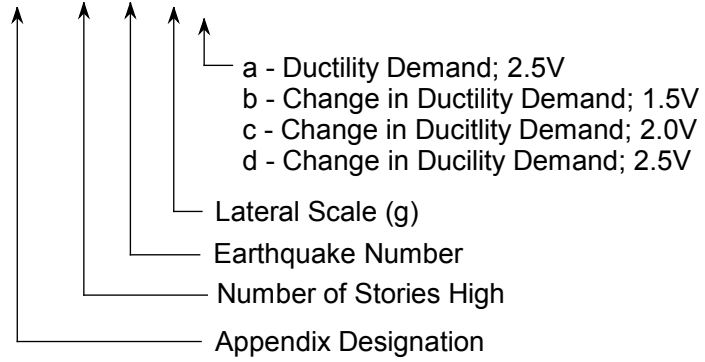


## Appendix C2 – Ductility Demand Versus $r_p$

Figure Number Designations:

### Figure C2.3.1.1a



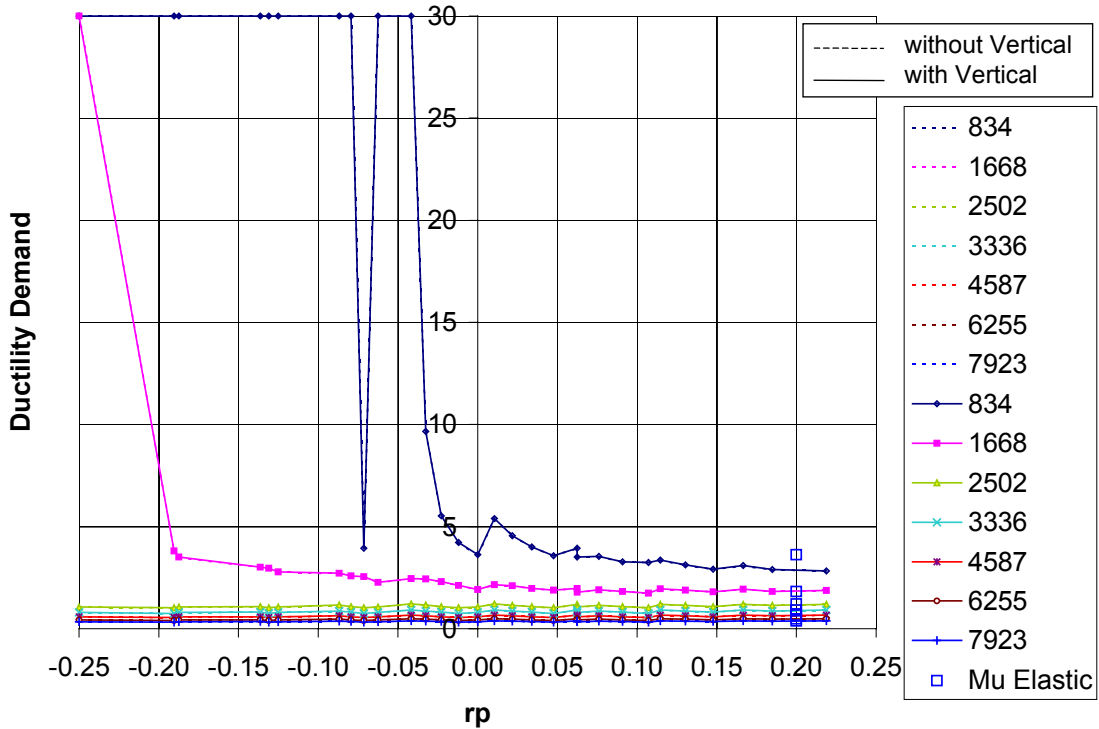


Figure C2.3.1.1a – EQ1, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 0.705 Seconds.

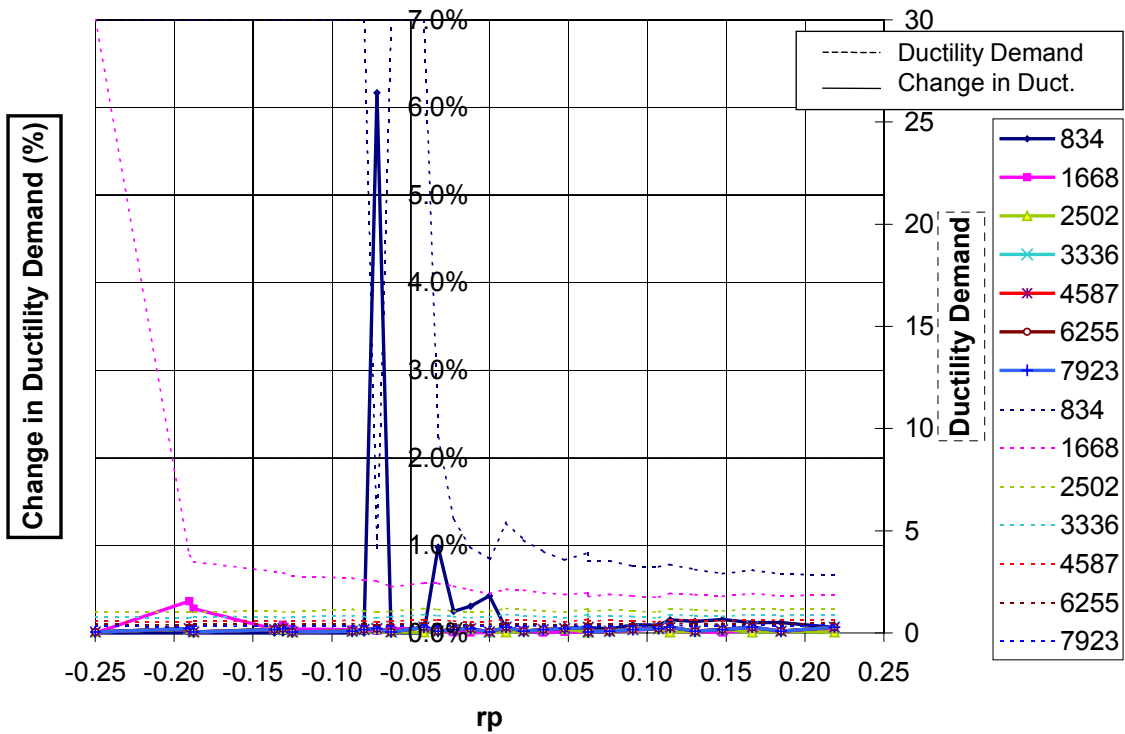


Figure C2.3.1.1b – EQ1, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 0.705 Seconds.

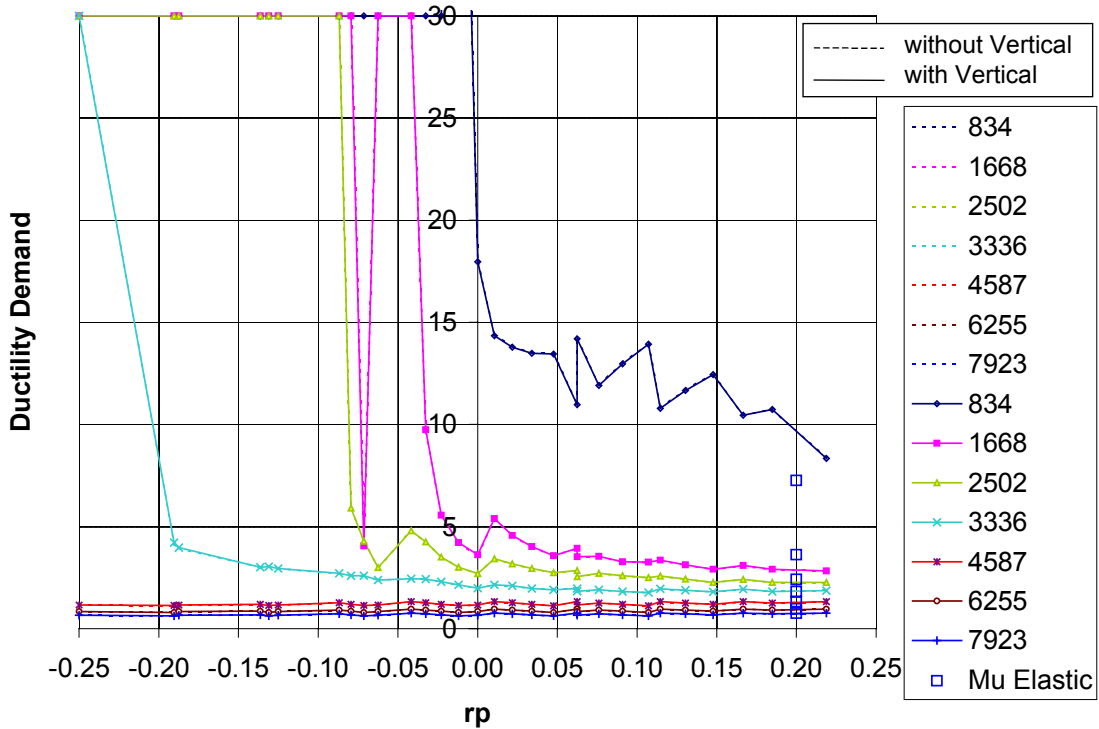


Figure C2.3.1.2a – EQ1, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 0.705 Seconds.

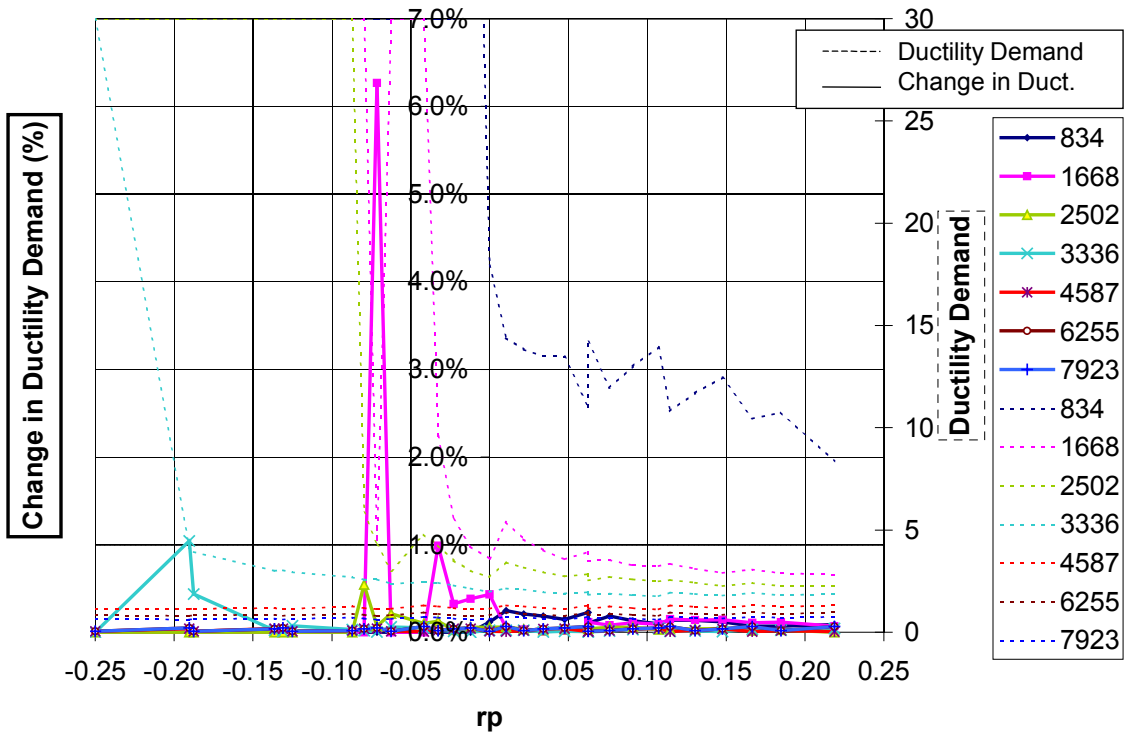
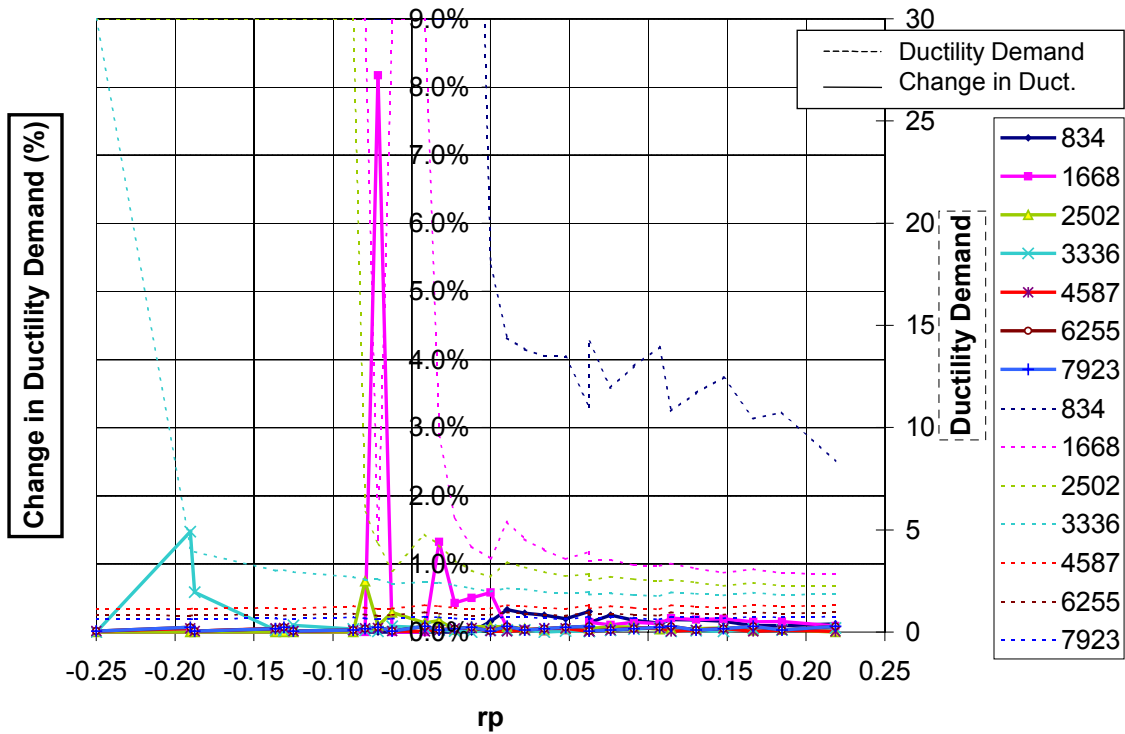
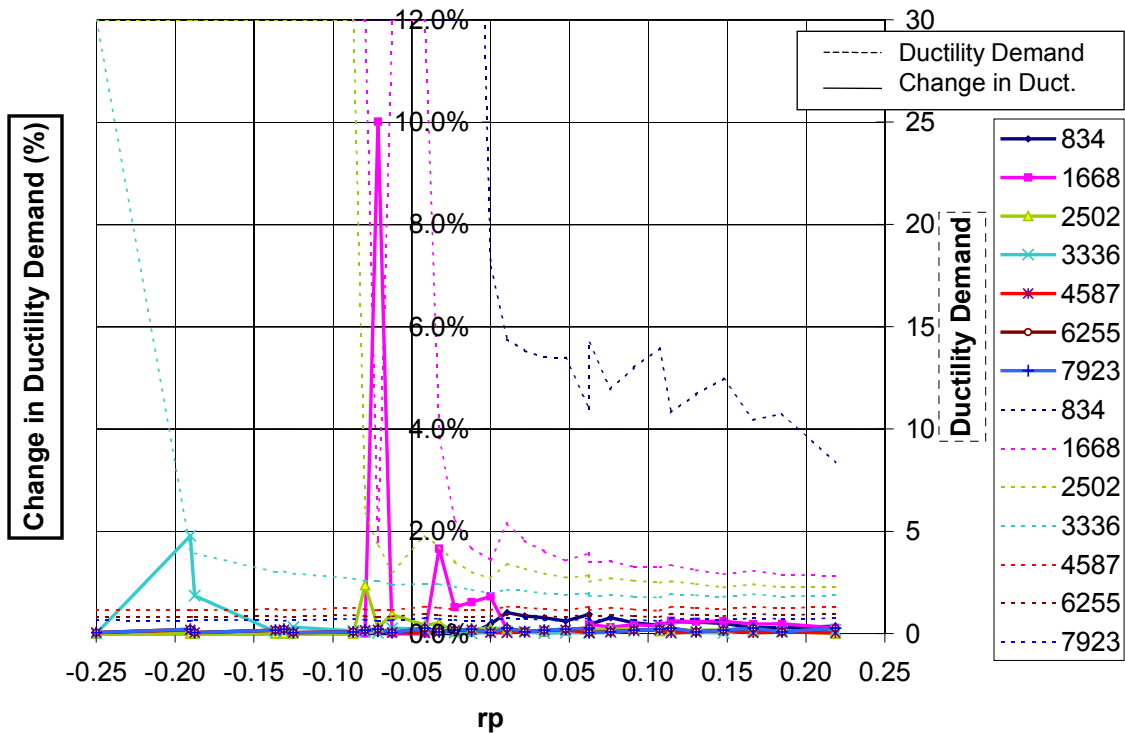


Figure C2.3.1.2b – EQ1, Lateral Scale = 0.2 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 0.705 Seconds.



**Figure C2.3.1.2c – EQ1, Lateral Scale = 0.2 g, Vertical Multiplier = 2.0, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 0.705 Seconds.**



**Figure C2.3.1.2d – EQ1, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 0.705 Seconds.**

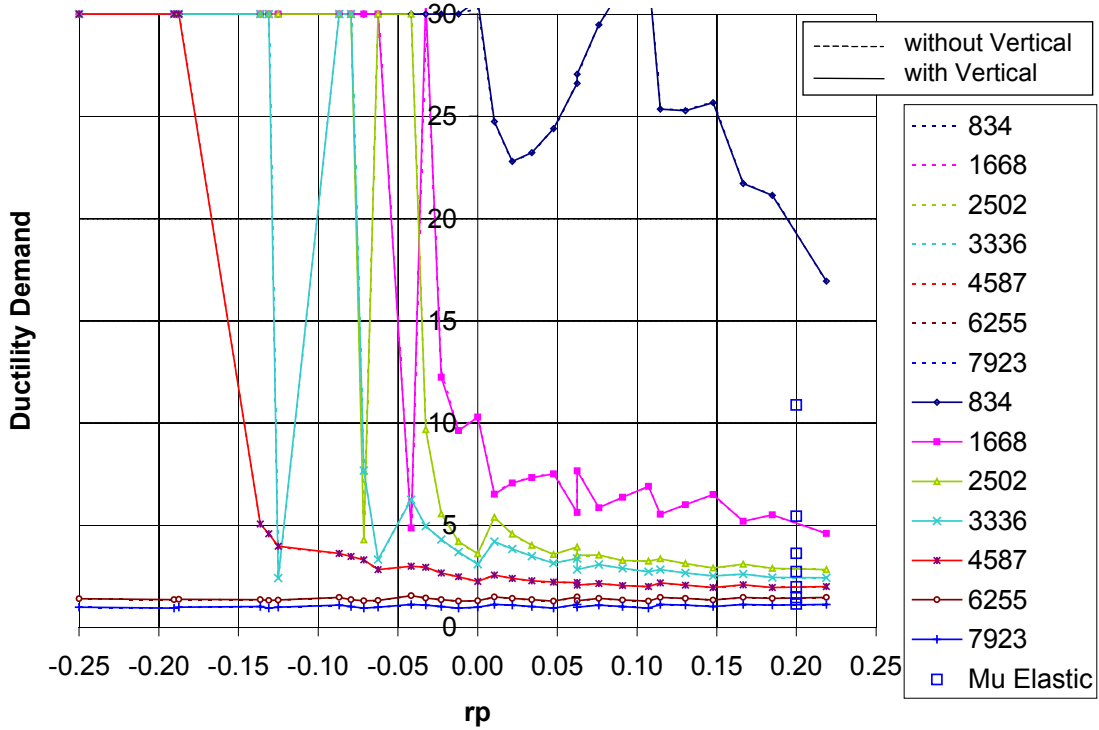


Figure C2.3.1.3a – EQ1, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 0.705 Seconds.

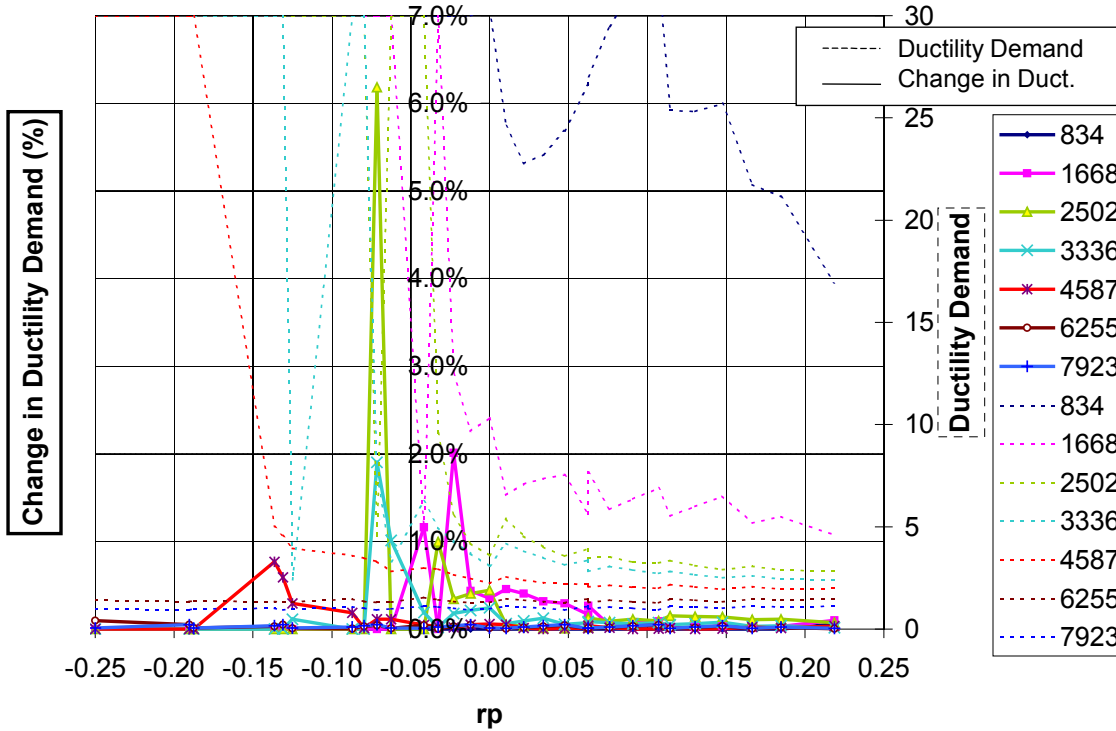


Figure C2.3.1.3b – EQ1, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 0.705 Seconds.

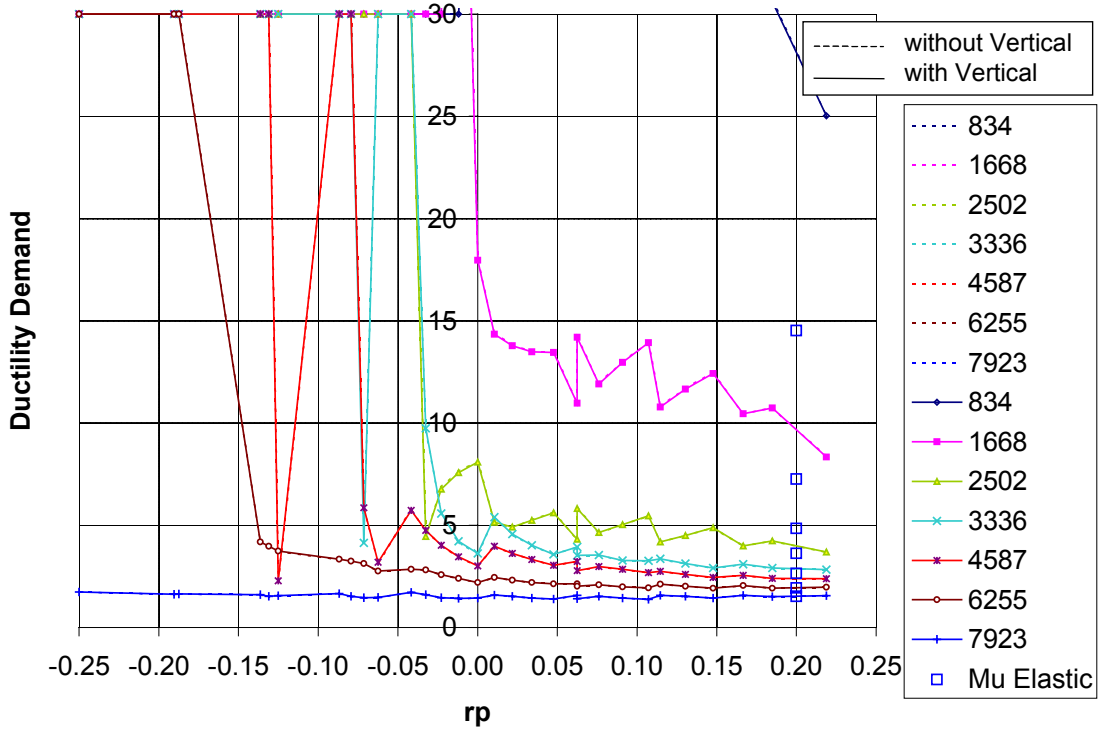


Figure C2.3.1.4a – EQ1, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 0.705 Seconds.

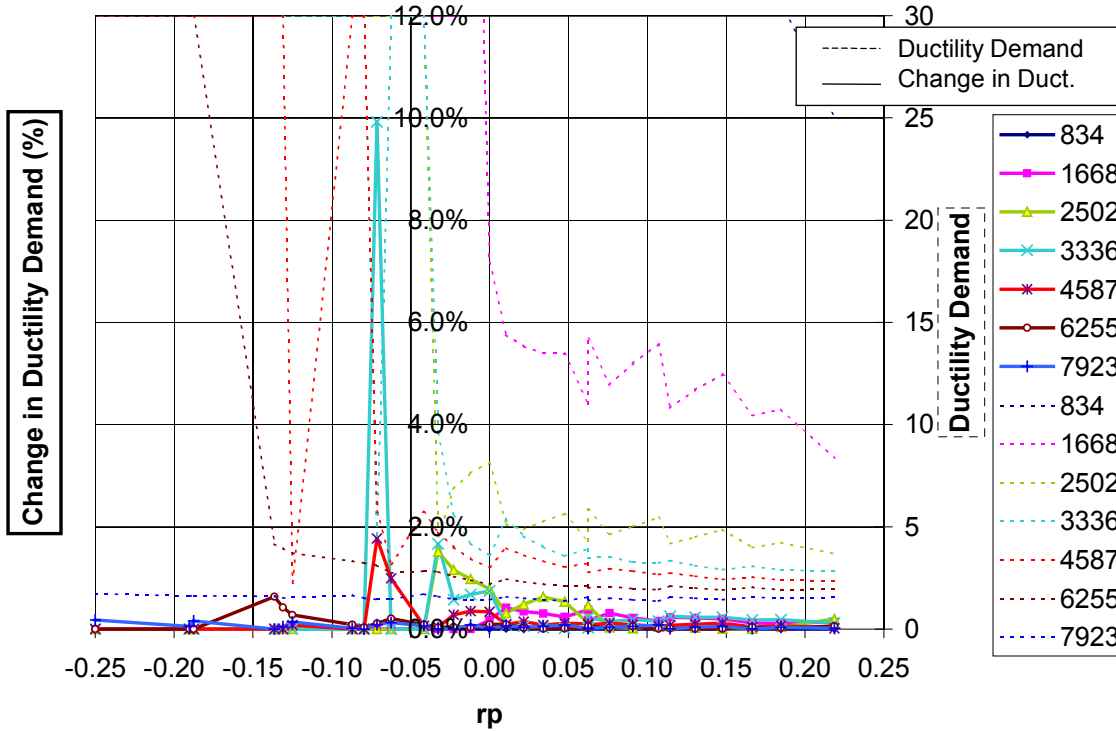


Figure C2.3.1.4b – EQ1, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 0.705 Seconds.

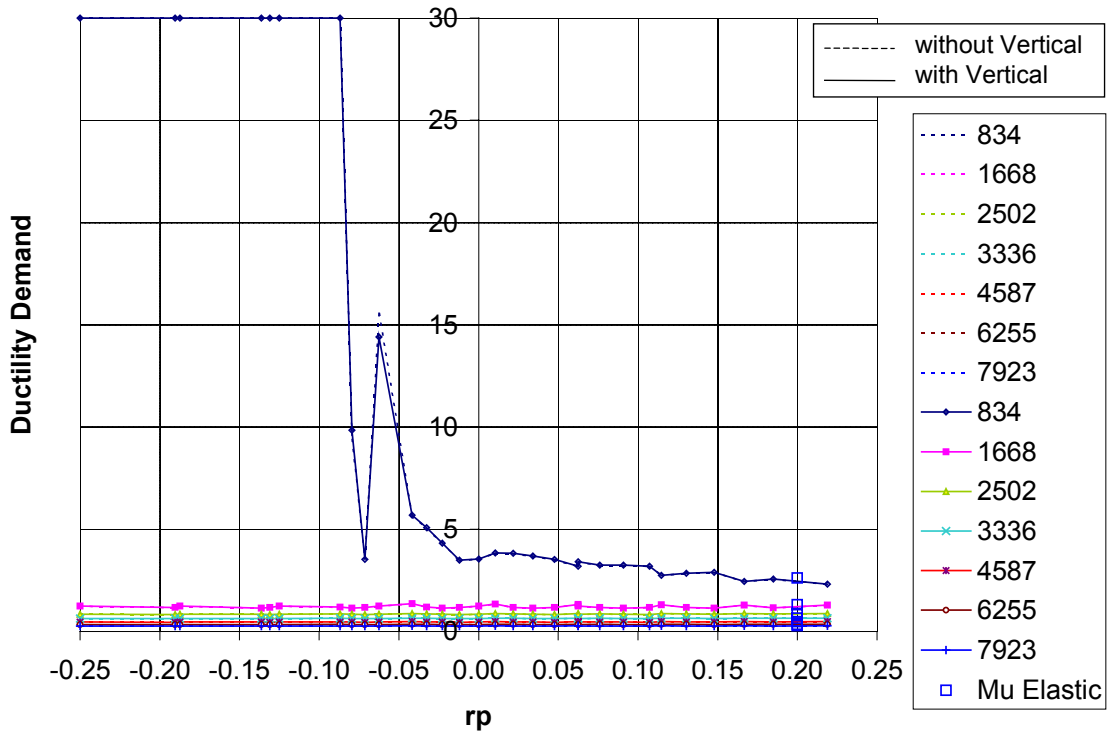


Figure C2.4.1.1a – EQ1, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 0.903 Seconds.

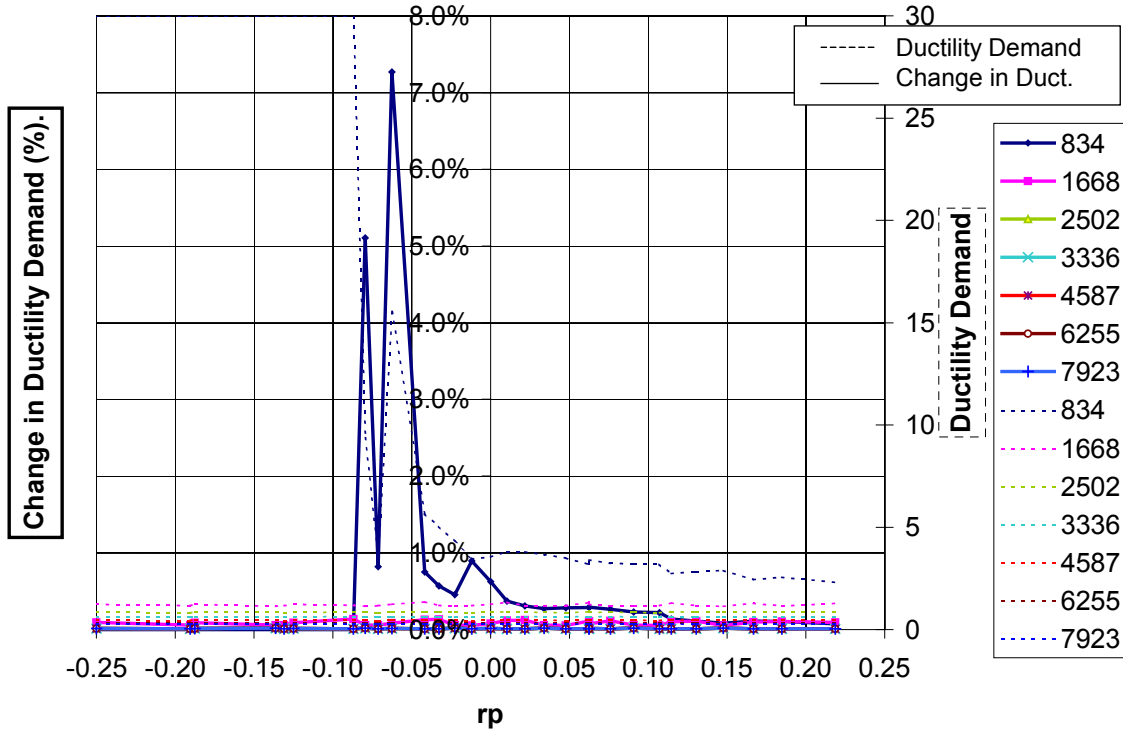


Figure C2.4.1.1b – EQ1, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 0.705 Seconds.

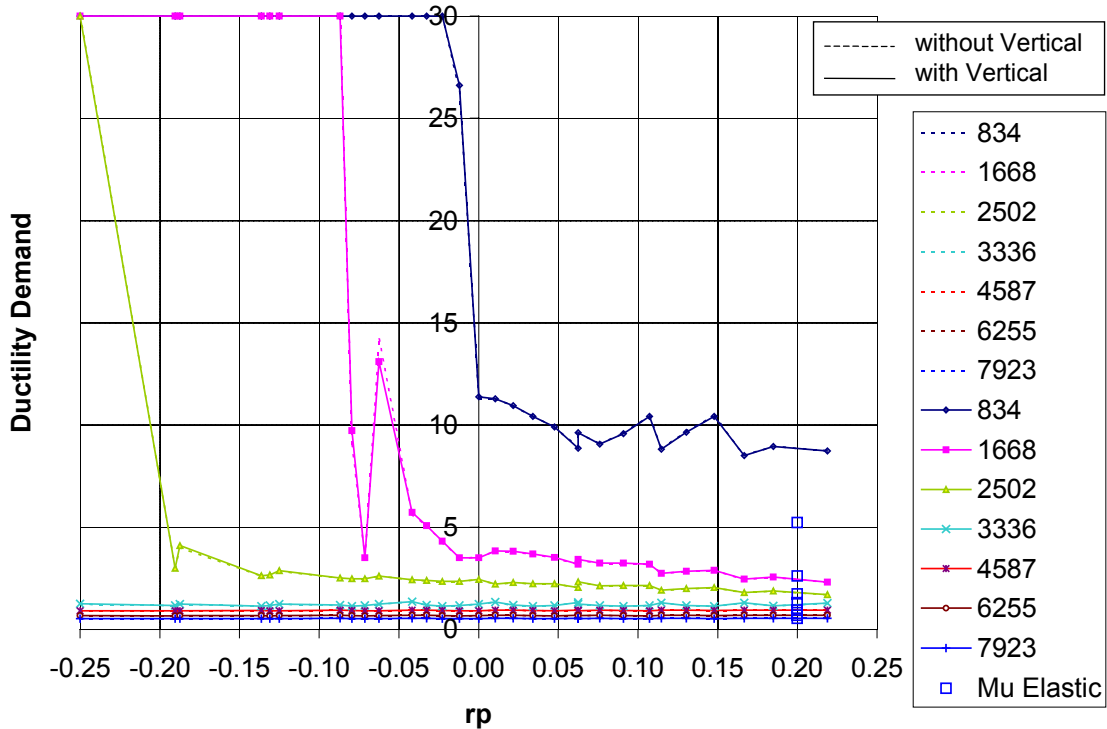


Figure C2.4.1.2a – EQ1, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 0.903 Seconds.

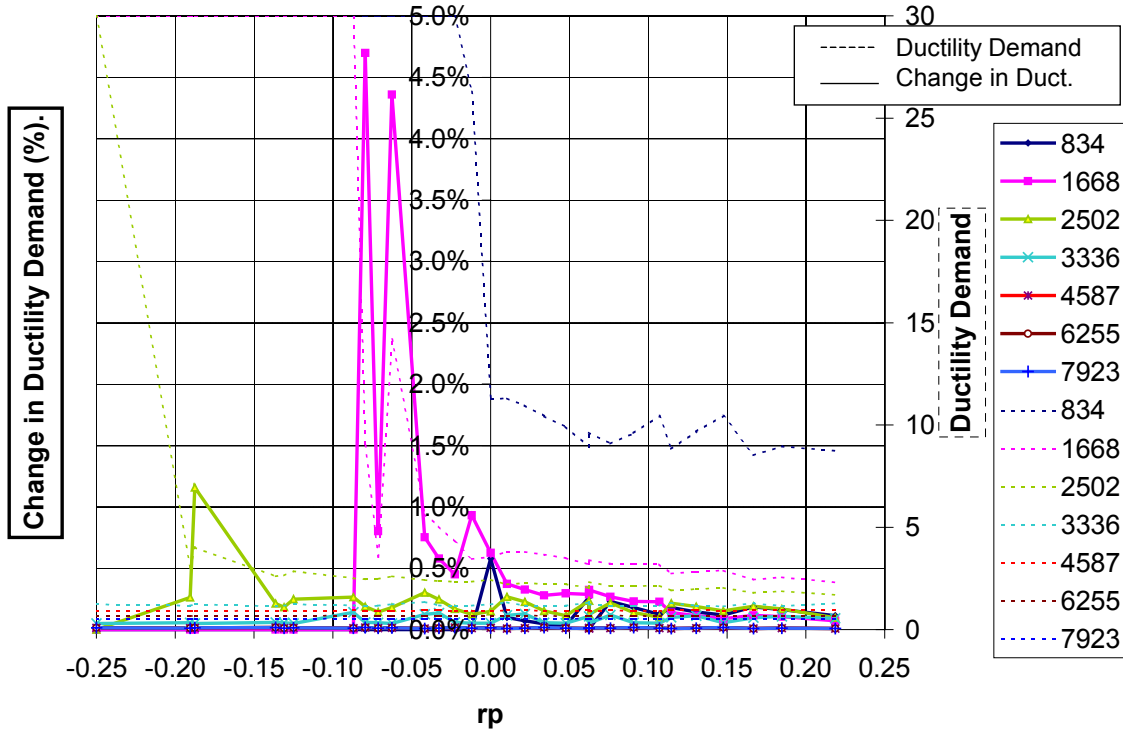
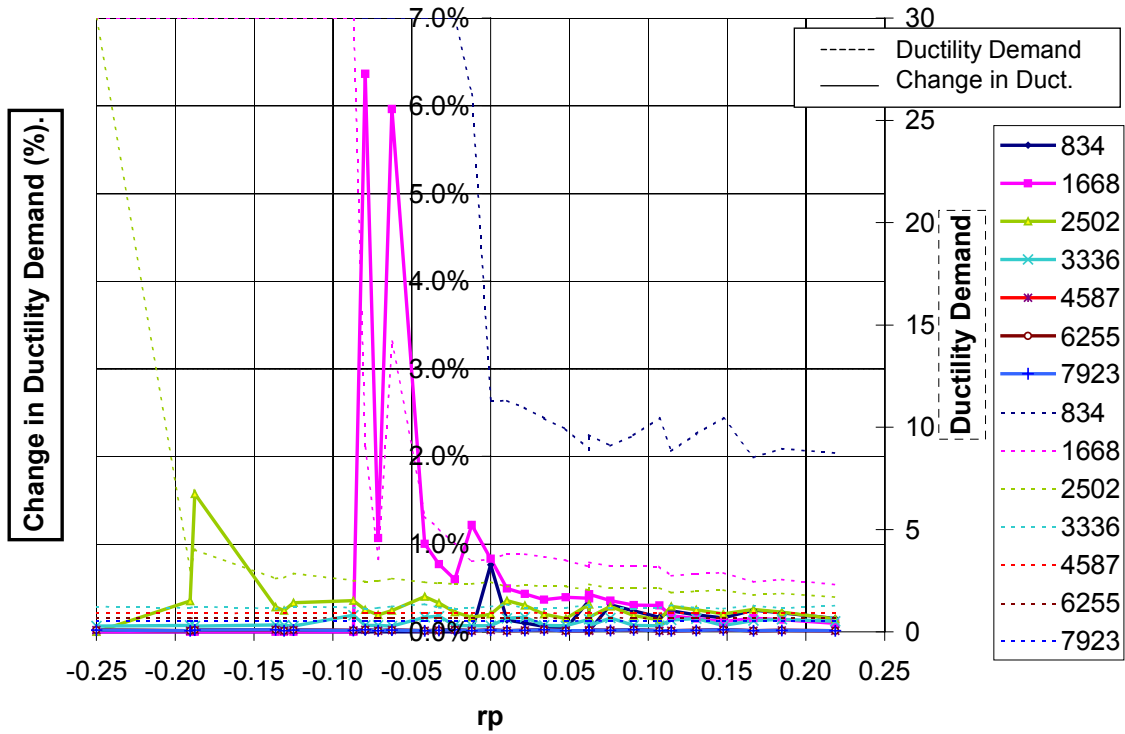
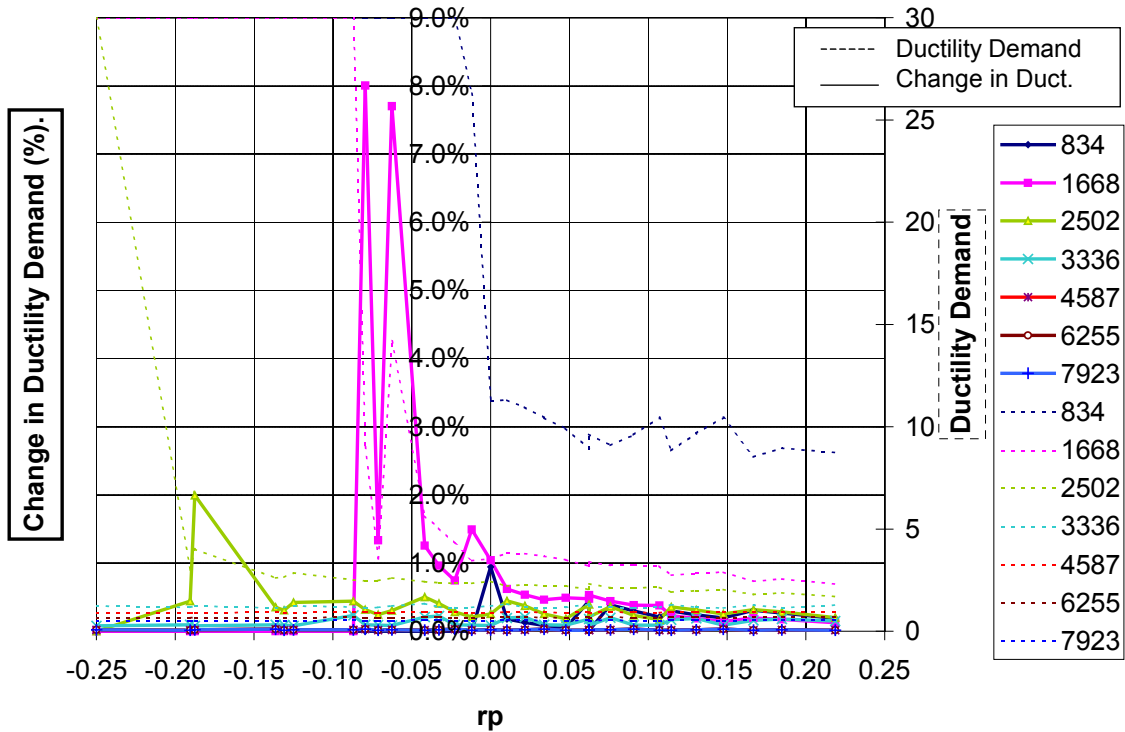


Figure C2.4.1.2b – EQ1, Lateral Scale = 0.2 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 0.903 Seconds



**Figure C2.4.1.2c – EQ1, Lateral Scale = 0.2 g, Vertical Multiplier = 2.0, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 0.903 Seconds**



**Figure C2.4.1.2d – EQ1, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 0.903 Seconds**

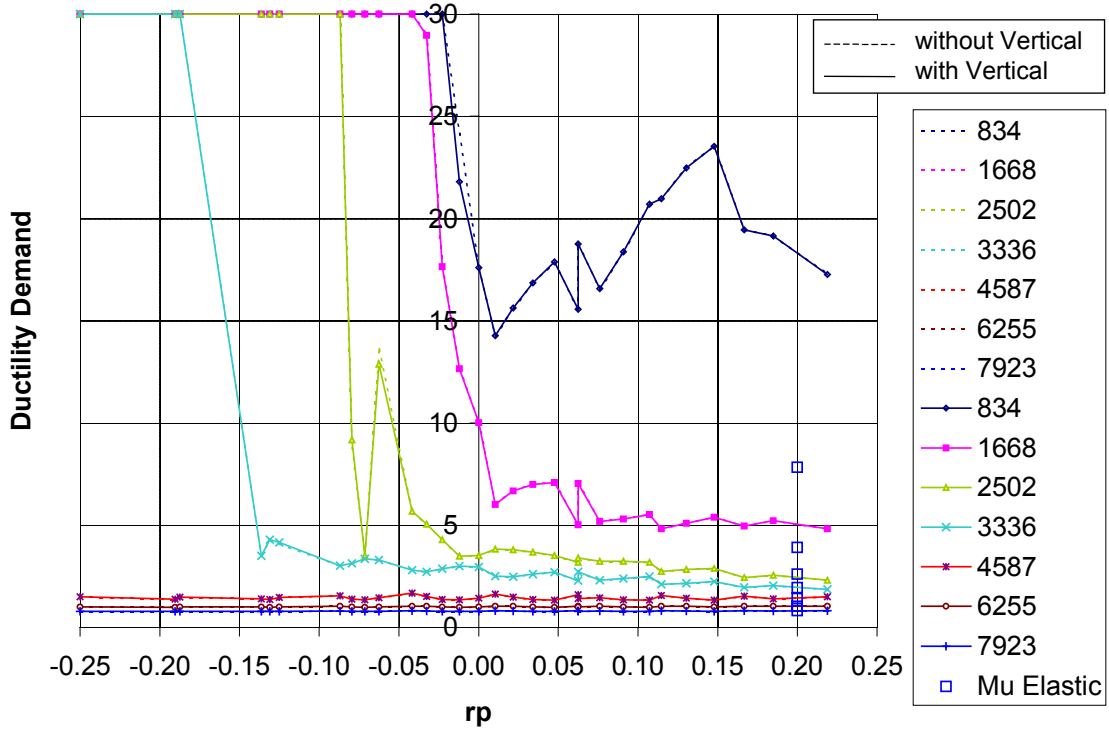


Figure C2.4.1.3a – EQ1, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 0.903 Seconds.

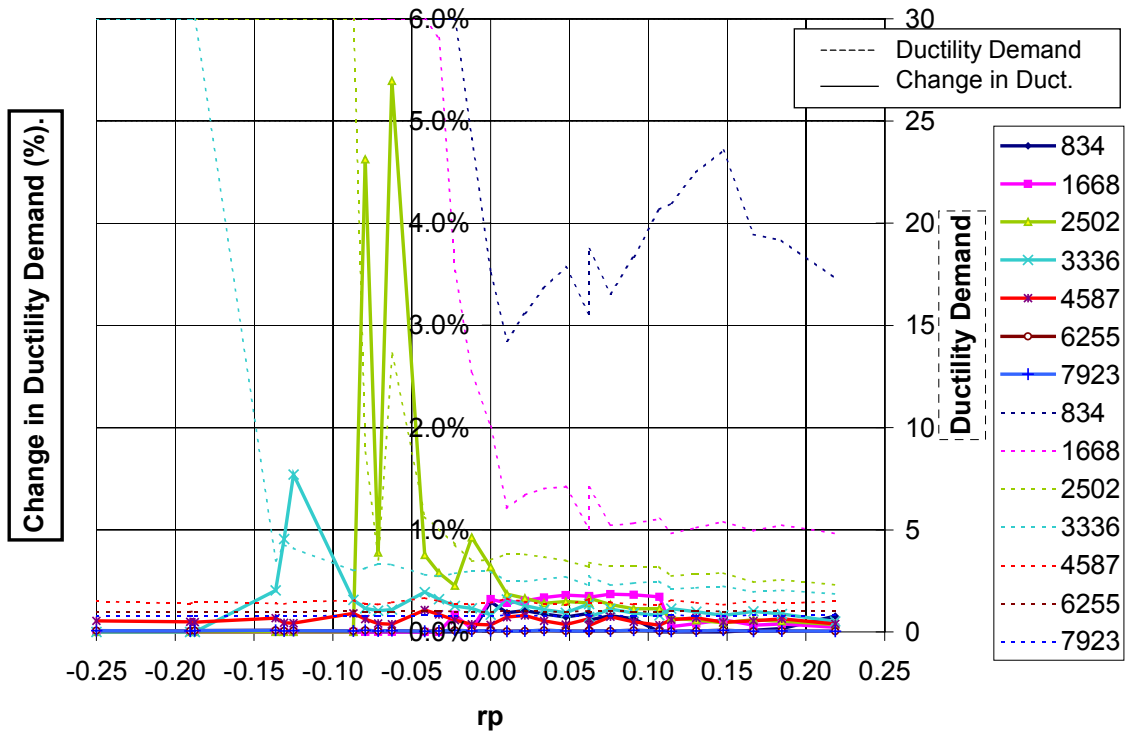


Figure C2.4.1.3b – EQ1, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 0.903 Seconds

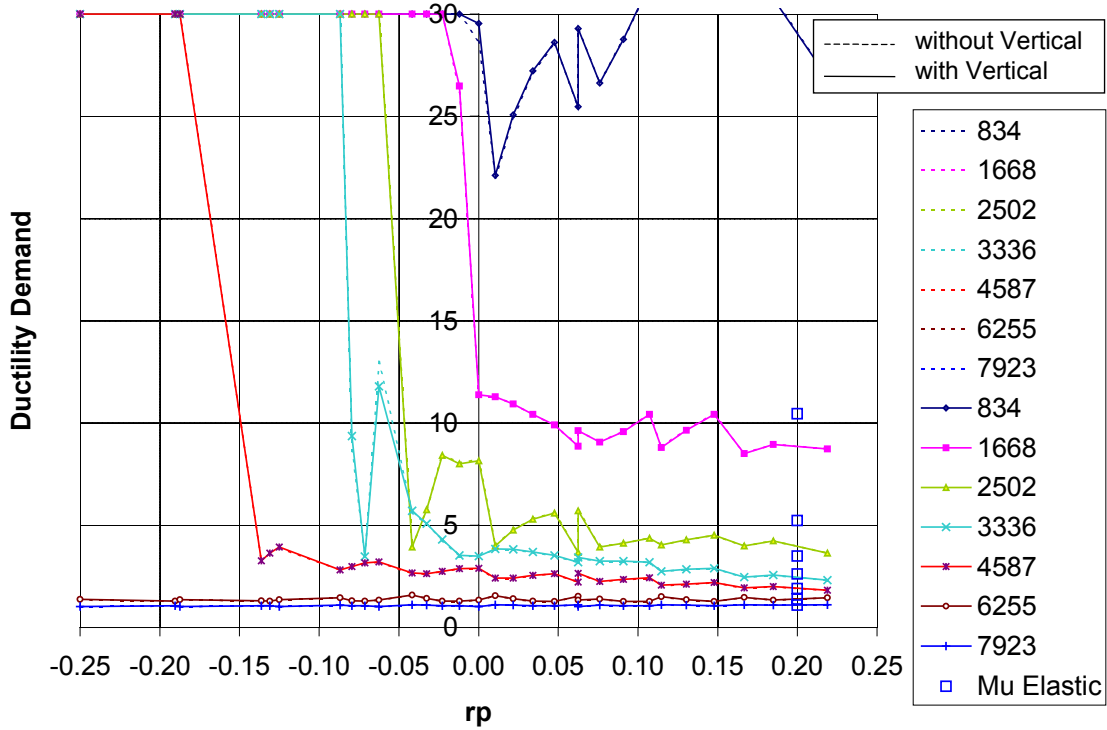


Figure C2.4.1.4a – EQ1, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 0.903 Seconds.

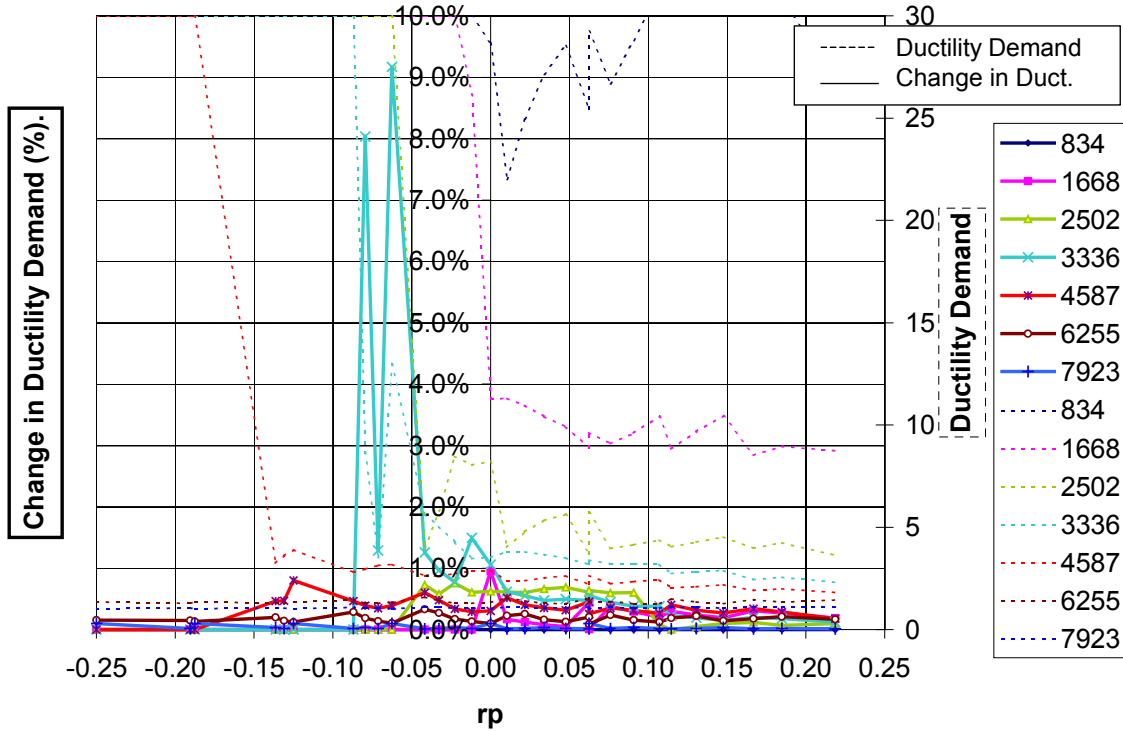


Figure C2.4.1.4b – EQ1, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 0.903 Seconds

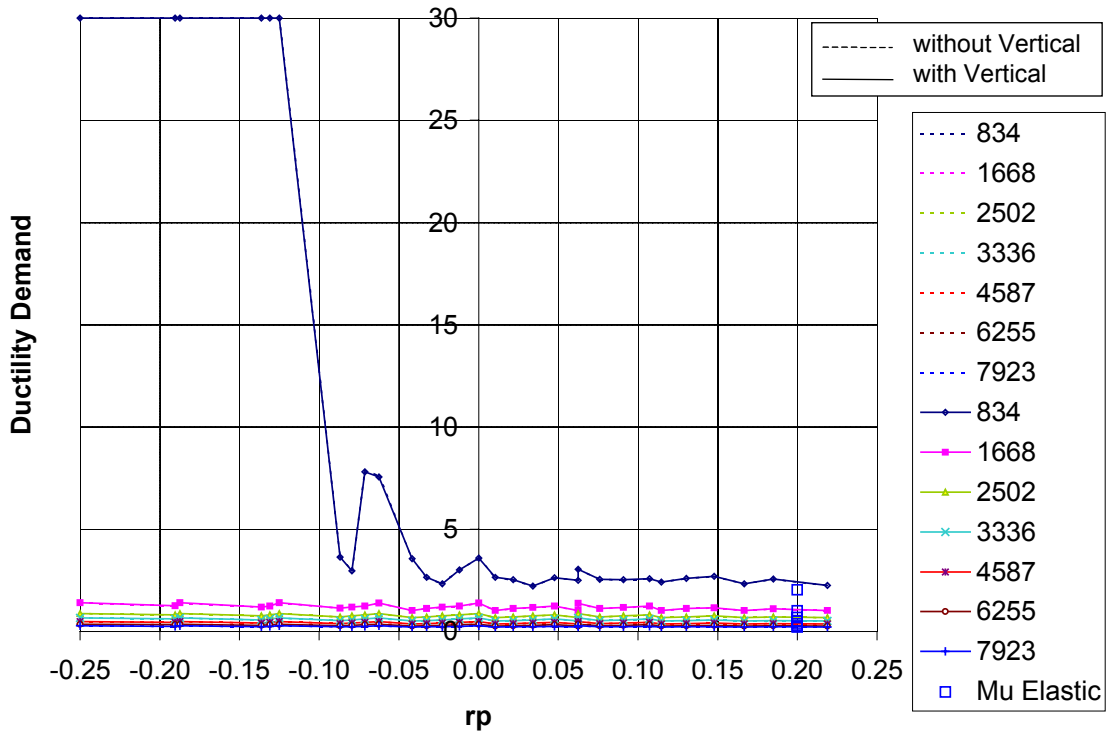


Figure C2.5.1.1a – EQ1, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.093 Seconds.

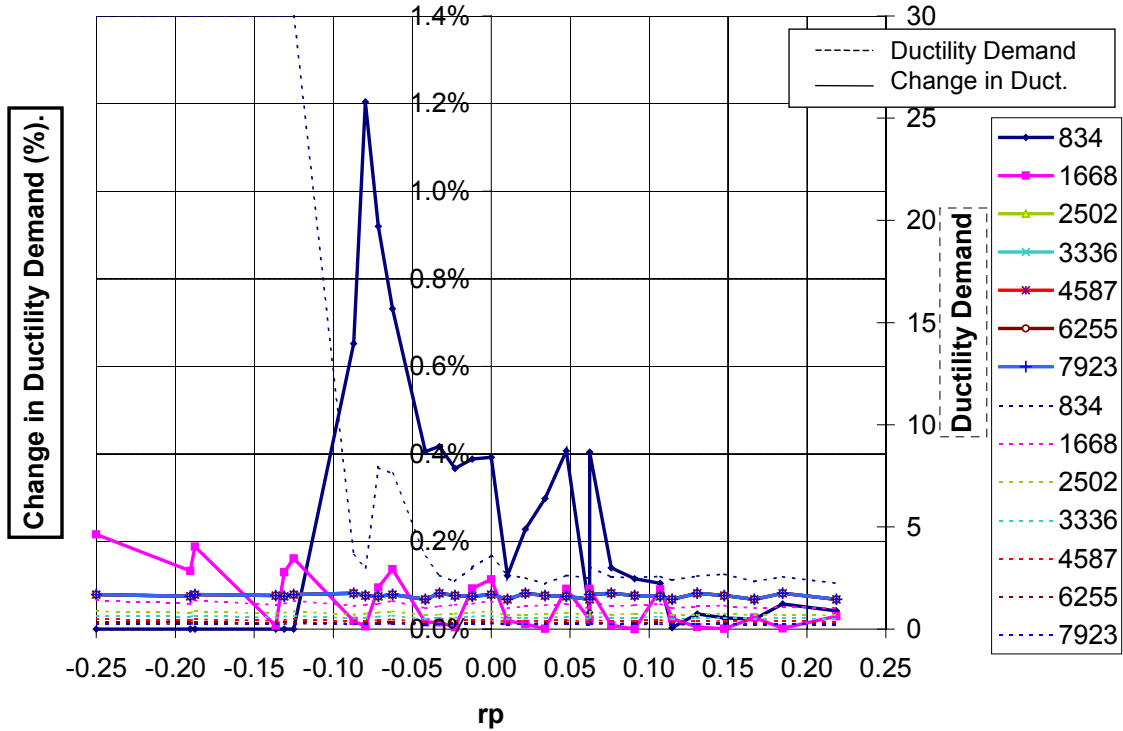


Figure C2.5.1.1b – EQ1, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.093 Seconds

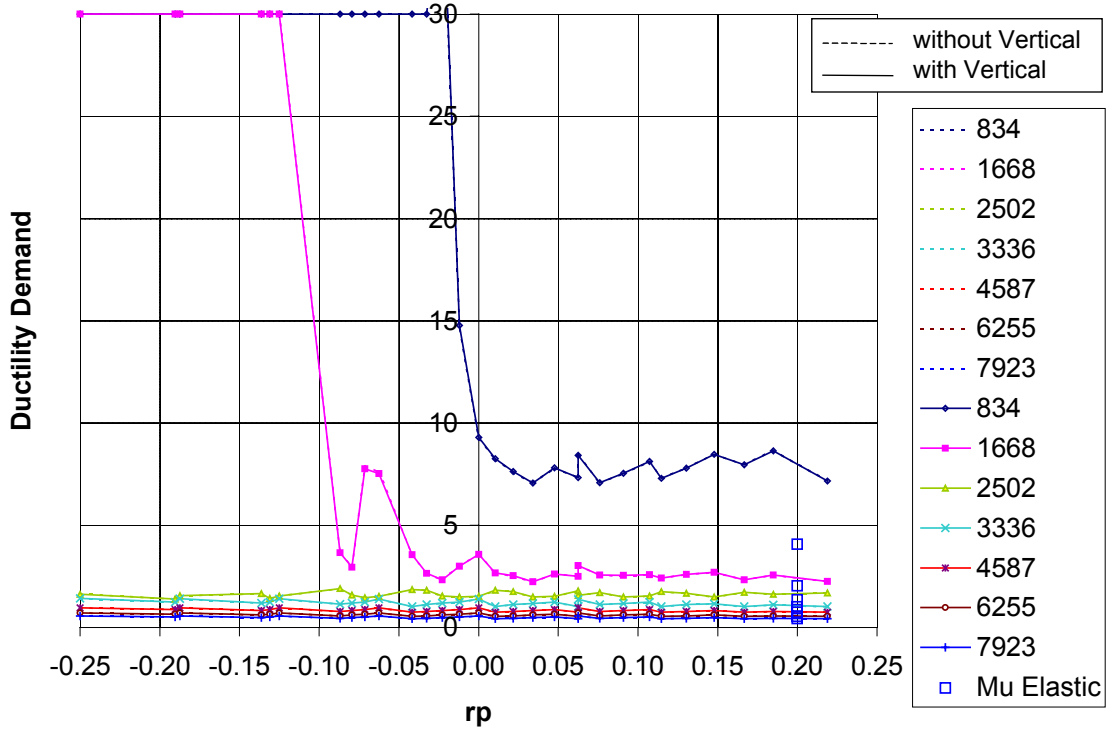


Figure C2.5.1.2a – EQ1, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.093 Seconds.

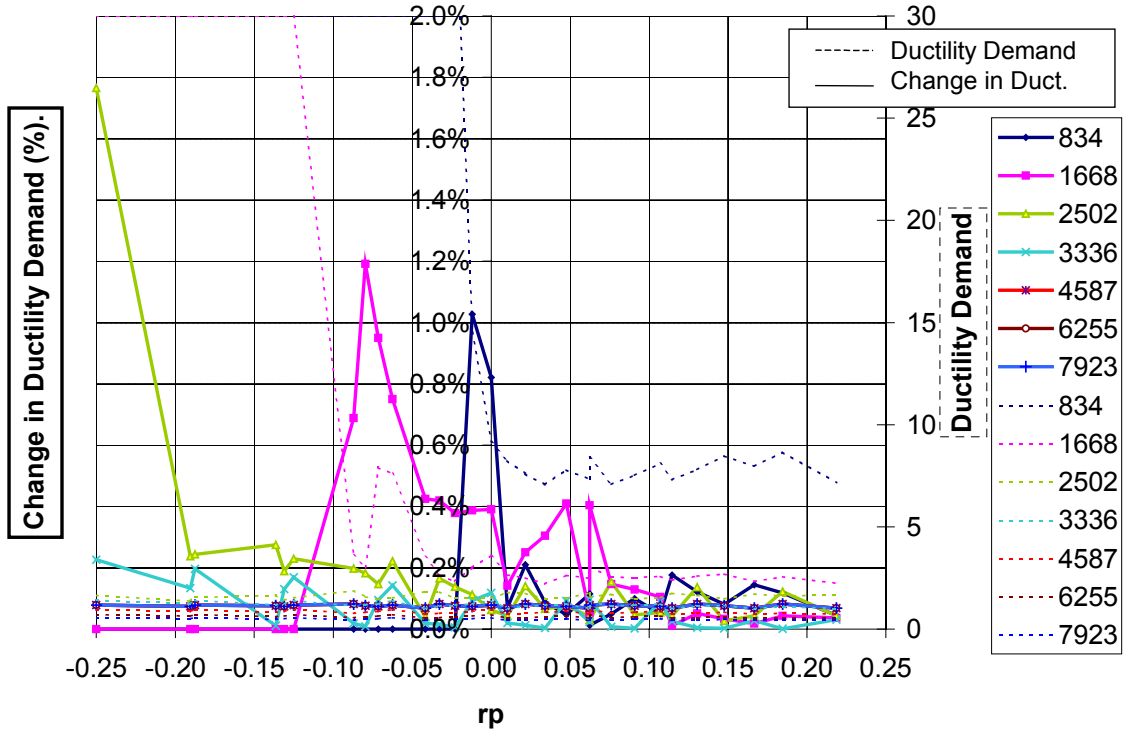
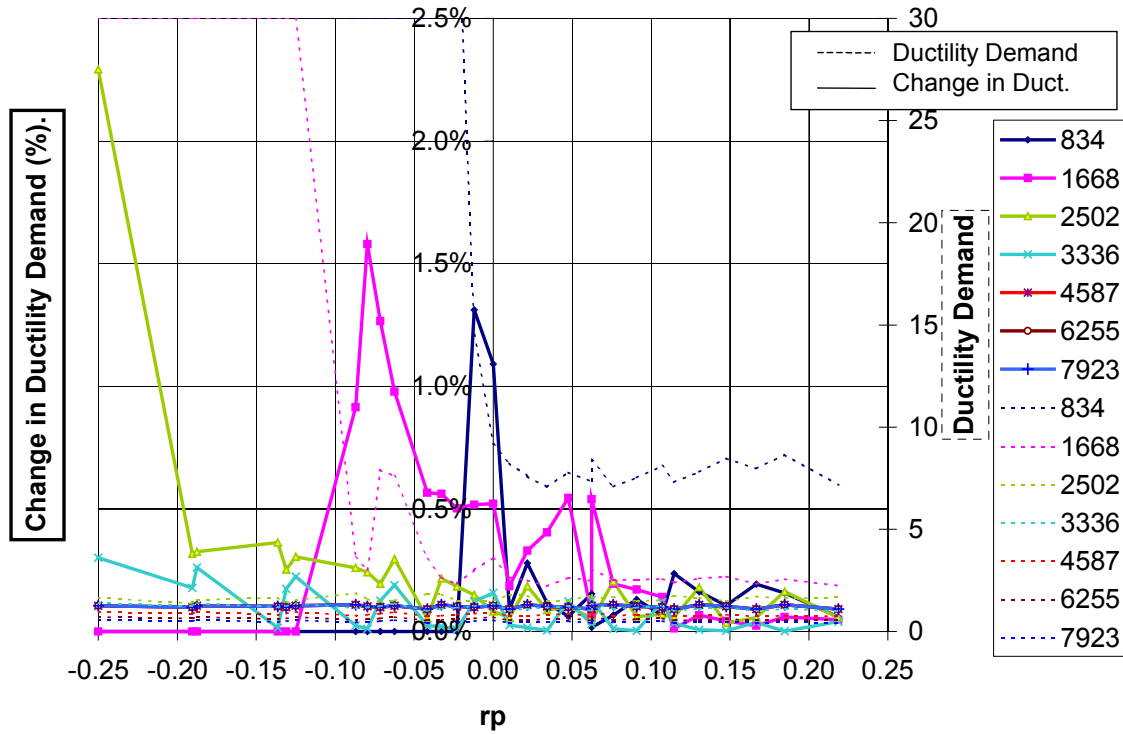
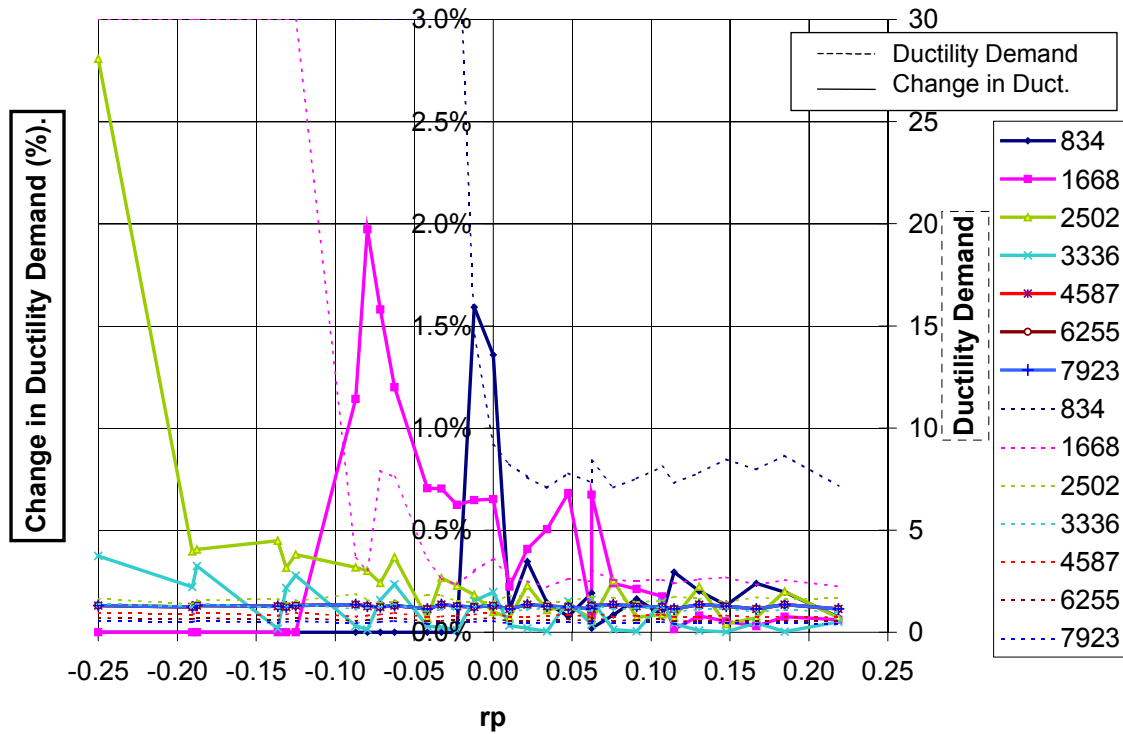


Figure C2.5.1.2b – EQ1, Lateral Scale = 0.2 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.093 Seconds



**Figure C2.5.1.2c – EQ1, Lateral Scale = 0.2 g, Vertical Multiplier = 2.0, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.093 Seconds**



**Figure C2.5.1.2d – EQ1, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.093 Seconds**

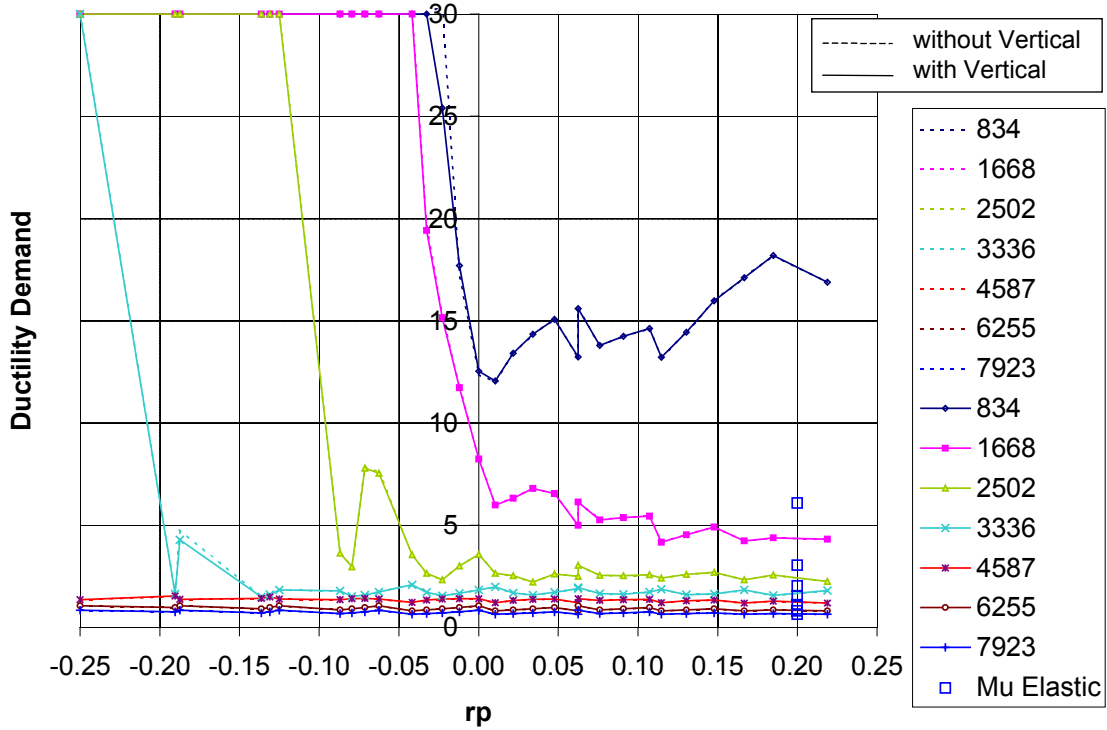


Figure C2.5.1.3a – EQ1, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.093 Seconds.

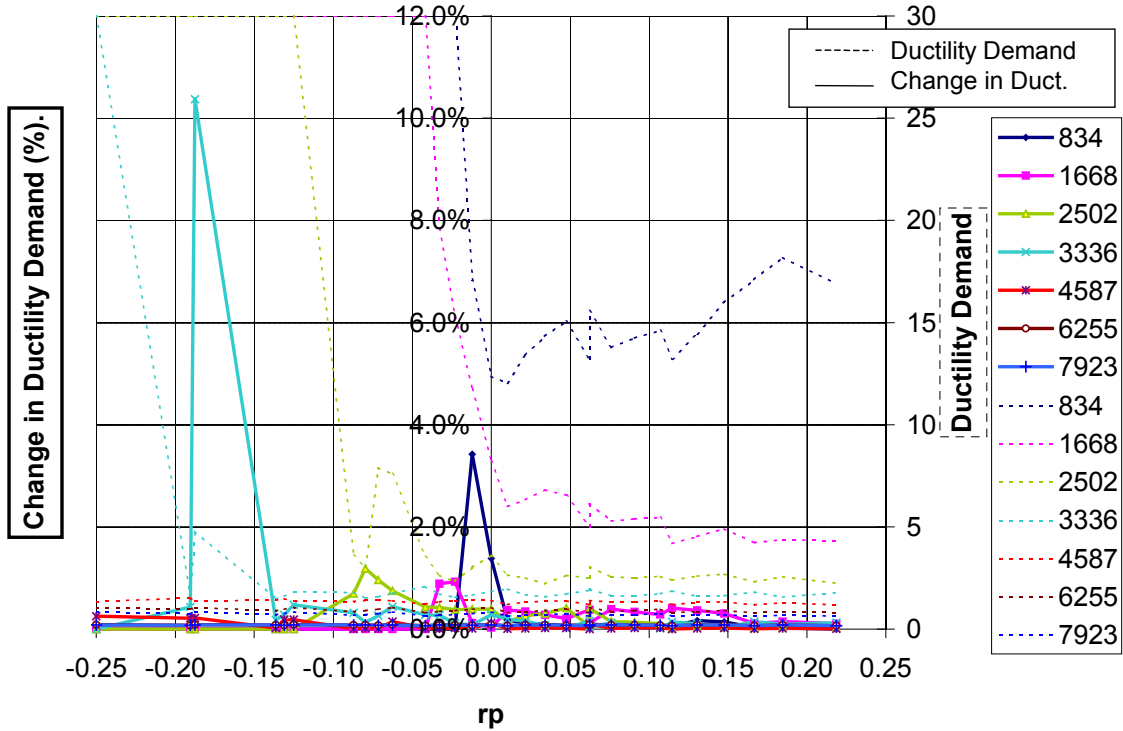


Figure C2.5.1.3b– EQ1, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.093 Seconds

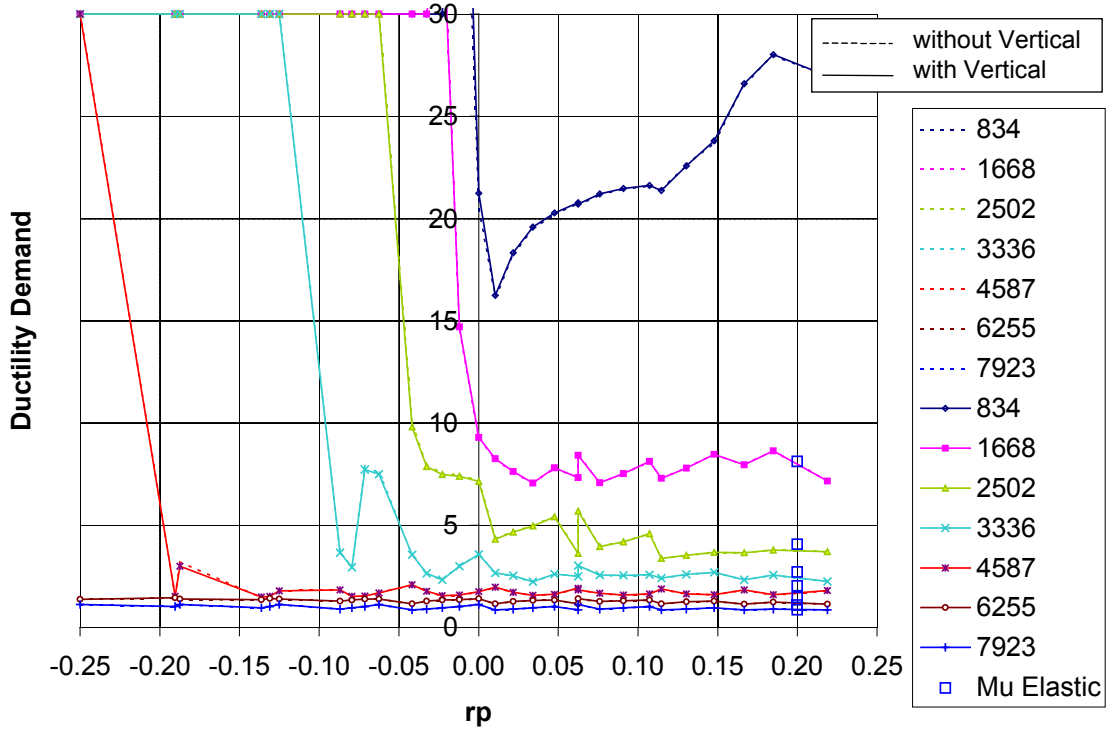


Figure C2.5.1.4a – EQ1, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.093 Seconds.

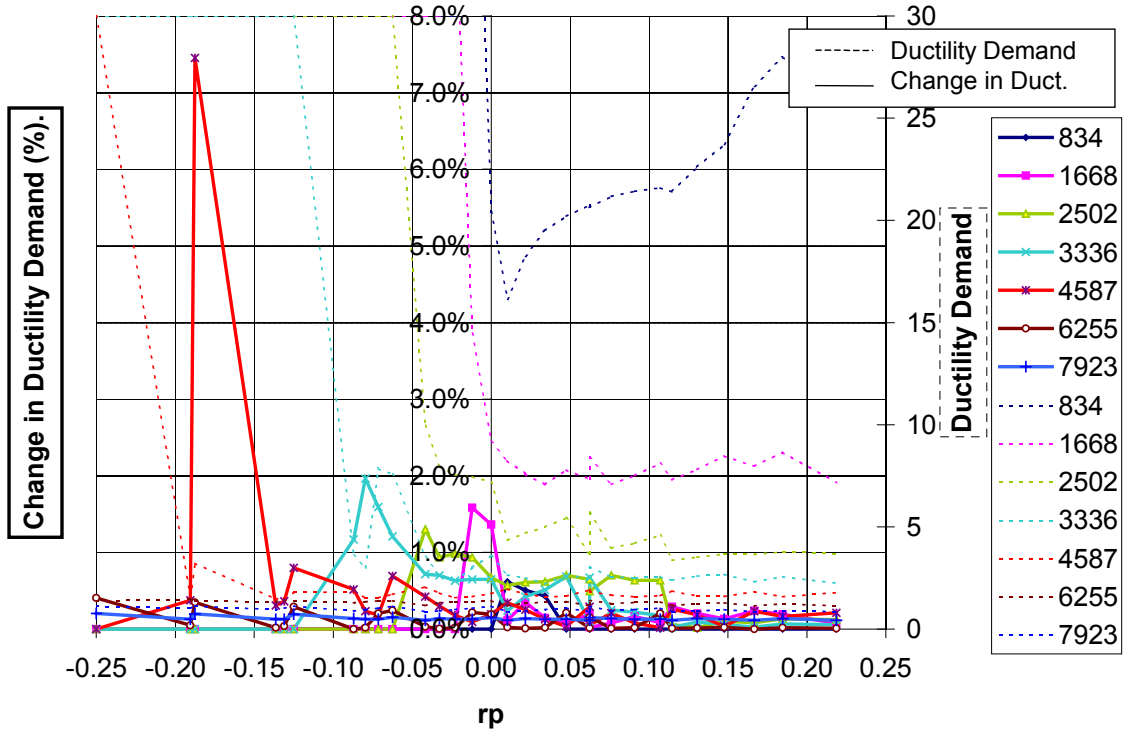


Figure C2.5.1.4b– EQ1, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.093 Seconds

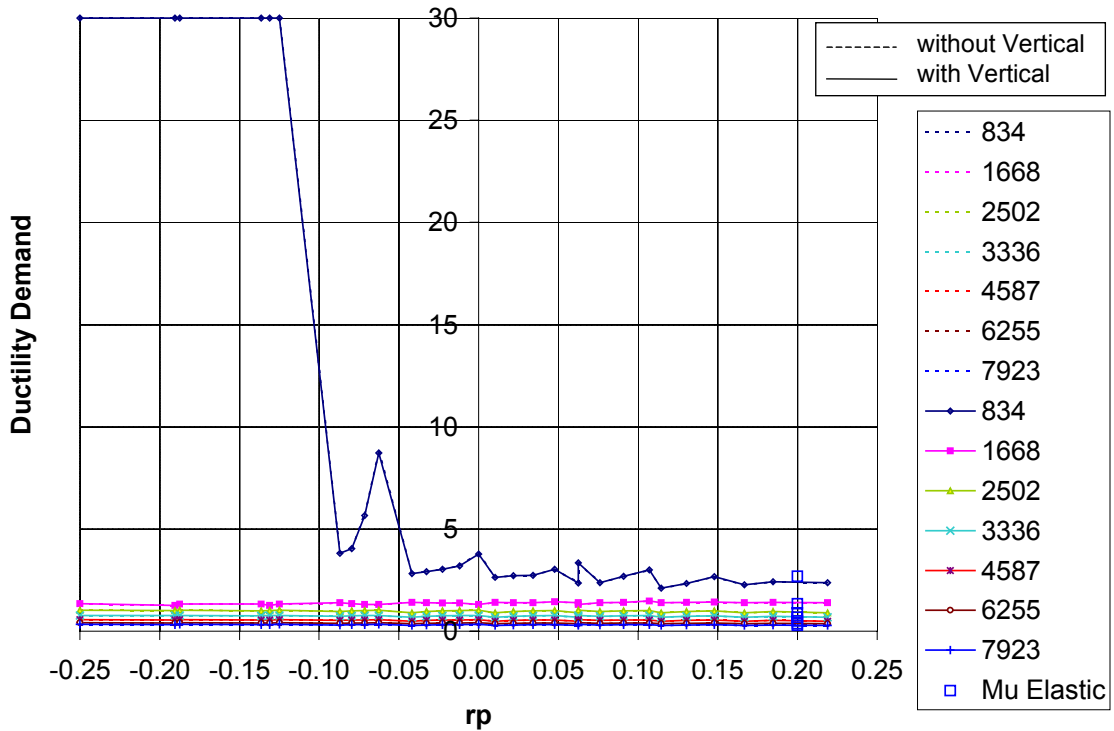


Figure C2.6.1.1a – EQ1, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.278 Seconds.

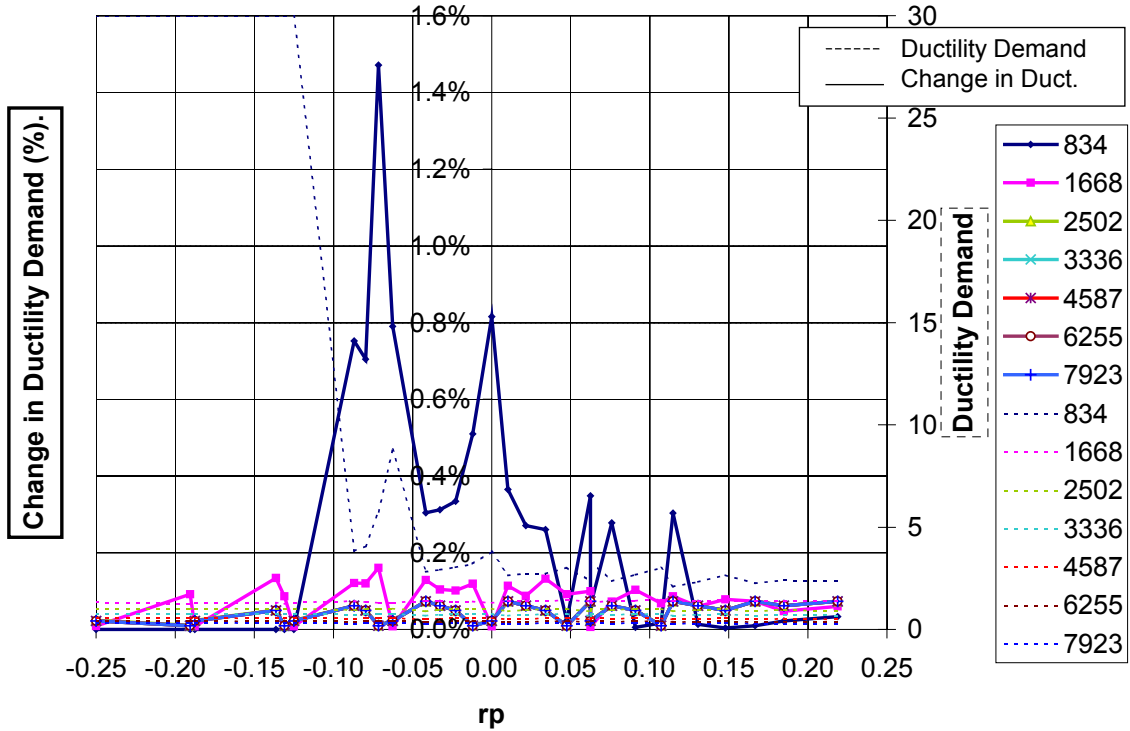


Figure C2.6.1.1b– EQ1, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.278 Seconds

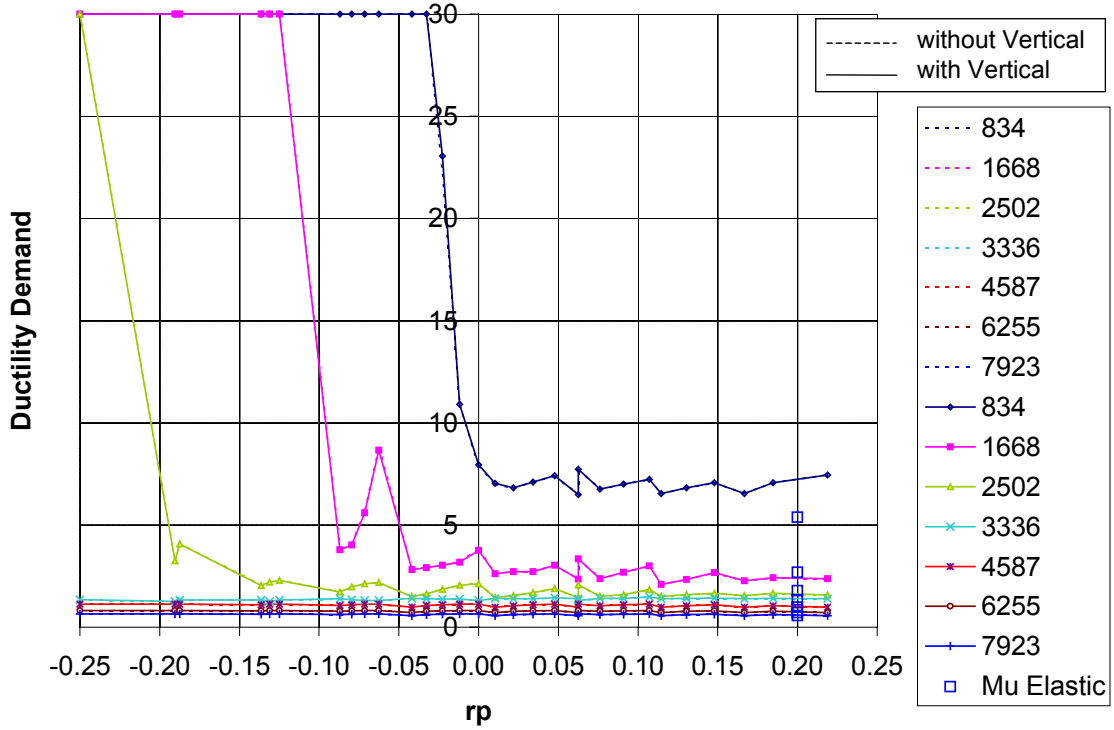


Figure C2.6.1.2a – EQ1, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.278 Seconds.

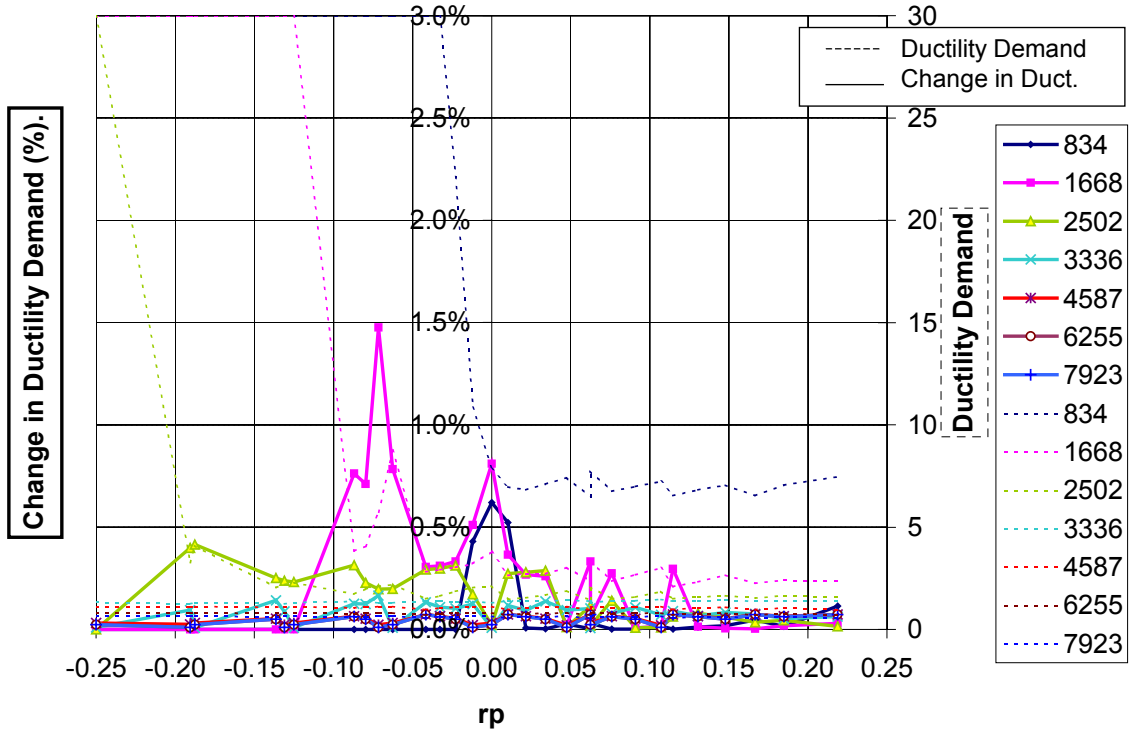
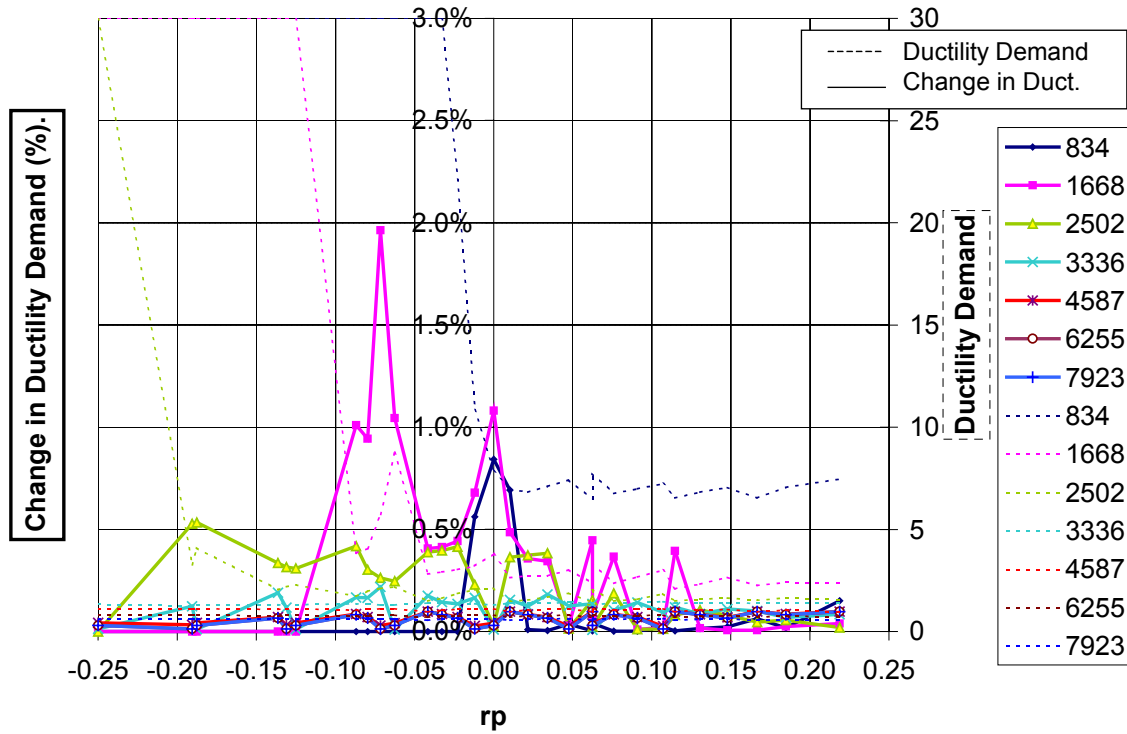
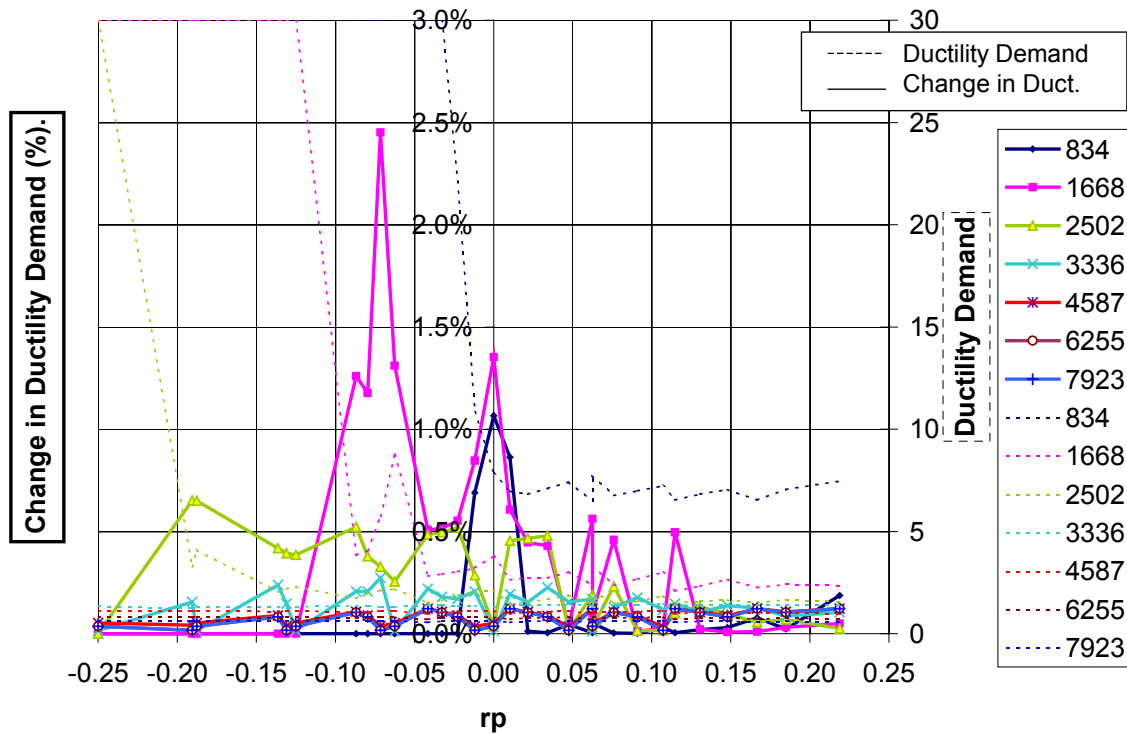


Figure C2.6.1.2b– EQ1, Lateral Scale = 0.2 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.278 Seconds



**Figure C2.6.1.2c– EQ1, Lateral Scale = 0.2 g, Vertical Multiplier = 2.0, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.278 Seconds**



**Figure C2.6.1.2d– EQ1, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.278 Seconds**

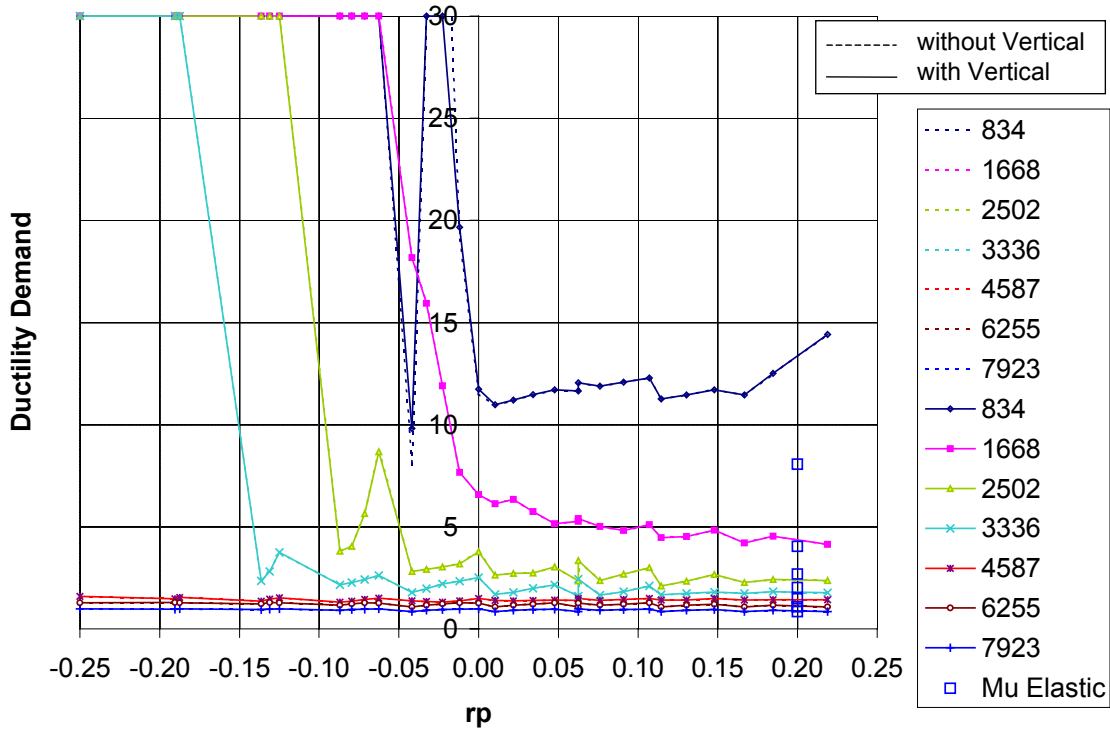


Figure C2.6.1.3a – EQ1, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.278 Seconds.

