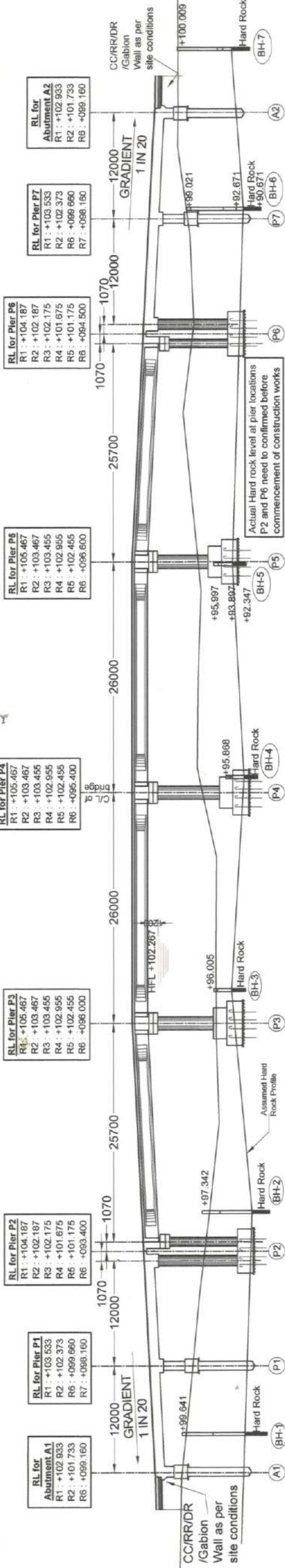


KEY PLAN:

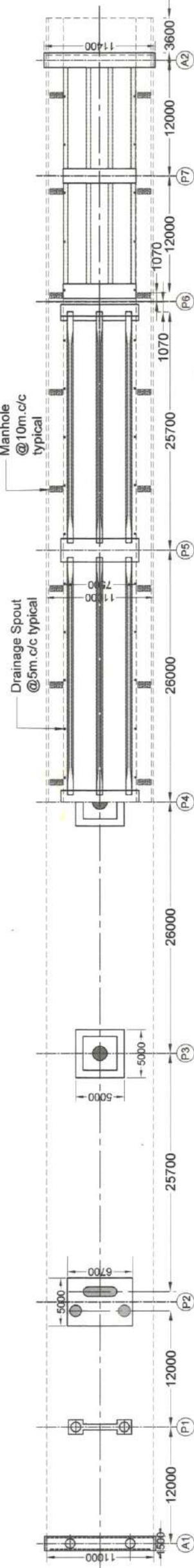
ALATHUR SIDE

VENGANNIYUR SIDE



REDUCED LEVEL	CHAINAGE	0/140.000	0/150.000	0/160.000	0/170.000	0/180.000	0/190.000	0/200.000	0/210.000	0/217.286	0/220.000	0/230.000	0/240.000	0/250.000	0/260.000	0/280.000	0/290.000	0/300.000

ELEVATION OF THE BRIDGE (SCALE 1:500)



HALF PLAN AT FOUNDATION LEVEL AND HALF PLAN AT PIER CAP LEVEL (SCALE 1:500)

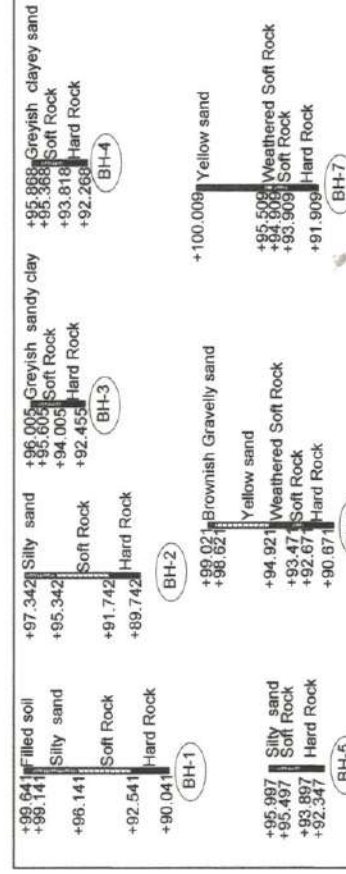
ESTIMATED QUANTITIES OF MATERIALS FOR SUPERSTRUCTURE PER SPAN (26m)

