion 1:1.5:3) excluding cost of reinforcement and its fabrication but including cost of all other materials, shuttering, casting, curing for 28 days and all incidental charges, etc. complete in all respect as per design, drawing and direction of the E-I-C.	cum	3.336			
10.	(4.2.06.03) Supplying and fabrication of M.S High strength deformed bar/ Twisted bar reinforcement of required size and length for all types of RCC work including straightening the rod, removing ruts, cleaning, cutting, hooking, bending, binding with supply of 22 B.W.G. GI wire, placing in position, including lapping, spacing and securing them in position by concrete blocks (1:1), metal chairs, etc. complete including cost of all materials, labour, local handling, laboratory test, incidentals necessary to complete the work as per specifications, drawings and direction of the Engineer. Laboratory test for physical property, strength, elongation% & bend to be performed as per ASTM. (Measurement will be based on standard weight of 490 lbs./ft3 Chairs, laps and separators will not be measures for payment. The cost of these will be included in the unit rate) High strength deformed bar (grade 60, billet)	kg	28202.000			
Total Price of the Tender						

The total price of our Tender is:

Tk:

[Insert value in figures] [Insert value in Words]

_____

Signature of the Tenderer

This Bill of Quantity contains _____ correction(s) duly initialed and signed by the authorized person of the Tenderer.

Bill of Quantities (BOQ)

Name of Project :

Name of Work : Detail Estimate of 7.00m Height Abutment.(Base-8550x6600x1000,Stem-3400) (Typical)

Package Number :

SL. No.	(Item Code) Description of Item of Works	Unit	Quantity	Quoted Unit Rates (Tk)		Total Amount In Figure (in Tk)
				In Figure	In Words	
1	2	3	4	5	6	7
1.	(4.1.04) Earth work in excavation in foundation trenches in all sorts of rocky, gravelly, slushy or organic type, up to a depth of 2m to the lines, grades and elevation as shown on the drawing, removing boulders, logs and other objectionable materials, clearing all loose materials, disposing of all excavated materials to a safe distance designated by the E-I-C for an initial lead of 20m, and cut to a firm surface including bailing out water, removal of spoils to a safe distance, back filling of sites of trenches up to original level, shoring if necessary etc. all complete as per requirement and instruction of the E-I-C. Back-filled materials shall be compacted to a density comparable with the adjacent undisturbed material.	cum	443.520			
2.	(4.1.07) Pumping and bailing out water/de-watering of work site including supply, operation and maintenance of requisite number of water pumps. It should be carried out in such a manner as to preclude possibilities of the movement of water through or alongside any concrete being placed, etc. all complete as per direction of E-I-C.	LS	2.0			
3.	(4.1.09) Single layer brick flat soling with 1st class or picked jhama kiln burnt bricks in foundation, filling the interstices tightly with sand of minimum FM 0.50, watering, leveling, dressing, etc. all complete as per instruction of the E-I-C.	sqm	112.294			
4.	(4.1.10.01.1) Cement concrete work in foundation with Portland cement, sand (minimum FM 1.80) and 1st class/picked jhama brick chips 20mm down graded (LAA value not exceeding 40), including shuttering, mixing by concrete mixer machine, casting, laying compacting and curing for the requisite period breaking bricks into chips etc. all complete as per direction of the E-I-C. Cylinder crushing strength of concrete should not be less than 105kg/cm2 at 28 days of curing (Suggested Mix Proportion 1:3:6). Additional quantity of cement to be added if required to attain the strength at the contractors own cost.	cum	8.422			
5.	(4.1.10.02.3) Reinforced cement concrete work in well caps, pile caps, bearing sheets, abutment base, etc. with Portland cement, sand (minimum FM 1.80) and 20mm down well graded crushed stone chips (Preferably stone chips from Madhyapara, Dinajpur), (LAA value not exceeding 30), including shuttering, mixing by concrete mixer machine casting, laying, compacting and curing, for 28 days, breaking stone boulders into chips etc. all complete as per direction of the E-I-C but excluding cost of reinforcement. Cylinder crushing strength of concrete should not be less than 250kg/cm2 at 28 days of curing (suggested mix proportion 1:1.5:3). Additional quantity of cement to be added if required to attain the strength at the contractor's own cost.	cum	112.860			
6.	(4.2.01.03.1) Reinforced Cement Concrete work in diaphragm walls, wing walls, piers, columns, abutments of bridges and vertical members of box culverts with 20mm down graded stone chips (Preferably stone chips from Madhyapara, Dinajpur), (LAA value not exceeding 30), sand (minimum FM 1.80) and cement having minimum 28 days ultimate cylinder crushing strength of 250kg/cm2 (suggested mix proportion 1:1.5:3). excluding cost of reinforcement and its fabrication but including cost of all other materials, shuttering, casting, curing for 28 days and all incidental charges, etc. complete in all respect as per design, drawing and direction of the E-I-C Upto 5m	cum	126.736			

