REVIEW ANALYSIS AND CONSTRUCTION OF LOAD OF FRAME STRUCTURE

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ABSTRACT

There are numerous developing countries and for them construction plays a vital part. There are specific design canons for structures for all countries. In order to lengthen the strength of RCC structures shear walls are used. They're constructed at each position of the structure to form a box structure. On external walls shear walls of equal length are placed symmetrically on contrary sides. The centre of graveness and centre of severity coincide in symmetrical structures so that the shear walls are placed symmetrically over the external edges or inner edges. To determine the gets of structures, structural analysis is the branch which predicts the responses of different structural factors due to effect of loads. There's software to do the major analysis known ase-tabs(Extended Three Dimensional Analysis of Building Systems) by which static, dynamic, direct and nonlinear etc analysis is done. To design multistoried structure in a methodical process is the main purpose of this software. From this we will do the analysis manually & using ETABS, & we will see the results.

Keyword : - *Construction and analysis , Building Response, Building analysis etc….*

1. INTRODUCTION:

Seismic events cause major detriment to structures so acceptable stiffness is to be given for resistance. So special designs are made for these structures in order to reduce the impact of seismic events. In the request ETABS is generally used design software. It's used by numerous companies for their design design purpose. So in this paper we will deal with the analysis results attained from a structure by using ETABS software.

It has a specialty to reduce the analysis time of heavy structures. thus it saves time, gives delicacy as compared to manually. So in this paper we will see that homemade result and the results shown by ETABS are roughly same.

2. LITERATURE REVIEW

In past many have done research work related to ETABS for analyzing and designing of heavy structures. So further here we are analyzing the structure and comparing the results manually and by obtaining through ETABS software.

3. Draw, Assign & Analysis

In this analysis we take a frame structure and section of Beam, Column, Slab and other data as per table 1.

Table -1: Data Table

Display Units	Metric SI
Number of Grid Lines in X direction	4
Number of Grid Lines in Y direction	4
Spacing of Grid in X Direction	8m
Spacing of Grid in Y Direction	6m
Number of Stories	4
Typical Storey Height	3.35 m
Bottom Storey Height	2 m
Beam Section	230mm x 400mm
Column Section	300mm x 300mm
Slab	125 mm
Grade of Concrete	M-20
Grade of Steel	Fe 500
Loads	As per code IS 875, IS 1893:2002
Load Combination	As per code
Support Condition	Fixed

