

“COMPARATIVE STUDY AND ANALYSIS OF BOX BRIDGE”

Er. Nirak Kumar Shah*; Prof. Dr. Govind Prasad Lamichhane**

*Graduate School of Engineering,
Mid-West University,
Birendranagar, Surkhet, NEPAL
Email id: 2074nirakshah@gmail.com

**School of Engineering,
Pokhara University,
Kaski, NEPAL

DOI: 10.5958/2278-4853.2023.00036.8

ABSTRACT

This study deals with the computational analysis of Box Bridge. It introduces a conventional concept of multispan bridge where the multispan span deck is supported by Pier/shearwall and mat beaneath along the whole longitudinal section of span. It includes comparative studies among two types of box bridges. To observe structural response parameter at different location of bridge intersecting deck, slab, pier and optimum & more efficient type of bridge between two types of Box Bridge. The geometries bridges are same besides of some necessary structural components. For the comparison of analysis of these bridge models structural symmetries are considered. The structural elements are required to be designed to withstand maximum bending moment and shear force, static and vehicle loads as per IRC are taken into consideration for the analysis of these bridges. Analysis has been performed with the help of SAP2000v14 software. Deflection pattern of deck slab, pier and shearwall are taken as study parameter of this research.

KEYWORDS: Pier, Shear Wall, Box Bridge, SAP2000v14.

REFERENCES

1. I. Journal, C. Civil, and S. Engineering, “Design coefficients for single and two cell box culvert,” no. July, 2017, doi: 10.6088/ijcser.201203013044.
2. A. Tiwari and S. S. Bhadouria, “Comparative Cost Evaluation of RCC Box and Solid Slab,” IJSRD-International J. Sci. Res. Dev., vol. 5, no. 08, pp. 2321–0613, 2017.
3. P. leela Krishna and K. rajasekhar, “Analysis and Design of RCC Box Culvert,” Int. J. Sci. Technol. Eng., vol. 4, no. 10, pp. 141–156, 2014.
4. M. B. Khan and M. P. Alam, “Hydraulic Design of Box Culvert for,” no. 9, pp. 31–40, 2015.
5. M. Afzal and H. Sharif, “Analysis and Design of Railway Box Bridge and Comparison Between Staad Software and Mdm Results,” Int. J. Sci. Dev. Res., vol. 1, no. 8, pp. 1–8, 2016.

6. K. S. Kattimani and R. Shreedhar, "Parametric Studies of Box Culverts," vol. 1, no. 1, pp. 58–65, 2013.
7. A. Galatage, A. D. Patil, and A. A. Galatage, "Analysis of Box Culvert under Cushion Loading," Int. Adv. Res. J. Sci. Eng. Technol., vol. 3, no. September, 2016, doi: 10.17148/IARJSET.2016.3631.