SL. No.	(Item Code) Description of Item of Works	Unit	Quantity	Quoted Unit Rates (Tk)		Total Amount In Figure (in Tk)
				In Figure	In Words	
1	2	3	4	5	6	7
7.	(4.3.01.03) Providing rainwater down pipe including placing in position and cost of all materials as per drawing and direction of the E-I-C. 50mm PVC pipe	m	62.000			
8.	(4.3.14) Back filling of abutment with 50:50 best quality picked jhama brick khoa & sand of min. FM 1.00 of 450mm width, in layers of 150mm thickness free from dust impurities etc. including compacting using steel or concrete drop hammer (durmus), watering & dressing and including supply & cost of all materials, carrying and labour, arranging and supplying of steel/concrete hammer and other tools required to work site etc. al complete as per direction of the E-I-C. Payment to be made for the compacted volume only for a compaction of 90% of the maximum dry density.	cum	89.640			
9.	(4.2.05.04) Reinforced Cement Concrete work in railing and rail post with stone chips (Preferably stone chips from Madhyapara, Dinajpur), sand (minimum FM 1.80) and cement having minimum 28 days ultimate cylinder crushing strength of 250kg/cm2 (suggested mix proportion 1:1.5:3) excluding cost of reinforcement and its fabrication but including cost of all other materials, shuttering, casting, curing for 28 days and all incidental charges, etc. complete in all respect as per design, drawing and direction of the E-I-C.	cum	2.976			
10.	(4.2.06.03) Supplying and fabrication of M.S High strength deformed bar/ Twisted bar reinforcement of required size and length for all types of RCC work including straightening the rod, removing ruts, cleaning, cutting, hooking, bending, binding with supply of 22 B.W.G. GI wire, placing in position, including lapping, spacing and securing them in position by concrete blocks (1:1), metal chairs, etc. complete including cost of all materials, labour, local handling, laboratory test, incidentals necessary to complete the work as per specifications, drawings and direction of the Engineer. Laboratory test for physical property, strength, elongation% & bend to be performed as per ASTM. (Measurement will be based on standard weight of 490 lbs./ft3 Chairs, laps and separators will not be measures for payment. The cost of these will be included in the unit rate) High strength deformed bar (grade 60, billet)	kg	28083.000			
Total Price of the Tender						

The total price of our Tender is:

Tk:

[Insert value in figures] [Insert value in Words]

_____

Signature of the Tenderer

This Bill of Quantity contains _____ correction(s) duly initialed and signed by the authorized person of the Tenderer.