Step 1 : First we draw the structure in ETABS.
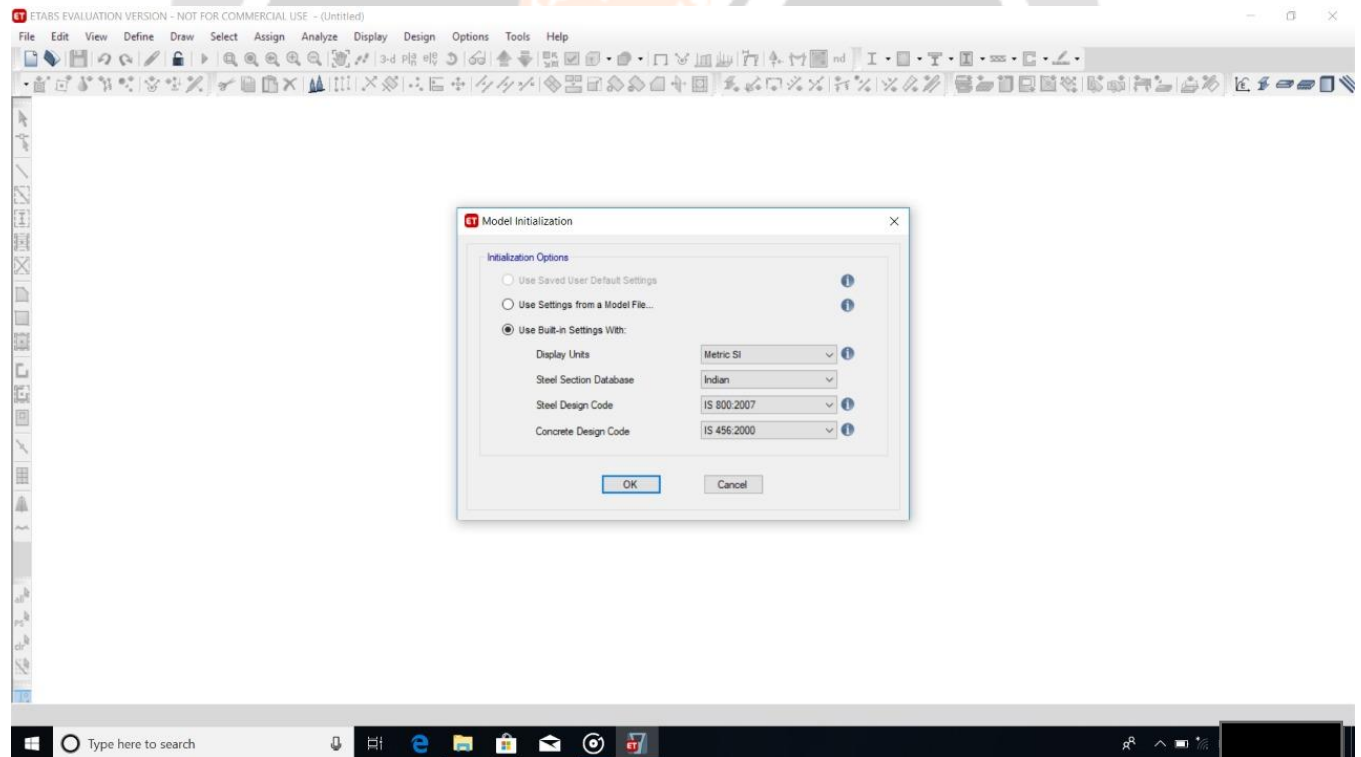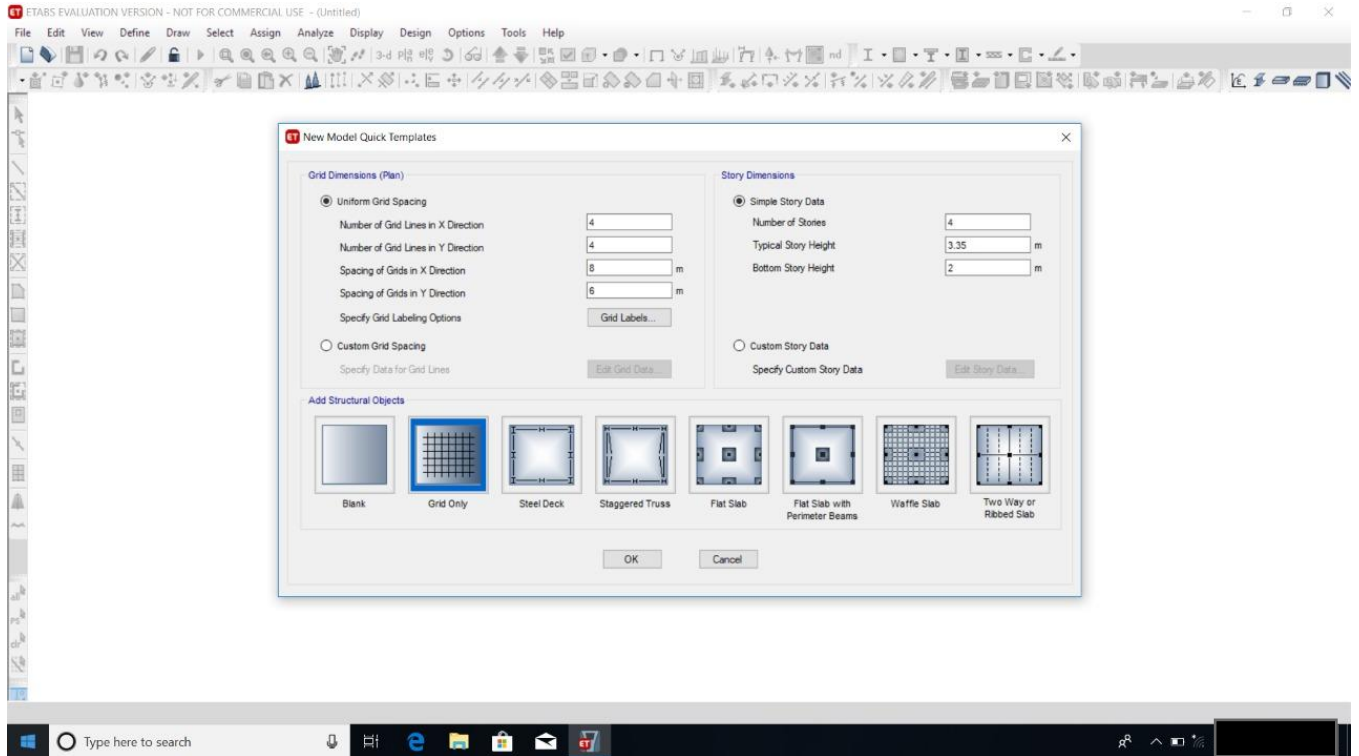