ITEM	PSC Girders	Slab & Diaphragm
Prestressing steel	2350kg	-
Reinforcing steel	12500kg	18500kg
Structural concrete	60 m3	95 m3

*Estimated quantity does not include handrails, footpath slabs, kerbs and other non-structural members
*Above estimated quantities are for reference & should be verified by field engineer before further actions

If Hard rock level during execution has a variation more than 500mm, the same may be communicated to this office to revise the design

R6 Level given is Tentative. As per Hard rock conditions, R6 can be raised but should not be lowered below LWL



DETAILS OF PRESTRESSED I-GIRDERS (26M SPAN)

BORE HOLE DETAILS (SCALE 1:400)

Table-4: DESIGN PARAMETERS FOR FOUNDATION

Abutment/Foundation Pier No.	Size of Foundation OR Dia. of Pile (mm)	Max. Base pressure (kN/m²) OR Working Pile Load (kN)	Horizontal load on Pile (kN)	Embedment/Socket depth into hard rock/strata (mm)	Estimated length of MS liner/casing pipe for pile (mm)
A1 & A2	Pile 1000Ø	1800	150	1200	2500
P1 & P7	Pile 1000Ø	1800	50	600	2500
P2 & P6	Open 5000x6700	600	-	200	-
P3, P4, P5	Open 5000x5000	600	-	200	-

Table-2: HYDRAULIC PARAMETERS

Design MFL/HFL	+102.267
Design OFL	-
Design LWL	-
Design Scour Level at Pier points (Lowest)	+94.921
Design Scour Level at Abutment points (Lowest)	+95.509
Design linear ventway	146m
Design discharge at MFL	2604 m³/s

Table-1: GEOMETRICAL FEATURES

Span arrangement	26.000m x 4 & 12.000m x 4
Overall length	156.000 m
Overall width	11.000 m
Carriageway width	7.500 m
Footpath	1.500 m on both sides
Bridge type	PSC Girder & slab integrated with Substructures

NOTES:

- GENERAL: Dimensions are in millimeters and all levels are in meters unless otherwise mentioned.
- Only written dimensions are to be followed. No drawing shall be scaled.

REFERENCE LETTERS

No	Letter No.	Date	Description
1	CPM/2023/02/2023-AB-08	20/01/2023	Investigation Details

REFERENCE DRAWINGS

No	Drawing/Sheet No.	Date	Drawing Title
1	-	-	-
2	-	-	-
3	-	-	-
4	-	-	-
5	-	-	-

REVISIONS

No	Revised By	Checked By	Approved By	Date	Description
1	-	-	-	-	-

NAME OF ROAD: VENGANNUR-ALATHUR

NAME OF CROSSING: GAYATHRI RIVER

NAME OF BRIDGE: VENGANNIYUR BRIDGE

DESIGNER: PMD - NH

NAME OF DIVISION: PALAKKAD

DESIGNED BY: NIMA K V

DESIGNED BY: 3RD GRADE DRAFTSMAN

DESIGNED BY: TUPIN S

DESIGNED BY: ASSISTANT BRIDGE ENGINEER

DESIGNED BY: AGUN K V

DESIGNED BY: BRIDGE ENGINEER

DESIGNED BY: ANITHAKUMARI K

DESIGNED BY: SENIOR BRIDGE ENGINEER

DESIGNED BY: SAJU S

DESIGNED BY: DIRECTOR (B&C)

