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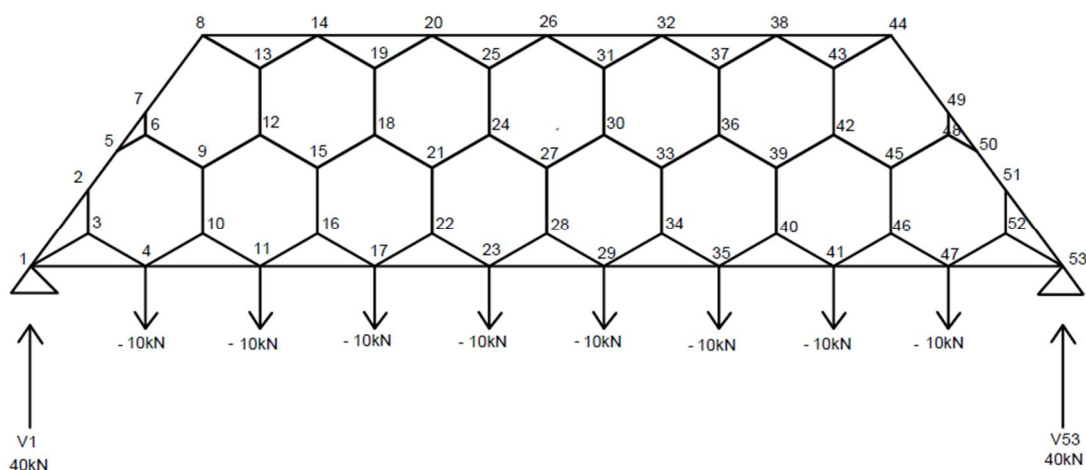


Fig 2: Truss members with load

Analyzing of perfect truss consists of finding the reactions at the support and finding the internal forces in the members of the truss.

A. Reactions of Supports

The reactions at the supports determine the load condition of the applied force and system of equilibrium by equilibrium equations. The equilibrium equations are a summation of horizontal and vertical forces are equal to zero.

$$\Sigma H = 0; \Sigma V = 0; \Sigma M = 0.$$

B. Internal Forces of Members

The internal forces in the members are determined by the joints of the truss is in equilibrium. The internal forces are found by the analytical or graphical method. In this project, the analytical method is used to find internal forces by the members.

By using the analytical method, the calculation of internal forces is found by method of joints and method of sections.

For this hexagonal structured steel frame, the method of joints is used to calculate internal forces of the members. The three dimensional hexagonal structured steel framed design is shown below.

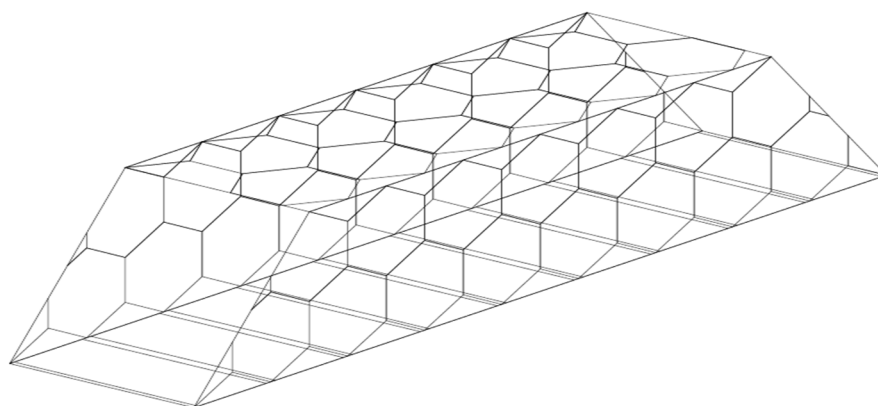


Fig 3: Three dimensional hexagonal structured frame.

III. CONCLUSION

The major purpose of this project is to understand the design principles underlying the creation of hexagonal structures for a wide range of practical applications. We can analyze and benefit through this highly efficient structural model in future. Collecting data, analyzing survey forms and tabulating data is used to apply statistical principles in calculating. An interesting future study might involve testing and analyzing the hexagonal structured design and stimulate the usage of ordinary designs.



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