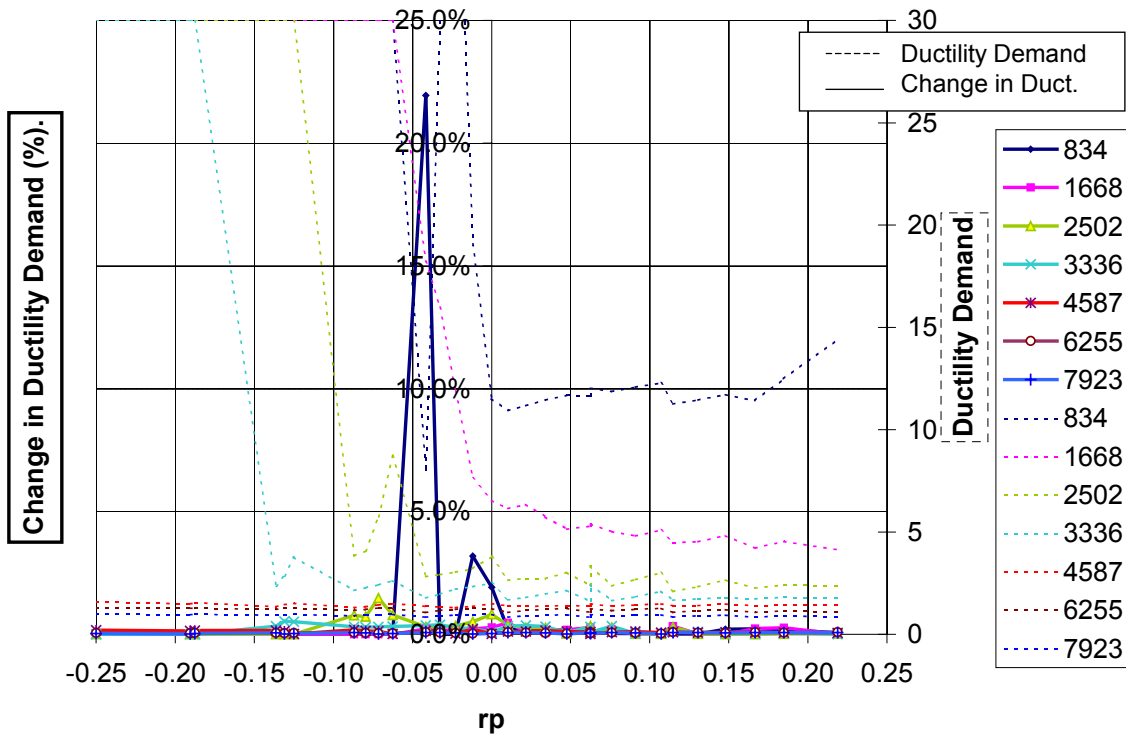


Figure C2.6.1.3b– EQ1, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.278 Seconds

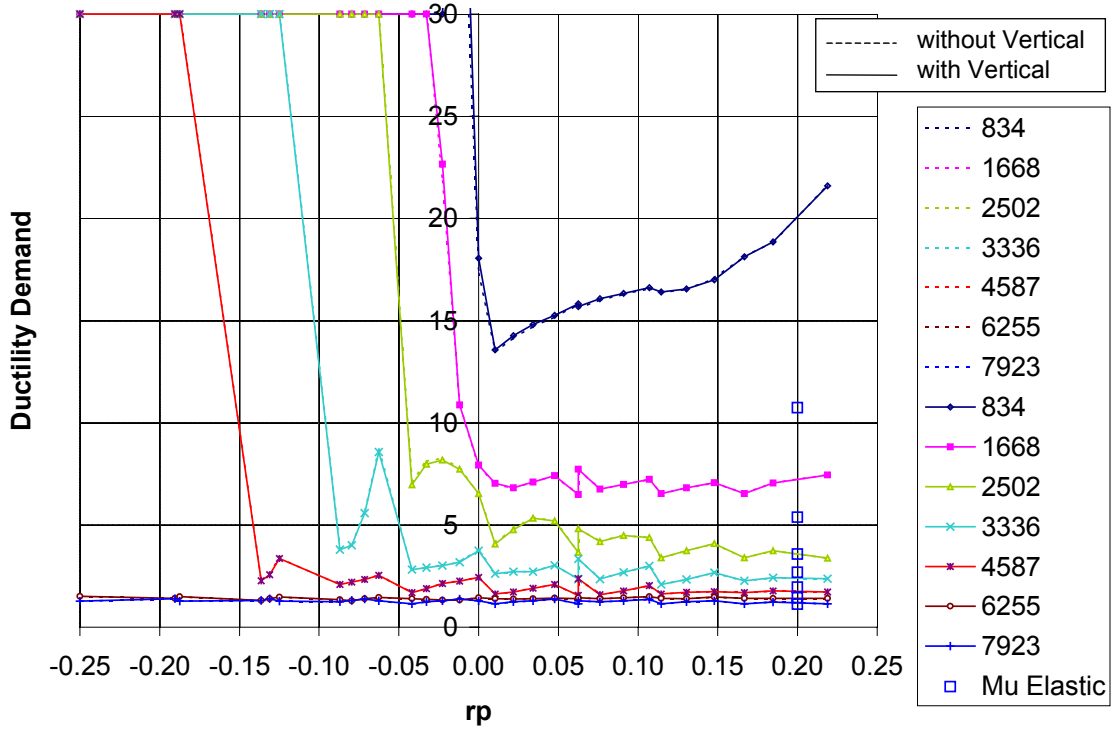


Figure C2.6.1.4a – EQ1, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.278 Seconds.

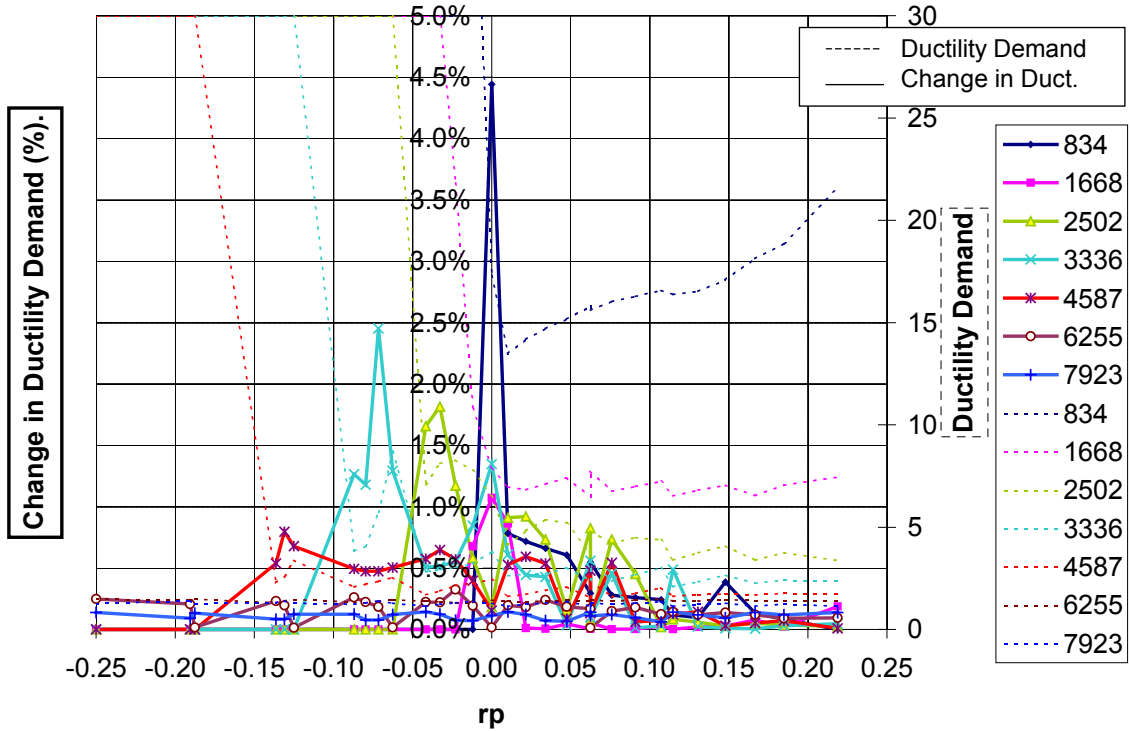


Figure C2.6.1.4b– EQ1, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.278 Seconds

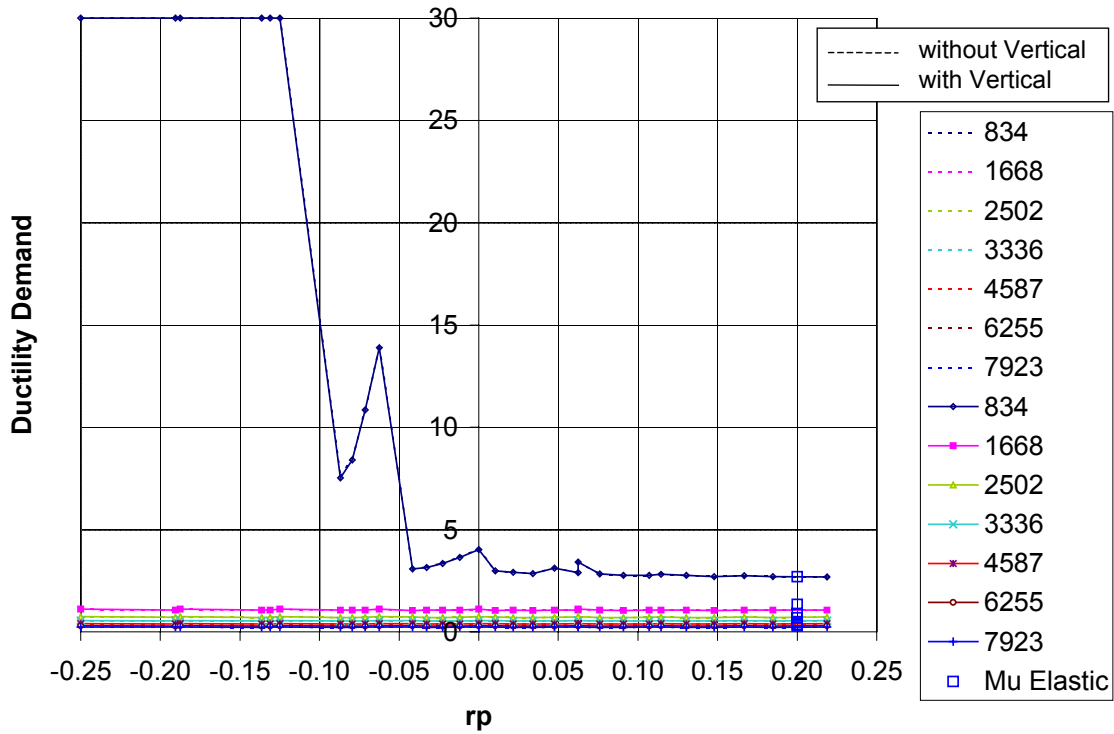


Figure C2.7.1.1a – EQ1, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.459 Seconds.

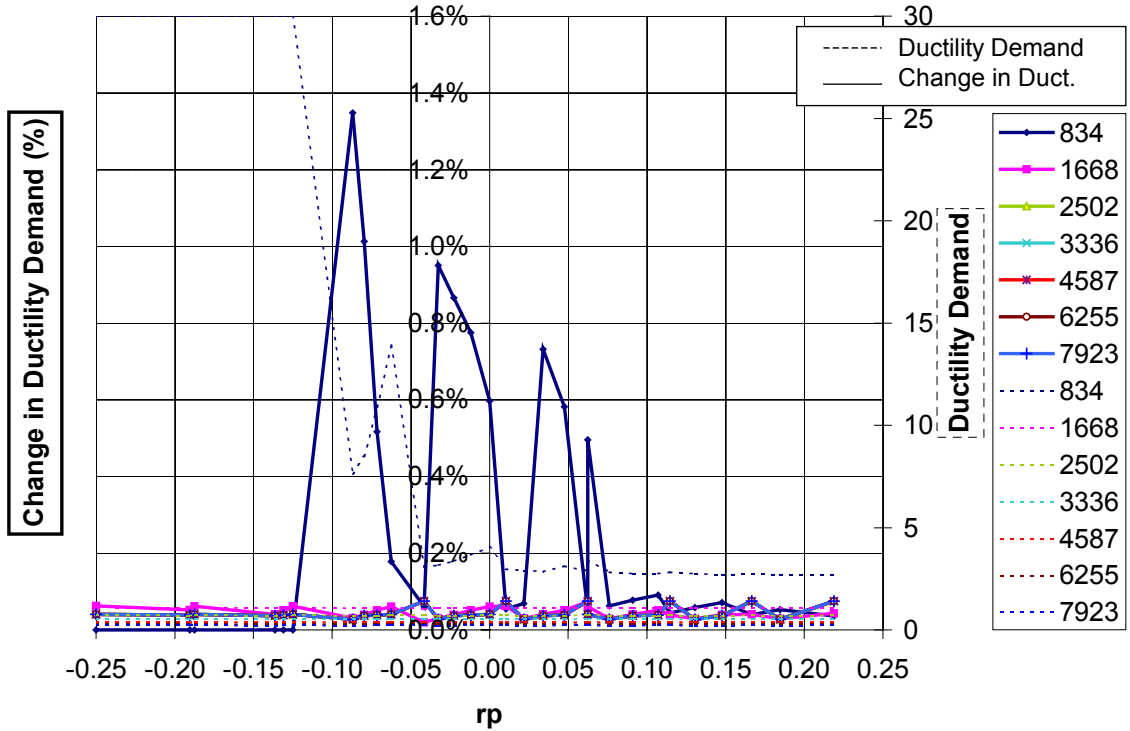


Figure C2.7.1.1b– EQ1, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.459 Seconds

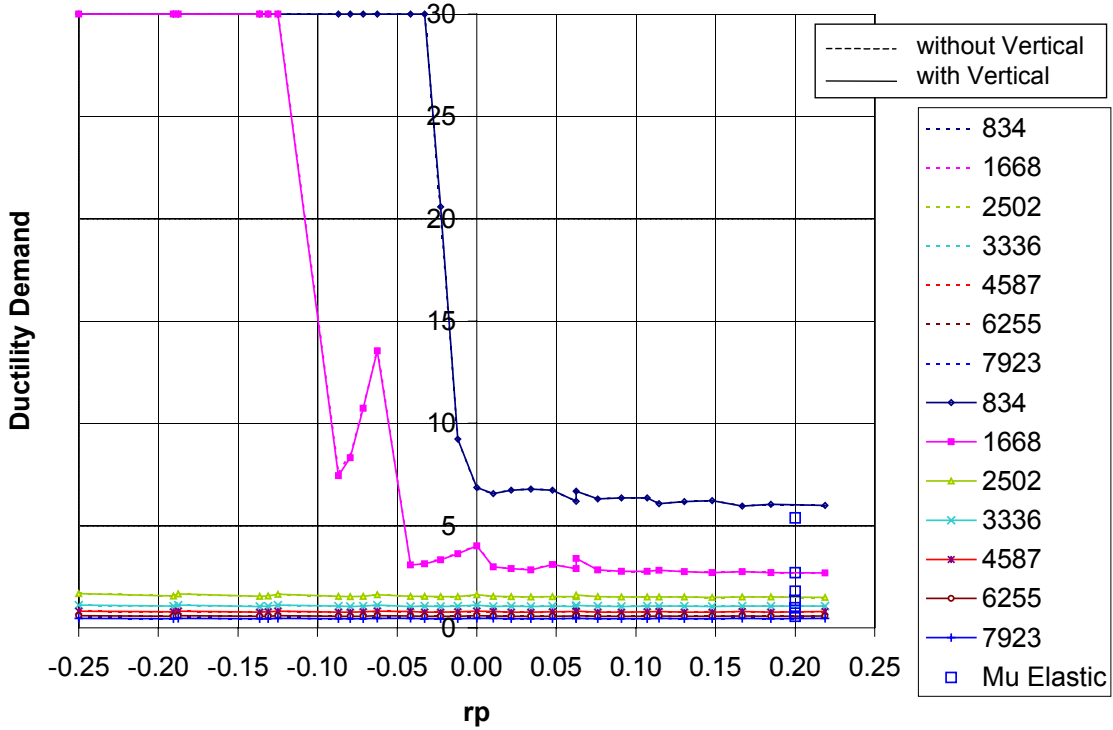


Figure C2.7.1.2a – EQ1, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.459 Seconds.

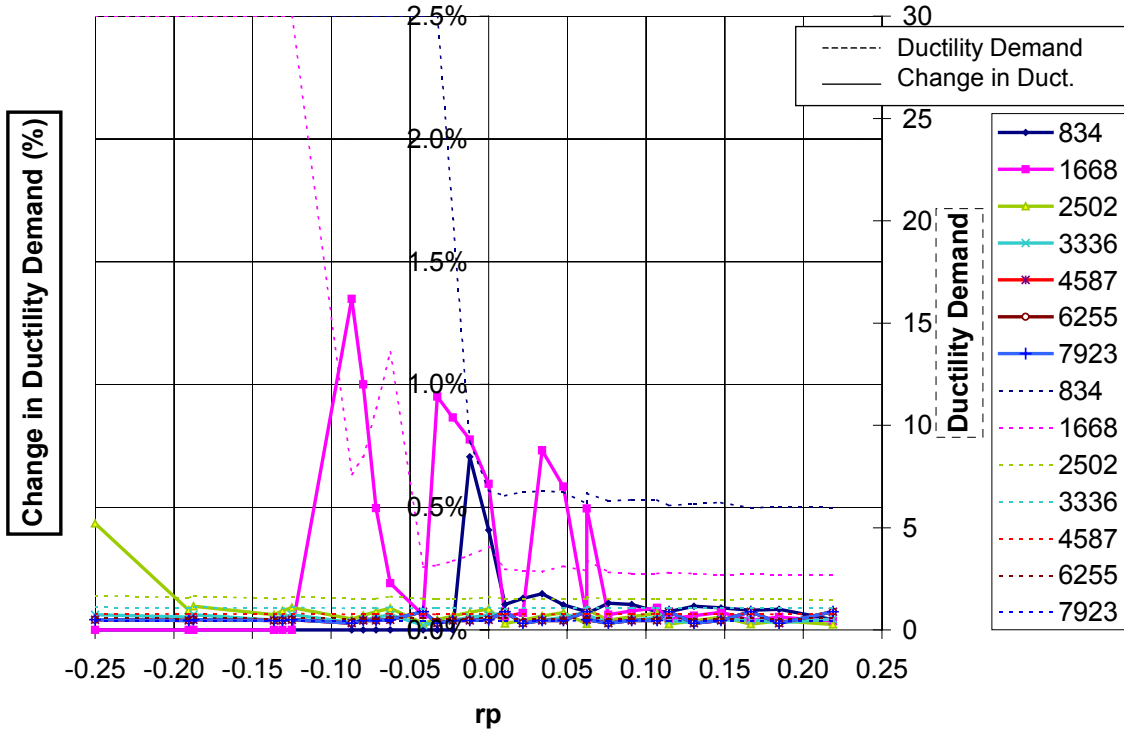


Figure C2.7.1.2b– EQ1, Lateral Scale = 0.2 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.459 Seconds

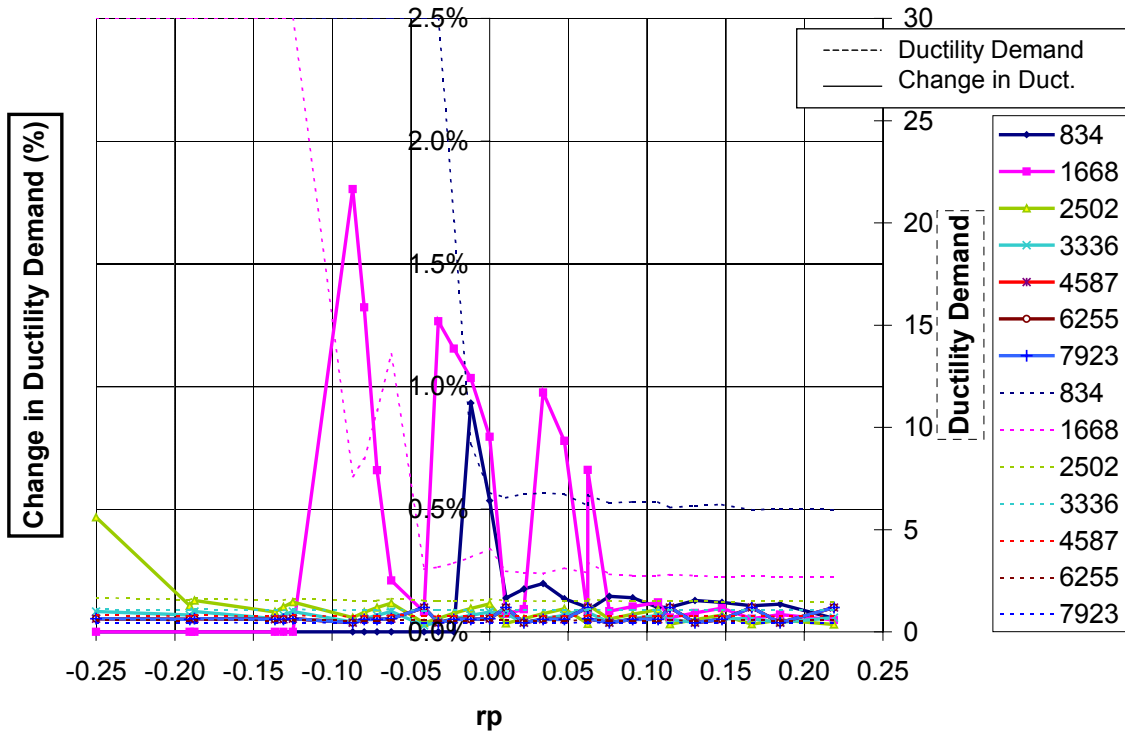


Figure C2.7.1.2c– EQ1, Lateral Scale = 0.2 g, Vertical Multiplier = 2.0, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.459 Seconds

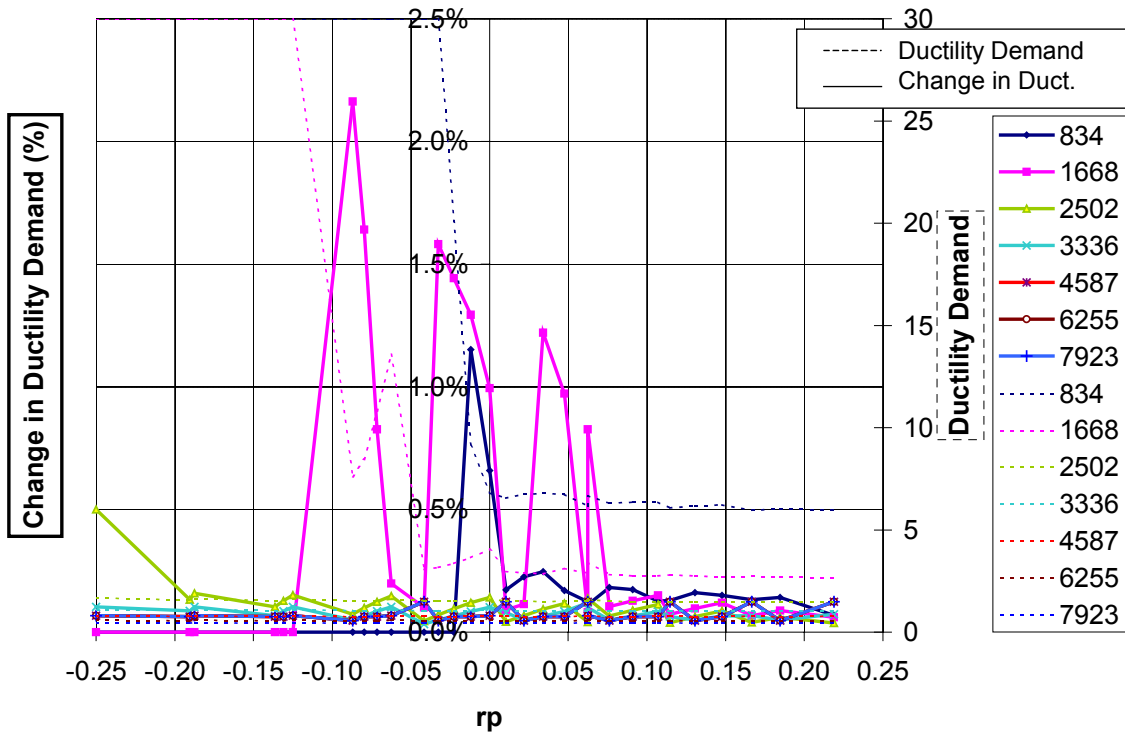


Figure C2.7.1.2d– EQ1, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.459 Seconds

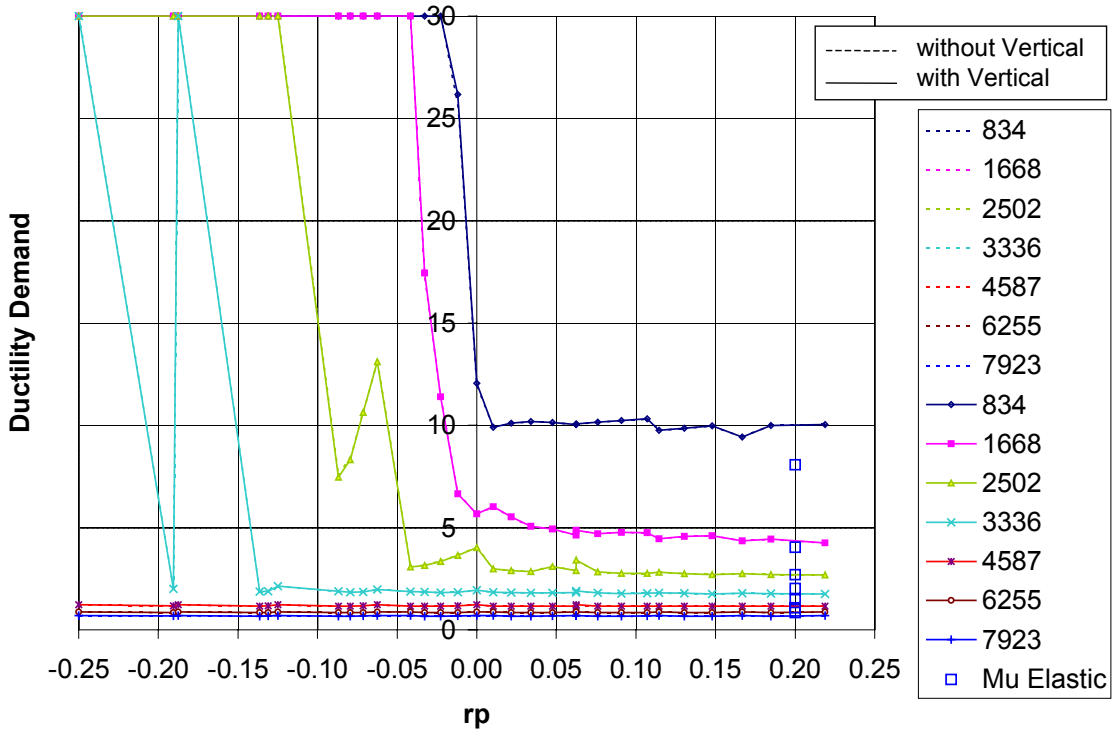


Figure C2.7.1.3a – EQ1, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.459 Seconds.

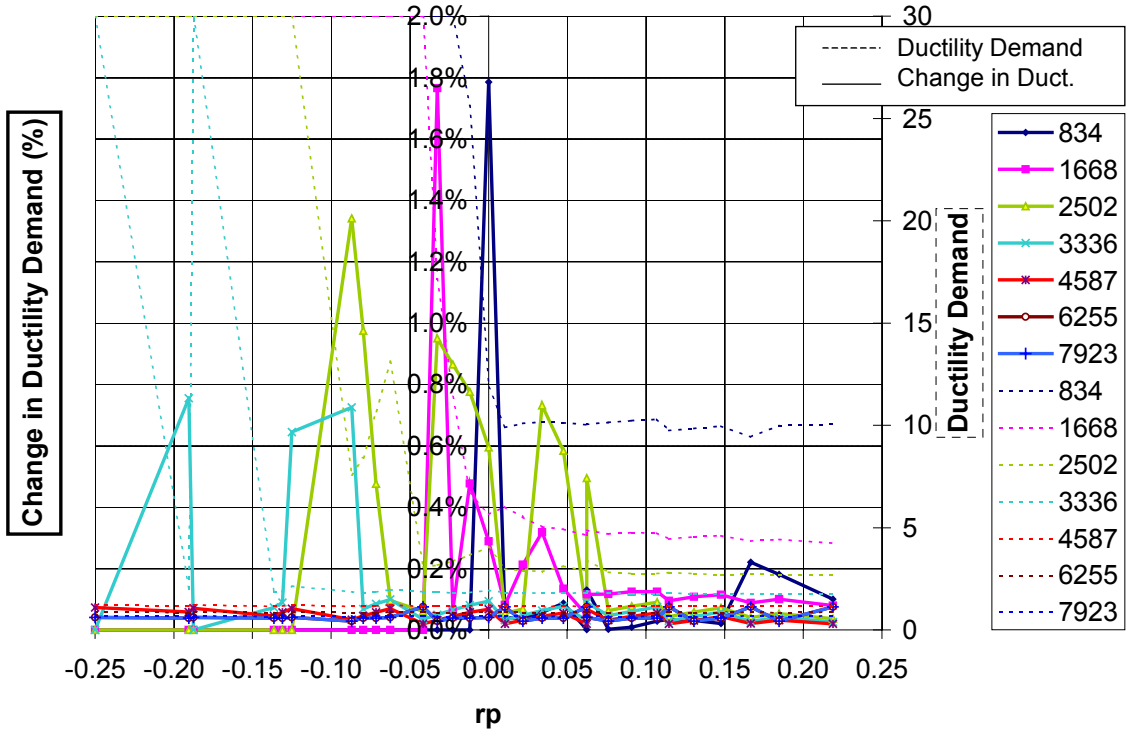


Figure C2.7.1.3b– EQ1, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.459 Seconds

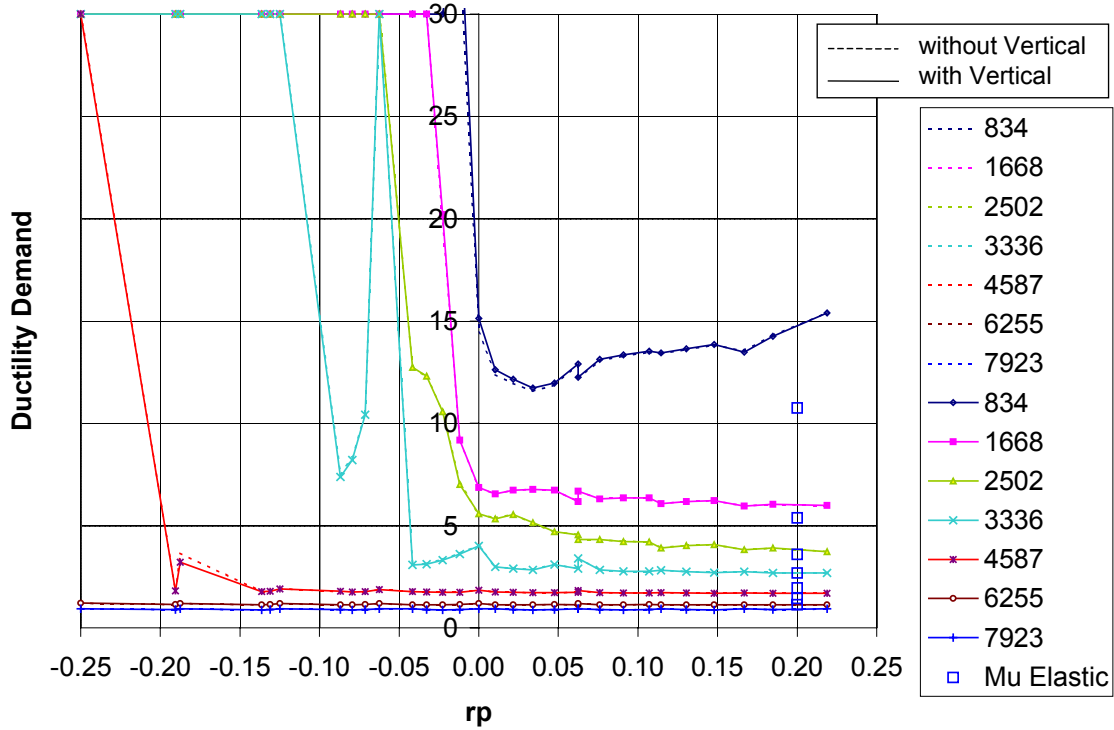


Figure C2.7.1.4a – EQ1, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.459 Seconds.

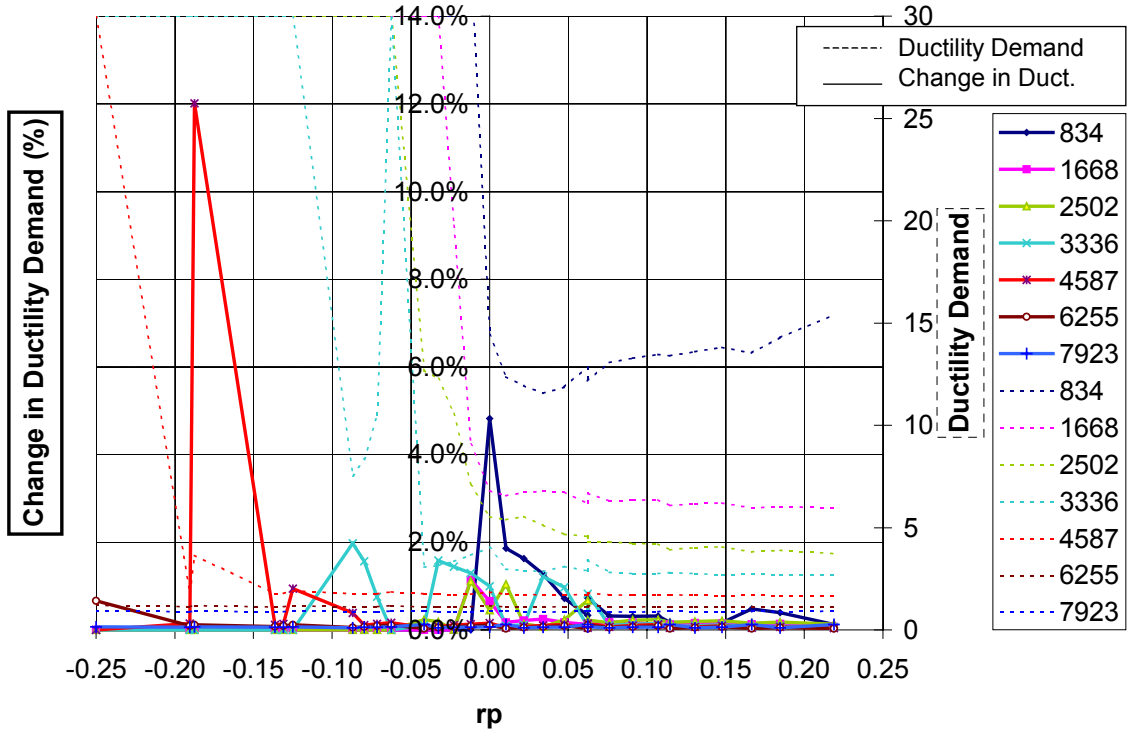


Figure C2.7.1.4b– EQ1, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.459 Seconds

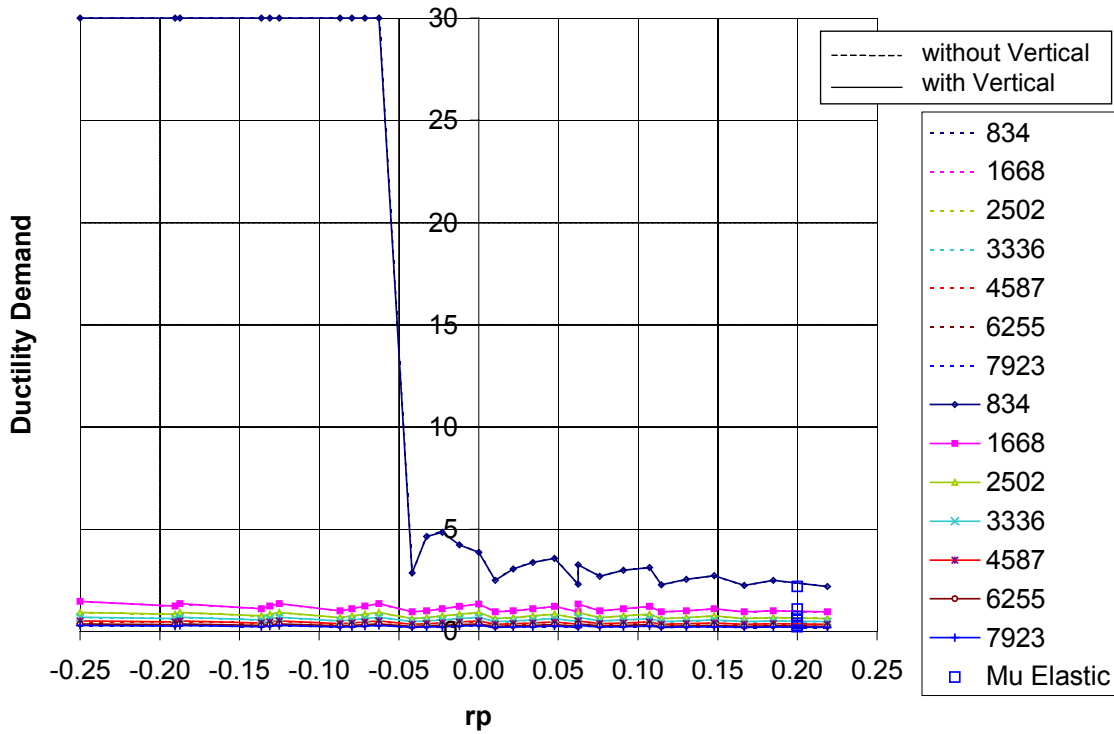


Figure C2.8.1.1a – EQ1, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.655 Seconds.

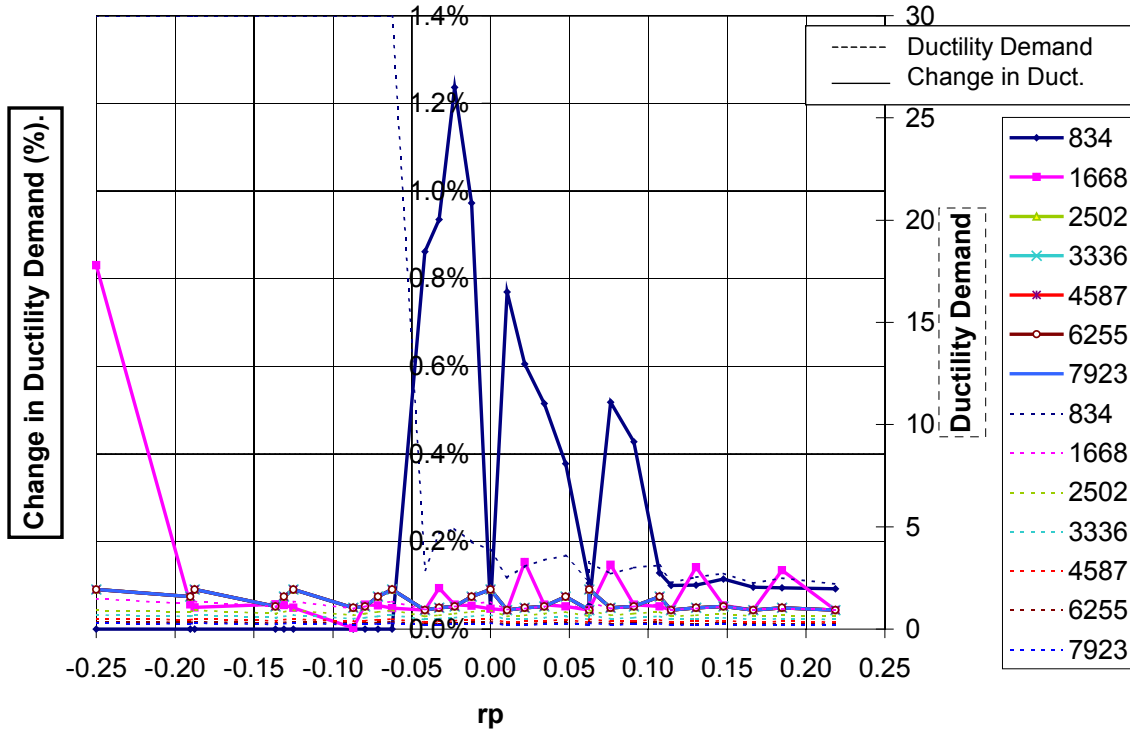


Figure C2.8.1.1b– EQ1, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.655 Seconds

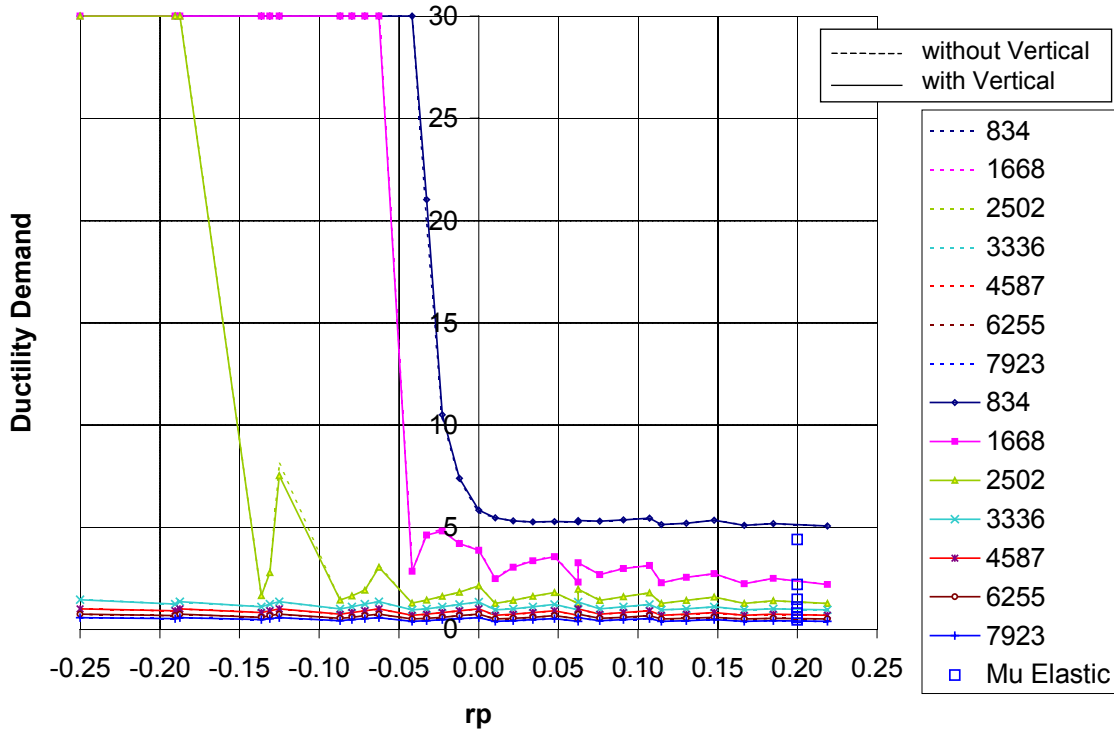


Figure C2.8.1.2a – EQ1, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.655 Seconds.

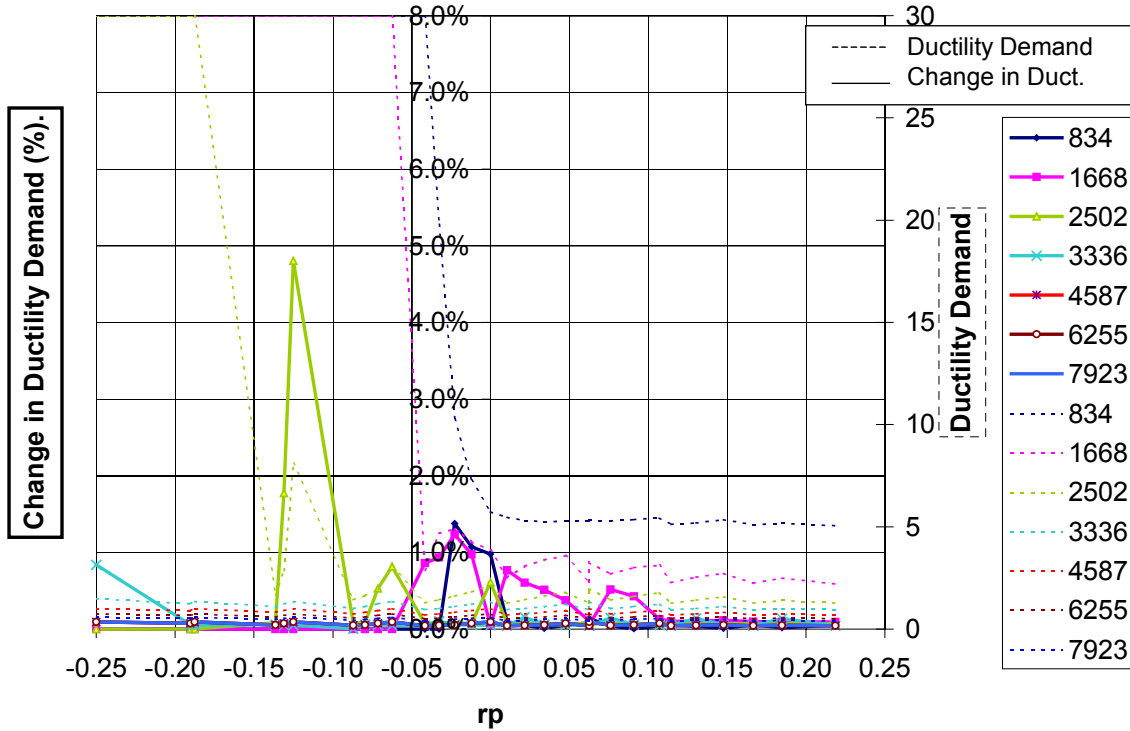
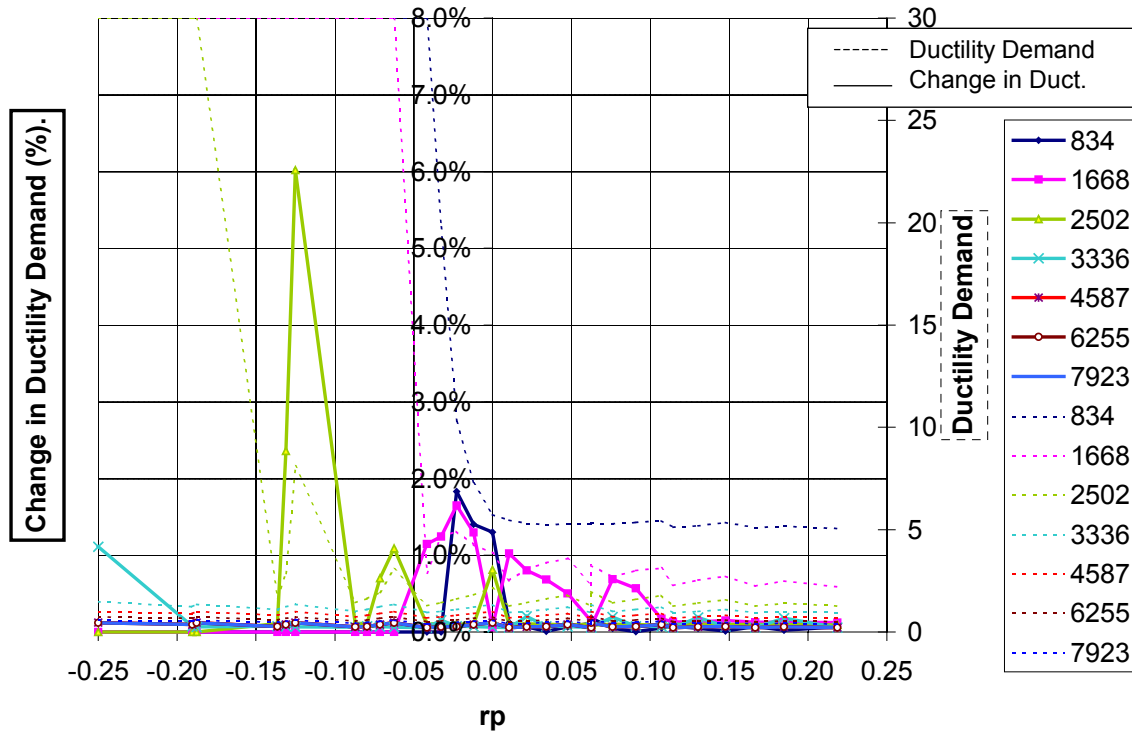
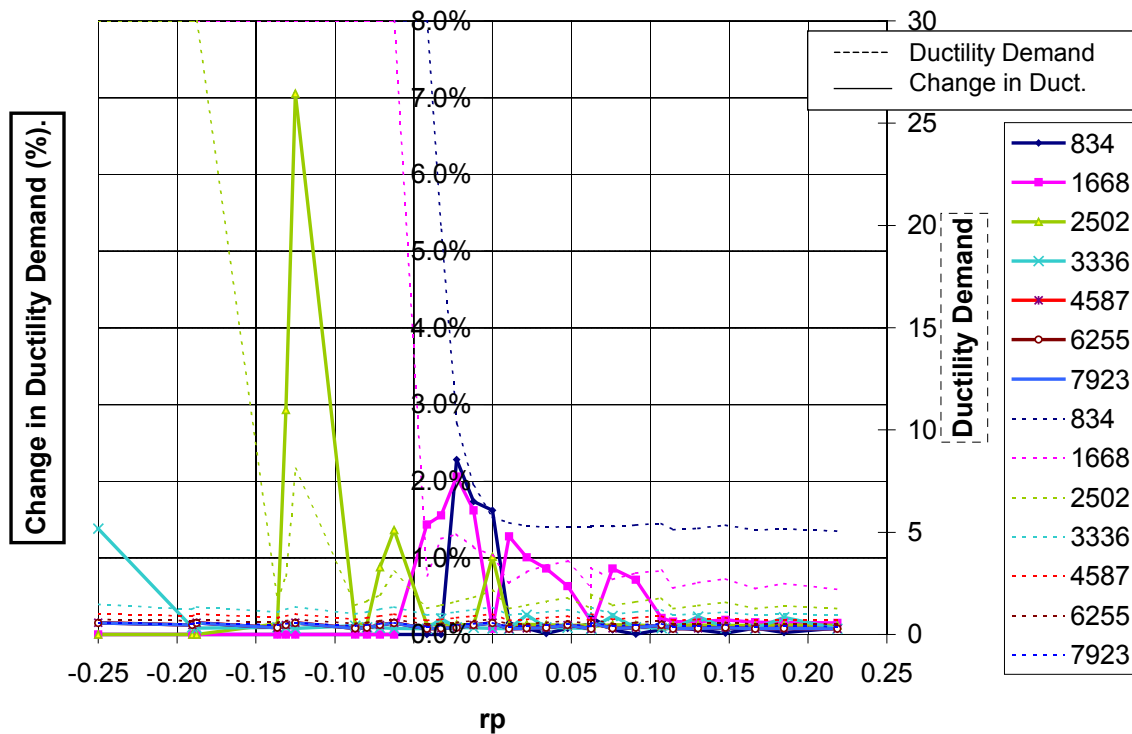


Figure C2.8.1.2b– EQ1, Lateral Scale = 0.2 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.655 Seconds



**Figure C2.8.1.2c– EQ1, Lateral Scale = 0.2 g, Vertical Multiplier = 2.0, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.655 Seconds**



**Figure C2.8.1.2d– EQ1, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.655 Seconds**

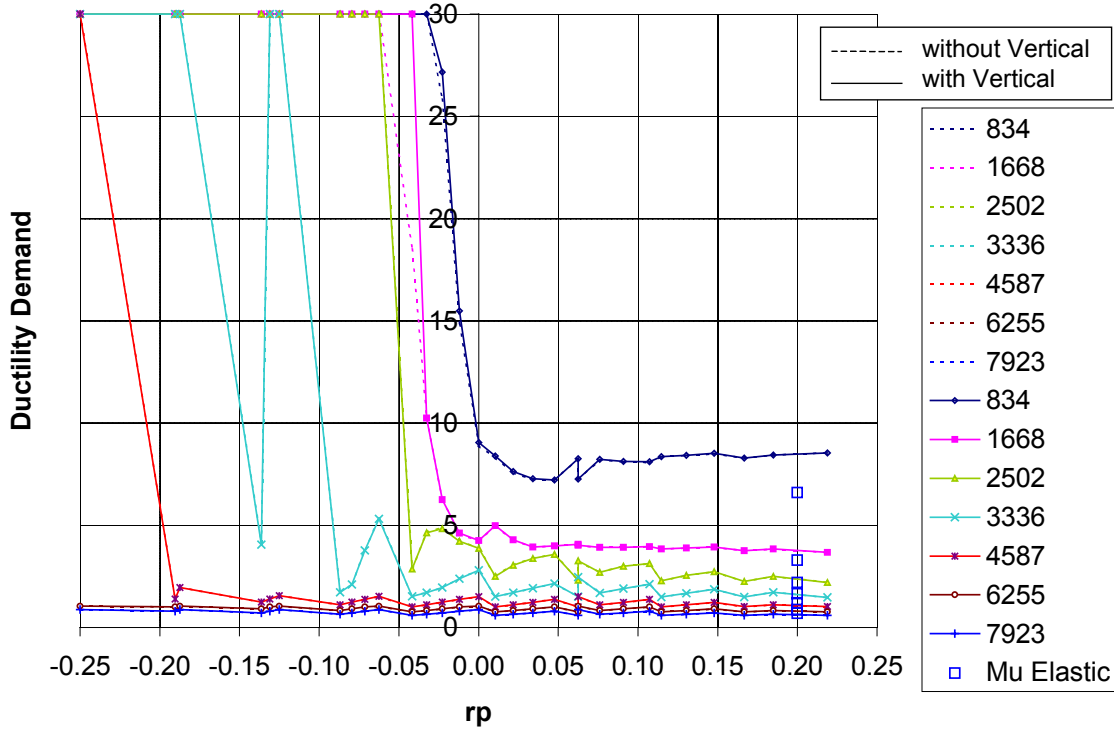


Figure C2.8.1.3a – EQ1, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.655 Seconds.

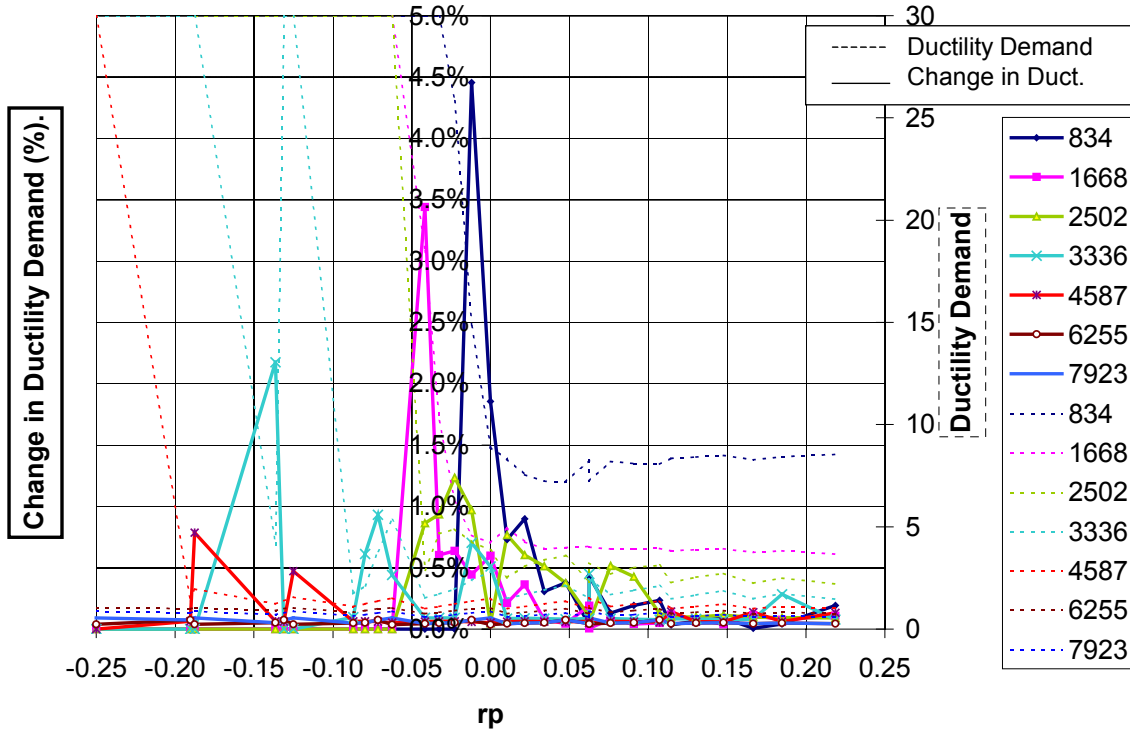


Figure C2.8.1.3b– EQ1, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.655 Seconds

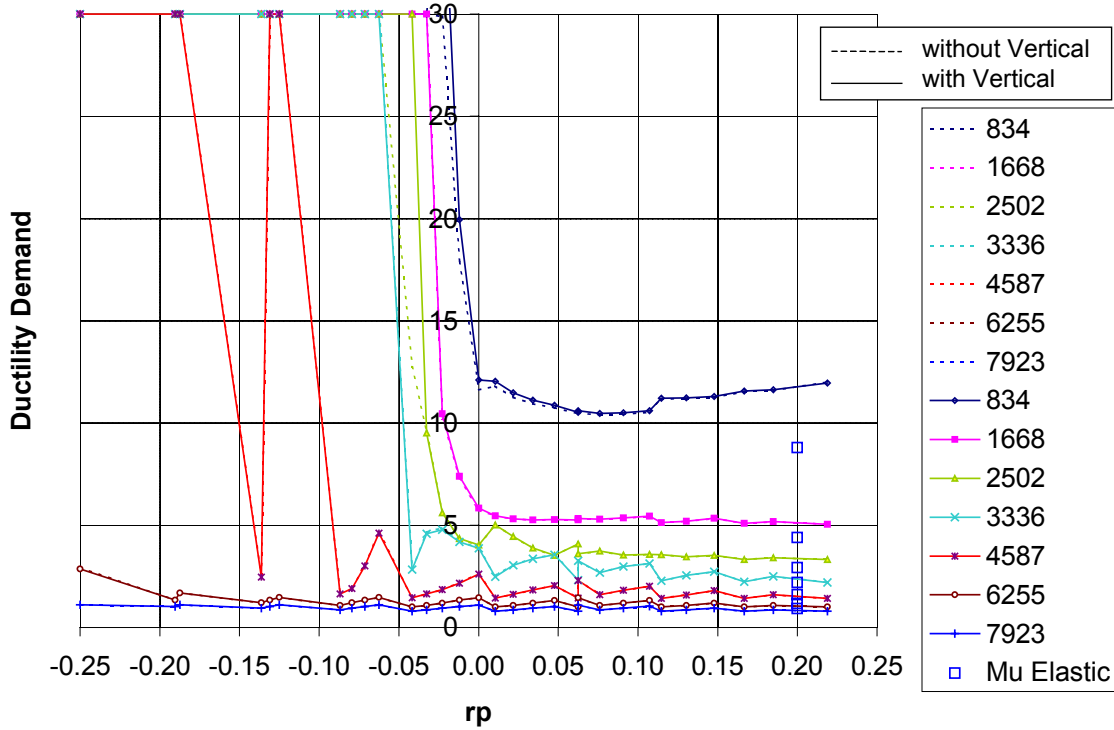


Figure C2.8.1.4a – EQ1, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.655 Seconds.

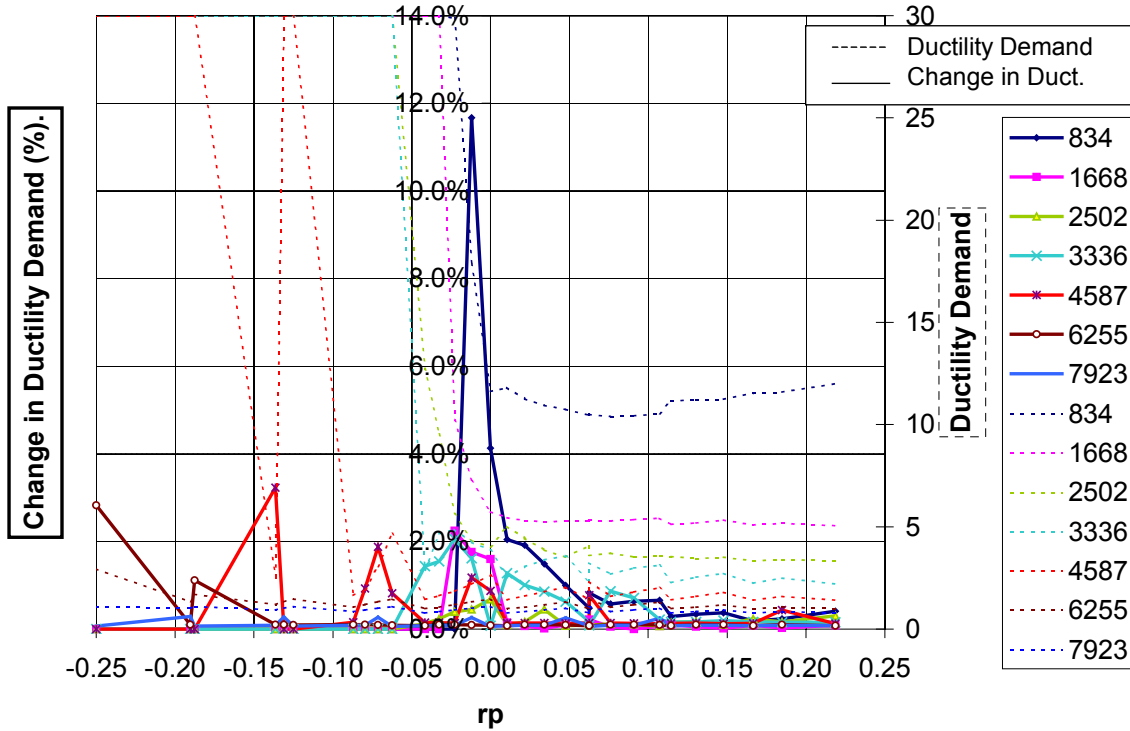


Figure C2.8.1.4b– EQ1, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.655 Seconds

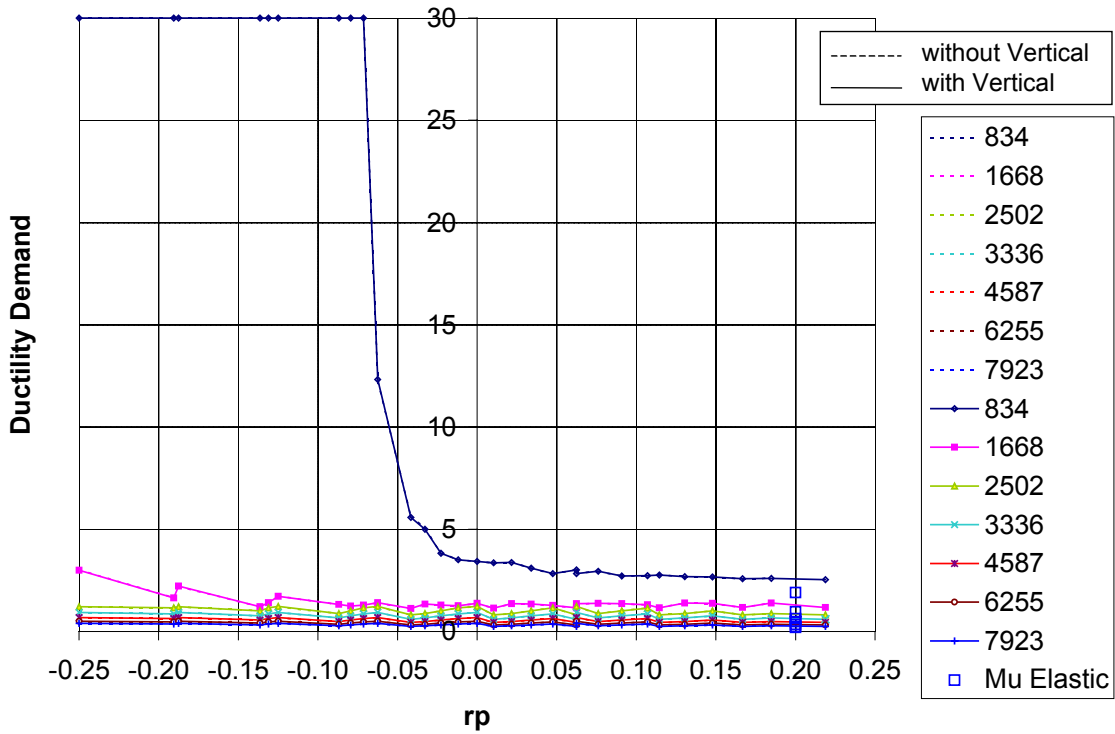


Figure C2.9.1.1a – EQ1, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.808 Seconds.

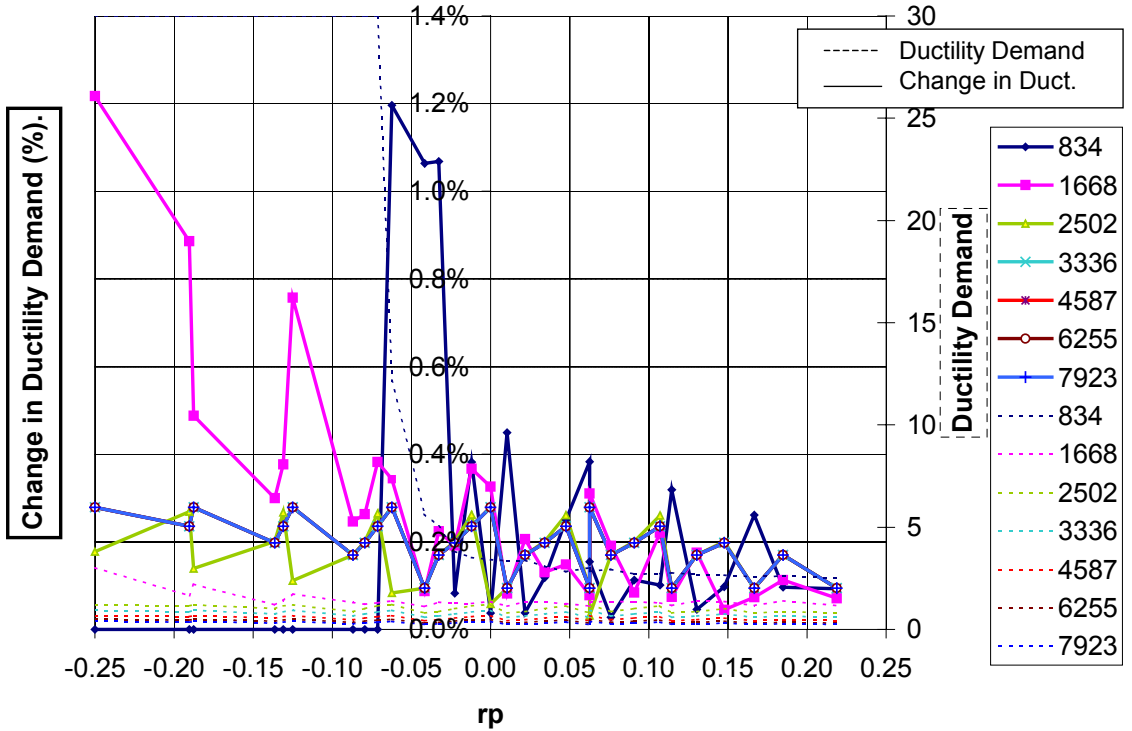


Figure C2.1.1.9a– EQ1, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.808 Seconds

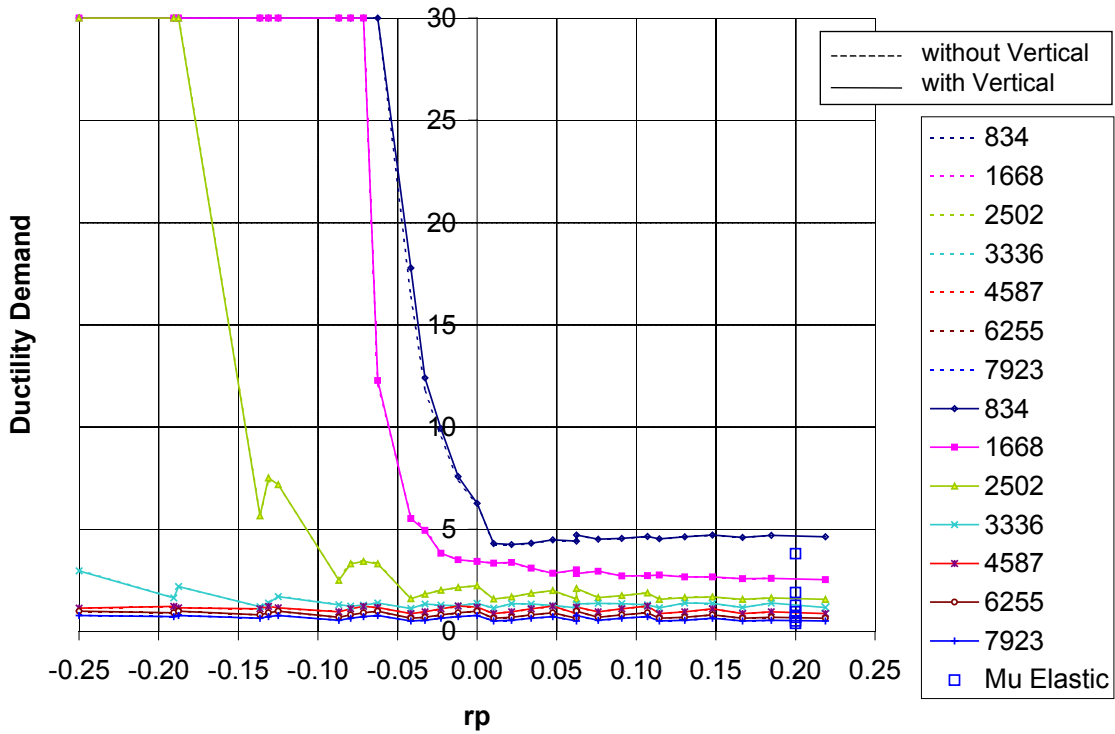


Figure C2.9.1.2a – EQ1, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.808 Seconds.

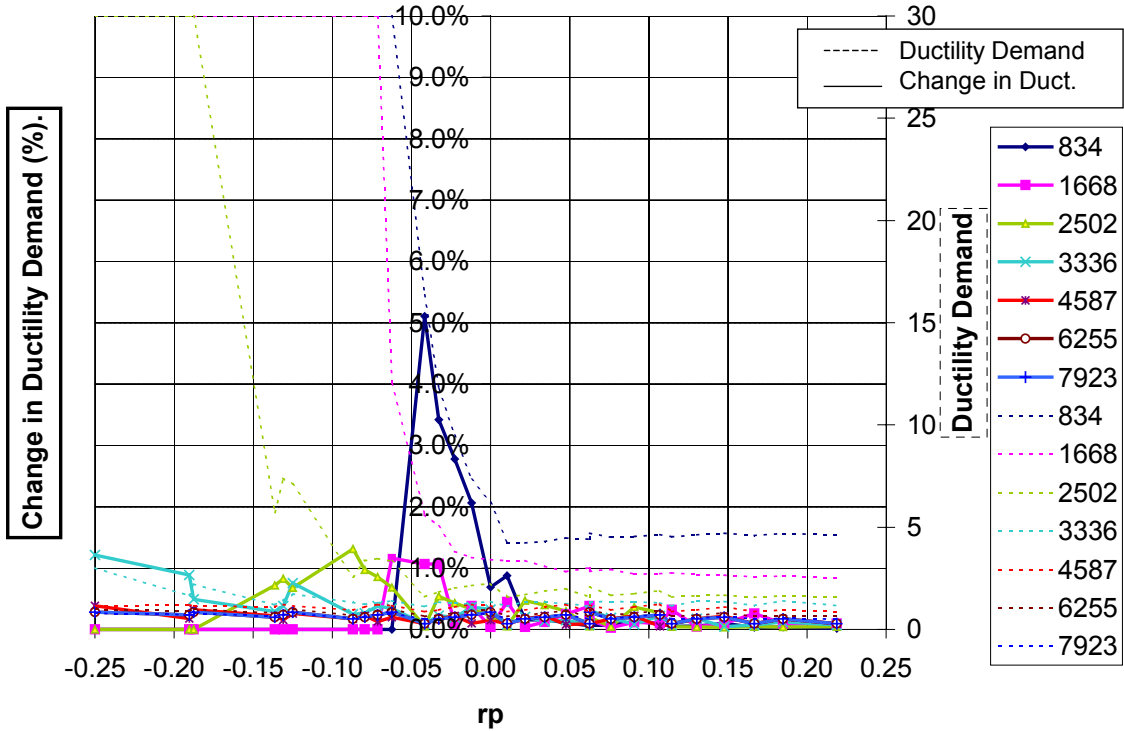
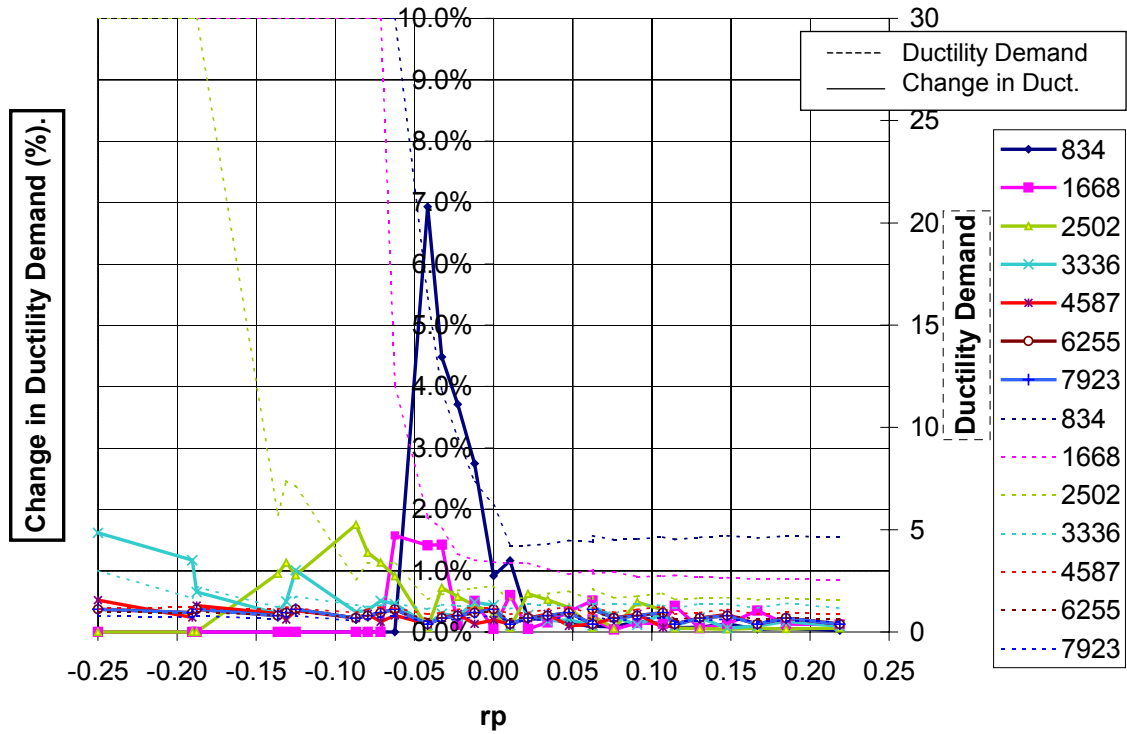
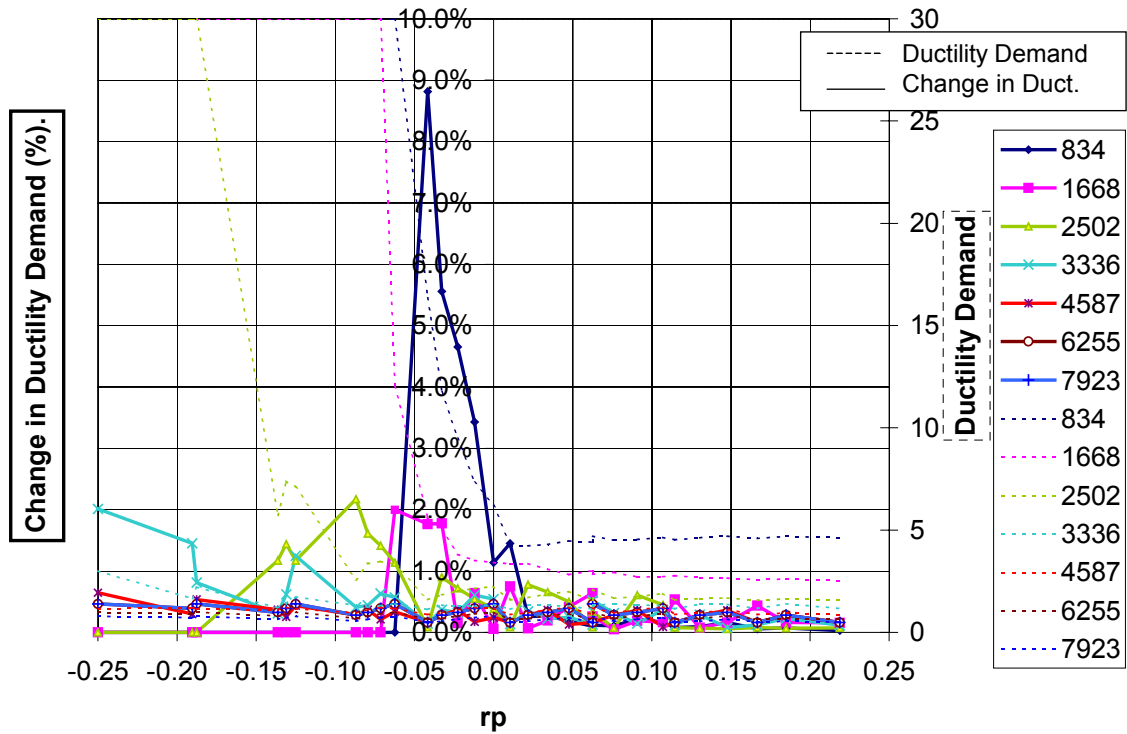


Figure C2.9.1.2b– EQ1, Lateral Scale = 0.2 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.808 Seconds



**Figure C2.9.1.2c– EQ1, Lateral Scale = 0.2 g, Vertical Multiplier = 2.0, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.808 Seconds**



**Figure C2.9.1.2d– EQ1, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.808 Seconds**

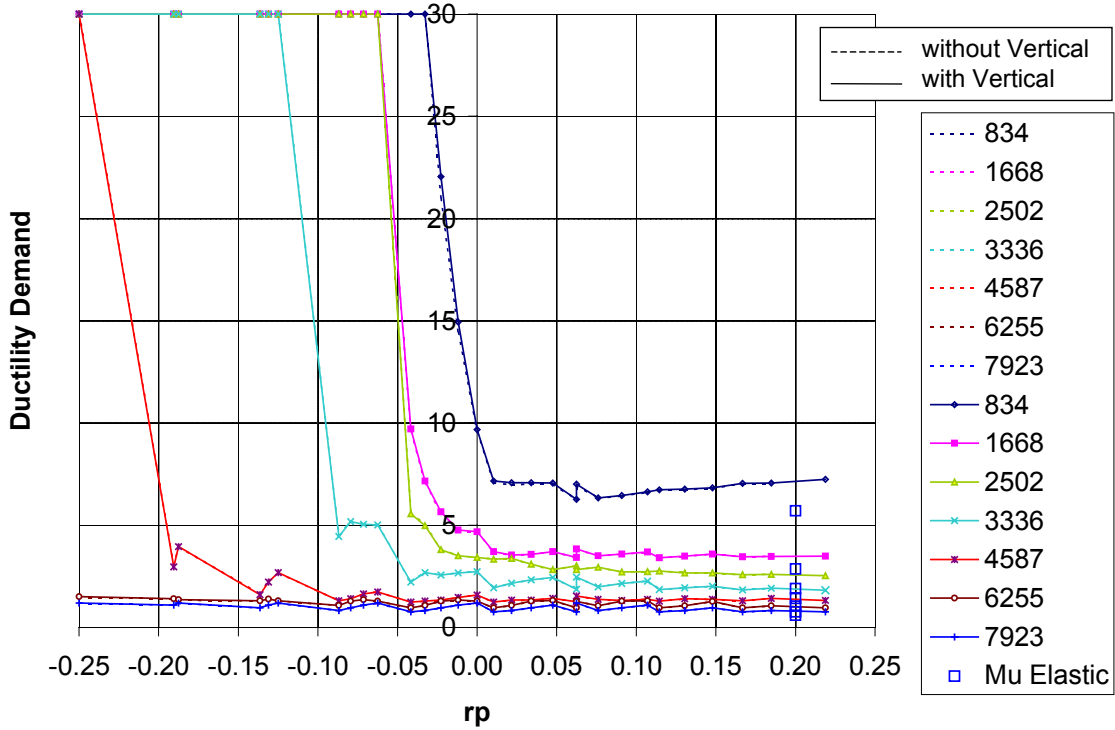


Figure C2.9.1.3a – EQ1, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.808 Seconds.

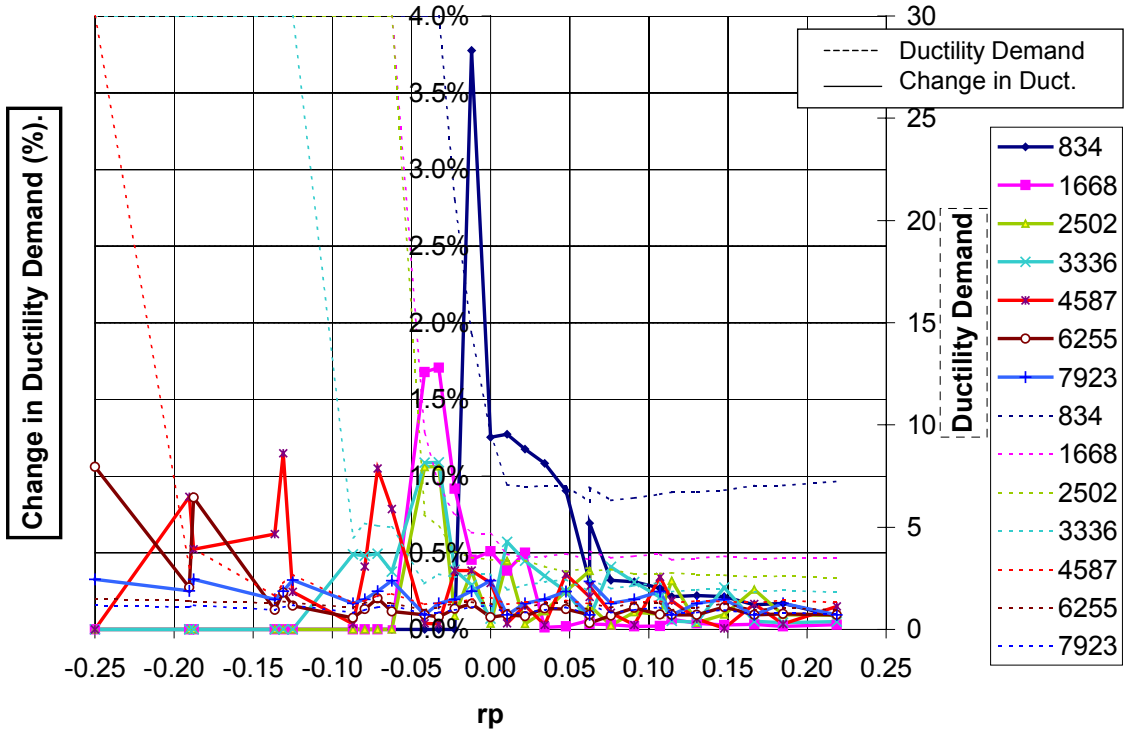


Figure C2.9.1.3b– EQ1, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.808 Seconds

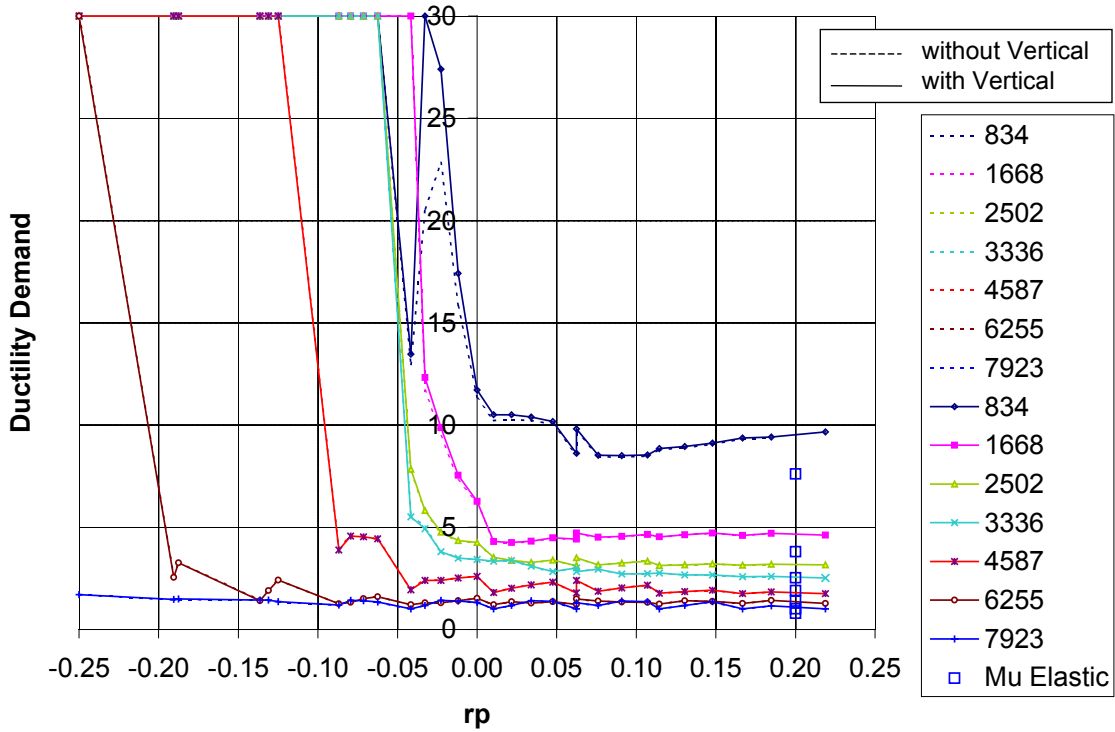


Figure C2.9.1.4a – EQ1, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.808 Seconds.

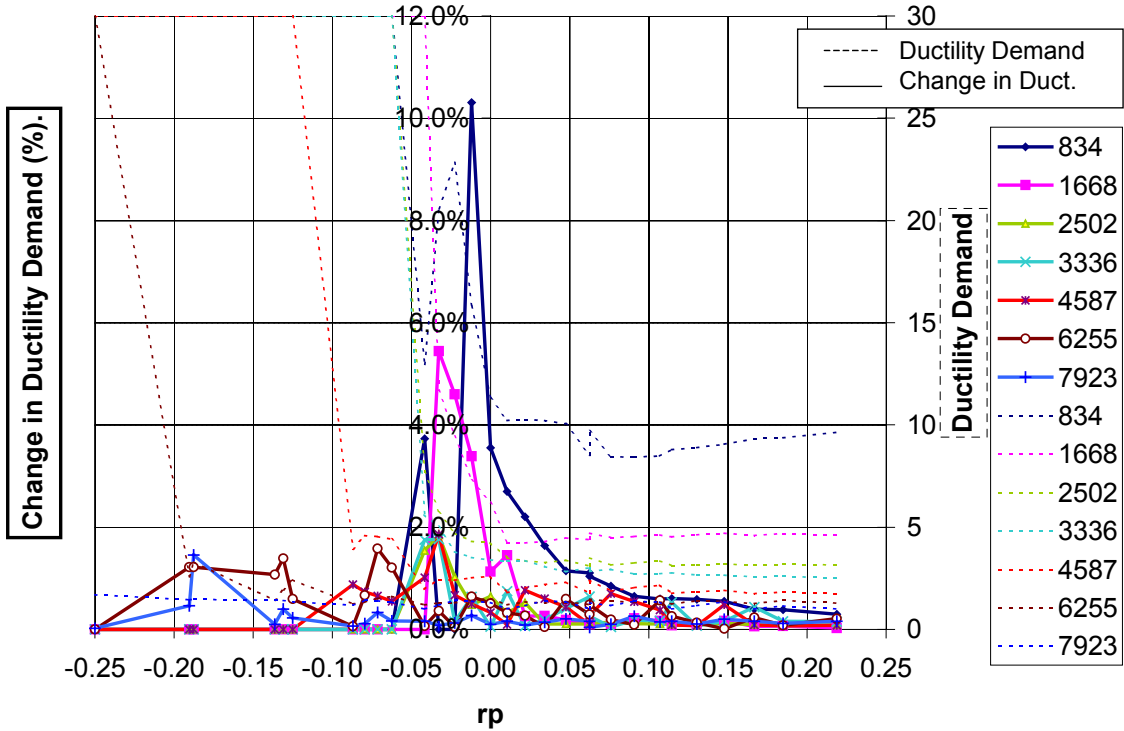


Figure C2.9.1.4b– EQ1, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.808 Seconds

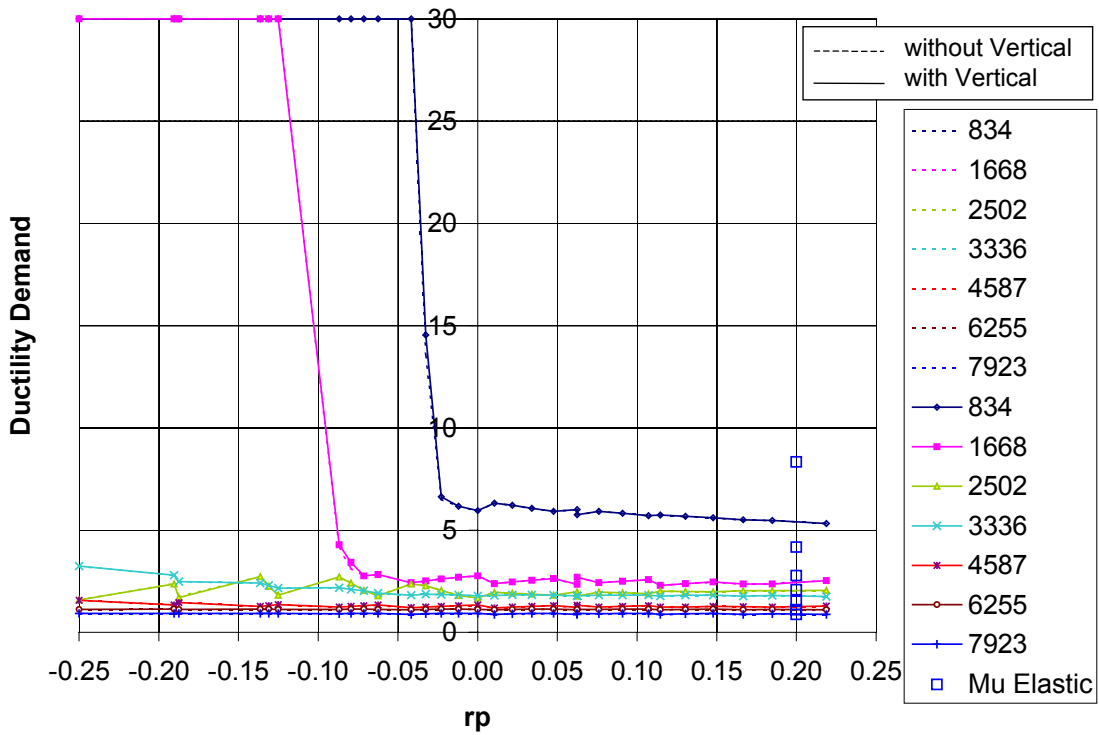


Figure C2.3.2.1a – EQ2, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 0.705 Seconds.

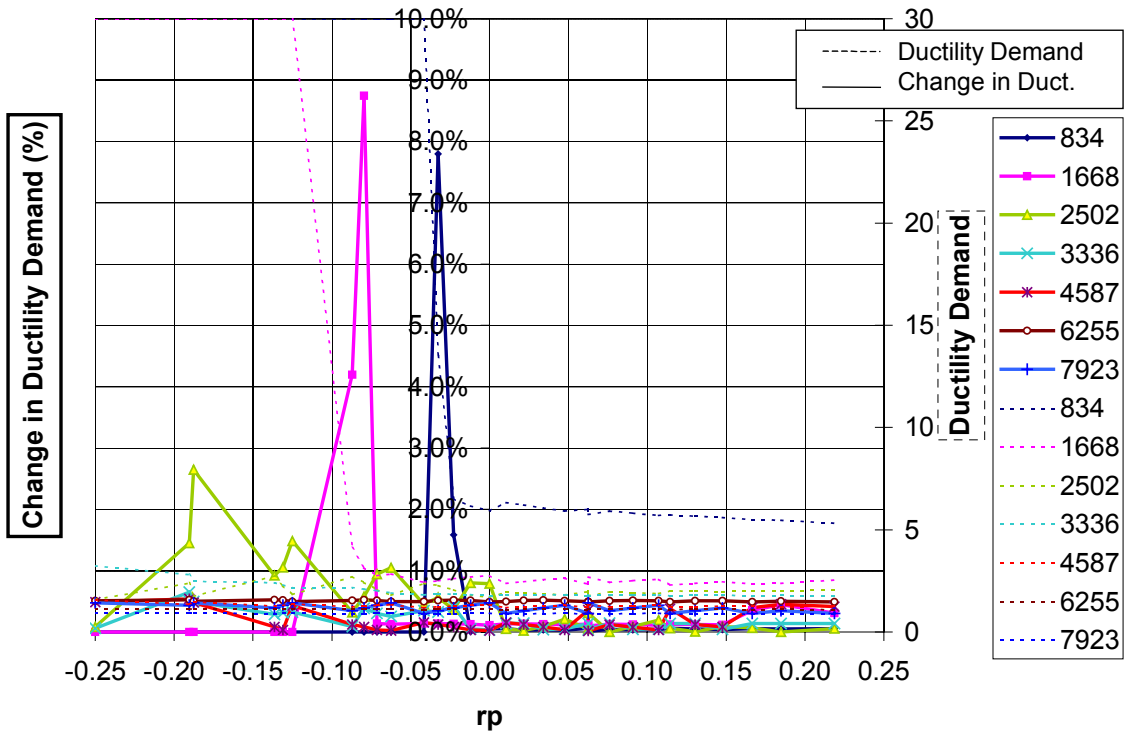


Figure C2.3.2.1b– EQ2, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 0.705 Seconds

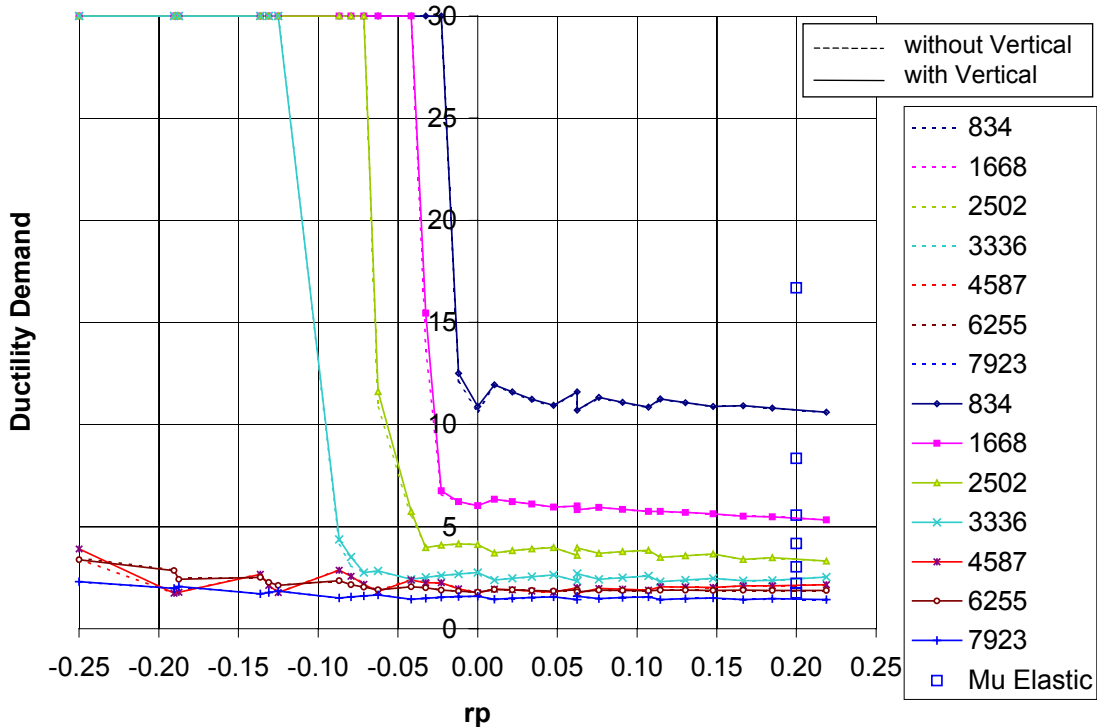


Figure C2.3.2.2a – EQ2, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 0.705 Seconds.

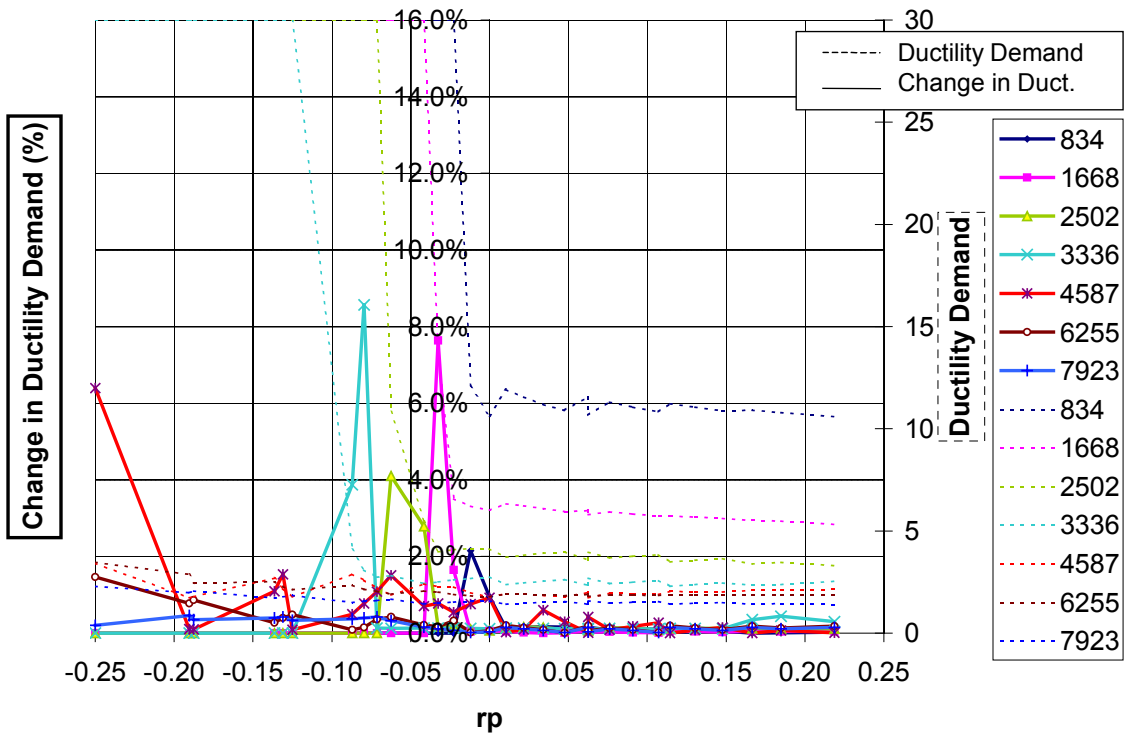


Figure C2.3.2.2b– EQ2, Lateral Scale = 0.2 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 0.705 Seconds

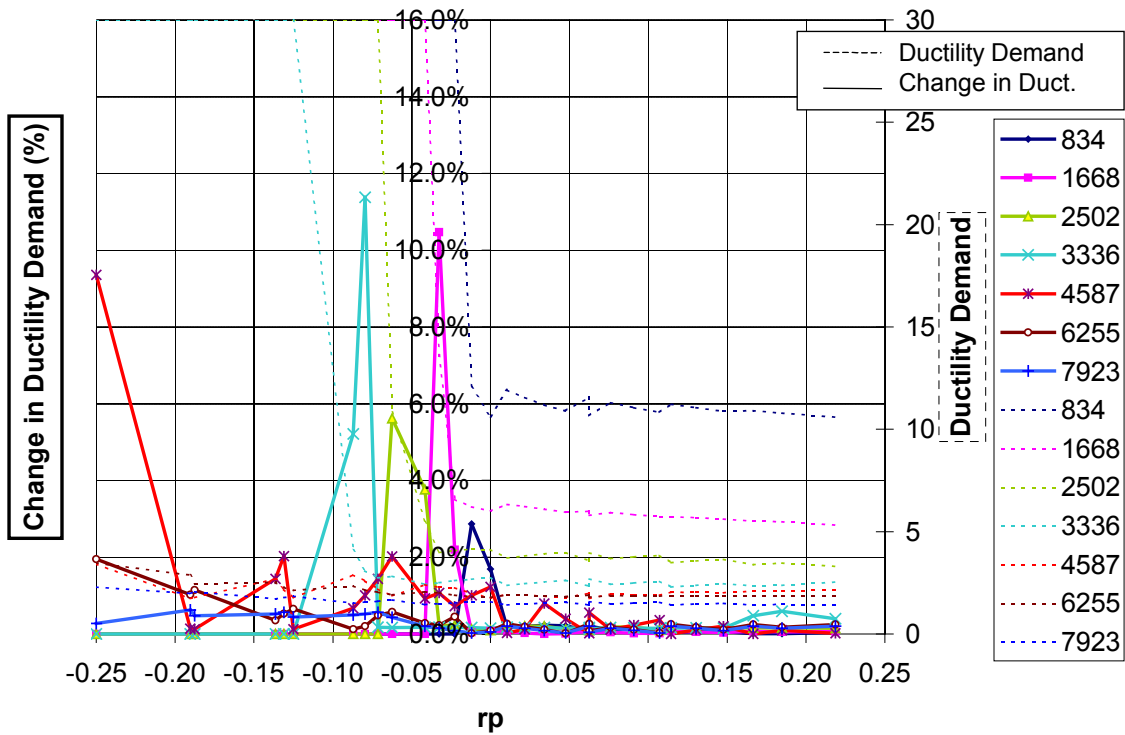


Figure C2.3.2.2c– EQ2, Lateral Scale = 0.2 g, Vertical Multiplier = 2.0, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 0.705 Seconds

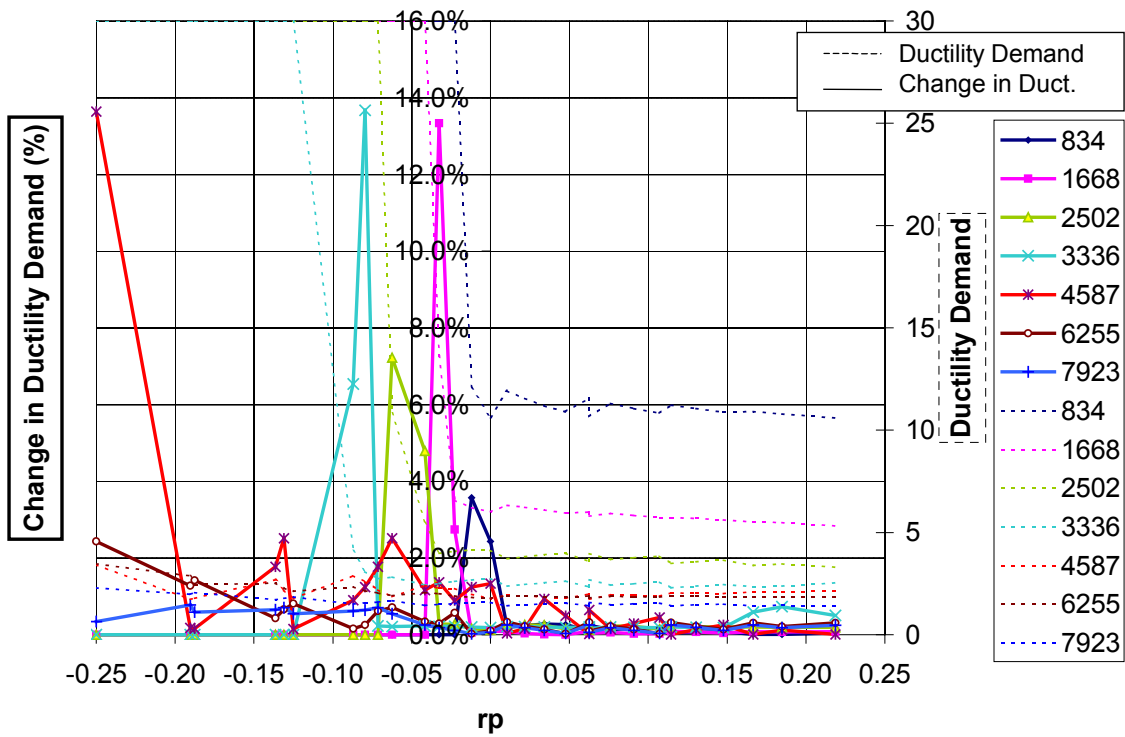


Figure C2.3.2.2d– EQ2, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 0.705 Seconds

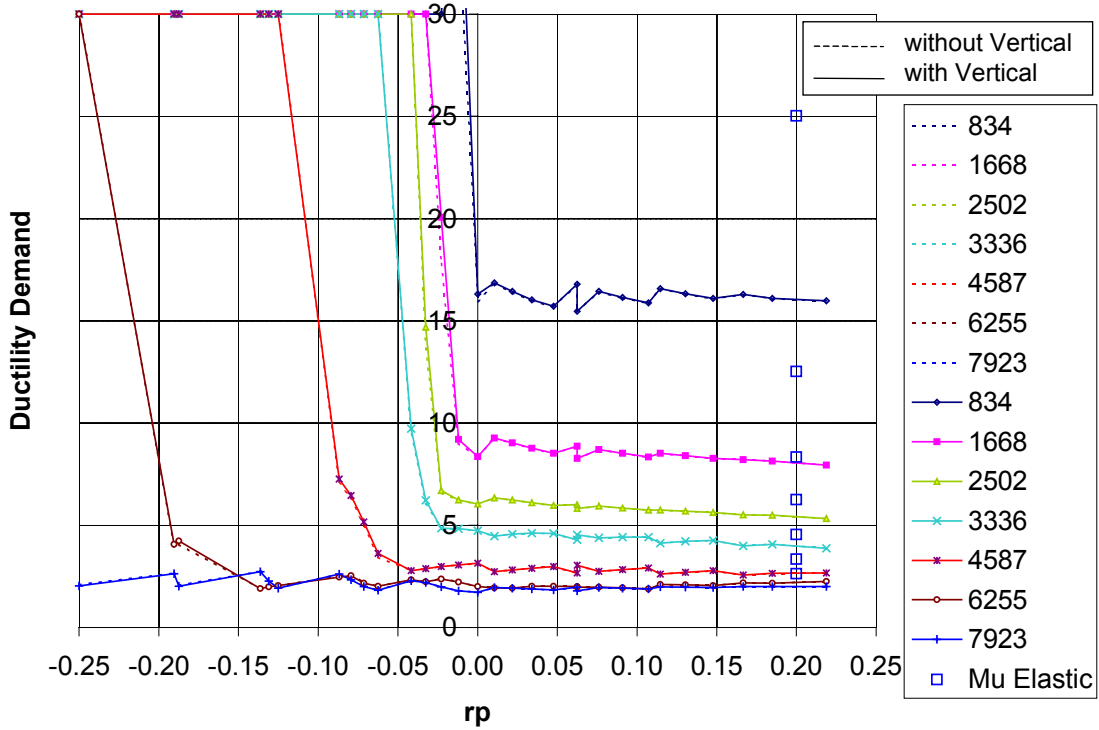


Figure C2.3.2.3a – EQ2, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 0.705 Seconds.