Fig -1: Unit & Code selection window
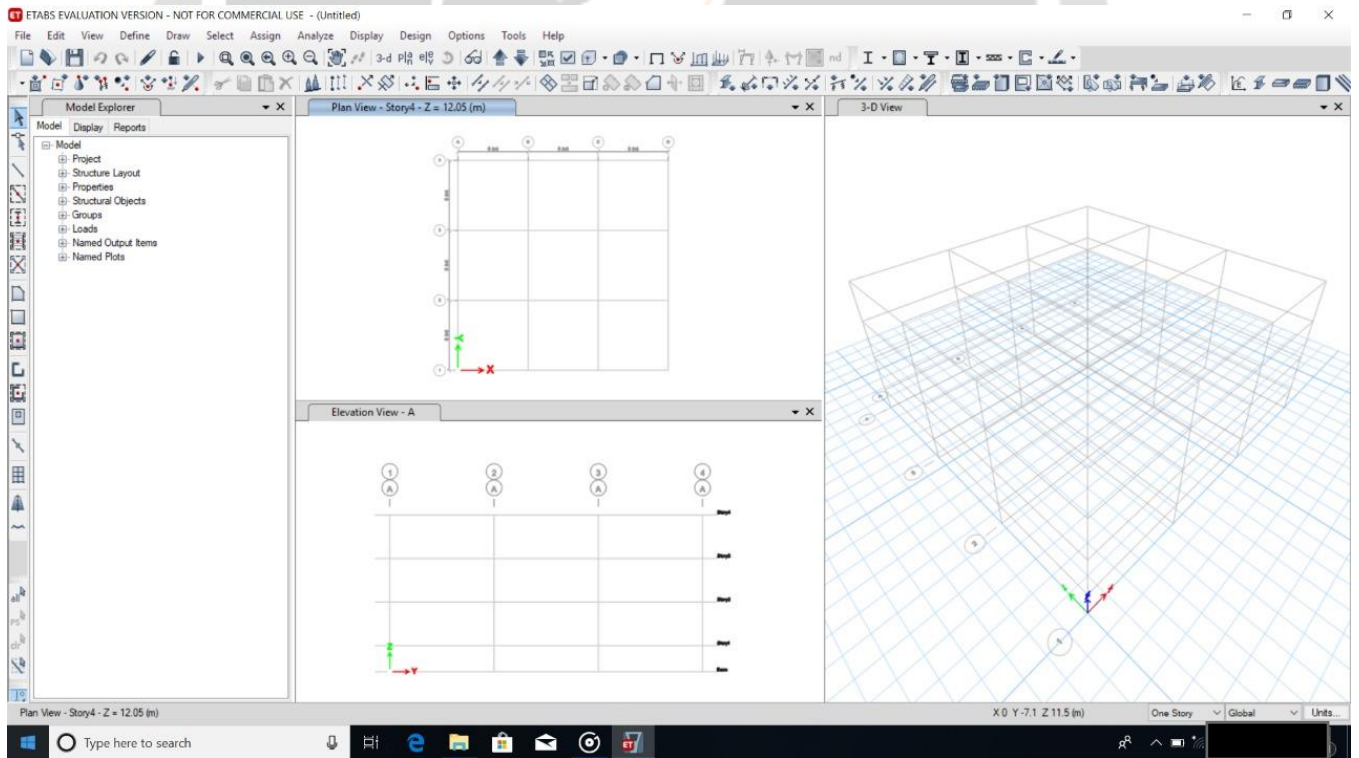
Fig -2: Grid Data

