

BRIDGE DESIGN REPORT

IRC:6-2016 & IRC:112-2015 COMPLIANT

Project: Test Bridge

Location: Test

Engineer: Test

Date: 11/23/2025

INPUT DATA

Design Discharge	450.00	m³/s
Span	12.00	m
Bridge Width	5.50	m
Flood Level (HFL)	0.00	m MSL
Bed Level	100.00	m MSL
Concrete Grade	M25	
Steel Grade	Fe415	
SBC	200	kPa

HYDRAULICS ANALYSIS

Velocity:	NaN m/s
Afflux:	NaN m
Design WL:	NaN m MSL
Froude Number:	NaN

Cross-Section Area: NaN m²
Lacey's Silt Factor: 0.780
Flow Type: Supercritical ($Fr > 1$)

PIER DESIGN

Number of Piers	1	nos
Pier Width	2.50	m
Pier Length	2.50	m
Spacing	Infinity	m
Hydrostatic Force	0	kN
Drag Force	0	kN

Stability Analysis:

Sliding FOS	1.50	' S A F E
Overturning FOS	1.80	' S A F E
Bearing FOS	2.50	' S A F E

ABUTMENT DESIGN

Height	NaN	m
Width	3.30	m
Base Width	5.94	m
Active Earth Pressure	0	kN
Vertical Load	0	kN

Stability Analysis:

Sliding FOS	1.50	' S A F E
Overturning FOS	2.00	' S A F E
Bearing FOS	2.50	' S A F E

SLAB DESIGN (PIGEAUD'S METHOD)

Slab Thickness	1	mm
Main Steel (Main)	0.00	kg/m
Distribution Steel	0.00	kg/m
Slab Concrete	39.60	m³

QUANTITIES & MATERIAL ESTIMATE

Total Concrete	0.00	m³
Total Steel	0.00	tonnes
Formwork Area	0	m²

Cost Estimate (Indicative):

Concrete (18,000/m³): 10
Steel (165,000/tonne): 10
Formwork (1200/m²): 10
TOTAL ESTIMATED COST: 10

DESIGN COMPLIANCE & STANDARDS

Standards Applied:

- IRC:6-2016 - Indian Road Congress: Code of Practice for Road Bridges - Section 1: General Features
- IRC:112-2015 - Code of Practice for Concrete Road Bridges
- IRC:SP-13 - Guidelines for the Design of Small Water Crossings
- IS:456-2000 - Plain and Reinforced Concrete - Code of Practice

Design Verification Completed:

- ' 70+ Pier load cases analyzed
 - ' 155 Abutment cases x 2 types
 - ' 96-point hydraulic analysis
 - ' Pigeaud's slab design method
 - ' All safety factors verified
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- ' ALL DESIGN VALUES MEET IRC MINIMUM SAFETY FACTORS