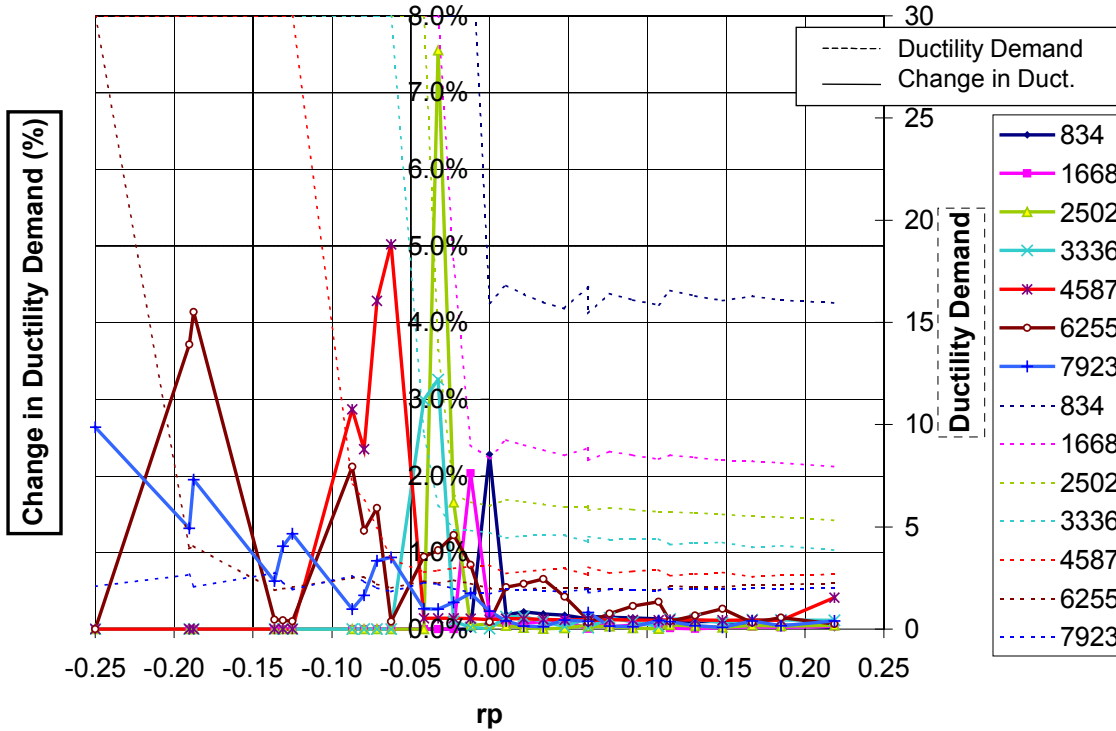


Figure C2.3.2.3b– EQ2, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 0.705 Seconds

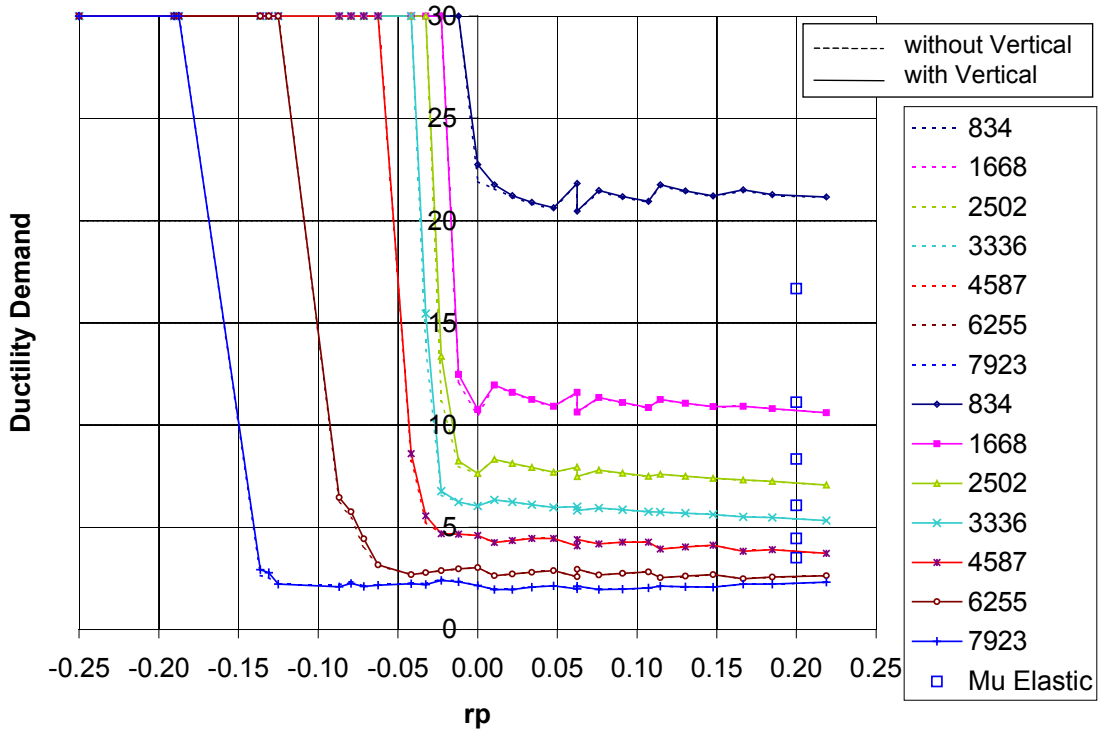


Figure C2.3.2.4a – EQ2, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 0.705 Seconds.

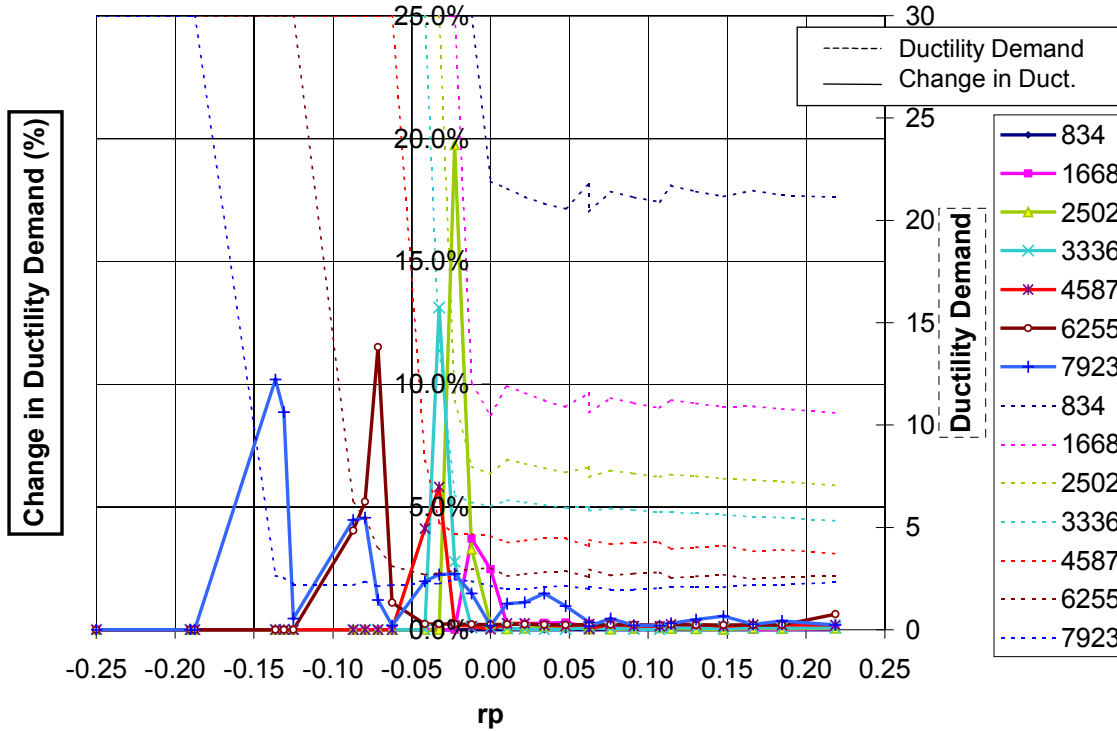


Figure C2.3.2.4b– EQ2, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 0.705 Seconds

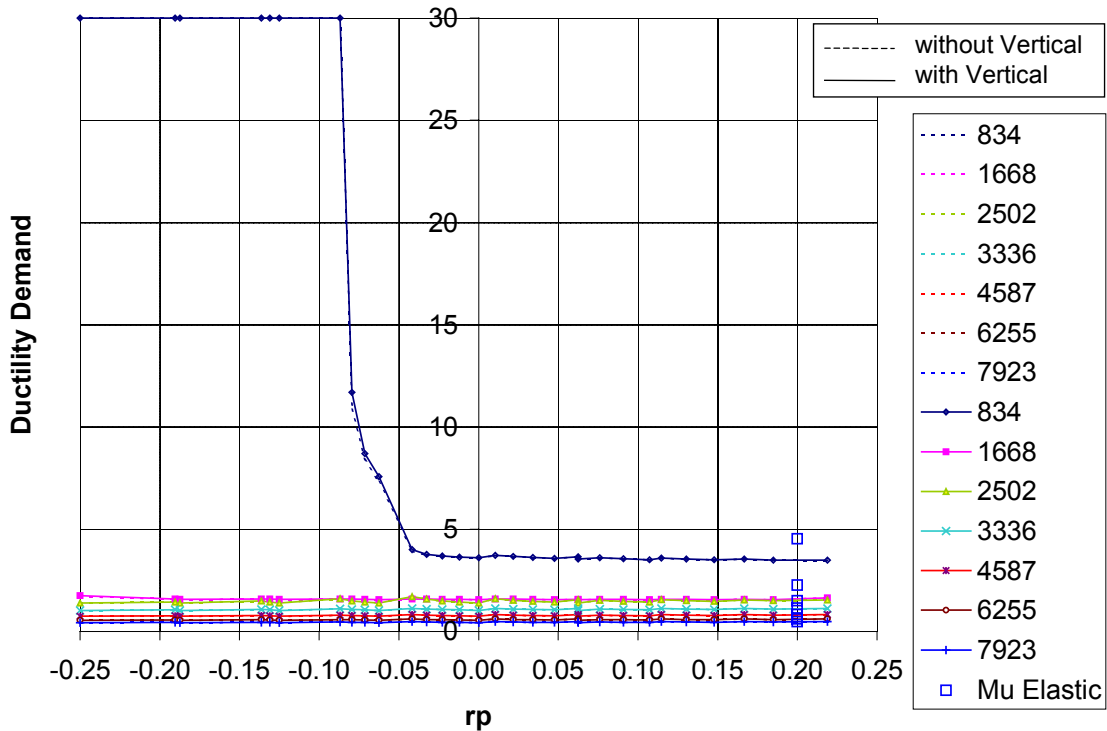


Figure C2.4.2.1a – EQ2, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 0.903 Seconds.

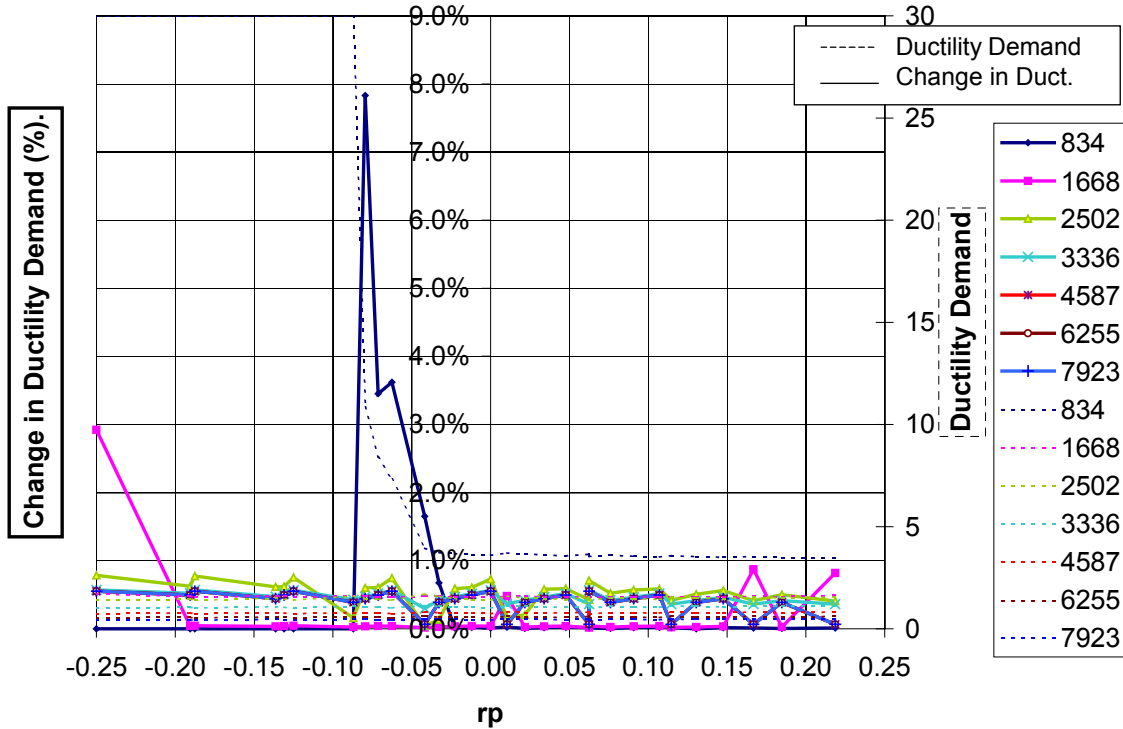


Figure C2.4.2.1b– EQ2, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 0.903 Seconds

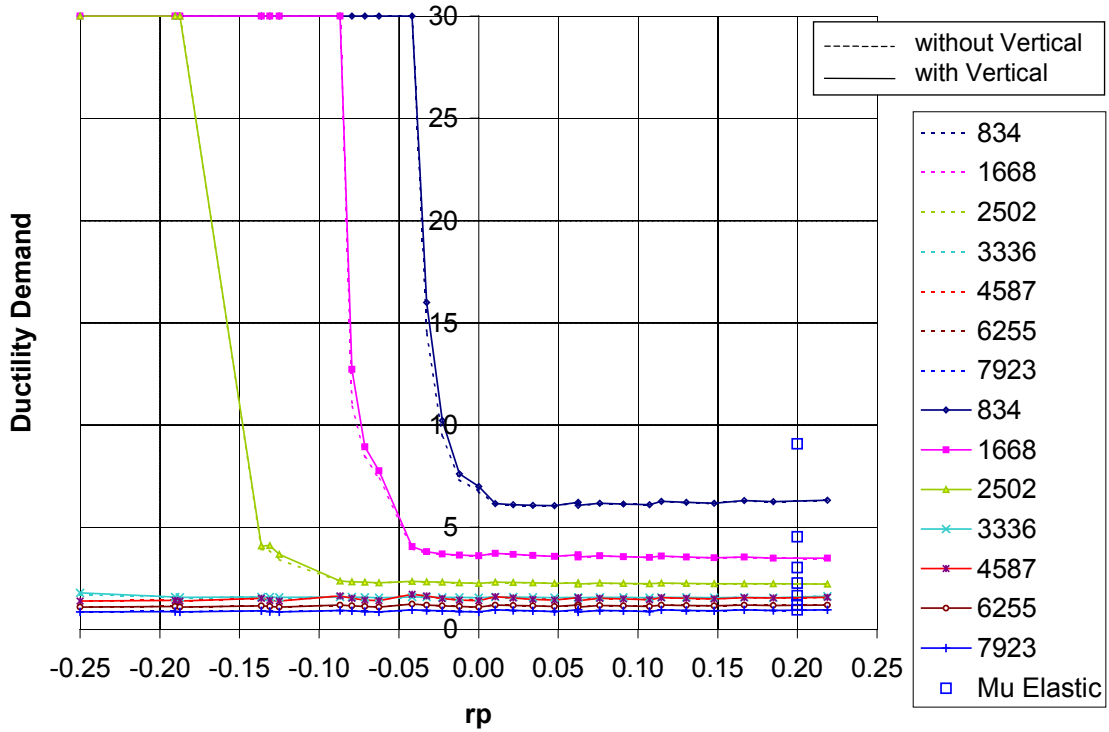


Figure C2.4.2.2a – EQ2, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 0.903 Seconds.

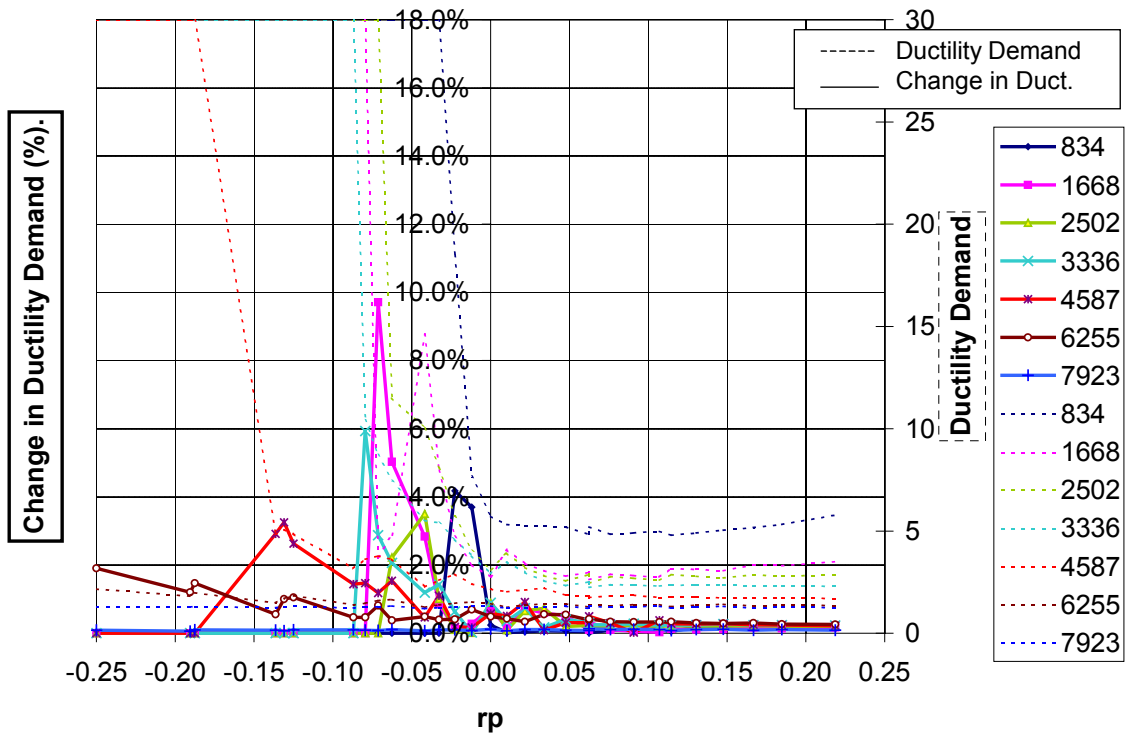


Figure C2.4.2.2b– EQ2, Lateral Scale = 0.2 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 0.903 Seconds

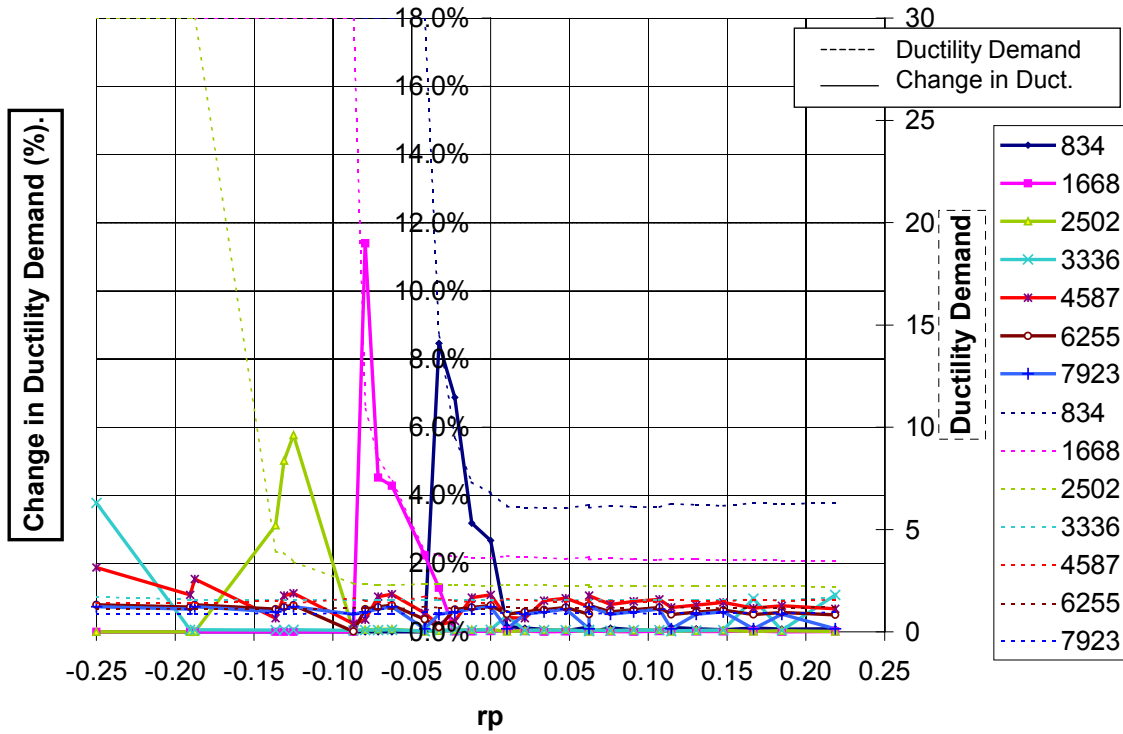


Figure C2.4.2.2c– EQ2, Lateral Scale = 0.2 g, Vertical Multiplier = 2.0, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 0.903 Seconds

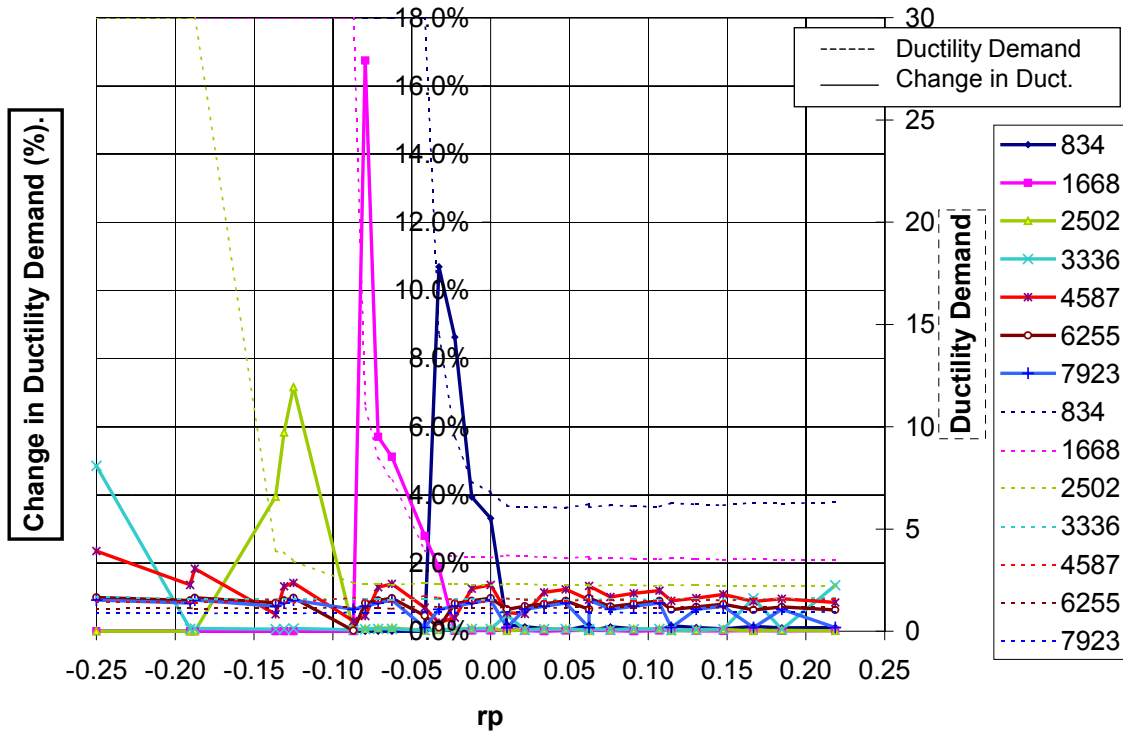


Figure C2.4.2.2d– EQ2, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 0.903 Seconds

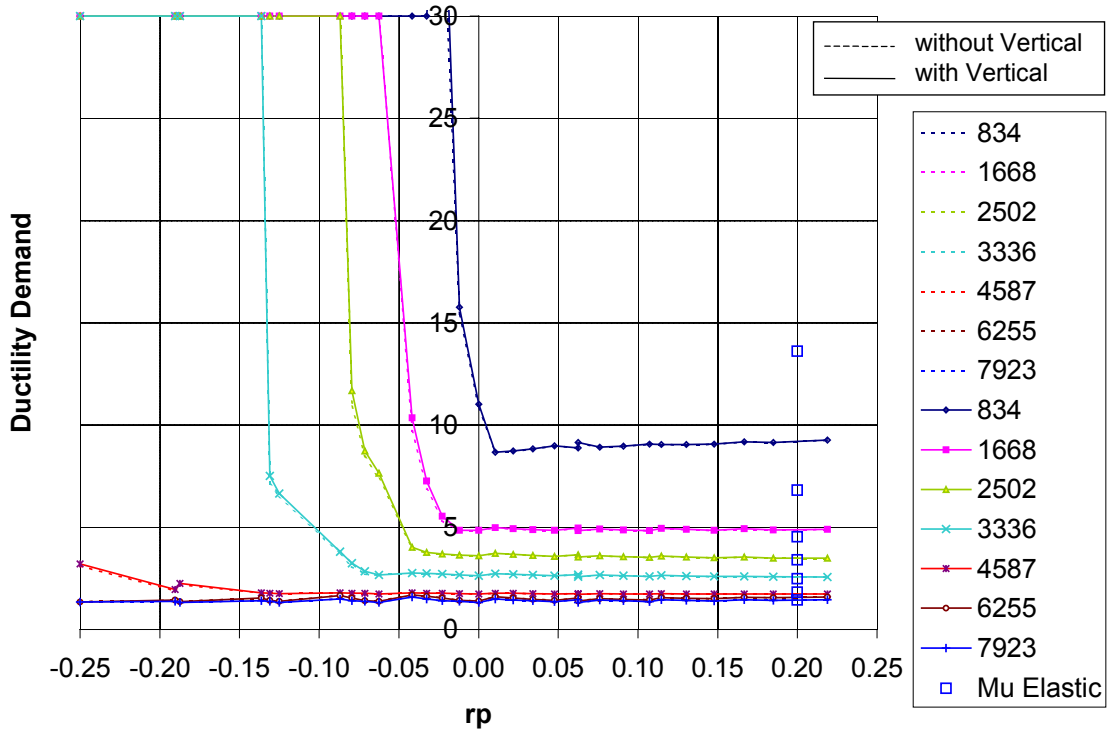


Figure C2.4.2.3a – EQ2, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 0.903 Seconds.

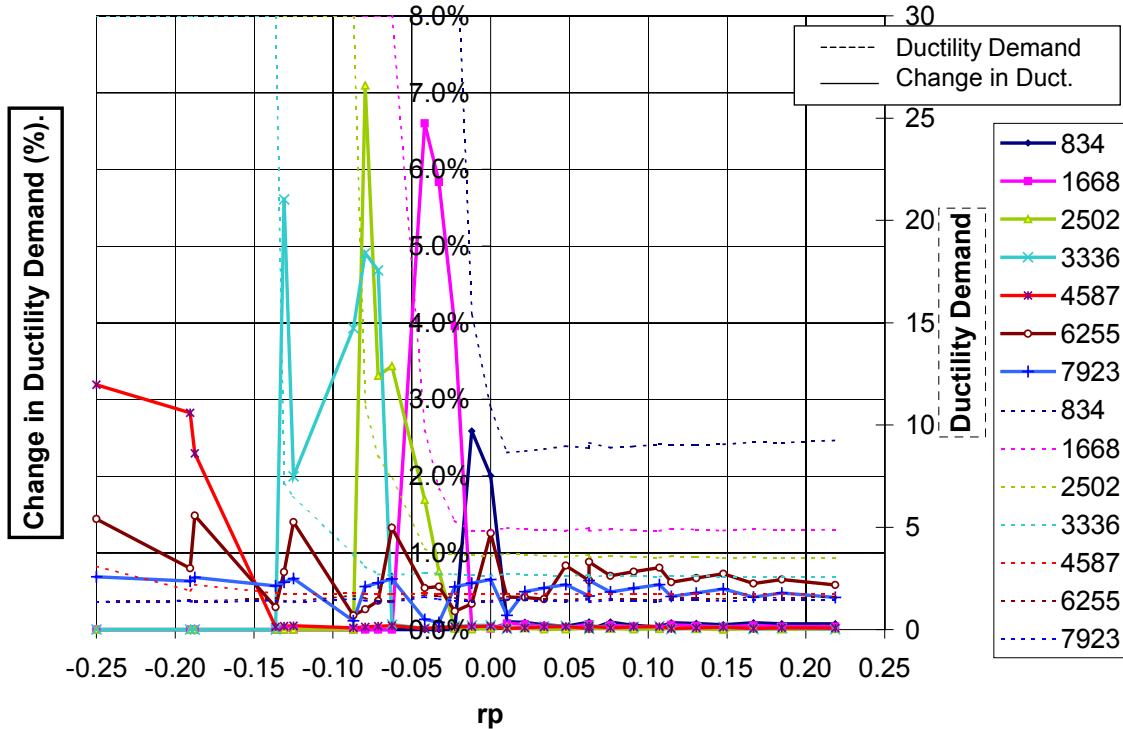


Figure C2.4.2.3b– EQ2, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 0.903 Seconds

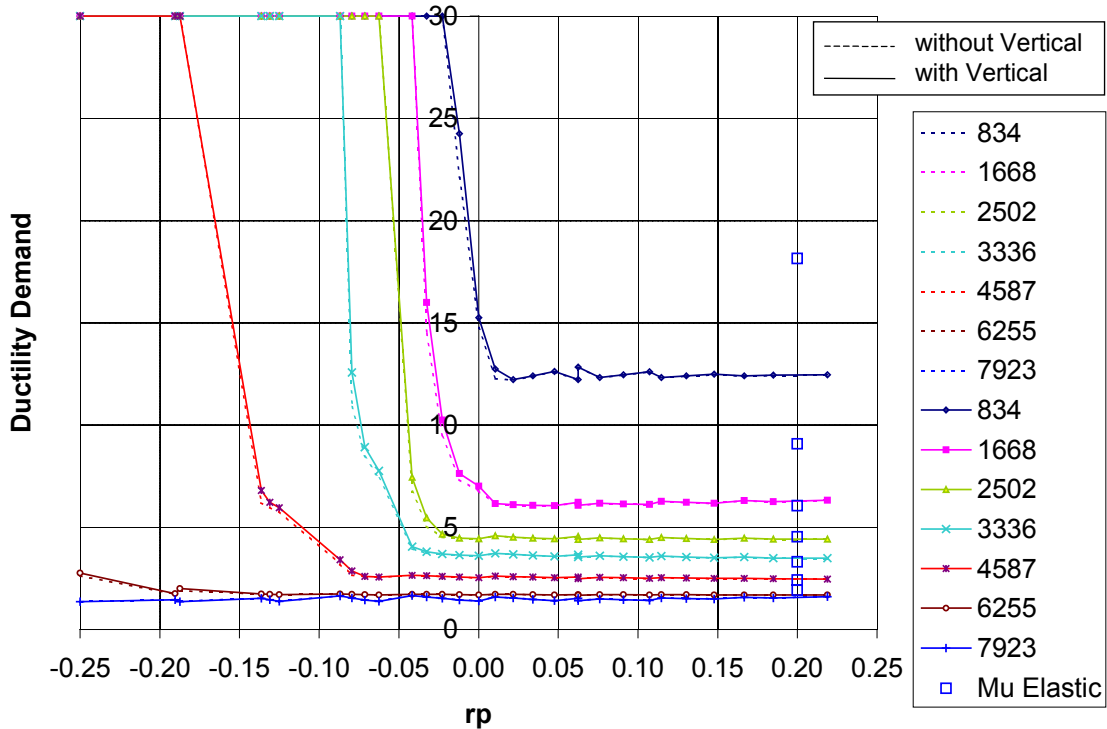


Figure C2.4.2.4a – EQ2, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 0.903 Seconds.

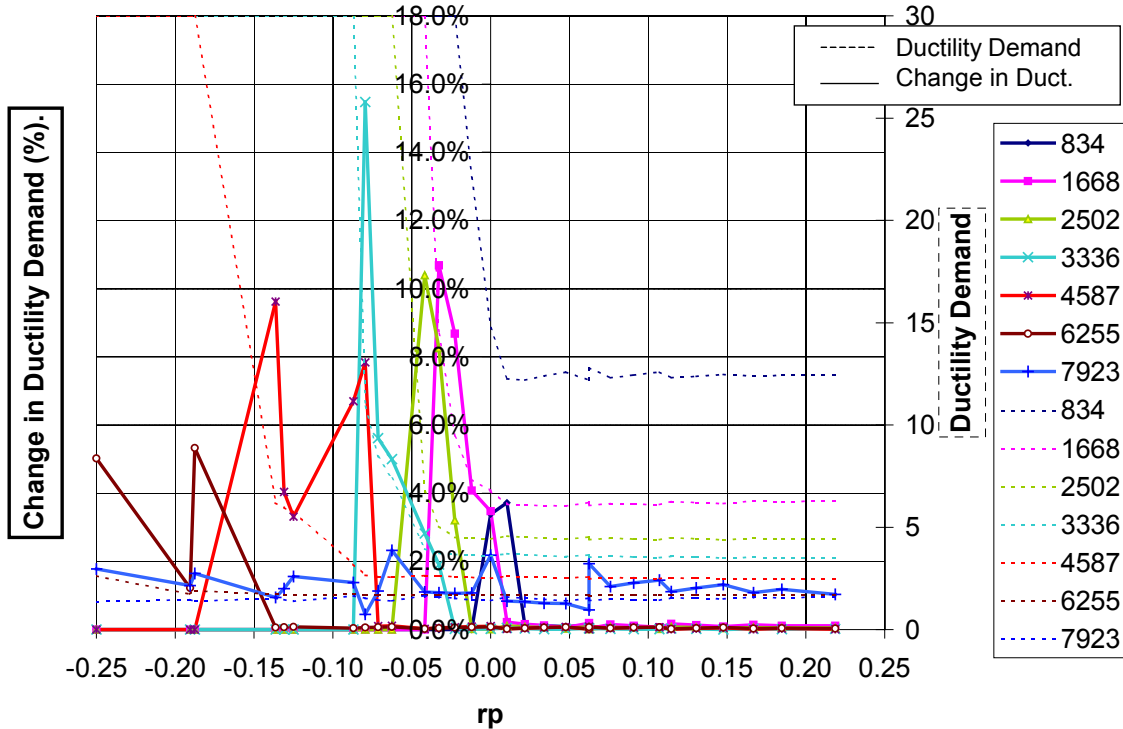


Figure C2.4.2.4b– EQ2, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 0.903 Seconds

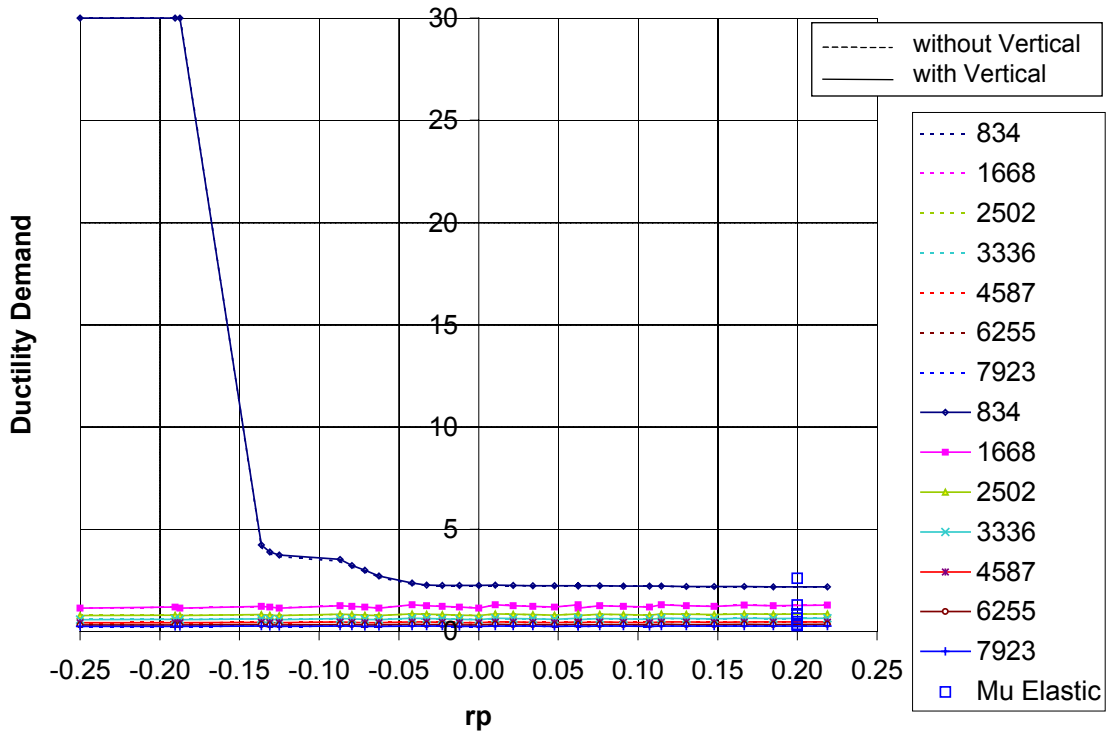


Figure C2.5.2.1a – EQ2, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.093 Seconds.

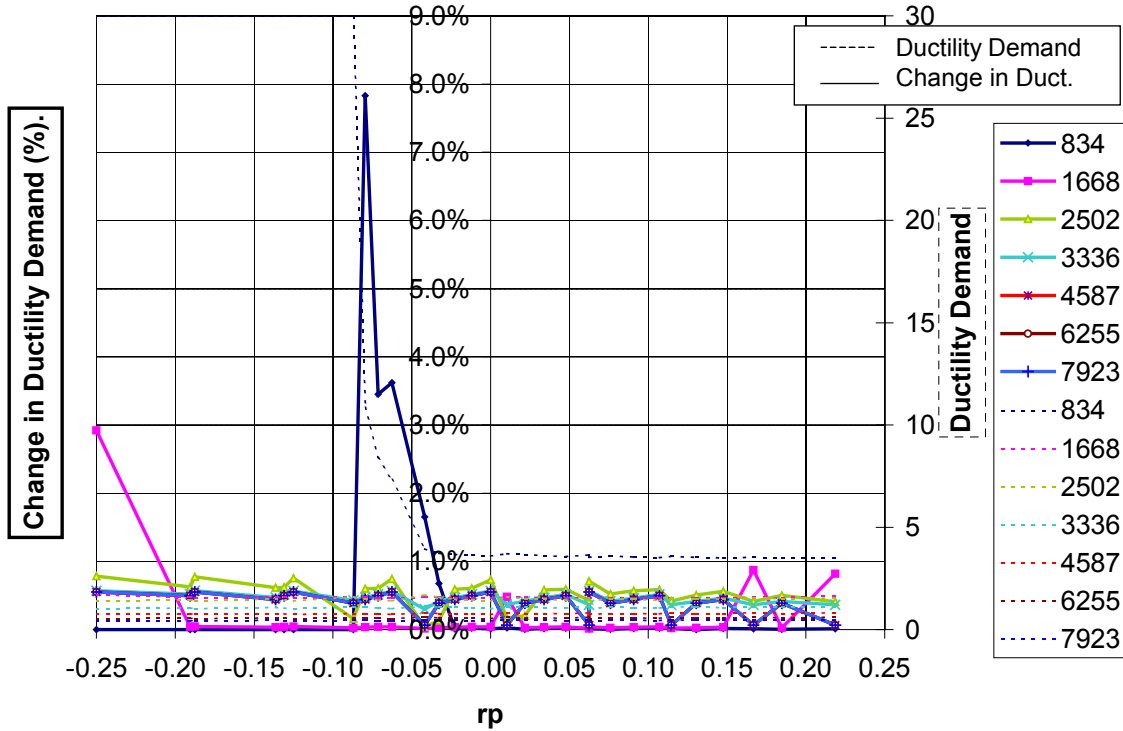


Figure C2.5.2.1b– EQ2, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.093 Seconds

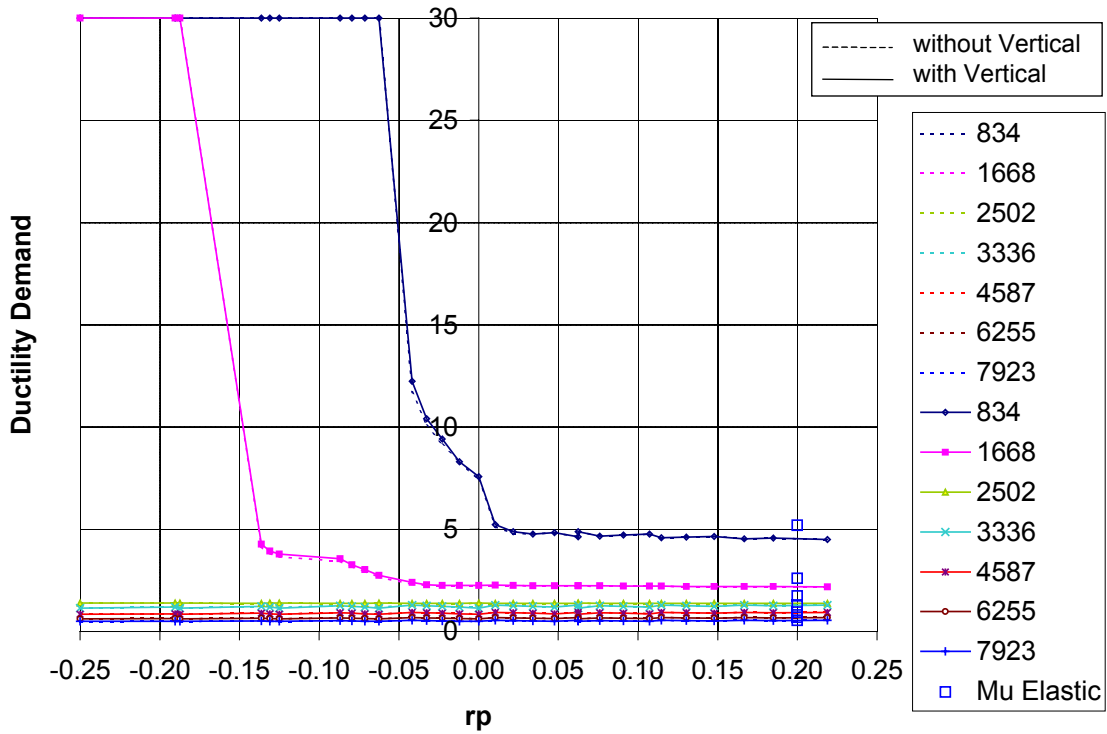


Figure C2.5.2.2a – EQ2, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.093 Seconds.

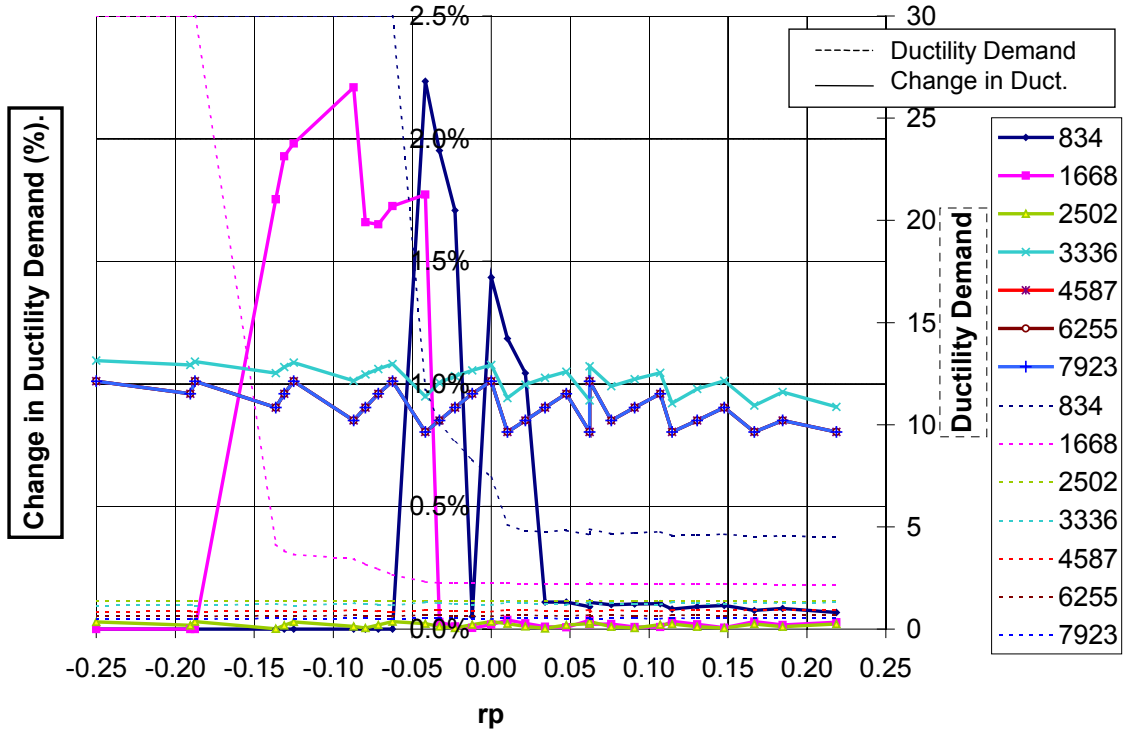
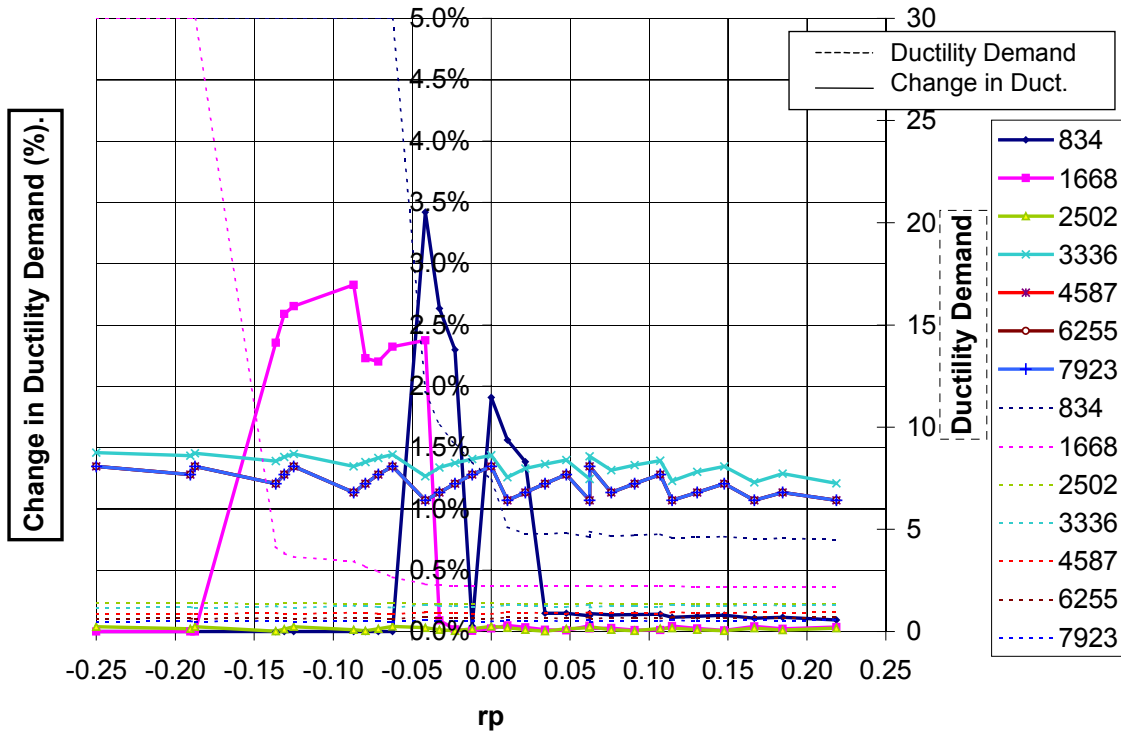
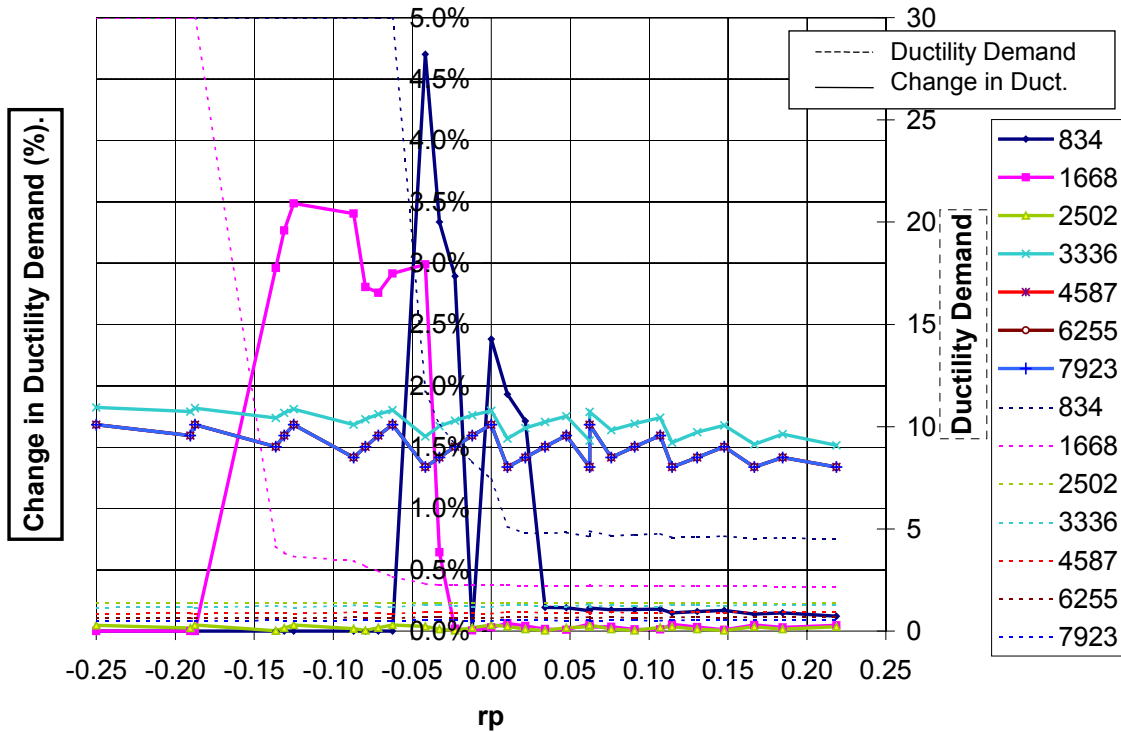


Figure C2.5.2.2b– EQ2, Lateral Scale = 0.2 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.093 Seconds



**Figure C2.5.2.2c– EQ2, Lateral Scale = 0.2 g, Vertical Multiplier = 2.0, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.093 Seconds**



**Figure C2.5.2.2d– EQ2, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.093 Seconds**

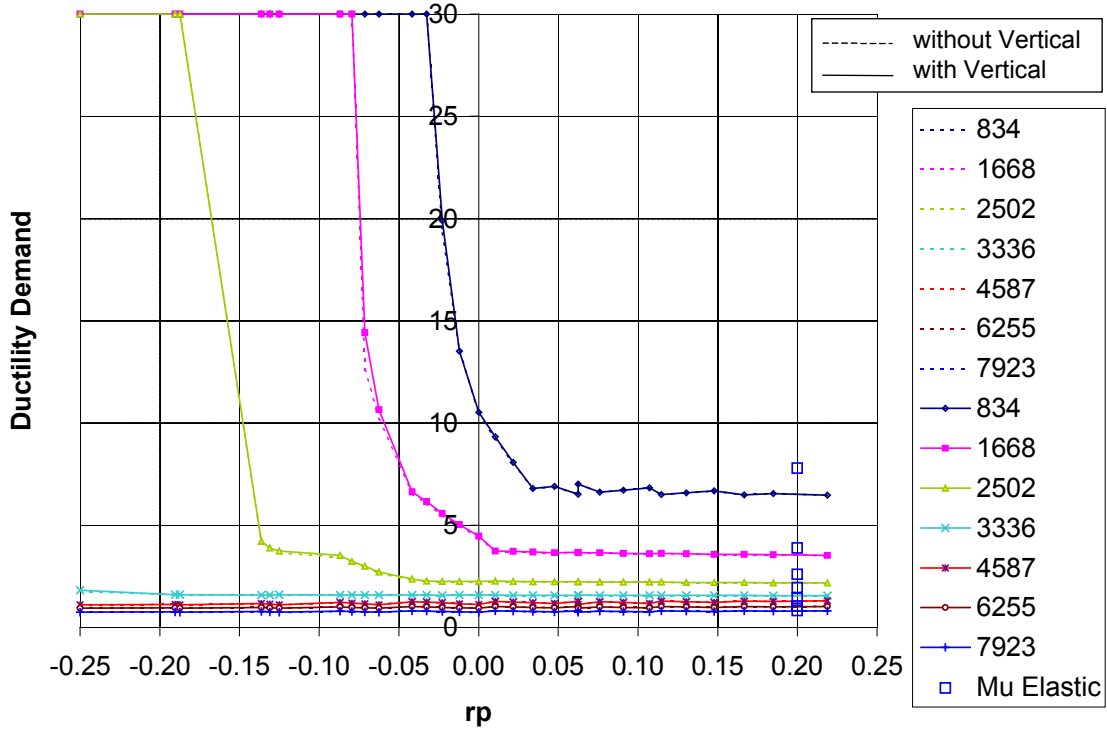


Figure C2.5.2.3a – EQ2, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.093 Seconds.

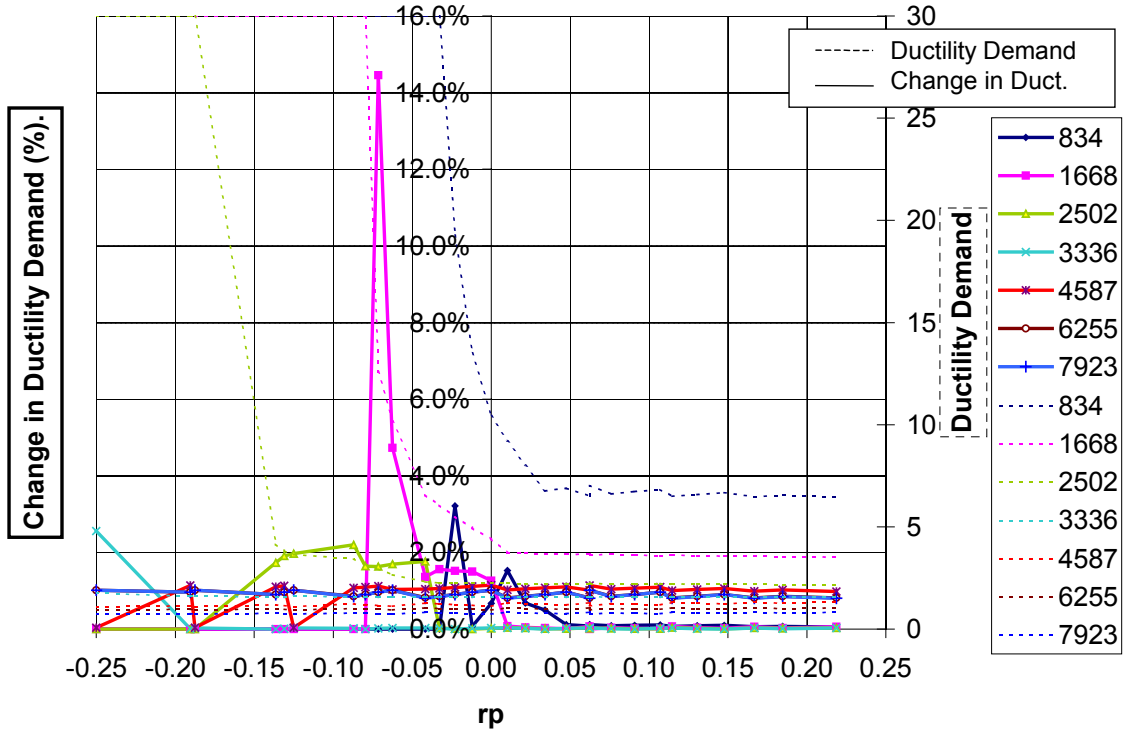


Figure C2.5.2.3b– EQ2, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.093 Seconds

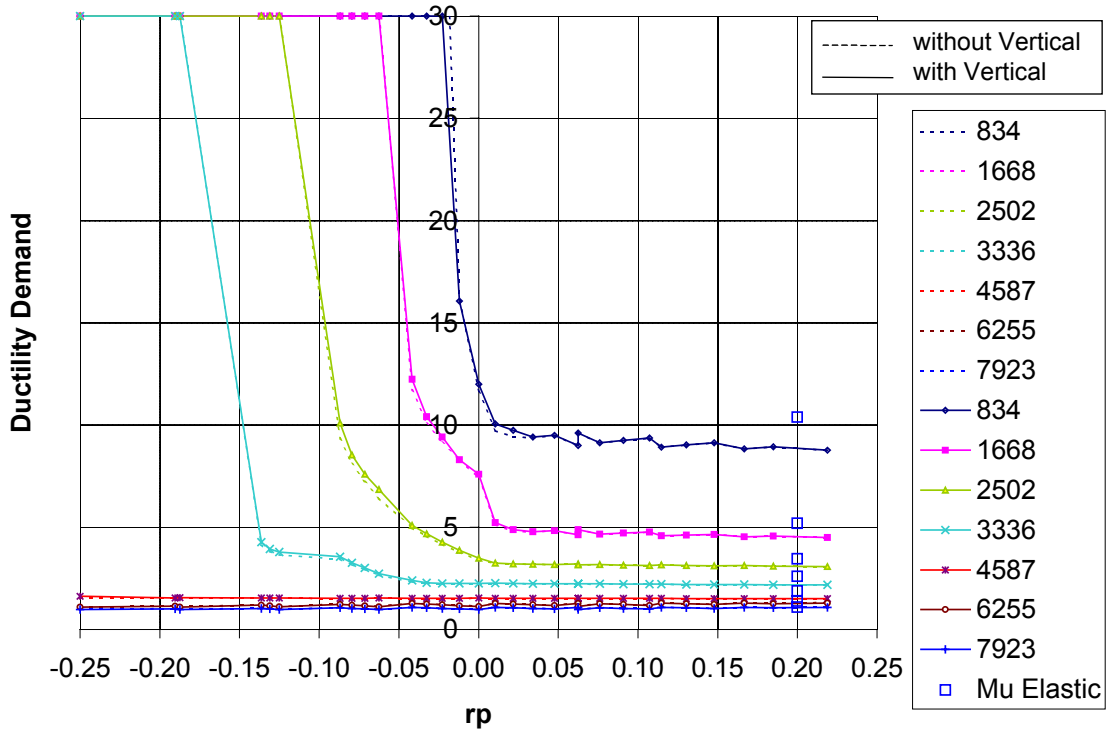


Figure C2.5.2.4a – EQ2, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.093 Seconds.

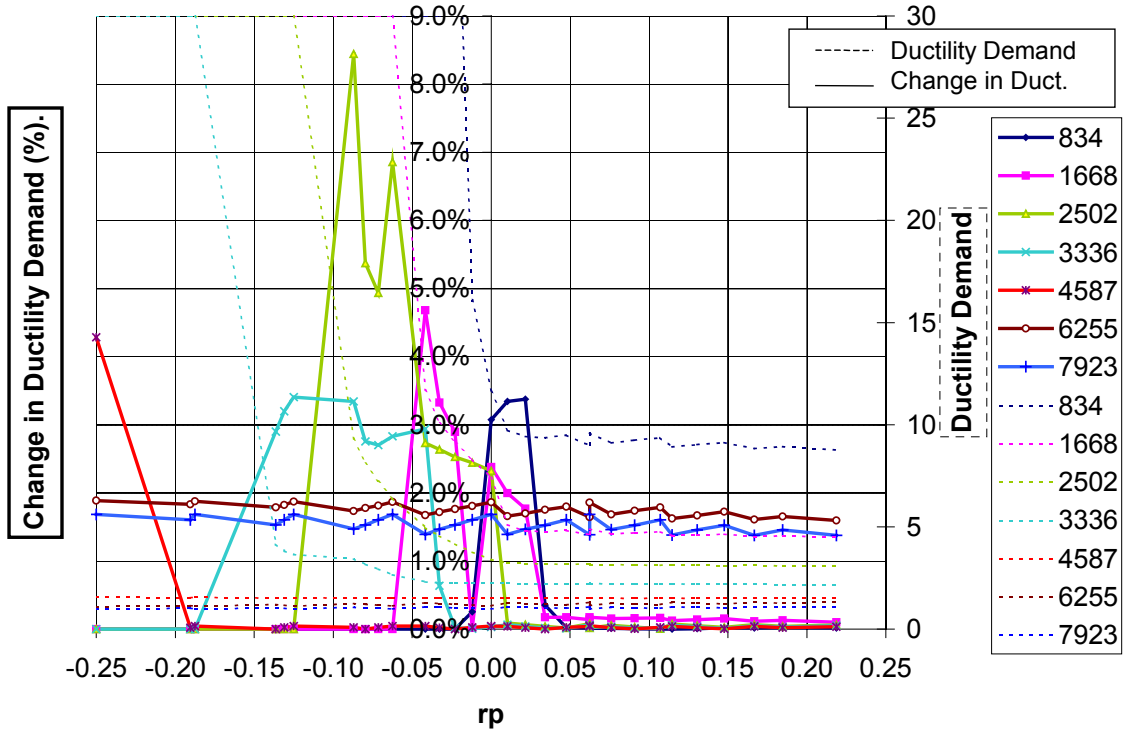


Figure C2.5.2.4b– EQ2, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.093 Seconds

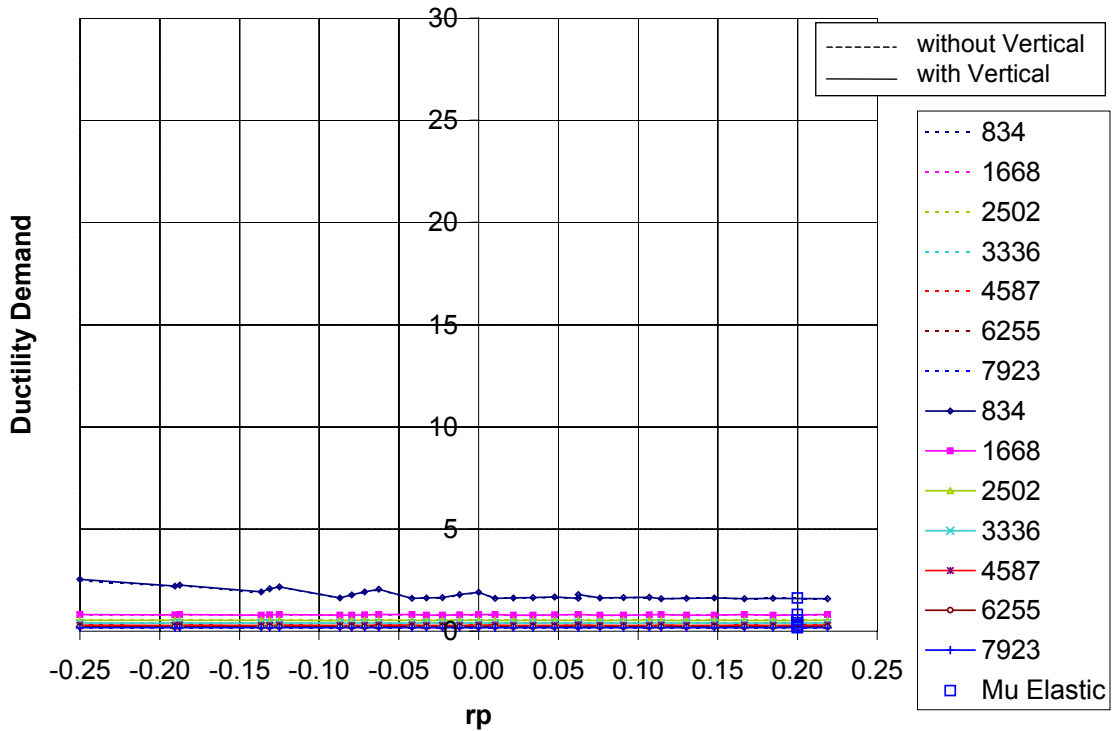


Figure C2.6.2.1a – EQ2, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.278 Seconds.

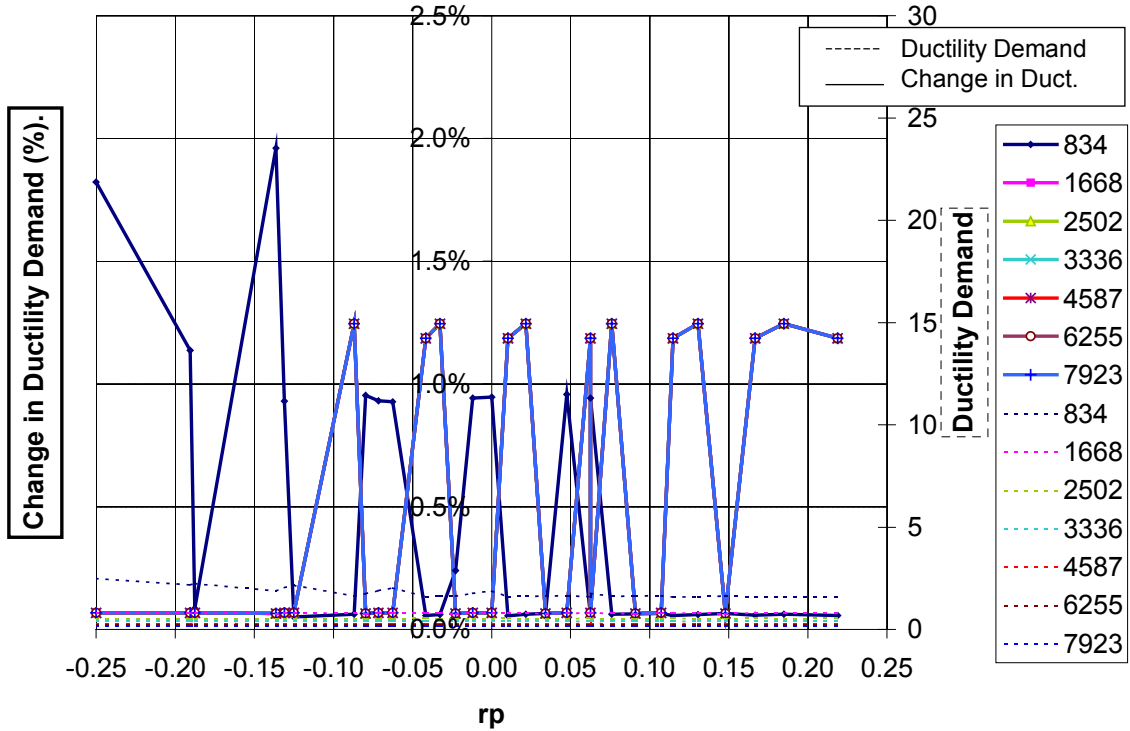


Figure C2.6.2.1b– EQ2, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.278 Seconds

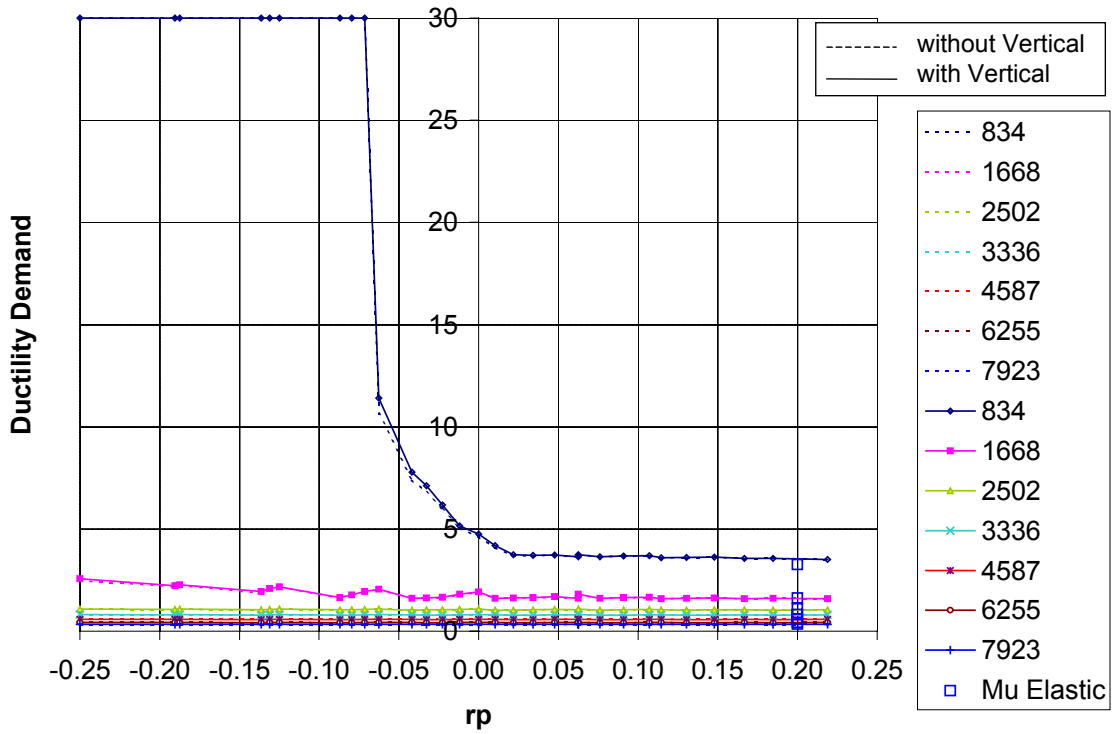


Figure C2.6.2.2a – EQ2, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.278 Seconds.

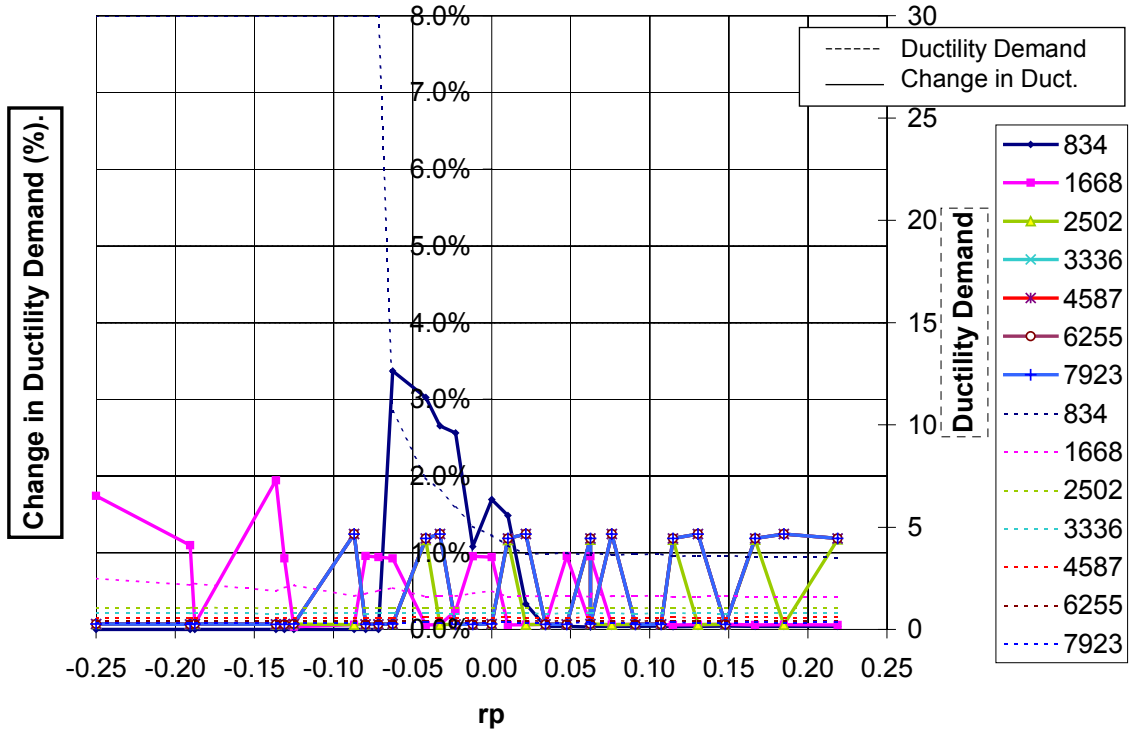
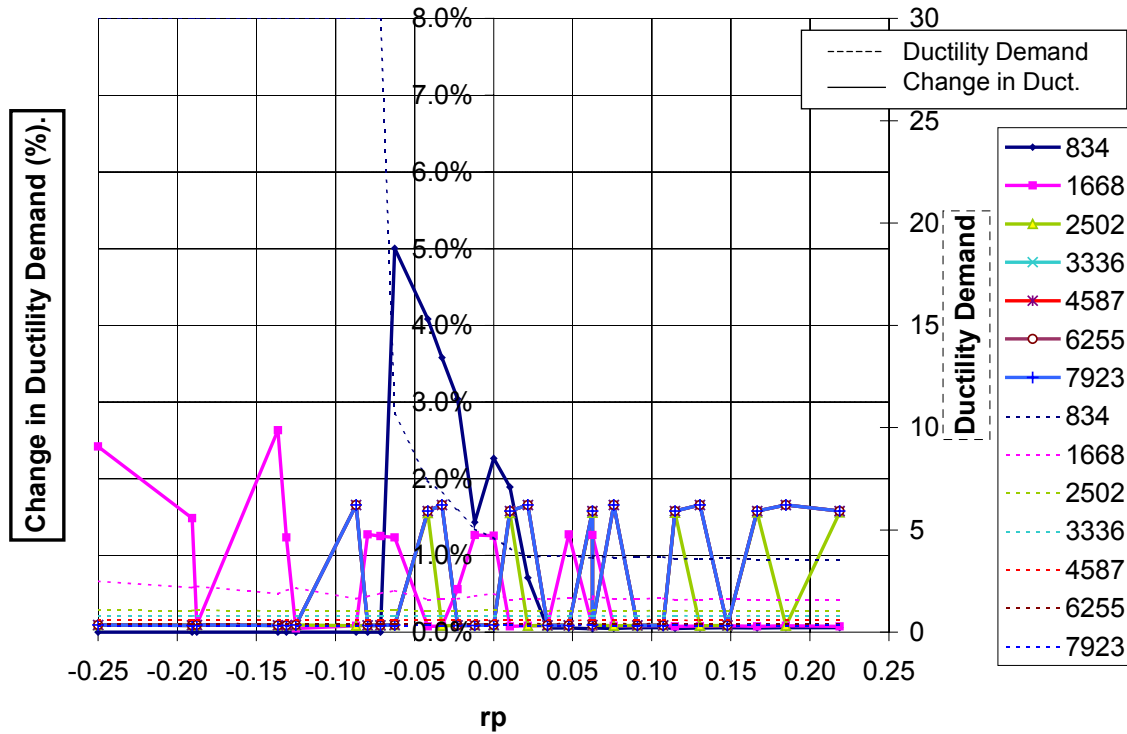
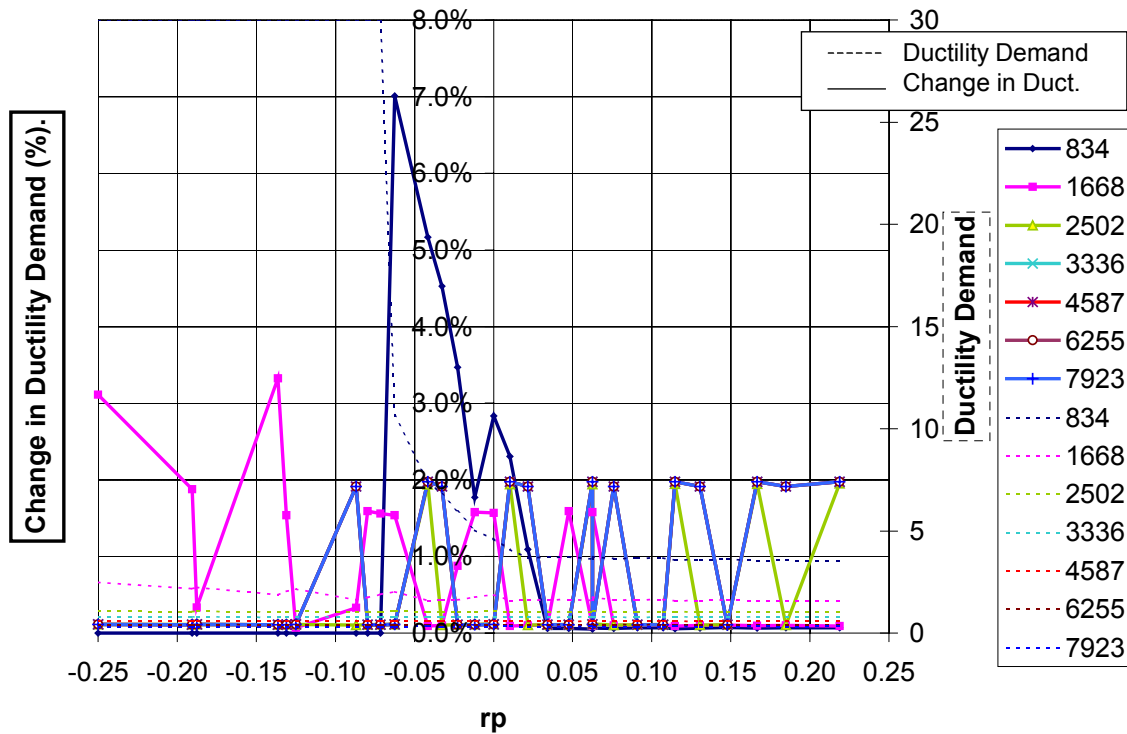


Figure C2.6.2.2b– EQ2, Lateral Scale = 0.2 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.278 Seconds



**Figure C2.6.2.2c– EQ2, Lateral Scale = 0.2 g, Vertical Multiplier = 2.0, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.278 Seconds**



**Figure C2.6.2.2d– EQ2, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.278 Seconds**

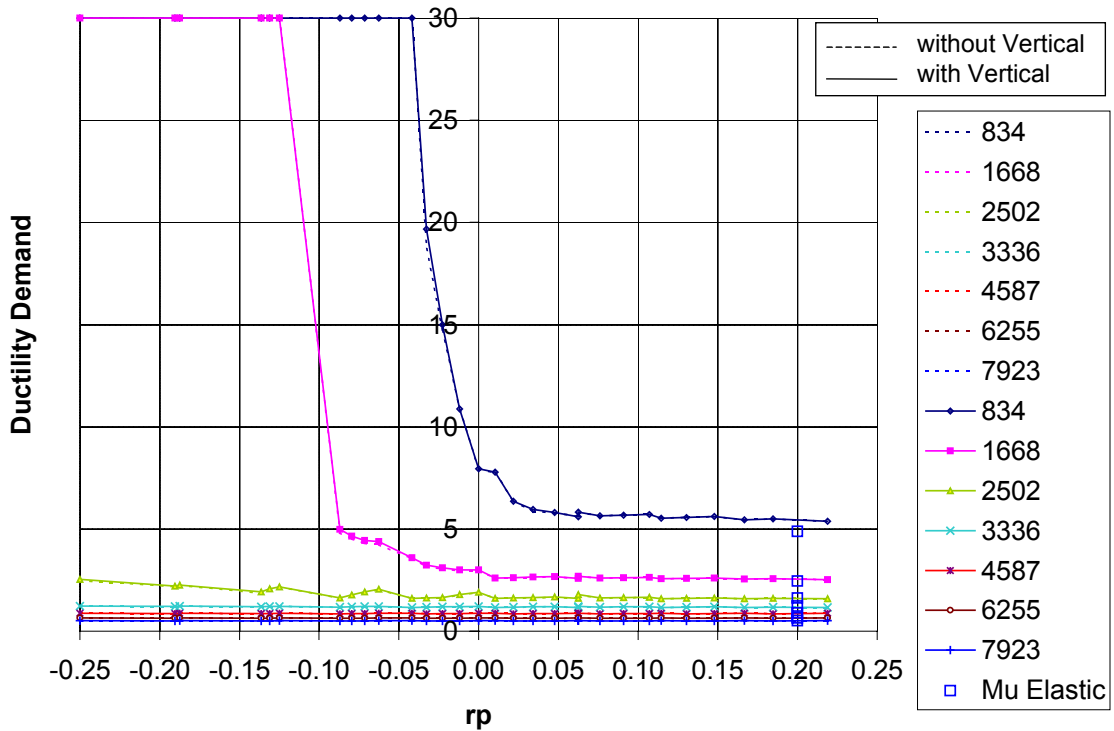


Figure C2.6.2.3a – EQ2, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.278 Seconds.

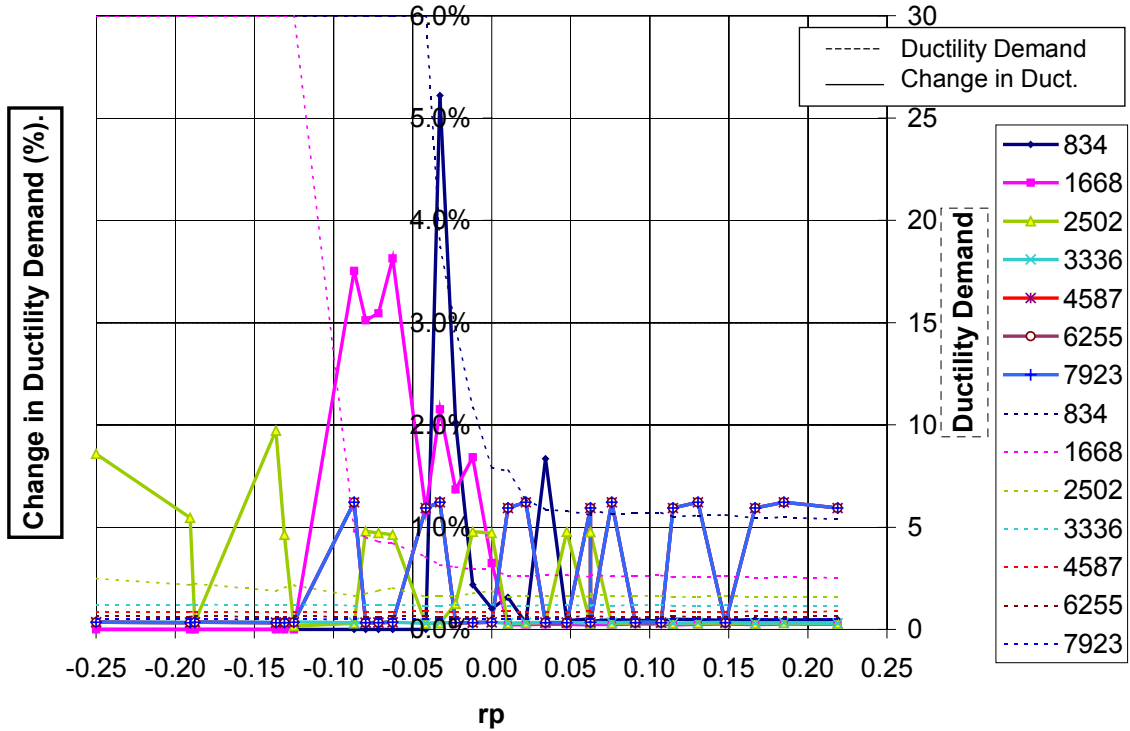


Figure C2.6.2.3b– EQ2, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.278 Seconds

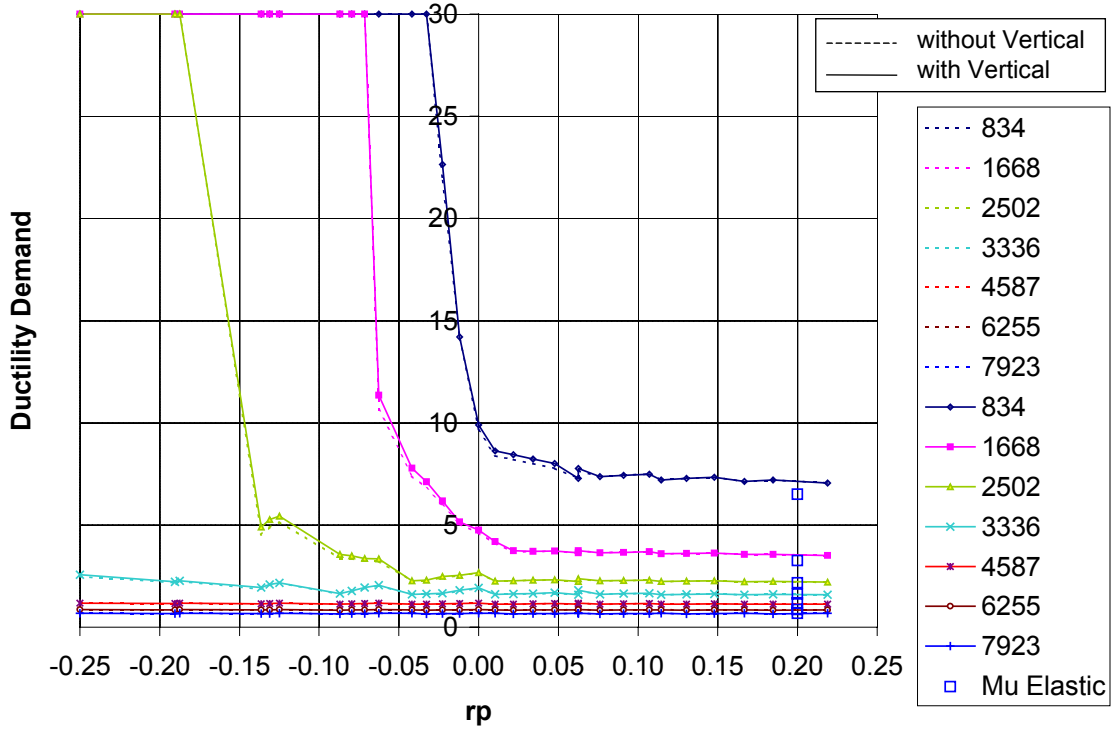


Figure C2.6.2.4a – EQ2, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.278 Seconds.

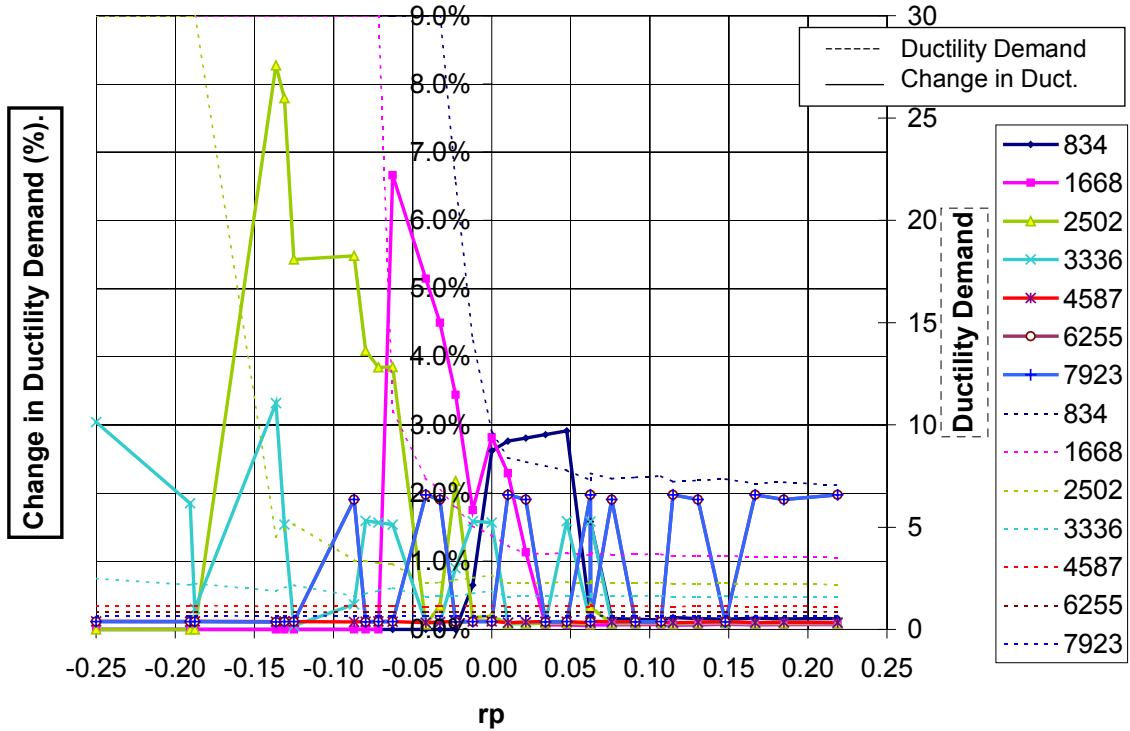


Figure C2.6.2.4b– EQ2, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.278 Seconds

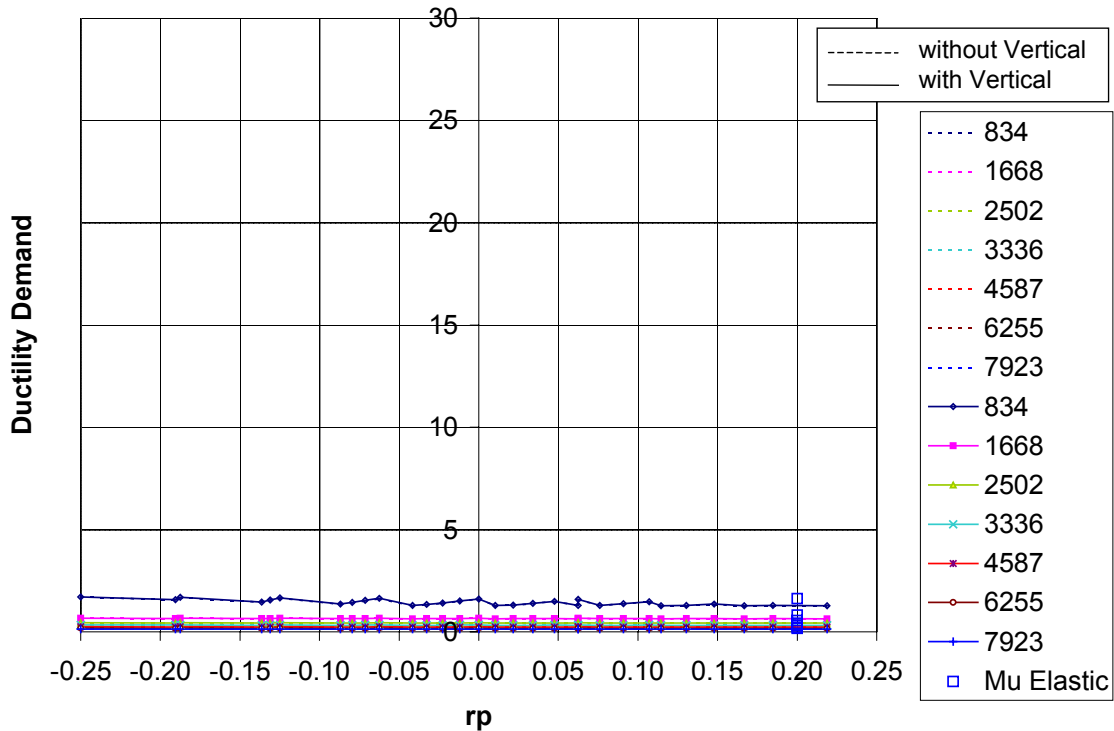


Figure C2.7.2.1a – EQ2, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.459 Seconds.

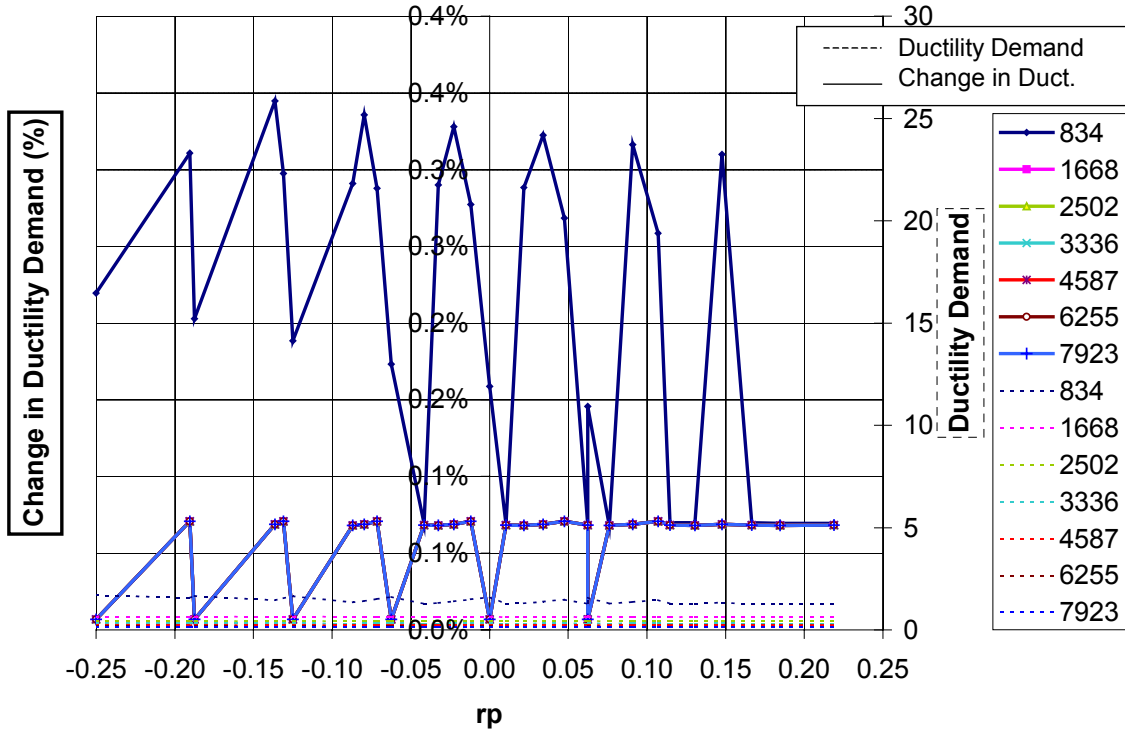


Figure C2.7.2.1b– EQ2, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.459 Seconds

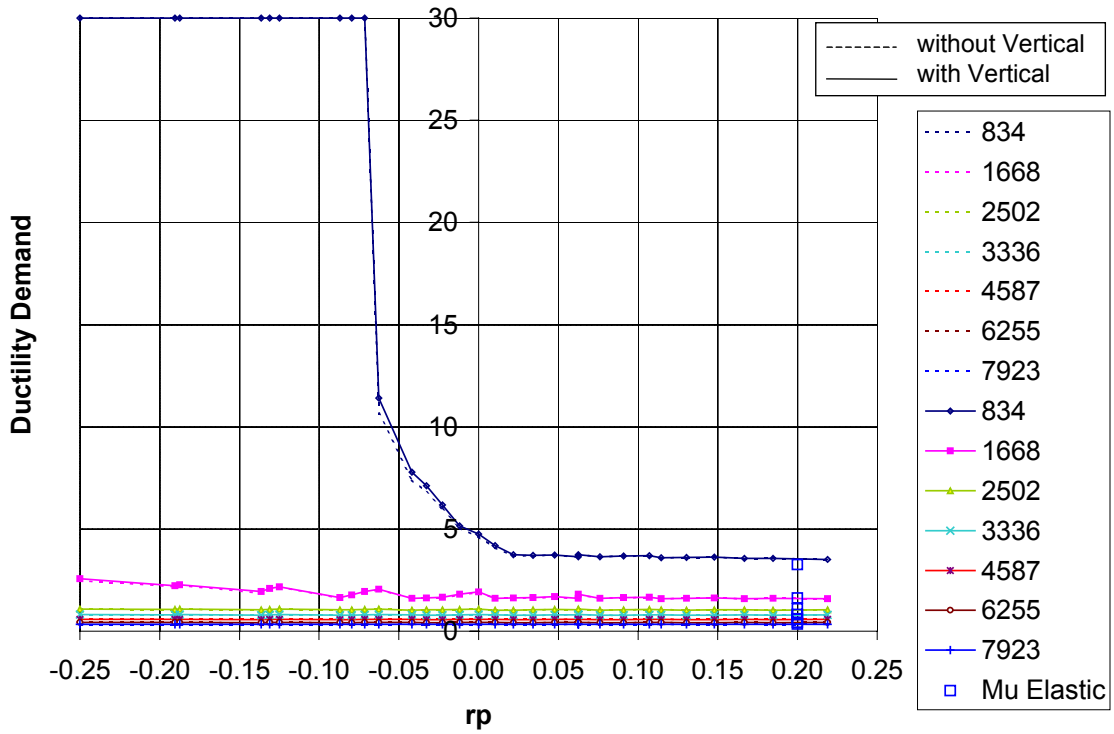


Figure C2.7.2.2a – EQ2, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.459 Seconds.