DESIGNED BY: APPROVED BY

DESIGNED BY: 12/07/2023

DESIGNED BY: Bridges Design Unit

DESIGNED BY: CHIEF DESIGN OFFICE

DESIGNED BY: PUBLIC WORKS DEPARTMENT

DESIGNED BY: KERALA PUBLIC WORKS DEPARTMENT

DESIGNED BY: PUBLIC OFFICE COMPOUND ROAD P.O. BOX 100

DESIGNED BY: TEL: 0471 2222222

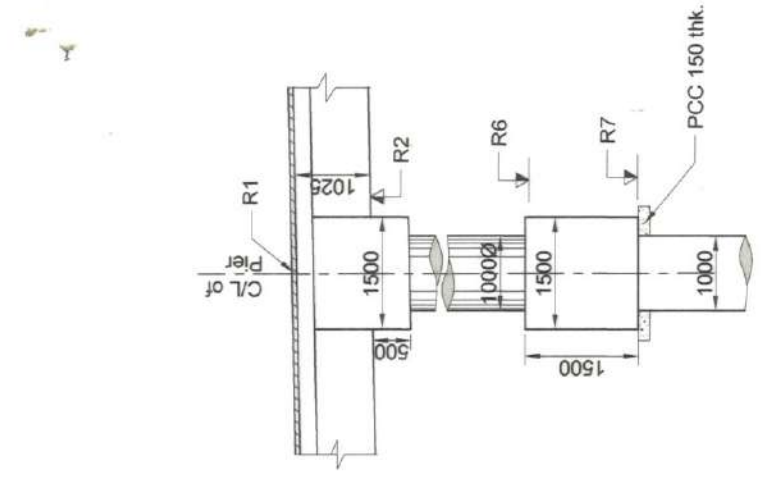
DESIGNED BY: Website: keralapwd.gov.in

DESIGNED BY: Email: bducco.pwd@gmail.com

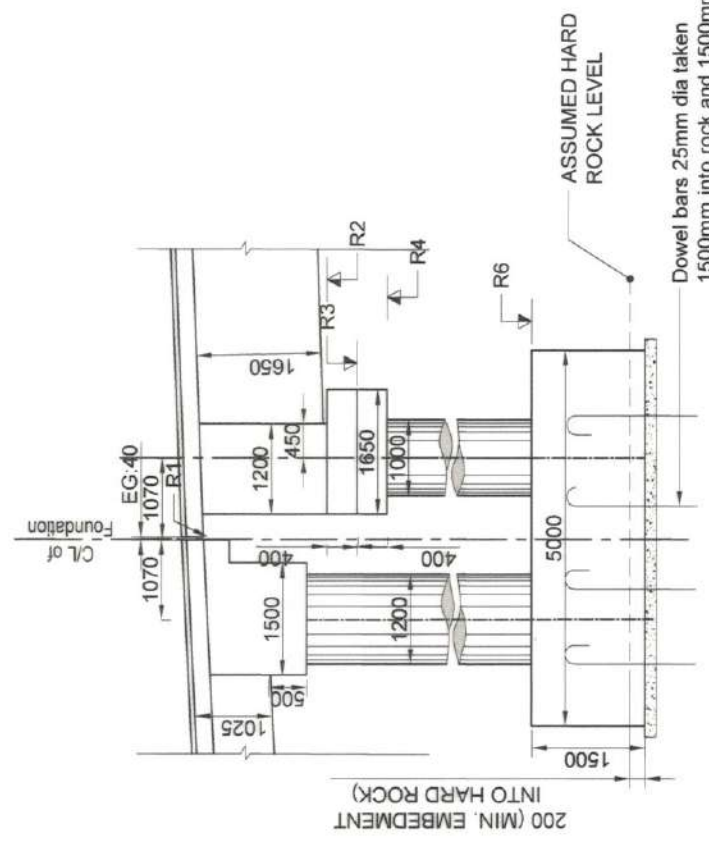
DESIGNED BY: DRAWING TITLE: GENERAL DESIGN DRAWING

DESIGNED BY: SHEET NO: 2a/5

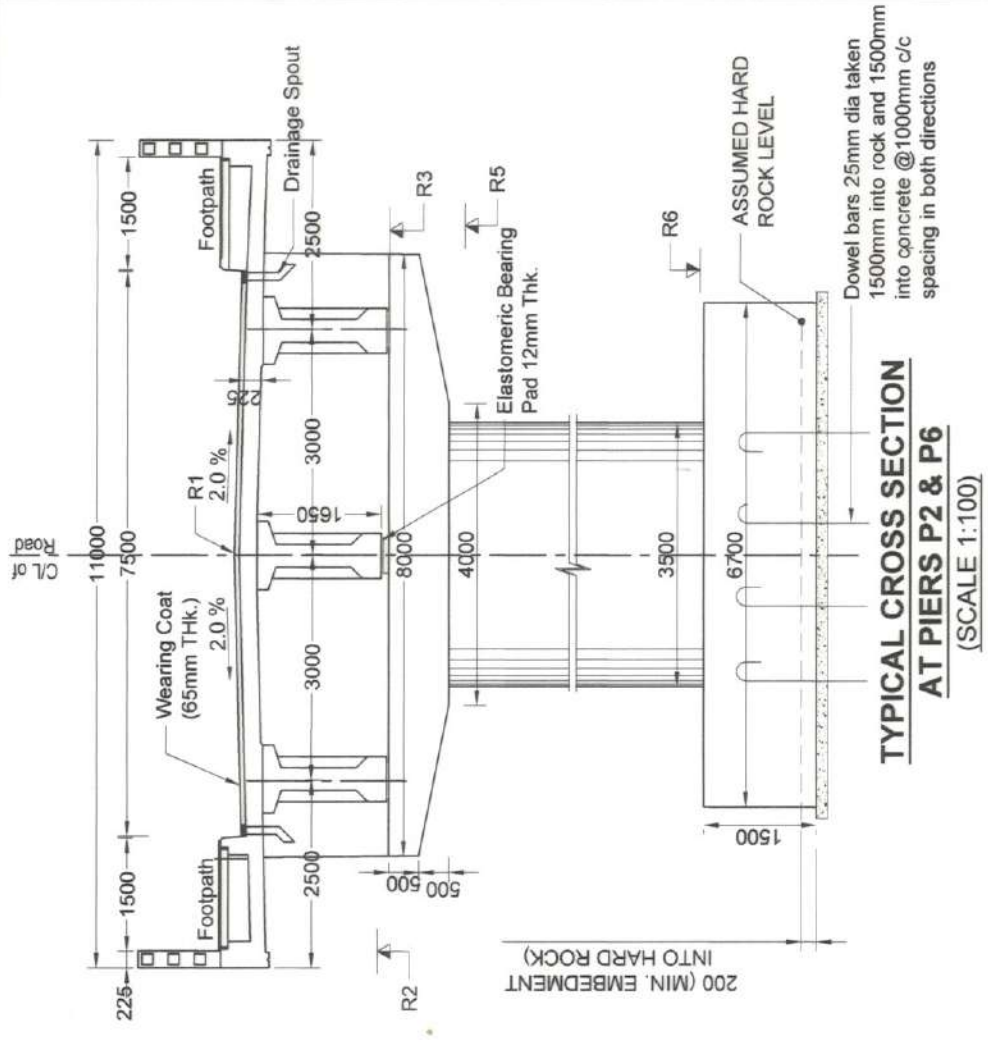
DESIGNED BY: CDO/BDU/32/22



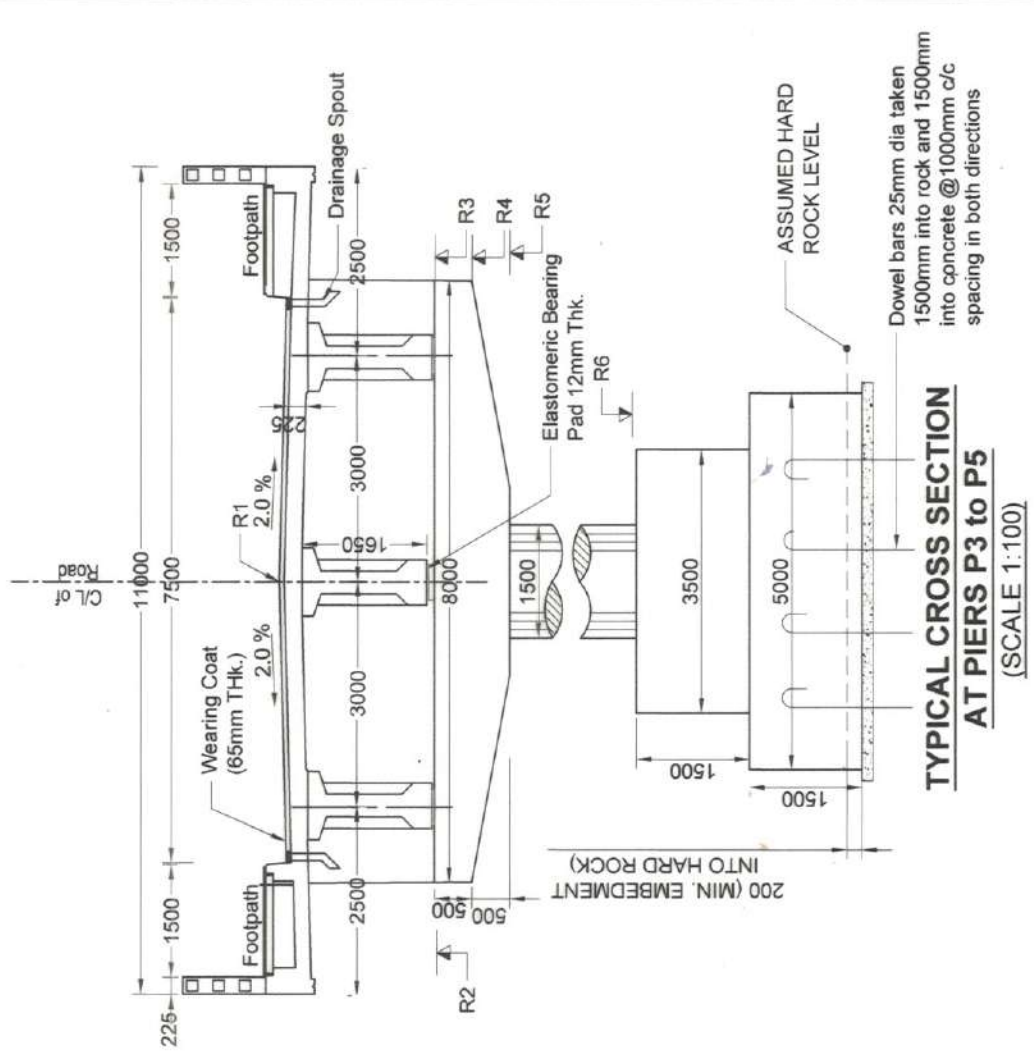
TYPE: SECTIONAL ELEVATION
OF PIERS P1 & P7
(SCALE 1:100)



**SECTIONAL ELEVATION AT
PIERS P2 & P6
(SCALE 1:100)**



1500mm into rock and 1500mm into concrete @1000mm c/c spacing in both directions



