

# BRIDGE DESIGN REPORT

IRC:6-2016 & IRC:112-2015

Project: Bridge Design - Span 30m

Span: 30m | Width: 8.4m | Discharge: 900m<sup>3</sup>/s

## HYDRAULIC DESIGN

Velocity	8.25	m/s
Afflux	0.892	m
Design Water Level	101.49	m
Froude Number	1.297	-
Cross-Sectional Area	109.03	m <sup>2</sup>

# PIER DESIGN

Width	1.20	m
Length	2.50	m
Number	3	nos
Spacing	13.20	m
Sliding FOS	1.50	' SAFE
Overturning FOS	1.80	' SAFE
Bearing FOS	2.50	' SAFE

# ABUTMENT DESIGN

Height	102.99	m
Width	4.50	m
Base Width	8.10	m
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

Thickness	1500	mm
Design Load	159.84	kN/m <sup>2</sup>
Longitudinal Moment	6473.7	kN.m/m
Transverse Moment	2877.2	kN.m/m
Shear Force	2397.7	kN/m
Main Steel Area	TBD	mm <sup>2</sup> /m
Distribution Area	262	mm <sup>2</sup> /m

## MATERIAL QUANTITIES

Concrete (Total)	3624.11	m <sup>3</sup>
Steel (Total)	0.00	tonnes
Formwork	756.00	m <sup>2</sup>
Slab Concrete	378.00	m <sup>3</sup>
Pier Concrete	56.25	m <sup>3</sup>
Abutment Concrete	3189.86	m <sup>3</sup>