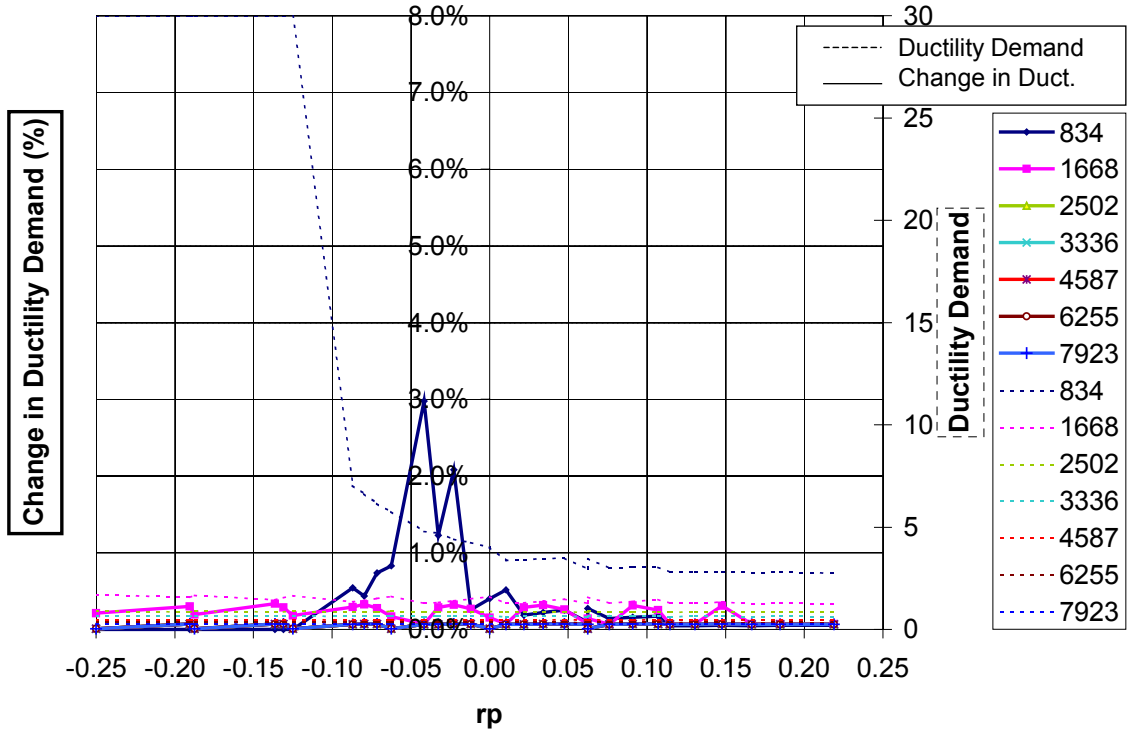
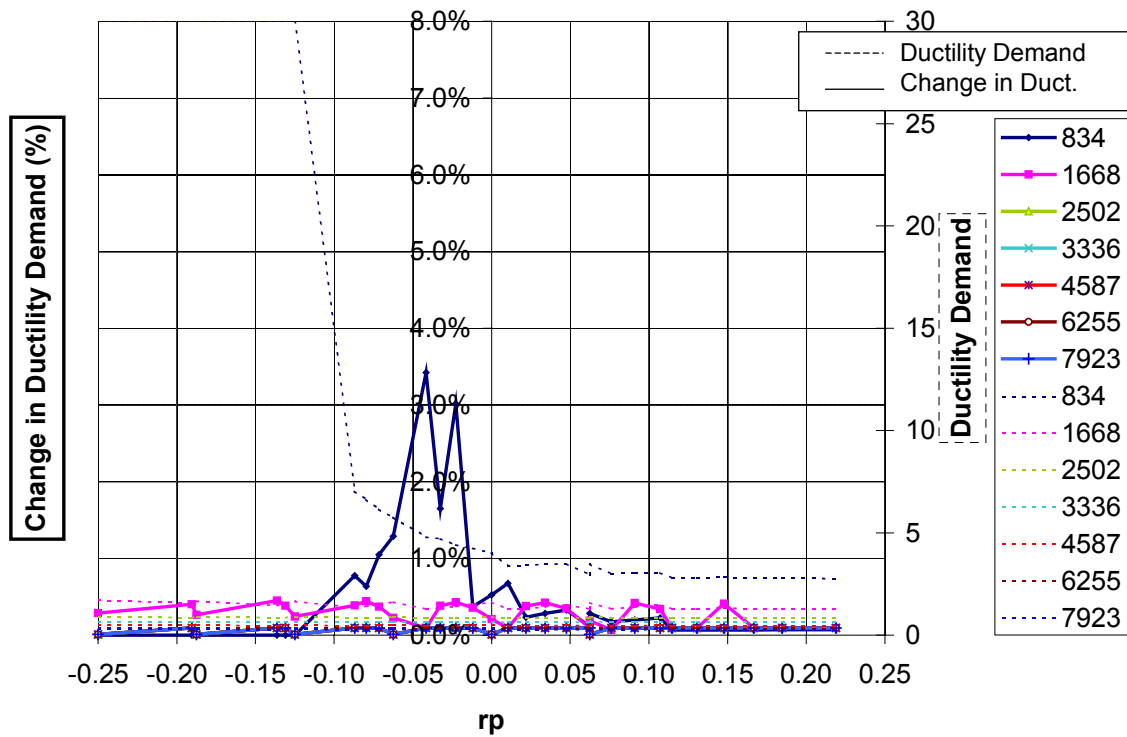
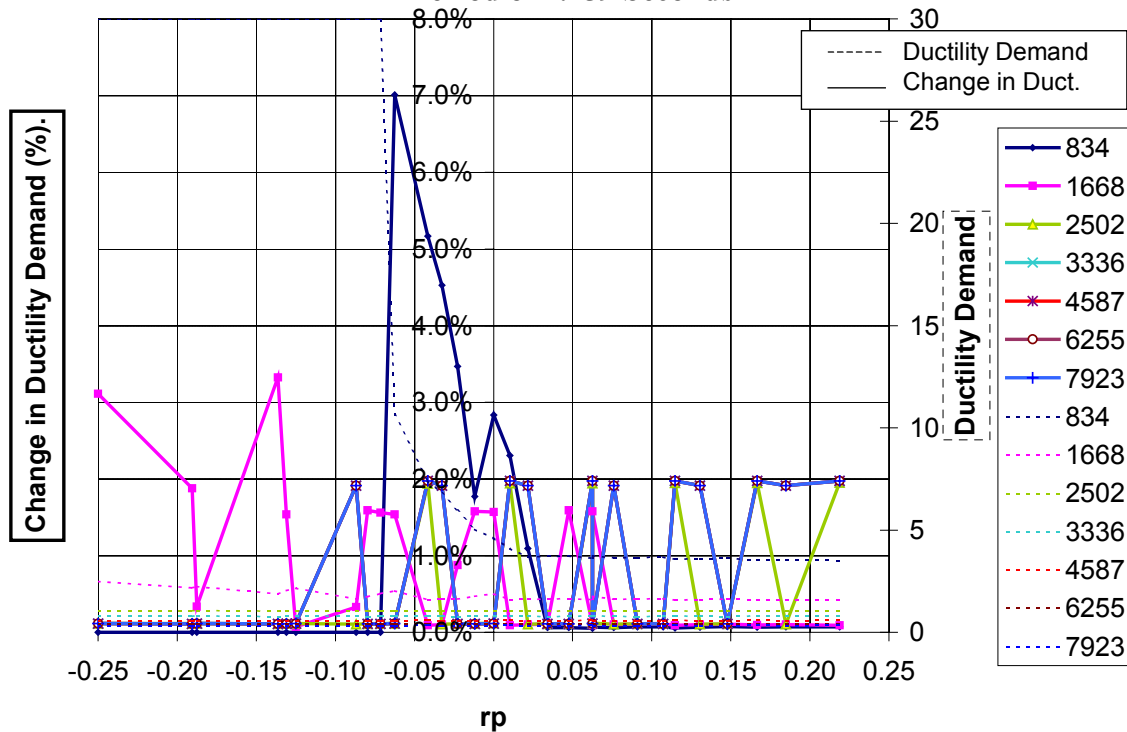


Figure C2.7.2.2b– EQ2, Lateral Scale = 0.2 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.459 Seconds



**Figure C2.7.2.2c– EQ2, Lateral Scale = 0.2 g, Vertical Multiplier = 2.0, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.459 Seconds**



**Figure C2.7.2.2d– EQ2, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.459 Seconds**

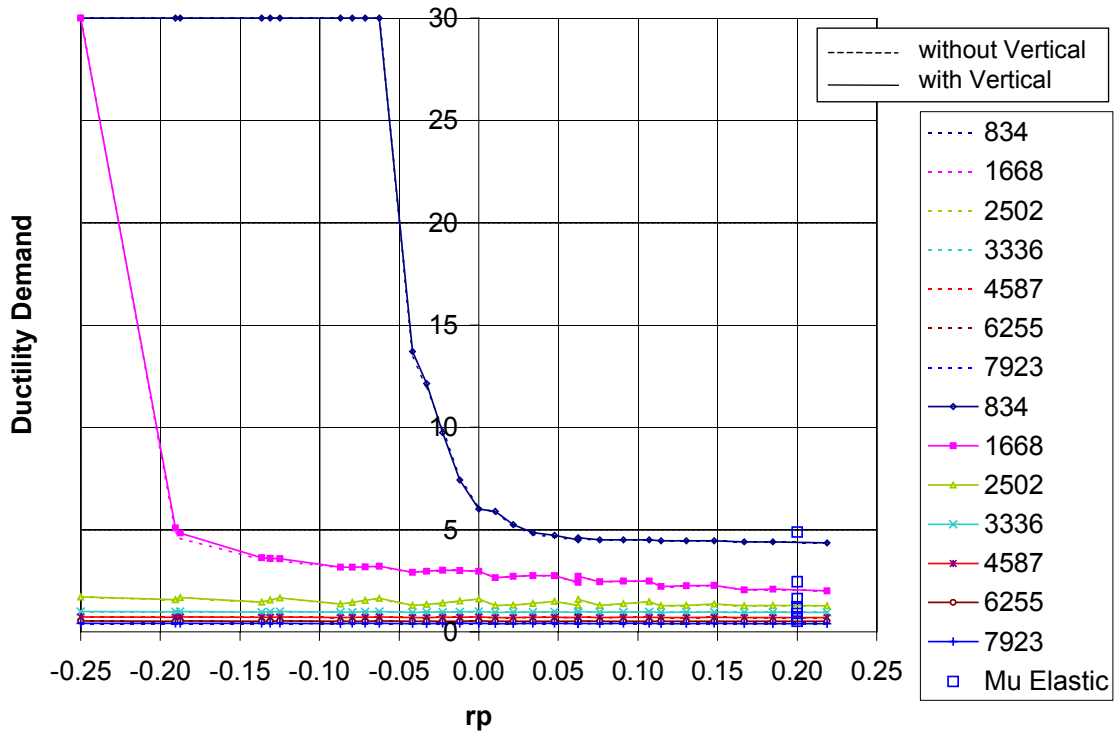


Figure C2.7.2.3a – EQ2, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.459 Seconds.

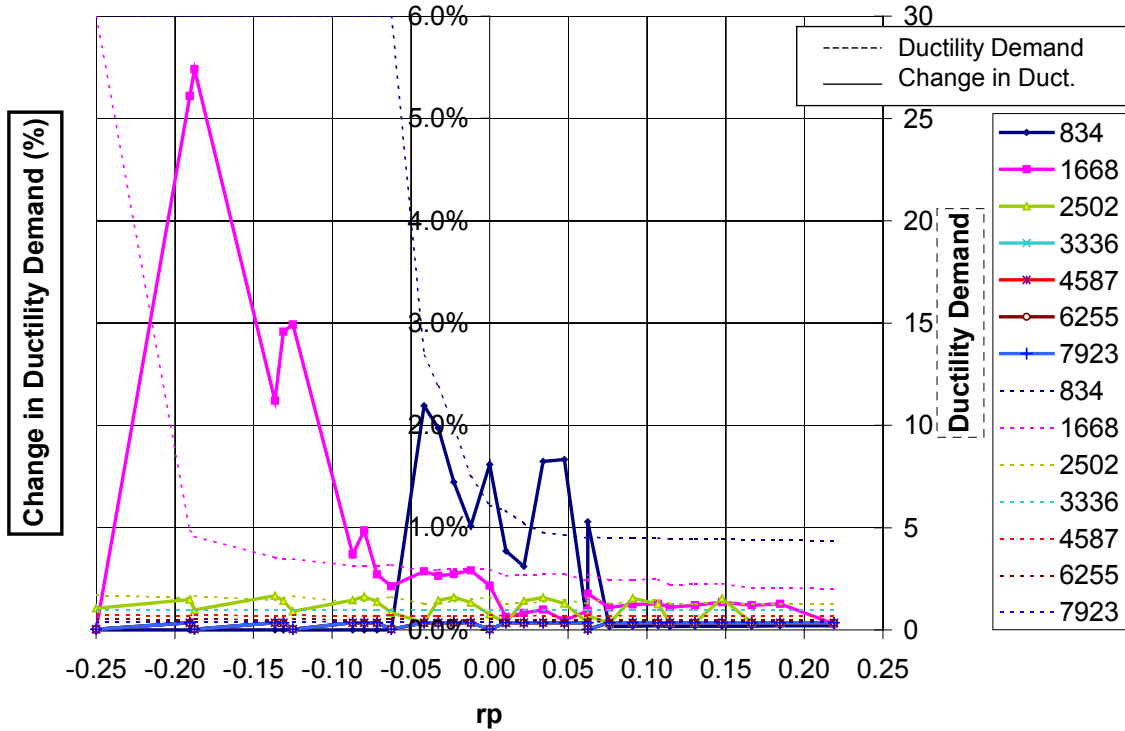


Figure C2.7.2.3b– EQ2, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.459 Seconds

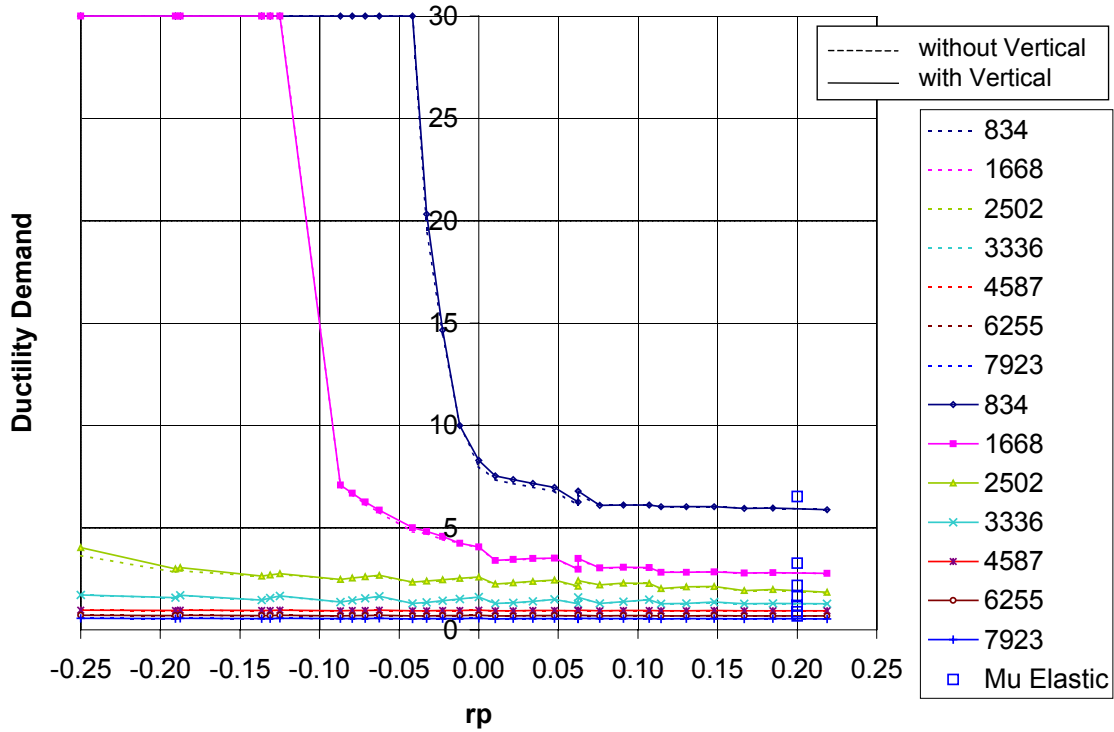


Figure C2.7.2.4a – EQ2, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.459 Seconds.

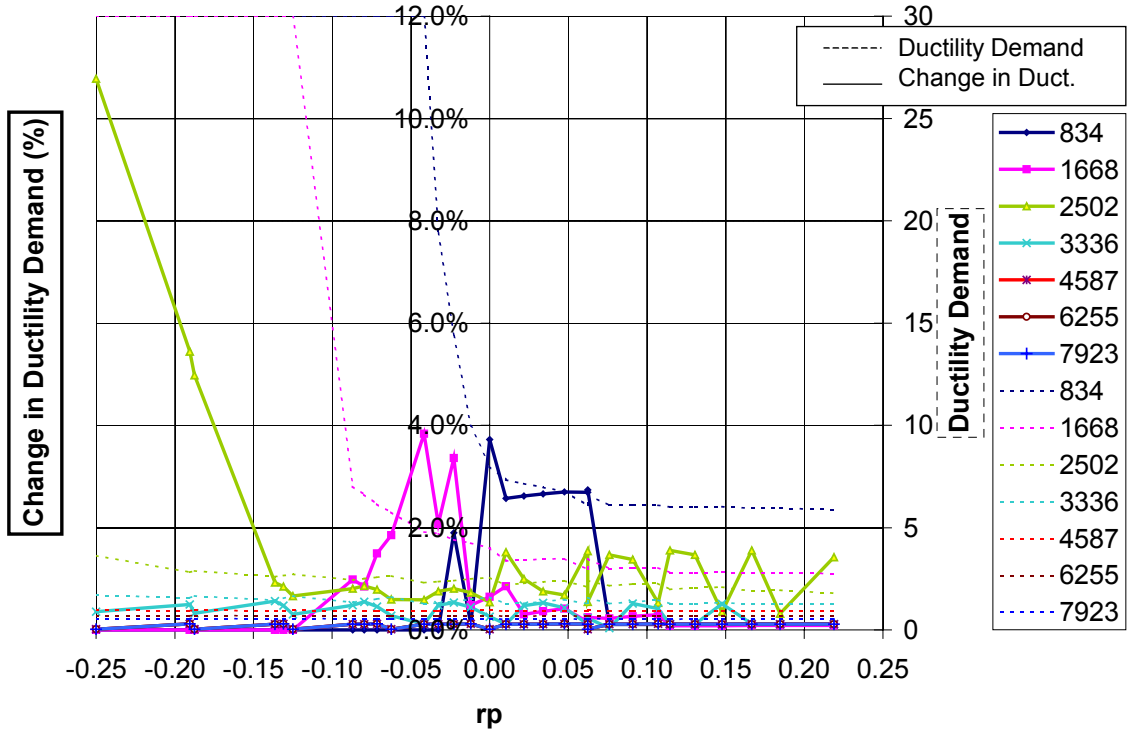


Figure C2.7.2.4b– EQ2, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.459 Seconds

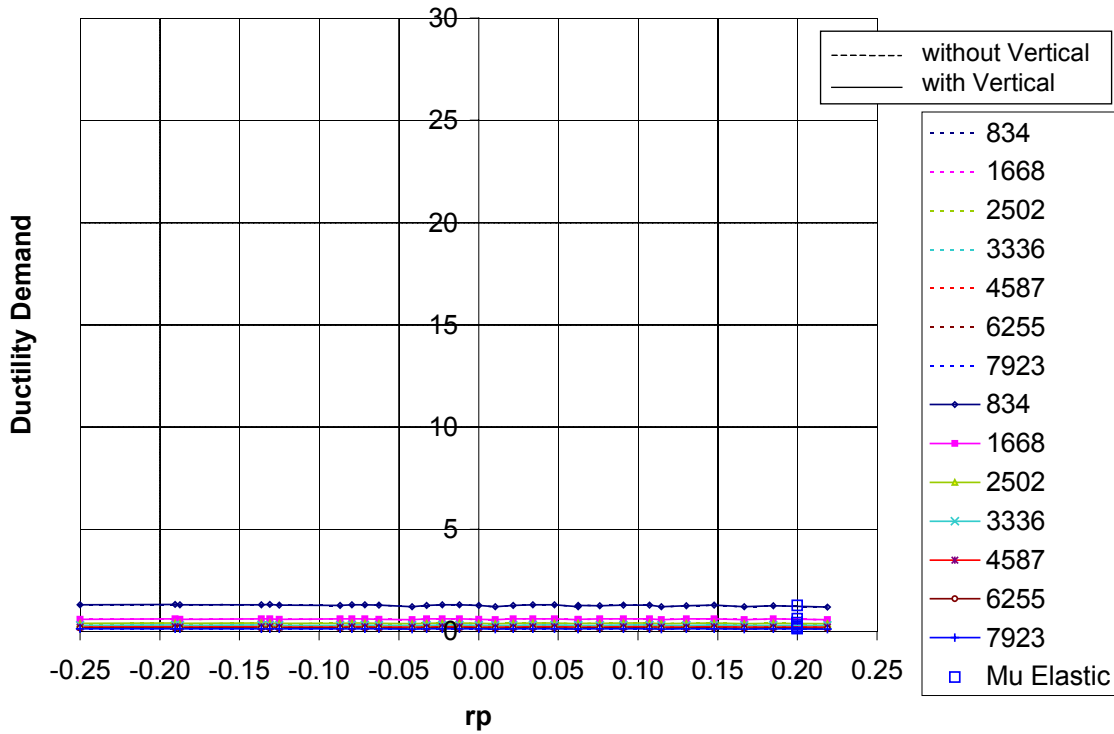


Figure C2.8.2.1a – EQ2, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.635 Seconds.

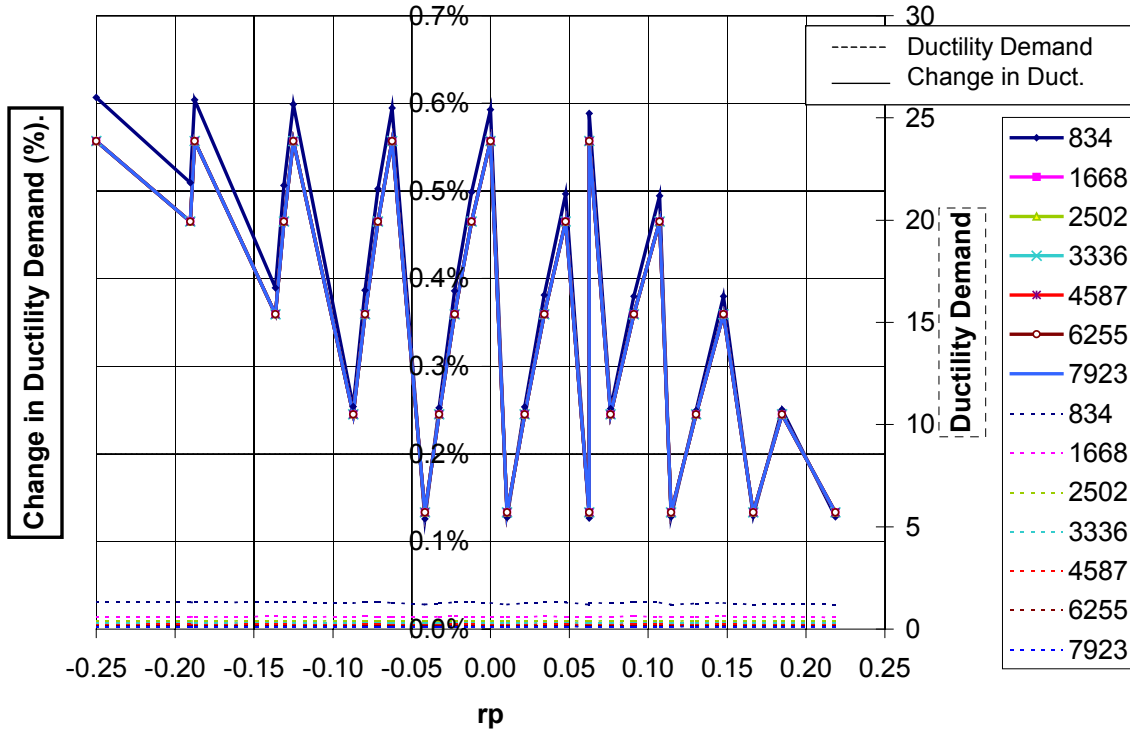


Figure C2.8.2.1b– EQ2, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.635 Seconds

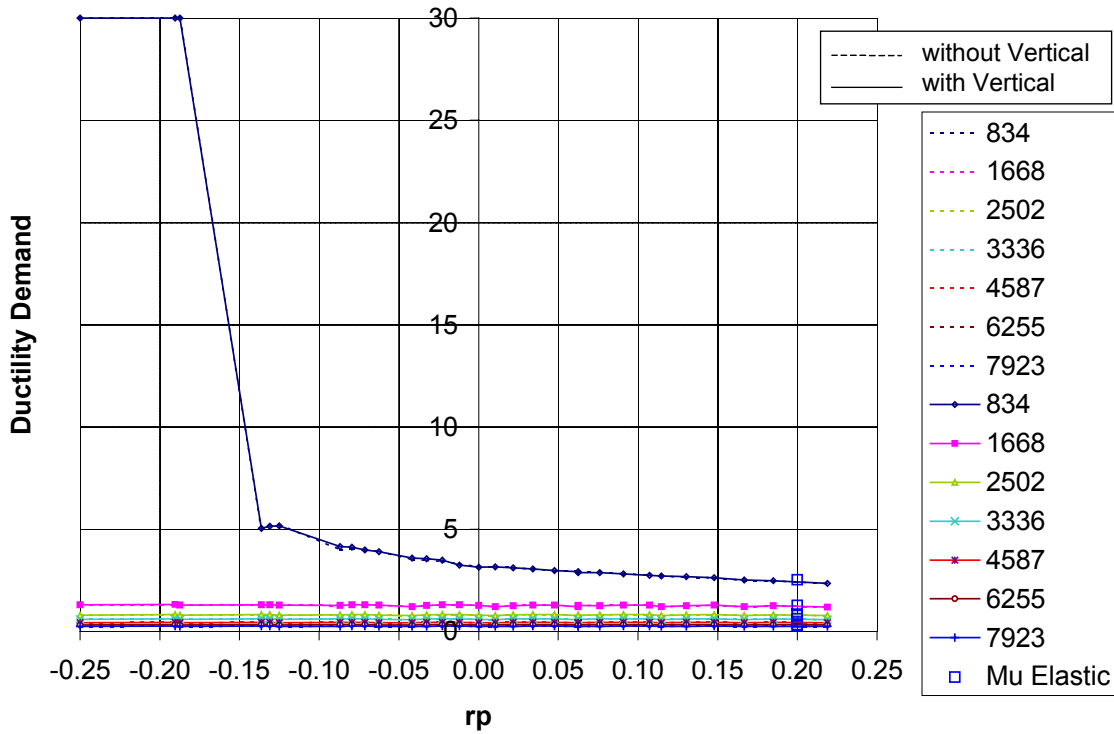


Figure C2.8.2.2a – EQ2, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.635 Seconds.

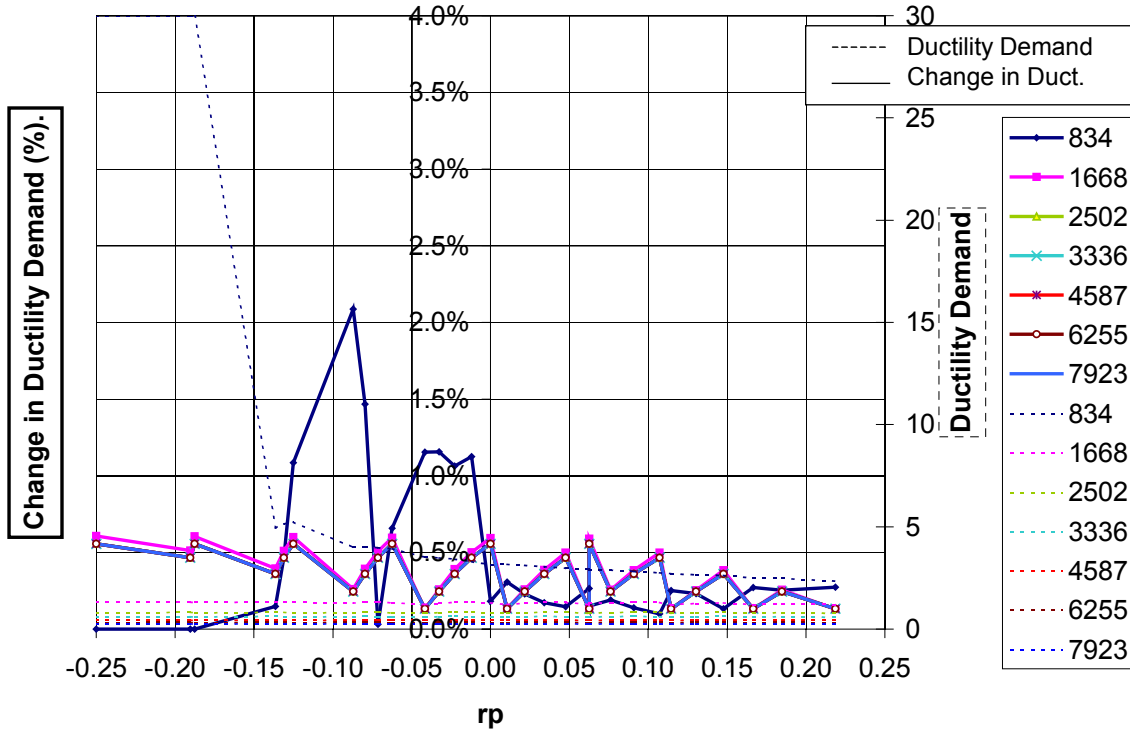


Figure C2.8.2.2b– EQ2, Lateral Scale = 0.2 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.635 Seconds

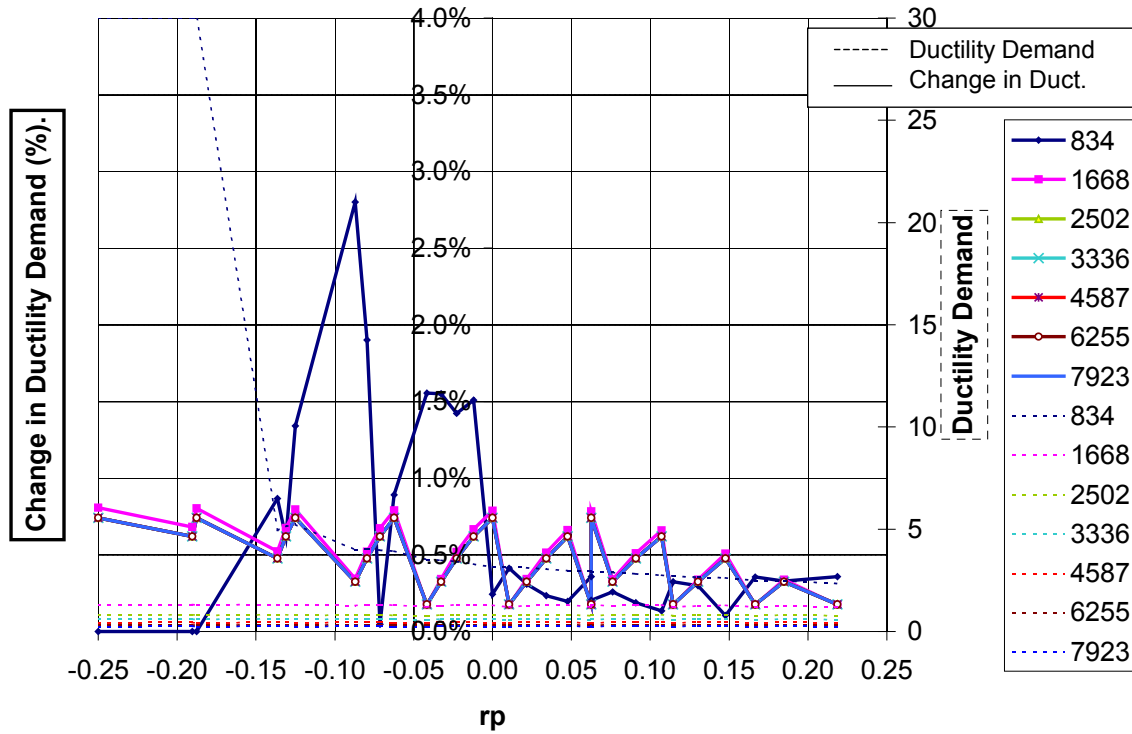


Figure C2.8.2.2c– EQ2, Lateral Scale = 0.2 g, Vertical Multiplier = 2.0, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.635 Seconds

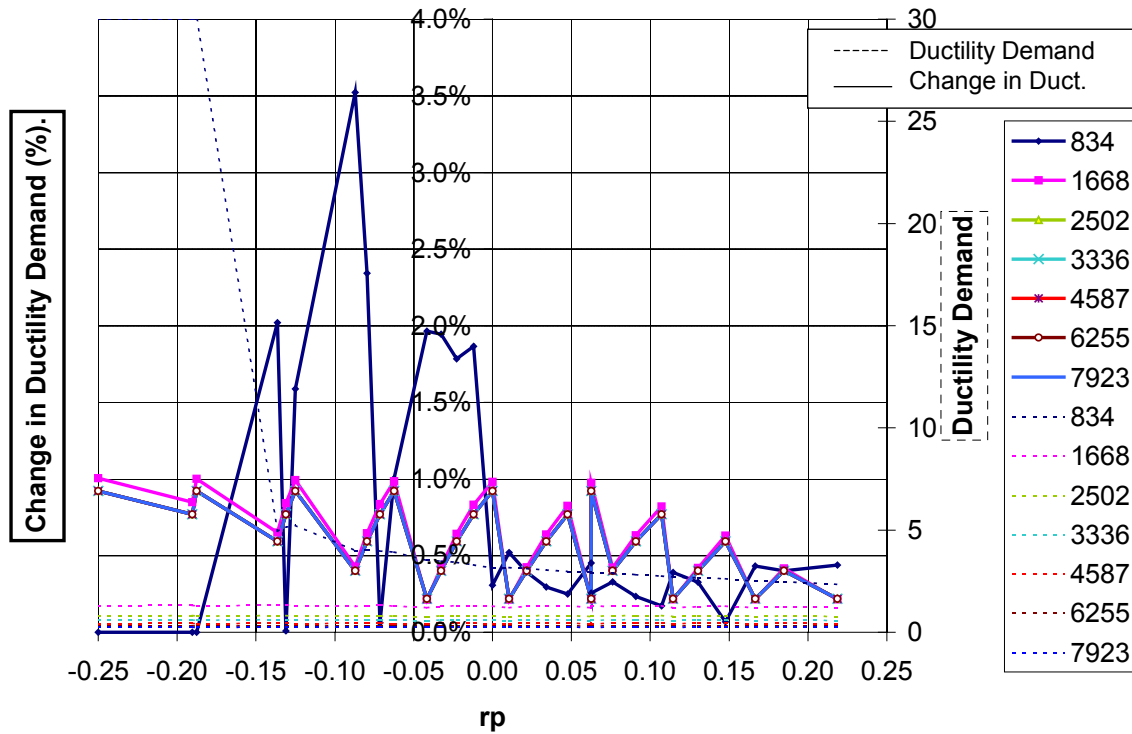


Figure C2.8.2.2d– EQ2, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.635 Seconds

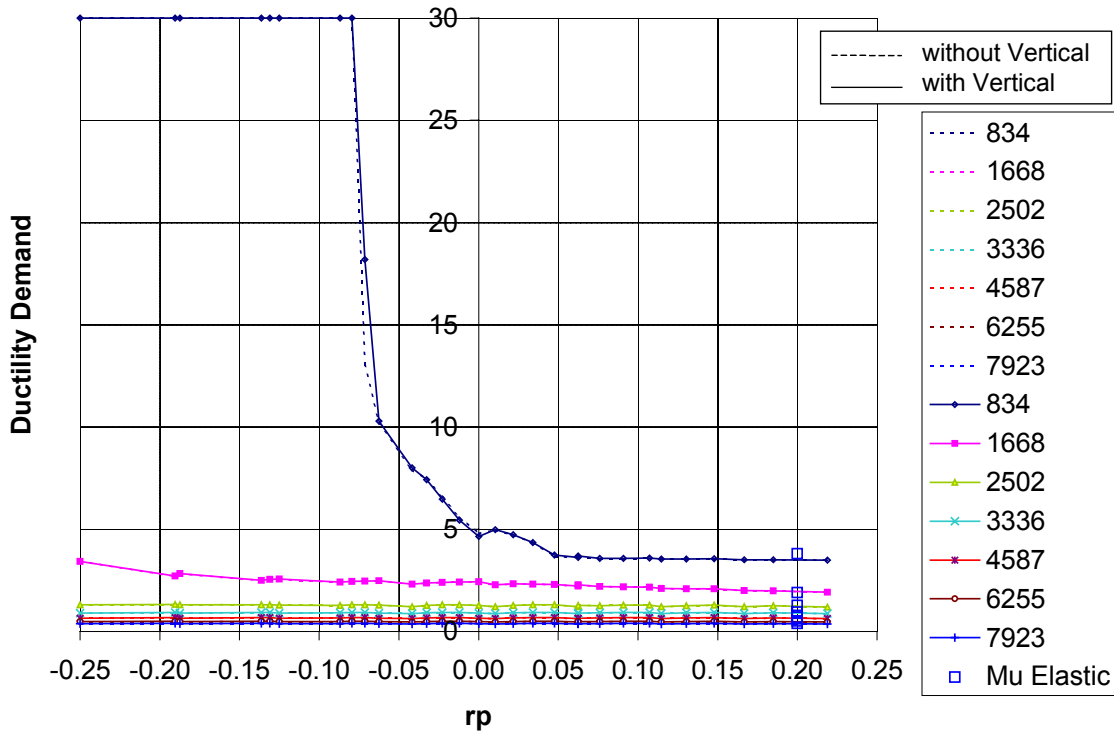


Figure C2.8.2.3a – EQ2, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.635 Seconds.

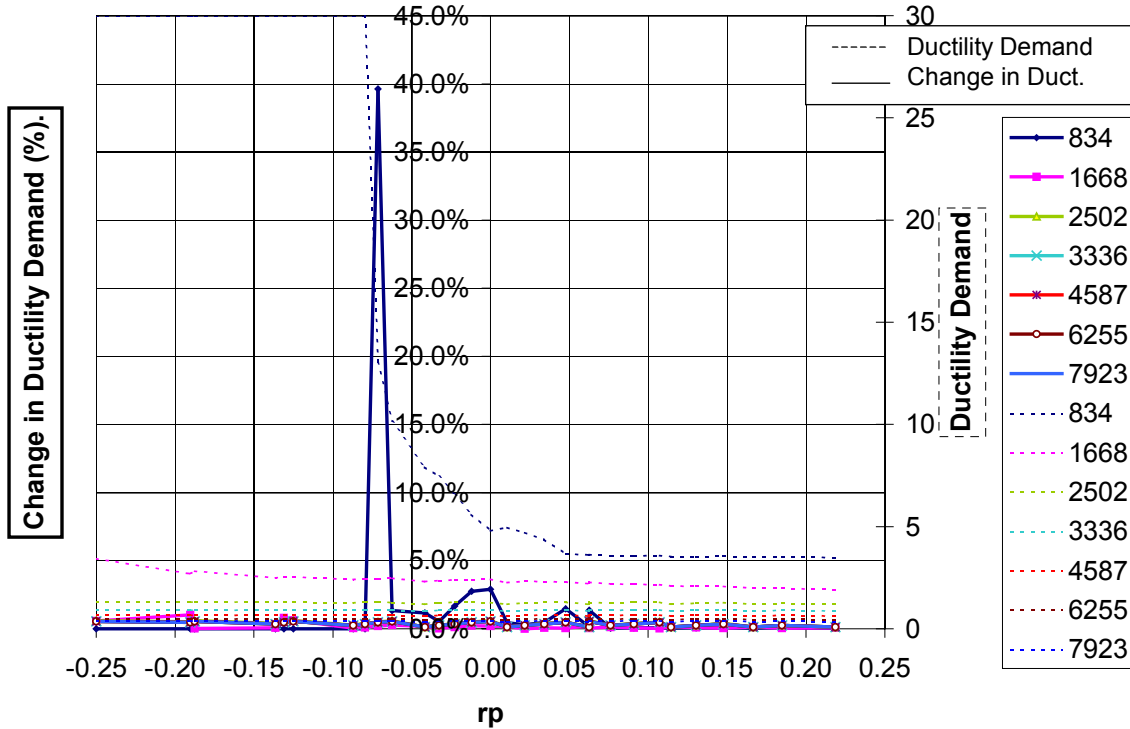


Figure C2.8.2.3b– EQ2, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.635 Seconds

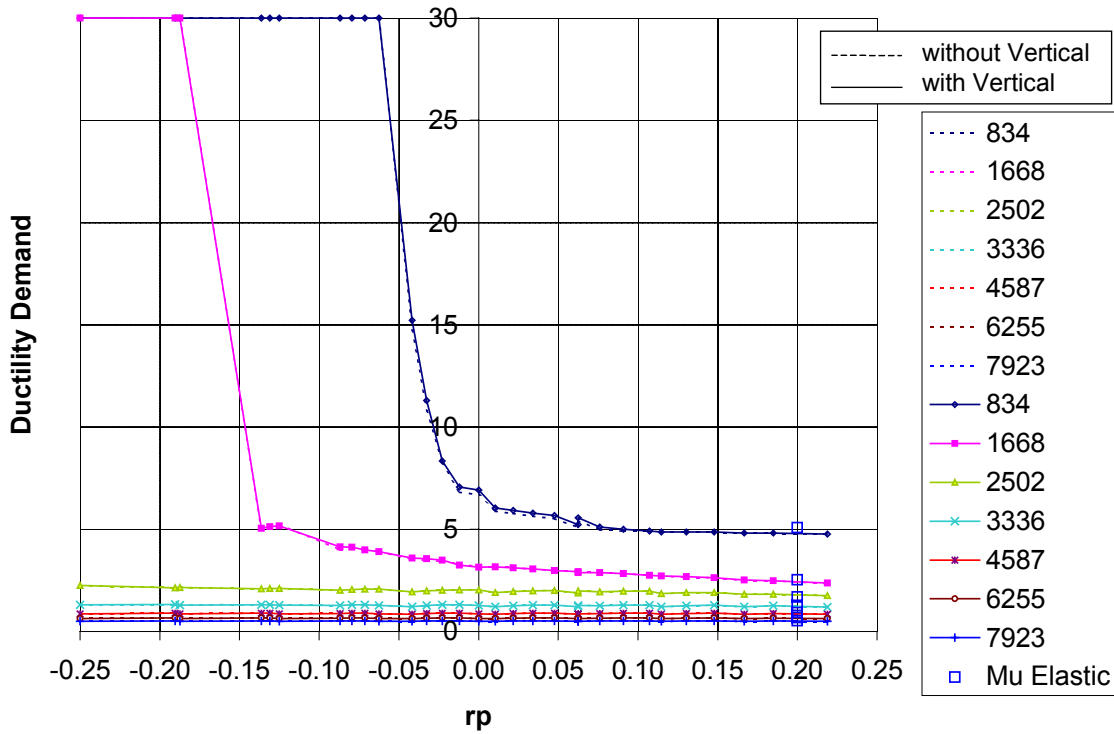


Figure C2.8.2.4a – EQ2, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.635 Seconds.

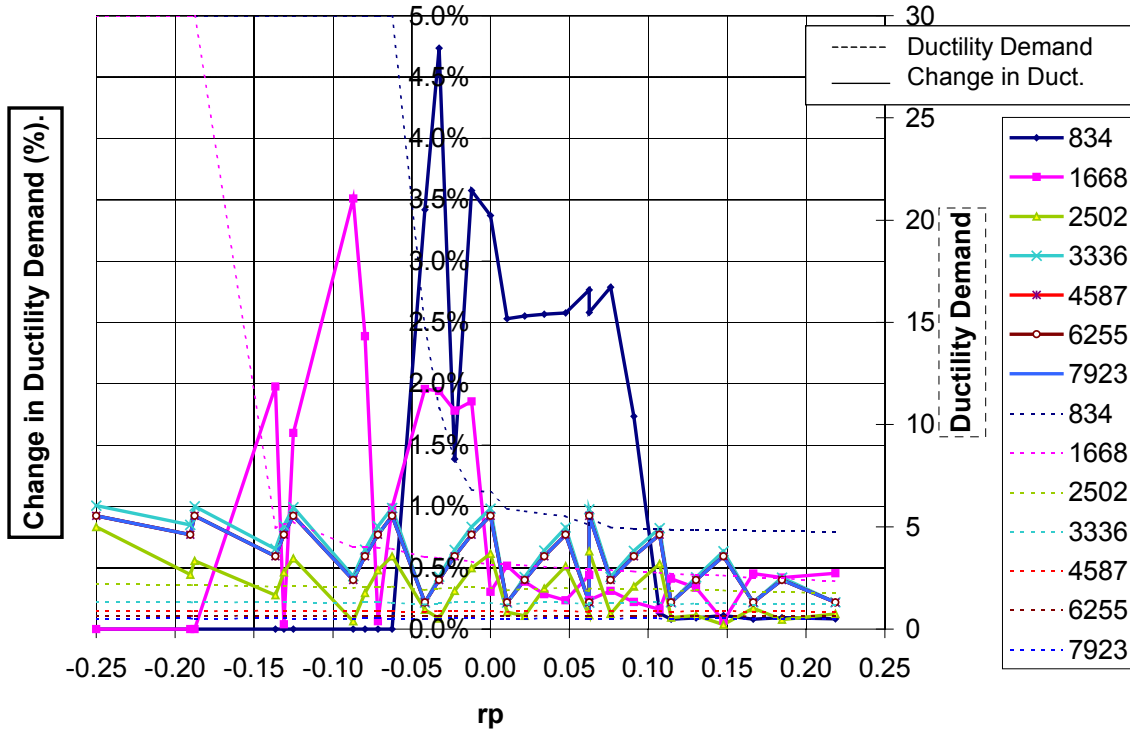


Figure C2.8.2.4b– EQ2, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.635 Seconds

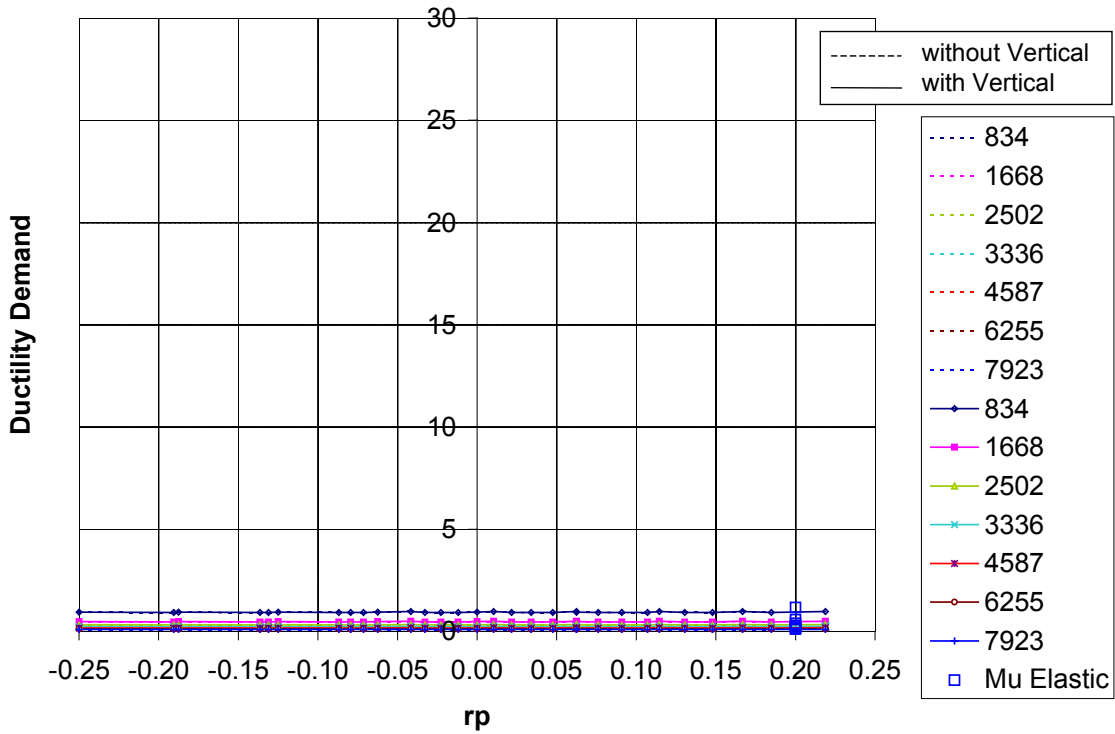


Figure C2.9.2.1a – EQ2, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.808 Seconds.

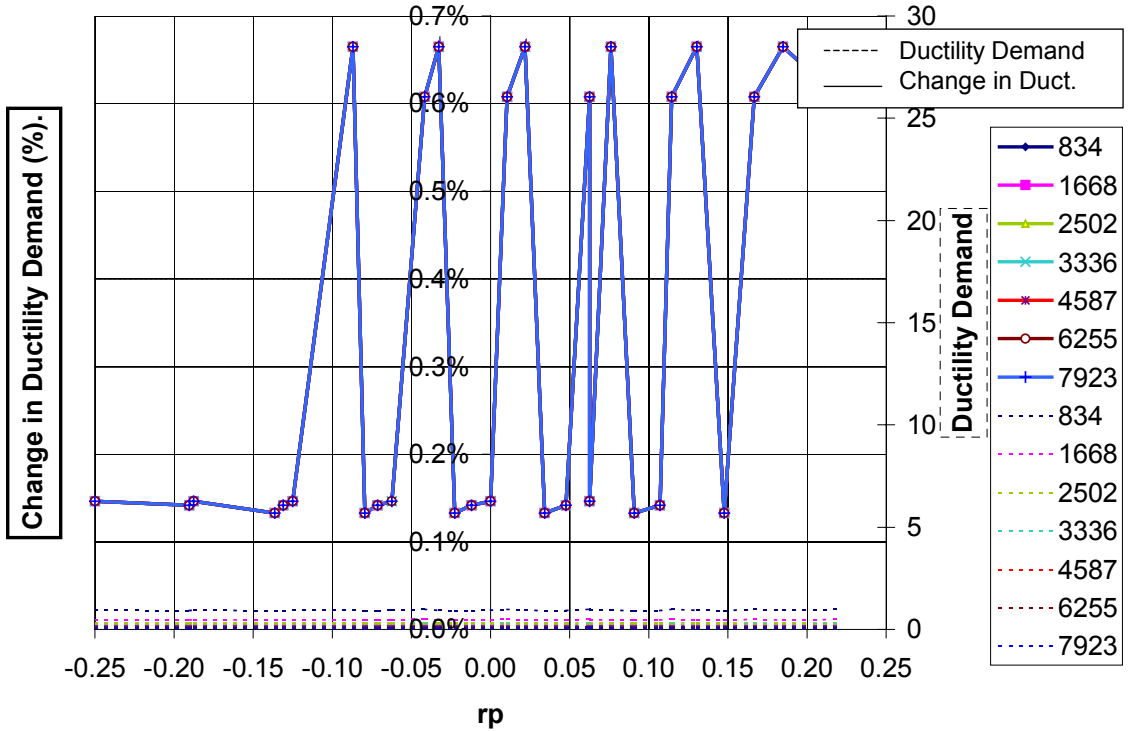


Figure C2.9.2.1b– EQ2, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.808 Seconds

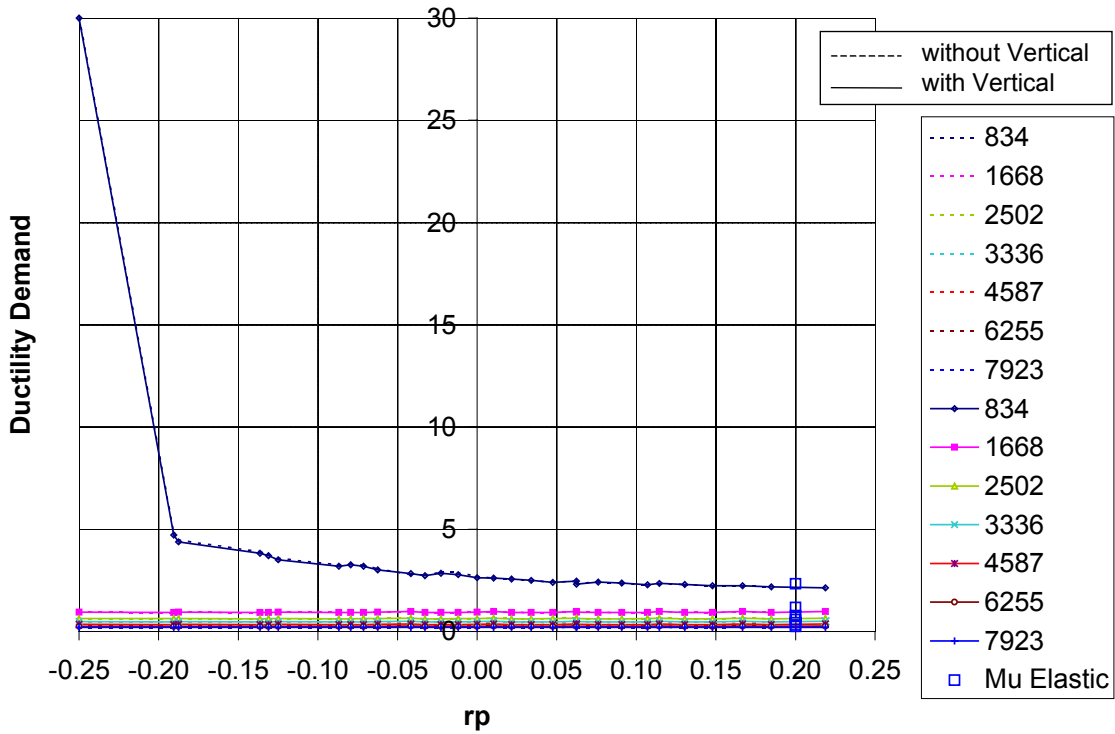


Figure C2.9.2.2a – EQ2, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.808 Seconds.

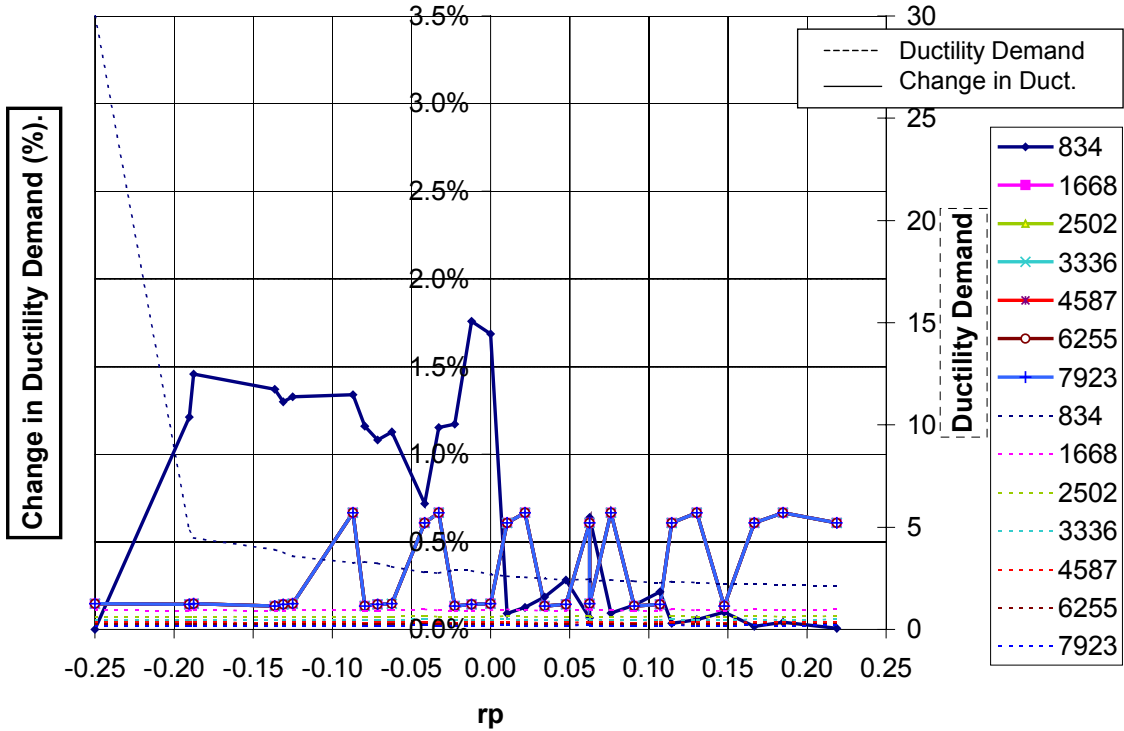
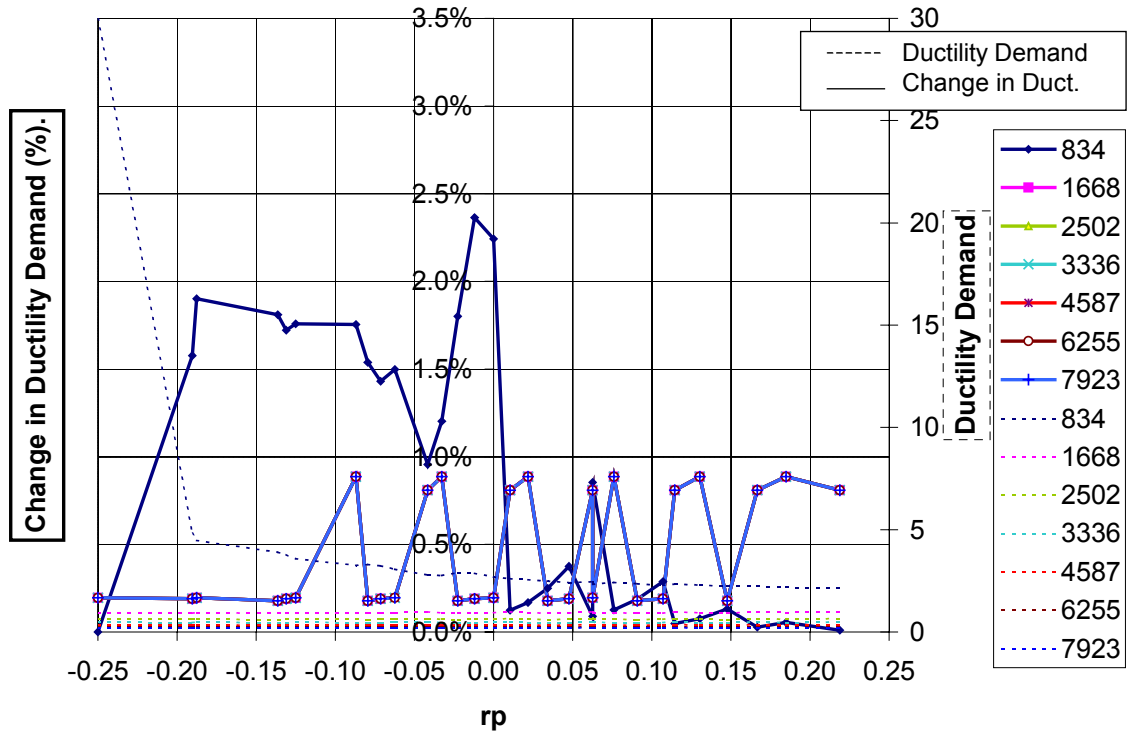
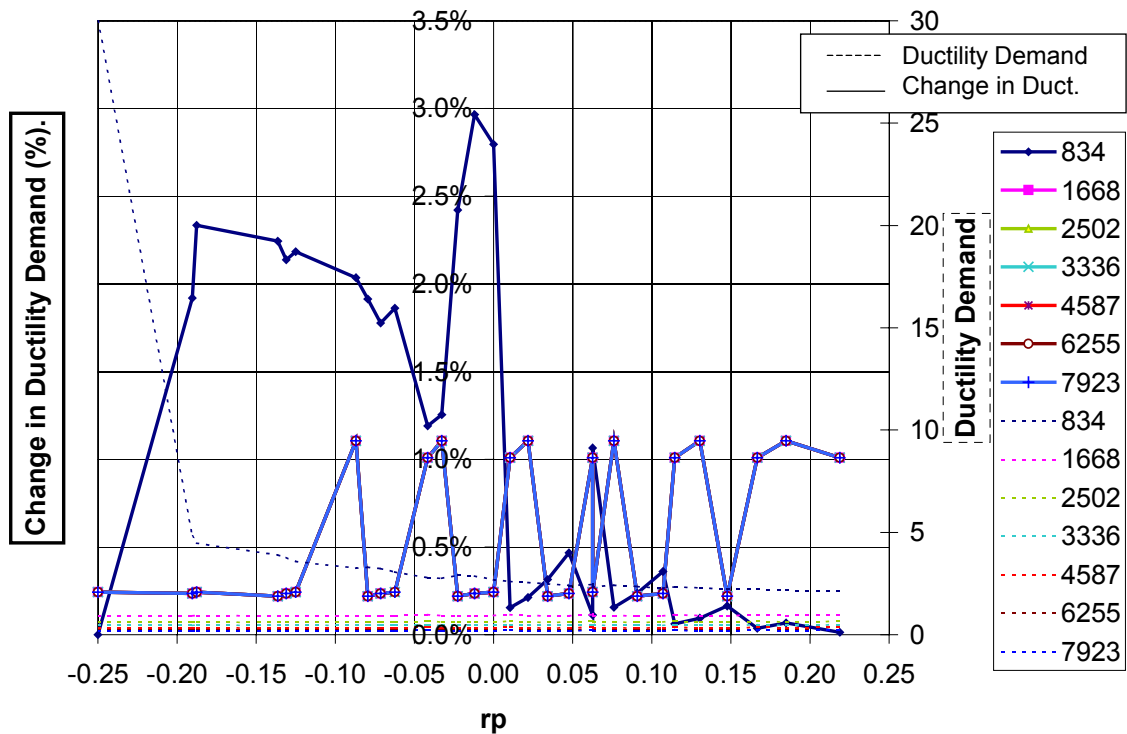


Figure C2.9.2.2b– EQ2, Lateral Scale = 0.2 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.808 Seconds



**Figure C2.9.2.2c– EQ2, Lateral Scale = 0.2 g, Vertical Multiplier = 2.0, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.808 Seconds**



**Figure C2.9.2.2d– EQ2, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.808 Seconds**

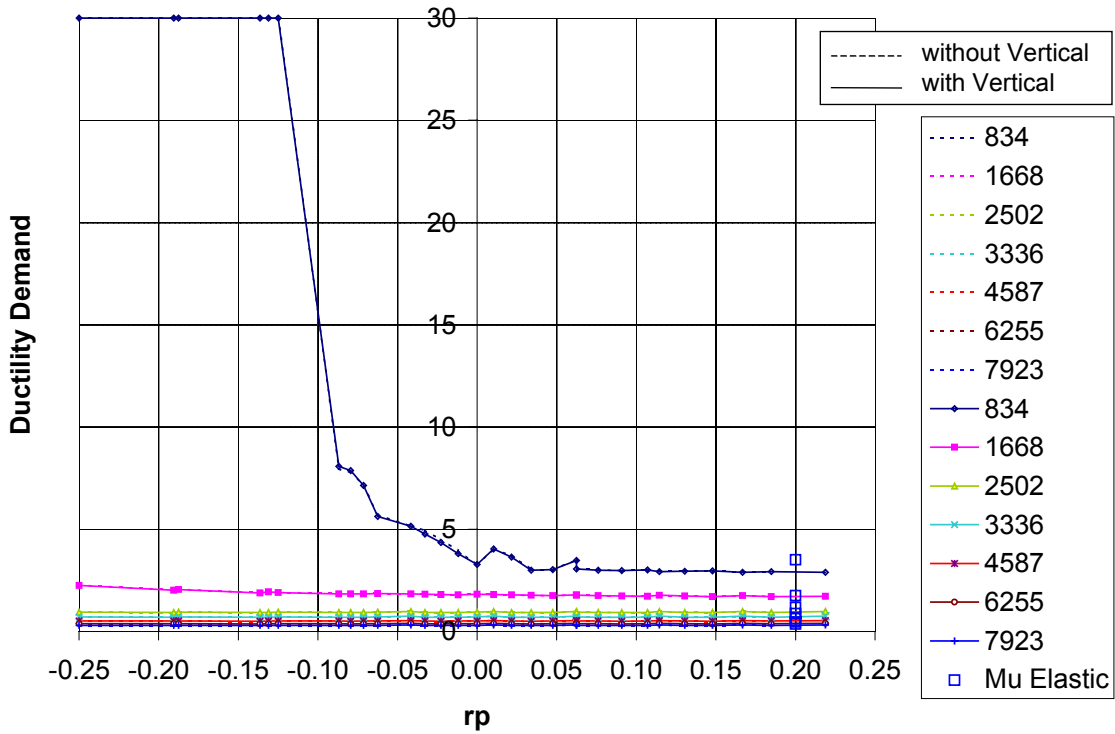


Figure C2.9.2.3a – EQ2, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.808 Seconds.

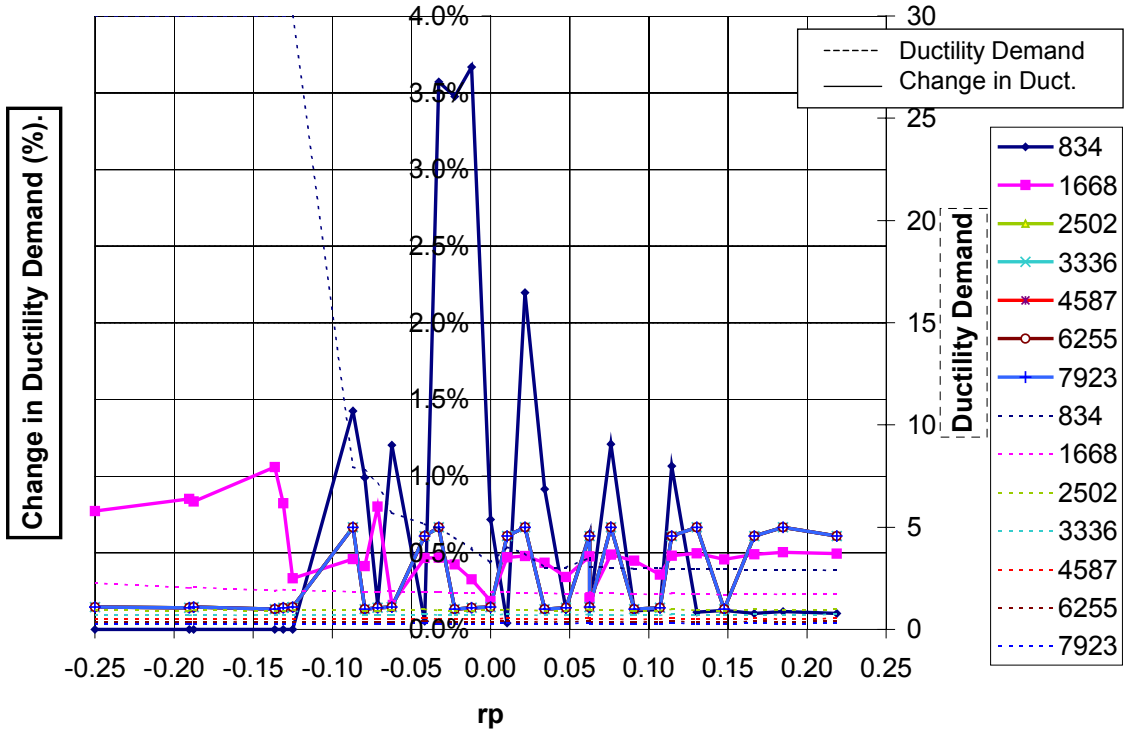


Figure C2.9.2.3b– EQ2, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.808 Seconds

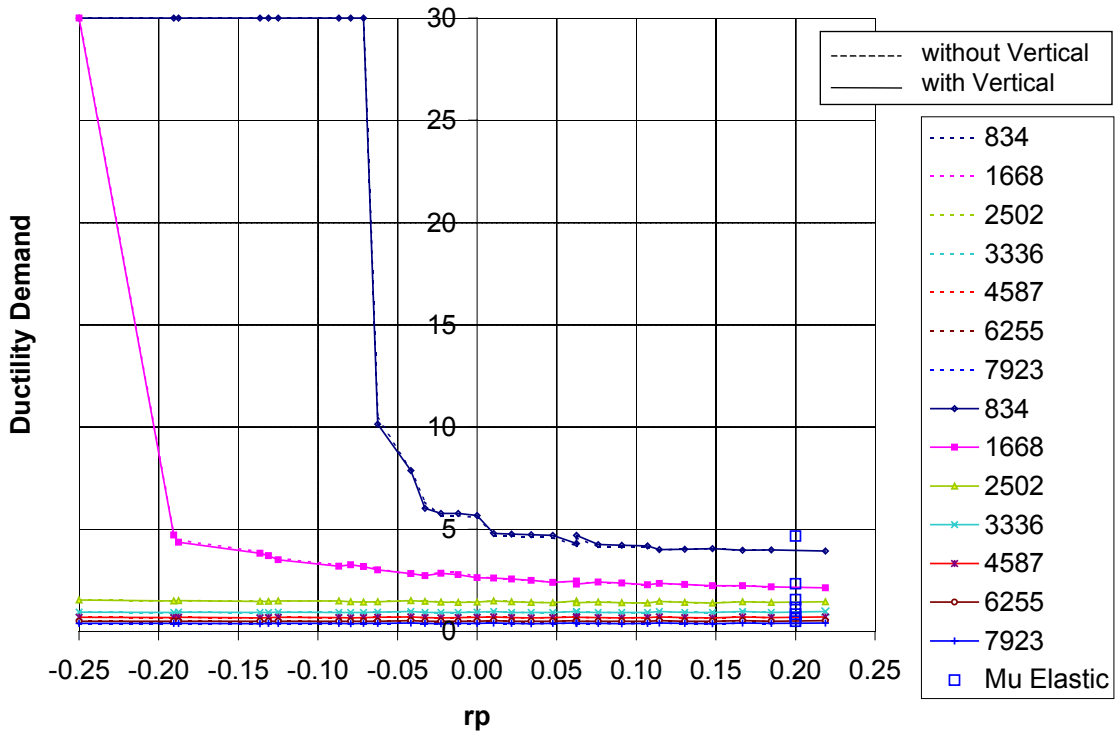


Figure C2.9.2.4a – EQ2, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.808 Seconds.

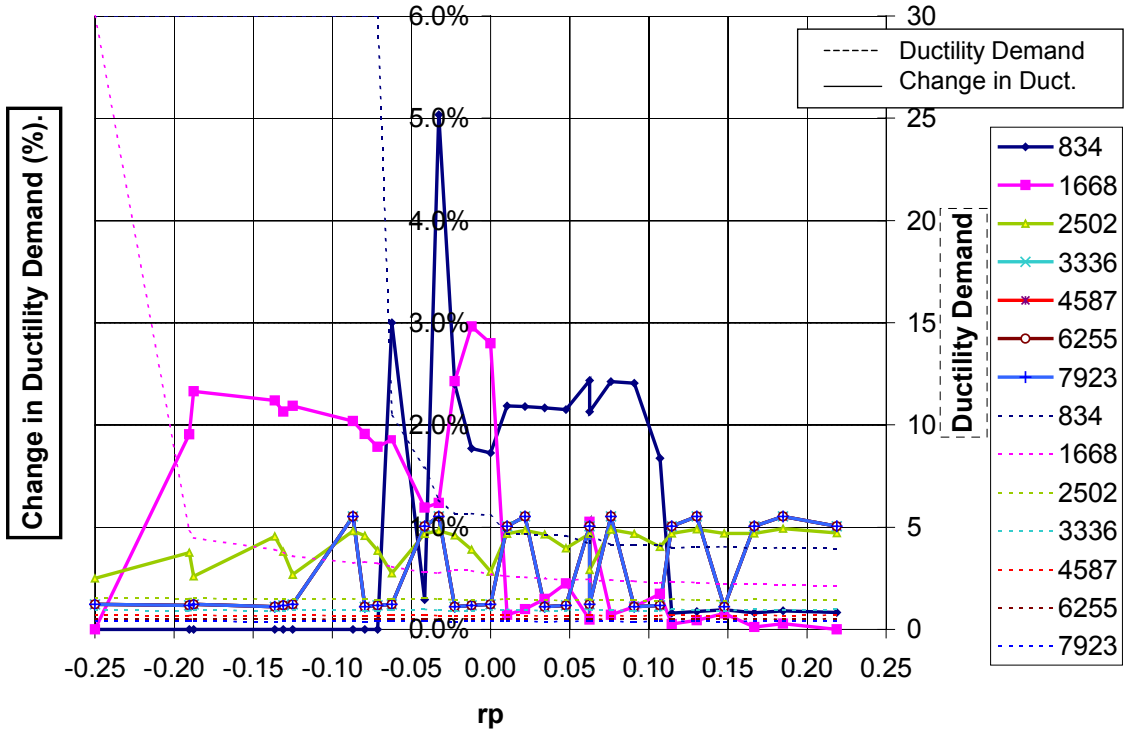


Figure C2.9.2.4b– EQ2, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.808 Seconds

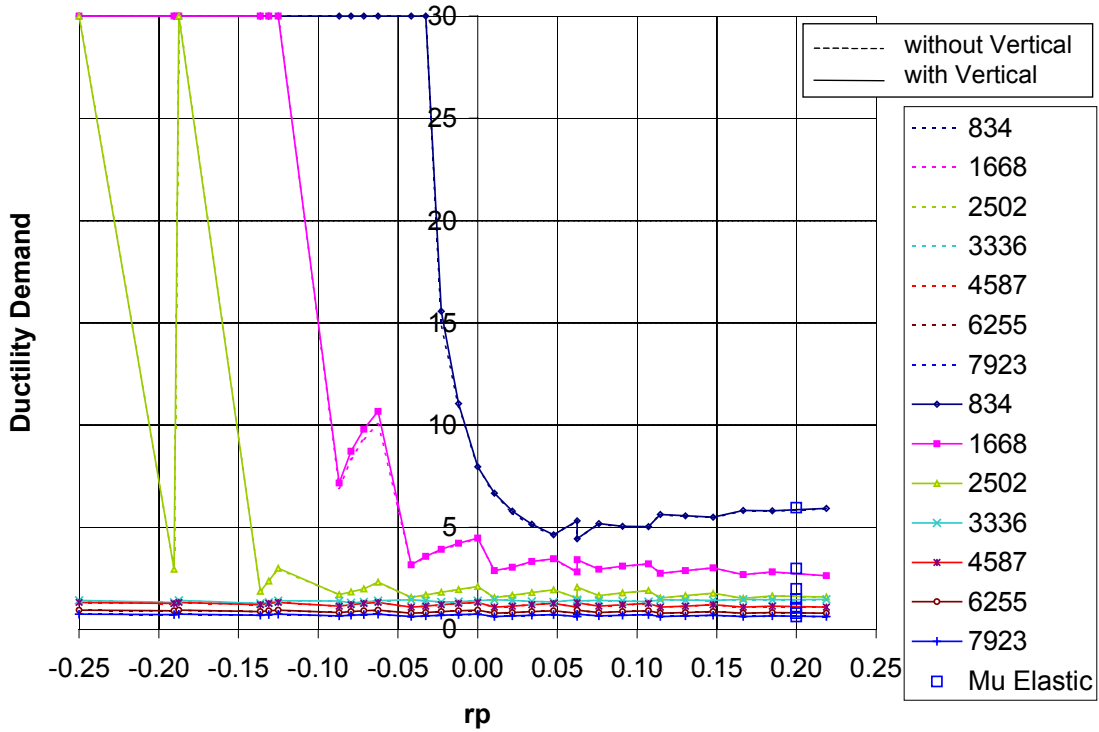


Figure C2.3.3.1a – EQ3, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 0.705 Seconds.

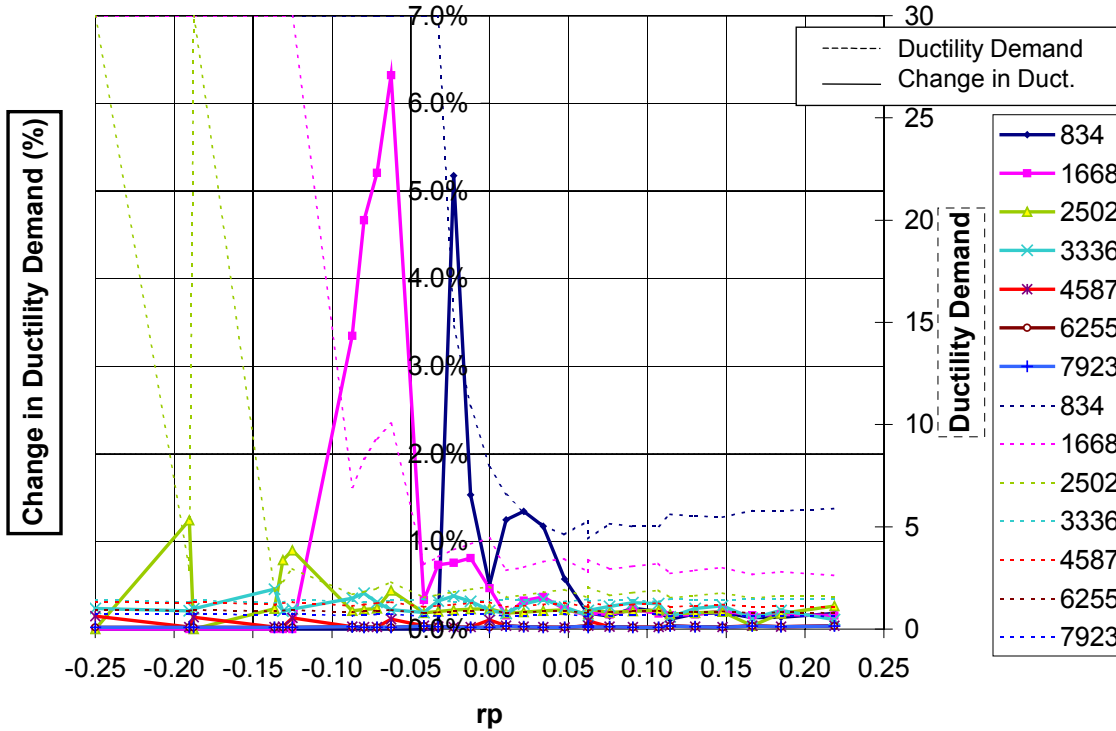


Figure C2.3.3.1b– EQ3, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 0.705 Seconds

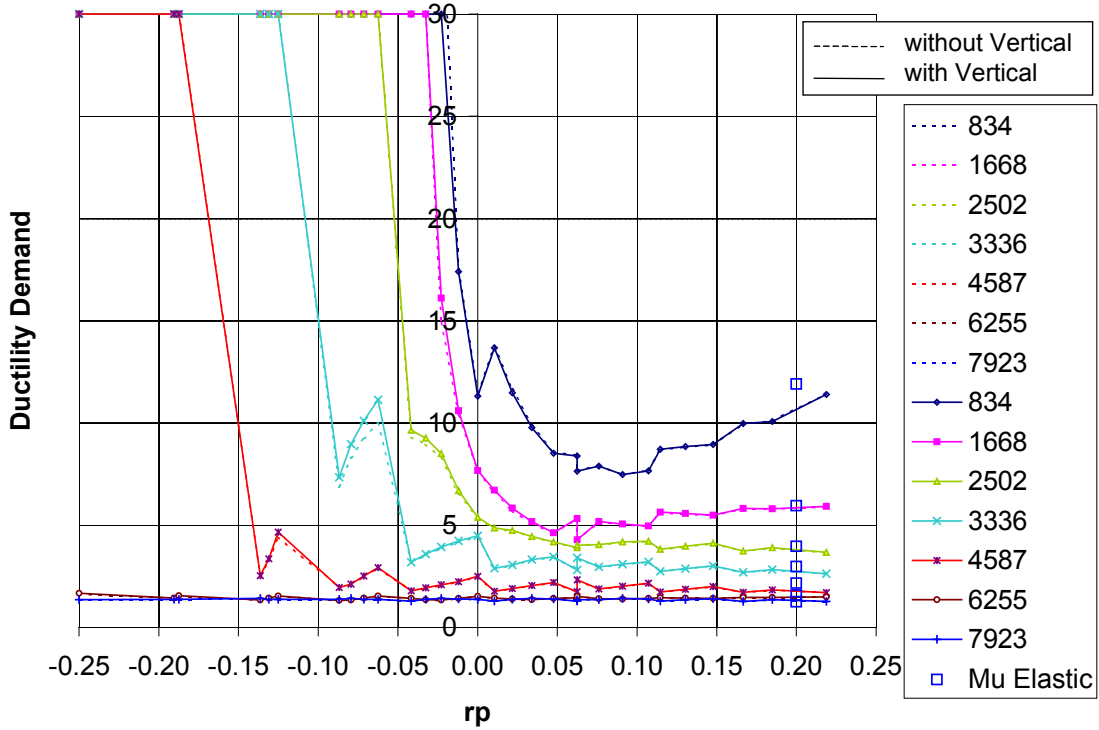


Figure C2.3.3.2a – EQ3, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 0.705 Seconds.

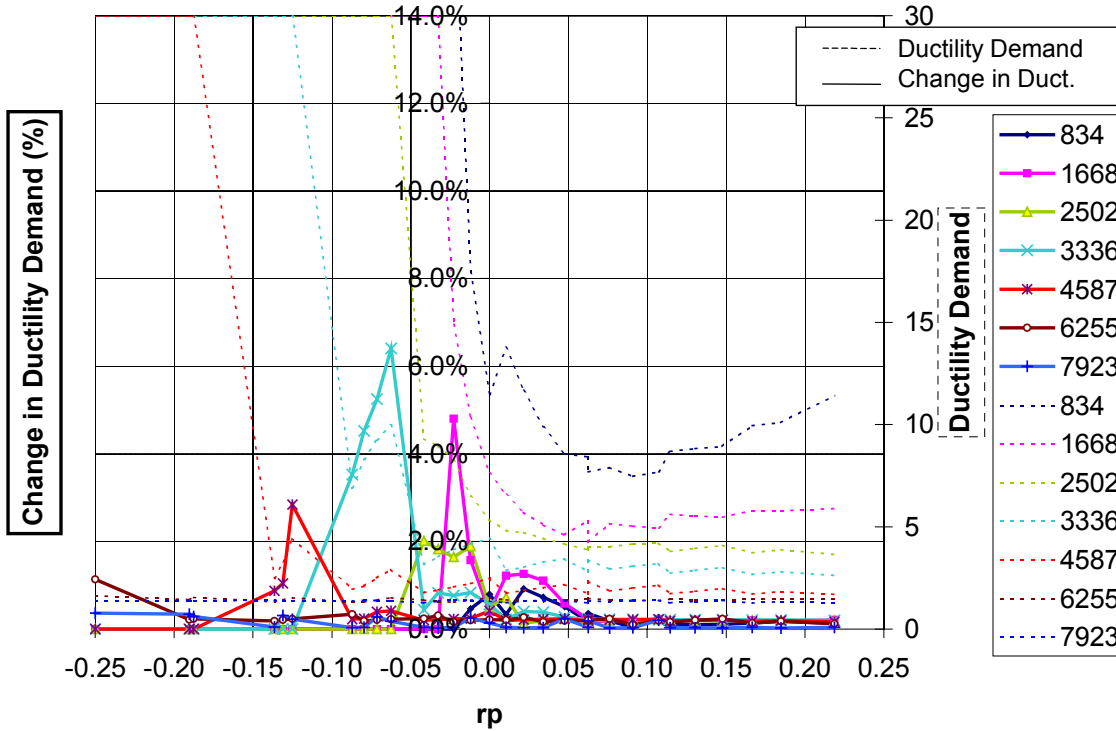
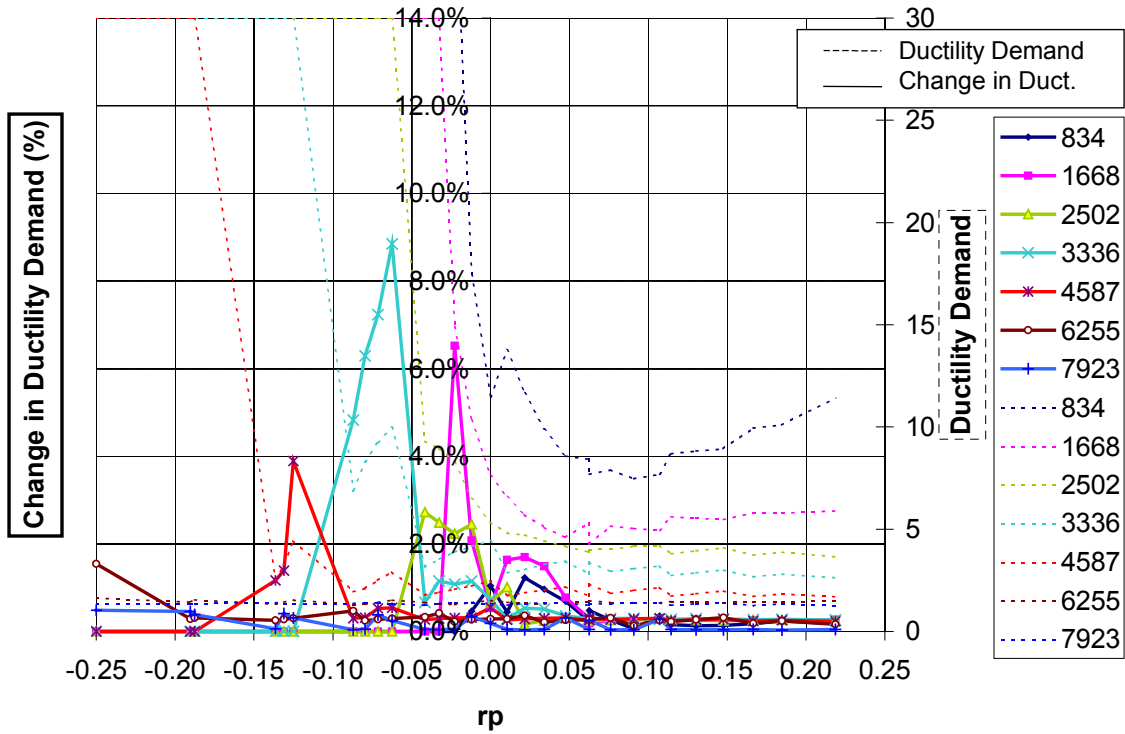
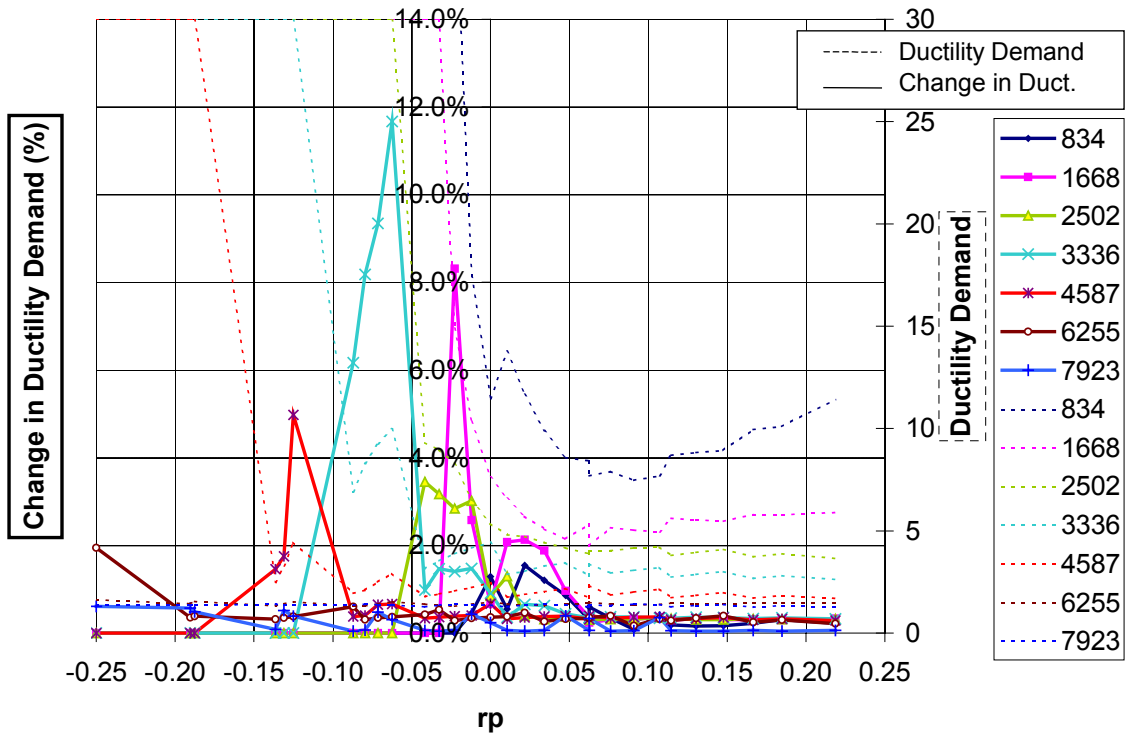


Figure C2.3.3.2b– EQ3, Lateral Scale = 0.2 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 0.705 Seconds



**Figure C2.3.3.2c– EQ3, Lateral Scale = 0.2 g, Vertical Multiplier = 2.0, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 0.705 Seconds**



**Figure C2.3.3.2d– EQ3, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 0.705 Seconds**

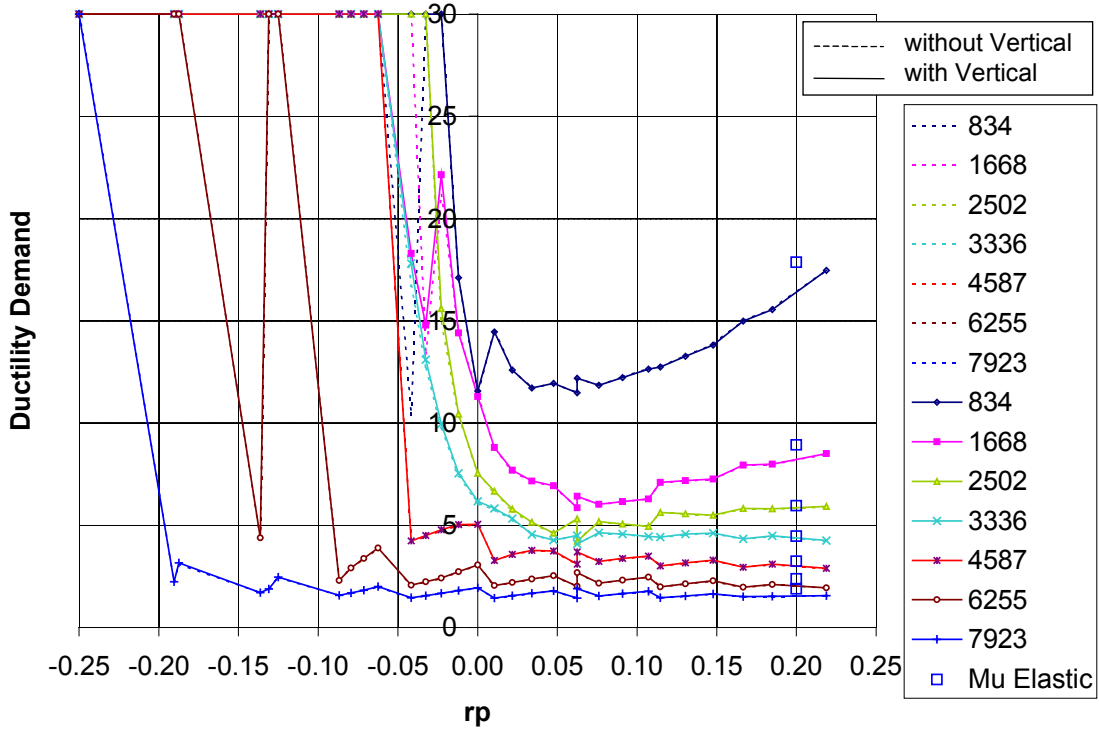


Figure C2.3.3.3a – EQ3, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 0.705 Seconds.

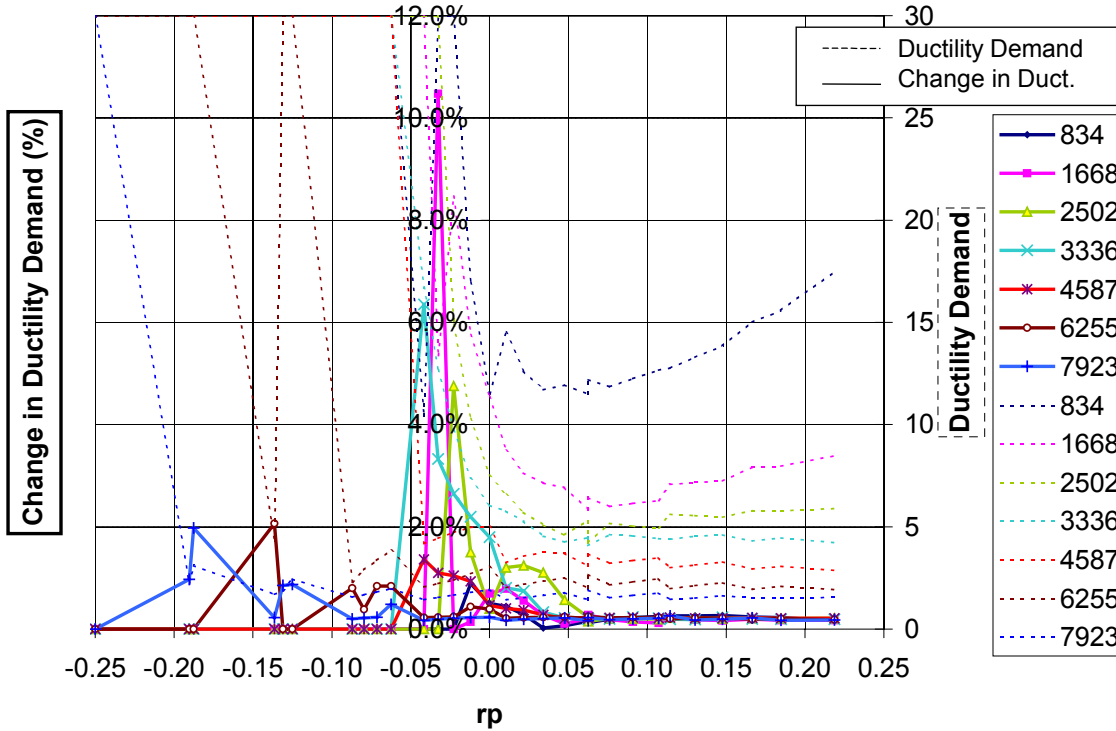


Figure C2.3.3.3b– EQ3, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 0.705 Seconds

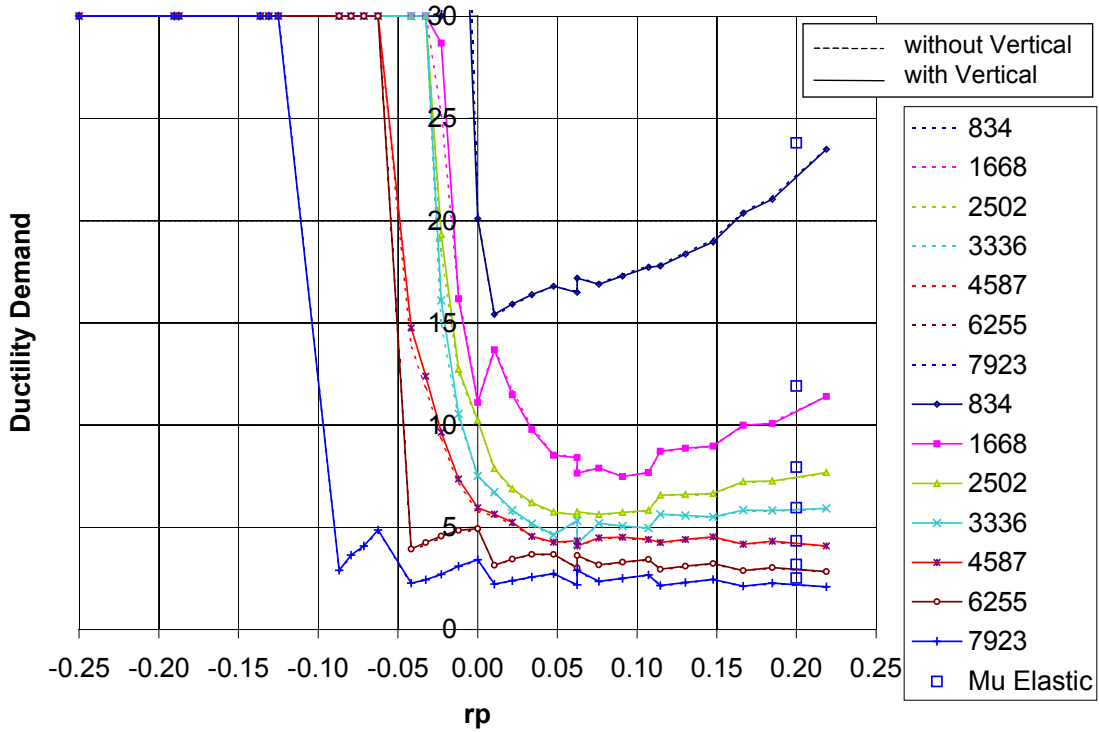


Figure C2.3.3.4a – EQ3, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 0.705 Seconds.

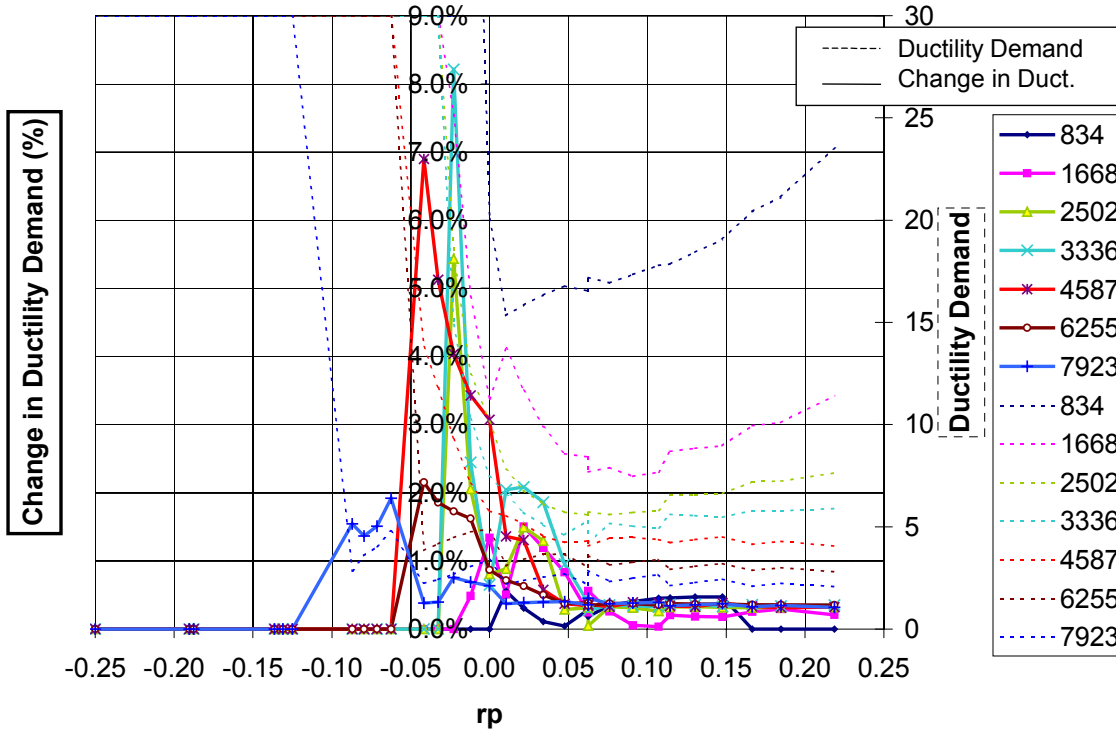


Figure C2.3.3.4b– EQ3, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 0.705 Seconds

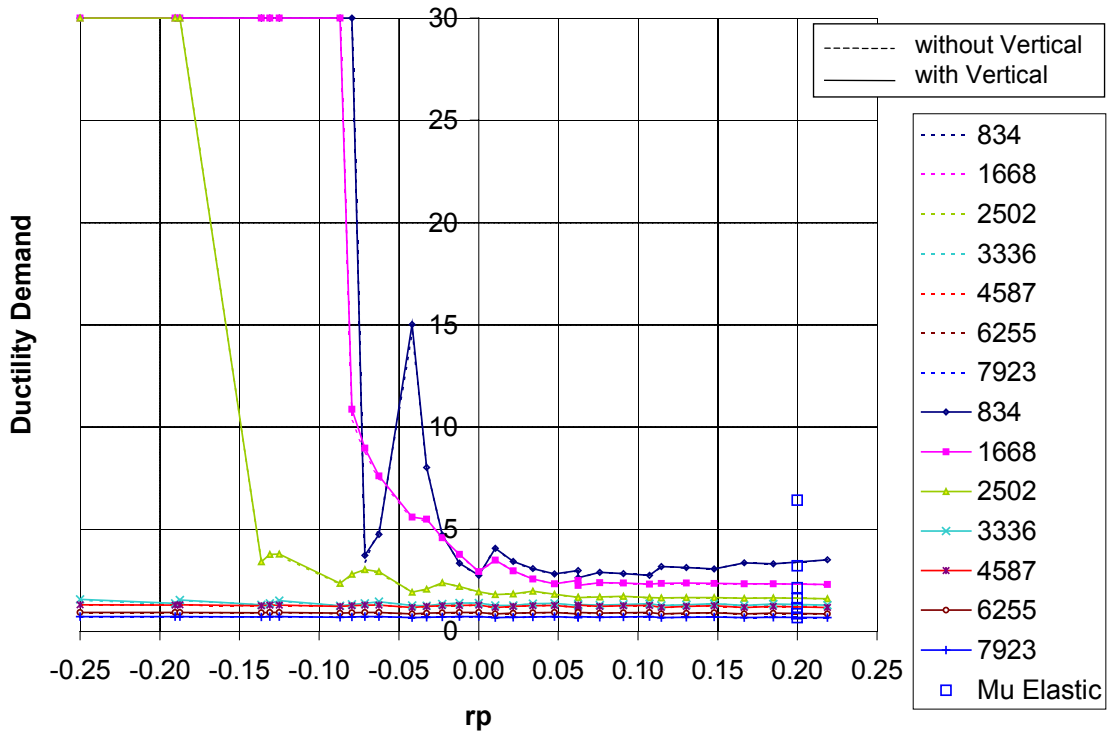


Figure C2.4.3.1a – EQ3, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 0.903 Seconds.