1500mm into rock and 1500mm into concrete @ 1000mm c/c spacing in both directions

KEY PLAN:									
NOTES: 1. GENERAL All dimensions are in millimeters and all levels are in meters unless otherwise stated. 2. Only written dimensions are to be followed. No drawing shall be scaled.									
REFERENCE LETTERS									
No	Letter No.	Date	Investigation Details						
1	CPW62/18/2022 AB3 BR	29/01/2022							
REFERENCE DRAWINGS									
No	Drawings/Sheet No.	Date	Drawing Title						
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
REVISIONS									
Rev No	Design/Check/Revised	Recommended	Approved	Date	Description				
R1									
R2									
R3									
R4									
VENGANNUR-ALATHUR									
GAYATHRI RIVER									
VENGANNIYUR BRIDGE									
DRAWINGS ISSUED FOR ☐ ROAD PREPARATION ☐ ADMIN/FINANCIAL SANCTION ☐ TECHNICAL SANCTION ☐ CONSTRUCTION		EXECUTION WORK PWD - NH NAME OF PARKING PALAKKAD							
ROAD CATEGORY ☐ NATIONAL HIGHWAY ☐ STATE HIGHWAY ☐ MAJOR DISTRICT ROAD ☐ DISTRICT ROAD ☐ CULVERT ☐ MINOR BRIDGE ☐ MAJOR BRIDGE ☐ FLYOVER BRIDGE ☐ UNDER PASS ☐ ROAD OVER BRIDGE ☐ ROAD UNDER BRIDGE ☐ CAUSEWAY		DRAWN BY NIMA K V 3RD GRADE DRAFTSMAN CHECKED BY RUPIN S ASSISTANT BRIDGE ENGINEER CROCKERY							
CONSTRUCTION NATURE ☐ NEW ☒ RECONSTRUCTION ☐ REHABILITATION		REVIEWED BY ANITHAKUMARI K SENIOR BRIDGE ENGINEER RECOMMENDED BY SAU S DIRECTOR (MOS)							
DATE 12/07/2023		APPROVED BY ANITHAKUMARI K R CHIEF ENGINEER DESIGN							
Bridges Design Unit CHIEF DESIGN OFFICE DESIGN WING, KERALA PUBLIC WORKS DEPARTMENT PUBLIC OFFICE COMPOUND, MUSEUM P.O. THIRUVANANTHAPURAM, KERALA PIN 695 033 TEL: 0477 2325255 Fax: 0477 2325255 Email: boudo.pwd@gmail.com									
DRAWING TITLE GENERAL DESIGN DRAWING DIMENSION DETAILS - 1									
DRAWING NO. CDO/BDU/32/22									