Fig -3: Grid Structure

Step 2 : Now we assign the property as described previously and then assign the load & make load combinations as per IS Code,
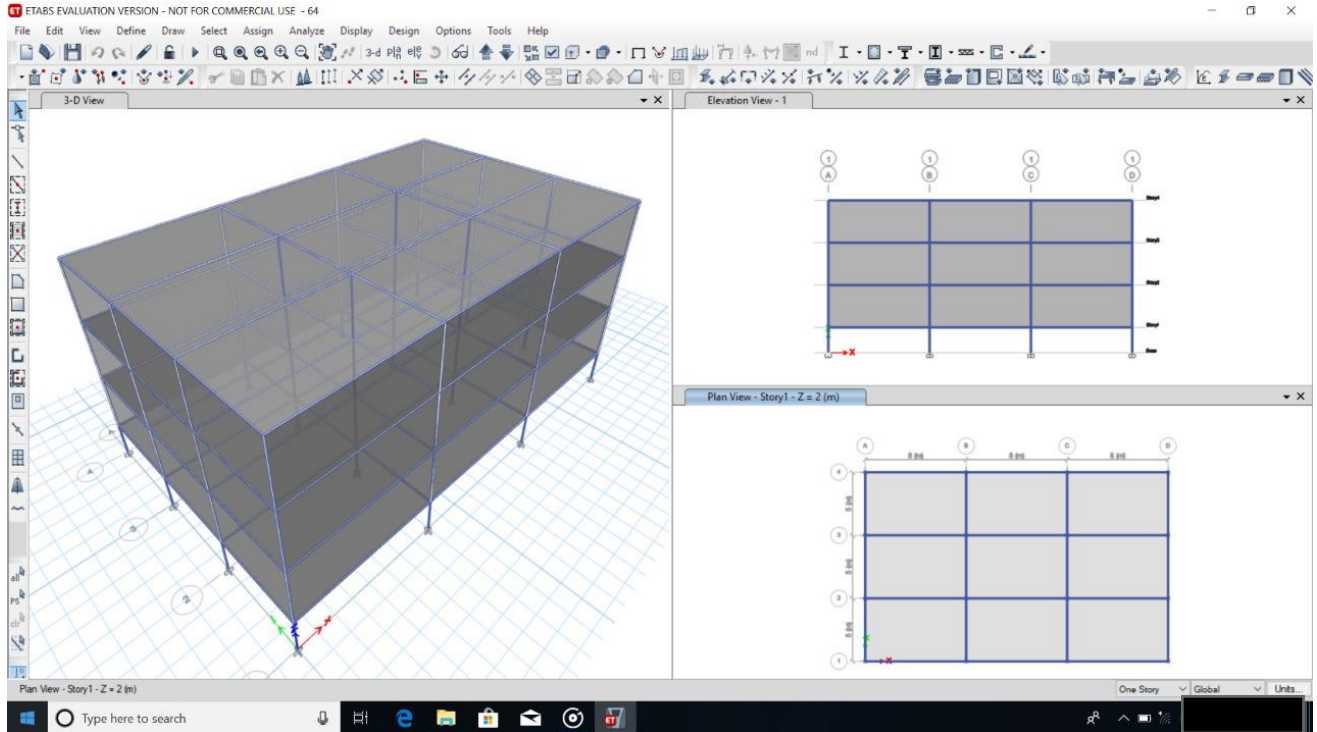