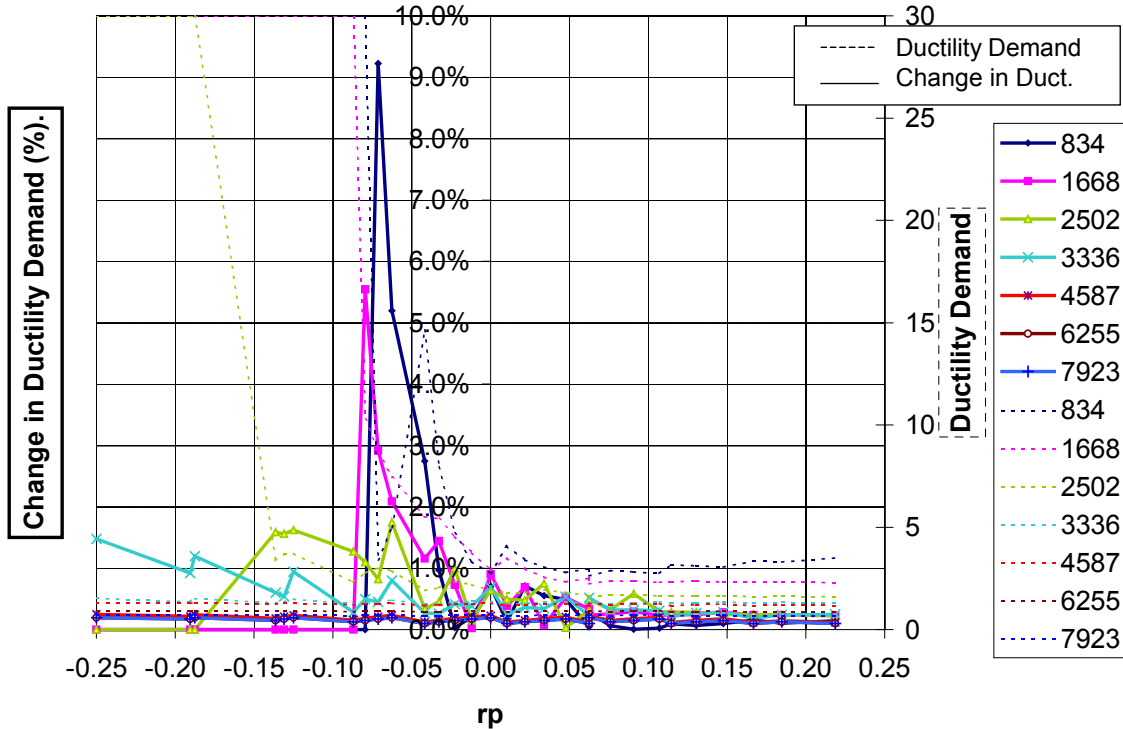


Figure C2.4.3.1b– EQ3, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 0.903 Seconds

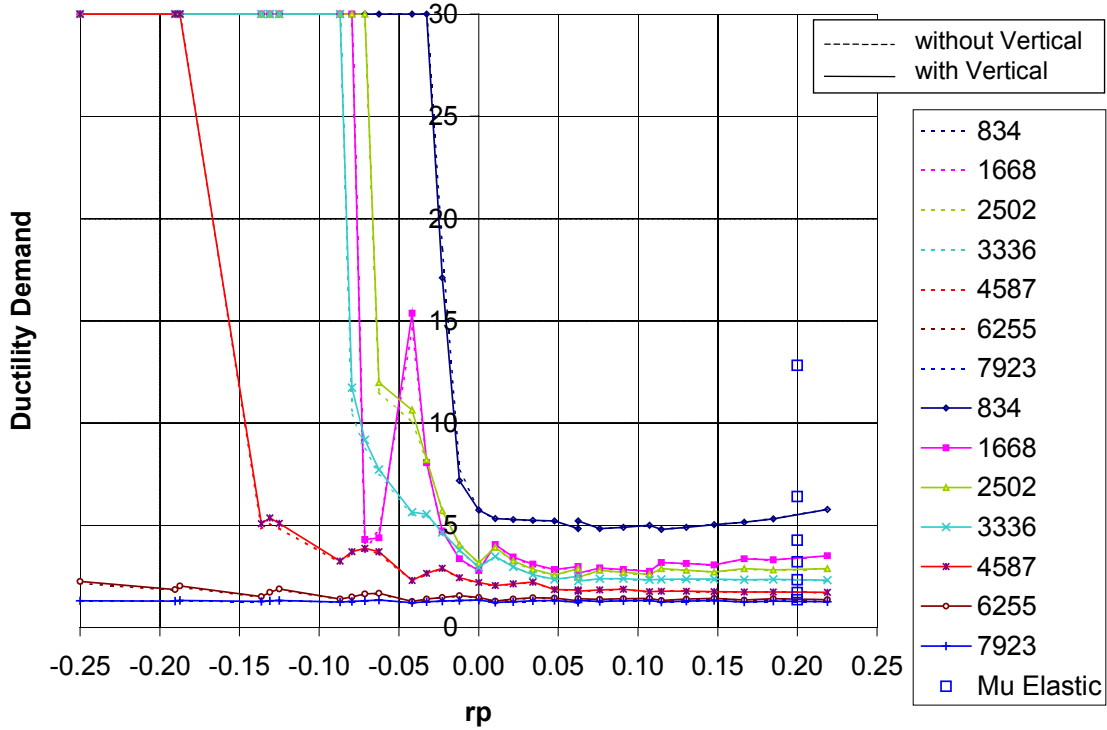


Figure C2.4.3.2a – EQ3, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 0.903 Seconds.

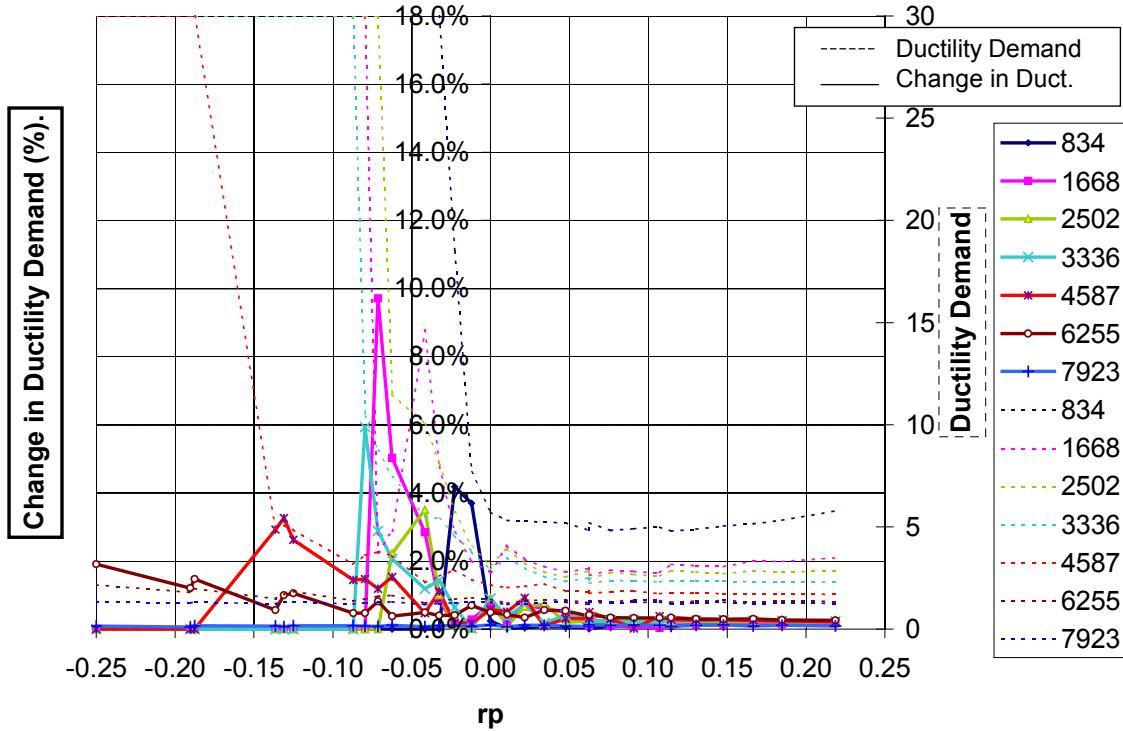
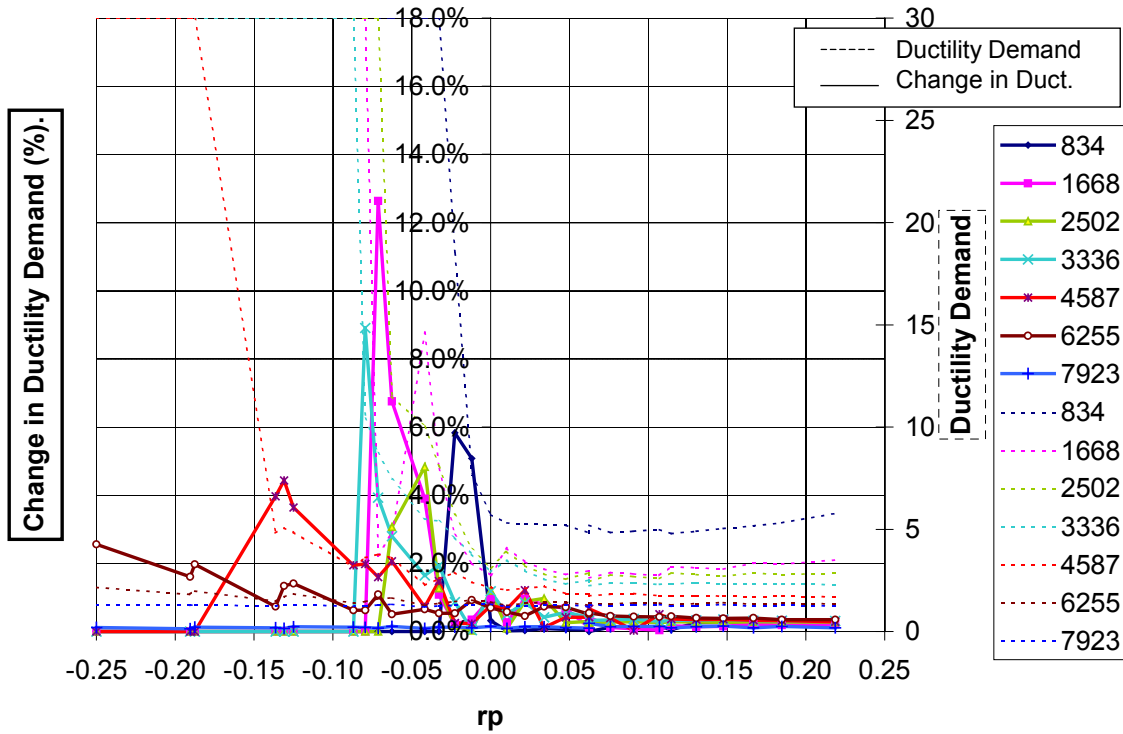
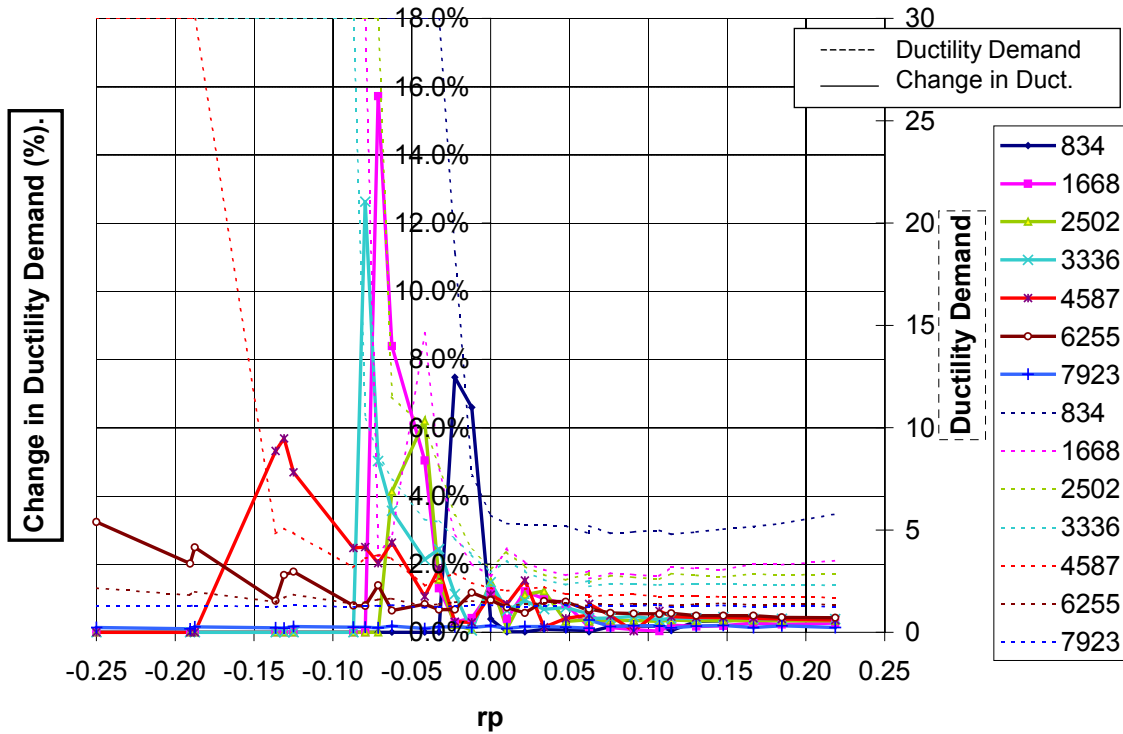


Figure C2.4.3.2b– EQ3, Lateral Scale = 0.2 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 0.903 Seconds



**Figure C2.4.3.2c– EQ3, Lateral Scale = 0.2 g, Vertical Multiplier = 2.0, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 0.903 Seconds**



**Figure C2.4.3.2d– EQ3, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 0.903 Seconds**

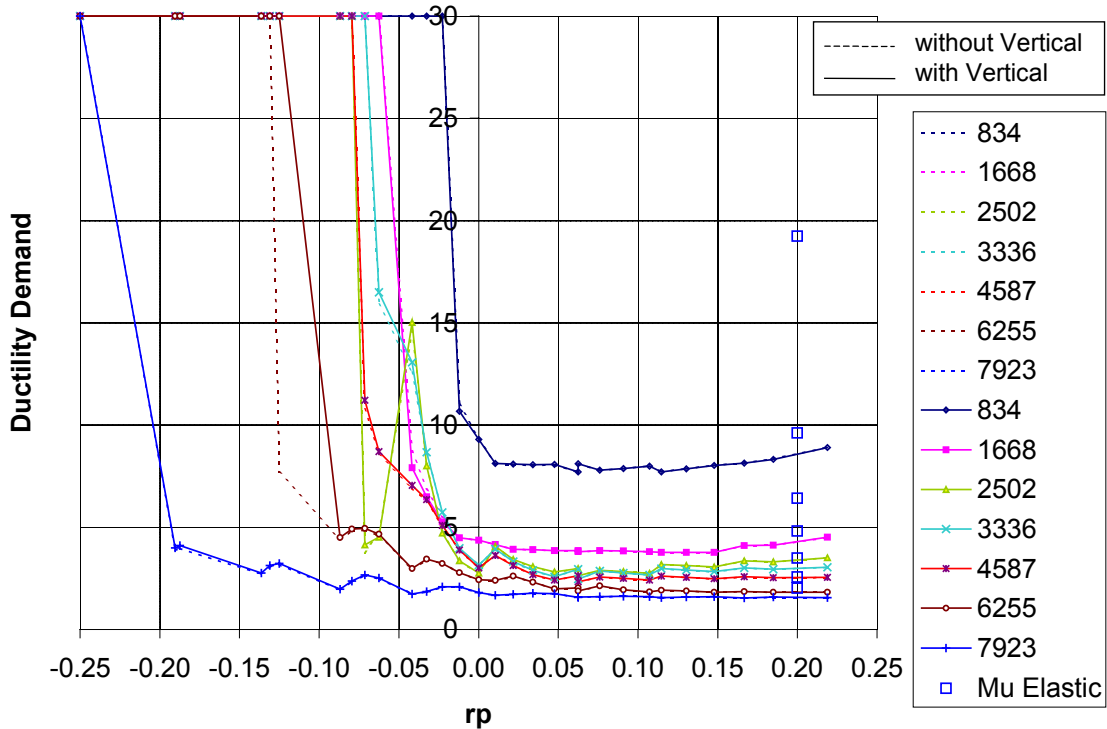


Figure C2.4.3.3a – EQ3, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 0.903 Seconds.

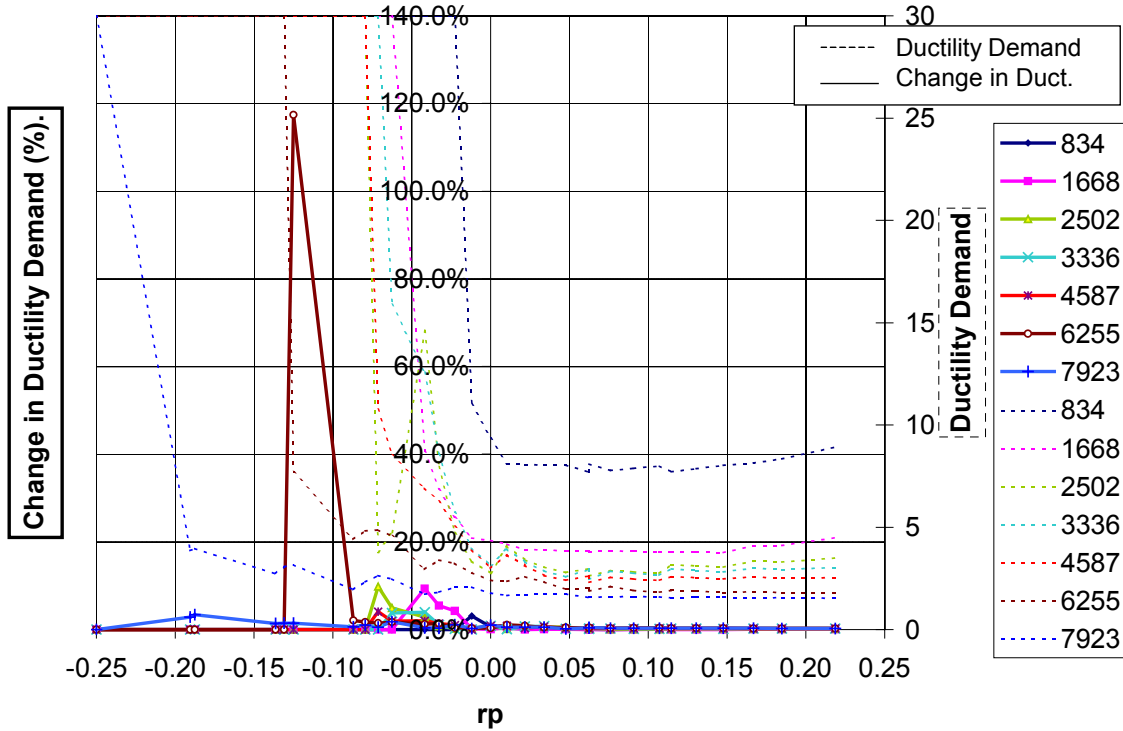


Figure C2.4.3.3b– EQ3, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 0.903 Seconds

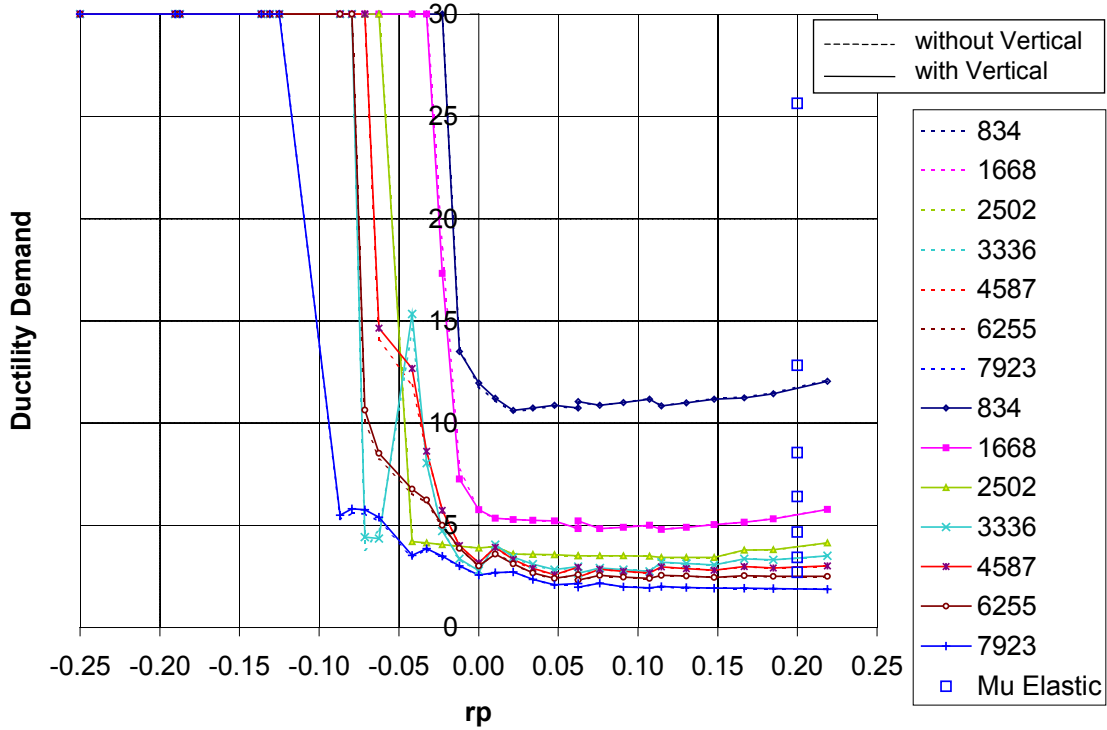


Figure C2.4.3.4a – EQ3, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 0.903 Seconds.

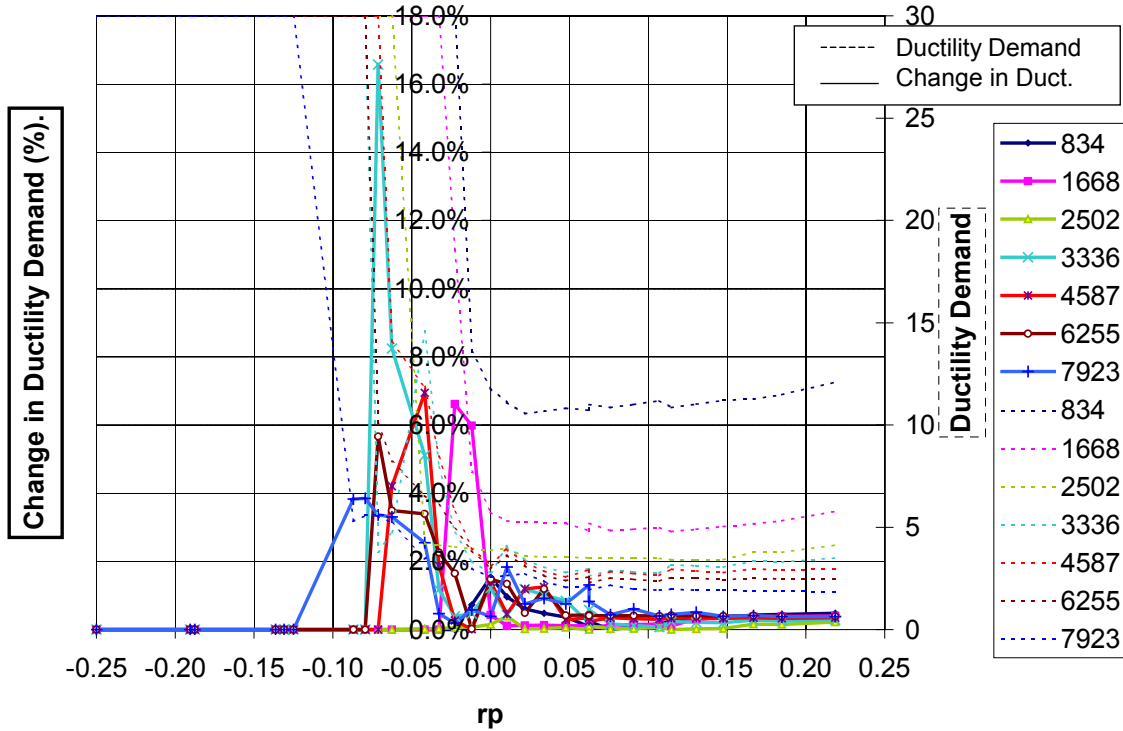


Figure C2.4.3.4b– EQ3, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 0.903 Seconds

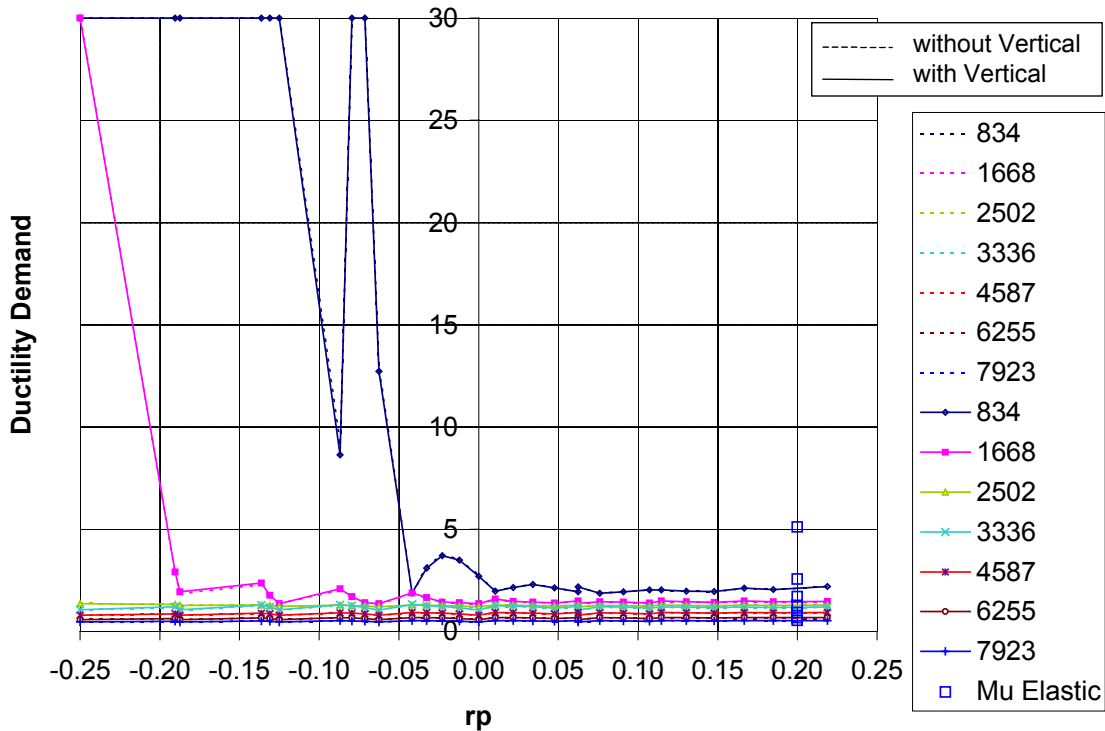


Figure C2.5.3.1a – EQ3, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.093 Seconds.

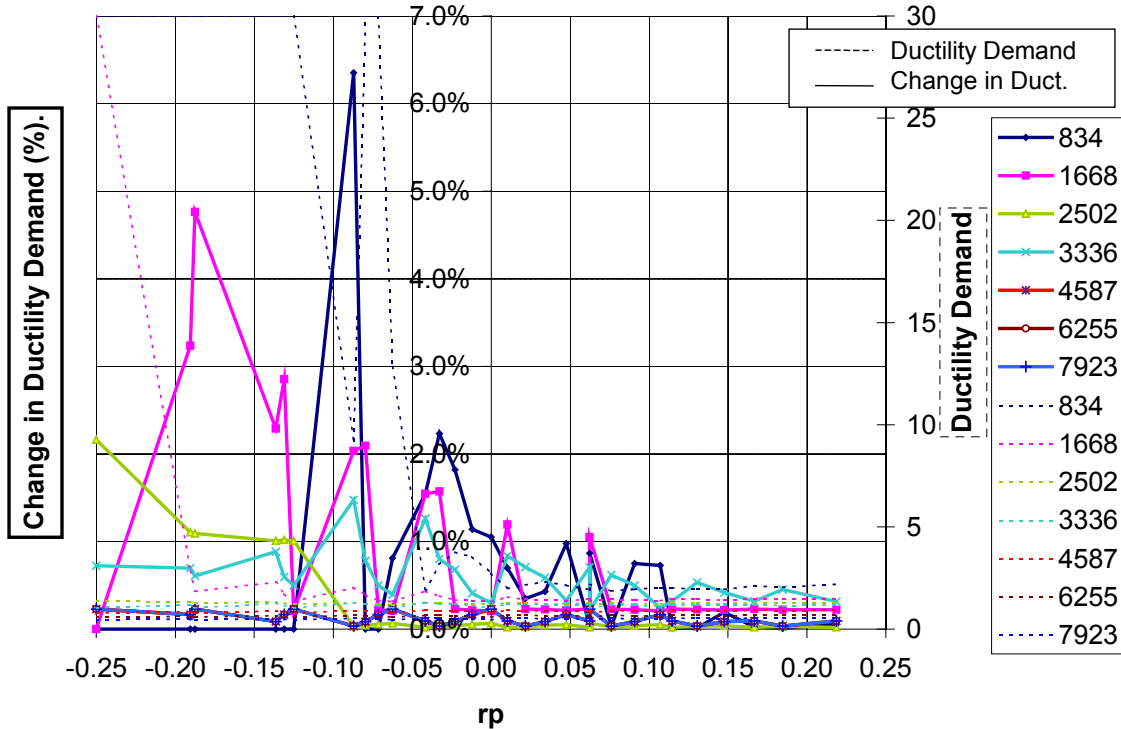


Figure C2.5.3.1b– EQ3, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.093 Seconds

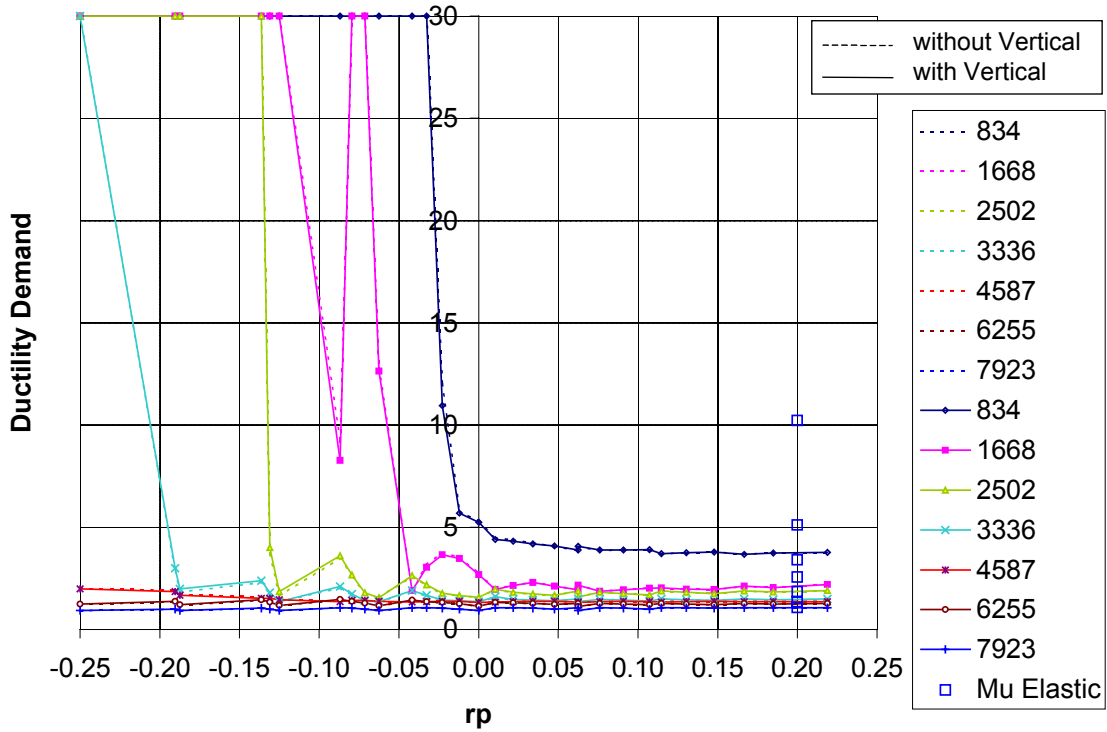


Figure C2.5.3.2a – EQ3, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.093 Seconds.

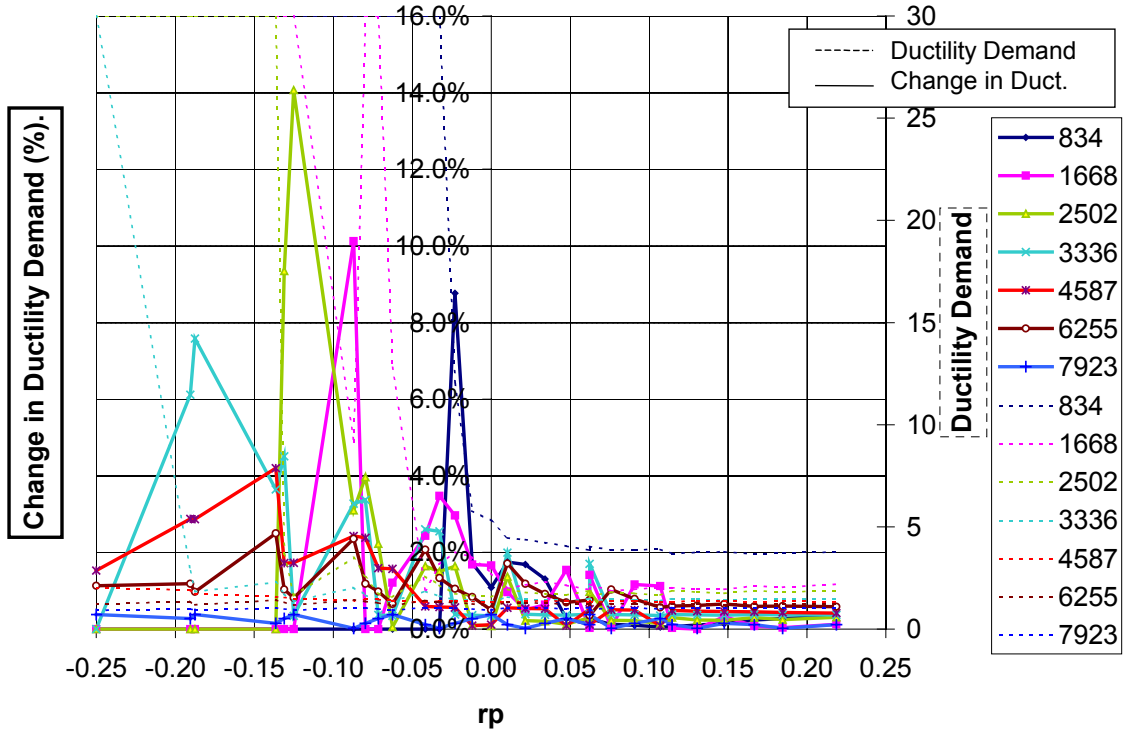
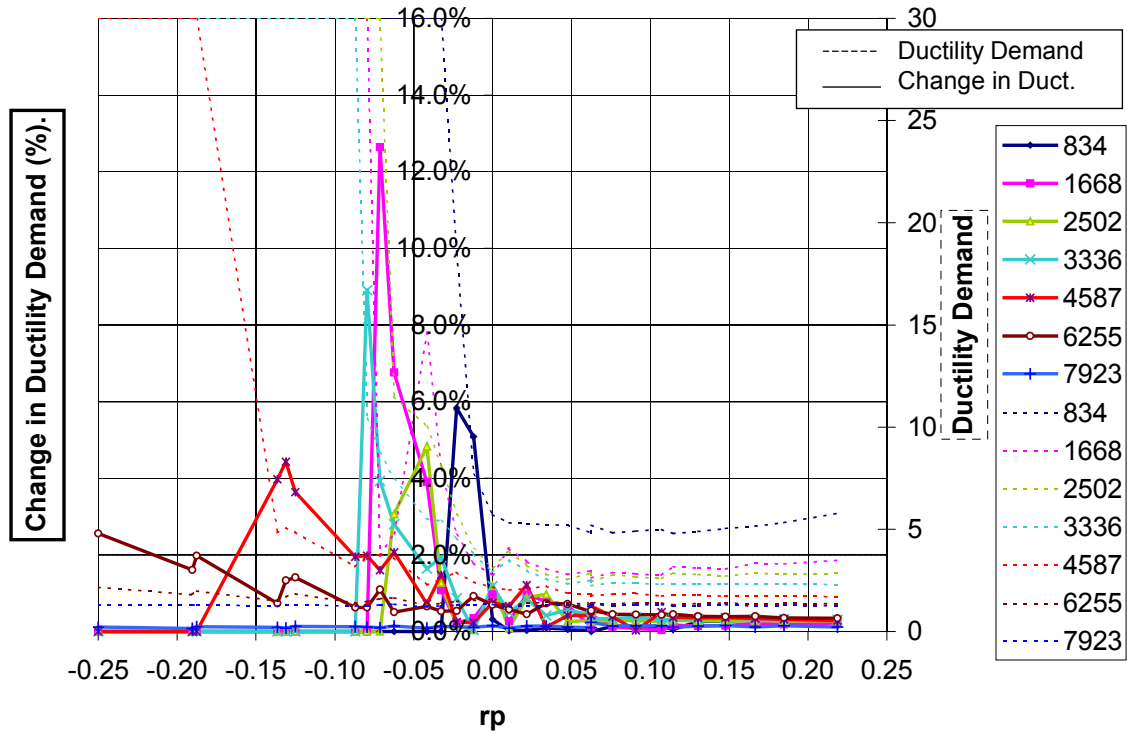
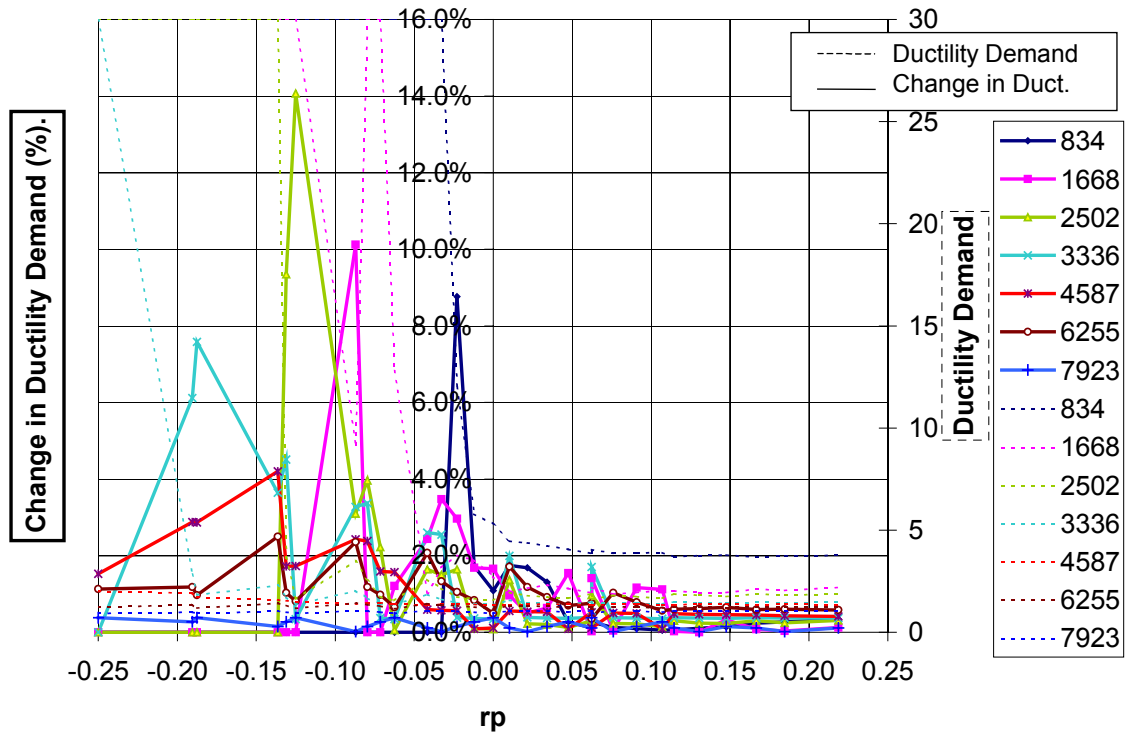


Figure C2.5.3.2b– EQ3, Lateral Scale = 0.2 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.093 Seconds



**Figure C2.5.3.2c– EQ3, Lateral Scale = 0.2 g, Vertical Multiplier = 2.0, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.093 Seconds**



**Figure C2.5.3.2d– EQ3, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.093 Seconds**

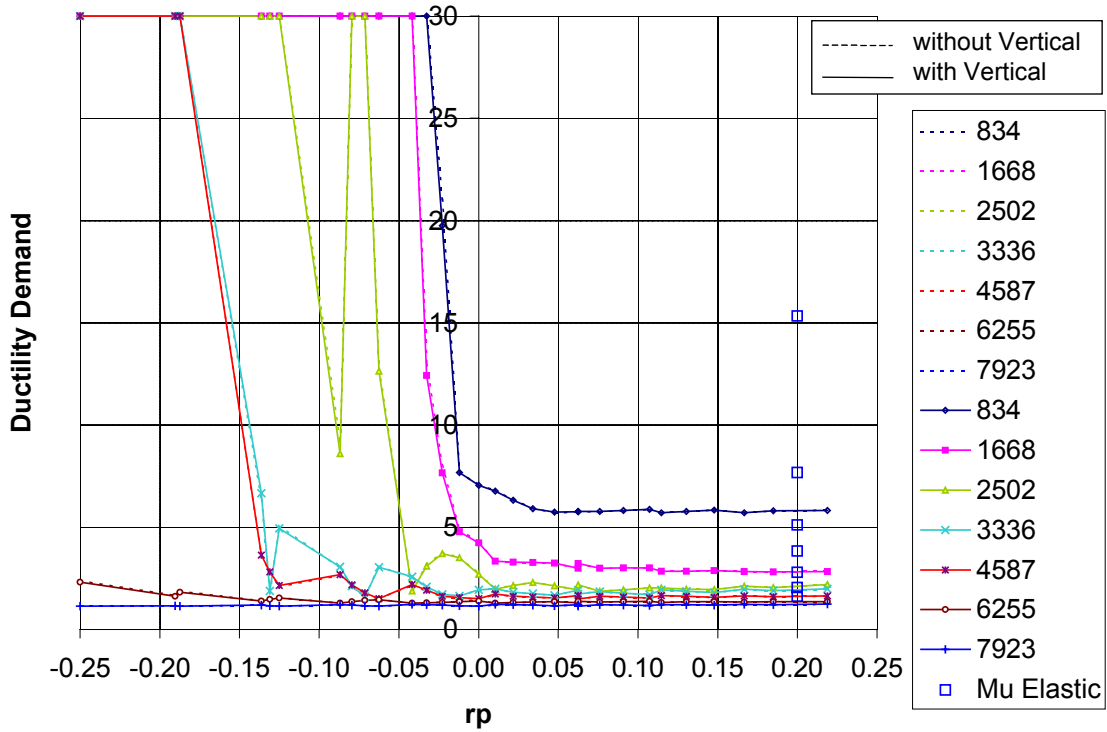


Figure C2.5.3.3a – EQ3, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.093 Seconds.

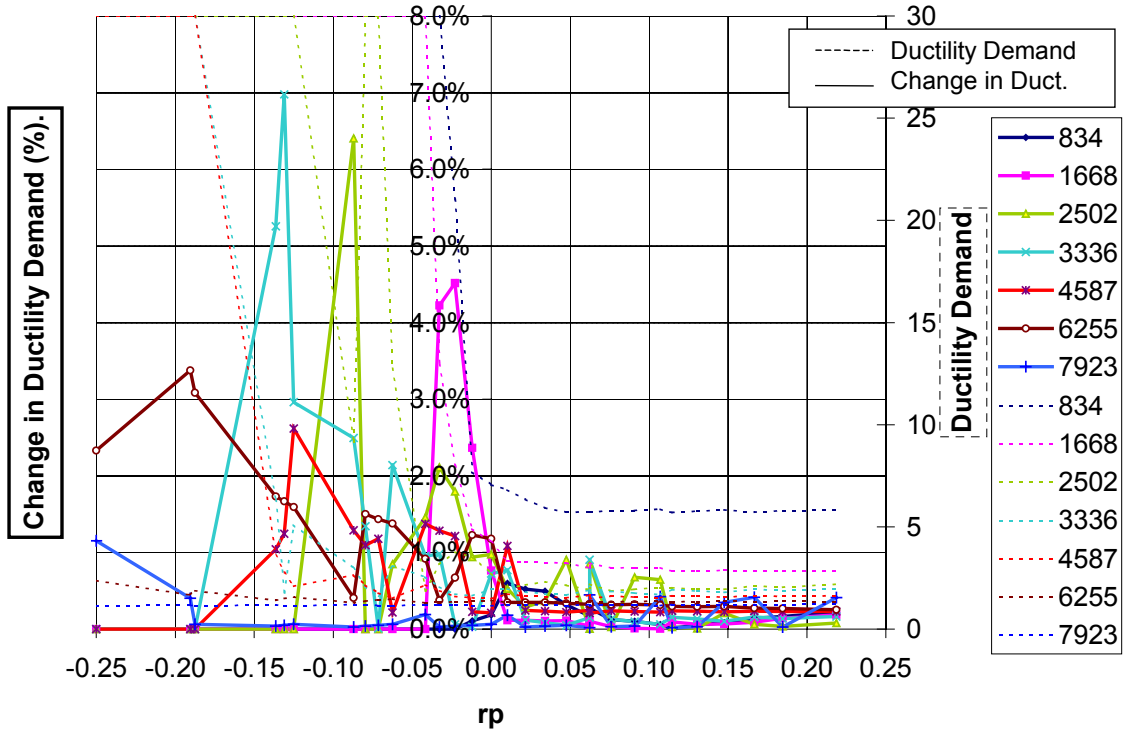


Figure C2.5.3.3b– EQ3, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.093 Seconds

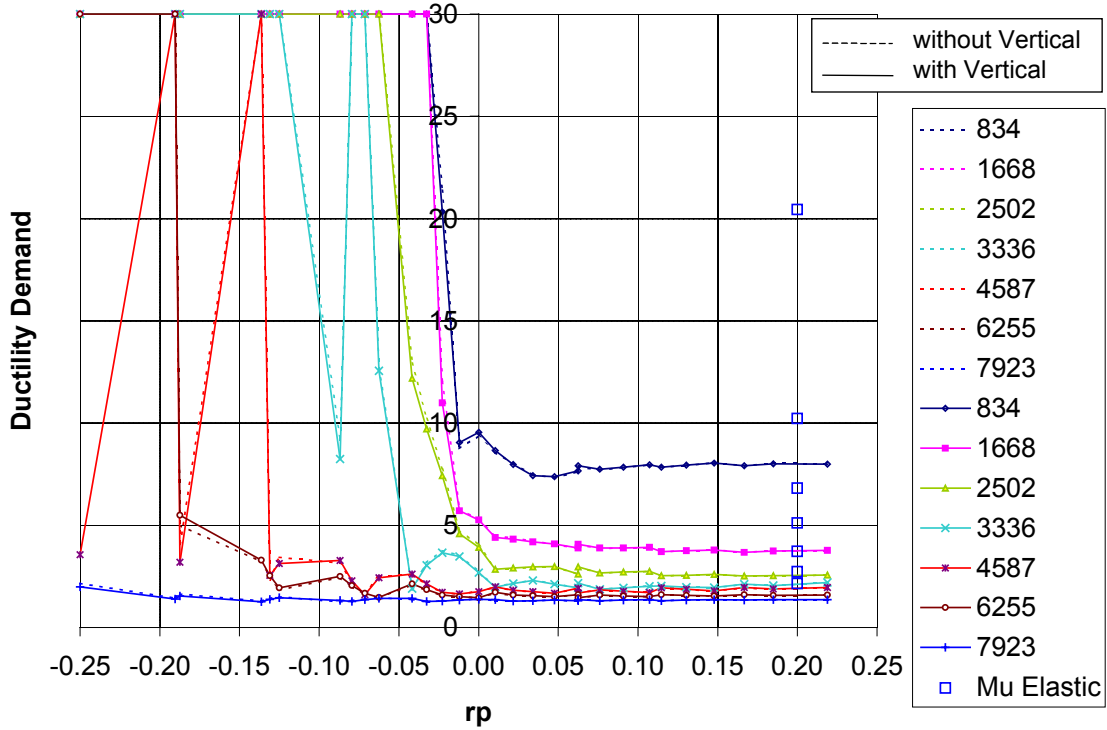


Figure C2.5.3.4a – EQ3, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.093 Seconds.

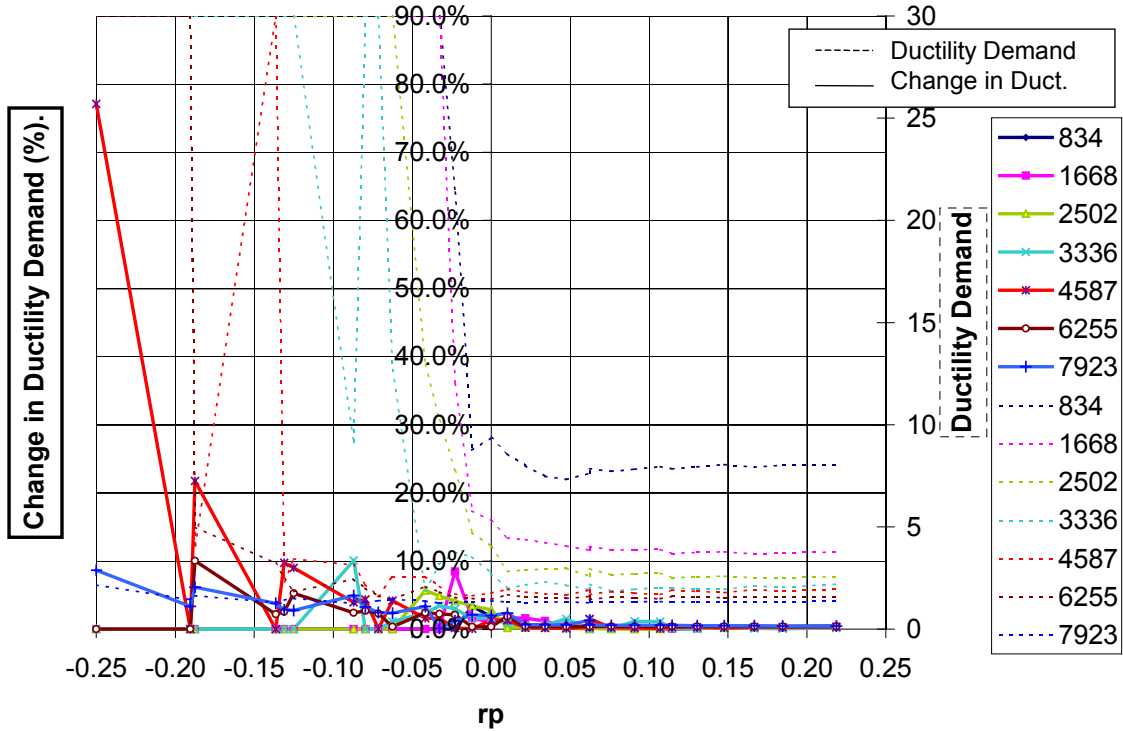


Figure C2.5.3.4b– EQ3, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.093 Seconds

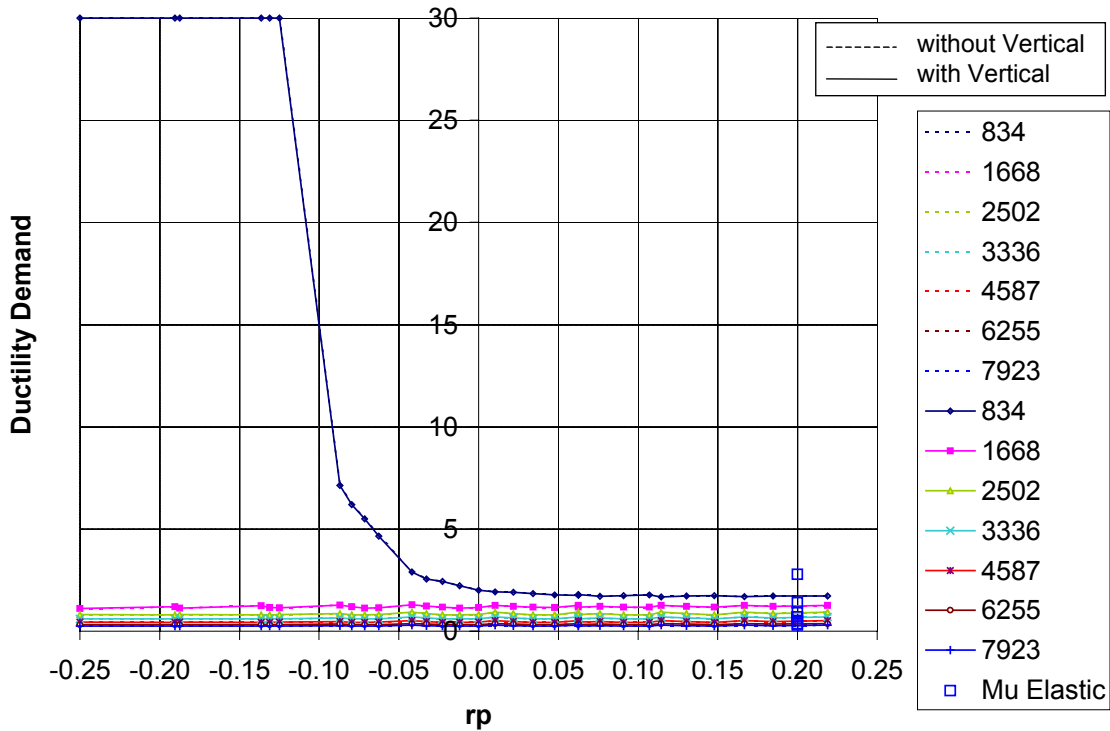


Figure C2.6.3.1a – EQ3, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.278 Seconds.

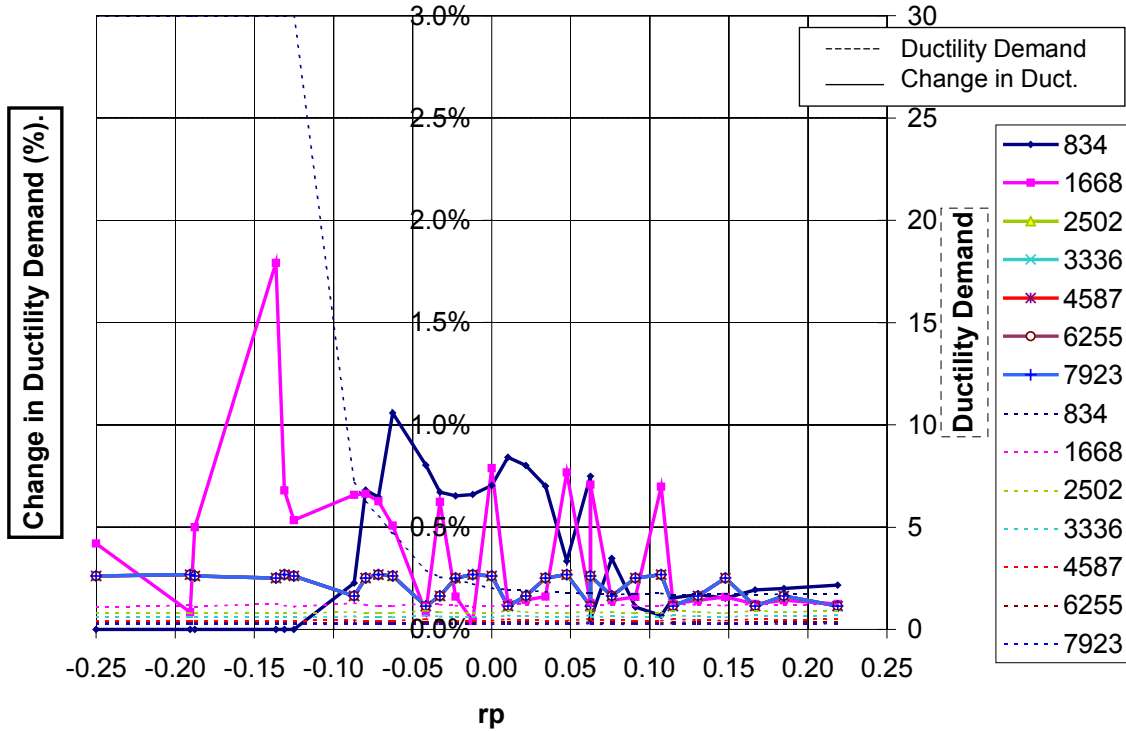


Figure C2.6.3.1b– EQ3, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.278 Seconds

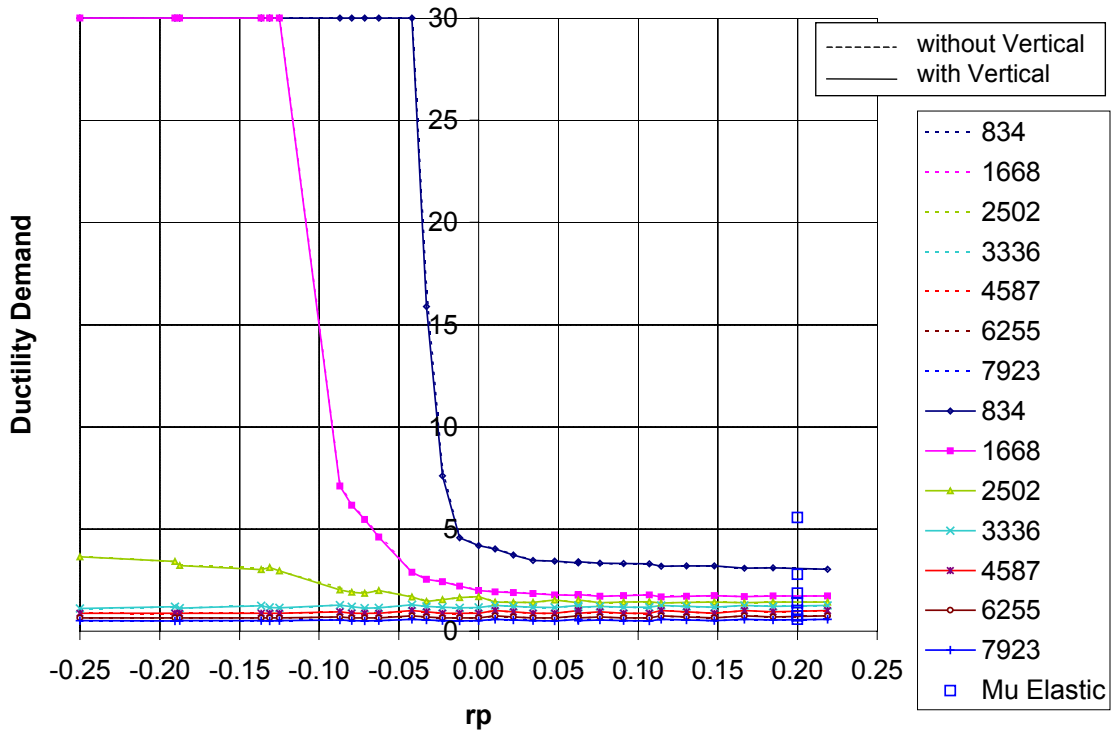


Figure C2.6.3.2a – EQ3, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.278 Seconds.

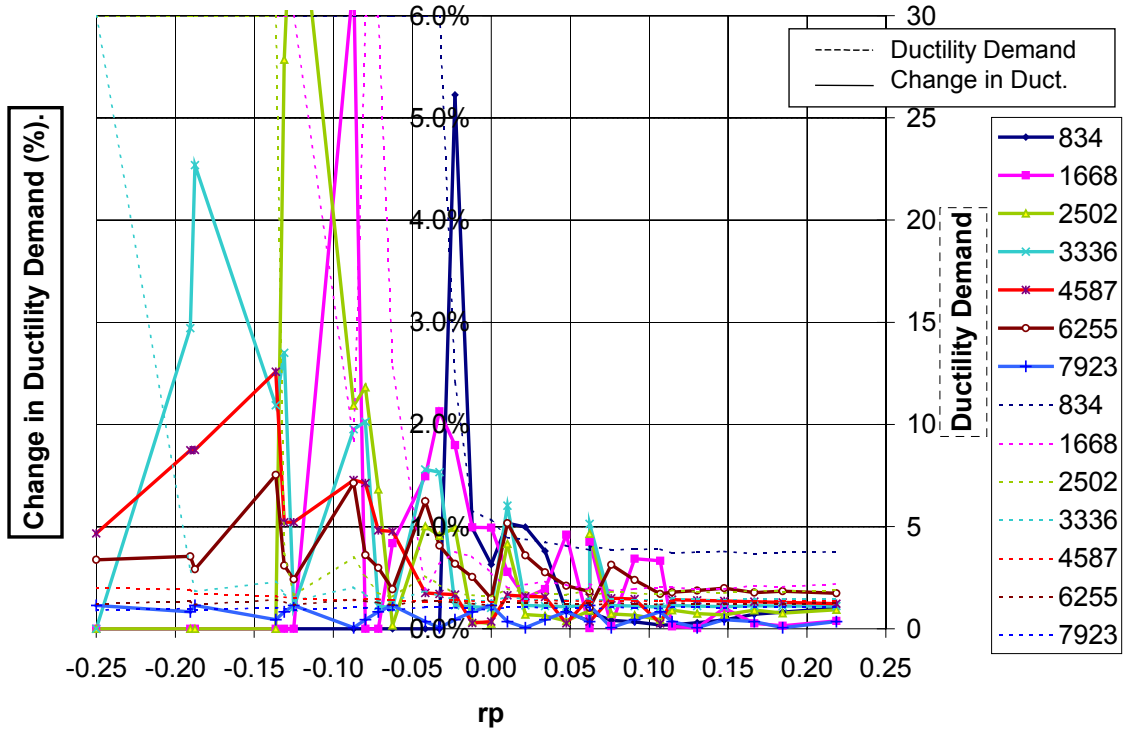
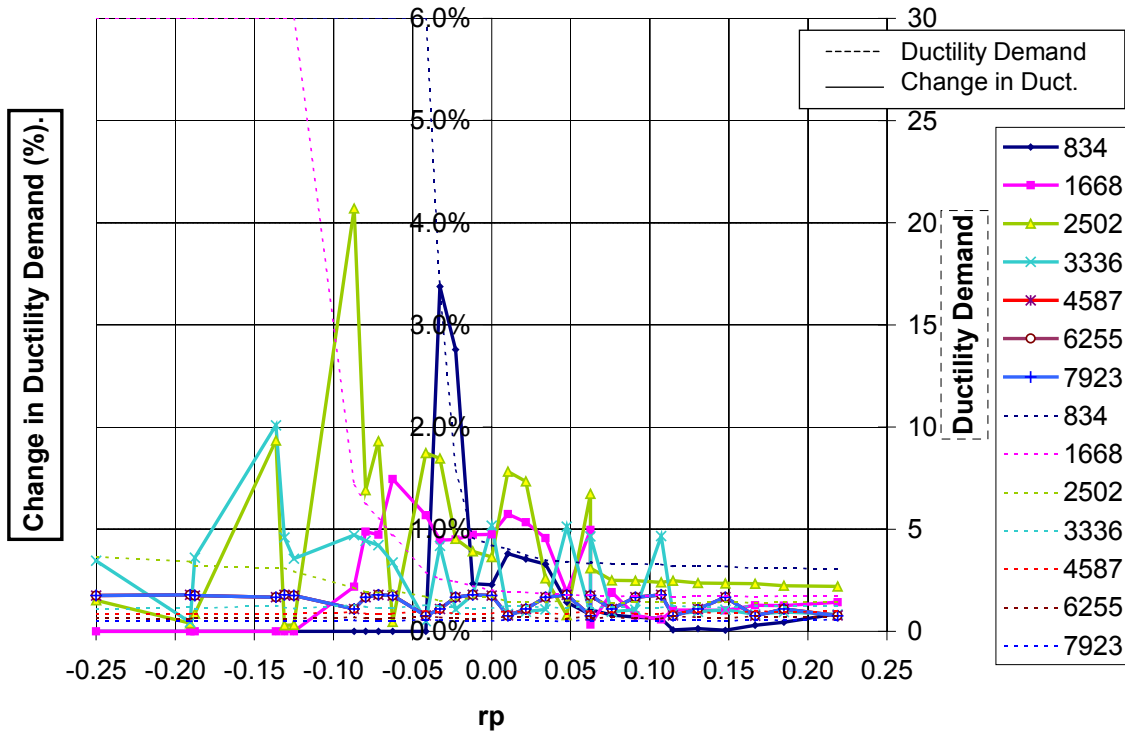
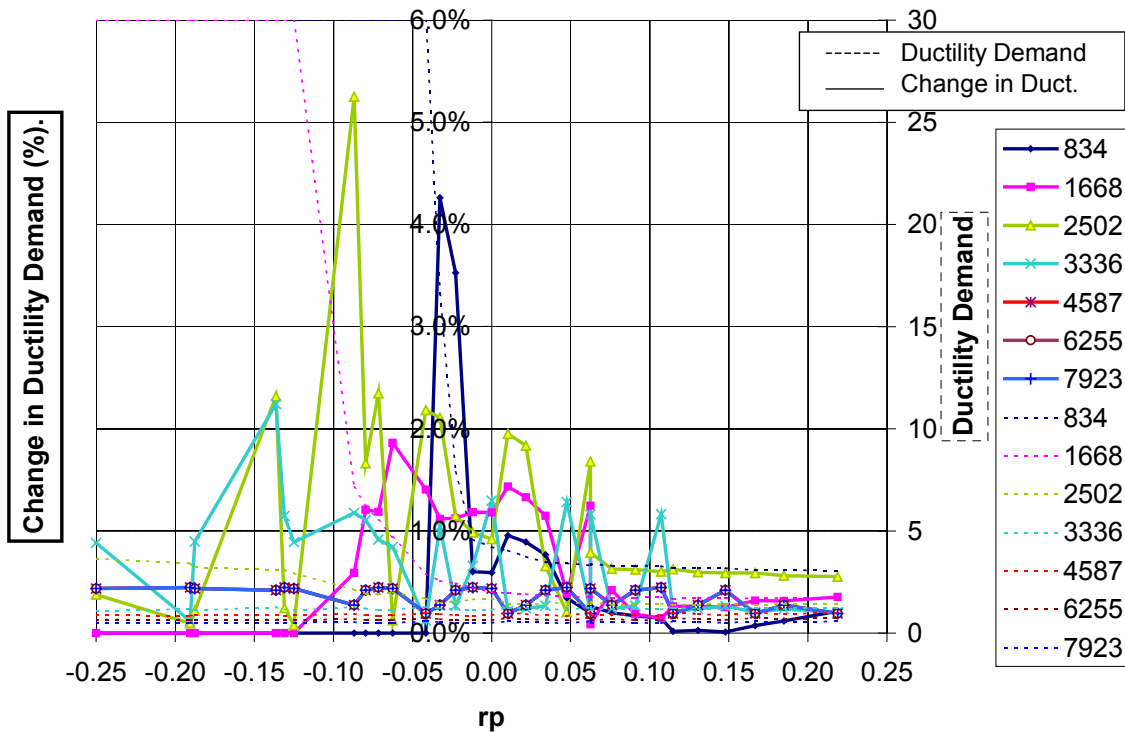


Figure C2.6.3.2b– EQ3, Lateral Scale = 0.2 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.278 Seconds



**Figure C2.6.3.2c– EQ3, Lateral Scale = 0.2 g, Vertical Multiplier = 2.0, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.278 Seconds**



**Figure C2.6.3.2d– EQ3, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.278 Seconds**

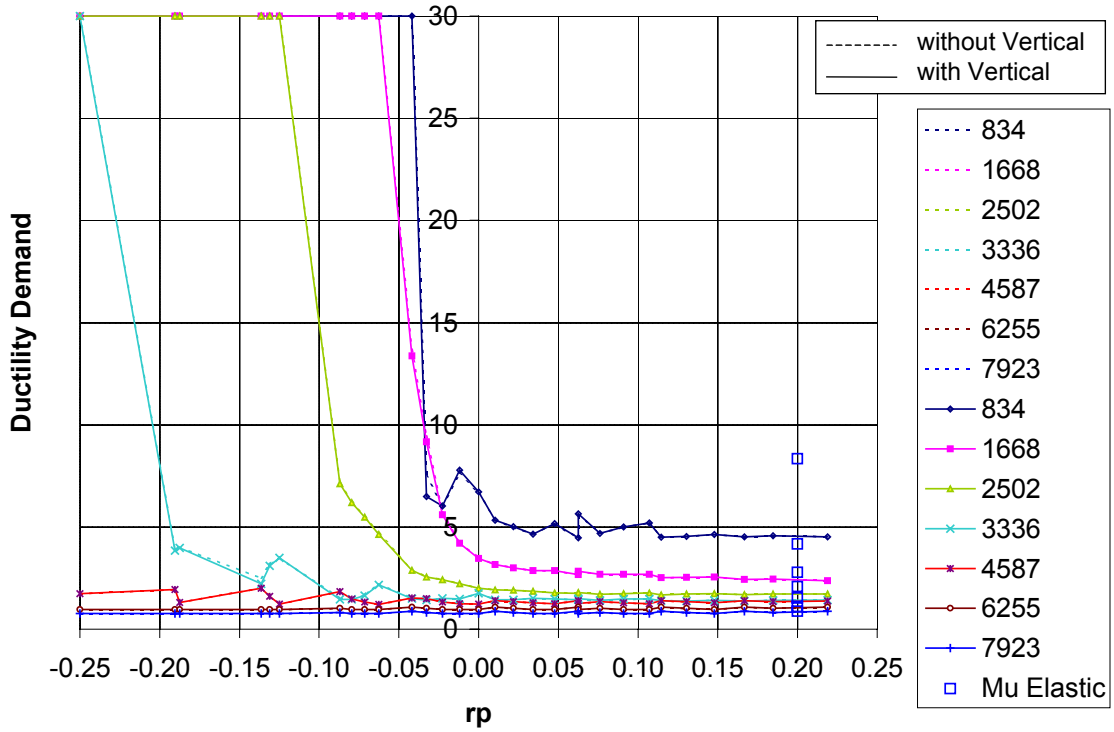


Figure C2.6.3.3a – EQ3, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.278 Seconds.

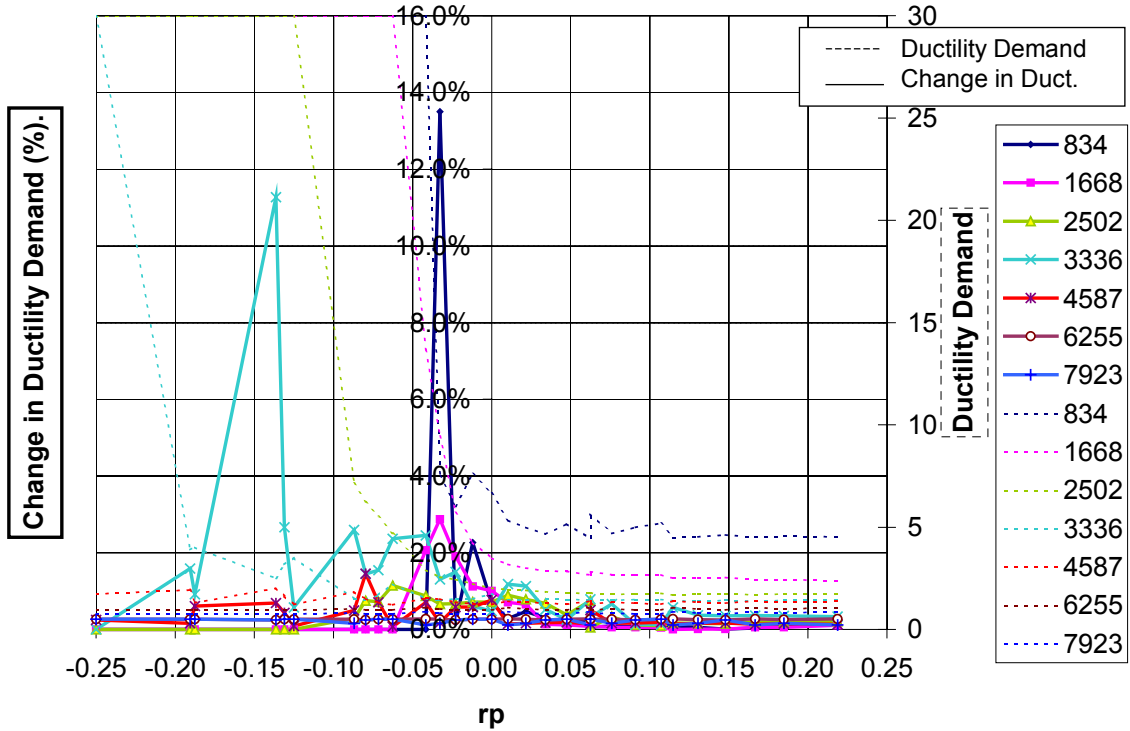


Figure C2.6.3.3b– EQ3, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.278 Seconds

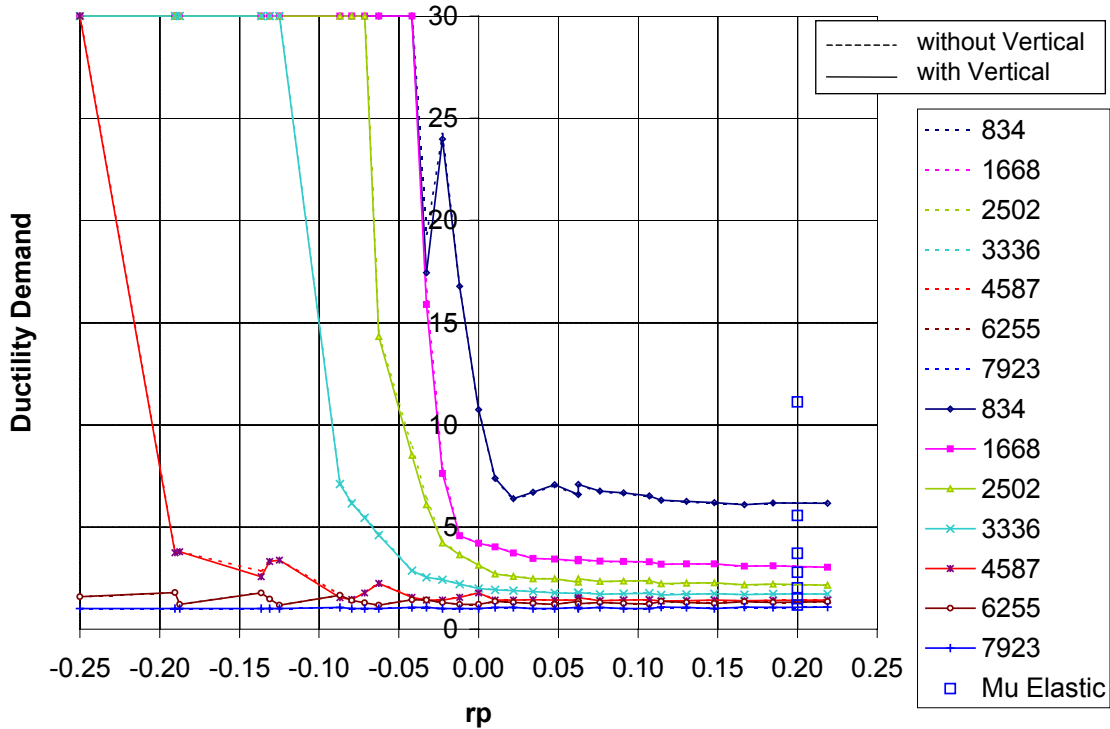


Figure C2.6.3.4a – EQ3, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.278 Seconds.

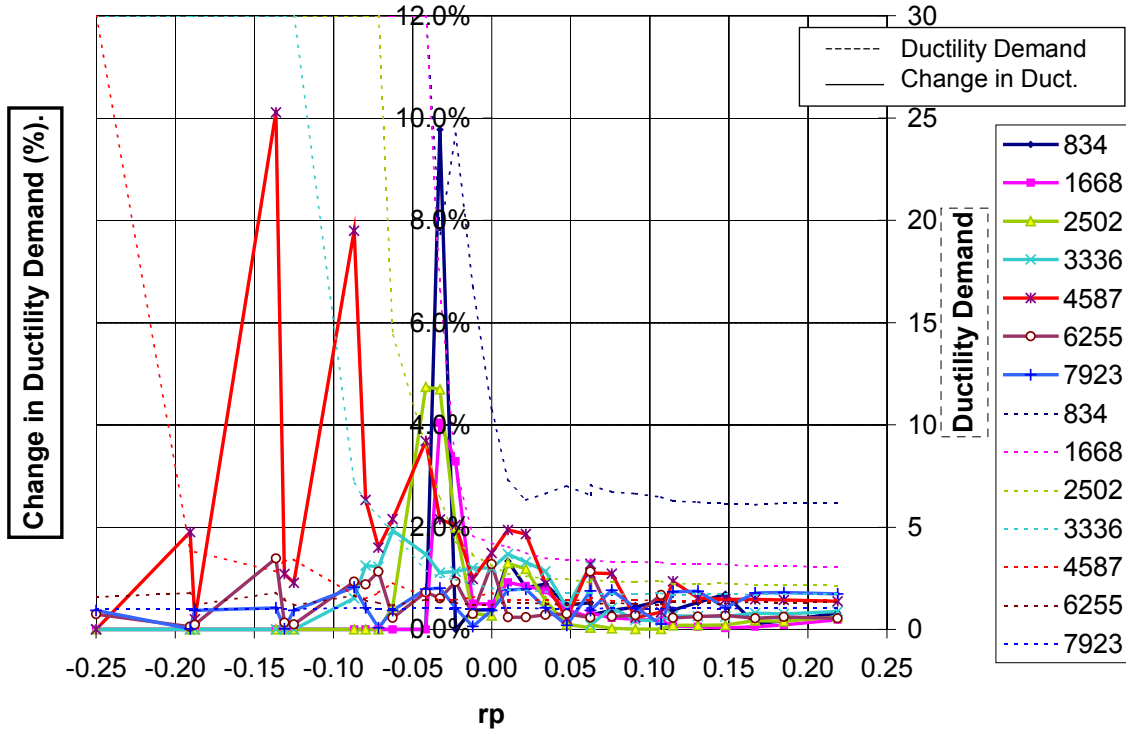


Figure C2.6.3.4b– EQ3, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.278 Seconds

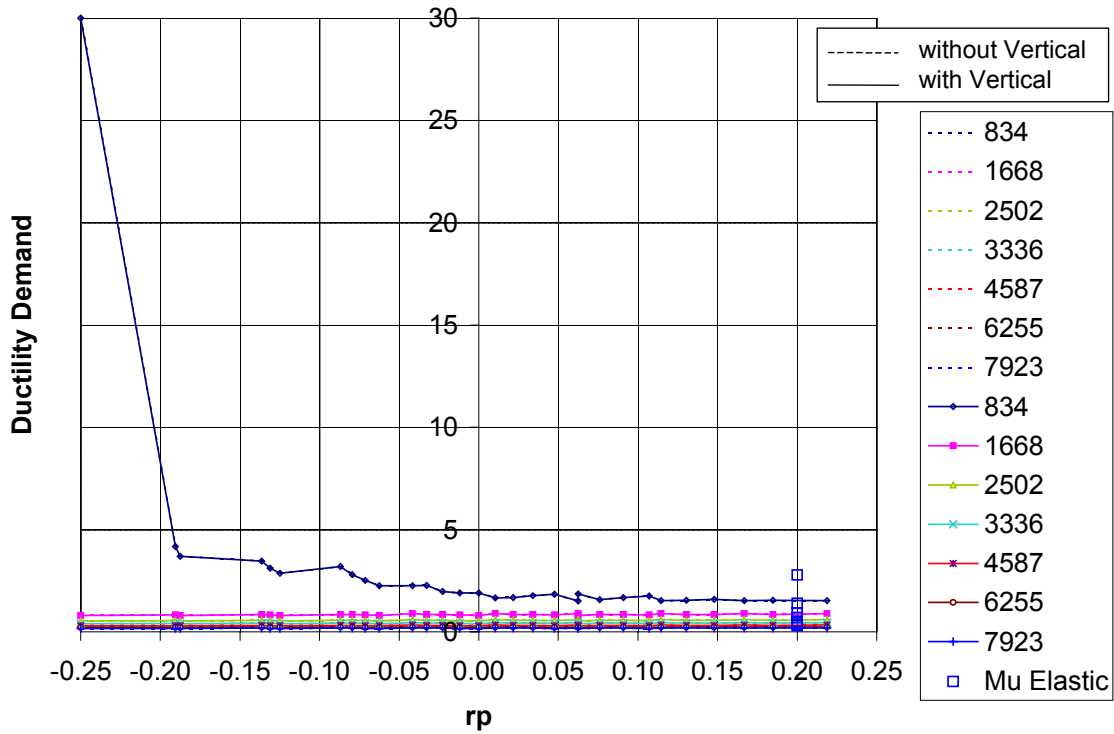


Figure C2.7.3.1a – EQ3, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.459 Seconds.

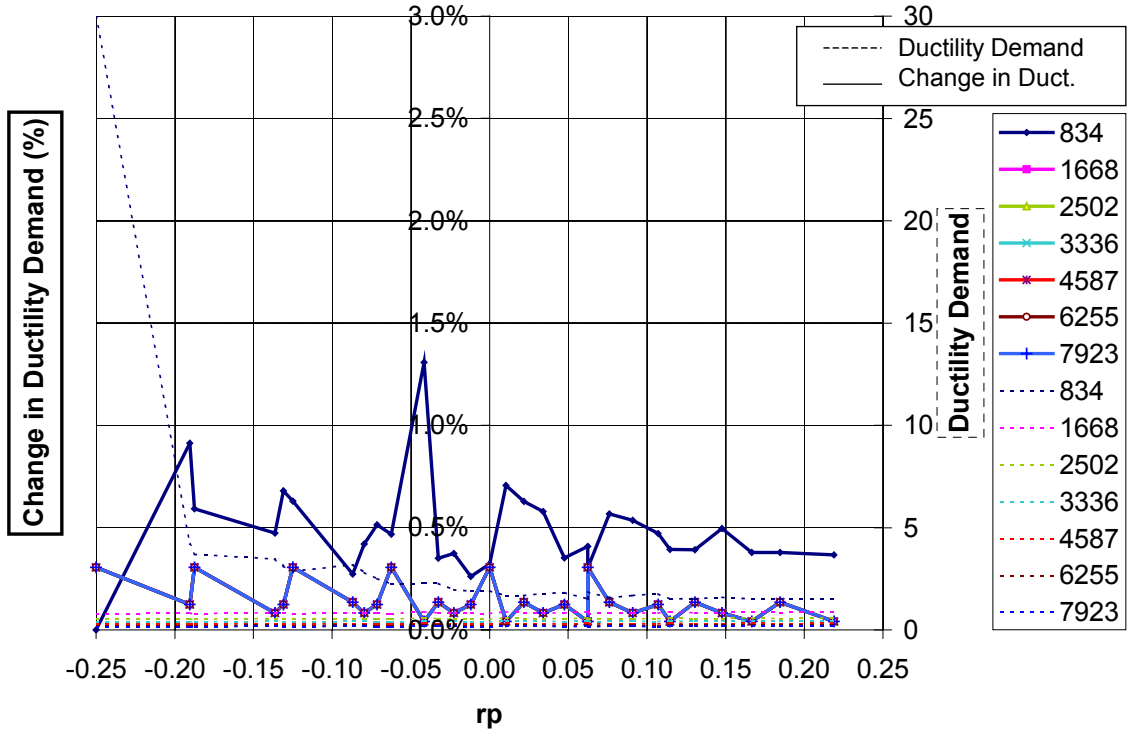


Figure C2.7.3.1b– EQ3, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.459 Seconds

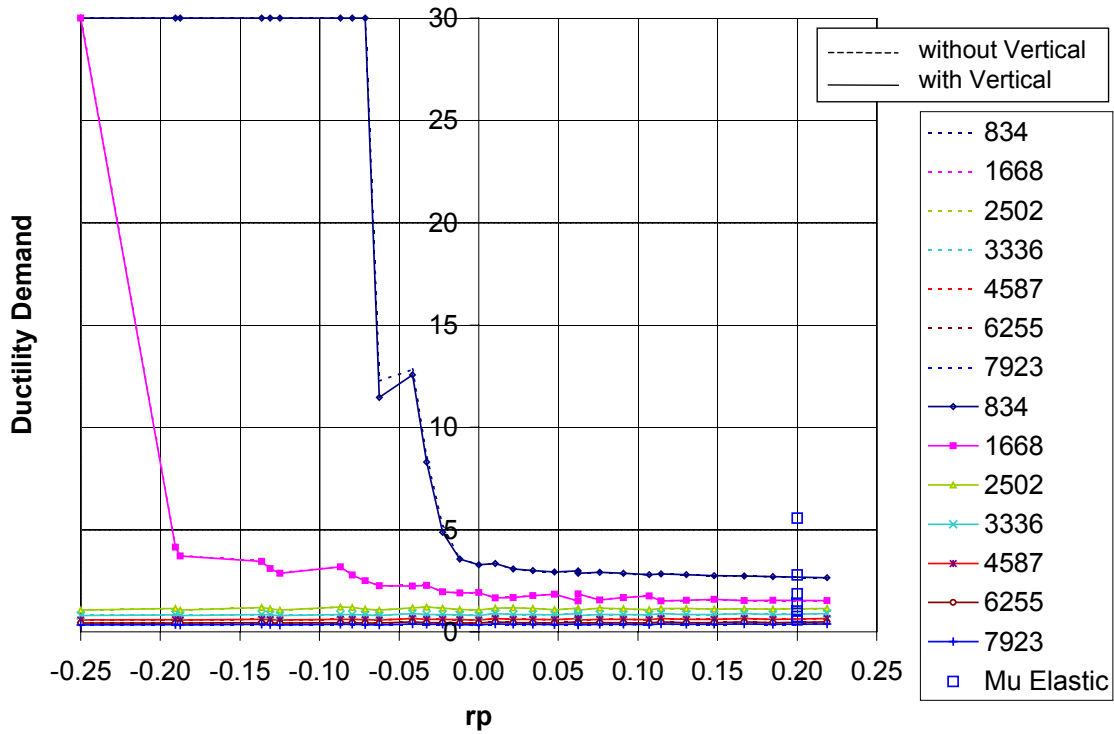


Figure C2.7.3.2a – EQ3, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.459 Seconds.

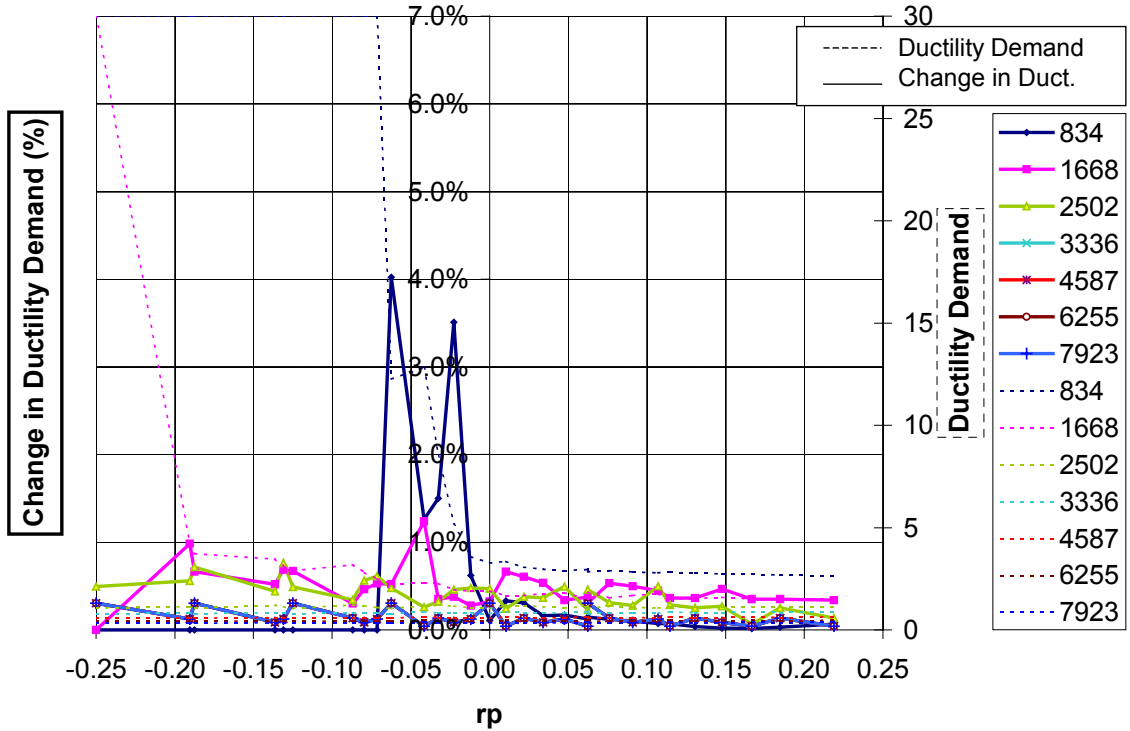
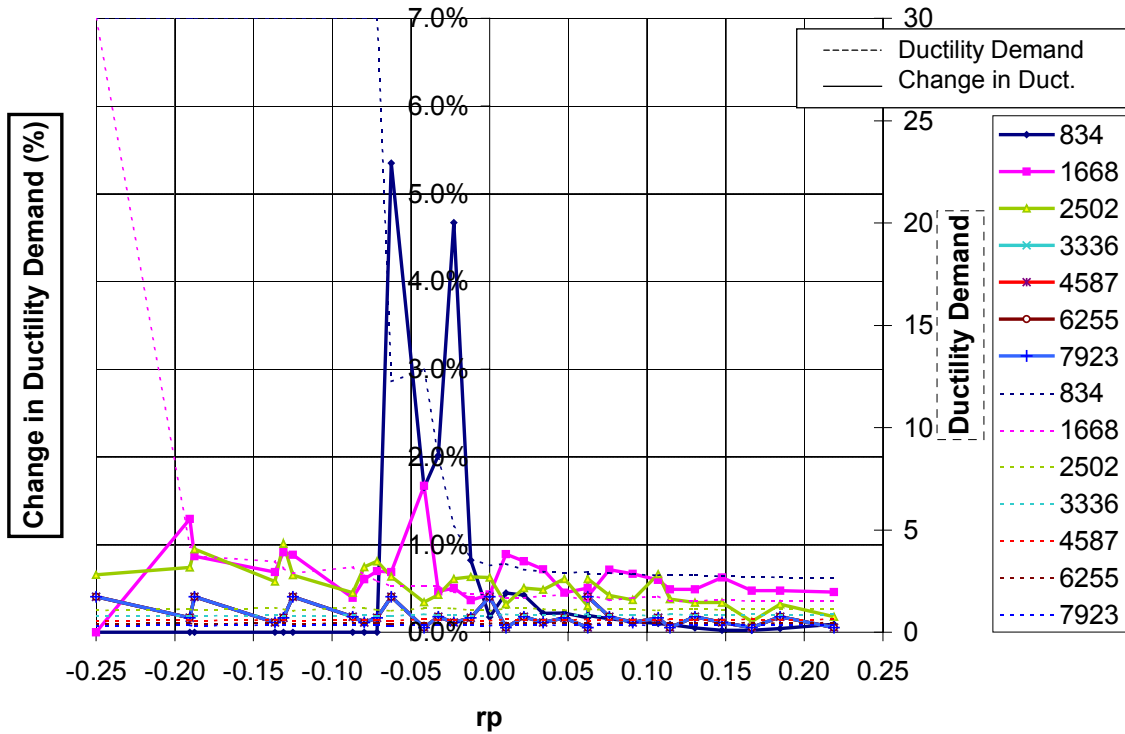
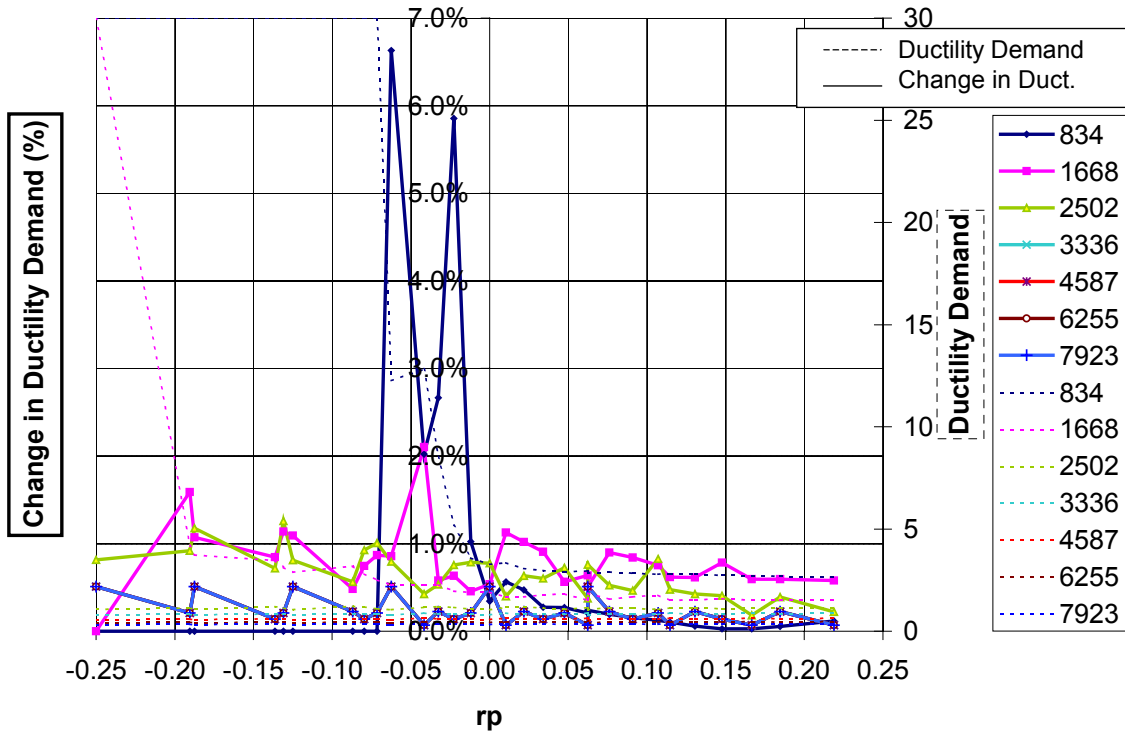


Figure C2.7.3.2b– EQ3, Lateral Scale = 0.2 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.459 Seconds



**Figure C2.7.3.2c– EQ3, Lateral Scale = 0.2 g, Vertical Multiplier = 2.0, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.459 Seconds**



**Figure C2.7.3.2d– EQ3, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.459 Seconds**

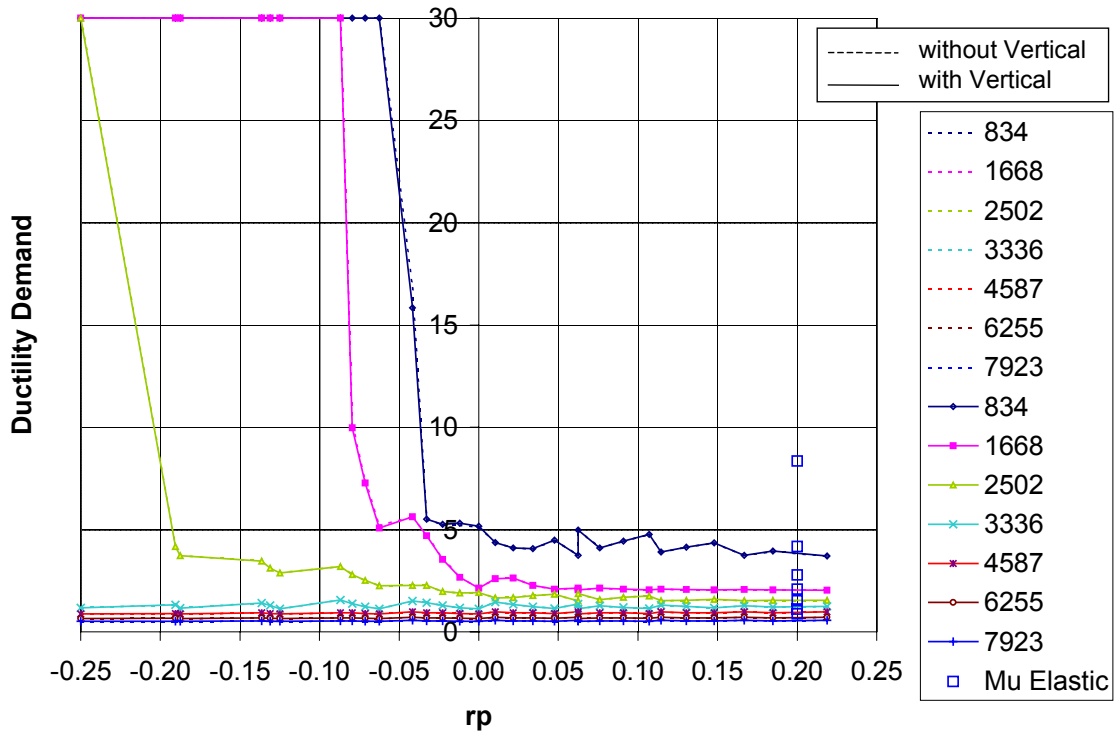


Figure C2.7.3.3a – EQ3, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.459 Seconds.