Bill of Quantities (BOQ)

Name of Project :

Name of Work : Bearing Seat (350mmx500mmx65mm) (Typical)

Package Number :

SL. No.	(Item Code) Description of Item of Works	Unit	Quantity	Quoted Unit Rates (Tk)		Total Amount In Figure (in Tk)
				In Figure	In Words	
1	2	3	4	5	6	7
1.	(4.2.01.03.1) Reinforced Cement Concrete work in diaphragm walls, wing walls, piers, columns, abutments of bridges and vertical members of box culverts with 20mm down graded stone chips (Preferably stone chips from Madhyapara, Dinajpur), (LAA value not exceeding 30), sand (minimum FM 1.80) and cement having minimum 28 days ultimate cylinder crushing strength of 250kg/cm2 (suggested mix proportion 1:1.5:3). excluding cost of reinforcement and its fabrication but including cost of all other materials, shuttering, casting, curing for 28 days and all incidental charges, etc. complete in all respect as per design, drawing and direction of the E-I-C Upto 5m	cum	0.160			
2.	(4.3.06.01.1) Supplying, fitting and fixing steel laminated Electrometric/Neoprene bearings in exact positions as per drawing, specifications conforming to ASTM D4014 and direction of the E-I-C including cost of all materials, labour, carrying etc. complete (The set shall mean all 100% virgin chloroprene Neoprene rubber bearing consisting of one or more vulcanized electrometric material pads bonded to rolled mild steel metal plates to form a sandwich arrangement etc. to complete the support of a girder at each end). Laboratory test to be performed from BUET, Dhaka for compression set value maximum 35% after 22 hr. at 100°C conforming to ASTM D-395 method B and Elastomer hardness limits=60±5 duro conforming to ASTM D2240. This type of bearings will be used for bridge beyond 12.0m span. Bearing sizes are as follows (one set extra for laboratory test). Size = length x breadth Size : 500mmx350mmX65mm	each	5.000			
3.	(4.2.06.03) Supplying and fabrication of M.S High strength deformed bar/ Twisted bar reinforcement of required size and length for all types of RCC work including straightening the rod, removing ruts, cleaning, cutting, hooking, bending, binding with supply of 22 B.W.G. GI wire, placing in position, including lapping, spacing and securing them in position by concrete blocks (1:1), metal chairs, etc. complete including cost of all materials, labour, local handling, laboratory test, incidentals necessary to complete the work as per specifications, drawings and direction of the Engineer. Laboratory test for physical property, strength, elongation% & bend to be performed as per ASTM. (Measurement will be based on standard weight of 490 lbs./ft3 Chairs, laps and separators will not be measures for payment. The cost of these will be included in the unit rate) High strength deformed bar (grade 60, billet)	kg	67.610			
Total Price of the Tender						

The total price of our Tender is: Tk: [Insert value in figures] [Insert value in Words]

_____

Signature of the Tenderer

This Bill of Quantity contains _____ correction(s) duly initialed and signed by the authorized person of the Tenderer.

Bill of Quantities (BOQ)

Name of Project :

Name of Work : Bearing Seat (350mmx600mmx75mm) (Typical)

Package Number :

SL. No.	(Item Code) Description of Item of Works	Unit	Quantity	Quoted Unit Rates (Tk)		Total Amount In Figure (in Tk)
				In Figure	In Words	
1	2	3	4	5	6	7
1.	(4.2.01.03.1) Reinforced Cement Concrete work in diaphragm walls, wing walls, piers, columns, abutments of bridges and vertical members of box culverts with 20mm down graded stone chips (Preferably stone chips from Madhyapara, Dinajpur), (LAA value not exceeding 30), sand (minimum FM 1.80) and cement having minimum 28 days ultimate cylinder crushing strength of 250kg/cm2 (suggested mix proportion 1:1.5:3). excluding cost of reinforcement and its fabrication but including cost of all other materials, shuttering, casting, curing for 28 days and all incidental charges, etc. complete in all respect as per design, drawing and direction of the E-I-C Upto 5m	cum	0.296			
2.	(4.3.06.01.1) Supplying, fitting and fixing steel laminated Electrometric/Neoprene bearings in exact positions as per drawing, specifications conforming to ASTM D4014 and direction of the E-I-C including cost of all materials, labour, carrying etc. complete (The set shall mean all 100% virgin chloroprene Neoprene rubber bearing consisting of one or more vulcanized electrometric material pads bonded to rolled mild steel metal plates to form a sandwich arrangement etc. to complete the support of a girder at each end). Laboratory test to be performed from BUET, Dhaka for compression set value maximum 35% after 22 hr. at 100°C conforming to ASTM D-395 method B and Elastomer hardness limits=60±5 duro conforming to ASTM D2240. This type of bearings will be used for bridge beyond 12.0m span. Bearing sizes are as follows (one set extra for laboratory test). Size = length x breadth Size : 500mmx350mmX65mm	each	5.000			
3.	(4.2.06.03) Supplying and fabrication of M.S High strength deformed bar/ Twisted bar reinforcement of required size and length for all types of RCC work including straightening the rod, removing ruts, cleaning, cutting, hooking, bending, binding with supply of 22 B.W.G. GI wire, placing in position, including lapping, spacing and securing them in position by concrete blocks (1:1), metal chairs, etc. complete including cost of all materials, labour, local handling, laboratory test, incidentals necessary to complete the work as per specifications, drawings and direction of the Engineer. Laboratory test for physical property, strength, elongation% & bend to be performed as per ASTM. (Measurement will be based on standard weight of 490 lbs./ft3 Chairs, laps and separators will not be measures for payment. The cost of these will be included in the unit rate) High strength deformed bar (grade 60, billet)	kg	69.830			
Total Price of the Tender						