Fig - 4 : Frame Structure

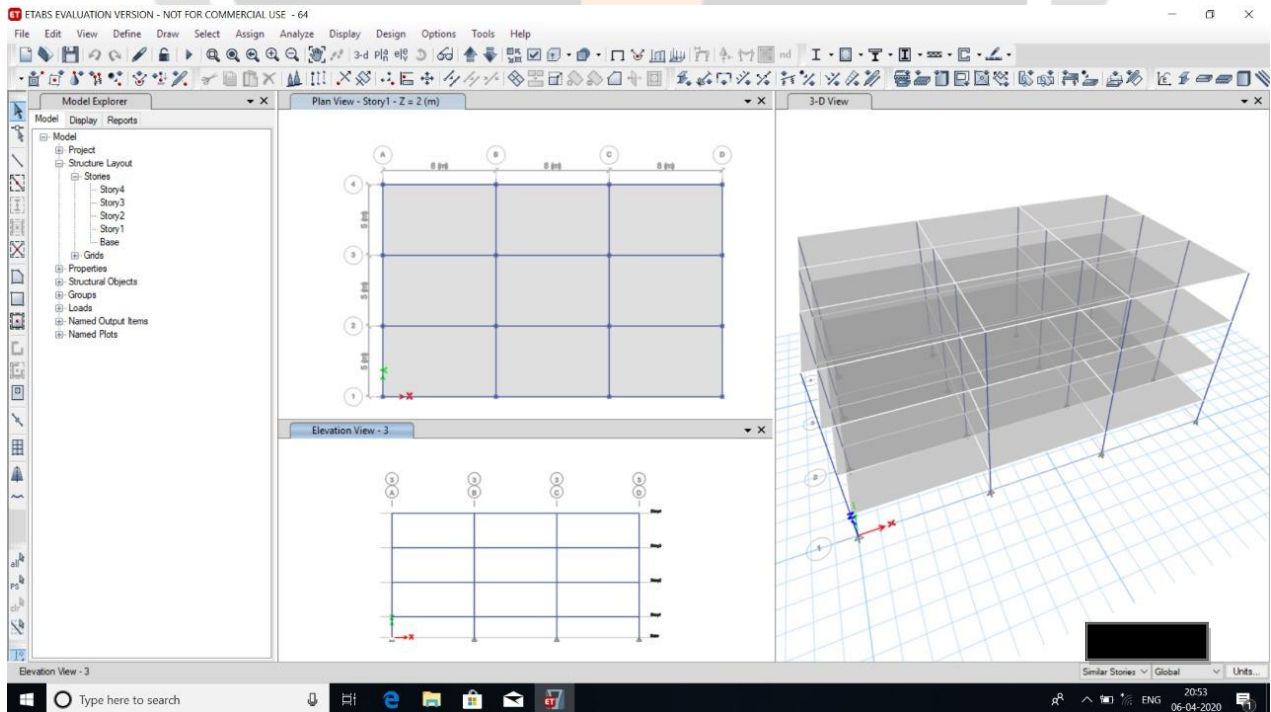Step 3 : Further we command the run analysis.