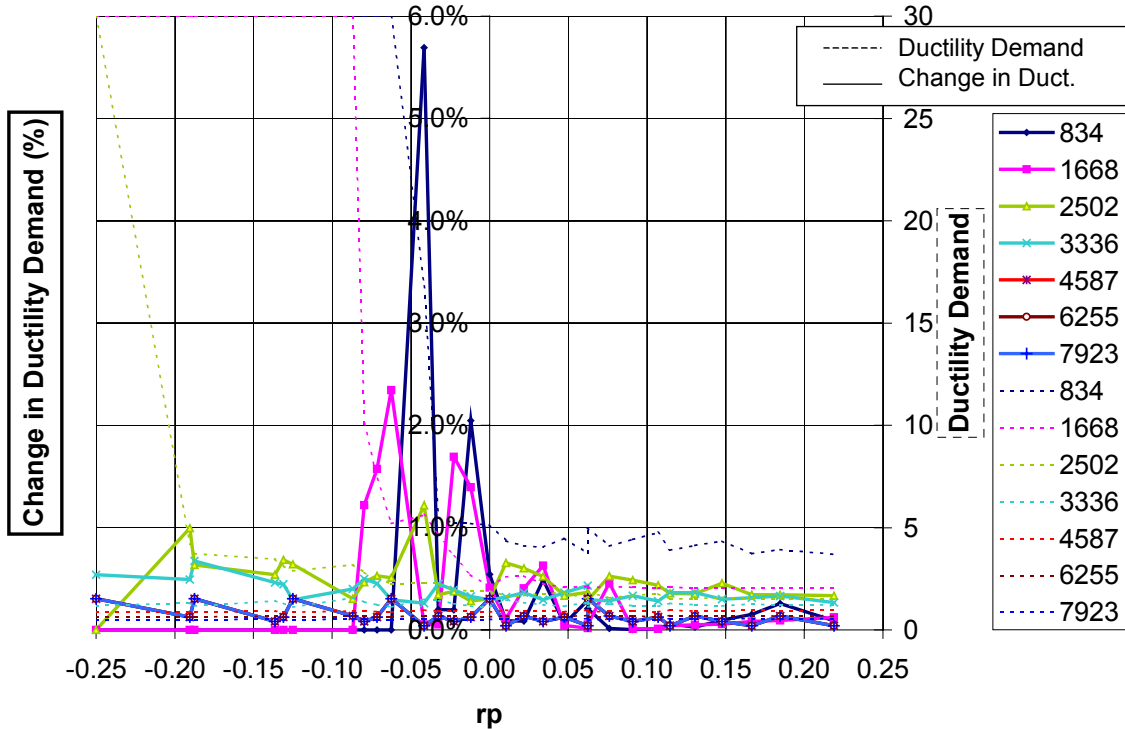
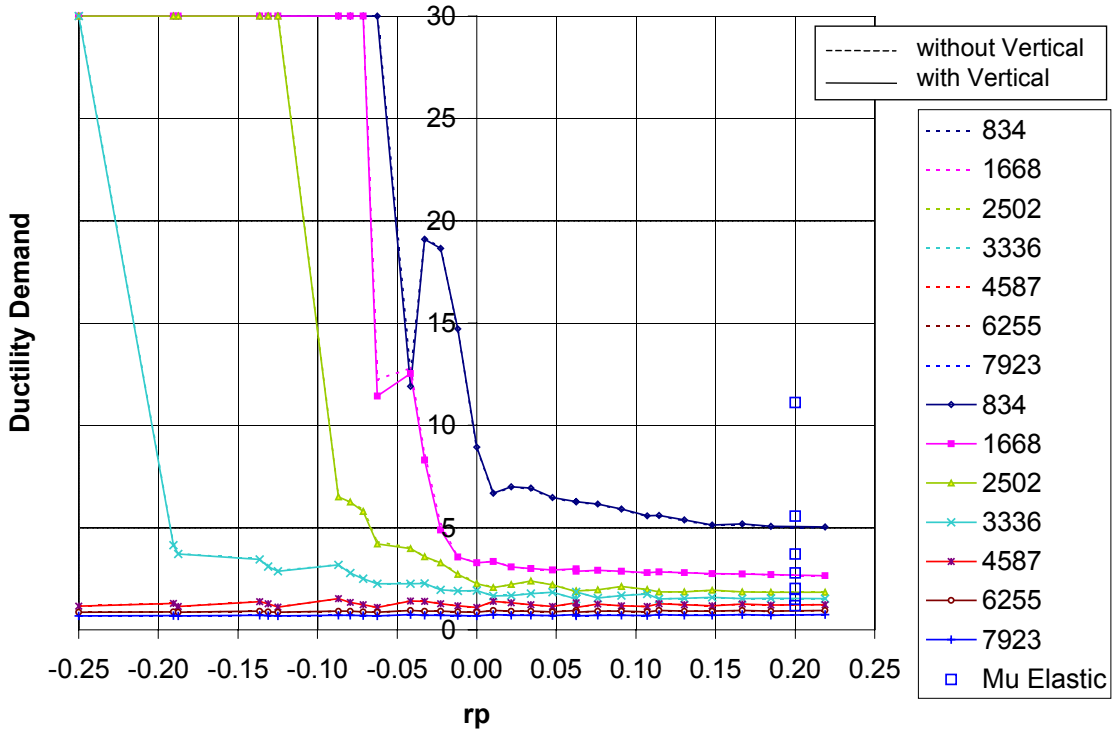
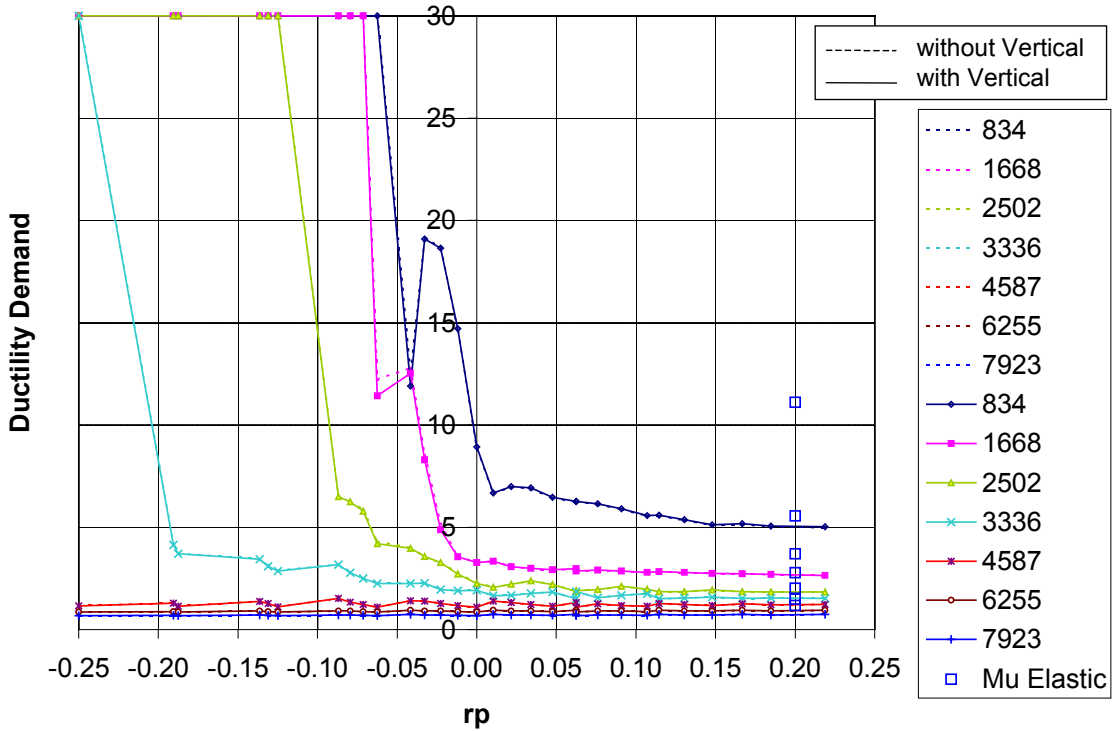


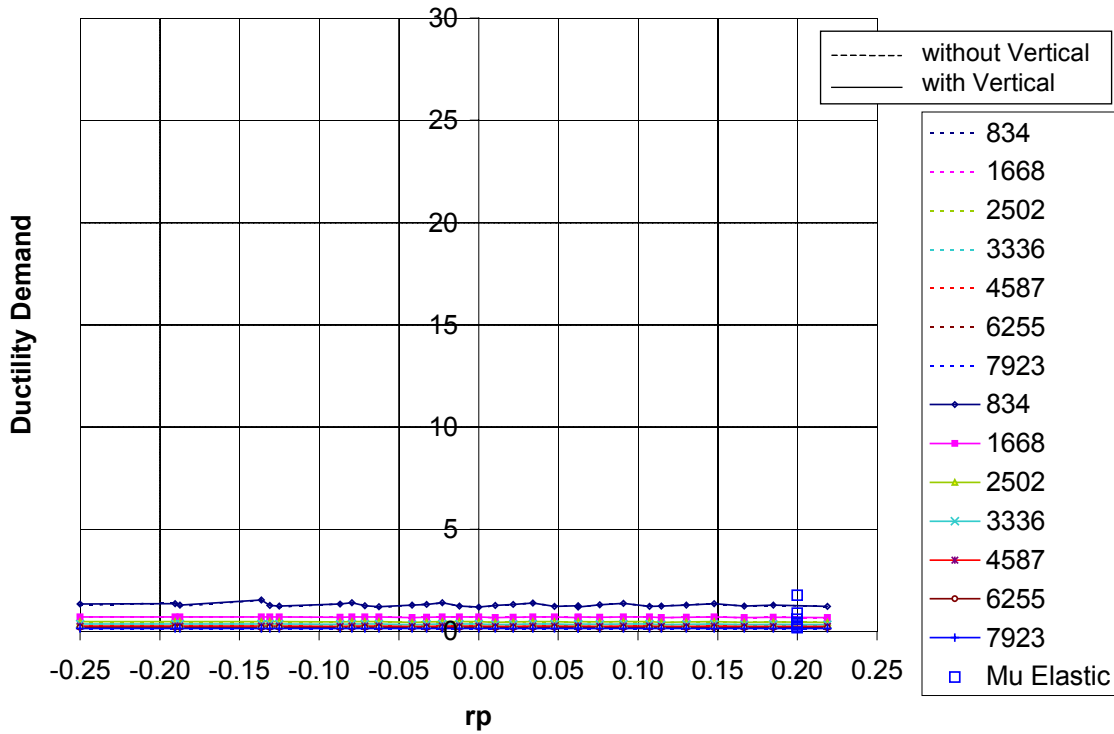
Figure C2.7.3.3b– EQ3, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.459 Seconds



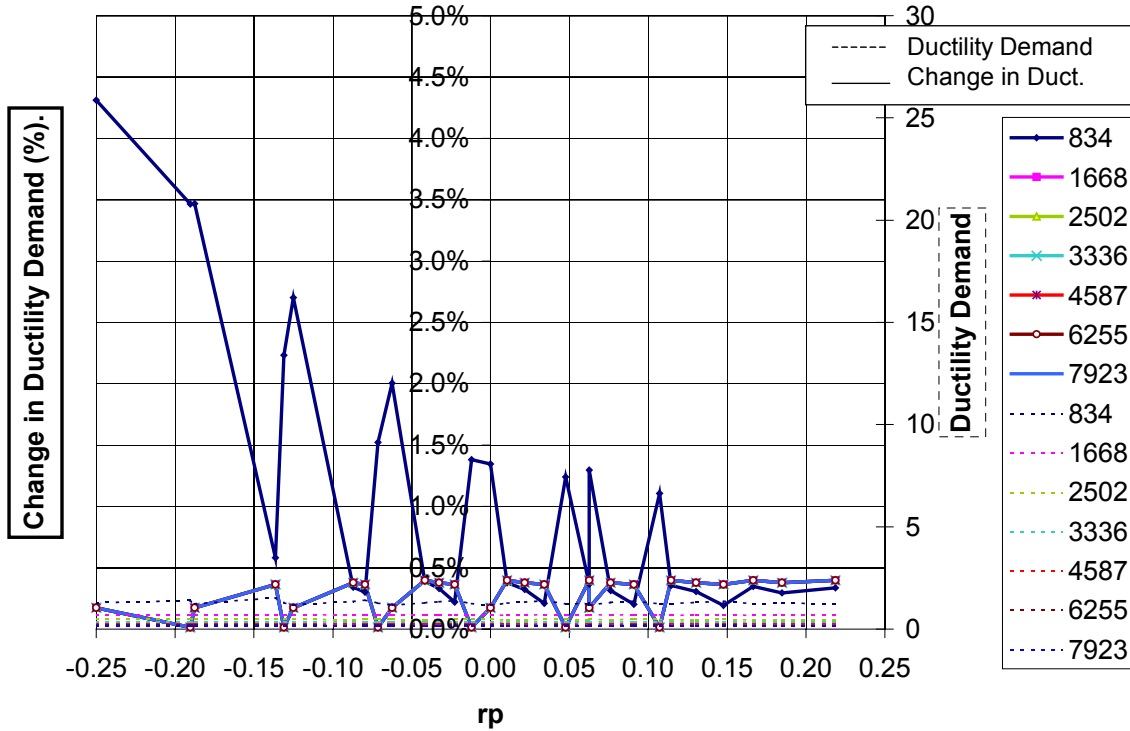
**Figure C2.7.3.4a – EQ3, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.459 Seconds.**



**Figure C2.7.3.4b– EQ3, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.459 Seconds**



**Figure C2.8.3.1a – EQ3, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.635 Seconds.**



**Figure C2.8.3.1b– EQ3, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.635 Seconds**

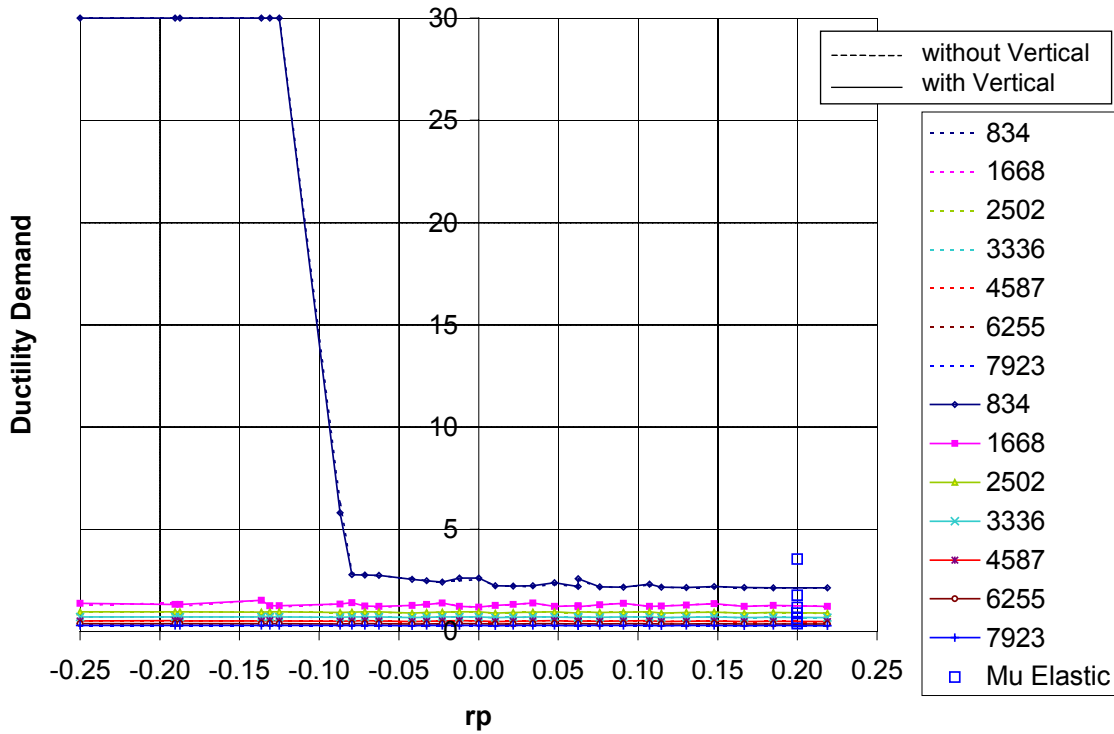


Figure C2.8.3.2a – EQ3, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.635 Seconds.

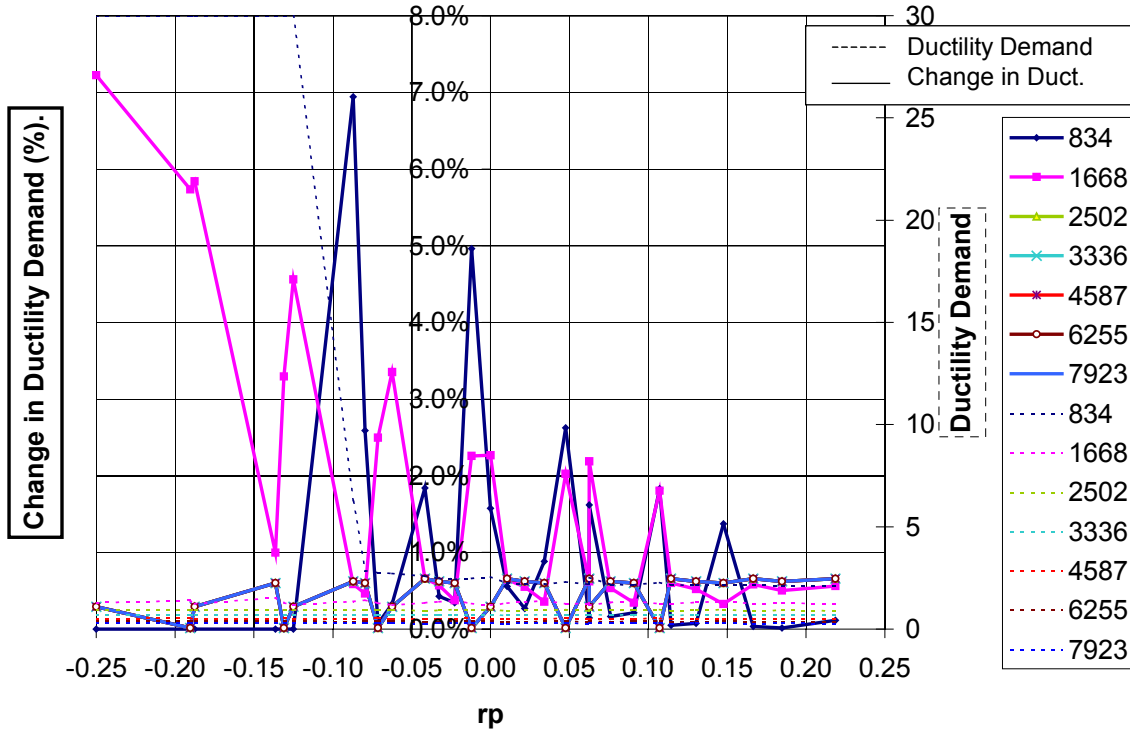
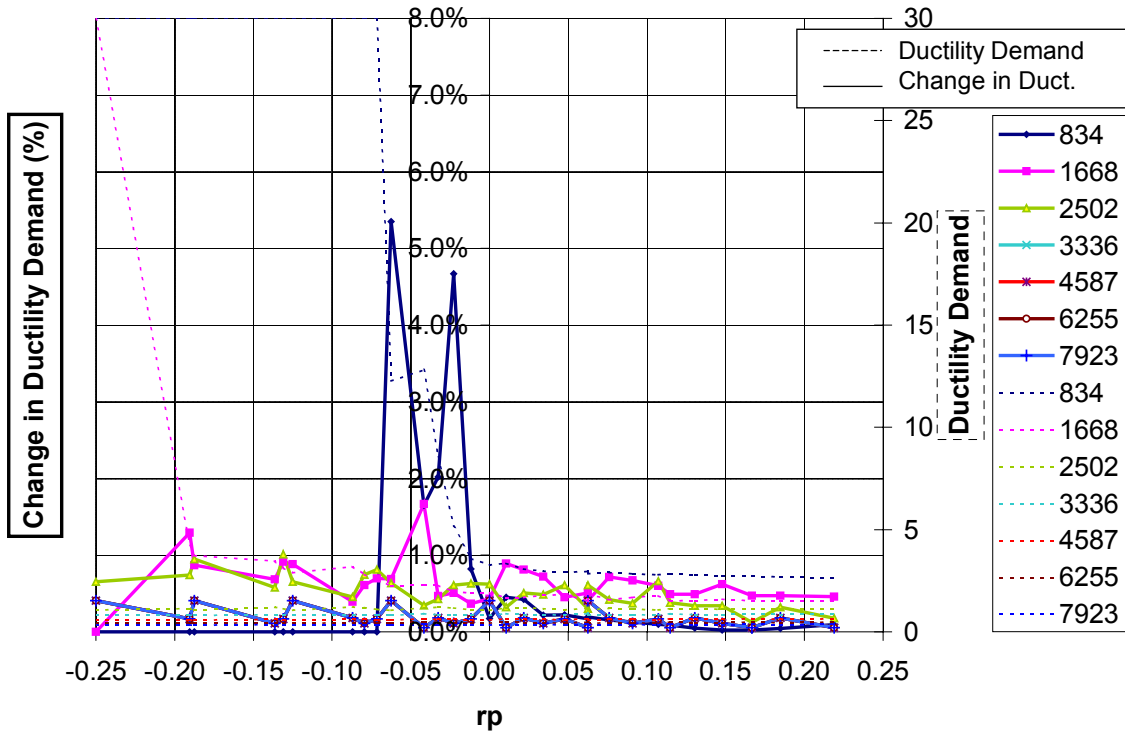
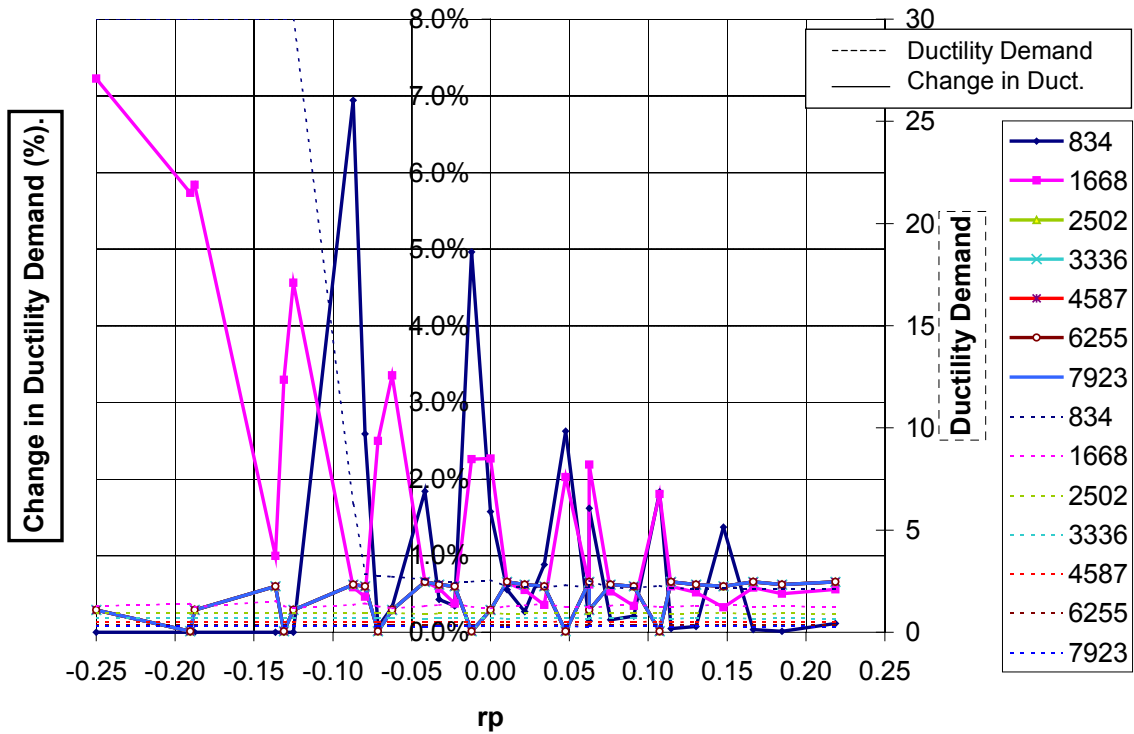


Figure C2.8.3.2b– EQ3, Lateral Scale = 0.2 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.635 Seconds



**Figure C2.8.3.2c– EQ3, Lateral Scale = 0.2 g, Vertical Multiplier = 2.0, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.635 Seconds**



**Figure C2.8.3.2d– EQ3, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.635 Seconds**

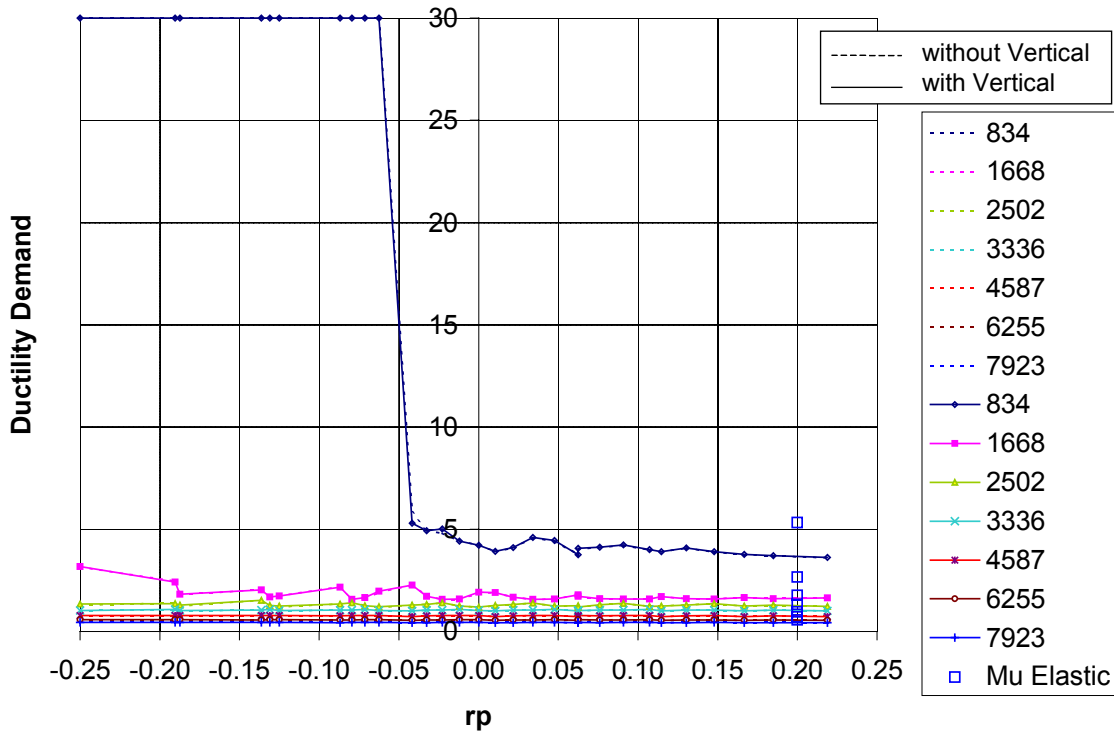


Figure C2.8.3.3a – EQ3, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.635 Seconds.

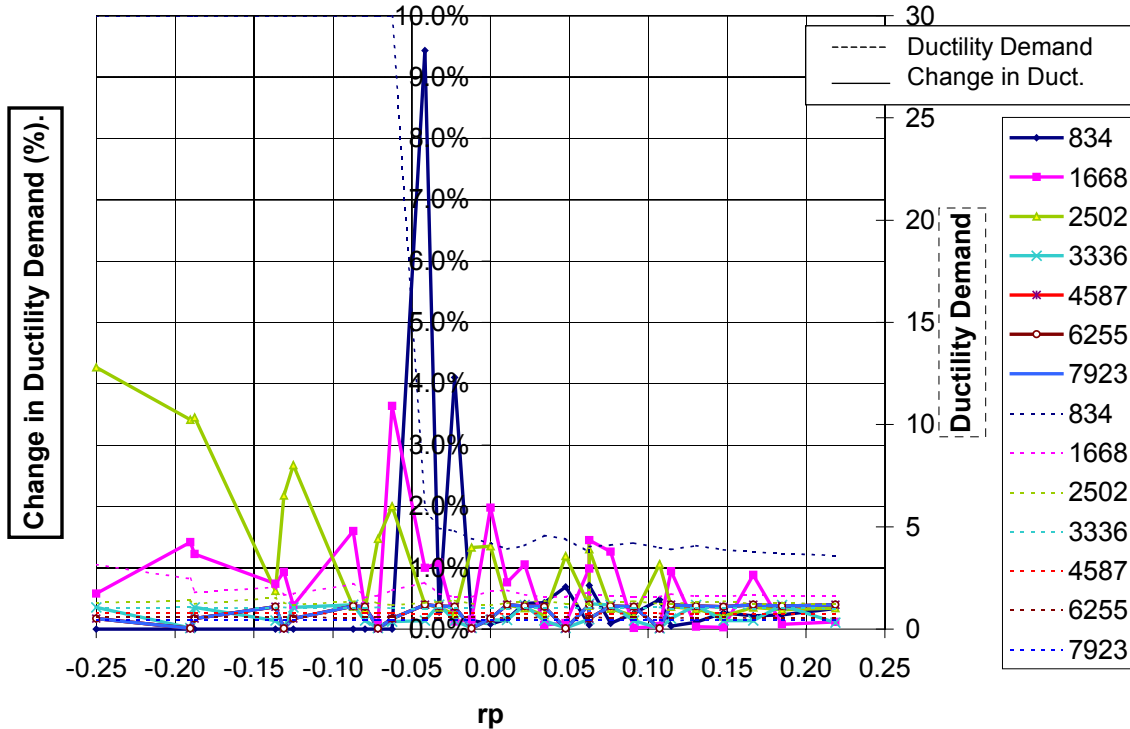


Figure C2.8.3.3b– EQ3, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.635 Seconds

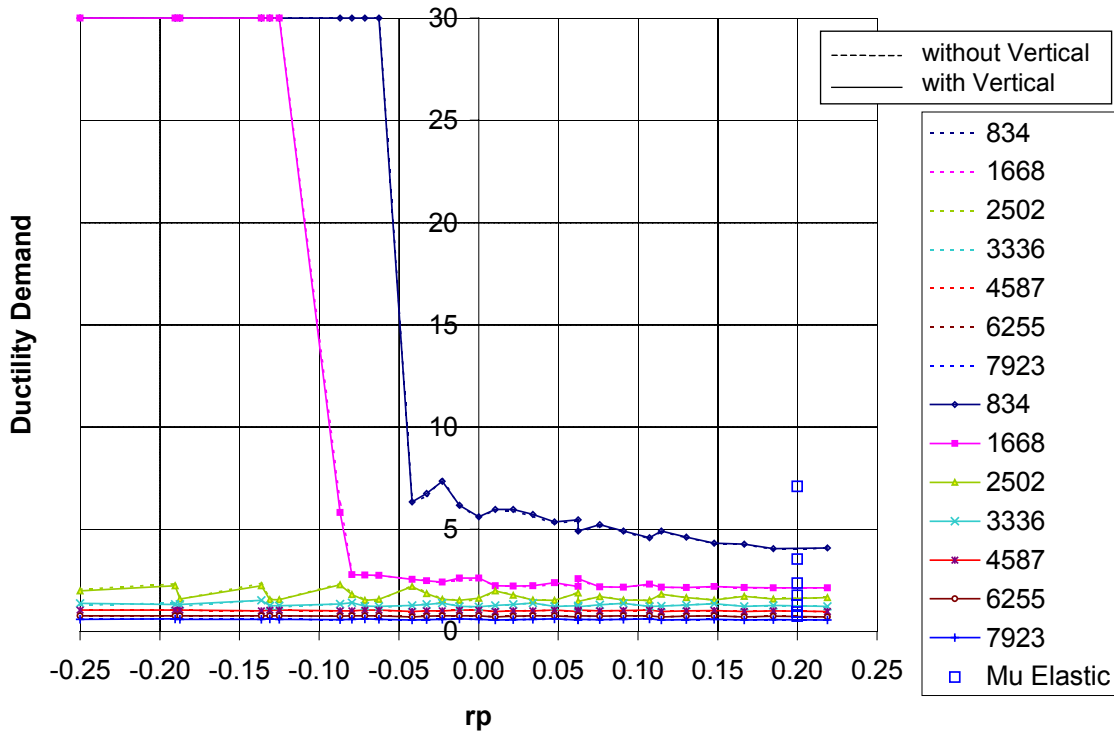


Figure C2.8.3.4a – EQ3, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.635 Seconds.

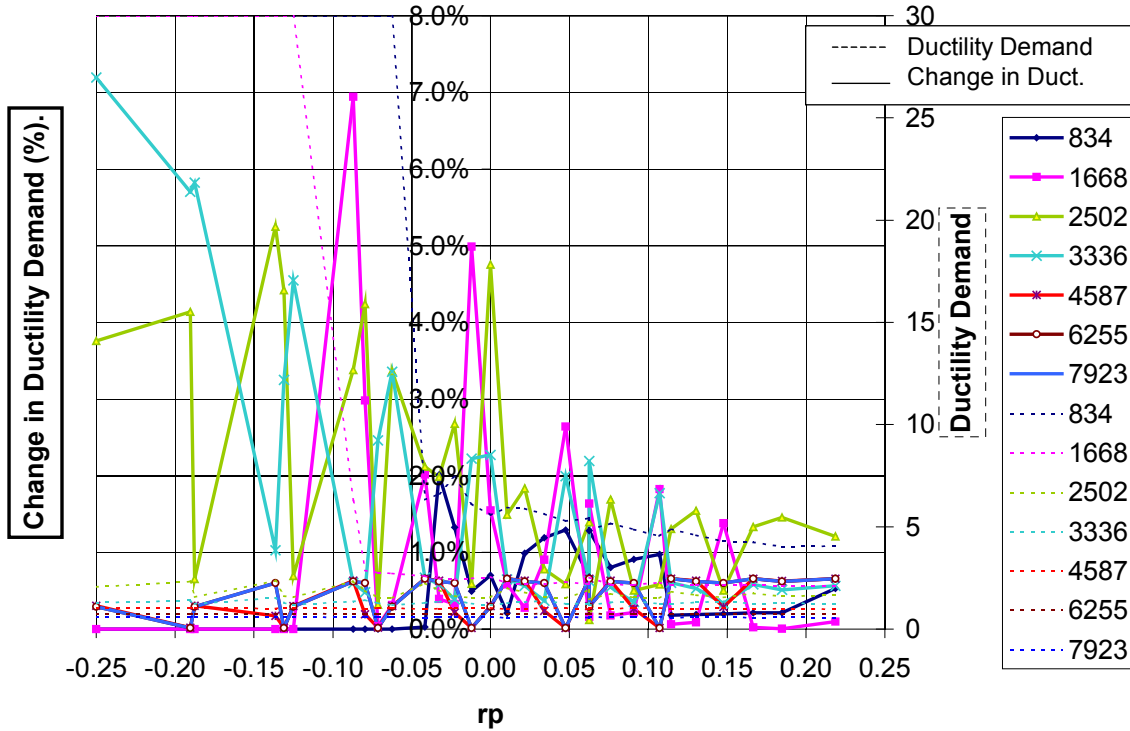


Figure C2.8.3.4b– EQ3, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.635 Seconds

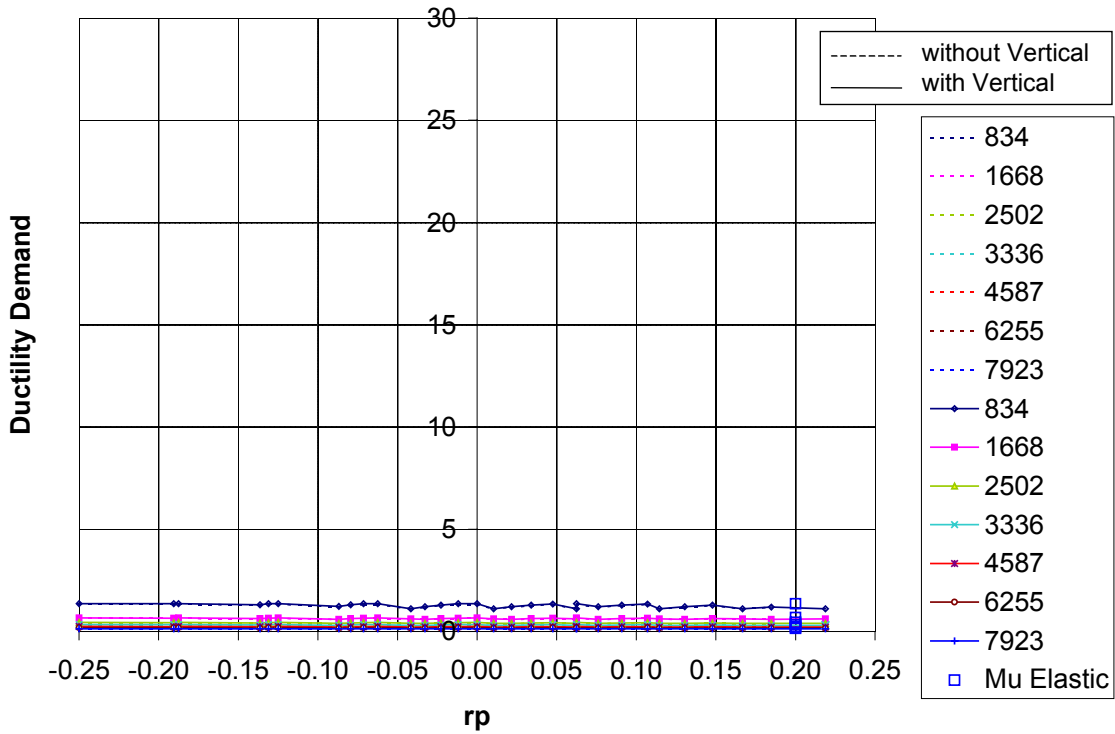


Figure C2.9.3.1a – EQ3, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.808 Seconds.

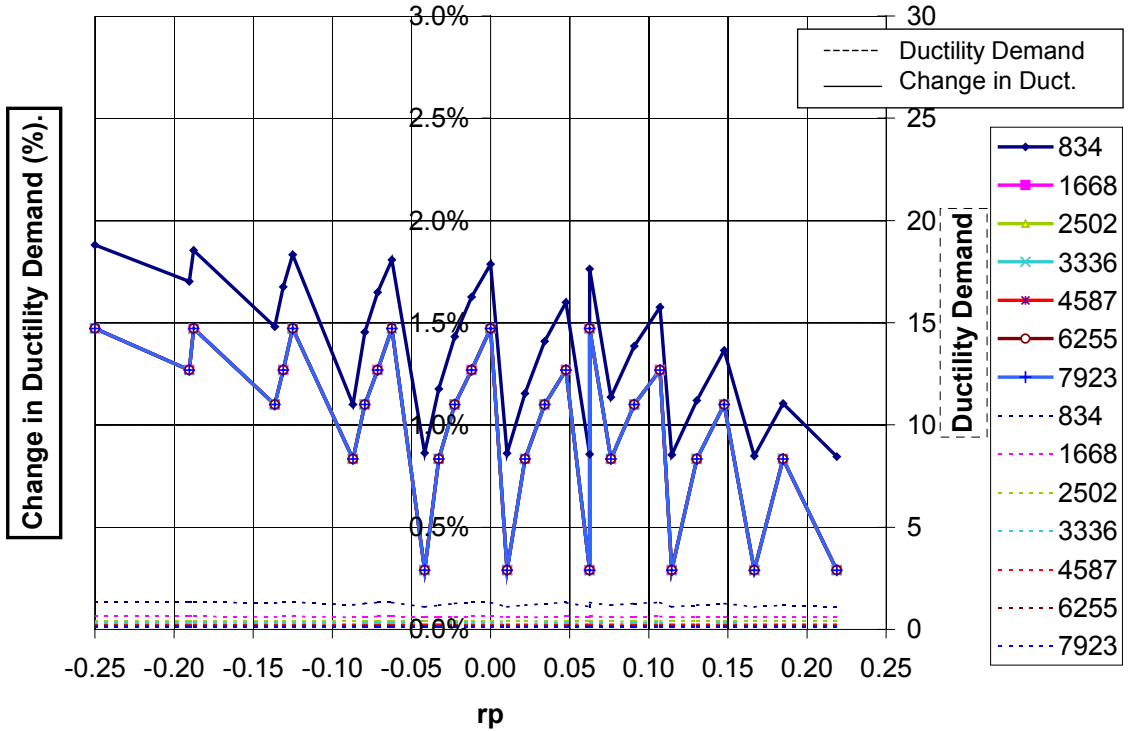


Figure C2.9.3.1b– EQ3, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.808 Seconds

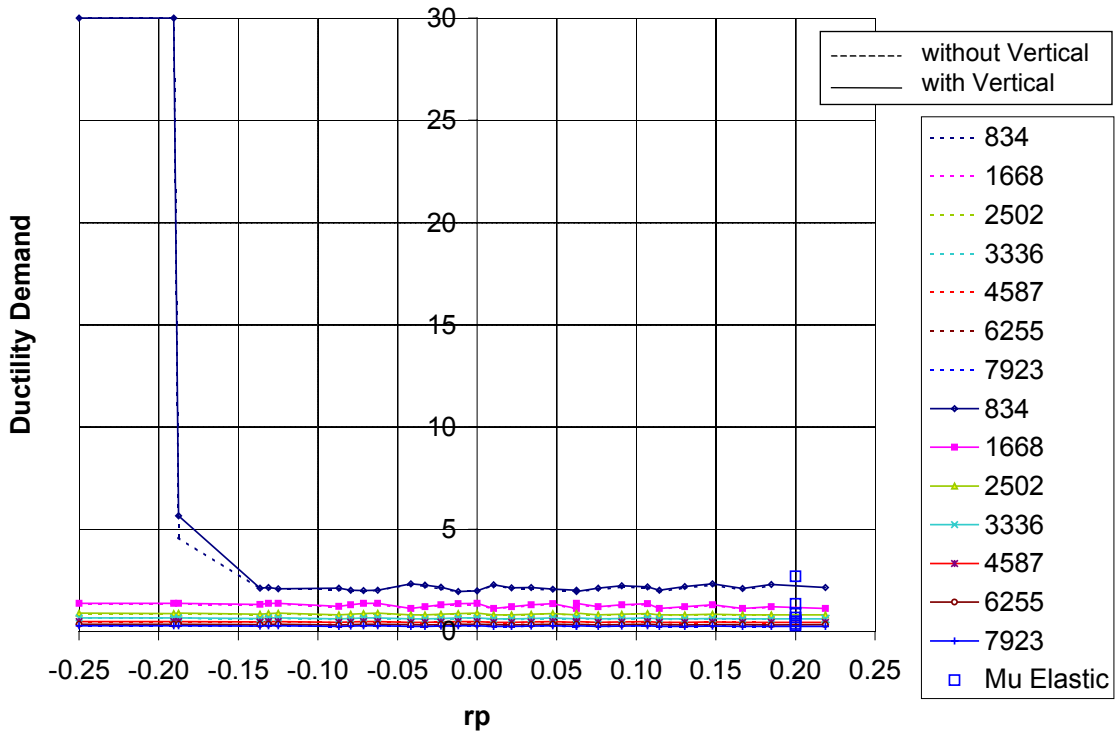


Figure C2.9.3.2a – EQ3, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.808 Seconds.

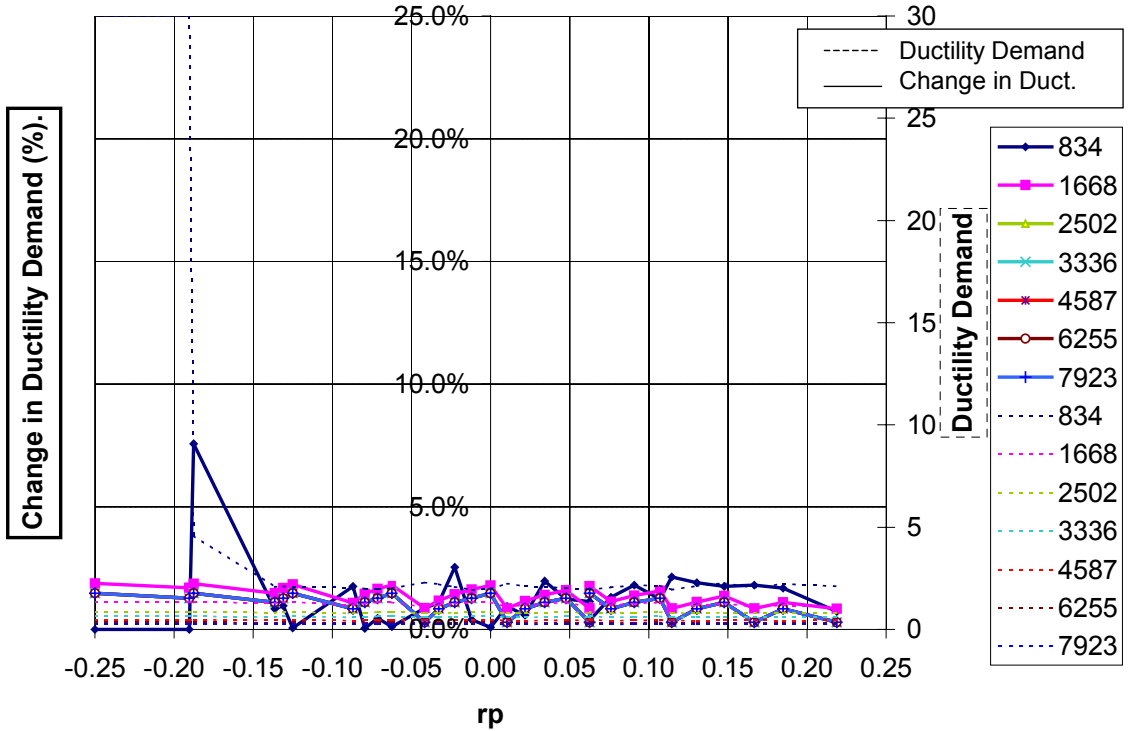
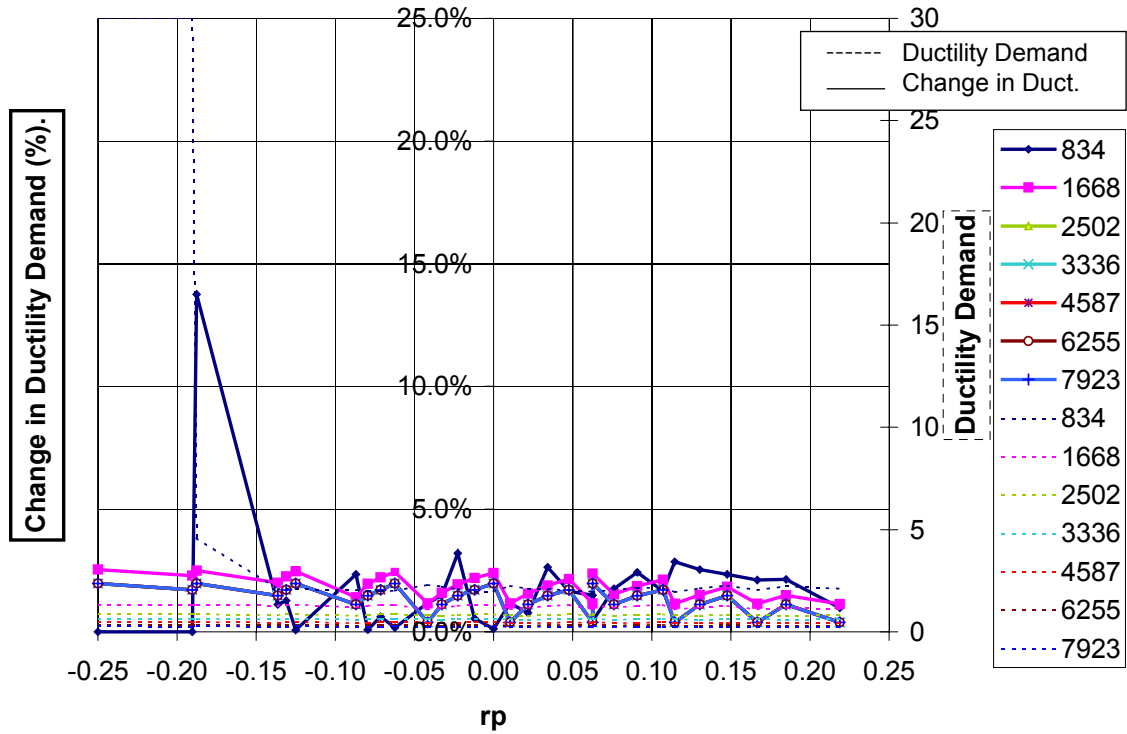
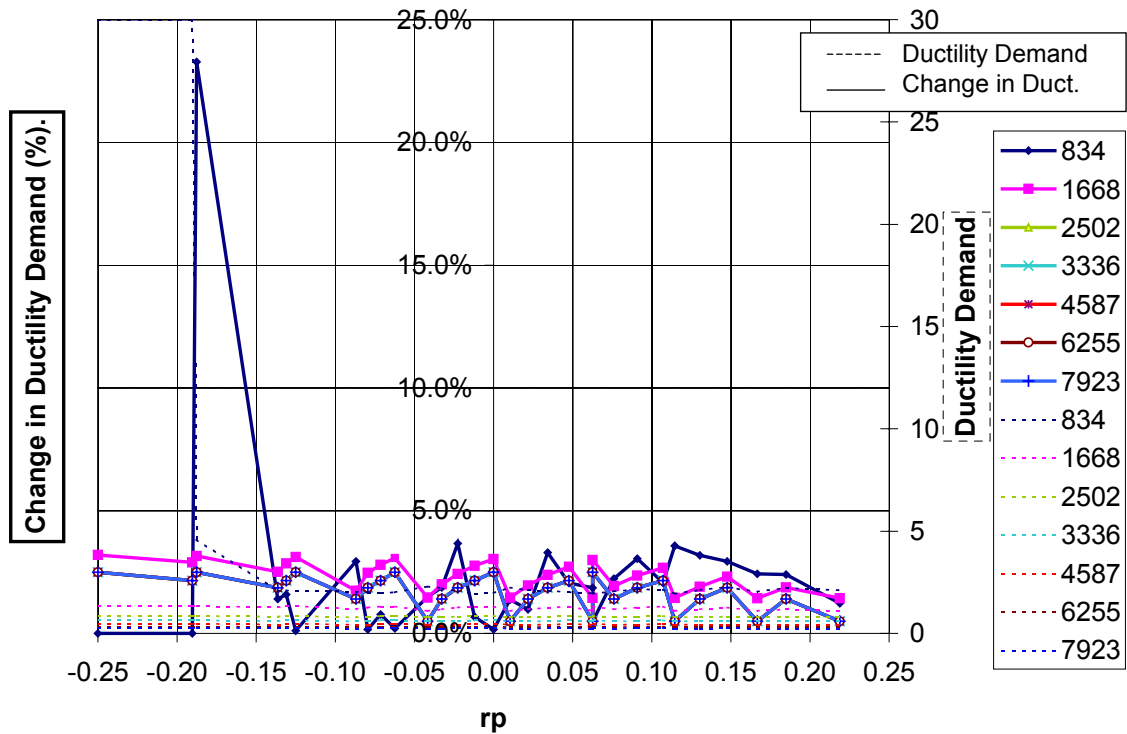


Figure C2.9.3.2b– EQ3, Lateral Scale = 0.2 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.808 Seconds



**Figure C2.9.3.2c– EQ3, Lateral Scale = 0.2 g, Vertical Multiplier = 2.0, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.808 Seconds**



**Figure C2.9.3.2d– EQ3, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.808 Seconds**

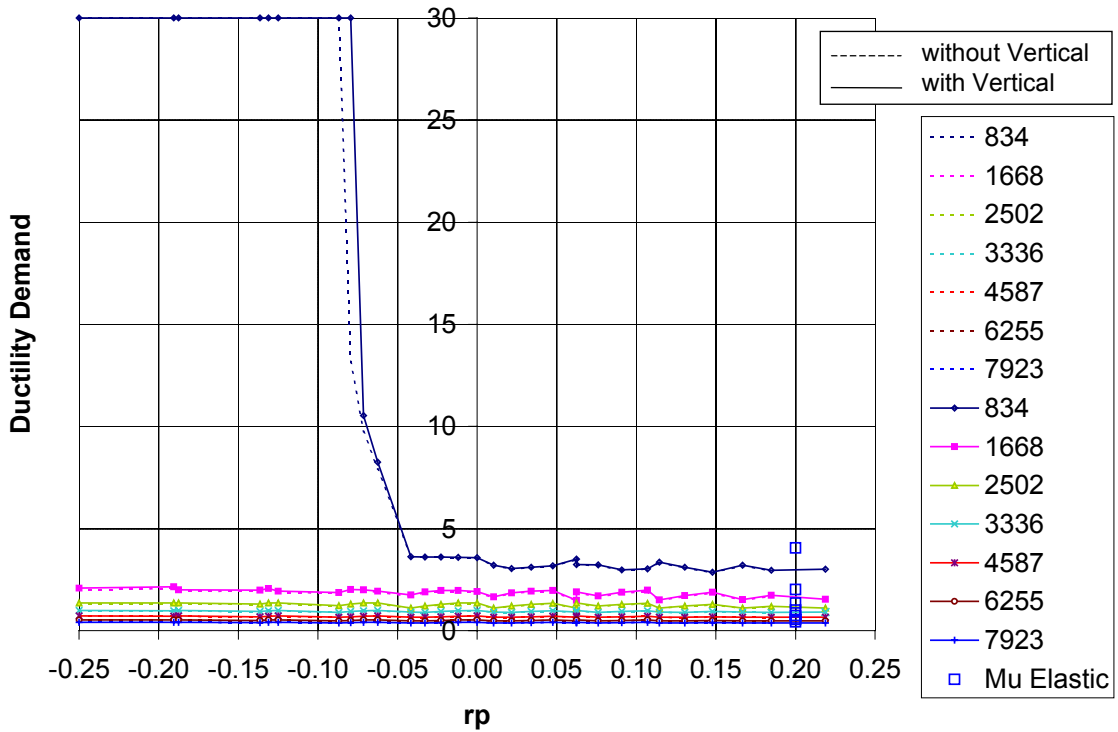


Figure C2.9.3.3a – EQ3, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.808 Seconds.

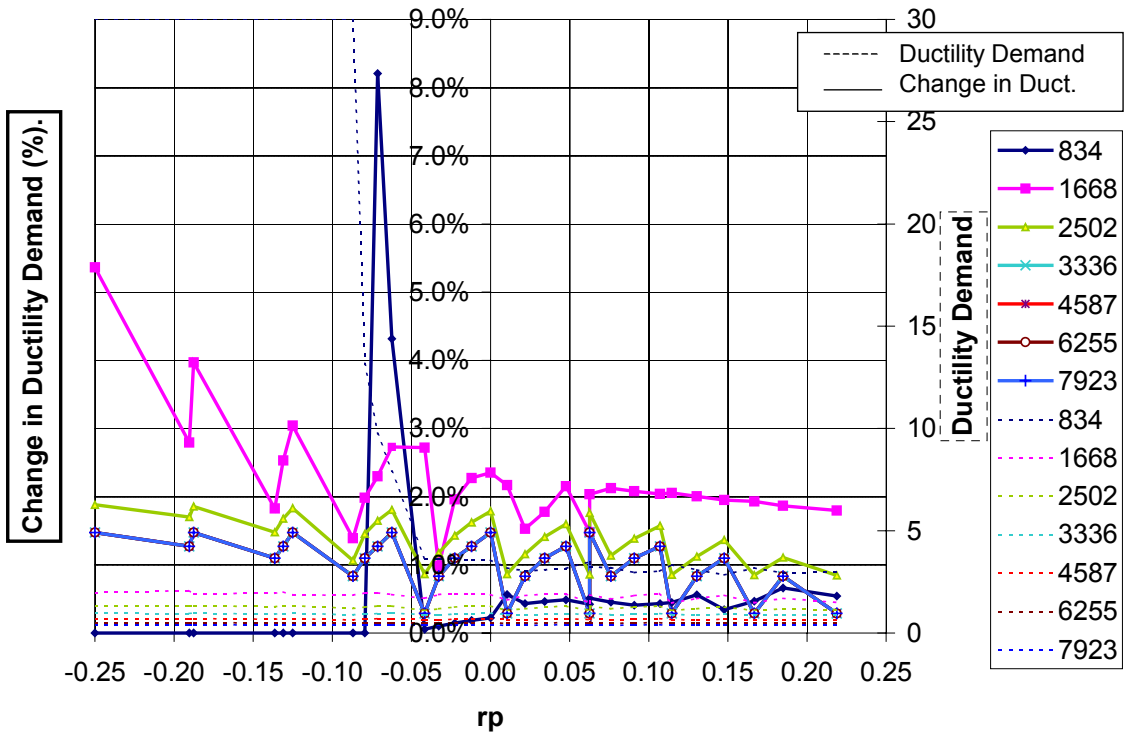


Figure C2.9.3.3b– EQ3, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.808 Seconds

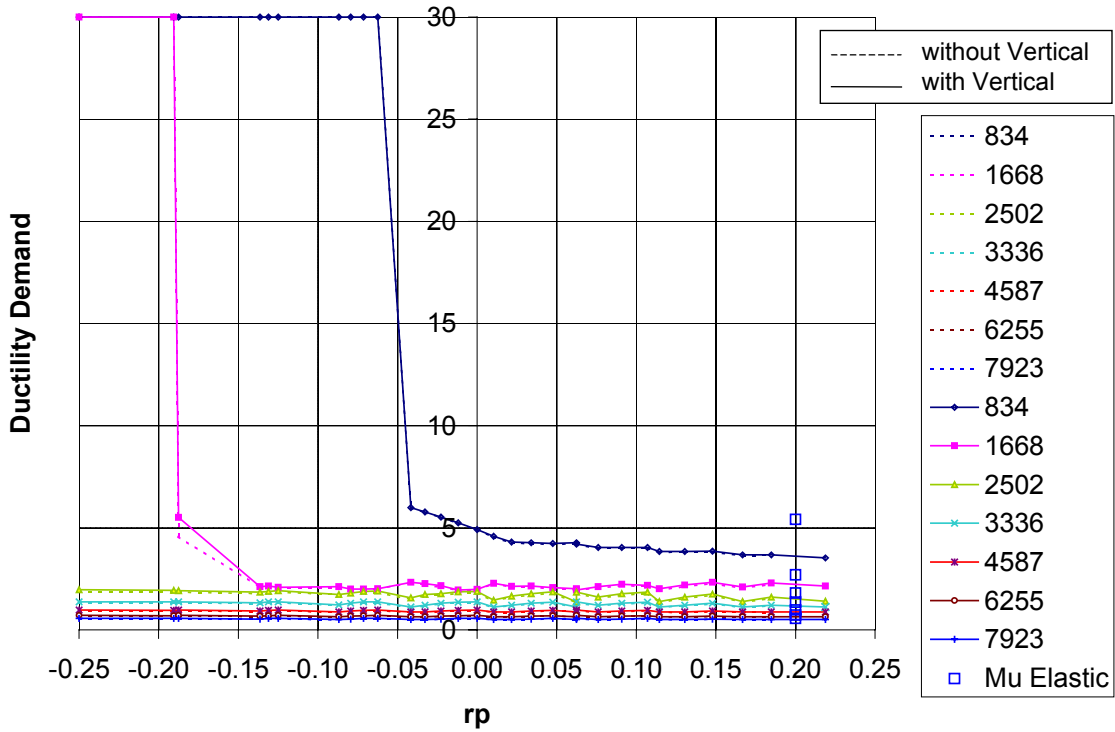


Figure C2.9.3.4a – EQ3, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.808 Seconds.

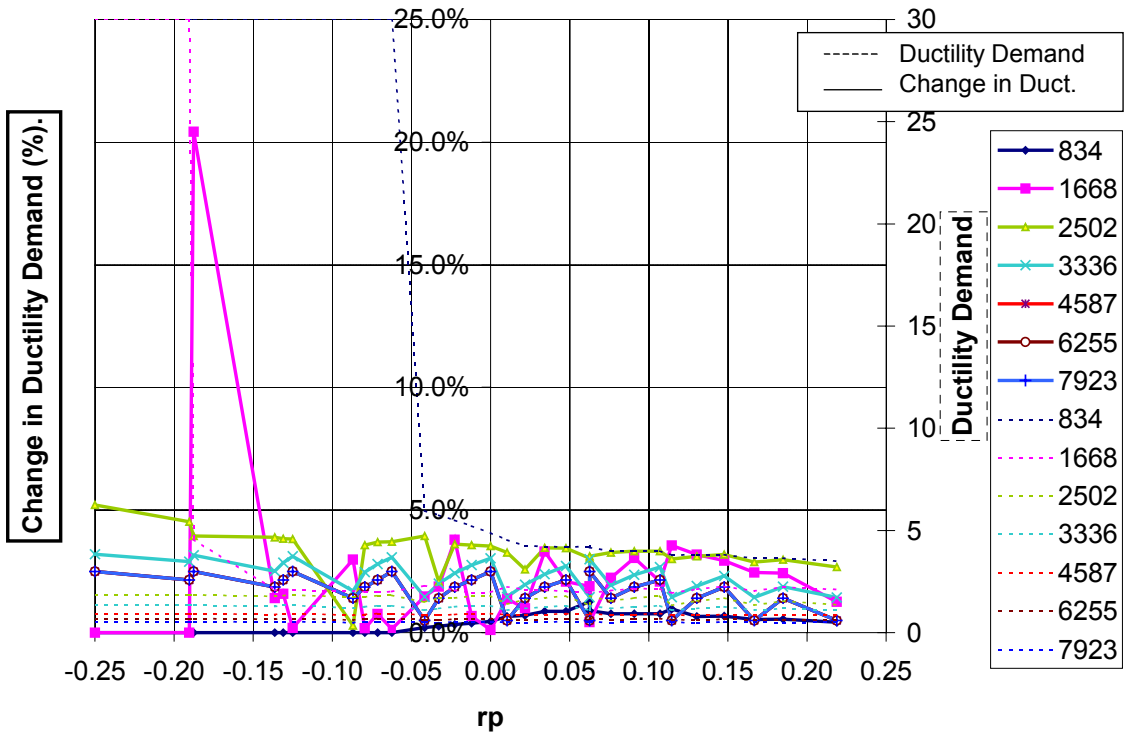


Figure C2.9.3.4b– EQ3, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.808 Seconds.

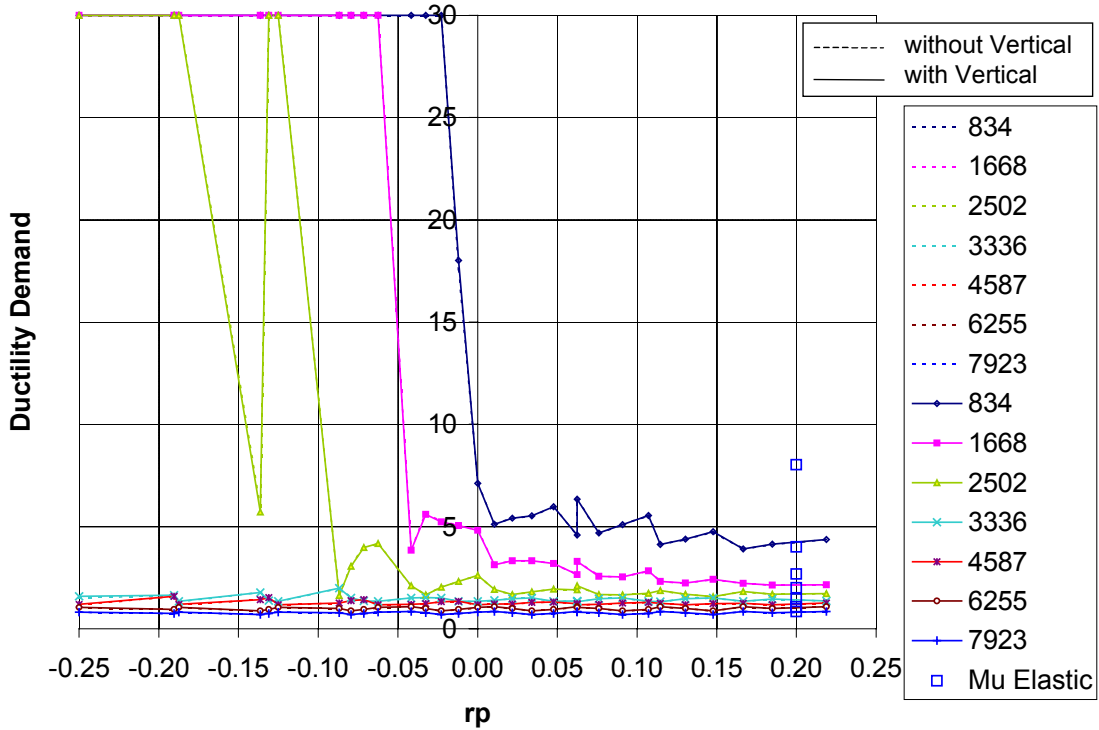


Figure C2.3.4.1a – EQ4, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 0.705 Seconds.

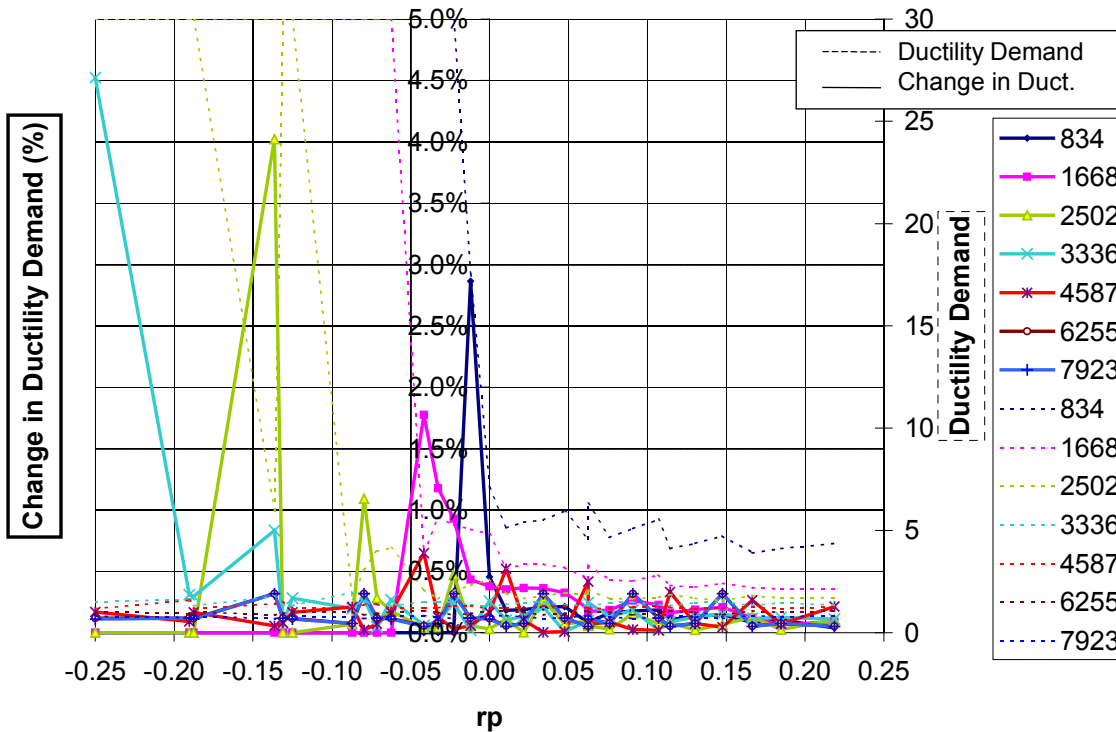


Figure C2.3.4.1b– EQ4, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 0.705 Seconds

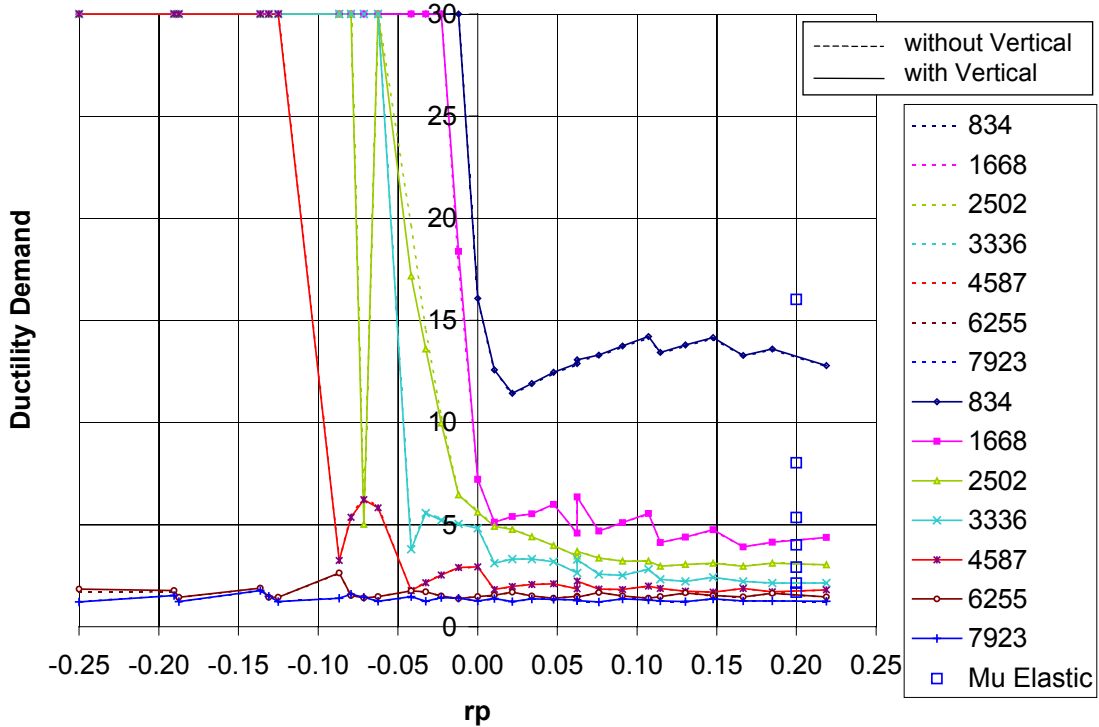


Figure C2.3.4.2a – EQ4, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 0.705 Seconds.

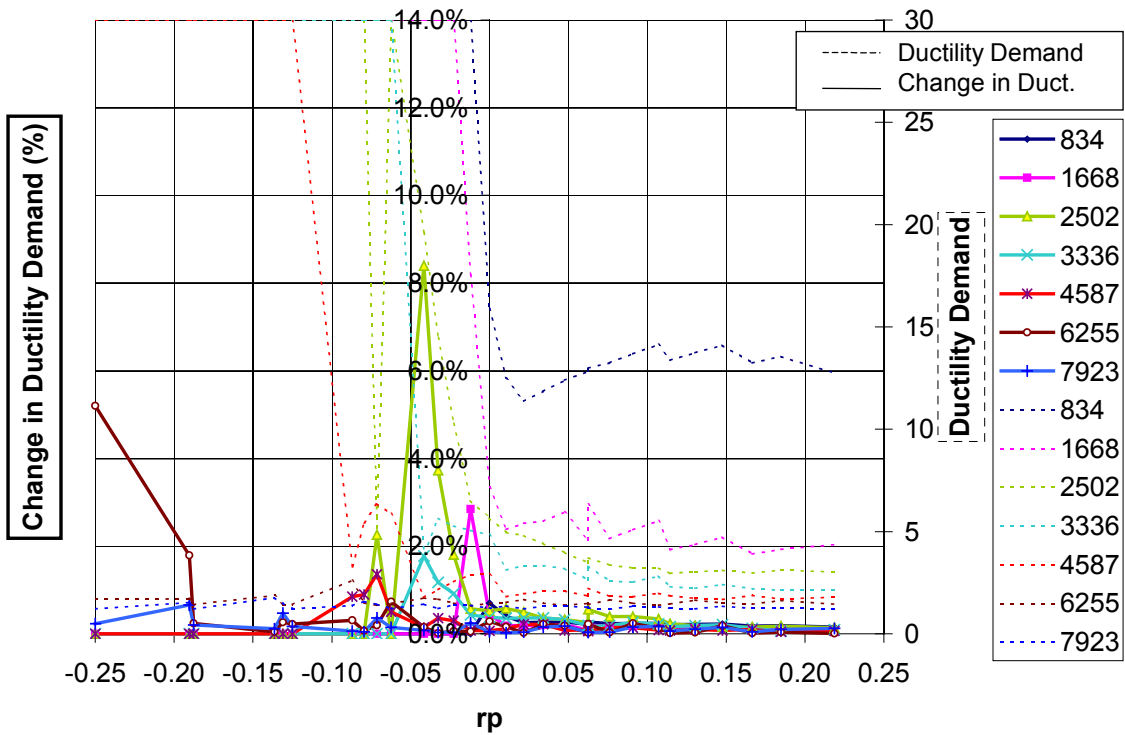
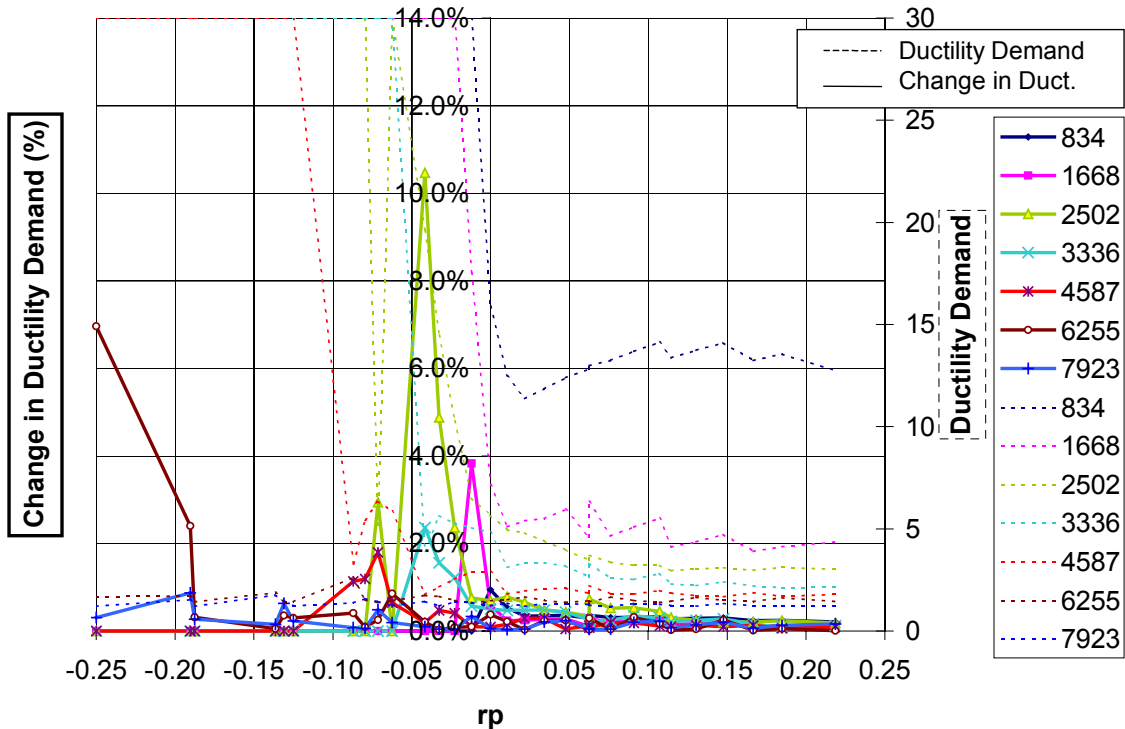
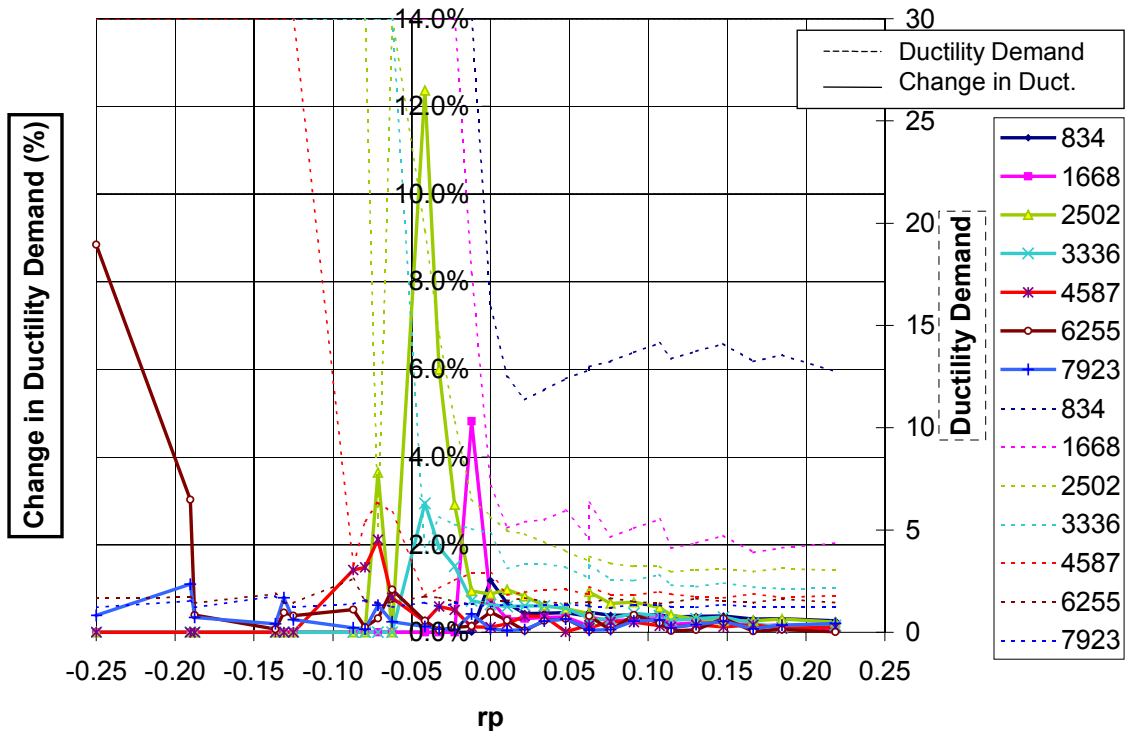


Figure C2.3.4.2b– EQ4, Lateral Scale = 0.2 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 0.705 Seconds



**Figure C2.3.4.2c– EQ4, Lateral Scale = 0.2 g, Vertical Multiplier = 2.0, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 0.705 Seconds**



**Figure C2.3.4.2d– EQ4, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 0.705 Seconds**

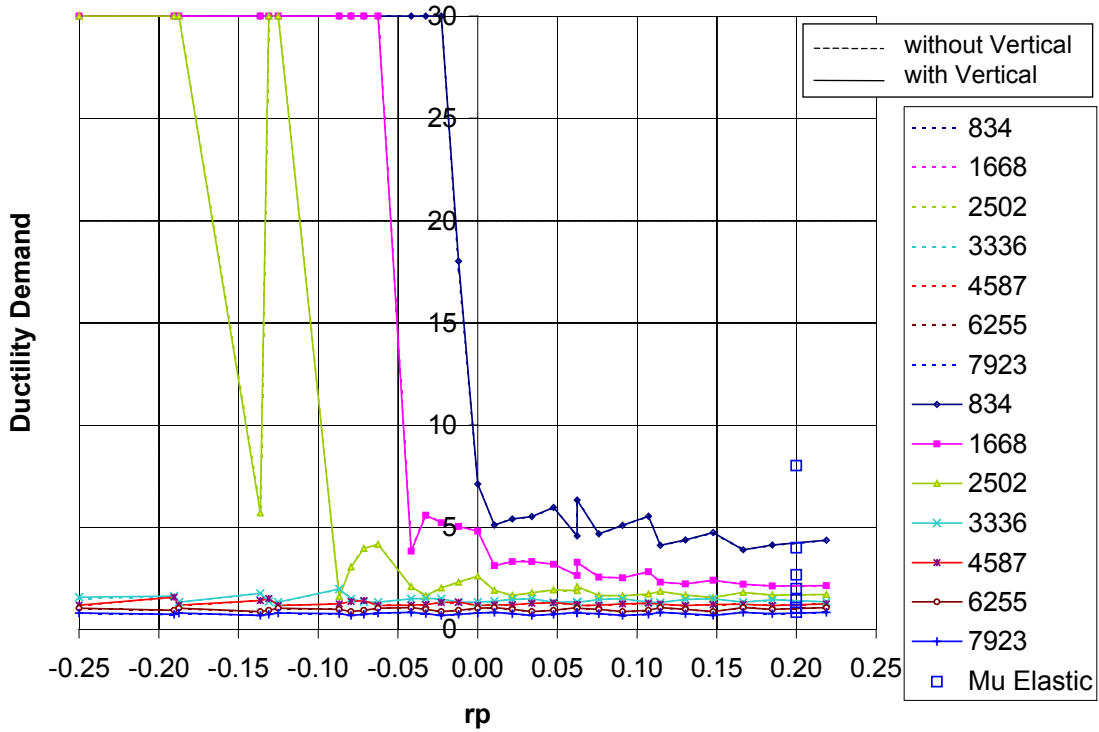


Figure C2.3.4.3a – EQ4, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 0.705 Seconds.

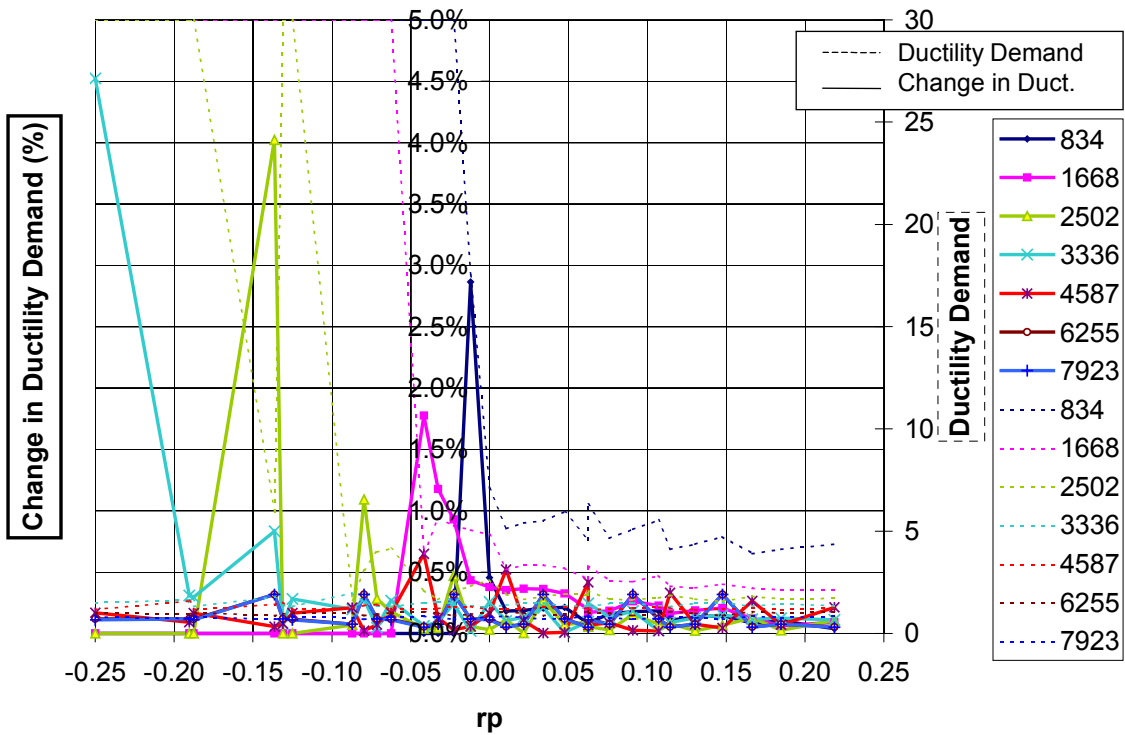


Figure C2.3.4.3b– EQ4, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 0.705 Seconds

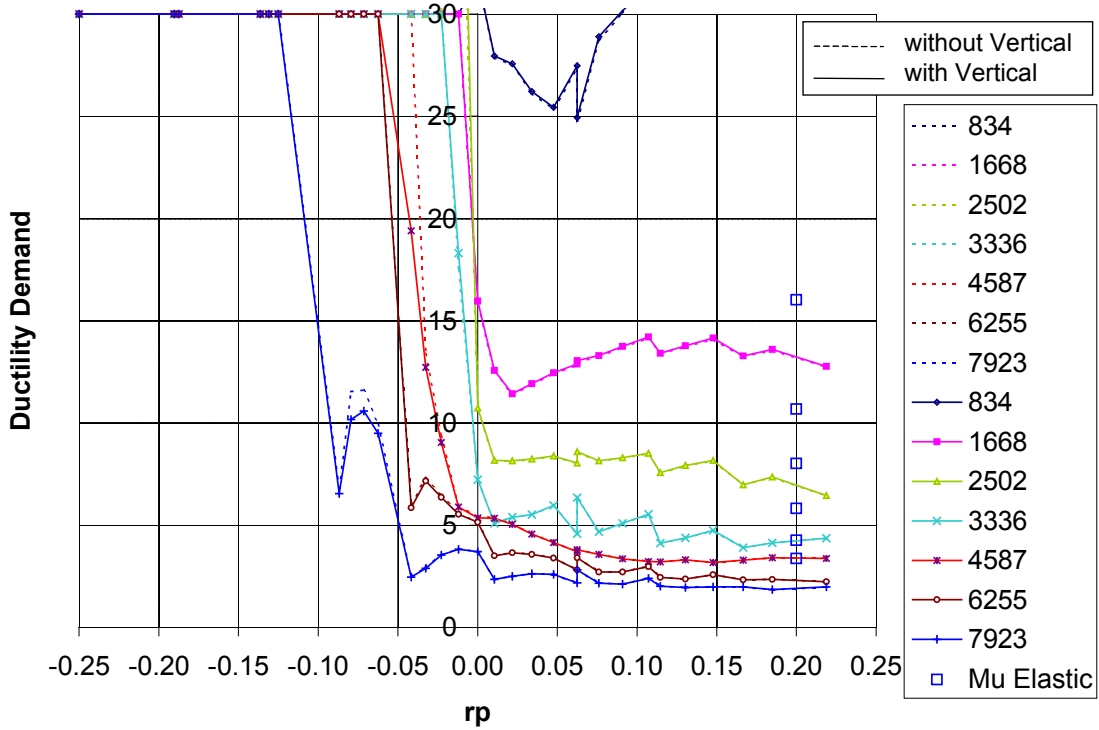


Figure C2.3.4.4a – EQ4, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 0.705 Seconds.

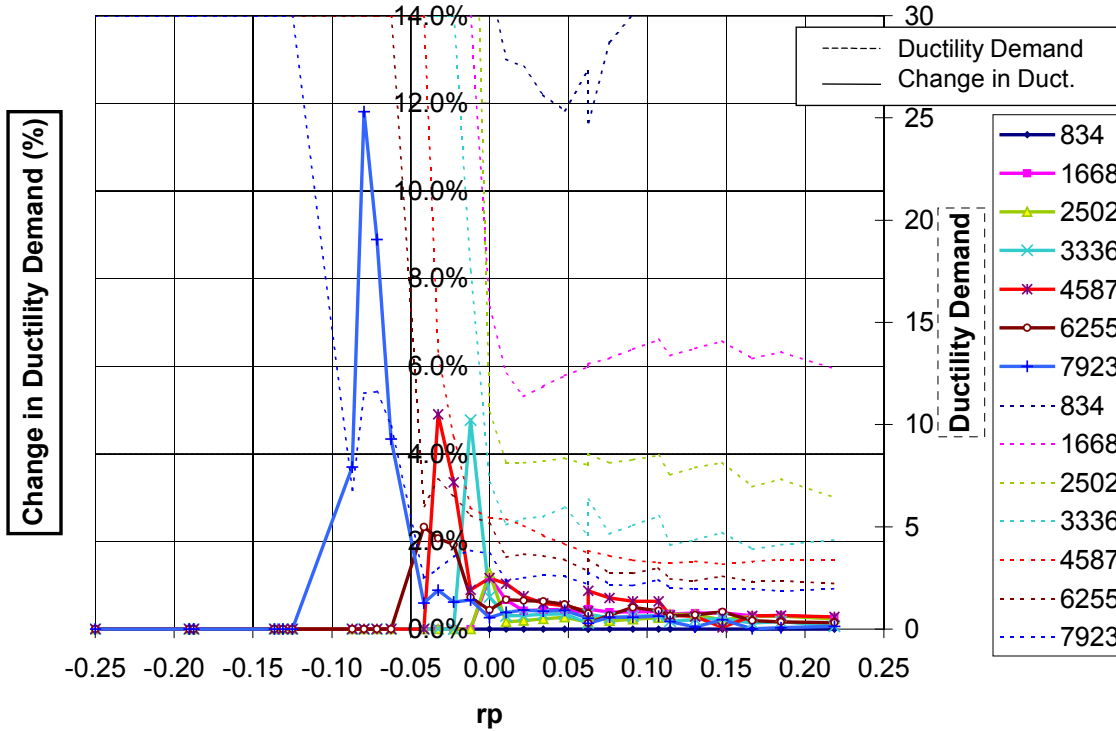


Figure C2.3.4.4b– EQ4, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 0.705 Seconds

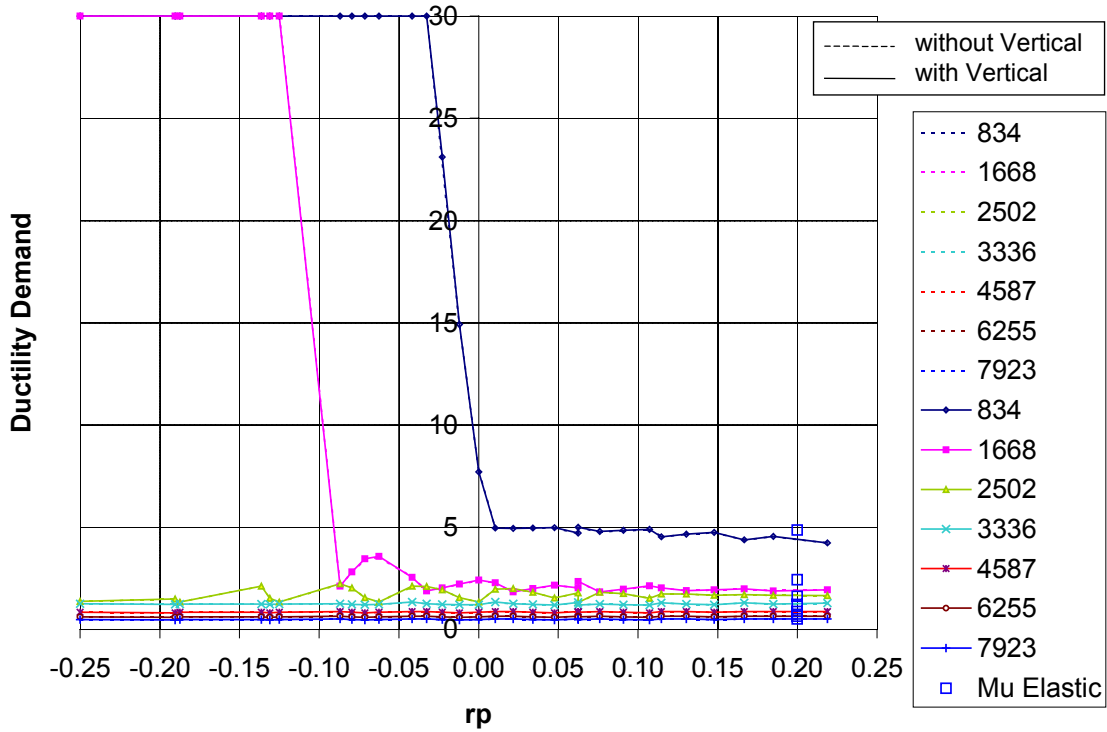


Figure C2.4.4.1a – EQ4, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 0.903 Seconds.

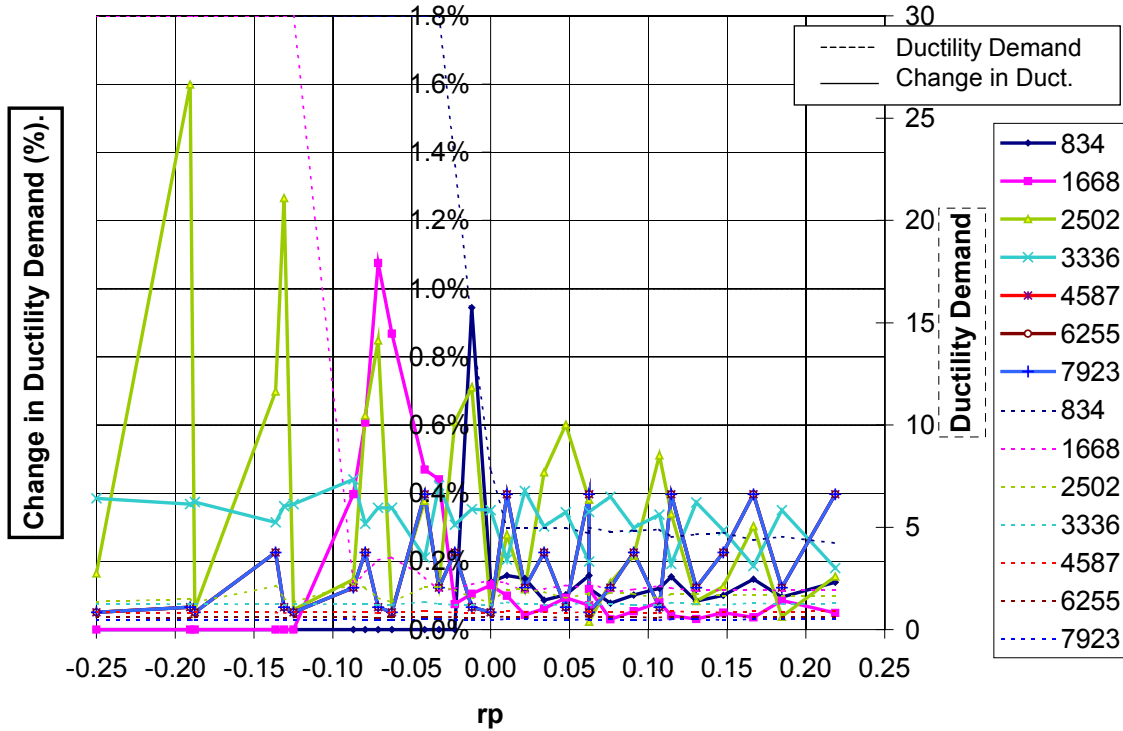


Figure C2.4.4.1b– EQ4, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 0.903 Seconds

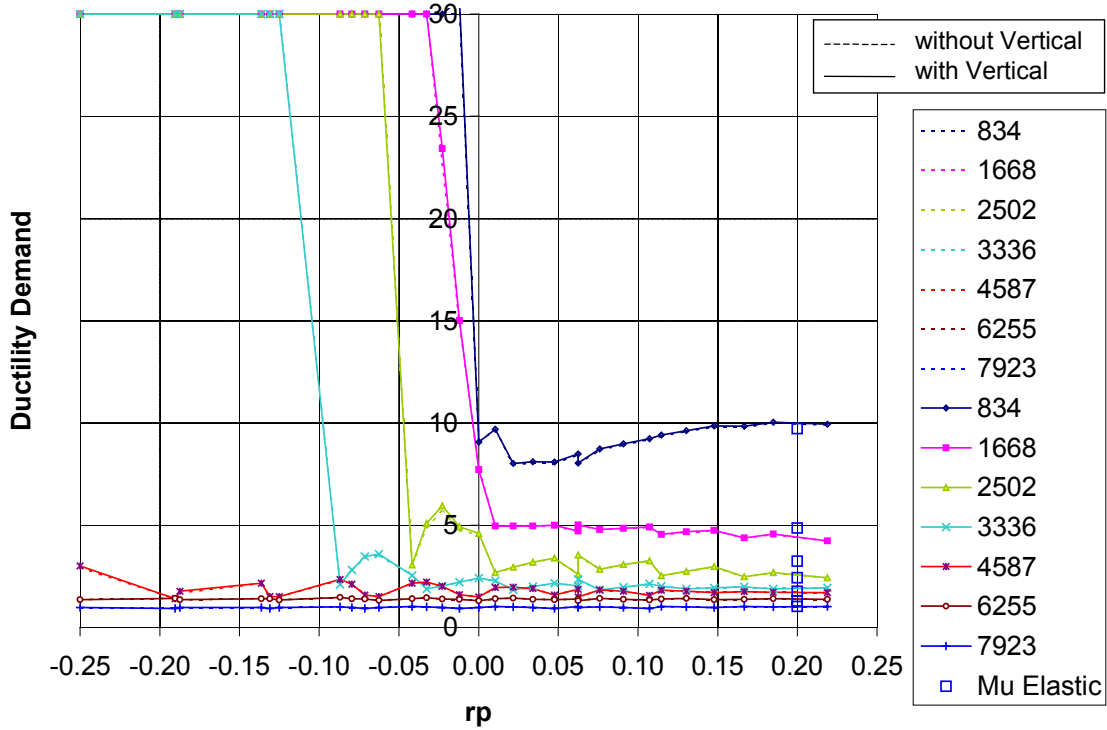


Figure C2.4.4.2a – EQ4, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 0.903 Seconds.

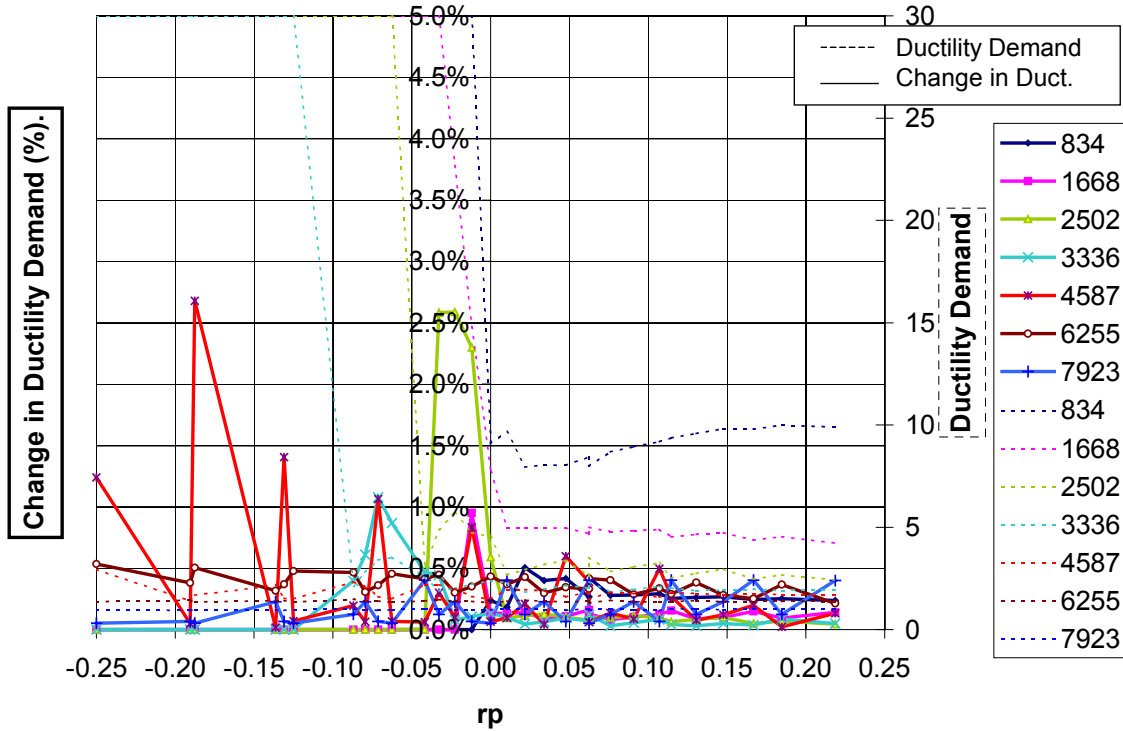


Figure C2.4.4.2b– EQ4, Lateral Scale = 0.2 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 0.903 Seconds

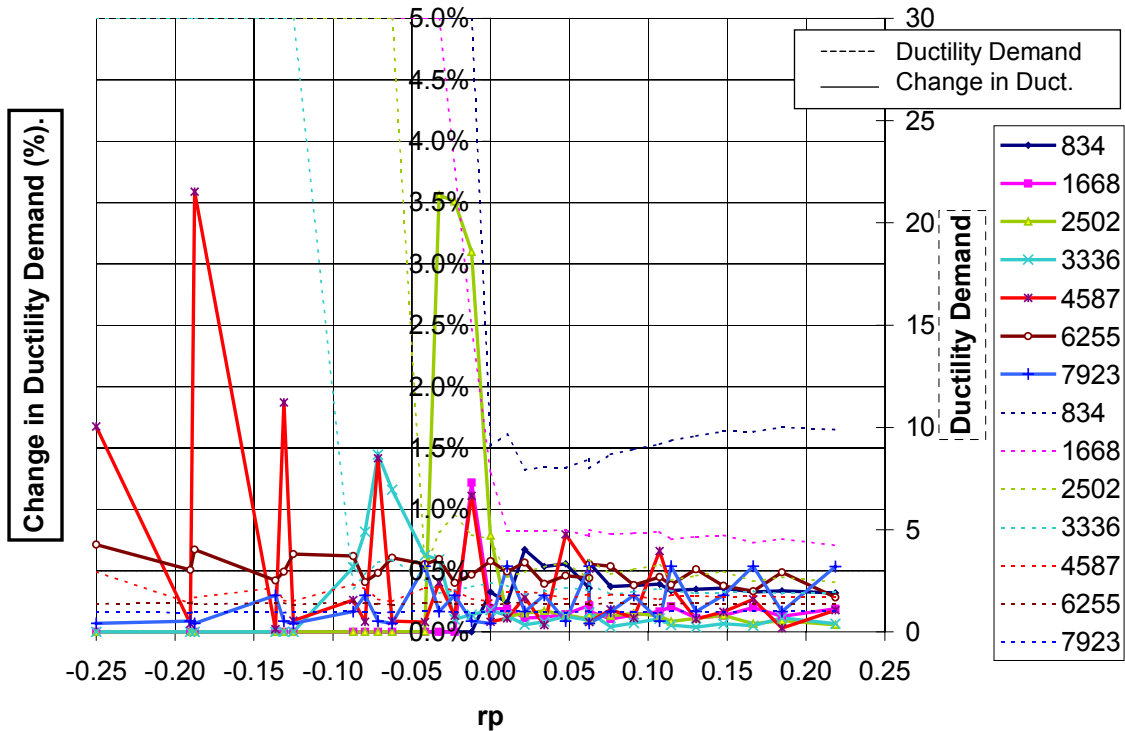


Figure C2.4.4.2c– EQ4, Lateral Scale = 0.2 g, Vertical Multiplier = 2.0, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 0.903 Seconds

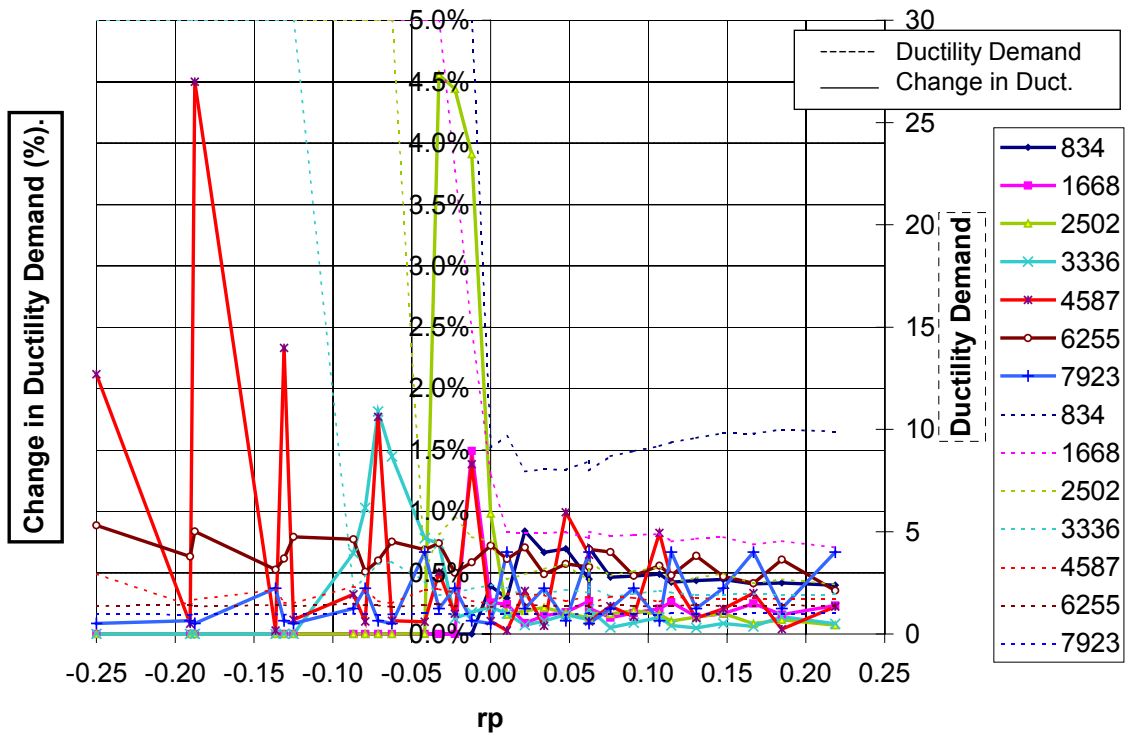


Figure C2.4.4.2d– EQ4, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 0.903 Seconds

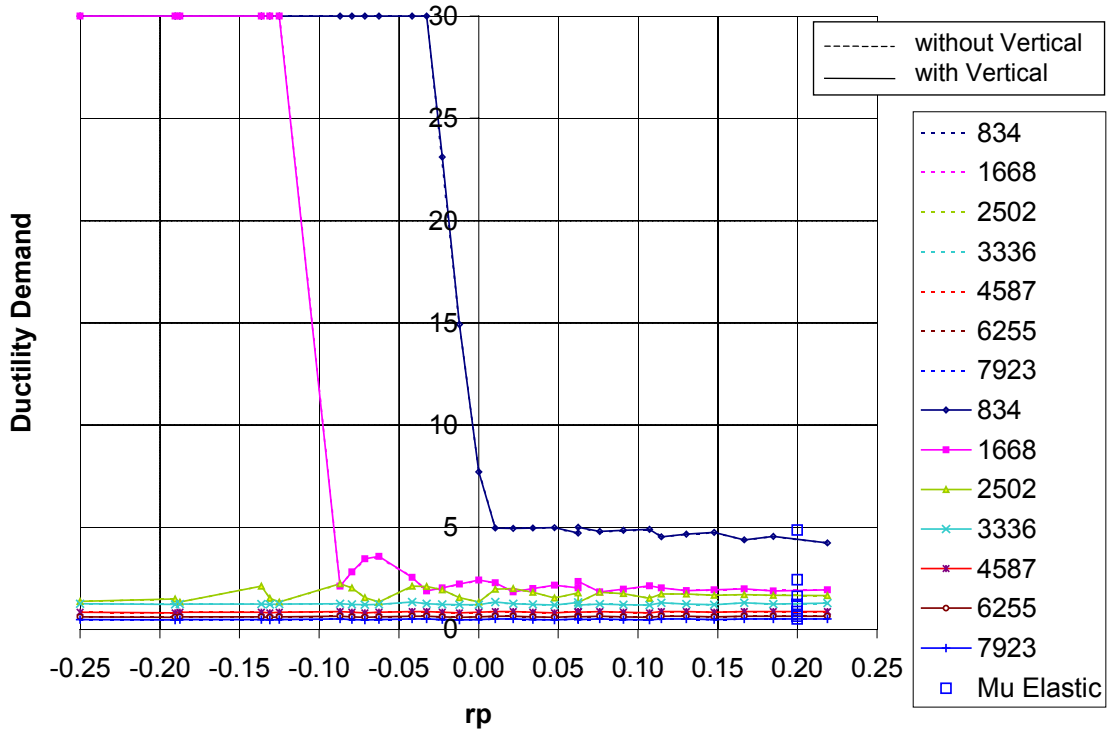


Figure C2.4.4.3a – EQ4, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 0.903 Seconds.