KEY PLAN:

NOTES:

1. **GENERAL**
1. All dimensions are in millimeters and all levels are in meters unless otherwise mentioned.
2. Only written dimensions are to be followed. No drawing shall be scaled.

REFERENCE LETTERS			
No	Letter No.	Date	Description
1	CEPHO/2185/2022-AB3-GR	29/01/2022	Investigation Details
2			

[illegible]

No.	Drawing/Sheet No.	Date	Drawing Title
REFERENCE DRAWINGS			

[illegible]

NAME OF ROAD	ROAD NO.
VENGANNUR-ALATHUR	
NAME OF CROSSING	ROAD CHARGE AT CL OF CROSSING
GAYATHRI RIVER	Ch: 217.286

NAME OF BRIDGE	BRIDGE No.
VENGANNIYUR BRIDGE	

☒ DAPS PREPARATION ☐ ADMIN./FINANCIAL SANCTION ☐ TECHNICAL SANCTION ☐ CONSTRUCTION	EXECUTION WORK PWD - NH
	NAME OF INCHARGE PALAKAID

ROAD CATEGORY ☐ NATIONAL HIGHWAY ☒ NATIONAL HIGHWAY

DRAWN BY: NIMA K V 3RD GRADE DRAFTSMAN

DESIGNED BY: 

☐ STATE HIGHWAY
☐ MAJOR DISTRICT ROAD
☒ OTHER DISTRICT ROAD

☐ VILLAGE ROAD BRIDGE CATEGORY: ☐ CULVERT	CHECKED:  ASSISTANT BRIDGE ENGINEER
---	--

☐ MINOR BRIDGE
☒ MAJOR BRIDGE
☐ FLYOVER BRIDGE

☐ UNDER PASS
☐ ROAD OVER BRIDGE
☐ ROAD UNDER BRIDGE

☐ CAUSEWAY CONSTRUCTION FEATURE	RECOMMENDATION 	SENIOR BRIDGE ENGINEER
---	--	------------------------

☒ RECONSTRUCTION
☐ REHABILITATION

DATE: 12/07/2023

Bridges Design Unit

CHIEF DESIGN OFFICE
DESIGN WING, KERALA PUBLIC WORKS DEPARTMENT
PUBLIC OFFICE COMPOUND, MUSEUM P.O.
THIRUVANANTHAPURAM, KERALA, PIN- 566 033

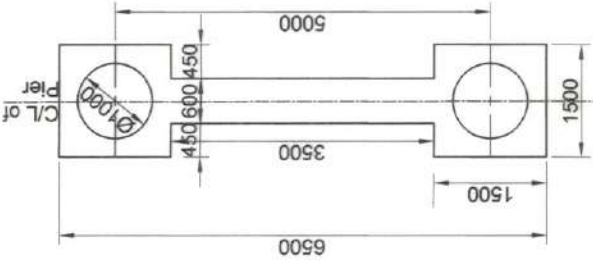
Tel: 04712322029
 Fax:
 Website: kerasipwd.gov.in
 Email: btbucio.pwc@gmail.com



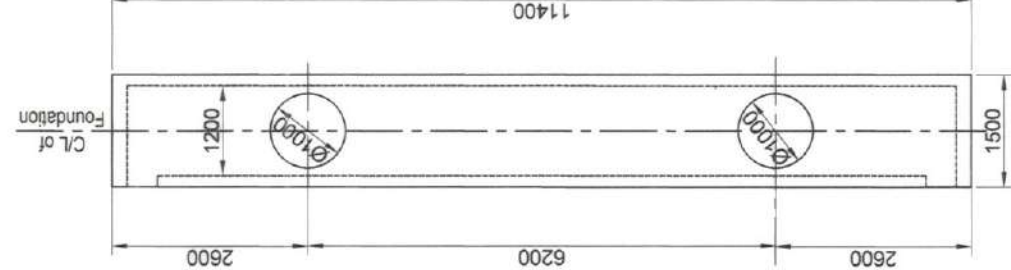
DRAWING TITLE
 DRAWING SCALE
 1:500, 1:100, 1:50