Fig -5: Deflected Shape of Structure

Step 4 : When the analysis has been completed and we found the following Deflection, Shear Force, Bending Moment, Axial Force & many results. Now we will check & compare the result manually by solving the structure.
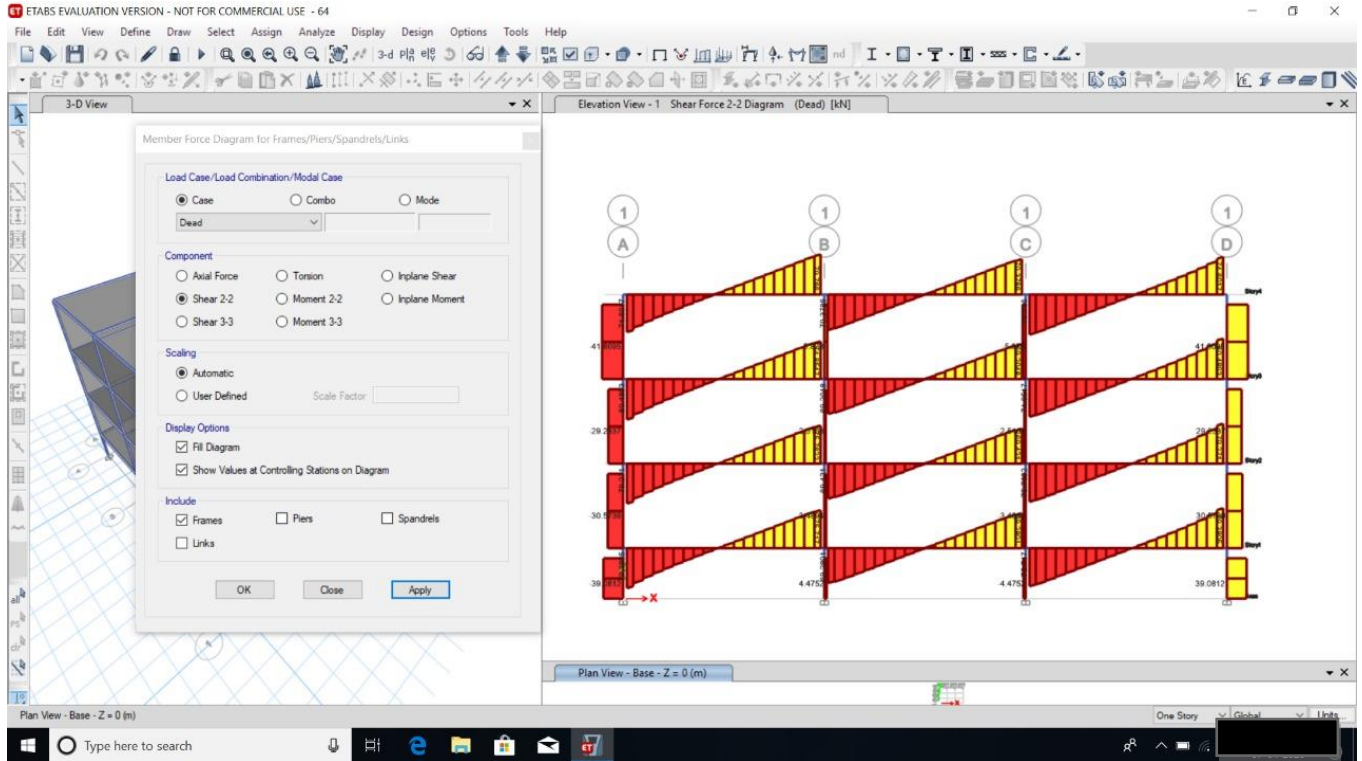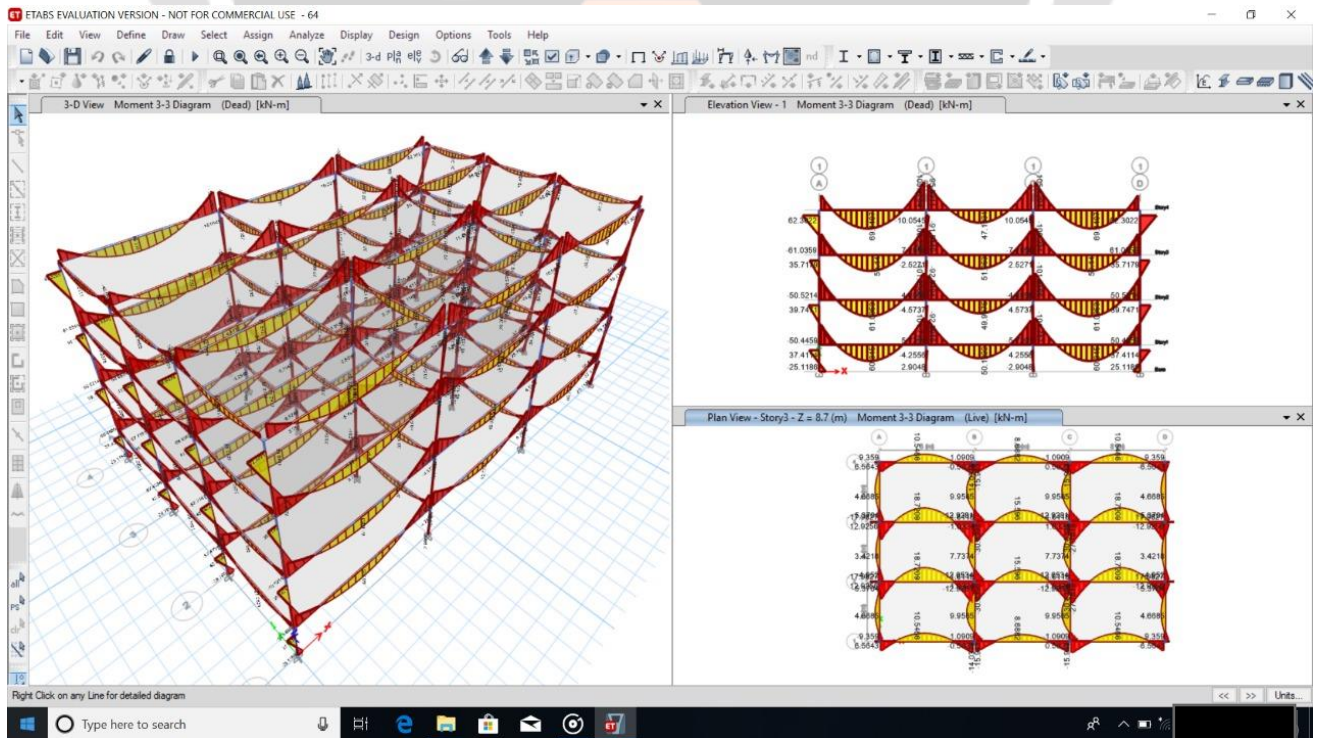