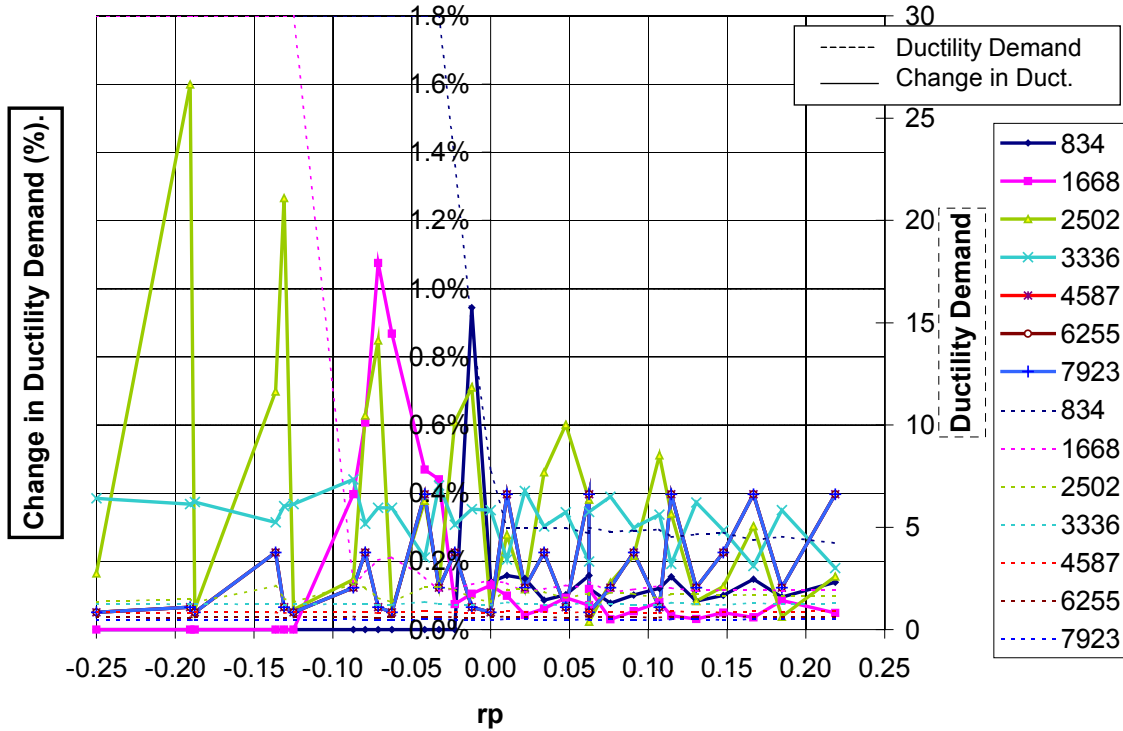


Figure C2.4.4.3b– EQ4, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 0.903 Seconds

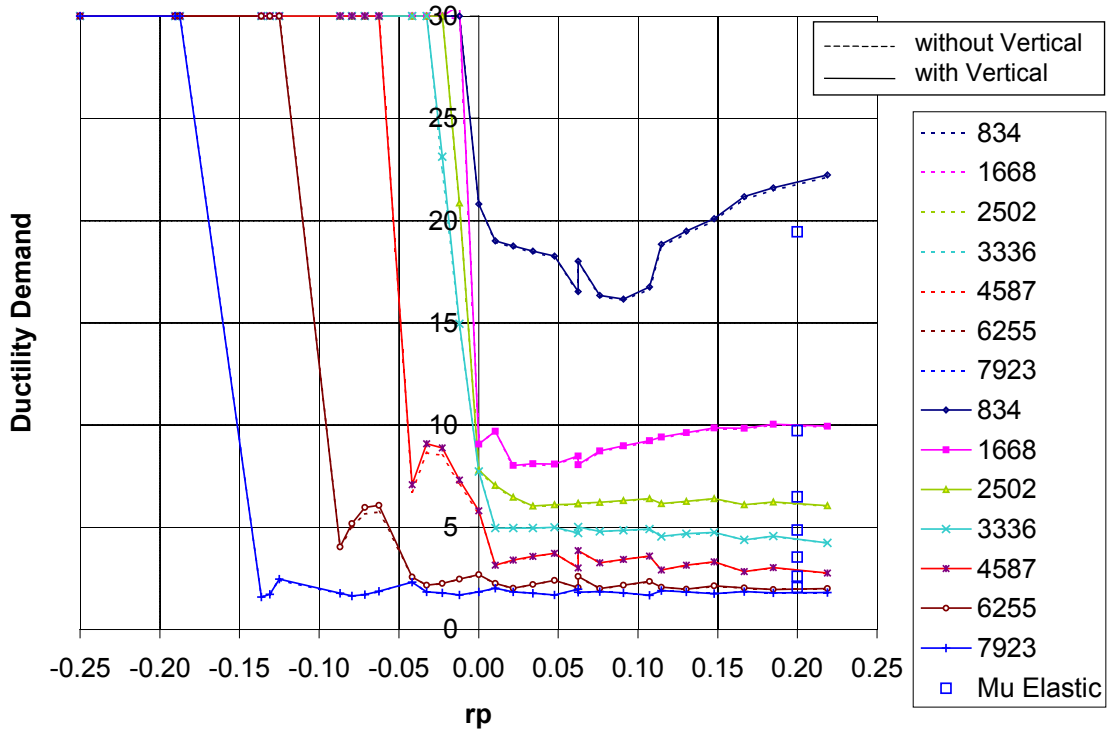


Figure C2.4.4.4a – EQ4, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 0.903 Seconds.

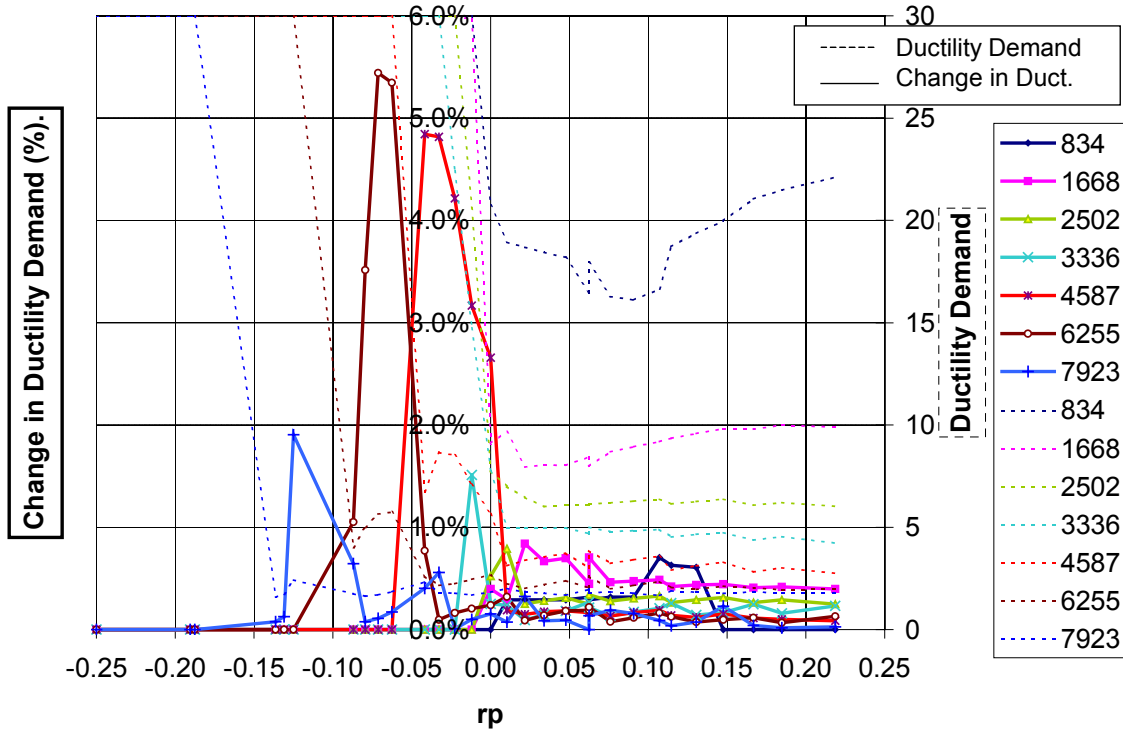


Figure C2.4.4.4b– EQ4, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 0.903 Seconds.

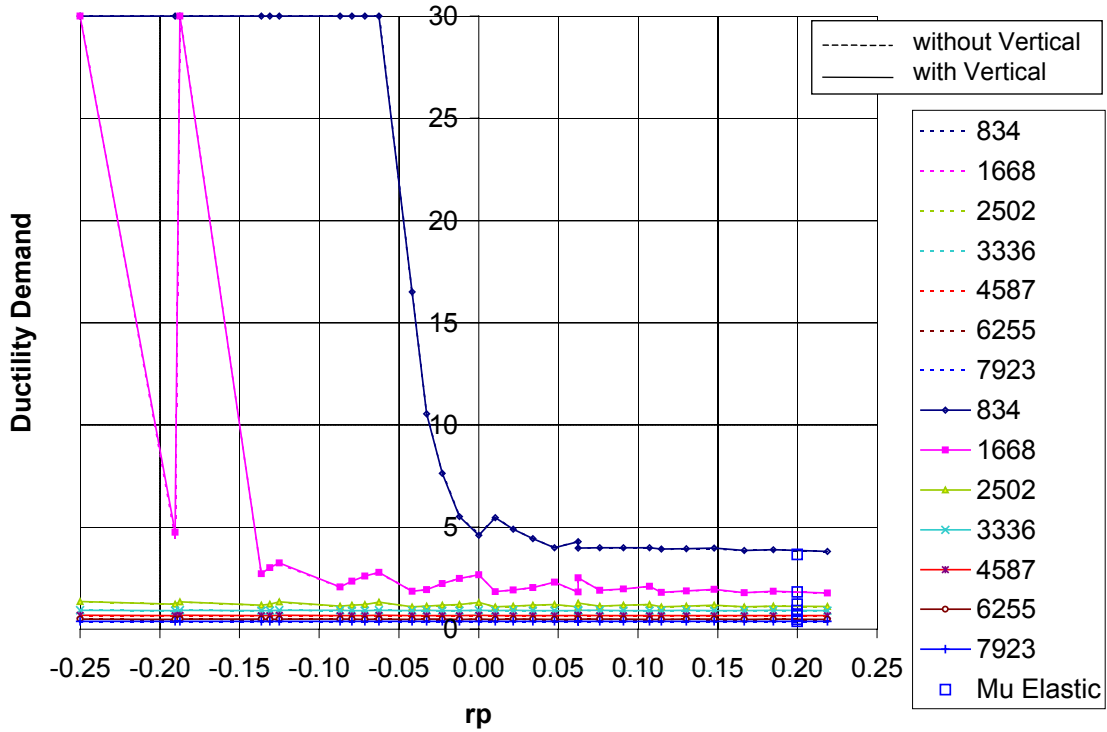


Figure C2.5.4.1a – EQ4, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.093 Seconds.

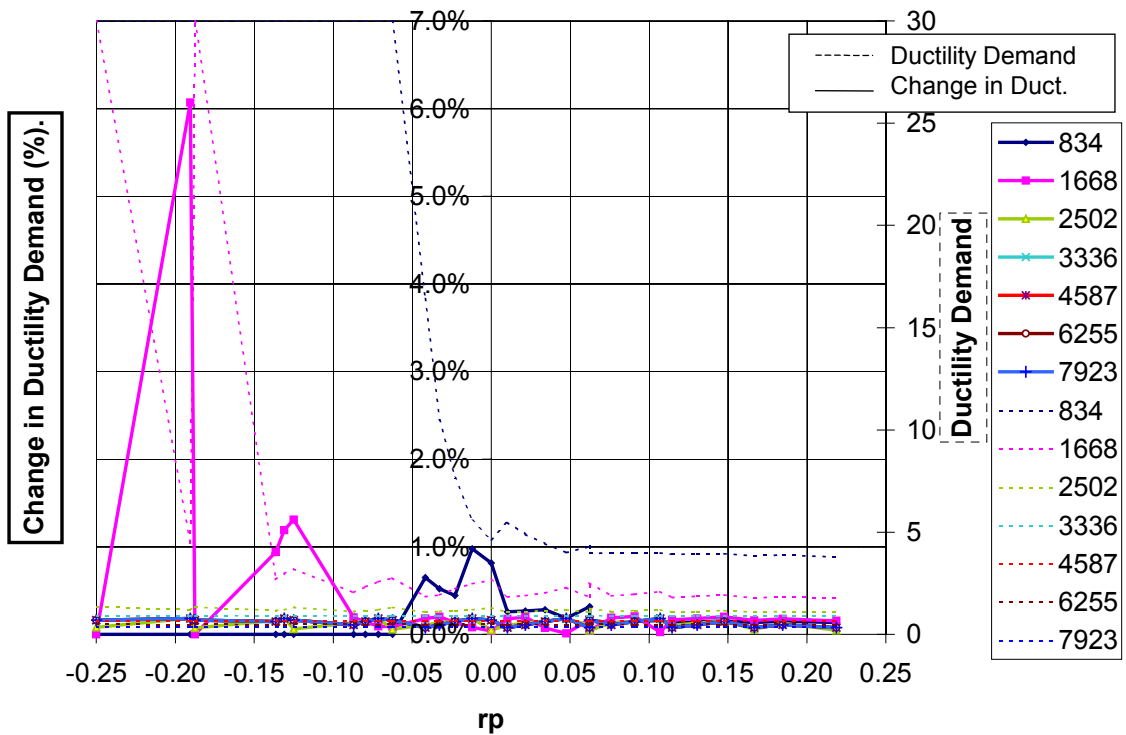


Figure C2.5.4.1b– EQ4, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.093 Seconds

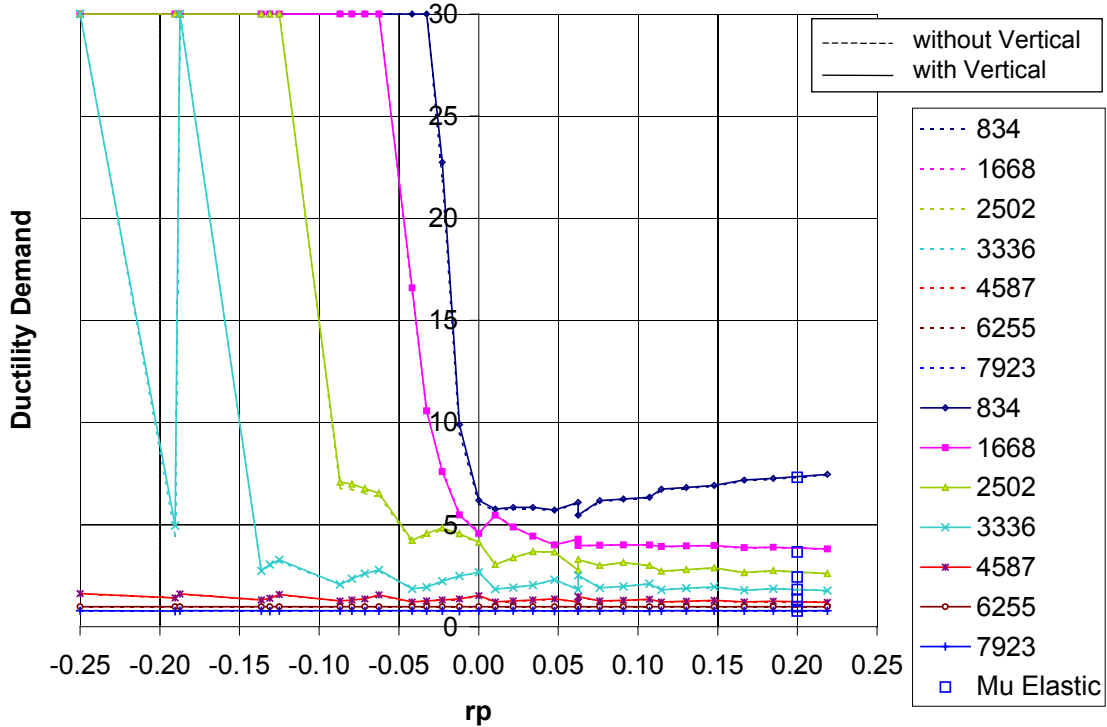


Figure C2.5.4.2a – EQ4, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.093 Seconds.

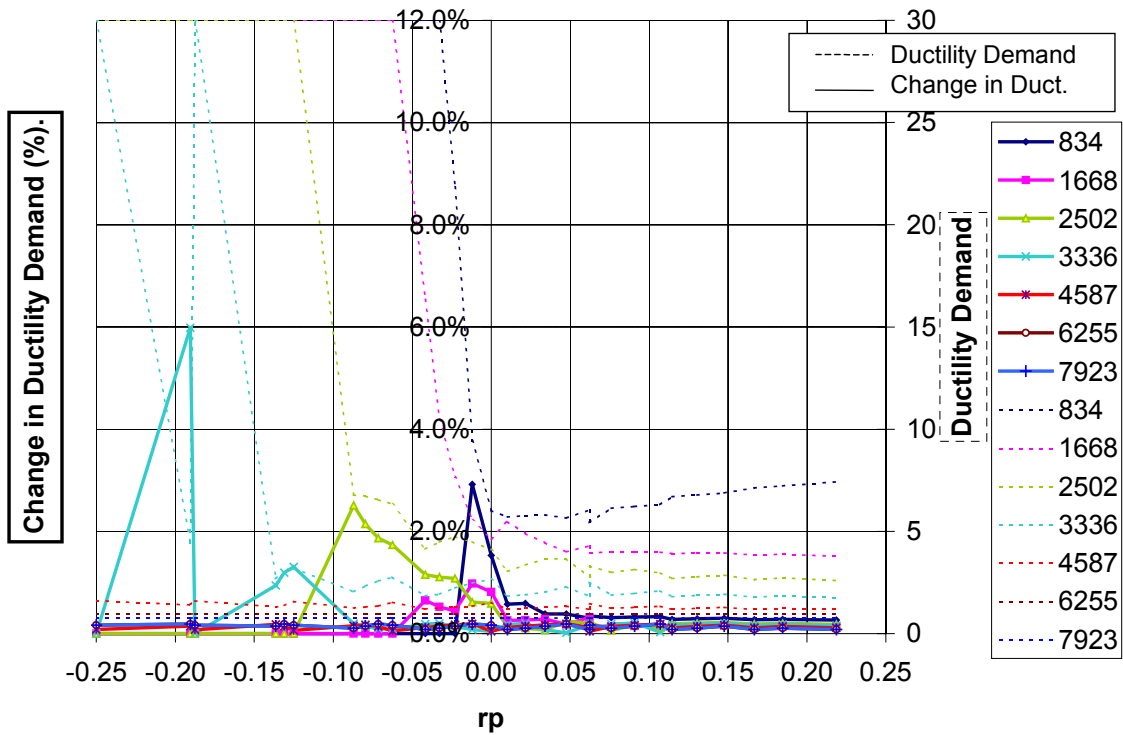
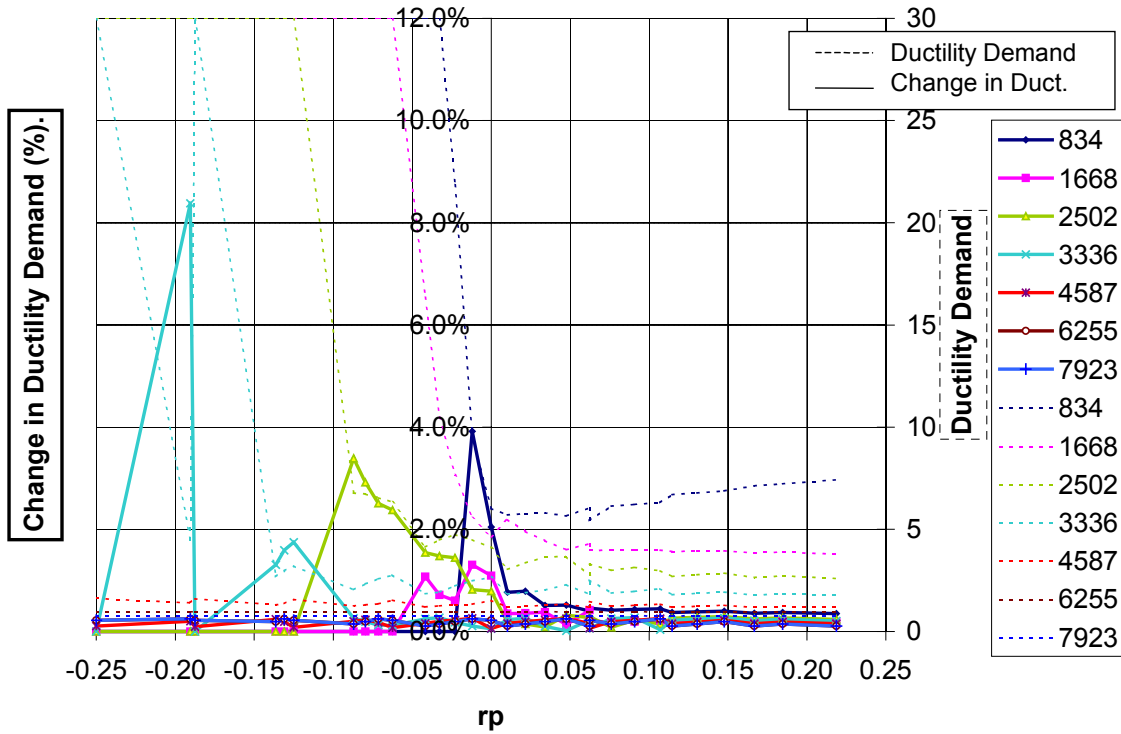
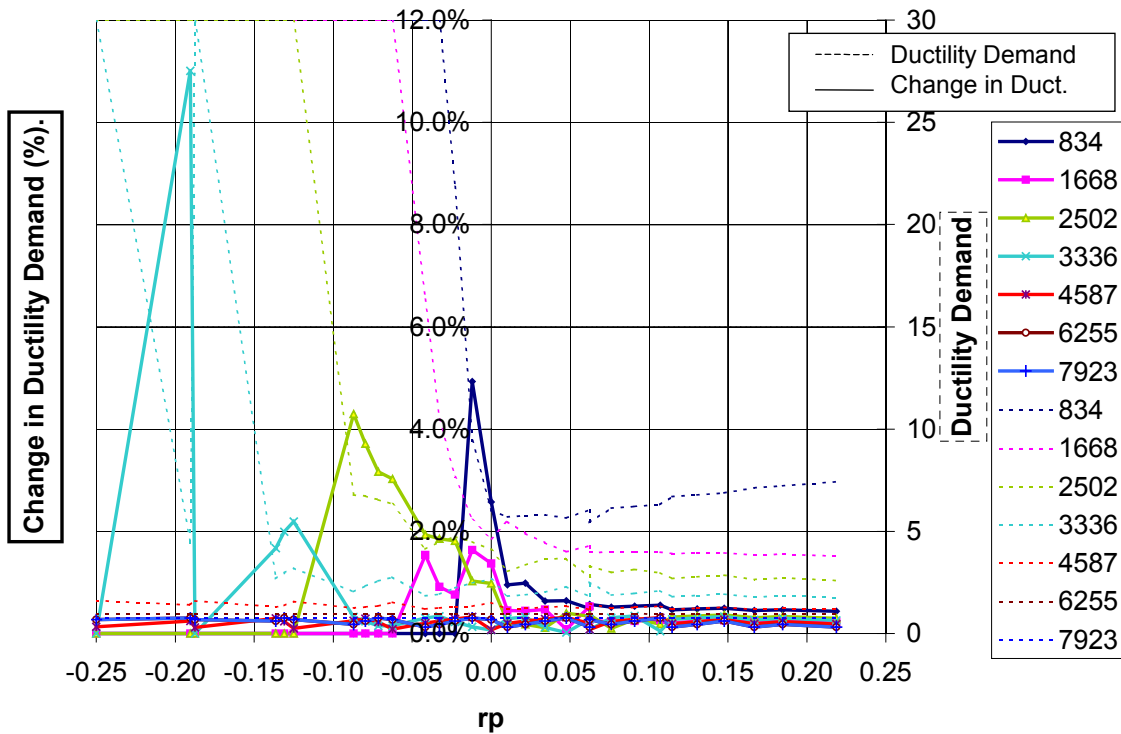


Figure C2.5.4.2b– EQ4, Lateral Scale = 0.2 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.093 Seconds



**Figure C2.5.4.2c– EQ4, Lateral Scale = 0.2 g, Vertical Multiplier = 2.0, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.093 Seconds**



**Figure C2.5.4.2d– EQ4, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.093 Seconds**

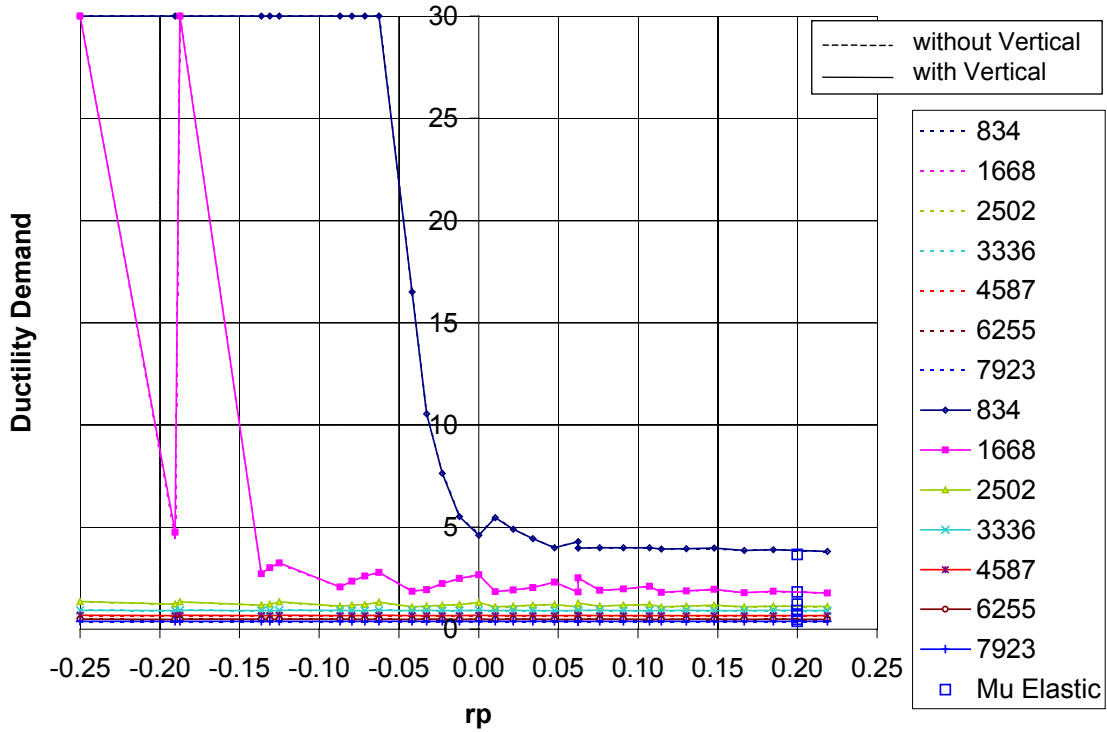


Figure C2.5.4.3a – EQ4, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.093 Seconds.

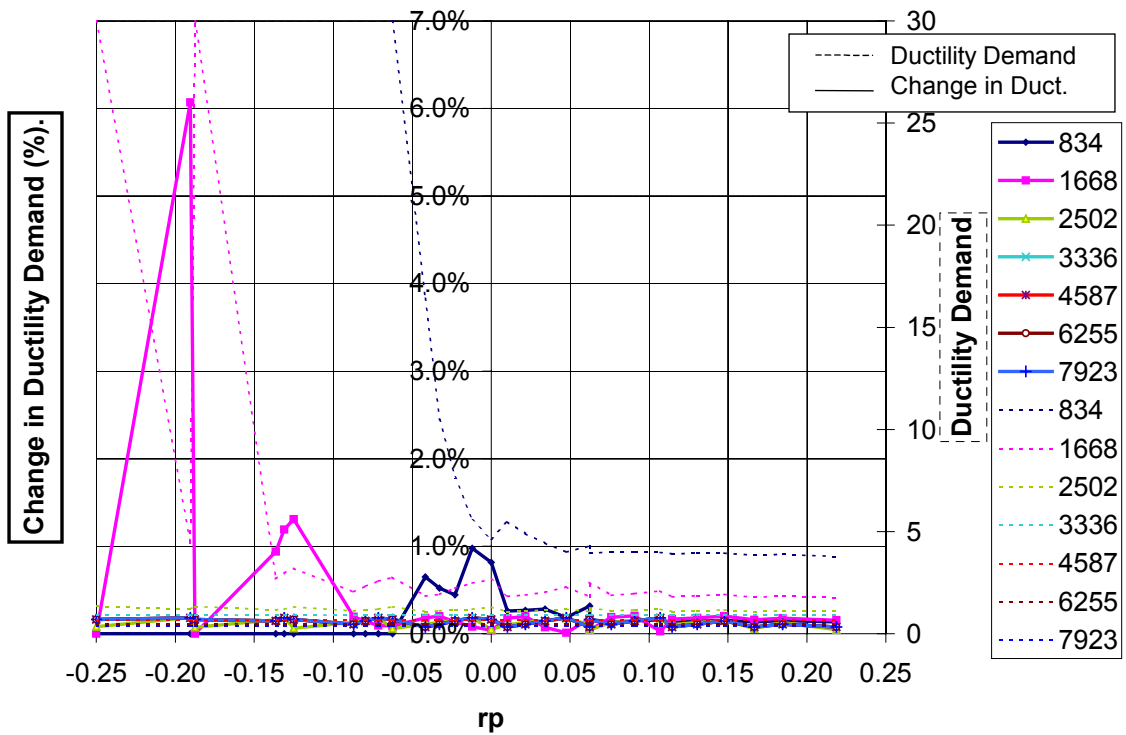


Figure C2.5.4.3b– EQ4, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.093 Seconds

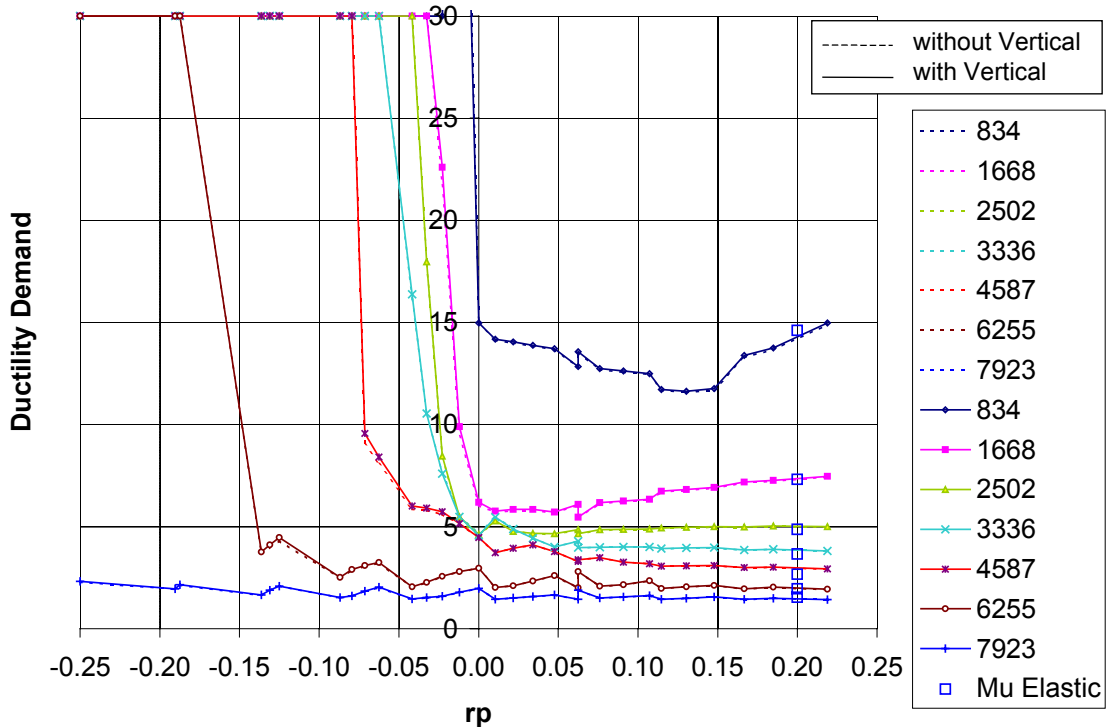


Figure C2.5.4.4a – EQ4, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.093 Seconds.

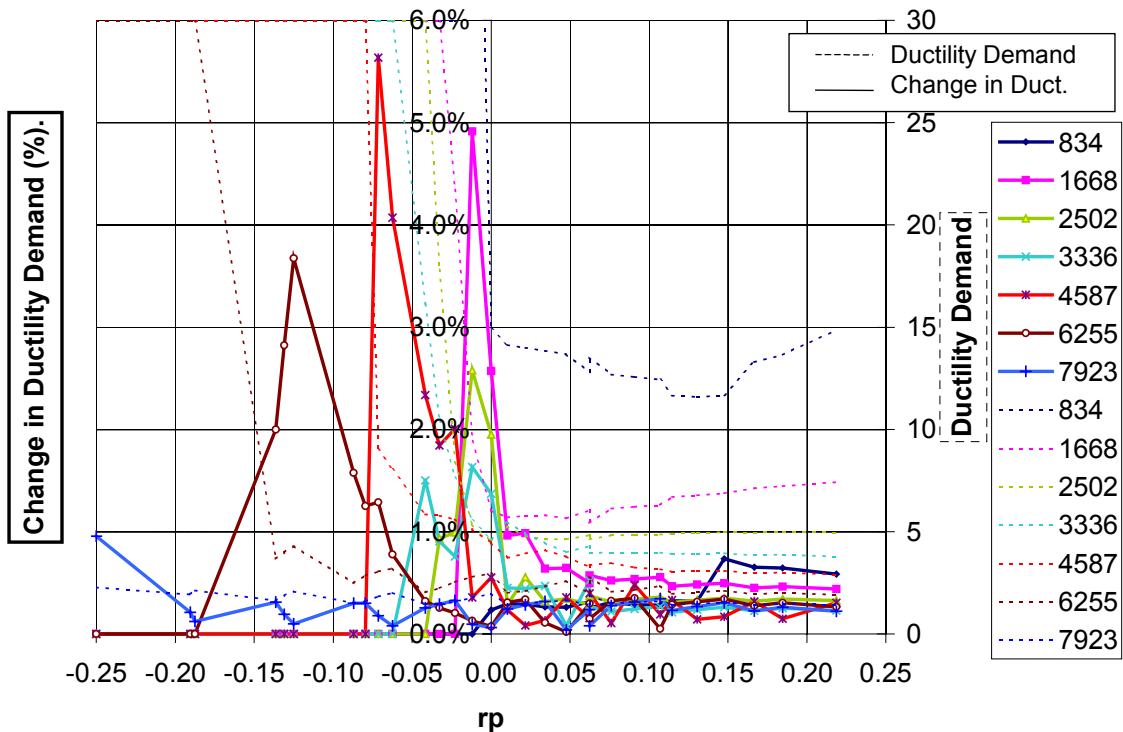


Figure C2.5.4.4b– EQ4, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.093 Seconds.

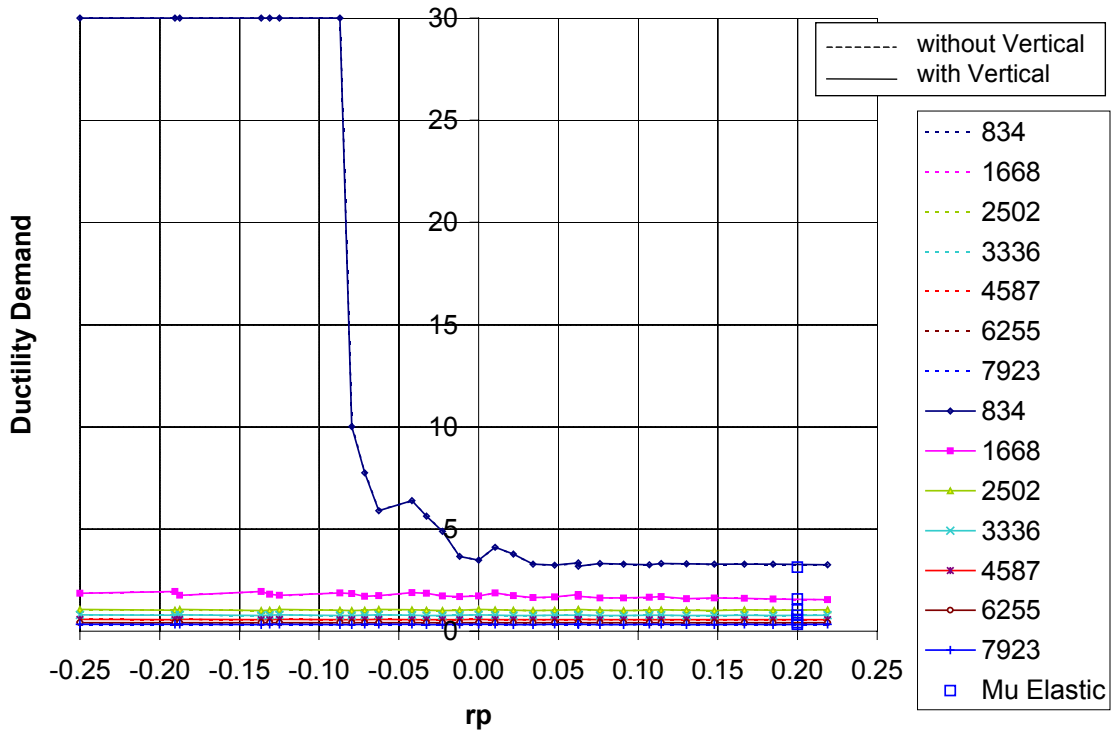


Figure C2.6.4.1a – EQ4, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.278 Seconds.

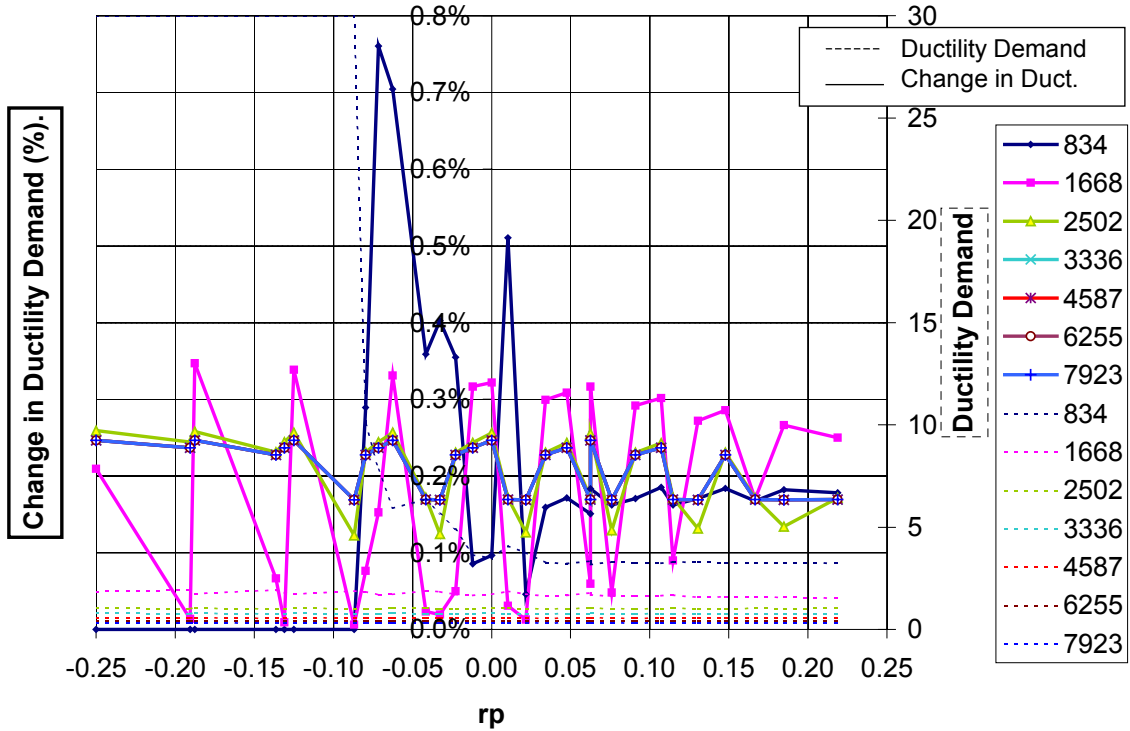


Figure C2.6.4.1b– EQ4, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.278 Seconds

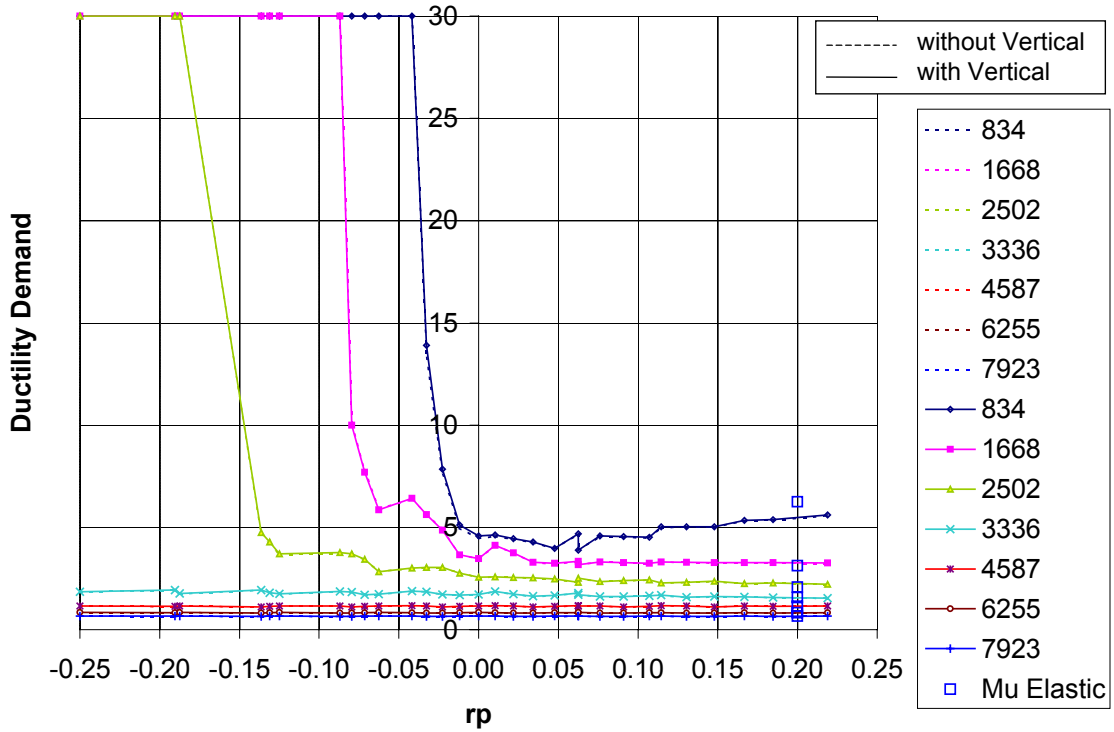


Figure C2.6.4.2a – EQ4, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.278 Seconds.

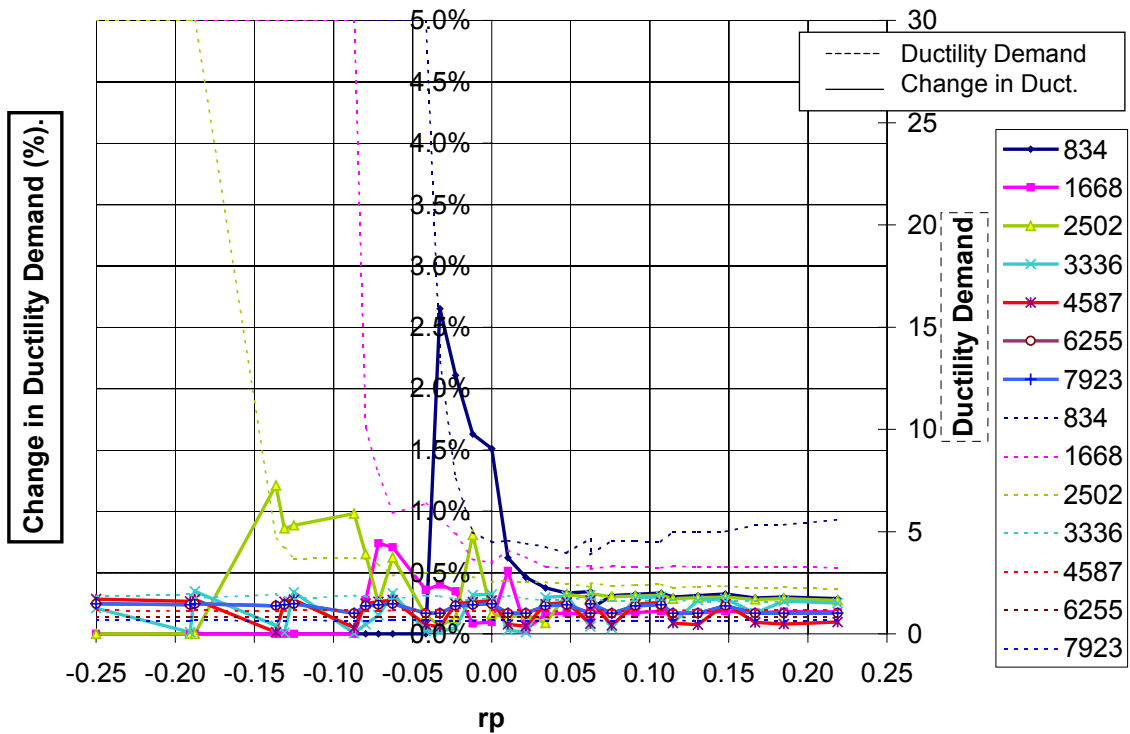
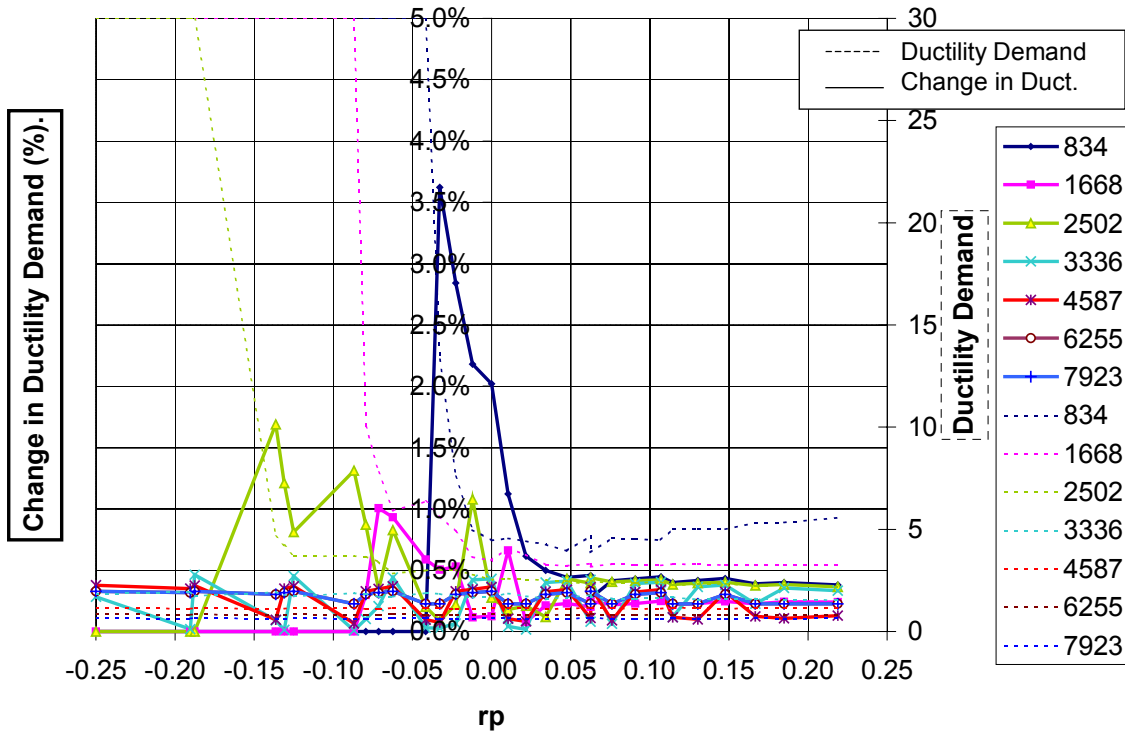
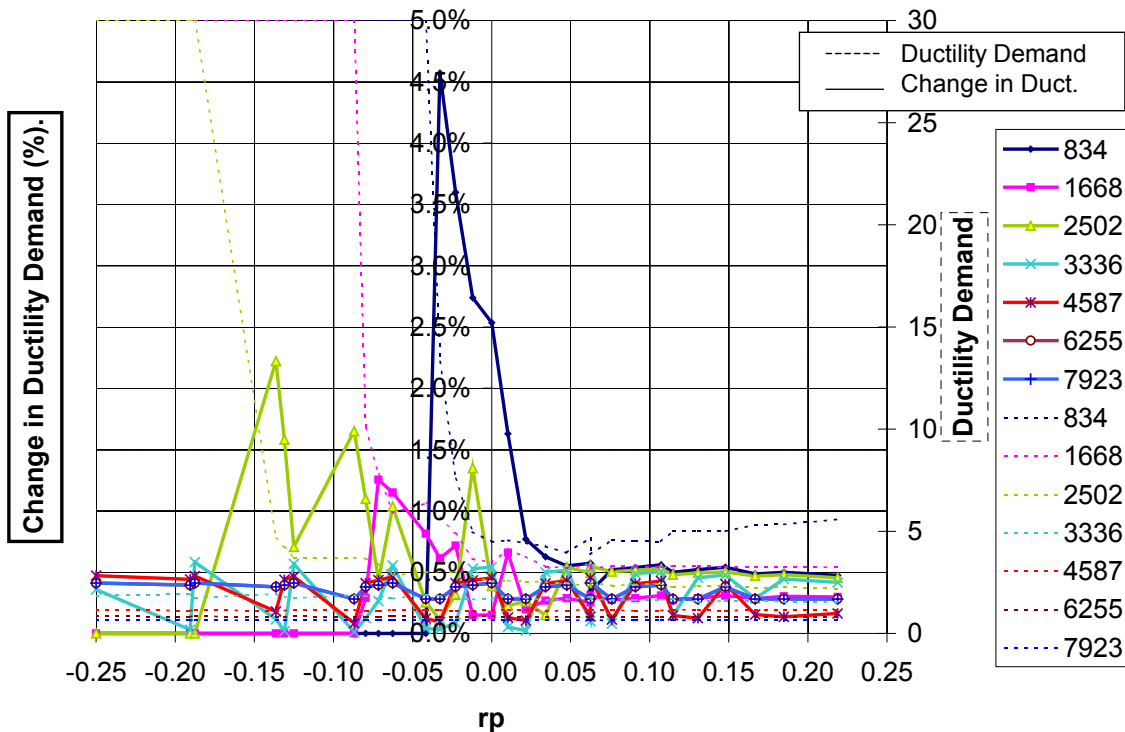


Figure C2.6.4.2b– EQ4, Lateral Scale = 0.2 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.278 Seconds



**Figure C2.6.4.2c– EQ4, Lateral Scale = 0.2 g, Vertical Multiplier = 2.0, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.278 Seconds**



**Figure C2.6.4.2d– EQ4, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.278 Seconds**

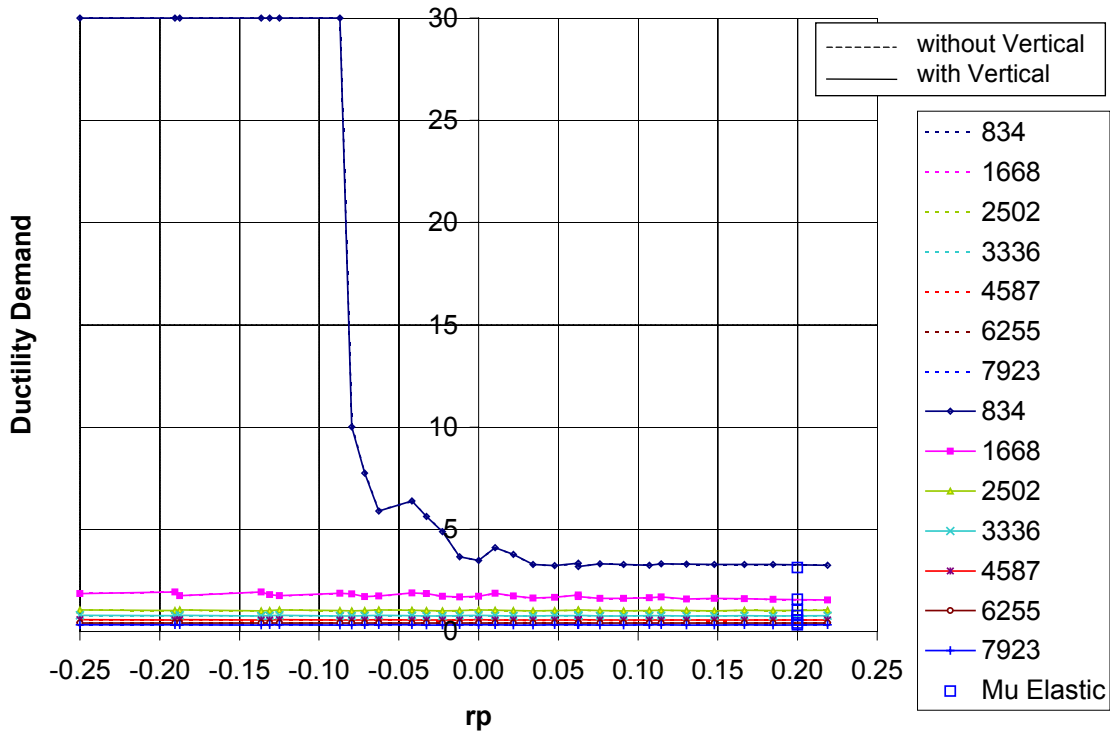


Figure C2.6.4.3a – EQ4, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.278 Seconds.

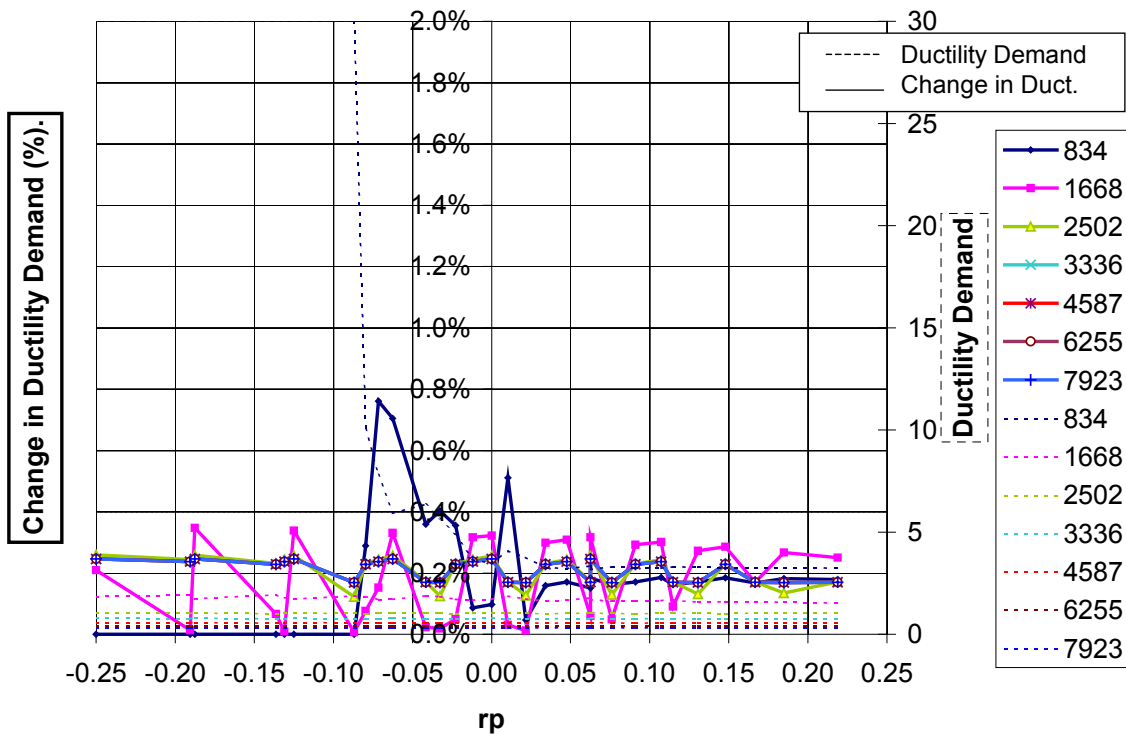


Figure C2.6.4.3b– EQ4, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.278 Seconds

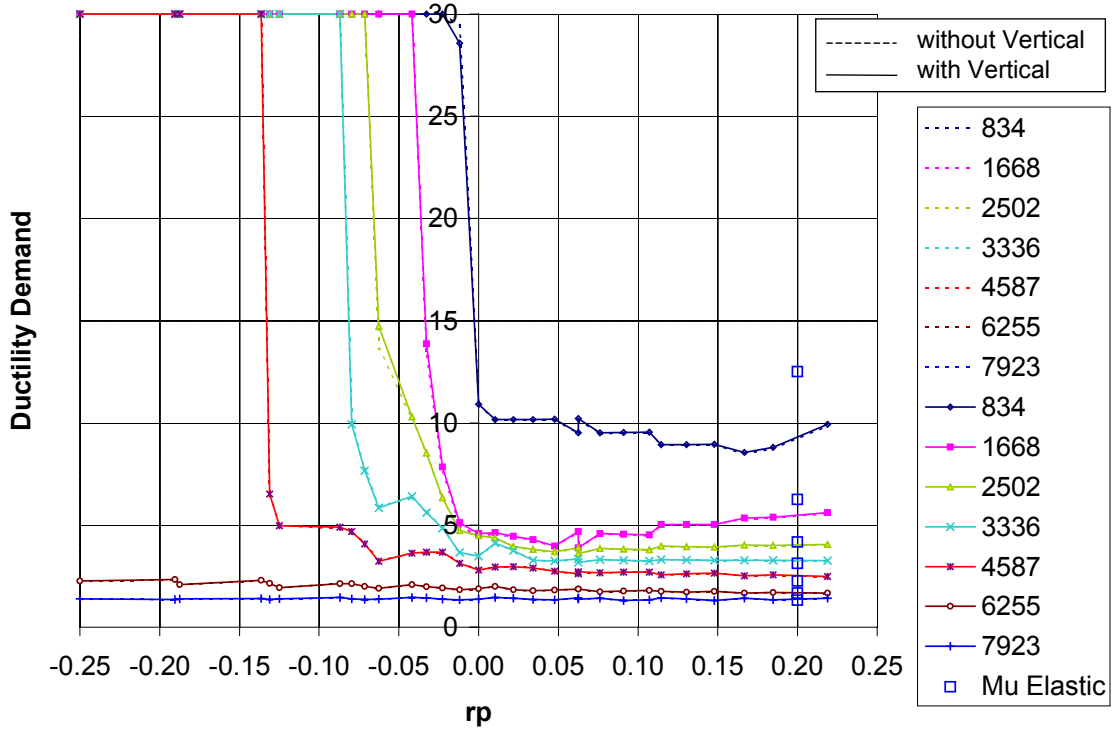


Figure C2.6.4.4a – EQ4, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.093 Seconds.

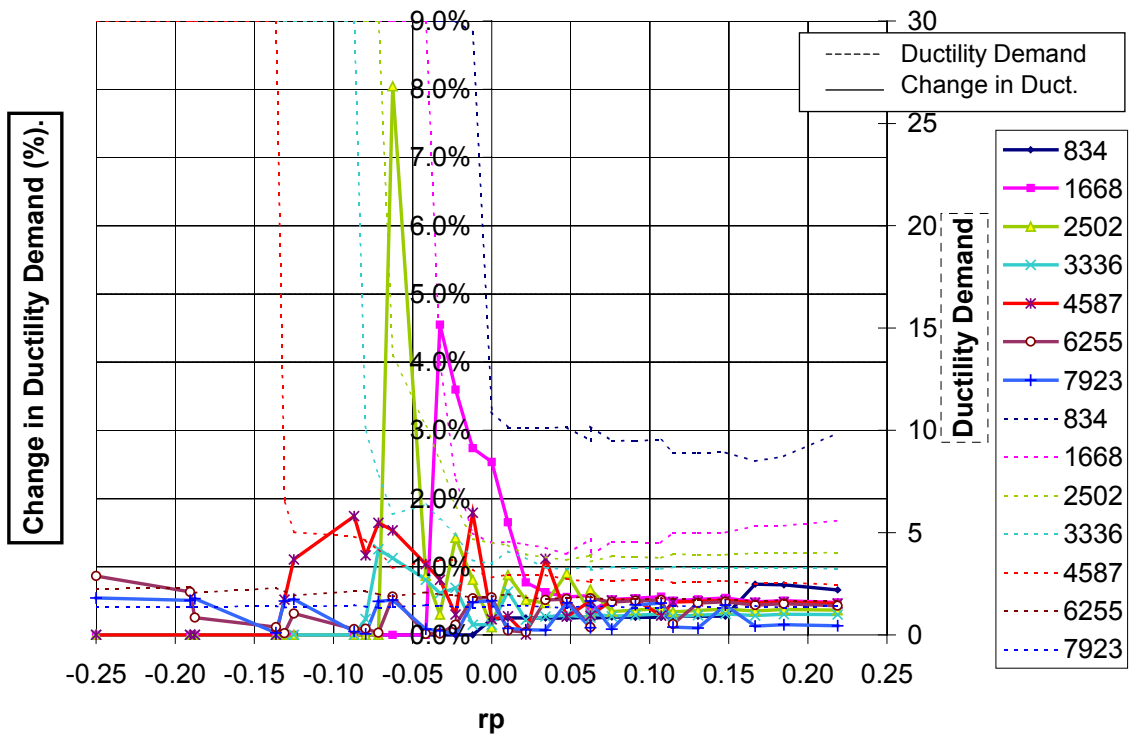
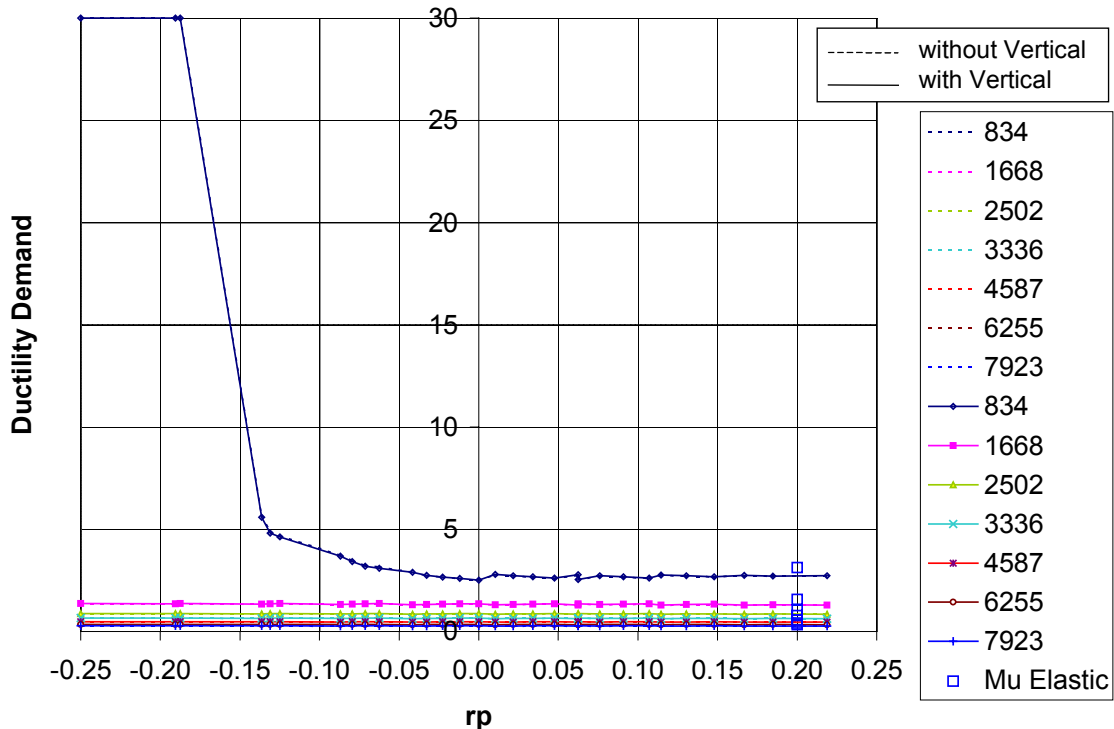
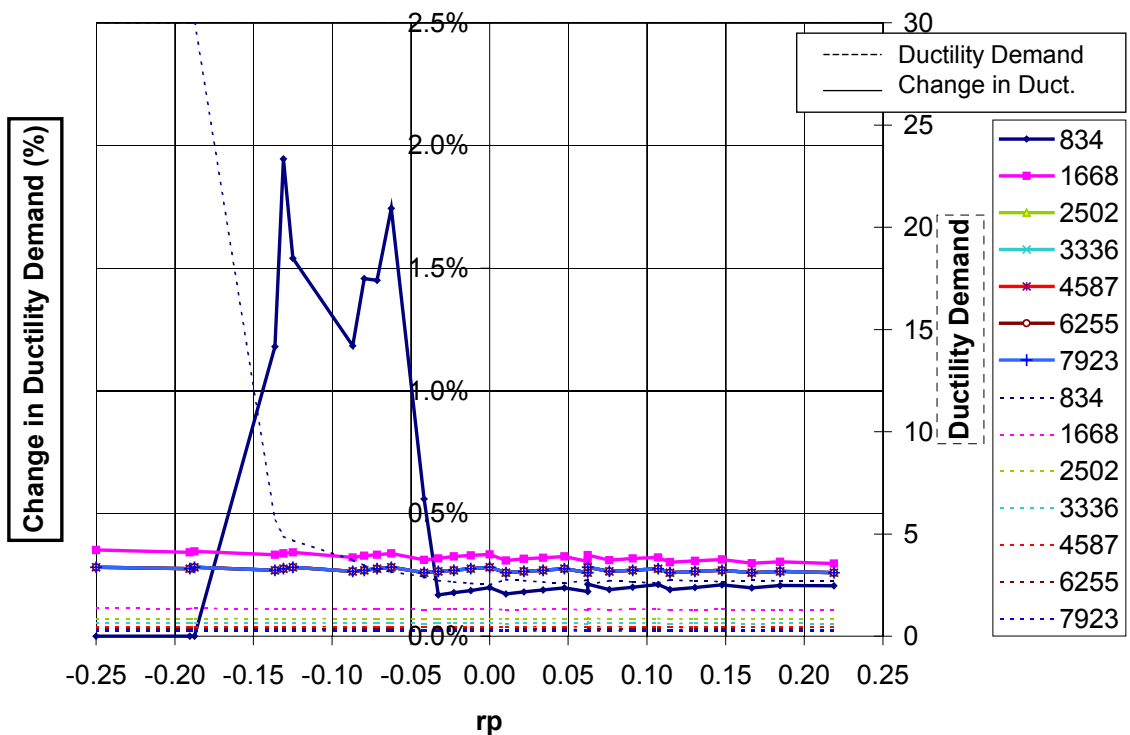


Figure C2.6.4.4b– EQ4, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.093 Seconds.



**Figure C2.7.4.1a – EQ4, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.459 Seconds.**



**Figure C2.7.4.1b– EQ4, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.459 Seconds**

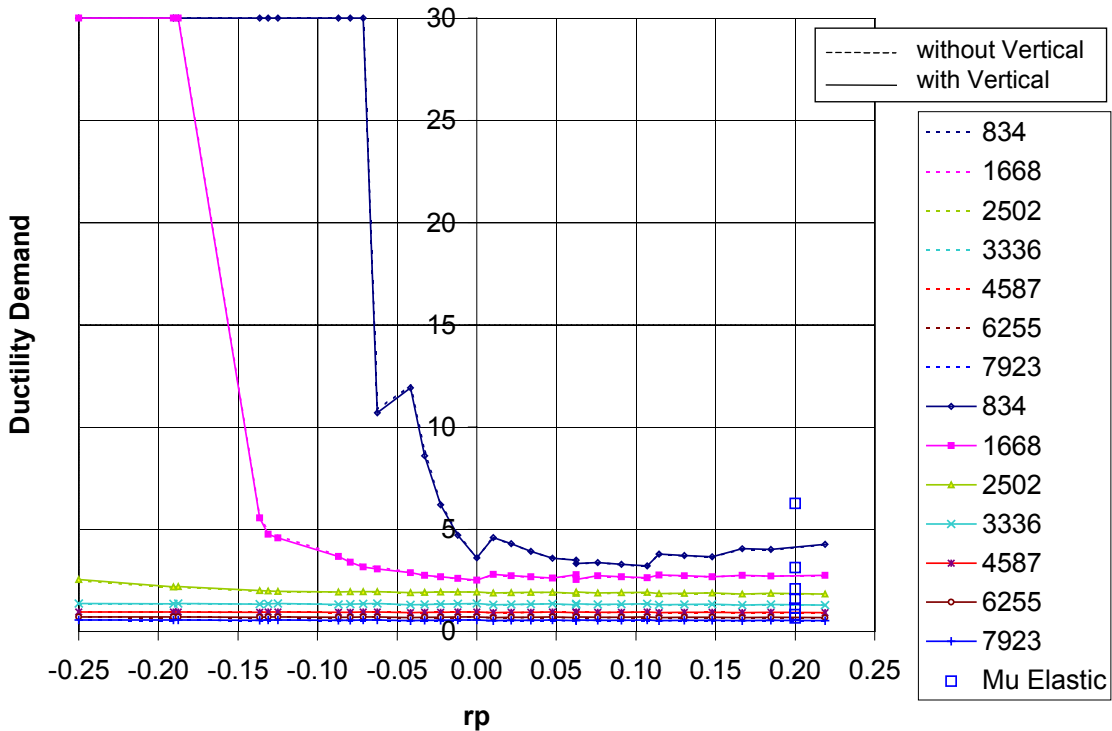


Figure C2.7.4.2a – EQ4, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.459 Seconds.

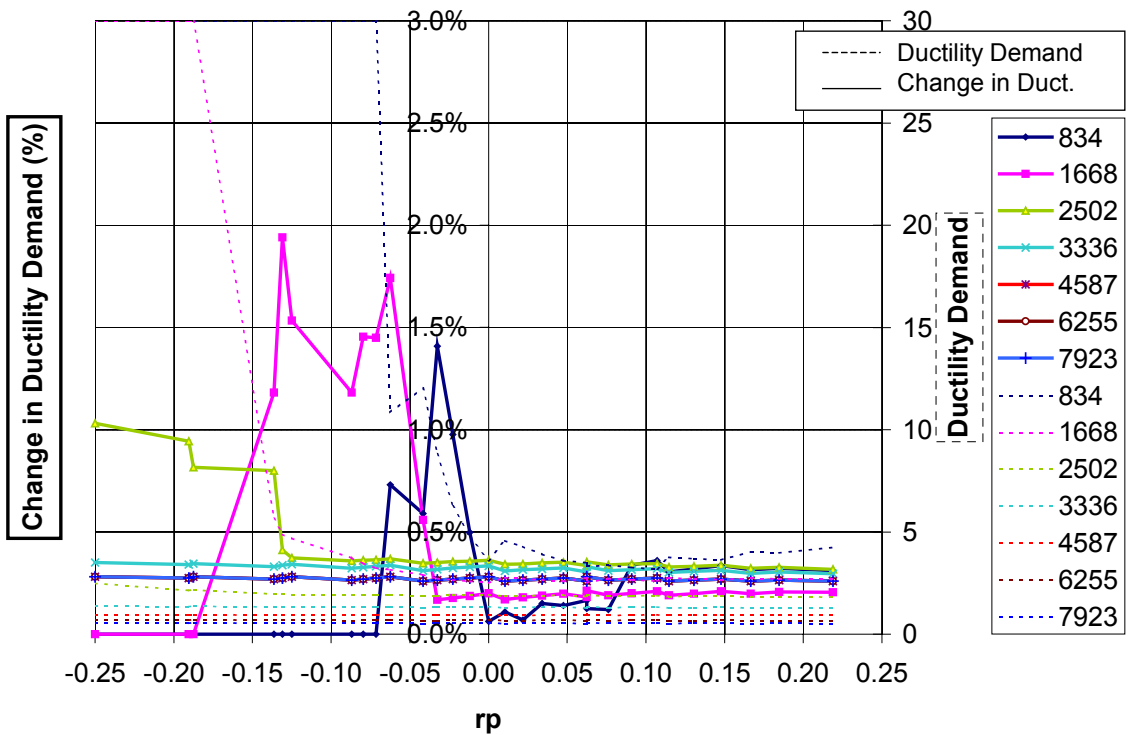


Figure C2.7.4.2b– EQ4, Lateral Scale = 0.2 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.459 Seconds

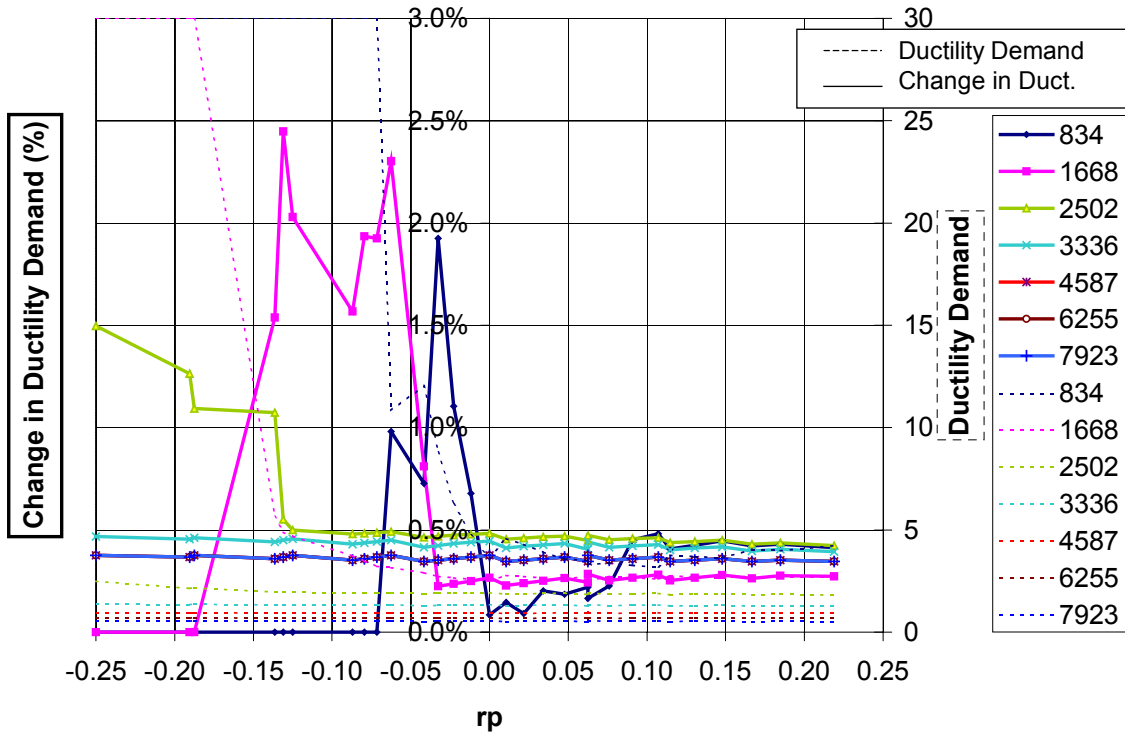


Figure C2.7.4.2c– EQ4, Lateral Scale = 0.2 g, Vertical Multiplier = 2.0, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.459 Seconds

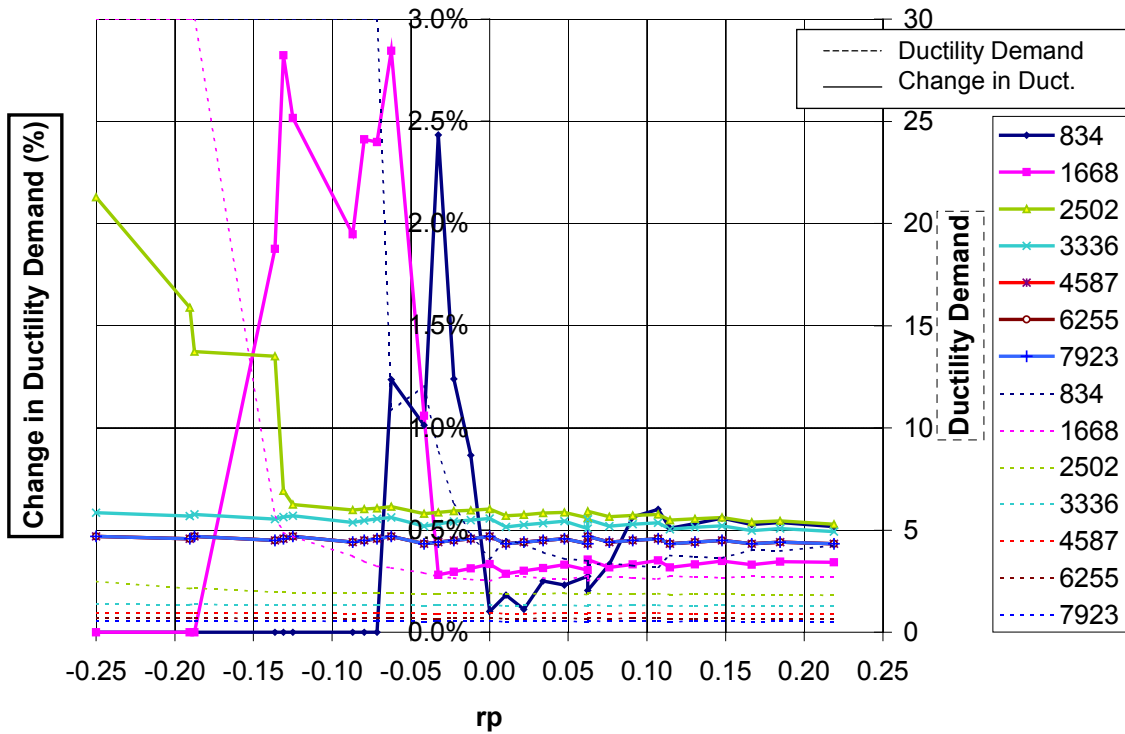


Figure C2.7.4.2d– EQ4, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.459 Seconds

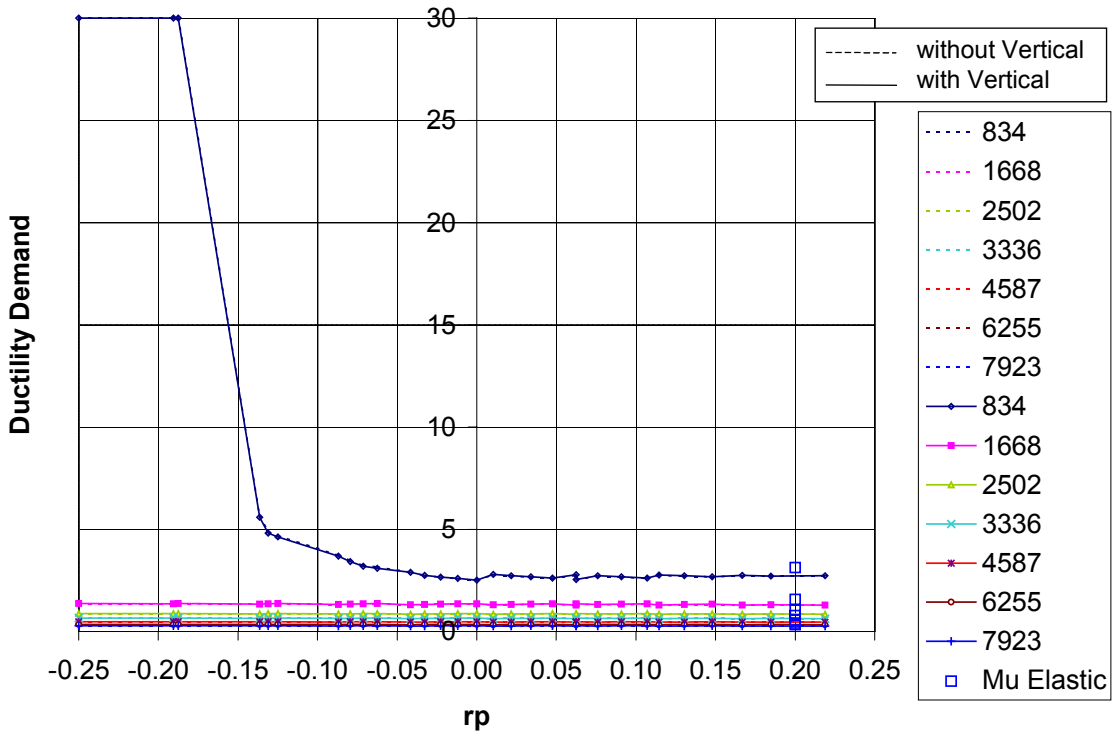


Figure C2.7.4.3a – EQ4, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.459 Seconds.

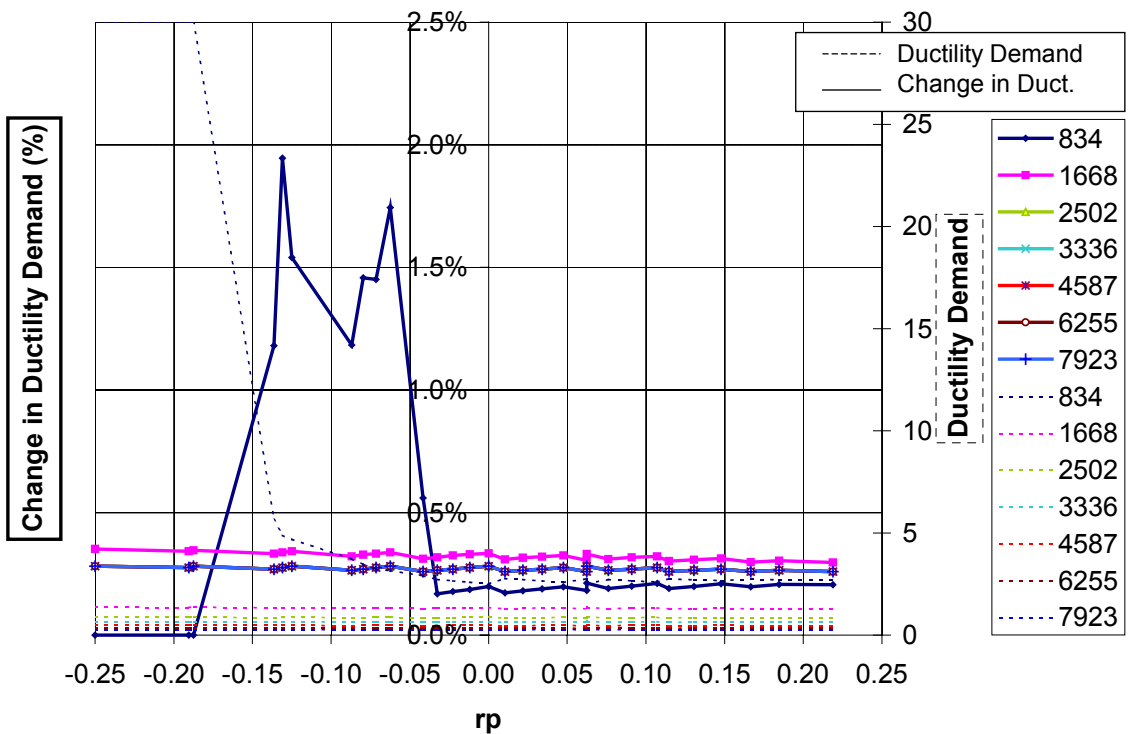


Figure C2.7.4.3b– EQ4, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.459 Seconds

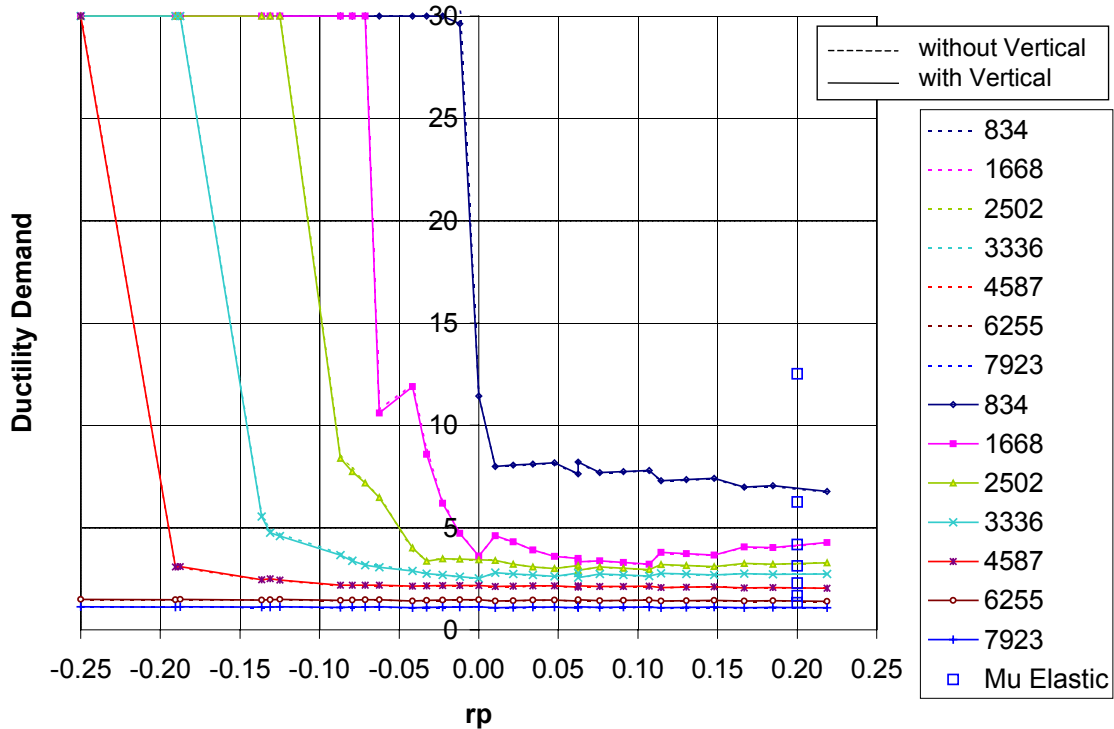


Figure C2.7.4.4a – EQ4, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.459 Seconds.

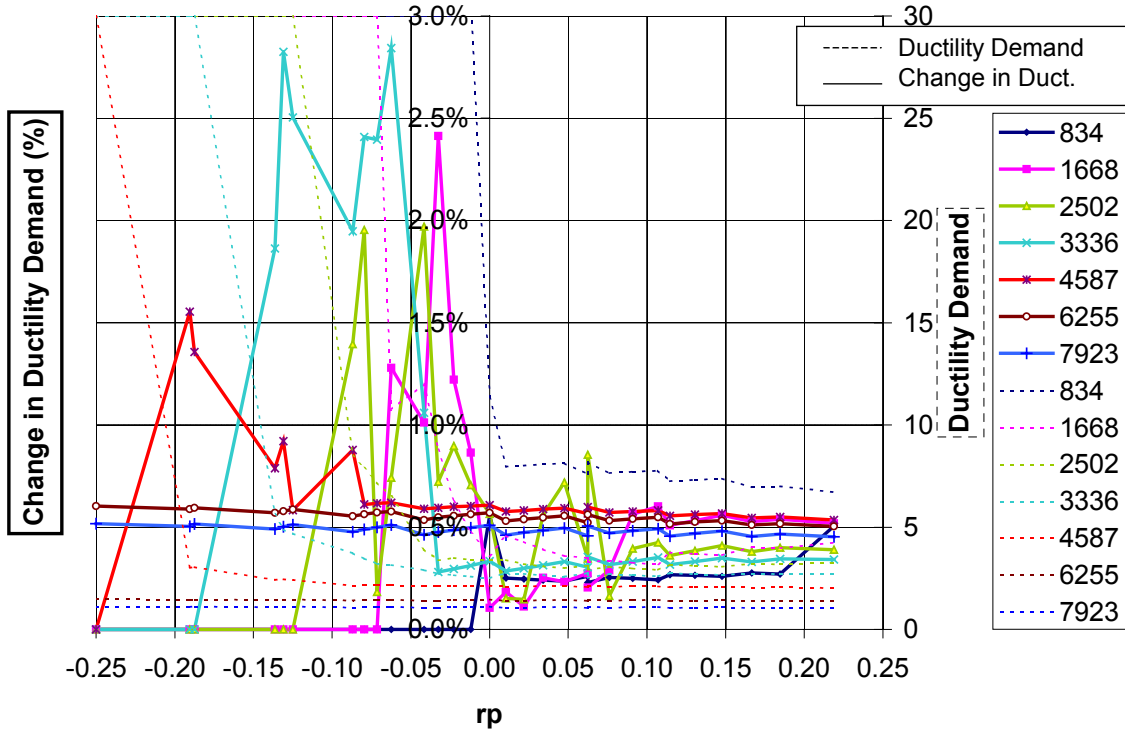


Figure C2.7.4.4b– EQ4, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.459 Seconds

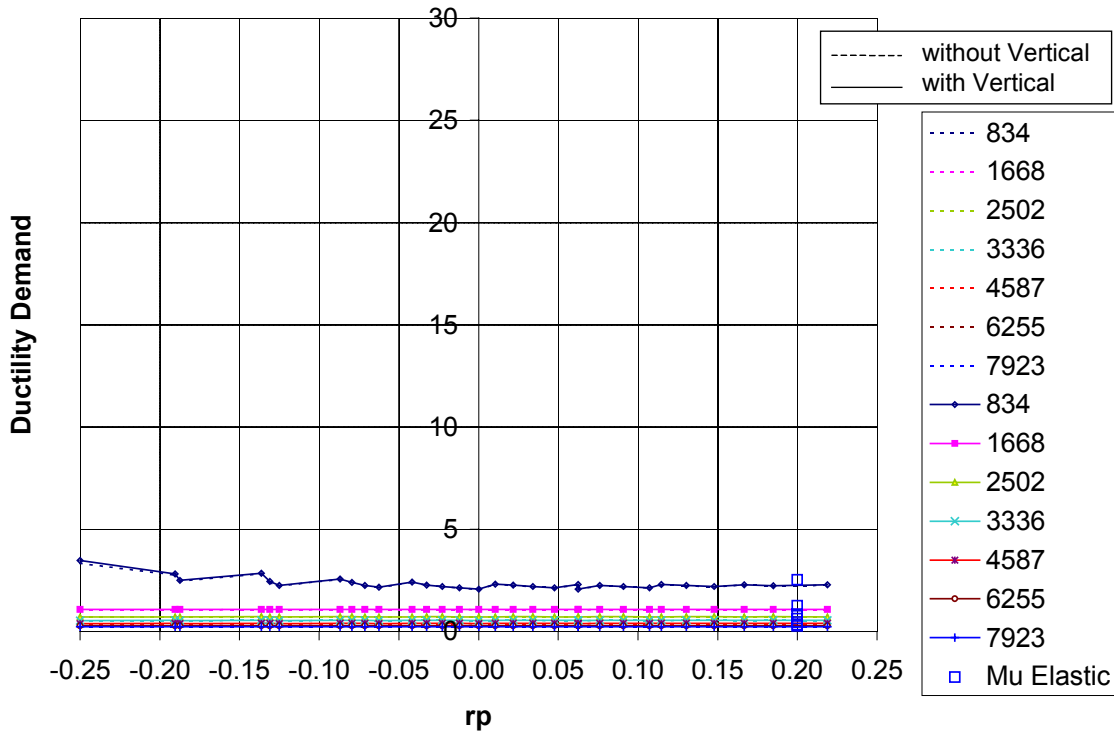


Figure C2.8.4.1a – EQ4, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.635 Seconds.

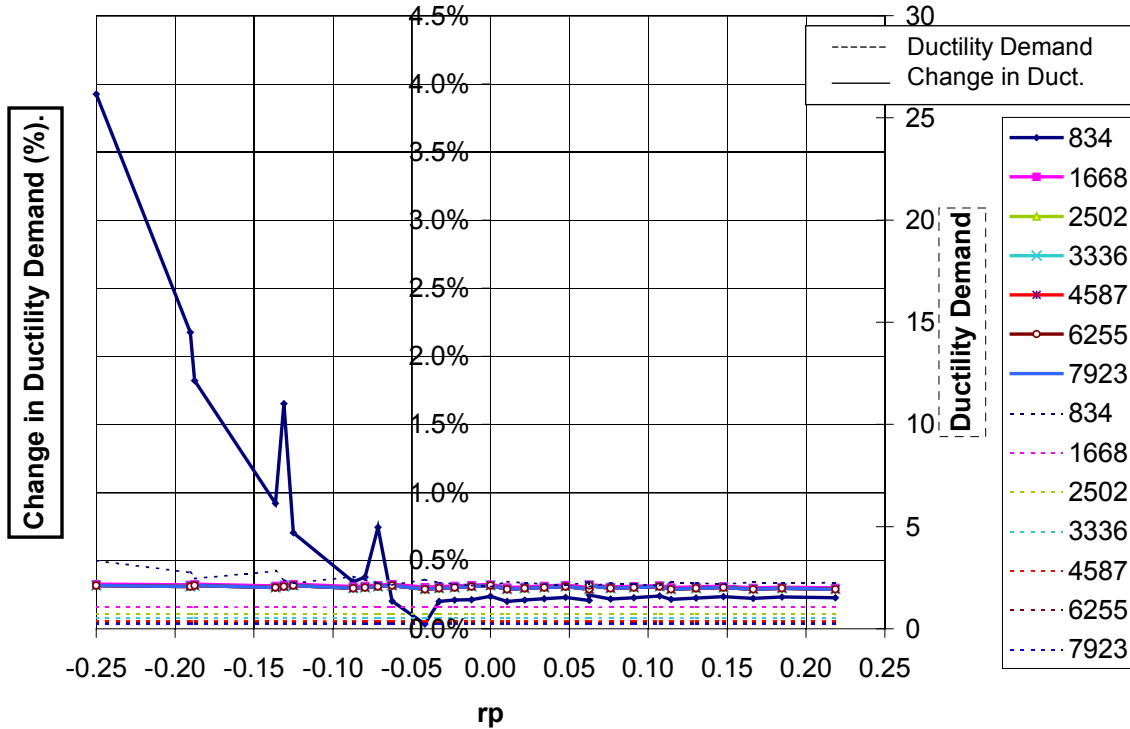


Figure C2.8.4.1b– EQ4, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.635 Seconds

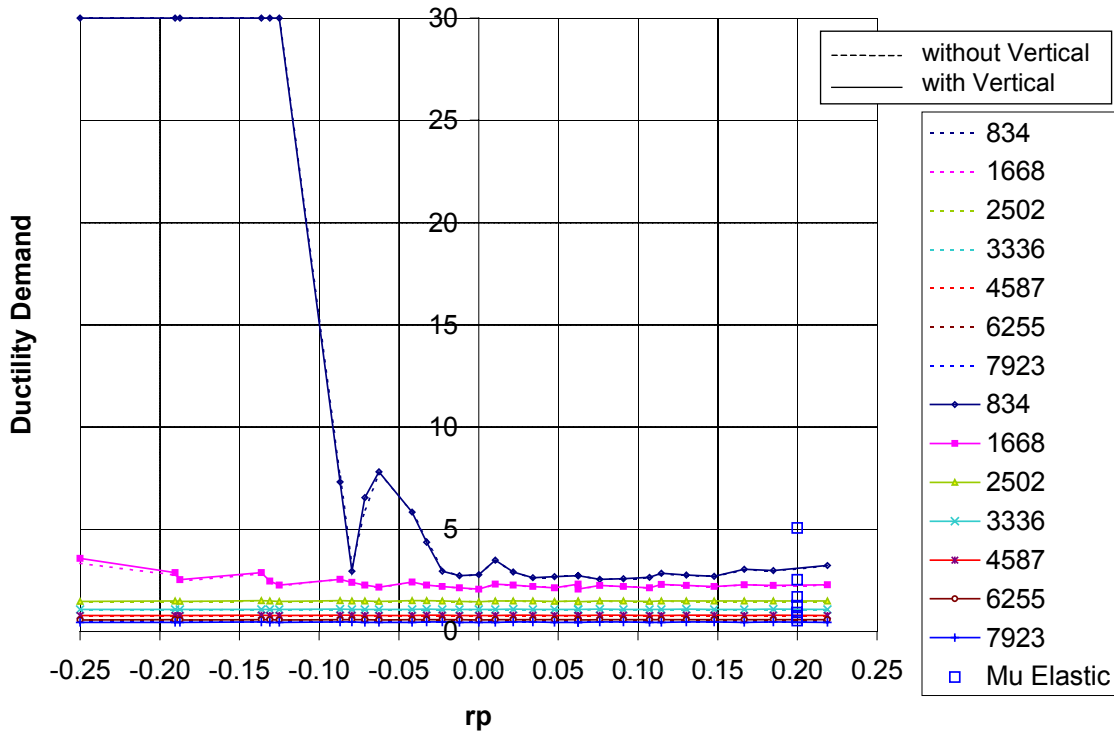


Figure C2.8.4.2a – EQ4, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.635 Seconds.

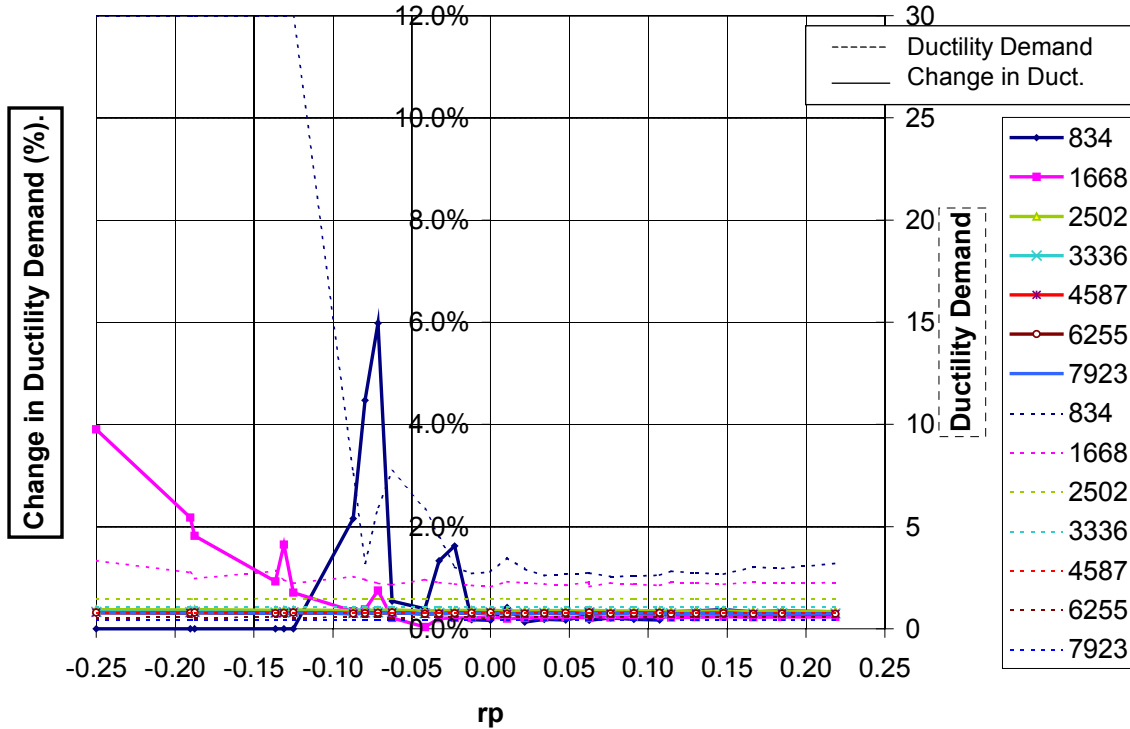
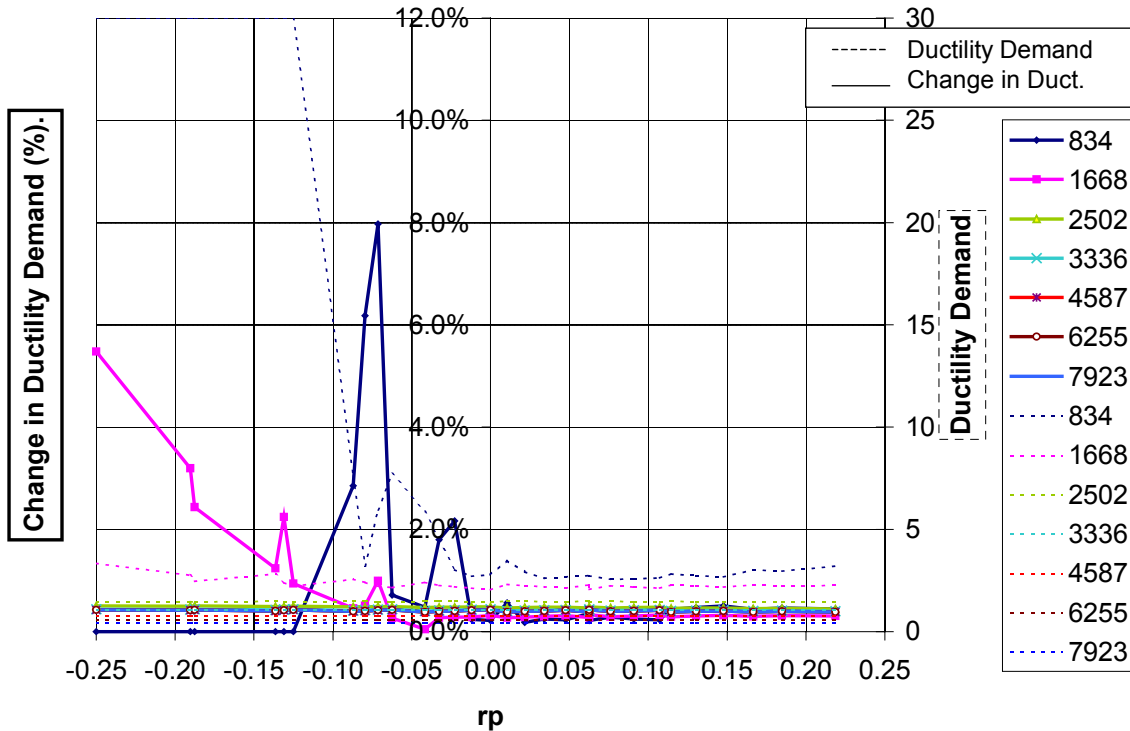
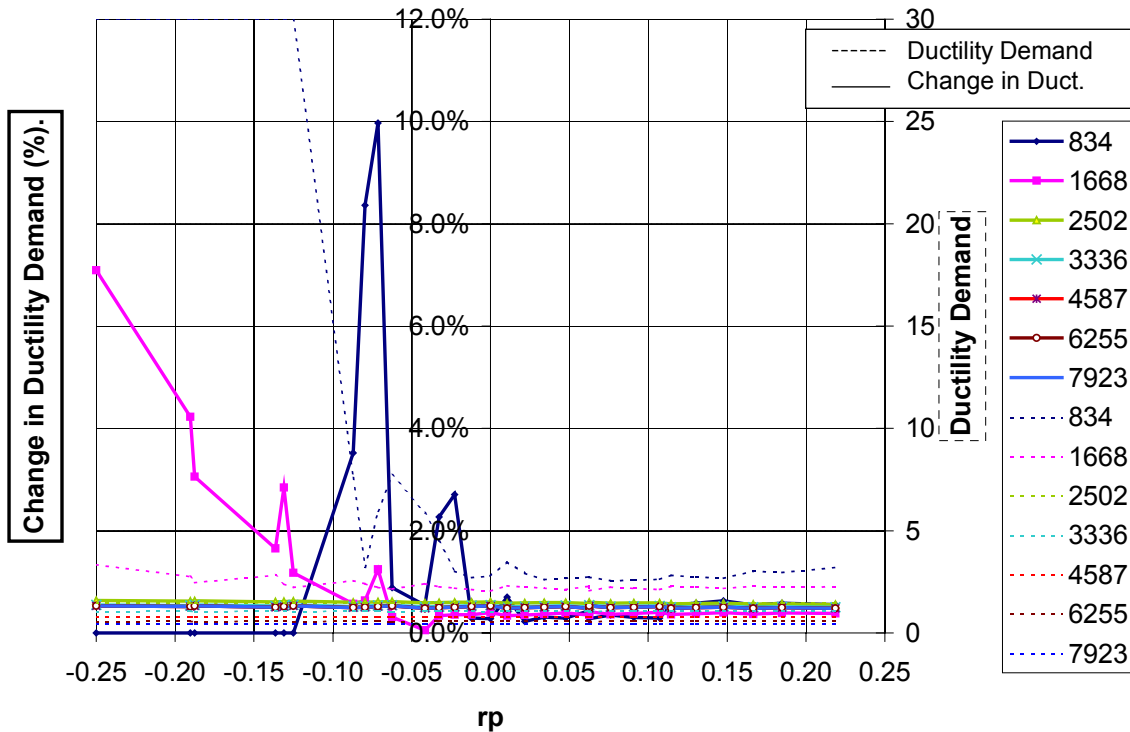


Figure C2.8.4.2b– EQ4, Lateral Scale = 0.2 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.635 Seconds



**Figure C2.8.4.2c– EQ4, Lateral Scale = 0.2 g, Vertical Multiplier = 2.0, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.635 Seconds**



**Figure C2.8.4.2d– EQ4, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.635 Seconds**

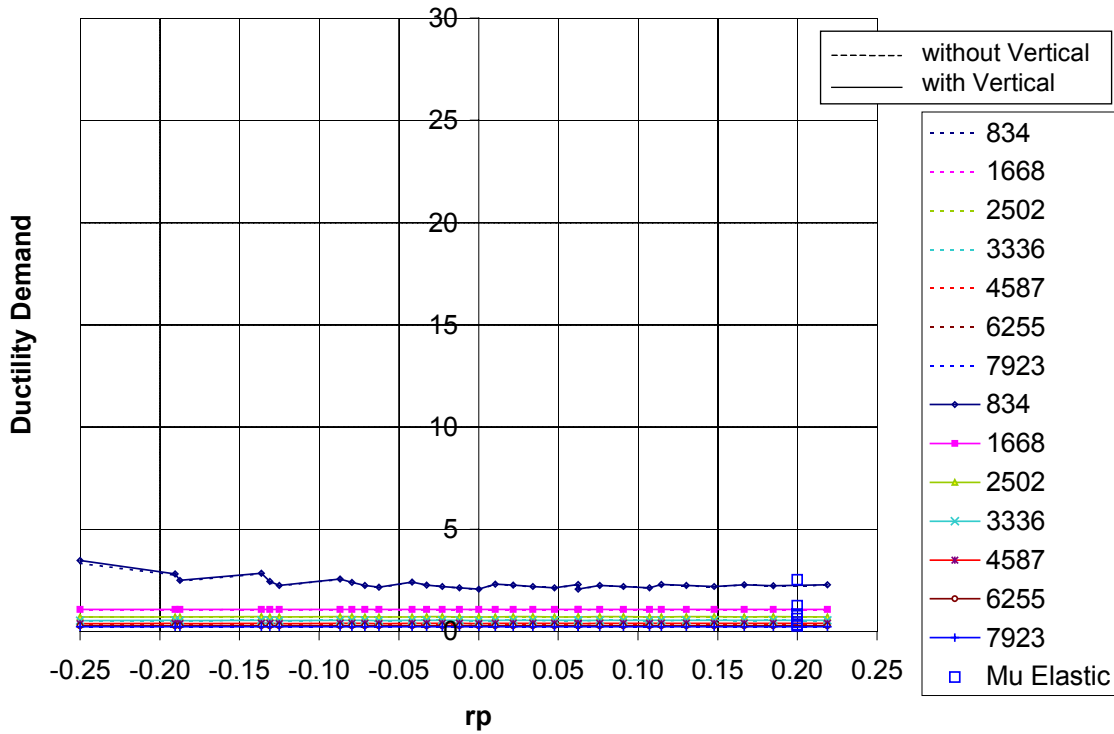


Figure C2.8.4.3a – EQ4, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.635 Seconds.