GENERAL DESIGN DRAWING

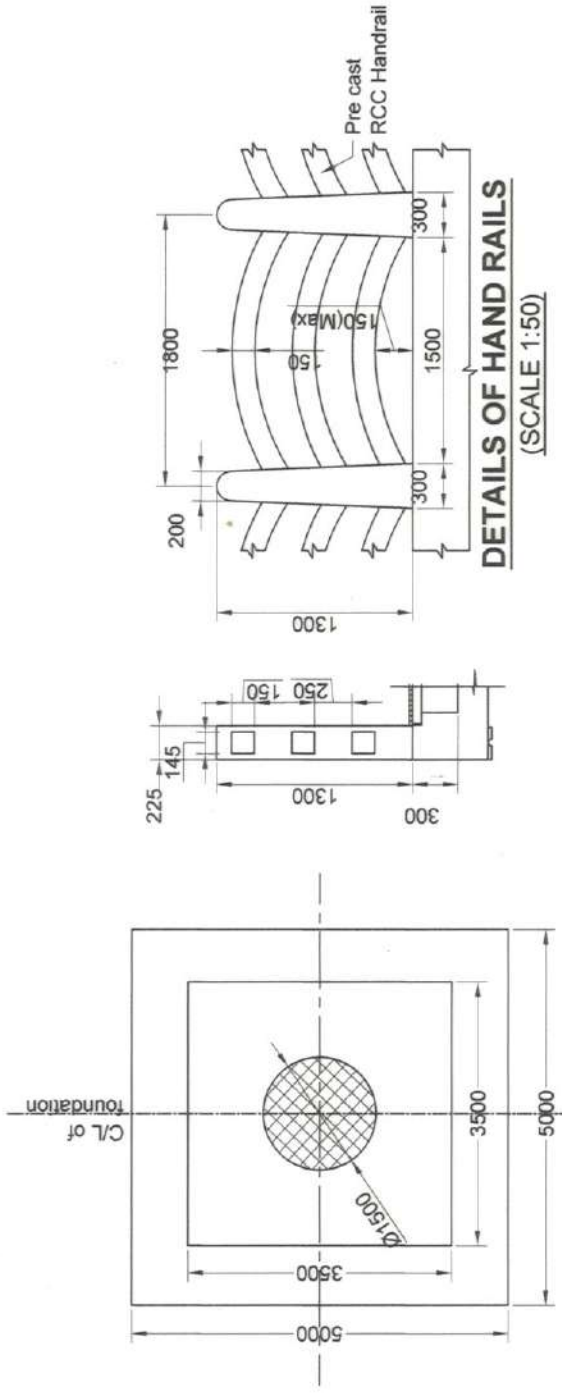
DRAWING No.	
REVISION No.	R0
SHEET No.	1



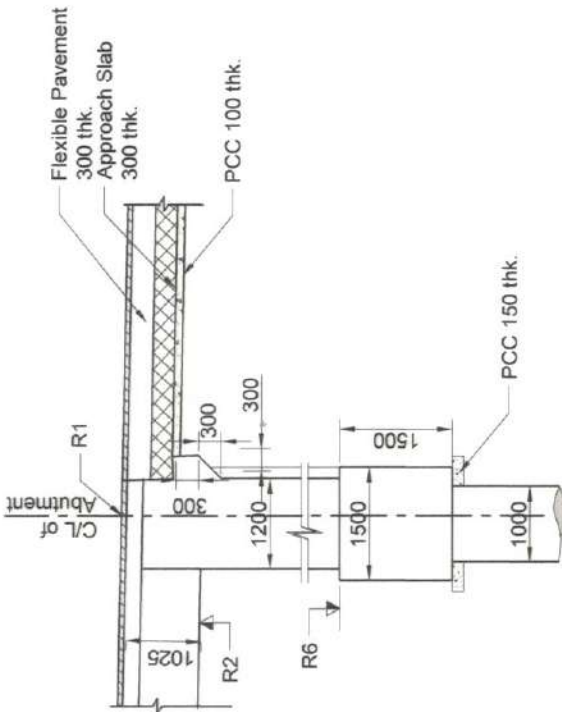
FOUNDATION PLAN FOR
PIERS P1 & P7
(SCALE 1:100)



