

CHAPTER 5

CONCLUSION AND FUTURE WORK

5.1 Conclusion

The study carried out under this assignment is interesting as it was done using SAP 2000 software. The results indicate that the soil pressures underneath the foundation vary with the spans in a quite different manner and the method of analysis. Under rigid analysis with small spans the pressure distribution takes higher values in the middle section of the beam compared to that of elastic analysis but at the edges it takes smaller values in comparison to that of elastic analysis. However it is necessary to pay special attention to edges of the strip as it develops high pressure under elastic analysis.

It is also noted that in elastic analysis in larger spans, pressure distribution varies along the beam following a harmonic pattern, indicating a higher pressure at the point of loading. At the edges also the pressure variation is very high exceeding the bearing capacity of the soil. Since the elastic analysis provides a comprehensive result for larger spans it is recommended to follow the elastic analysis in designing foundation for larger spans.

It is observed that in this research project, considerable variations of bending moment and shear forces are developed in both cases, elastic and rigid analysis for different spans of the beam.

5.2 Future Work

When designing the structural elements of foundations, it is designer's responsibility to obtain correct soil pressure, bending moment and shear force that leads to design a structurally safe and economically viable strip beam. Designer also should take care when designing the column beam connection and the edges of the foundation beams where high bearing pressure is developed; therefore, it is also necessary to provide accurate reinforcement and correct structural steel detailing at these locations.

Analysis shows that in each case of rigid and elastic cases bending moment and shear force along the strip beam give separate answers depending on the location and span of the beam; therefore, structural engineer should determine the accurate values of bending moment and shear force when designing the strip foundation inverted T type beams.



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