The total price of our Tender is: Tk: [Insert value in figures] [Insert value in Words]

_____

Signature of the Tenderer

This Bill of Quantity contains _____ correction(s) duly initialed and signed by the authorized person of the Tenderer.

Bill of Quantities (BOQ)

Name of Project :

Name of Work : Bearing Seat (450mmx650mmx90mm) (Typical)

Package Number :

SL. No.	(Item Code) Description of Item of Works	Unit	Quantity	Quoted Unit Rates (Tk)		Total Amount In Figure (in Tk)
				In Figure	In Words	
1	2	3	4	5	6	7
1.	(4.2.01.03.1) Reinforced Cement Concrete work in diaphragm walls, wing walls, piers, columns, abutments of bridges and vertical members of box culverts with 20mm down graded stone chips (Preferably stone chips from Madhyapara, Dinajpur), (LAA value not exceeding 30), sand (minimum FM 1.80) and cement having minimum 28 days ultimate cylinder crushing strength of 250kg/cm2 (suggested mix proportion 1:1.5:3). excluding cost of reinforcement and its fabrication but including cost of all other materials, shuttering, casting, curing for 28 days and all incidental charges, etc. complete in all respect as per design, drawing and direction of the E-I-C Upto 5m	cum	0.320			
2.	(4.3.06.01.1) Supplying, fitting and fixing steel laminated Electrometric/Neoprene bearings in exact positions as per drawing, specifications conforming to ASTM D4014 and direction of the E-I-C including cost of all materials, labour, carrying etc. complete (The set shall mean all 100% virgin chloroprene Neoprene rubber bearing consisting of one or more vulcanized electrometric material pads bonded to rolled mild steel metal plates to form a sandwich arrangement etc. to complete the support of a girder at each end). Laboratory test to be performed from BUET, Dhaka for compression set value maximum 35% after 22 hr. at 100°C conforming to ASTM D-395 method B and Elastomer hardness limits=60±5 duro conforming to ASTM D2240. This type of bearings will be used for bridge beyond 12.0m span. Bearing sizes are as follows (one set extra for laboratory test). Size = length x breadth Size : 500mmx350mmX65mm	each	5.000			
3.	(4.2.06.03) Supplying and fabrication of M.S High strength deformed bar/ Twisted bar reinforcement of required size and length for all types of RCC work including straightening the rod, removing ruts, cleaning, cutting, hooking, bending, binding with supply of 22 B.W.G. GI wire, placing in position, including lapping, spacing and securing them in position by concrete blocks (1:1), metal chairs, etc. complete including cost of all materials, labour, local handling, laboratory test, incidentals necessary to complete the work as per specifications, drawings and direction of the Engineer. Laboratory test for physical property, strength, elongation% & bend to be performed as per ASTM. (Measurement will be based on standard weight of 490 lbs./ft3 Chairs, laps and separators will not be measures for payment. The cost of these will be included in the unit rate) High strength deformed bar (grade 60, billet)	kg	155.240			
Total Price of the Tender						

The total price of our Tender is: Tk: [Insert value in figures] [Insert value in Words]

_____

Signature of the Tenderer

This Bill of Quantity contains _____ correction(s) duly initialed and signed by the authorized person of the Tenderer.