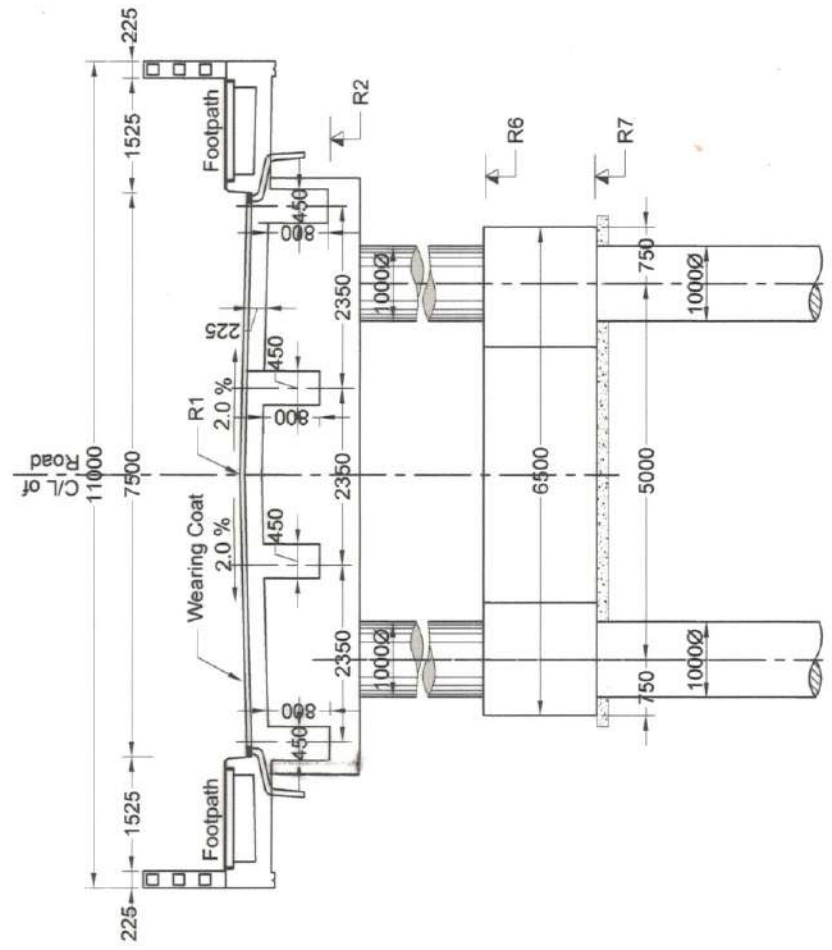
FOUNDATION PLAN FOR
ABUTMENTS A1 & A2
(SCALE 1:100)



**FOUNDATION PLAN AT
PIER P3 TO P5
(SCALE 1:100)**



**SECTIONAL ELEVATION
OF ABUTMENTS A1 & A2**
(SCALE 1:100)



TYPICAL CROSS SECTION AT PIERS P1 & P7
(SCALE 1:100)

Sl. No.	Component	Grade of concrete	Max. W/C ratio	Min. Cement content (kg/cum)	Min. Clear cover (mm)	Exposure condition
1	Superstructure					
a)	PSC Girders , Pedestals	M45	0.45	340	As per Dwg.	Moderate
b)	Deck Slab diaphragm & Handrails	M40	0.45	340	As per Dwg.	Moderate
2	Substructure					
a)	Piers, Wing wall, Abutments & Caps	M35	0.45	340	50	Moderate
b)	Open foundation (First Step below Abutment/Pier)	M30	0.45	360	75	Severe
c)	Open foundation (Remaining steps)	M25	0.45	360	75	Severe
d)	Pile Cap	M35	0.45	360	75	Severe
e)	Pile	M35	0.40	400	75	Severe
f)	Approach Slab, Retaining Wall	M30	0.45	340	50 / 75	Moderate

NOTE:- Standard deviation for concrete mix design shall be '6' as per IRC 112

NOTE:- Grade of levelling course shall be same as that of the footing just above the levelling course.