

## CHAPTER VI

### CONCLUSION

From this study the following results are obtained:

1. The design of SMRF structure

- a. Beam design

For primary beam 600x800 story 1-6, the longitudinal reinforcement at 0.425m and 7.575m is 9D25 for tension reinforcement and 5D25 for compression reinforcement and 4D25 at 4m for both tension and compression reinforcement. The shear reinforcement is 4P10-100 on the plastic hinge whereas the reinforcement outside plastic hinge is 4P10-120. For secondary beam 400x700 story 1-6, the longitudinal reinforcement at 0.425m is 4D22 for tension reinforcement and 2D22 for compression reinforcement, at 4m is 2D22 for compression reinforcement and 4D22 for tension reinforcement, at 7.575m is 5D22 for tension reinforcement and 3D22 for compression reinforcement. The shear reinforcement of the secondary beam is 3P10-320.

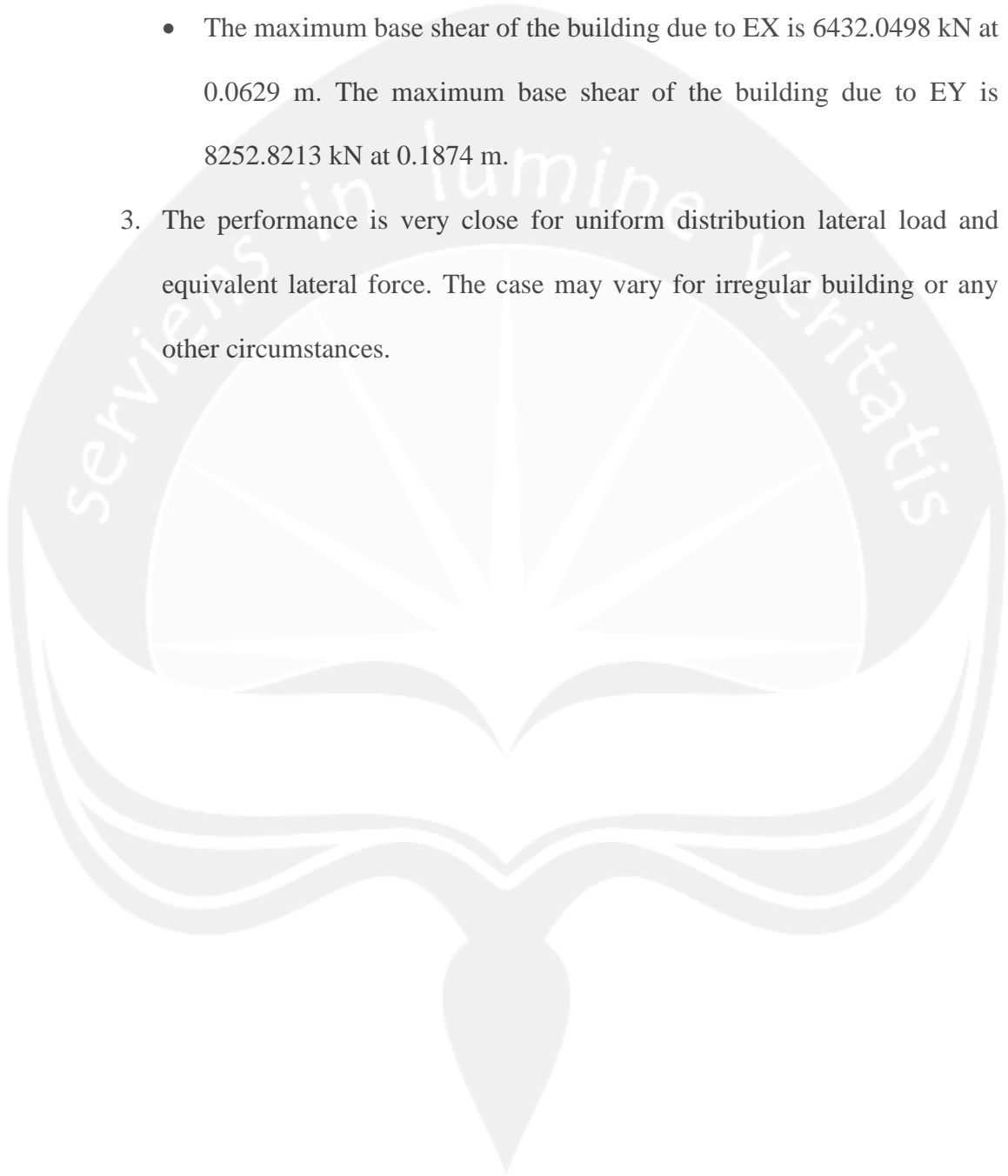
- b. Column design

The longitudinal reinforcement is 24D25 and the shear reinforcement is 4D13-125 at  $\lambda_0$  and 4D13-150 outside the  $\lambda_0$ .

2. The result of the Nonlinear Static Pushover Analysis

- The structure is safe for both lateral load pattern I and pattern II

- The target displacement or maximum displacement of the building is 0.08 m.
  - The maximum base shear of the building due to EX is 6432.0498 kN at 0.0629 m. The maximum base shear of the building due to EY is 8252.8213 kN at 0.1874 m.
3. The performance is very close for uniform distribution lateral load and equivalent lateral force. The case may vary for irregular building or any other circumstances.



## REFERENCES

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