Bill of Quantities (BOQ)

Name of Project :

Name of Work : Detail Estimate of 24.00m Long, 600 mm Dia Pile (Typical)

Package Number :

SL. No.	(Item Code) Description of Item of Works	Unit	Quantity	Quoted Unit Rates (Tk)		Total Amount In Figure (in Tk)
				In Figure	In Words	
1	2	3	4	5	6	7
1.	(4.1.20.01.3) Boring and casting of RCC cast-in-situ piles up to the required depth and dia with temporary steel casing in all types of soils including staging, drilling, driving, bentonite circulation, placing of reinforcement and placing concrete by tremie casting method with concrete with Portland cement, sand (minimum FM 2.50) and 19mm down graded crushed stone chips (Preferably stone chips from Madhyapara, Dinajpur), (LAA value not exceeding 30) to result minimum ultimate cylinder crushing strength of 210kg/cm2 at 28 days (suggested mix proportion 1:1.5:3) with allowable slump of 100mm to 150mm including cost of all materials, labour, equipment and all incidental charges but excluding the cost of reinforcement and its fabrication, etc. all complete as per design, drawing, specifications and of the E-I-C. Additional quantity of cement be added, if required to attain the afore-mentioned concrete strength, by the contractor at his own costs. Boring 600mm dia	m	24.750			
2.	(4.1.20.02.3) Boring and casting of RCC cast-in-situ piles up to the required depth and dia with temporary steel casing in all types of soils including staging, drilling, driving, bentonite circulation, placing of reinforcement and placing concrete by tremie casting method with concrete with Portland cement, sand (minimum FM 2.50) and 19mm down graded crushed stone chips (Preferably stone chips from Madhyapara, Dinajpur), (LAA value not exceeding 30) to result minimum ultimate cylinder crushing strength of 210kg/cm2 at 28 days (suggested mix proportion 1:1.5:3) with allowable slump of 100mm to 150mm including cost of all materials, labour, equipment and all incidental charges but excluding the cost of reinforcement and its fabrication, etc. all complete as per design, drawing, specifications and of the E-I-C. Additional quantity of cement be added, if required to attain the afore-mentioned concrete strength, by the contractor at his own costs. Concreting 600mm dia	cum	7.004			
3.	(4.1.24) Labour for breaking head of cast-in-situ bored pile/pre-cast pile up to required length by any means and removing the dismantled materials, such as, concrete to a safe distance including scrapping and removing concrete from steel/MS rods, preparation and making of platform where necessary, carrying, all sorts of handling, stacking the same properly after clearing, leveling and dressing the site and clearing the river bed, etc. all complete as per direction of the E-I-C. (Measurement will be given for the actual pile head volume to be broken).	cum	0.212			
4.	(Above 200 ton) Static load test of cast-in-situ/pre-cast concrete piles by the application of super imposed loads/Surcharge Method on the pile head, preparation of all arrangements including staging, supplying loads with approved means and keeping the full load in place for 24 hours minimum, measuring of settlements by calibrated gauges and subsequent removal of loads, staging and other temporary works, etc. complete. The test load shall not be less than double the design load of the pile and the applied load shall not be removed before 24 hours or until the rate of settlement is less than 0.01 inch (0.25mm) per half an hour, or as decided by the Engineer as per approved method. (In case of precast piles this item will be provisional. Payment & execution will be made only as per direction of the engineer.) Applied Load : Above 200 Ton	each	1.000			