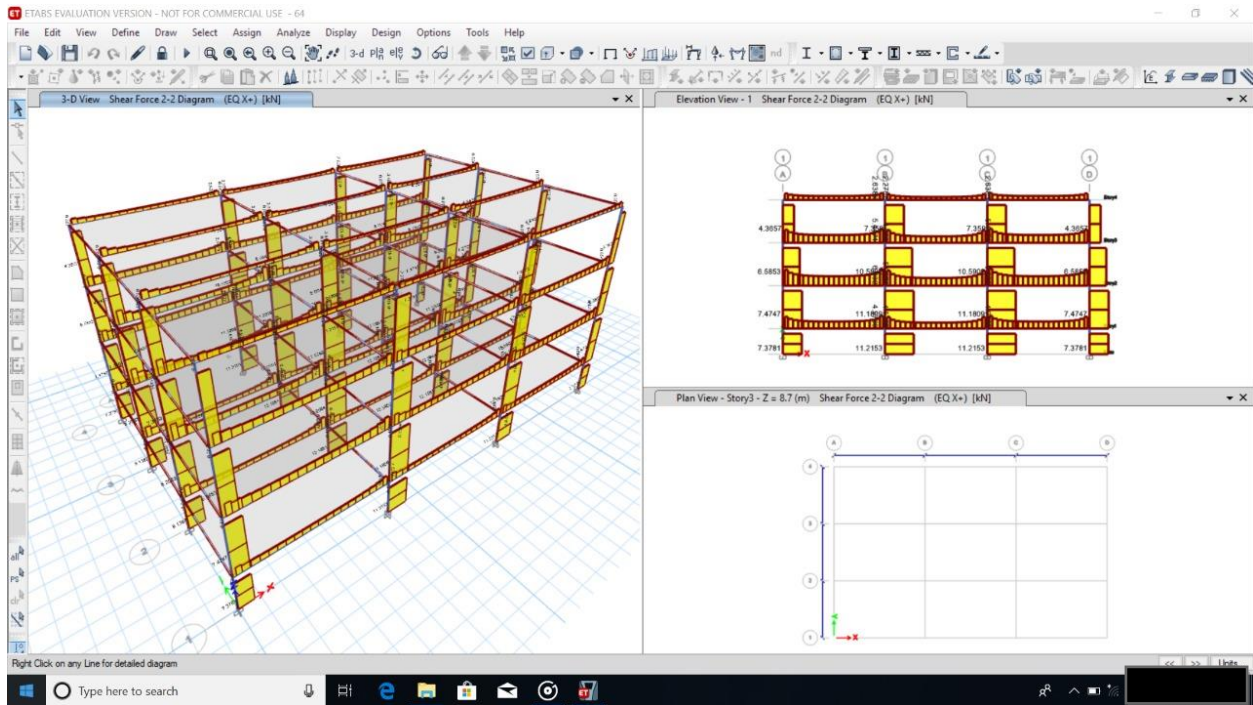**Fig -6** : Shear Force Diagram

Fig -7 : Bending Moment Diagram

Fig -8: SFD Due to Earthquake Load

Step 5 : Now we will check & compare the result manually by solving the structure.

4. CONCLUSIONS

When the structure were drawn in ETABS and analysis was done manually and by ETABS the values of deviation shear force, bending moment, axial force were set up roughly same. But we got some values more on top storey because of lower support severity. With the help of ETABS software we could break much before and so it saves time. It also helps in getting accurate results.

5. REFERENCES

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