

BRIDGE DESIGN REPORT

IRC:6-2016 & IRC:112-2015

Project: Bridge Design - Span 30m

Span: 30m | Width: 8.4m | Discharge: 900m³/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 ² |

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 ² |
| 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 ² /m |
| Distribution Area | 262 | mm ² /m |

MATERIAL QUANTITIES

| | | |
|-------------------|---------|----------------|
| Concrete (Total) | 3624.11 | m ³ |
| Steel (Total) | 0.00 | tonnes |
| Formwork | 756.00 | m ² |
| Slab Concrete | 378.00 | m ³ |
| Pier Concrete | 56.25 | m ³ |
| Abutment Concrete | 3189.86 | m ³ |