SL. No.	(Item Code) Description of Item of Works	Unit	Quantity	Quoted Unit Rates (Tk)		Total Amount In Figure (in Tk)
				In Figure	In Words	
1	2	3	4	5	6	7
5.	(4.1.27.03) Integrity test of cast-in-situ/pre-cast pile by placing a small accelerometer on the top of a pile while hitting the pile head with a small hammer. The shock wave traveling through the pile propagate with the velocity of sound in concrete which is 3000-3500 m/s approximately or as decided by the Engineer, as per approved method. (For upto 10 nos. pile of a single bridge)	set	1.000			
6.	(4.3.21.01) Welding at the splicing point of main reinforcement at 3 points (each point being 25mm in length) and each alternate contact point of spiral binder tie rod with the main vertical reinforcement of the bored piles using electrodes including the cost of all materials, labours, tools and equipment, the cost of power, etc. all complete as per drawings, specifications and directions of the Engineer. For spiral spot welding	each	1440.000			
7.	(4.3.21.02) Welding at the splicing point of main reinforcement at 3 points (each point being 25mm in length) and each alternate contact point of spiral binder tie rod with the main vertical reinforcement of the bored piles using electrodes including the cost of all materials, labours, tools and equipment, the cost of power, etc. all complete as per drawings, specifications and directions of the Engineer. Lapping welding of main reinforcement	each	24.000			
8.	(4.2.06.03) Supplying and fabrication of M.S High strength deformed bar/ Twisted bar reinforcement of required size and length for all types of RCC work including straightening the rod, removing ruts, cleaning, cutting, hooking, bending, binding with supply of 22 B.W.G. GI wire, placing in position, including lapping, spacing and securing them in position by concrete blocks (1:1), metal chairs, etc. complete including cost of all materials, labour, local handling, laboratory test, incidentals necessary to complete the work as per specifications, drawings and direction of the Engineer. Laboratory test for physical property, strength, elongation% & bend to be performed as per ASTM. (Measurement will be based on standard weight of 490 lbs./ft3 Chairs, laps and separators will not be measures for payment. The cost of these will be included in the unit rate) High strength deformed bar (grade 60, billet)	kg	995.840			
Total Price of the Tender						

The total price of our Tender is:

Tk:

[Insert value in figures] [Insert value in Words]

_____

Signature of the Tenderer

This Bill of Quantity contains _____ correction(s) duly initialed and signed by the authorized person of the Tenderer.

Bill of Quantities (BOQ)

Name of Project :

Name of Work : Detail Estimate of 30.00m Long, 700 mm Dia Pile (Typical)

Package Number :

SL. No.	(Item Code) Description of Item of Works	Unit	Quantity	Quoted Unit Rates (Tk)		Total Amount In Figure (in Tk)
				In Figure	In Words	
1	2	3	4	5	6	7
1.	(4.1.20.01.3) Boring and casting of RCC cast-in-situ piles up to the required depth and dia with temporary steel casing in all types of soils including staging, drilling, driving, bentonite circulation, placing of reinforcement and placing concrete by tremie casting method with concrete with Portland cement, sand (minimum FM 2.50) and 19mm down graded crushed stone chips (Preferably stone chips from Madhyapara, Dinajpur), (LAA value not exceeding 30) to result minimum ultimate cylinder crushing strength of 210kg/cm2 at 28 days (suggested mix proportion 1:1.5:3) with allowable slump of 100mm to 150mm including cost of all materials, labour, equipment and all incidental charges but excluding the cost of reinforcement and its fabrication, etc. all complete as per design, drawing, specifications and of the E-I-C. Additional quantity of cement be added, if required to attain the afore-mentioned concrete strength, by the contractor at his own costs. Boring 600mm dia	m	30.800			
2.	(4.1.20.02.3) Boring and casting of RCC cast-in-situ piles up to the required depth and dia with temporary steel casing in all types of soils including staging, drilling, driving, bentonite circulation, placing of reinforcement and placing concrete by tremie casting method with concrete with Portland cement, sand (minimum FM 2.50) and 19mm down graded crushed stone chips (Preferably stone chips from Madhyapara, Dinajpur), (LAA value not exceeding 30) to result minimum ultimate cylinder crushing strength of 210kg/cm2 at 28 days (suggested mix proportion 1:1.5:3) with allowable slump of 100mm to 150mm including cost of all materials, labour, equipment and all incidental charges but excluding the cost of reinforcement and its fabrication, etc. all complete as per design, drawing, specifications and of the E-I-C. Additional quantity of cement be added, if required to attain the afore-mentioned concrete strength, by the contractor at his own costs. Concreting 600mm dia	cum	11.858			
3.	(4.1.24) Labour for breaking head of cast-in-situ bored pile/pre-cast pile up to required length by any means and removing the dismantled materials, such as, concrete to a safe distance including scrapping and removing concrete from steel/MS rods, preparation and making of platform where necessary, carrying, all sorts of handling, stacking the same properly after clearing, leveling and dressing the site and clearing the river bed, etc. all complete as per direction of the E-I-C. (Measurement will be given for the actual pile head volume to be broken).	cum	0.308			
4.	(Above 300 ton) Static load test of cast-in-situ/pre-cast concrete piles by the application of super imposed loads/Surcharge Method on the pile head, preparation of all arrangements including staging, supplying loads with approved means and keeping the full load in place for 24 hours minimum, measuring of settlements by calibrated gauges and subsequent removal of loads, staging and other temporary works, etc. complete. The test load shall not be less than double the design load of the pile and the applied load shall not be removed before 24 hours or until the rate of settlement is less than 0.01 inch (0.25mm) per half an hour, or as decided by the Engineer as per approved method. (In case of precast piles this item will be provisional. Payment & execution will be made only as per direction of the engineer.) Applied Load : Above 300 Ton	each	1.000			

SL. No.	(Item Code) Description of Item of Works	Unit	Quantity	Quoted Unit Rates (Tk)		Total Amount In Figure (in Tk)
				In Figure	In Words	
1	2	3	4	5	6	7
5.	(4.1.27.03) Integrity test of cast-in-situ/pre-cast pile by placing a small accelerometer on the top of a pile while hitting the pile head with a small hammer. The shock wave traveling through the pile propagate with the velocity of sound in concrete which is 3000-3500 m/s approximately or as decided by the Engineer, as per approved method. (For upto 10 nos. pile of a single bridge)	set	1.000			
6.	(4.3.21.01) Welding at the splicing point of main reinforcement at 3 points (each point being 25mm in length) and each alternate contact point of spiral binder tie rod with the main vertical reinforcement of the bored piles using electrodes including the cost of all materials, labours, tools and equipment, the cost of power, etc. all complete as per drawings, specifications and directions of the Engineer. For spiral spot welding	each	2624.000			
7.	(4.3.21.02) Welding at the splicing point of main reinforcement at 3 points (each point being 25mm in length) and each alternate contact point of spiral binder tie rod with the main vertical reinforcement of the bored piles using electrodes including the cost of all materials, labours, tools and equipment, the cost of power, etc. all complete as per drawings, specifications and directions of the Engineer. Lapping welding of main reinforcement	each	32.000			
8.	(4.2.06.03) Supplying and fabrication of M.S High strength deformed bar/ Twisted bar reinforcement of required size and length for all types of RCC work including straightening the rod, removing ruts, cleaning, cutting, hooking, bending, binding with supply of 22 B.W.G. GI wire, placing in position, including lapping, spacing and securing them in position by concrete blocks (1:1), metal chairs, etc. complete including cost of all materials, labour, local handling, laboratory test, incidentals necessary to complete the work as per specifications, drawings and direction of the Engineer. Laboratory test for physical property, strength, elongation% & bend to be performed as per ASTM. (Measurement will be based on standard weight of 490 lbs./ft3 Chairs, laps and separators will not be measures for payment. The cost of these will be included in the unit rate) High strength deformed bar (grade 60, billet)	kg	2028.410			
Total Price of the Tender						

The total price of our Tender is:

Tk:

[Insert value in figures] [Insert value in Words]

_____

Signature of the Tenderer

This Bill of Quantity contains _____ correction(s) duly initialed and signed by the authorized person of the Tenderer.