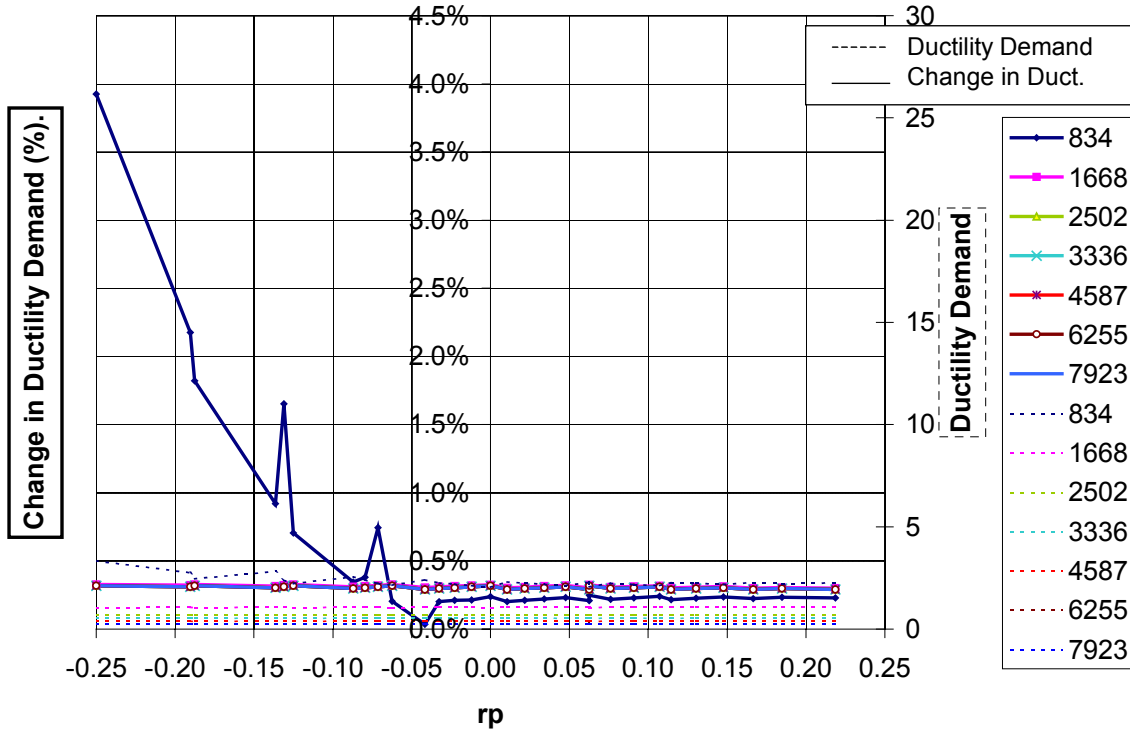


Figure C2.8.4.3b– EQ4, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.635 Seconds

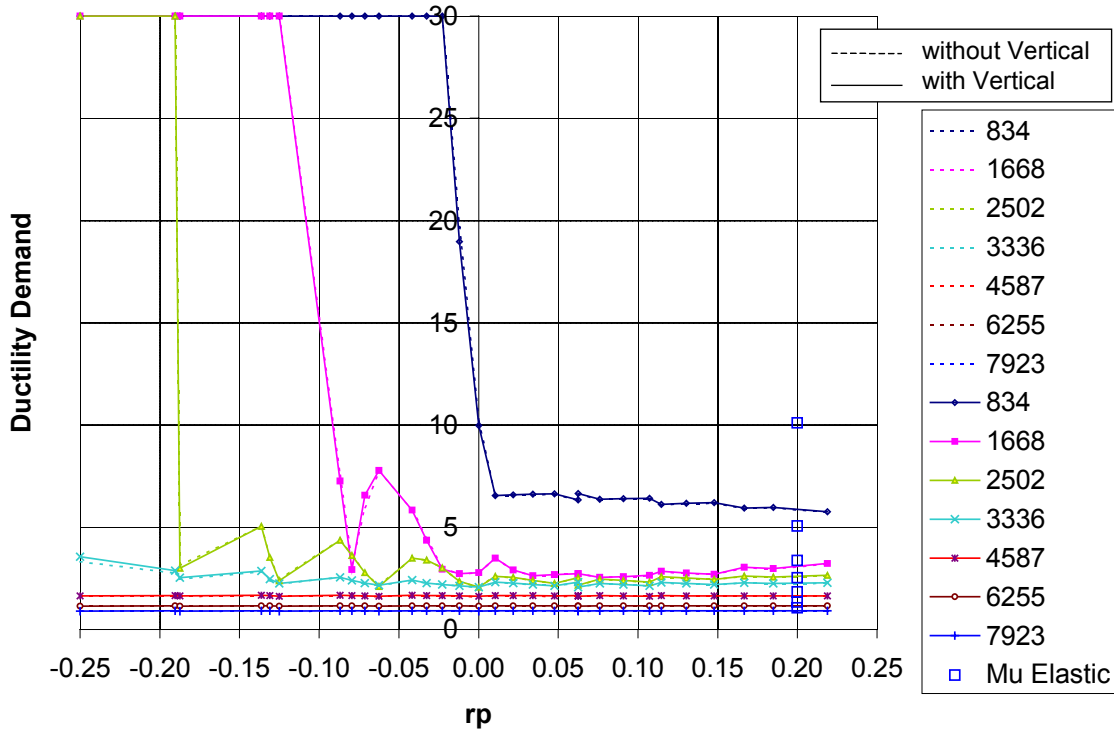


Figure C2.8.4.4a – EQ4, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.635 Seconds.

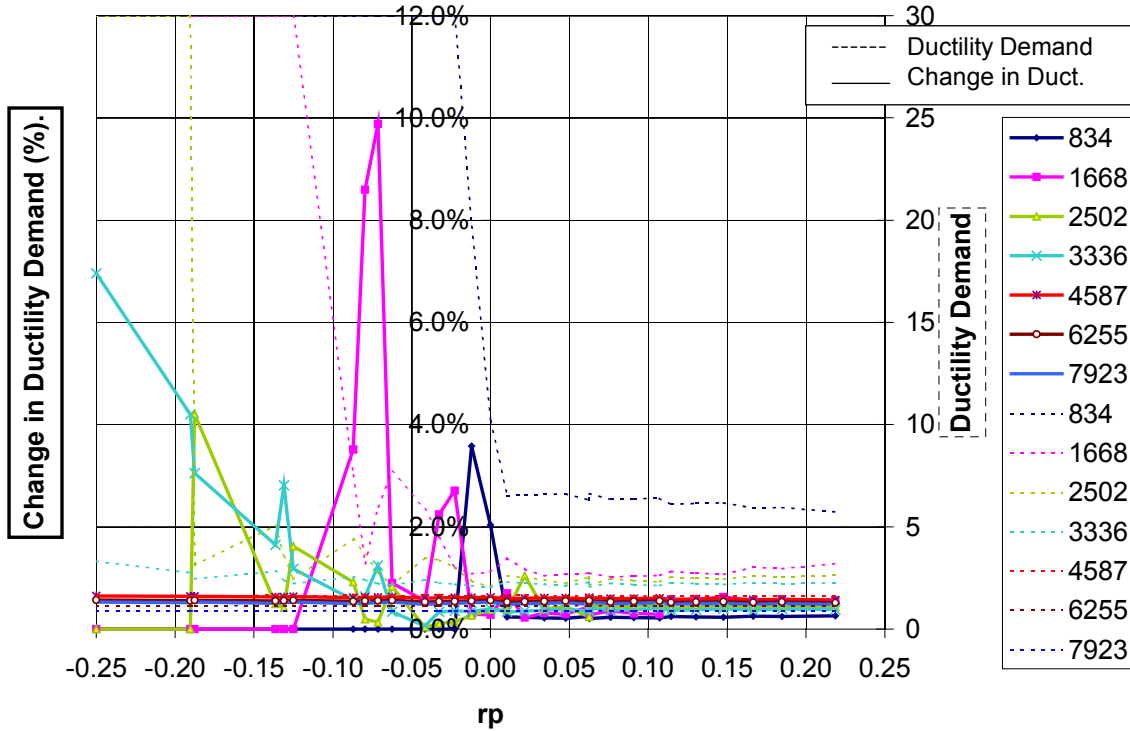


Figure C2.8.4.4b– EQ4, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.635 Seconds.

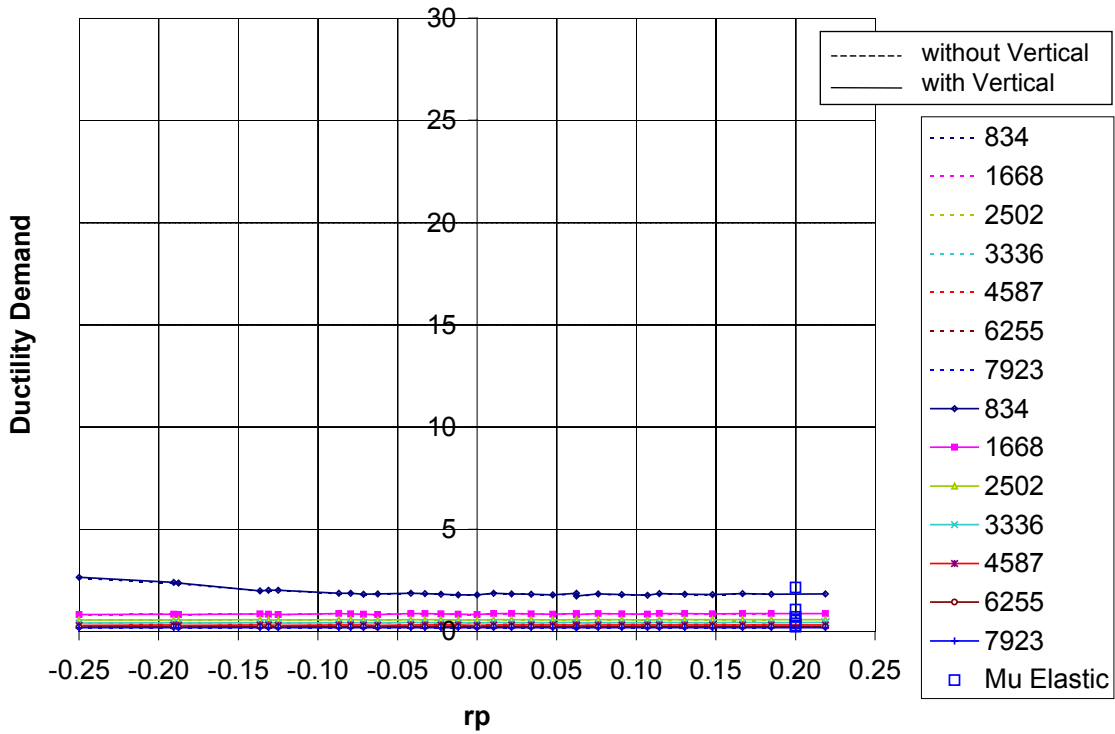


Figure C2.9.4.1a – EQ4, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.808 Seconds.

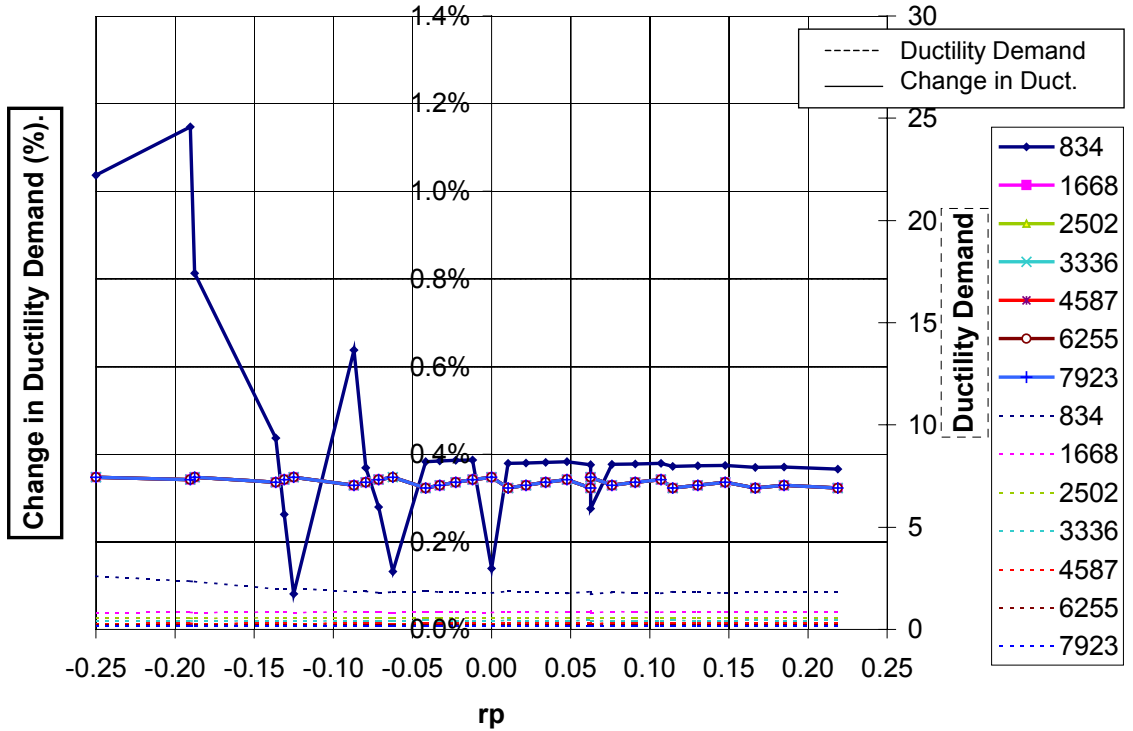


Figure C2.9.4.1b– EQ4, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.808 Seconds

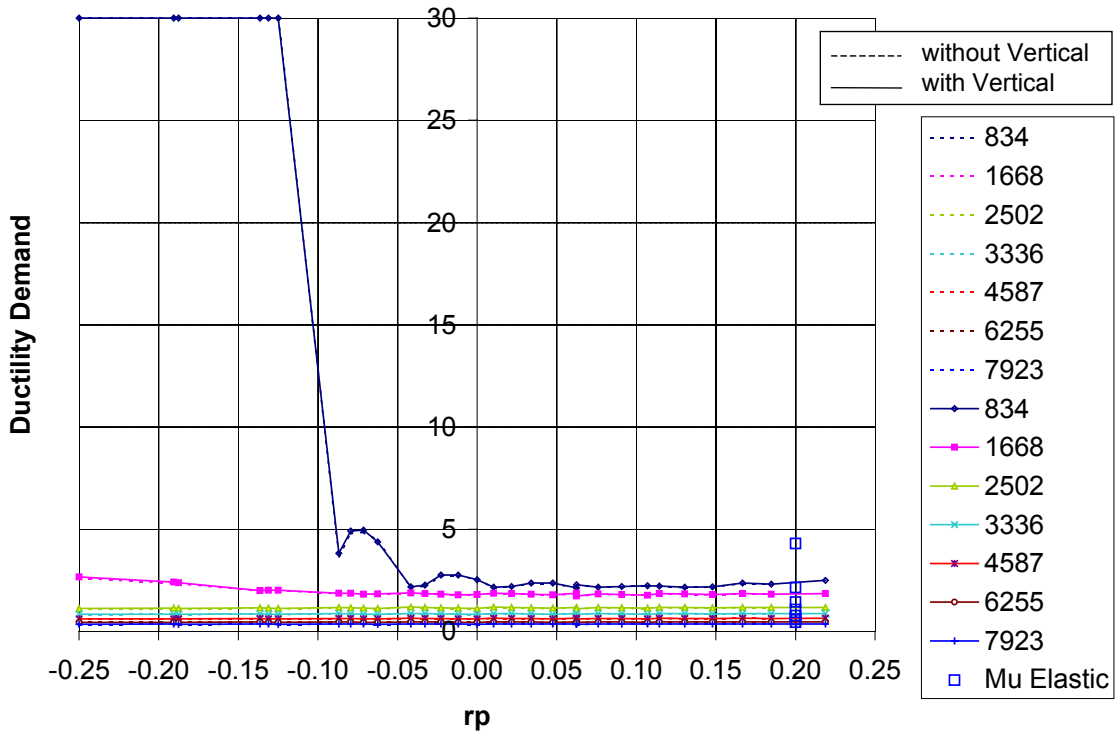


Figure C2.9.4.2a – EQ4, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.808 Seconds.

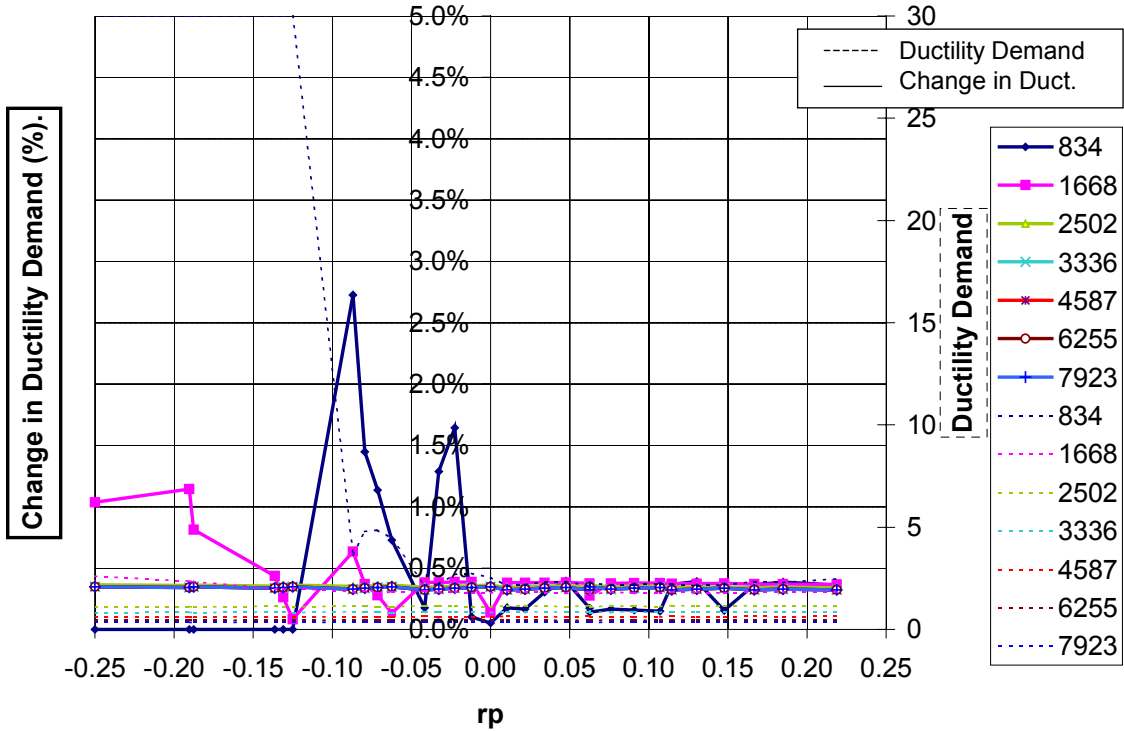
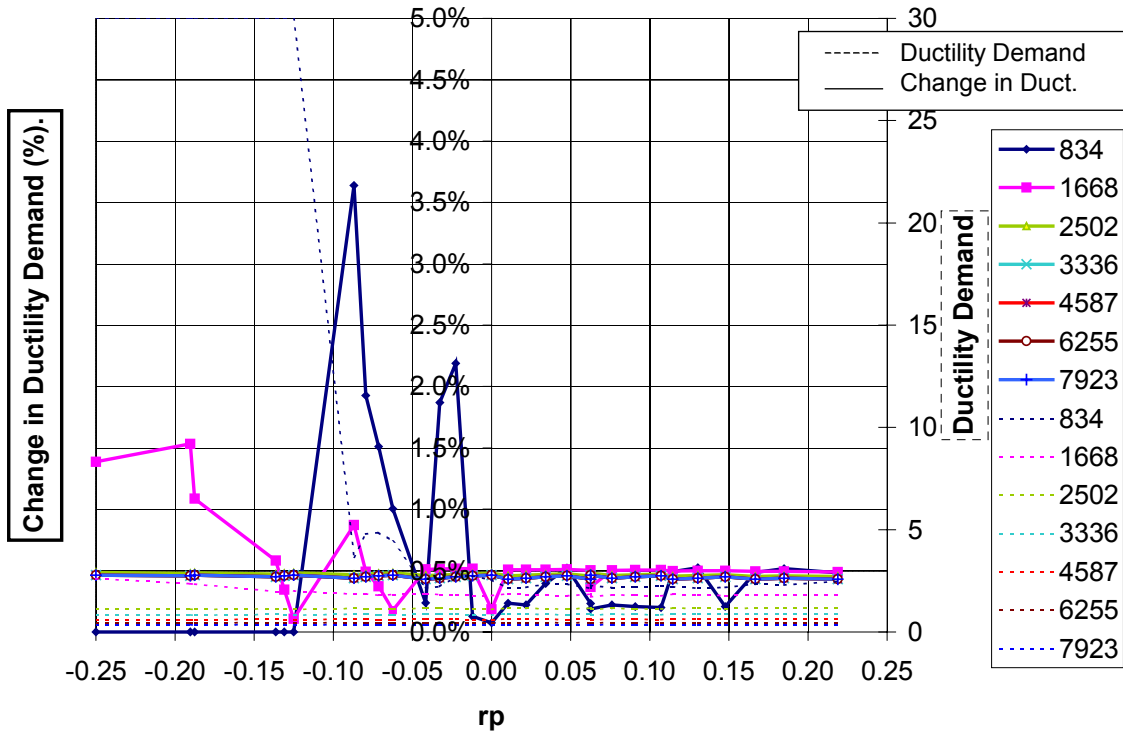
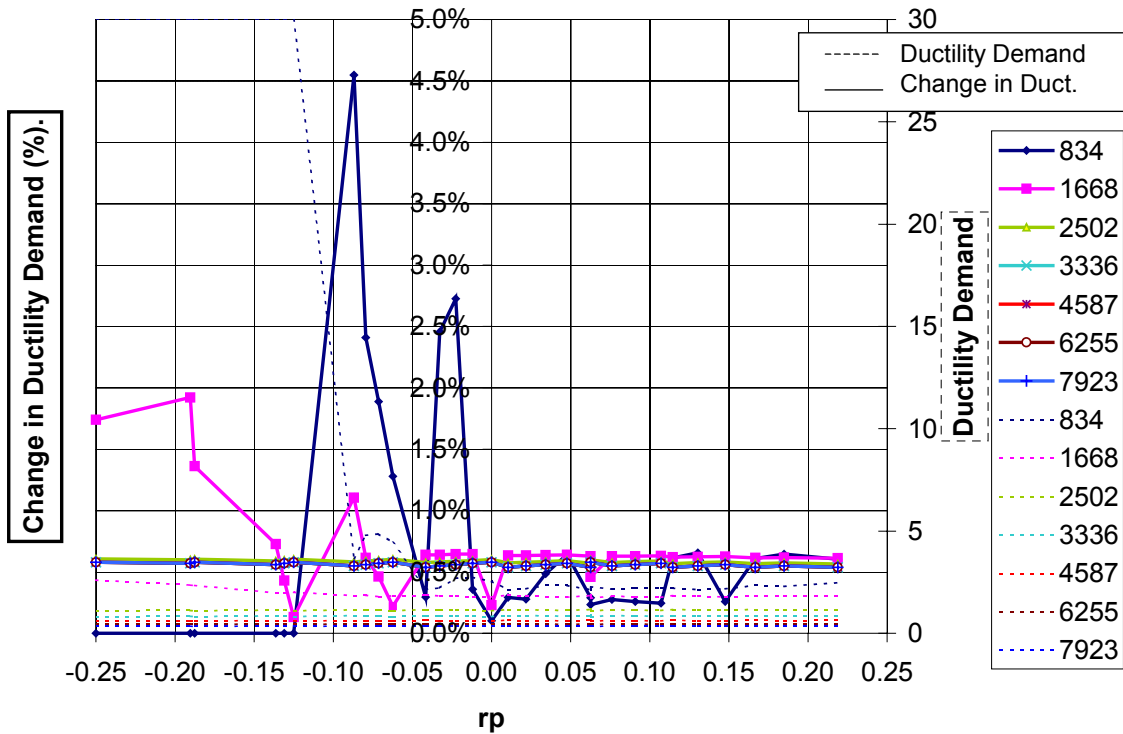


Figure C2.9.4.2b– EQ4, Lateral Scale = 0.2 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.808 Seconds



**Figure C2.9.4.2c– EQ4, Lateral Scale = 0.2 g, Vertical Multiplier = 2.0, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.808 Seconds**



**Figure C2.9.4.2d– EQ4, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.808 Seconds**

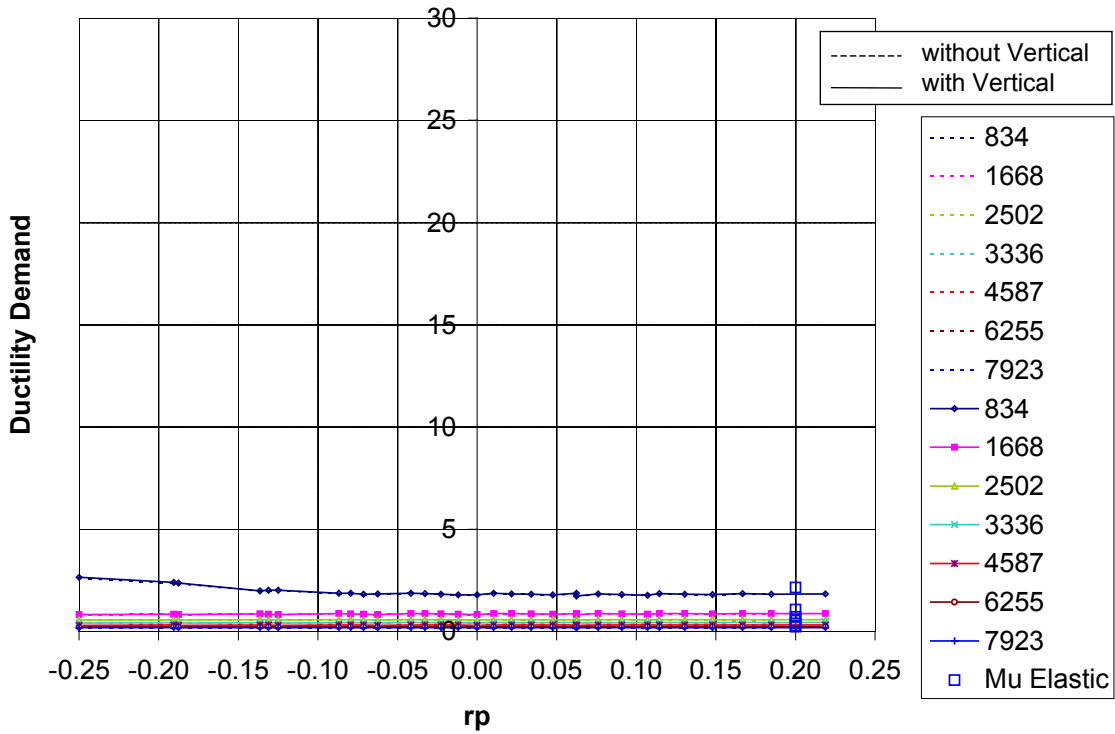


Figure C2.9.4.3a – EQ4, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.808 Seconds.

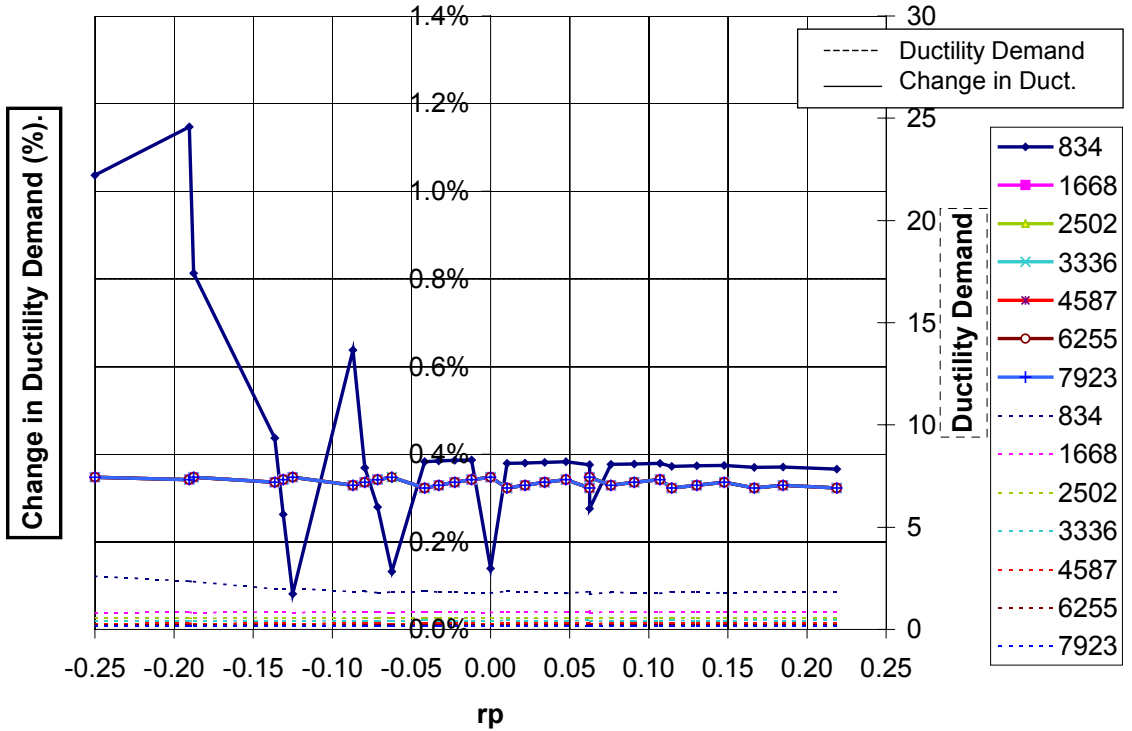


Figure C2.9.4.3b– EQ4, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.808 Seconds

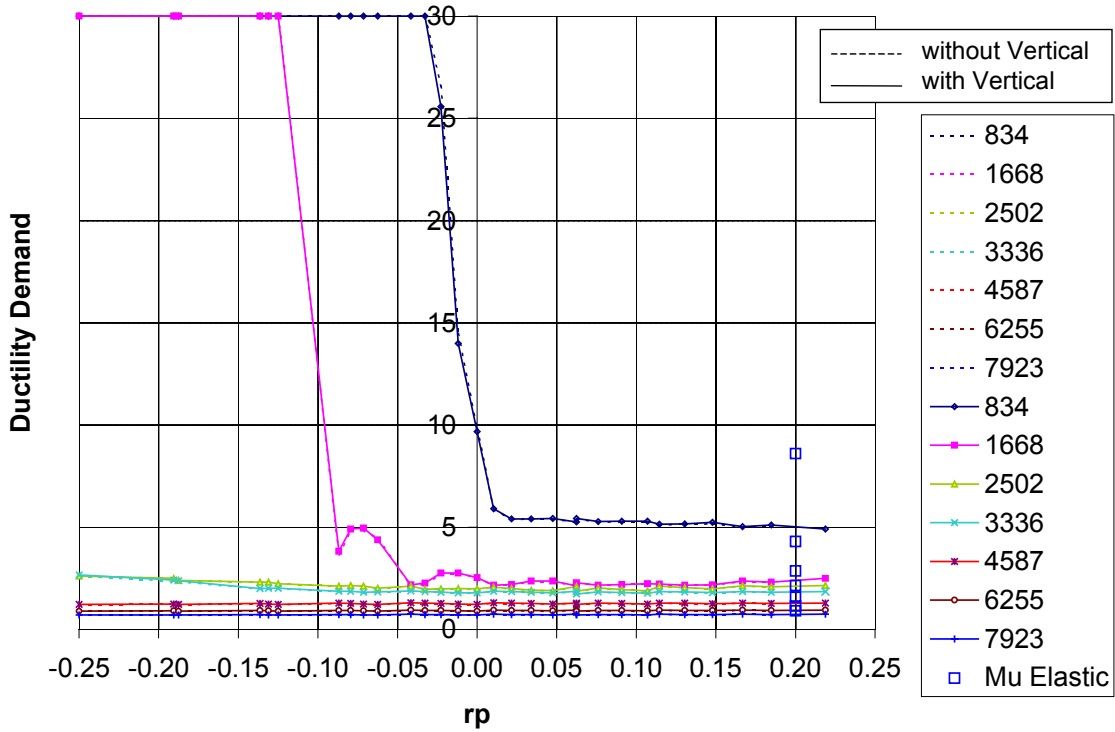


Figure C2.9.4.4a – EQ4, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.808 Seconds.

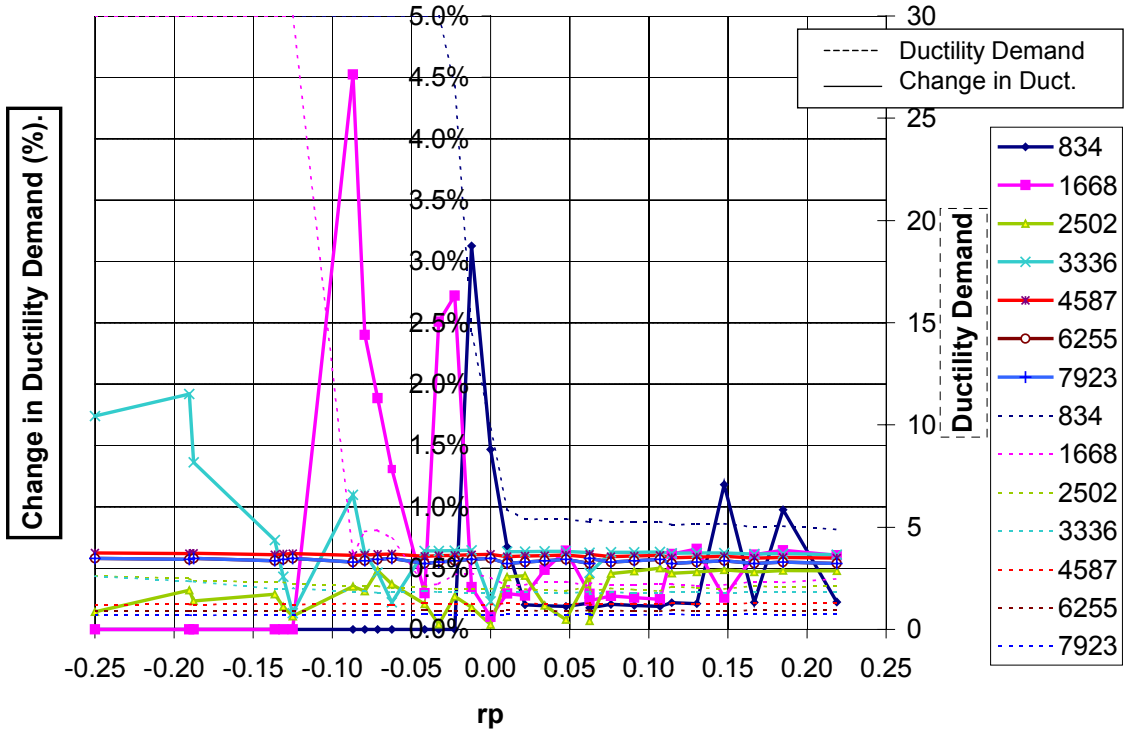


Figure C2.9.4.4b– EQ4, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.808 Seconds.

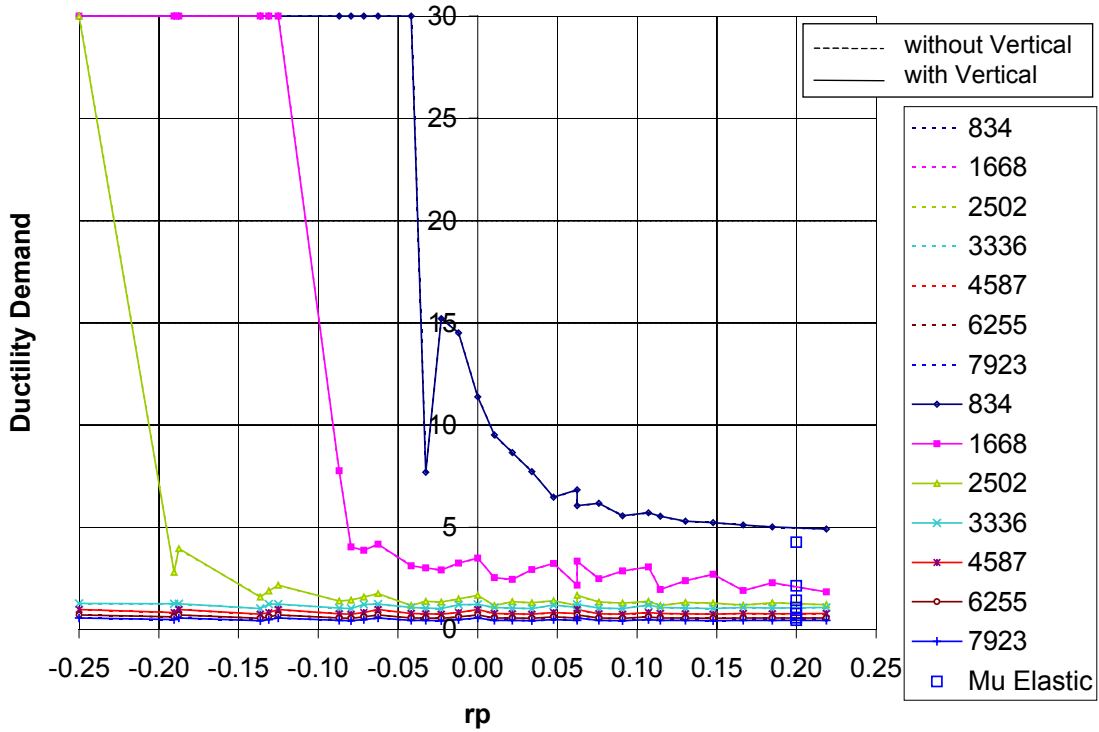


Figure C2.3.5.1a – EQ5, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 0.705 Seconds.

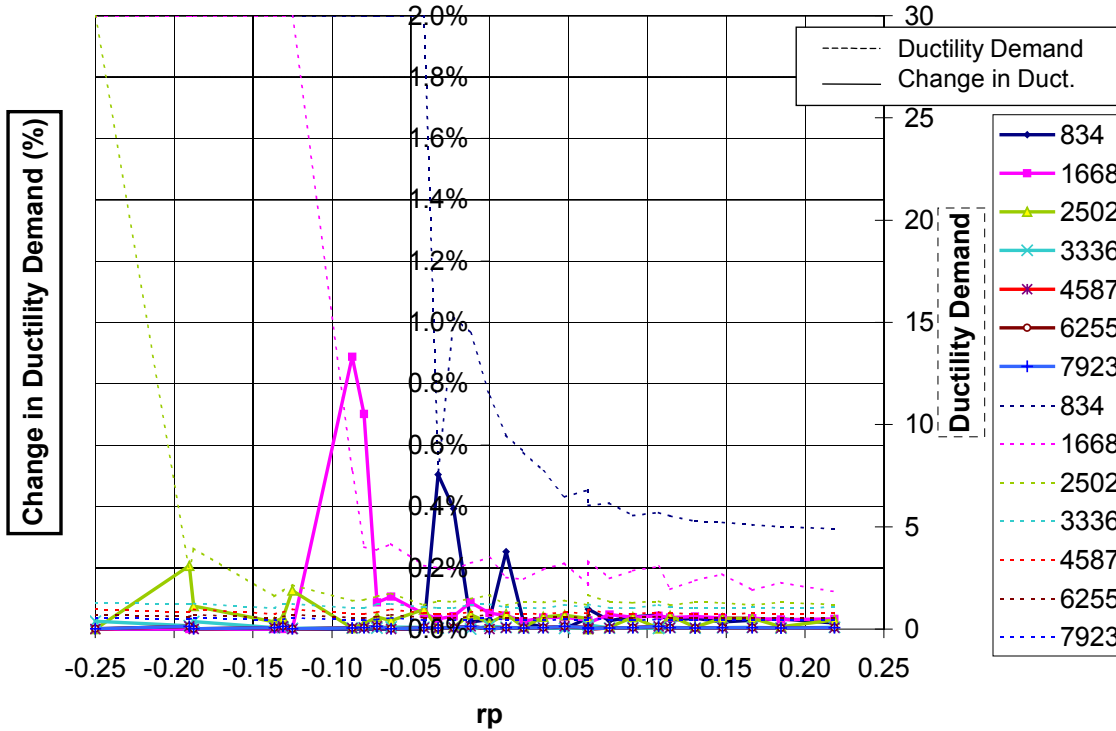


Figure C2.3.5.1b– EQ5, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 0.705 Seconds

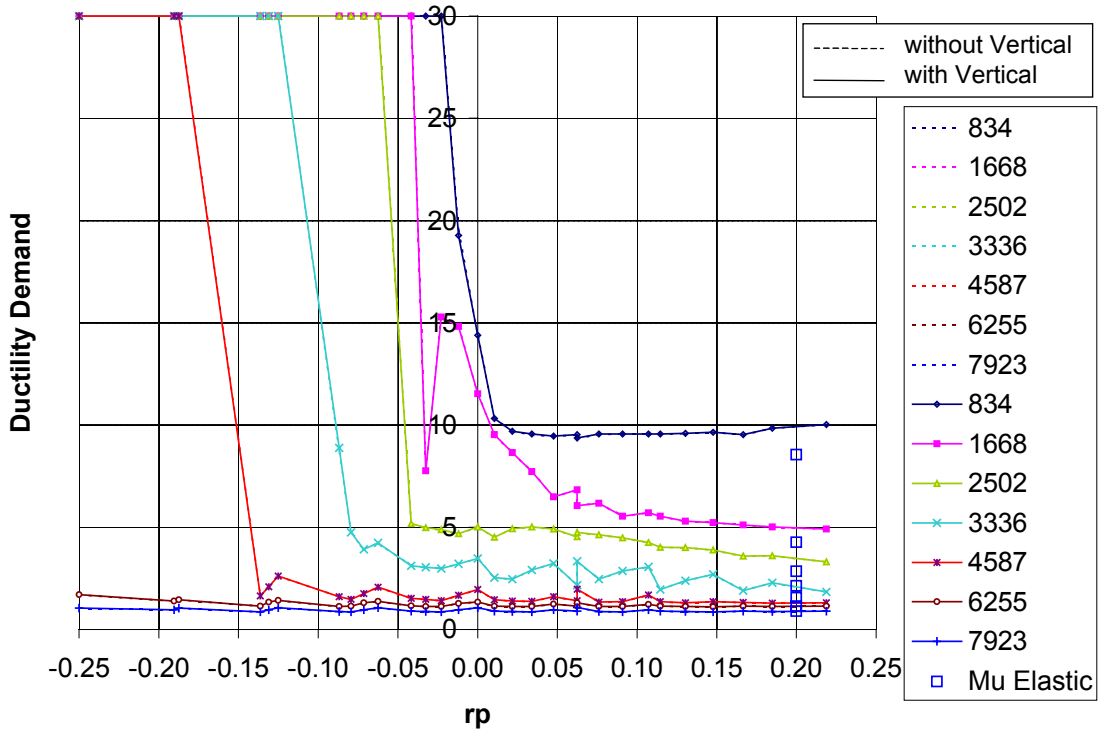


Figure C2.3.5.2a – EQ5, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 0.705 Seconds.

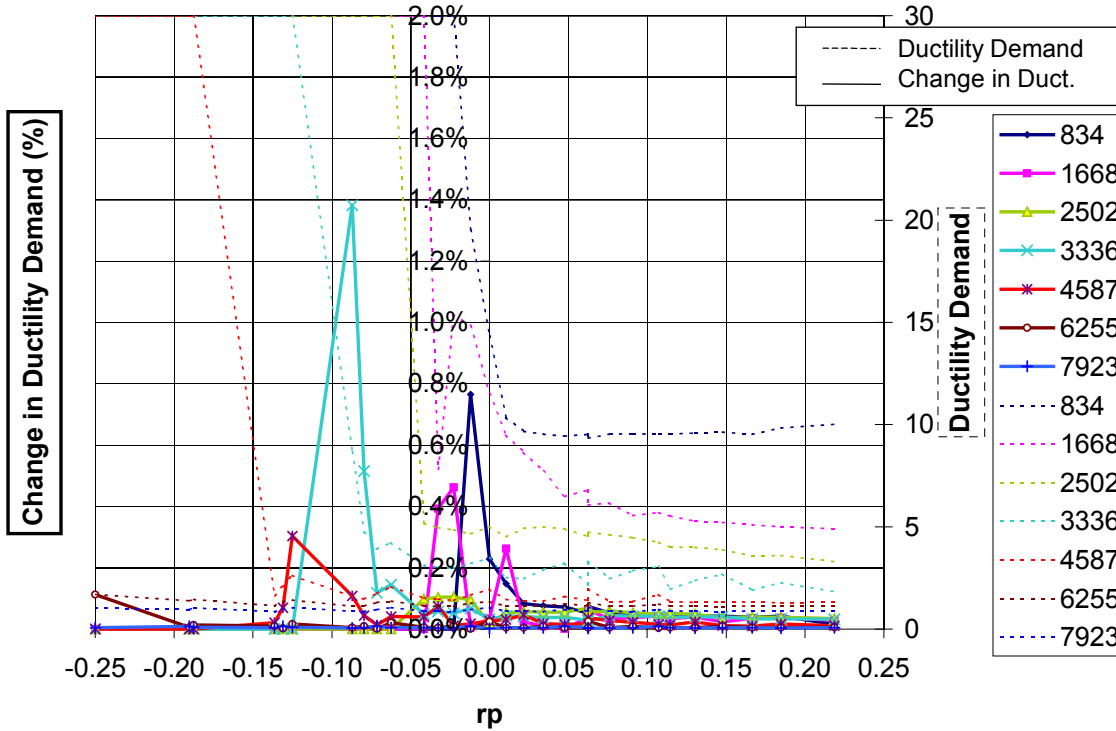
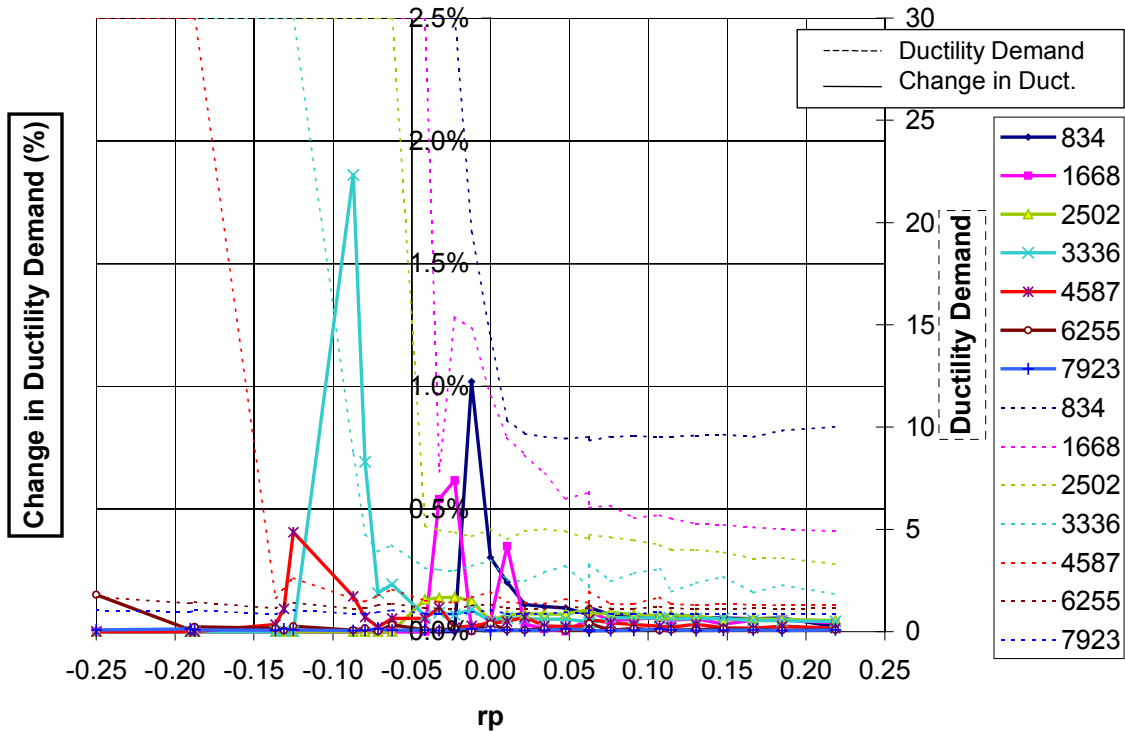
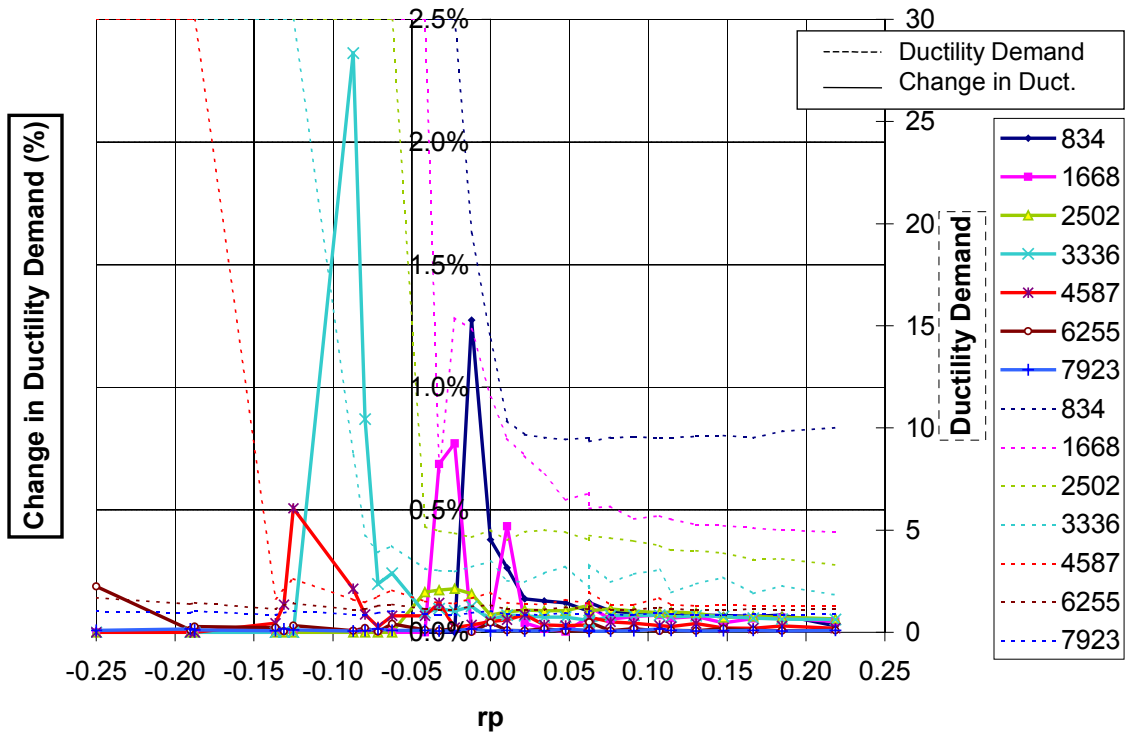


Figure C2.3.5.2b– EQ5, Lateral Scale = 0.2 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 0.705 Seconds



**Figure C2.3.5.2c– EQ5, Lateral Scale = 0.2 g, Vertical Multiplier = 2.0, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 0.705 Seconds**



**Figure C2.3.5.2d– EQ5, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 0.705 Seconds**

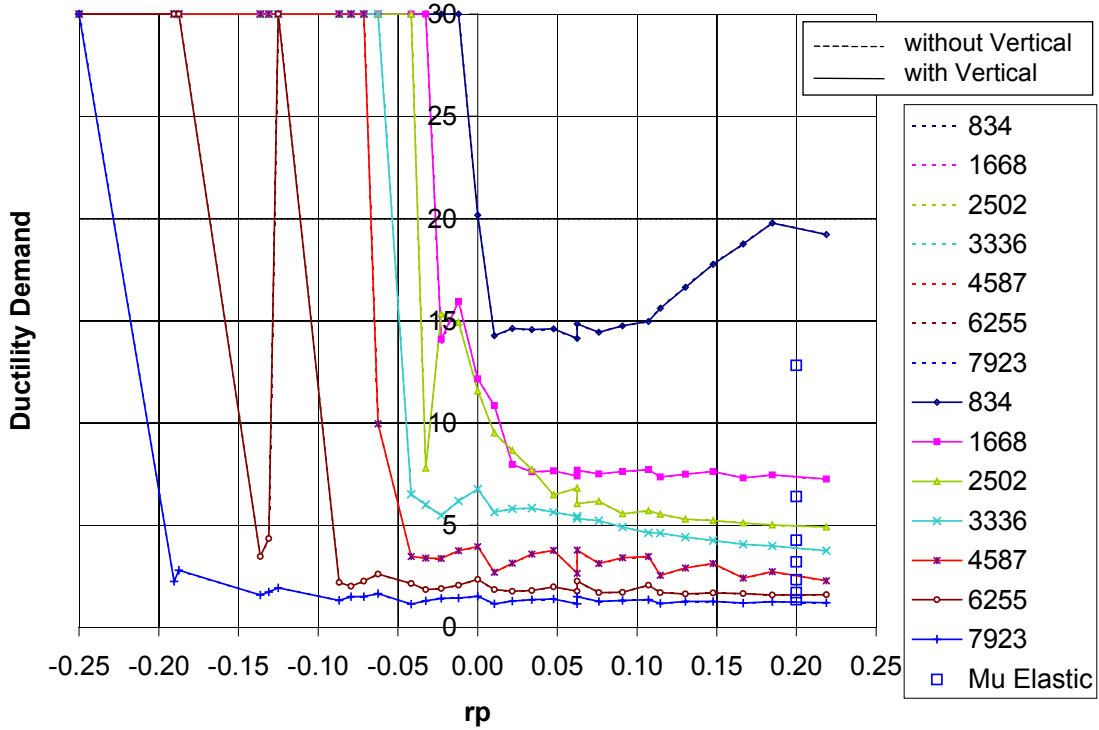


Figure C2.3.5.3a – EQ5, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 0.705 Seconds.

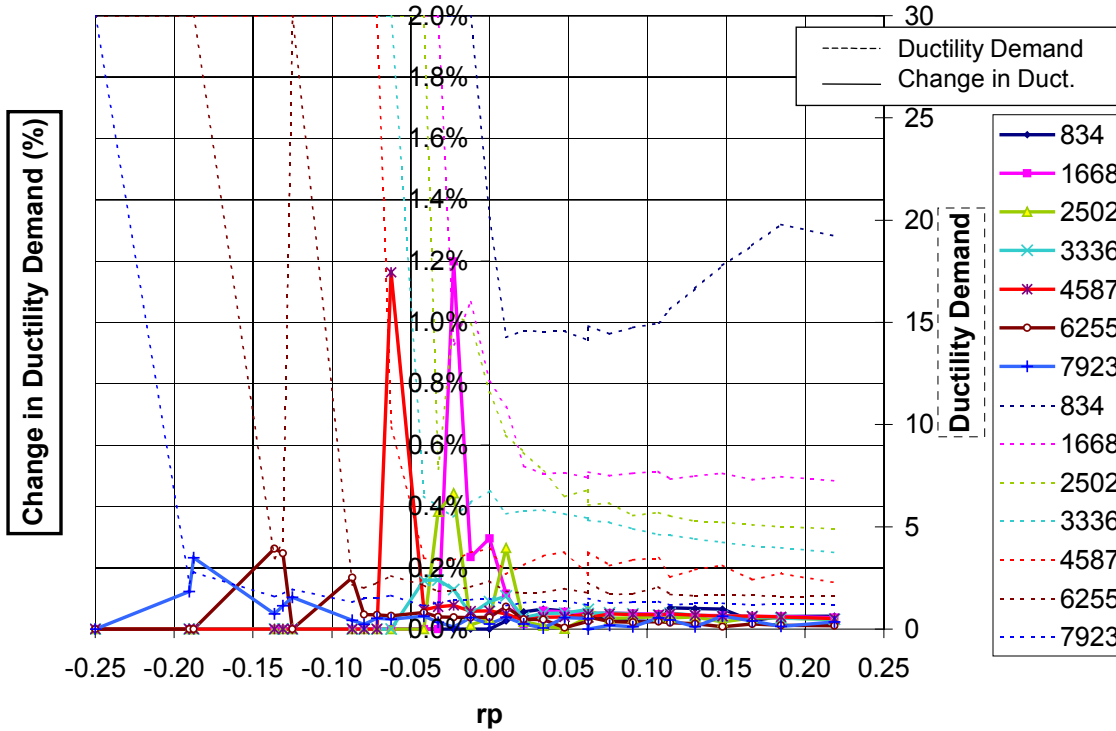


Figure C2.3.5.3b– EQ5, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 0.705 Seconds

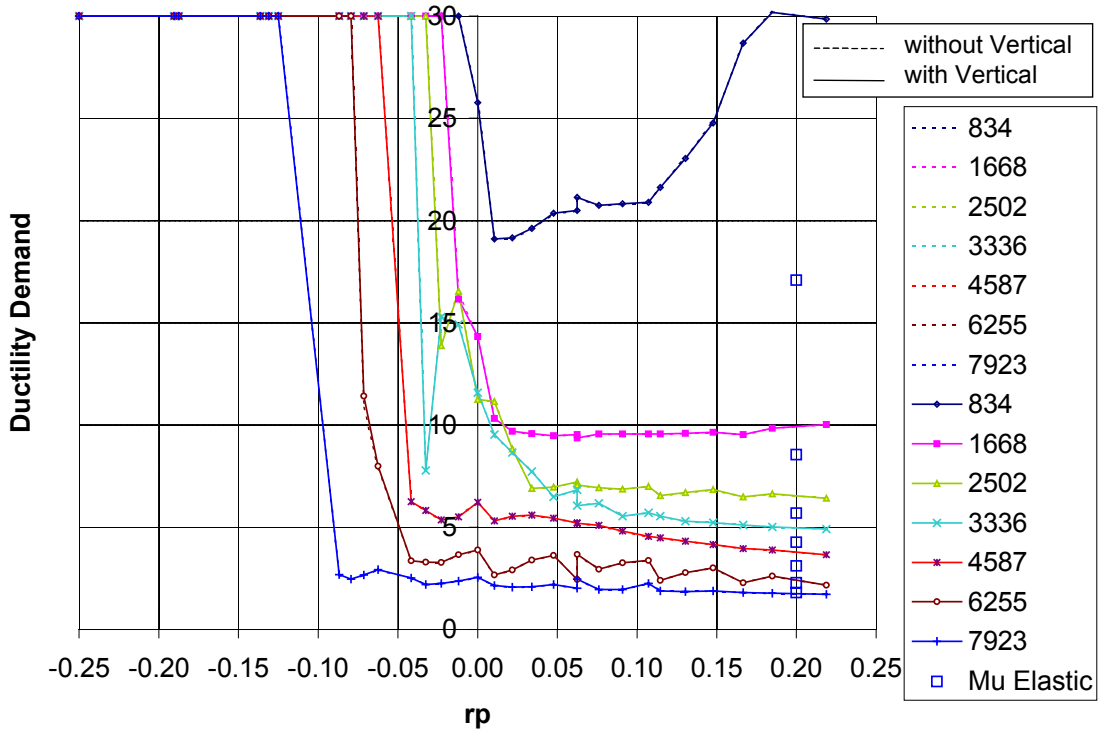


Figure C2.3.5.4a – EQ5, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 0.705 Seconds.

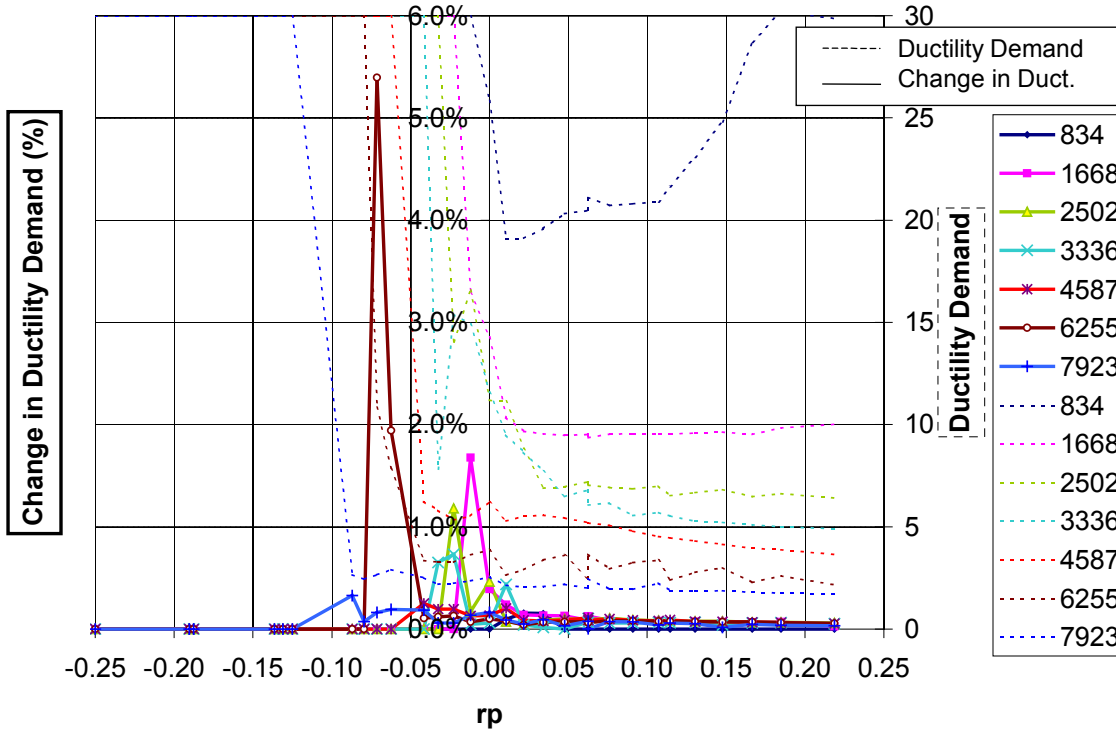


Figure C2.3.5.4b– EQ5, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 0.705 Seconds.

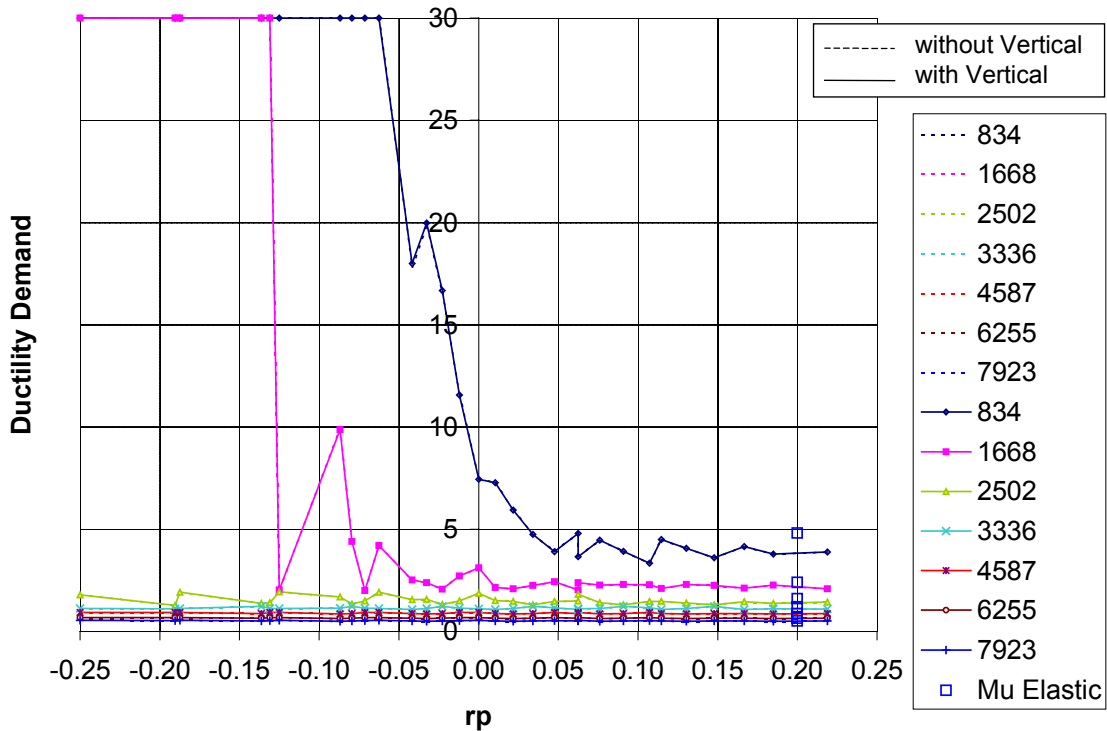


Figure C2.4.5.1a – EQ5, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 0.903 Seconds.

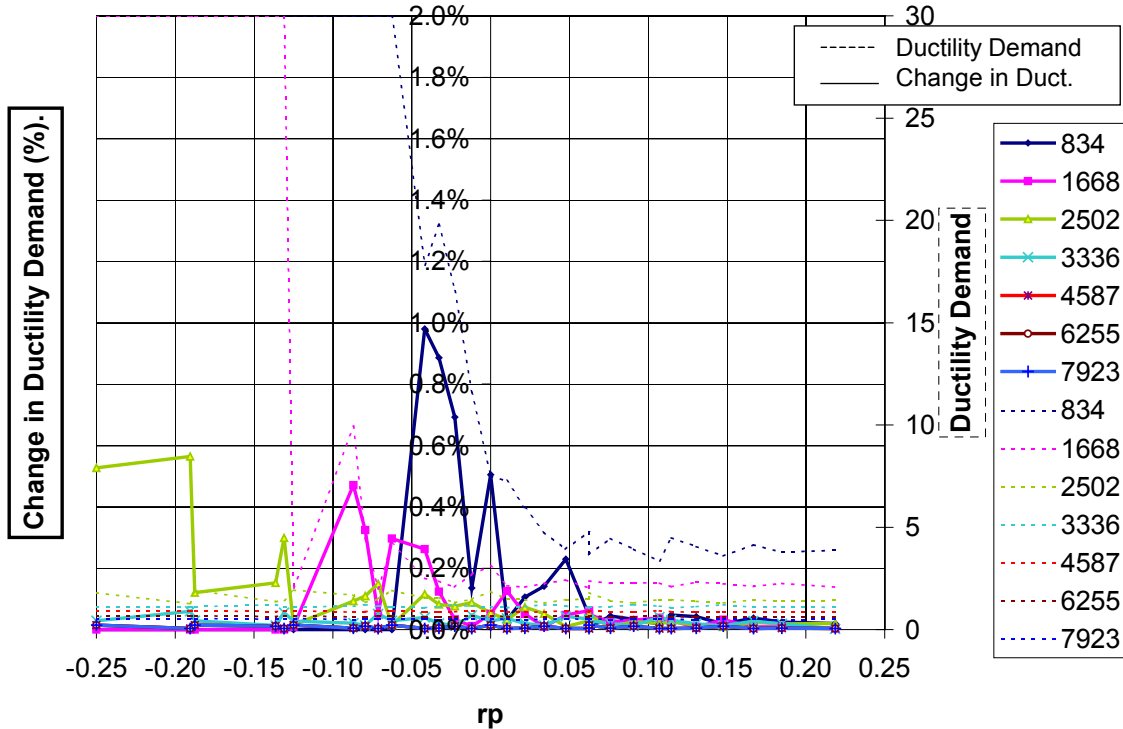


Figure C2.4.5.1b– EQ5, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 0.903 Seconds

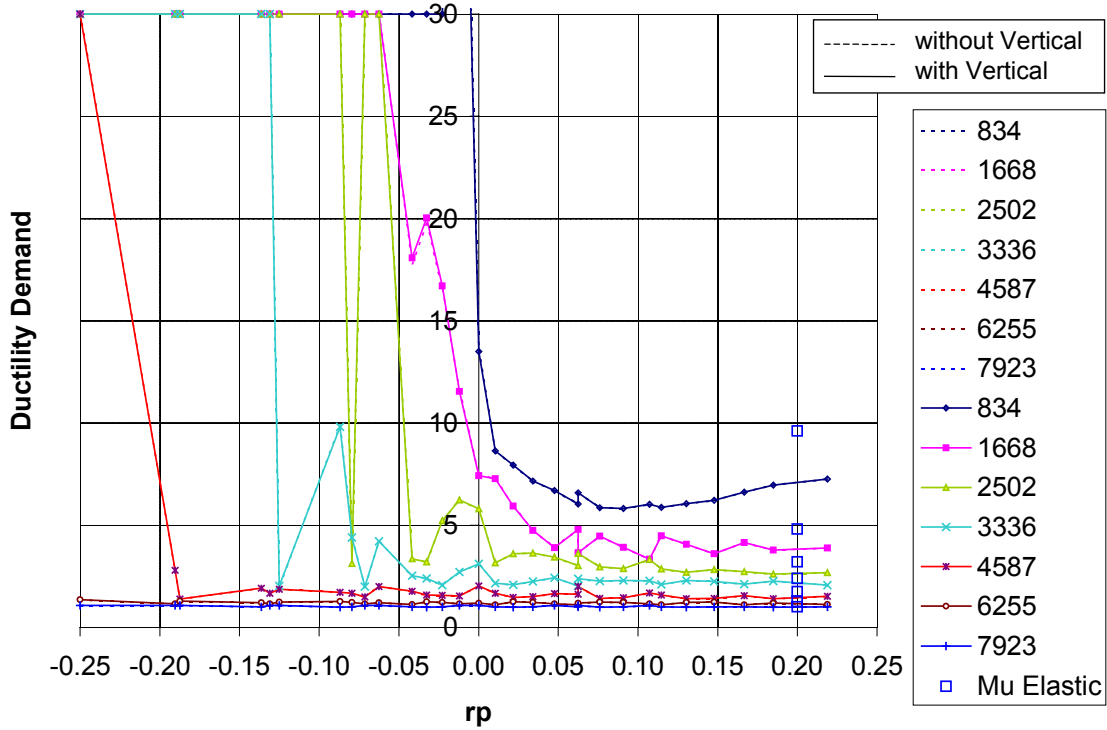


Figure C2.4.5.2a – EQ5, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 0.903 Seconds.

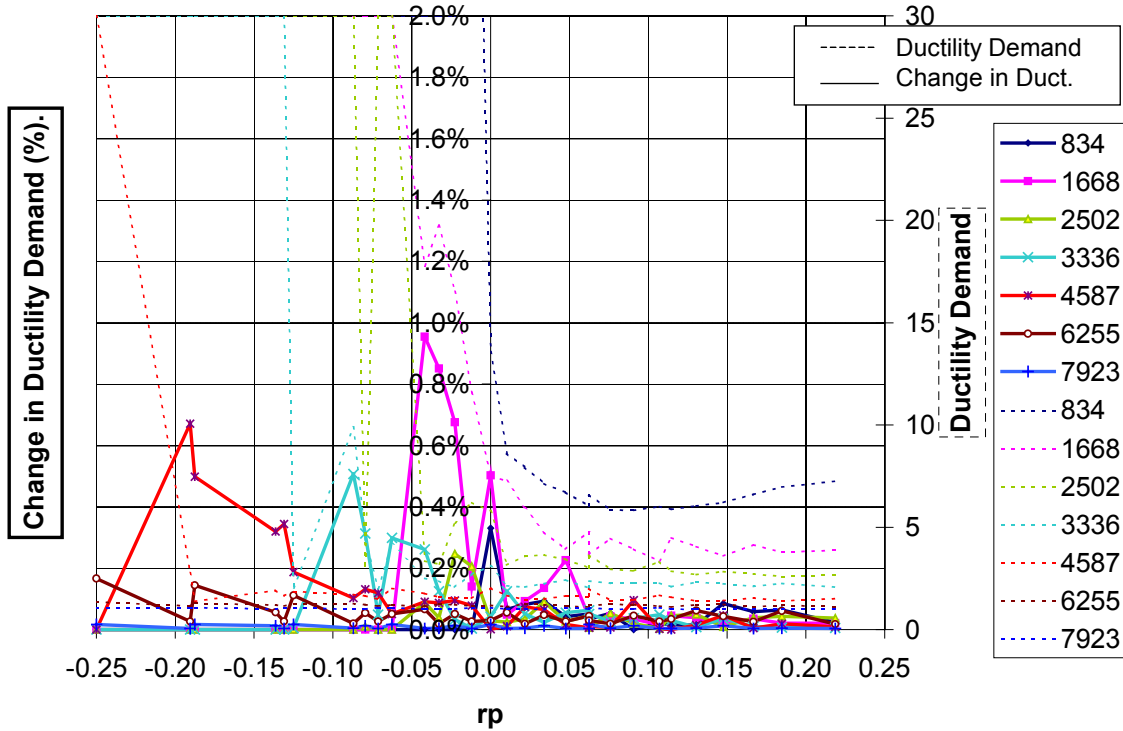
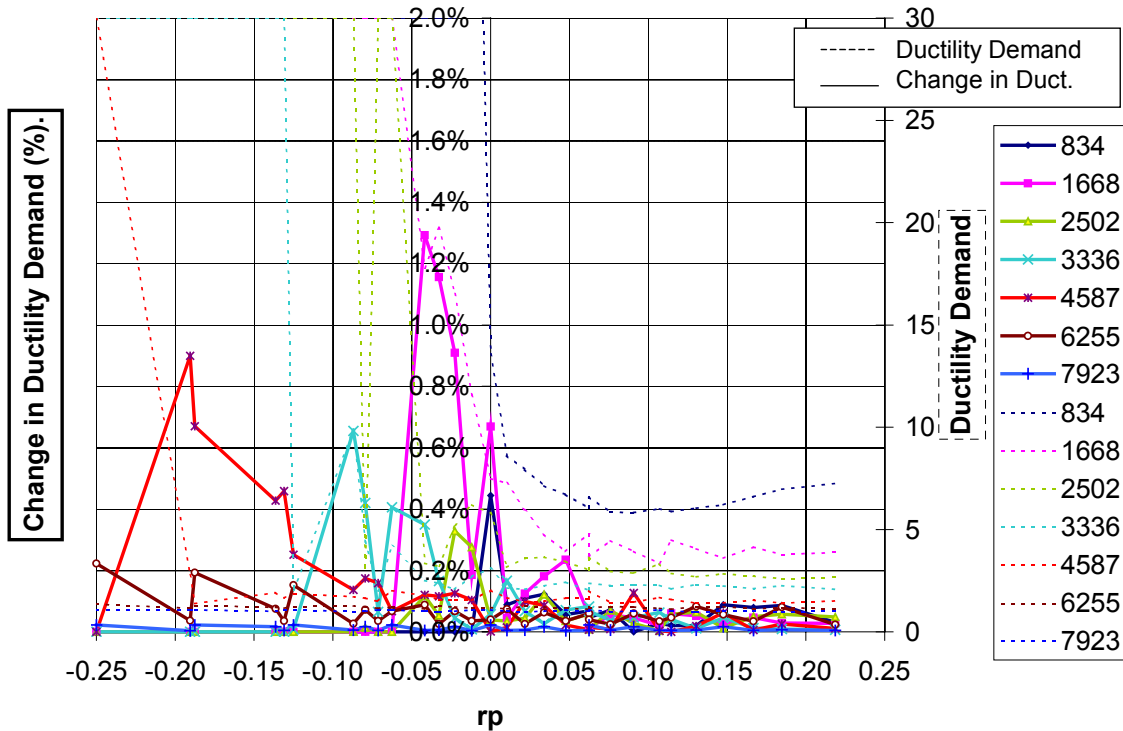
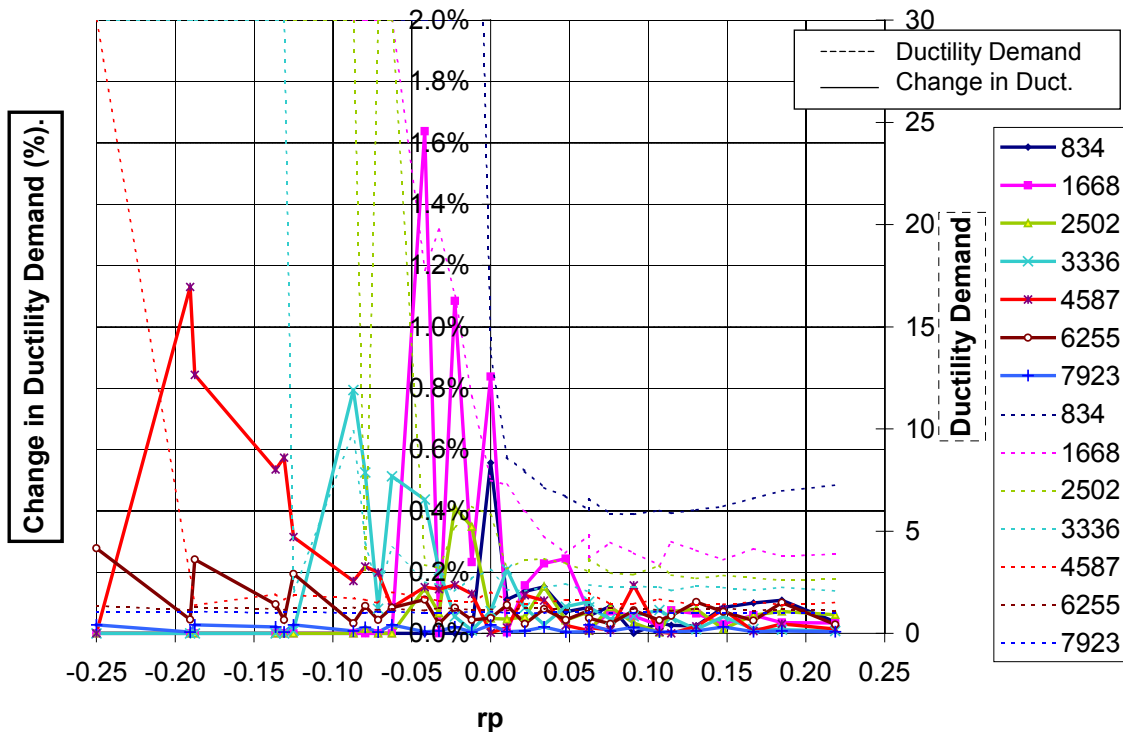


Figure C2.4.5.2b– EQ5, Lateral Scale = 0.2 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 0.903 Seconds



**Figure C2.4.5.2c– EQ5, Lateral Scale = 0.2 g, Vertical Multiplier = 2.0, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 0.903 Seconds**



**Figure C2.4.5.2d– EQ5, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 0.903 Seconds**

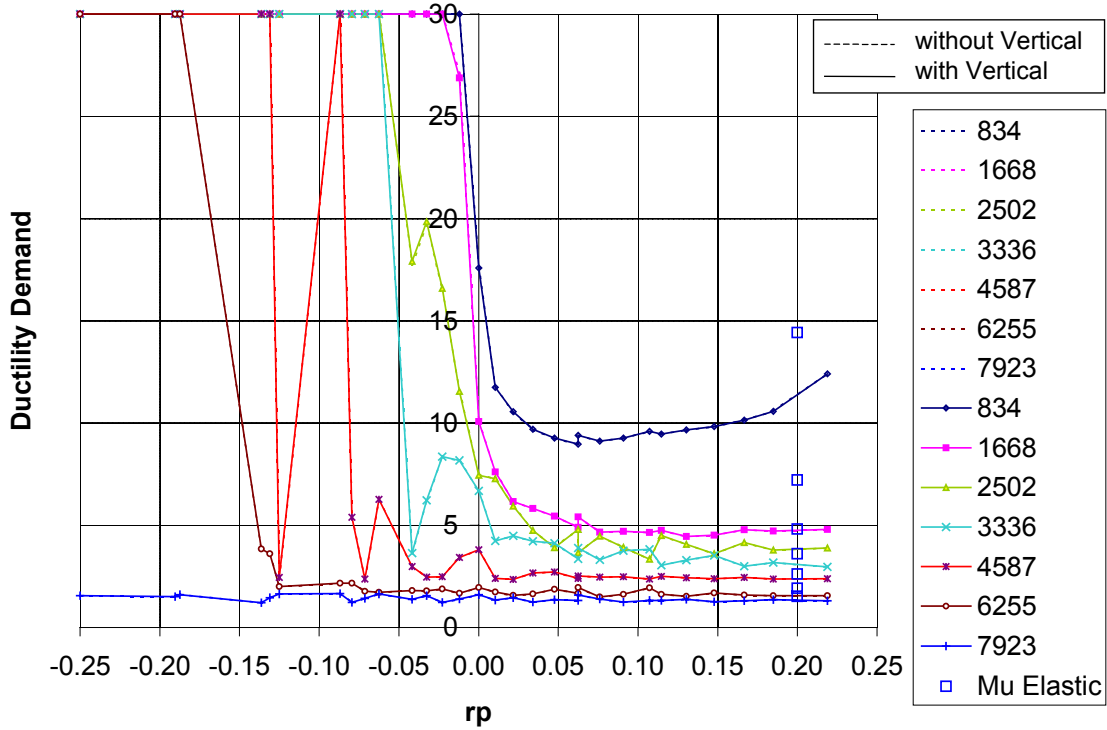


Figure C2.4.5.3a – EQ5, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 0.903 Seconds.

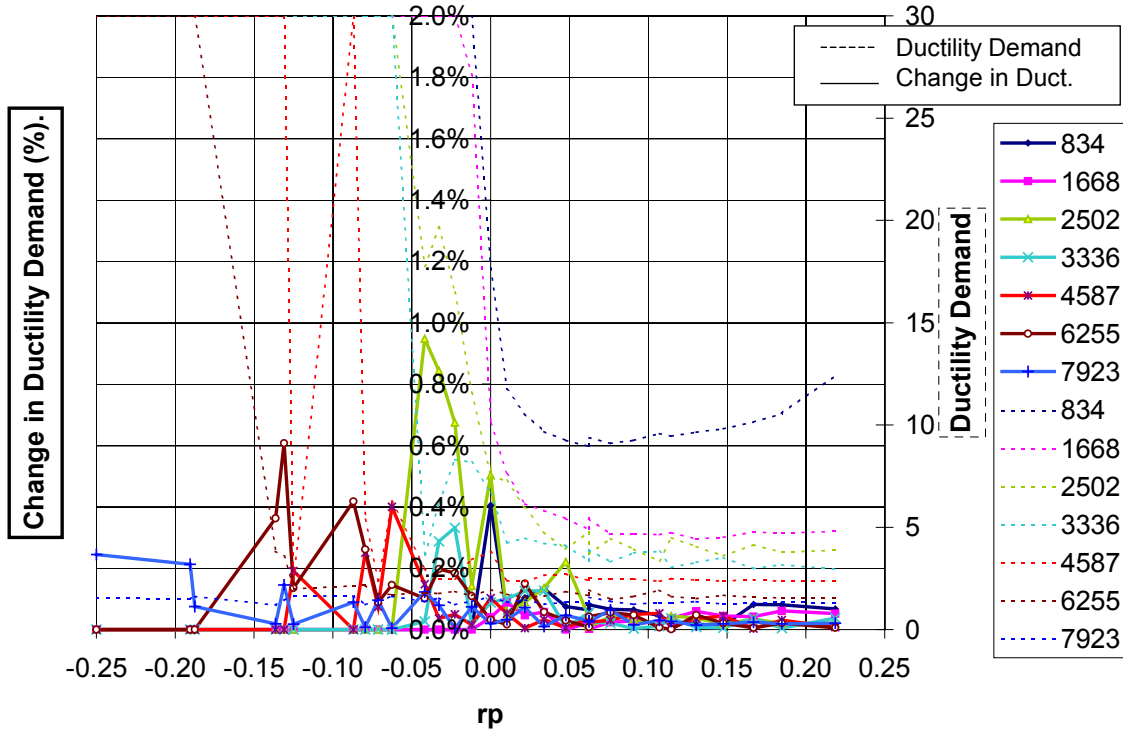


Figure C2.4.5.3b– EQ5, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 0.903 Seconds

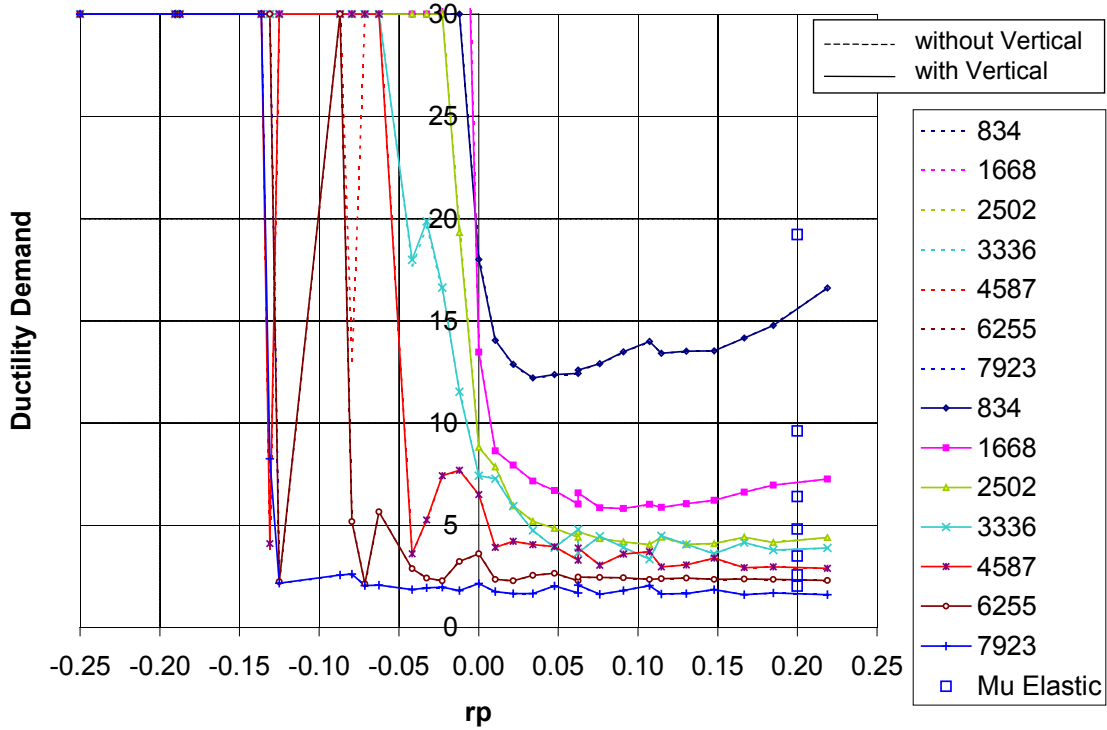


Figure C2.4.5.4a – EQ5, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 0.903 Seconds.

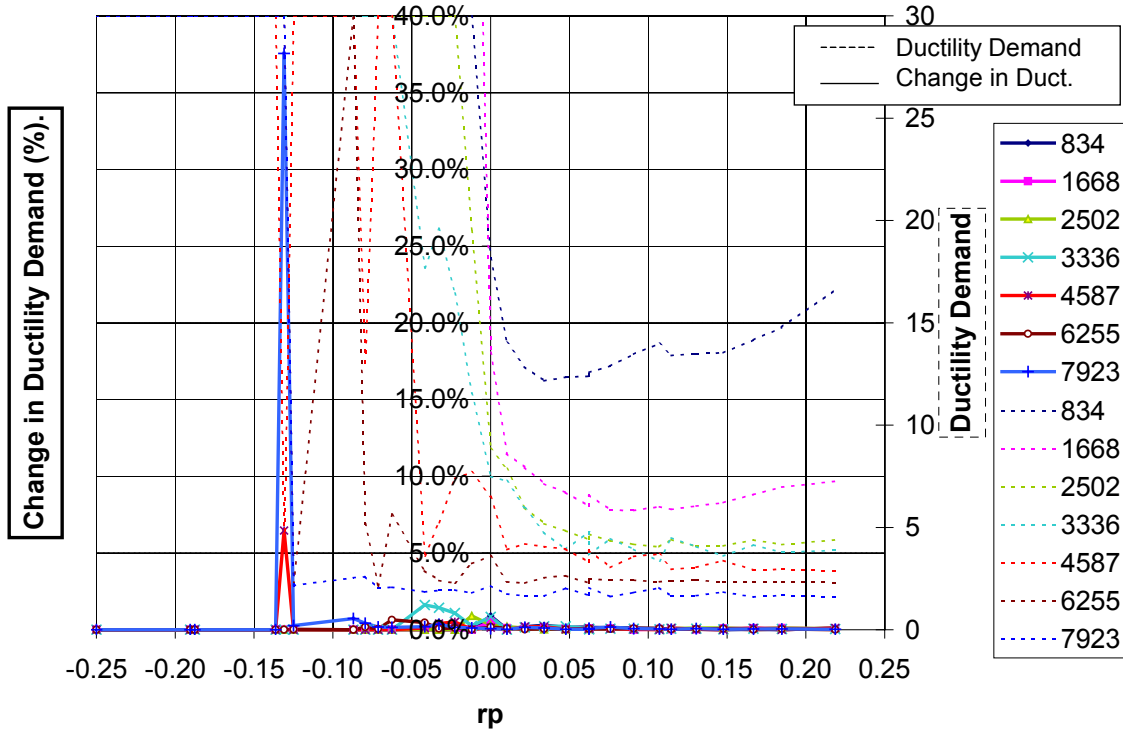


Figure C2.4.5.4b– EQ5, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 0.903 Seconds.

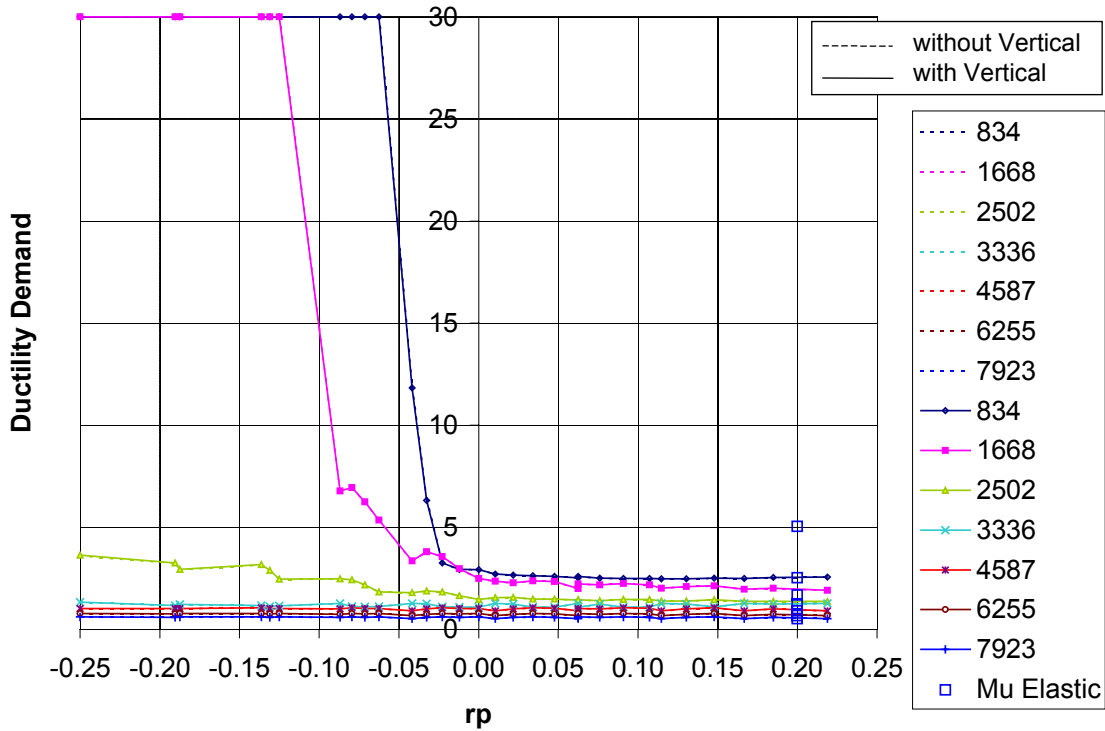


Figure C2.5.5.1a – EQ5, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.093 Seconds.

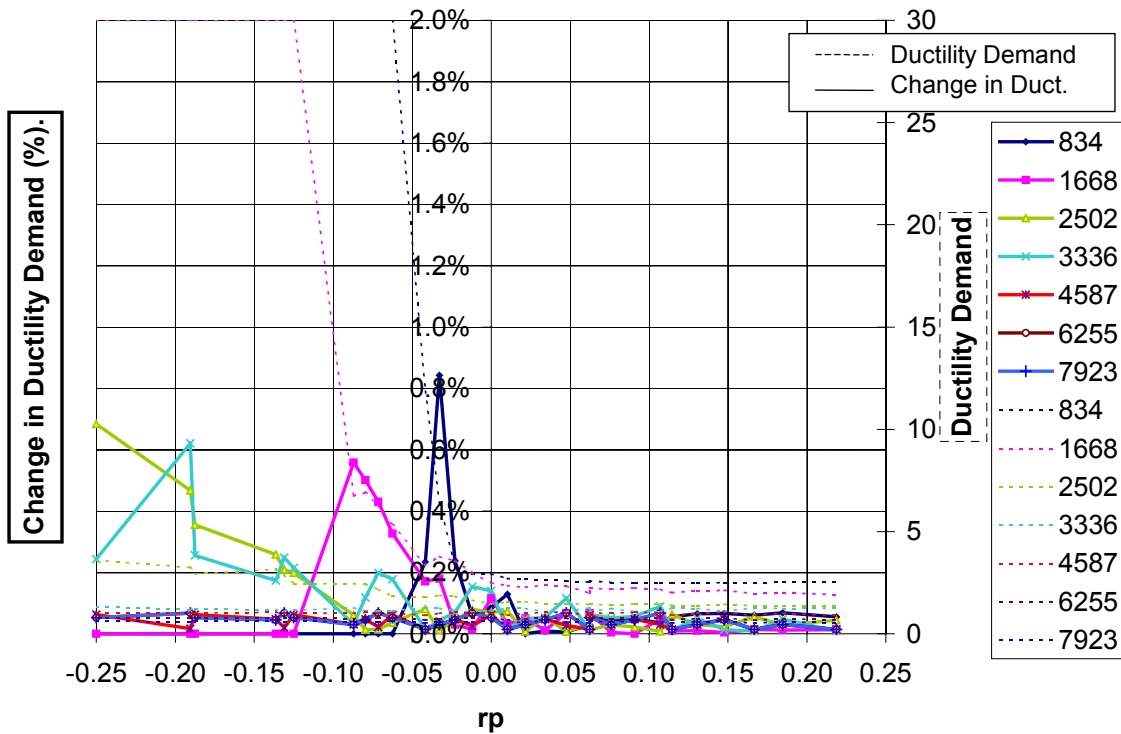


Figure C2.5.5.1b– EQ5, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.093 Seconds

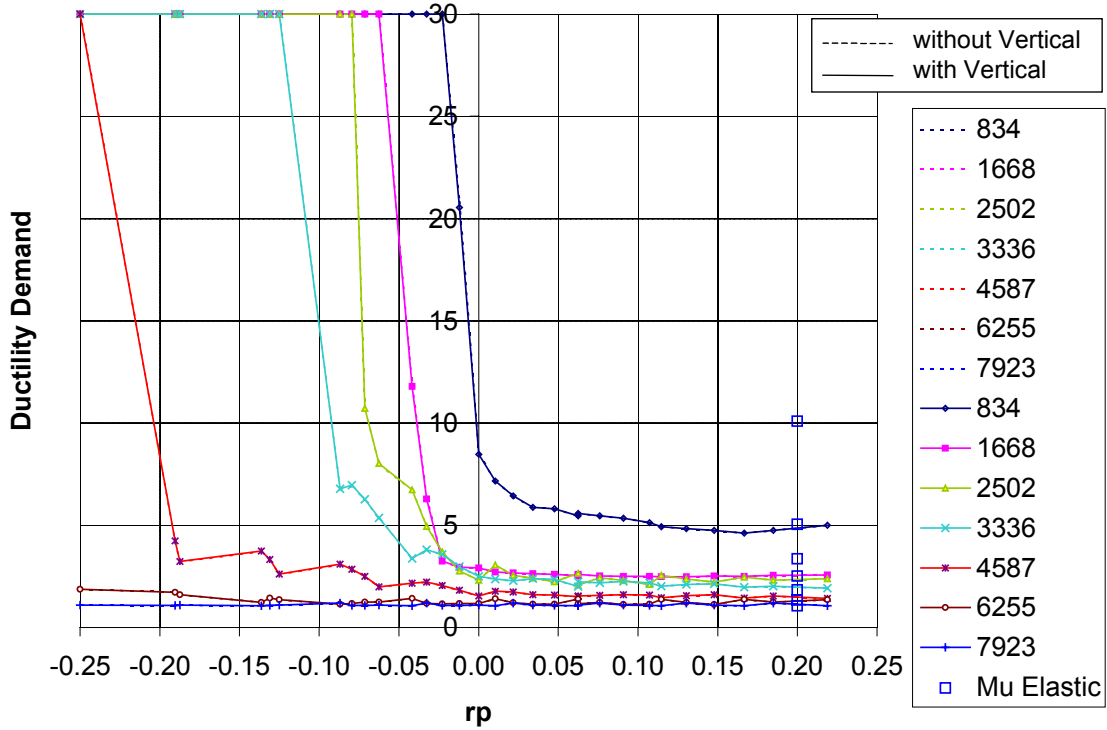


Figure C2.5.5.2a – EQ5, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.093 Seconds.

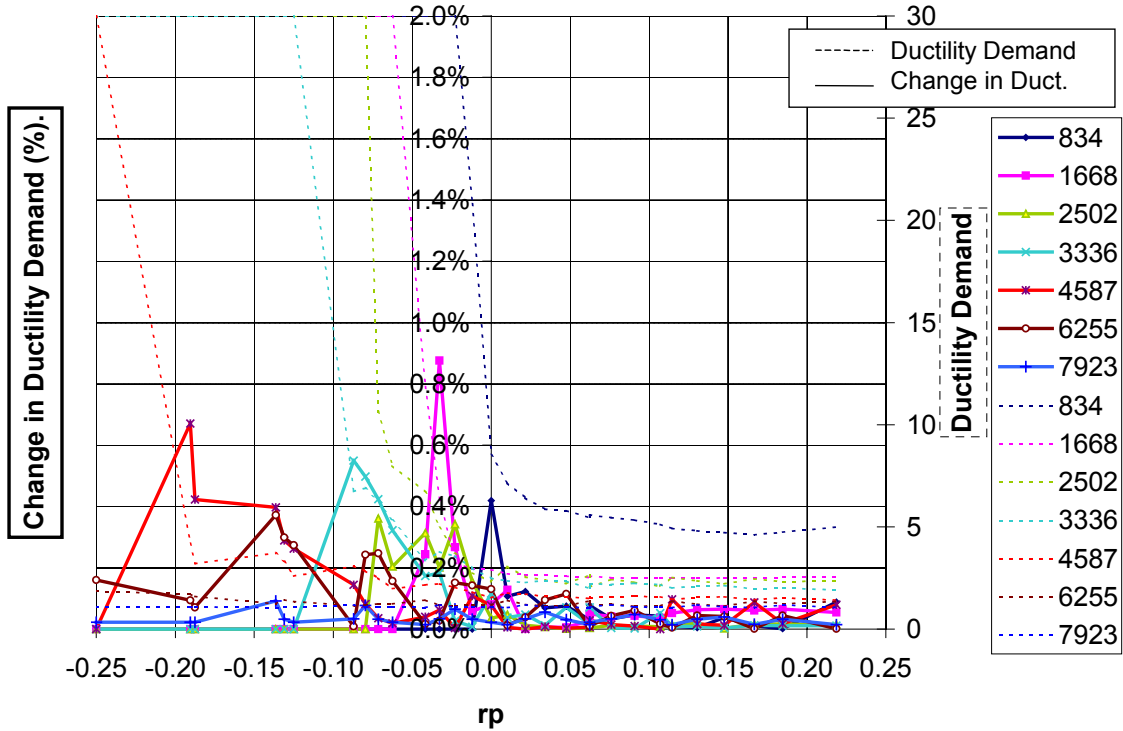


Figure C2.5.5.2b– EQ5, Lateral Scale = 0.2 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.093 Seconds

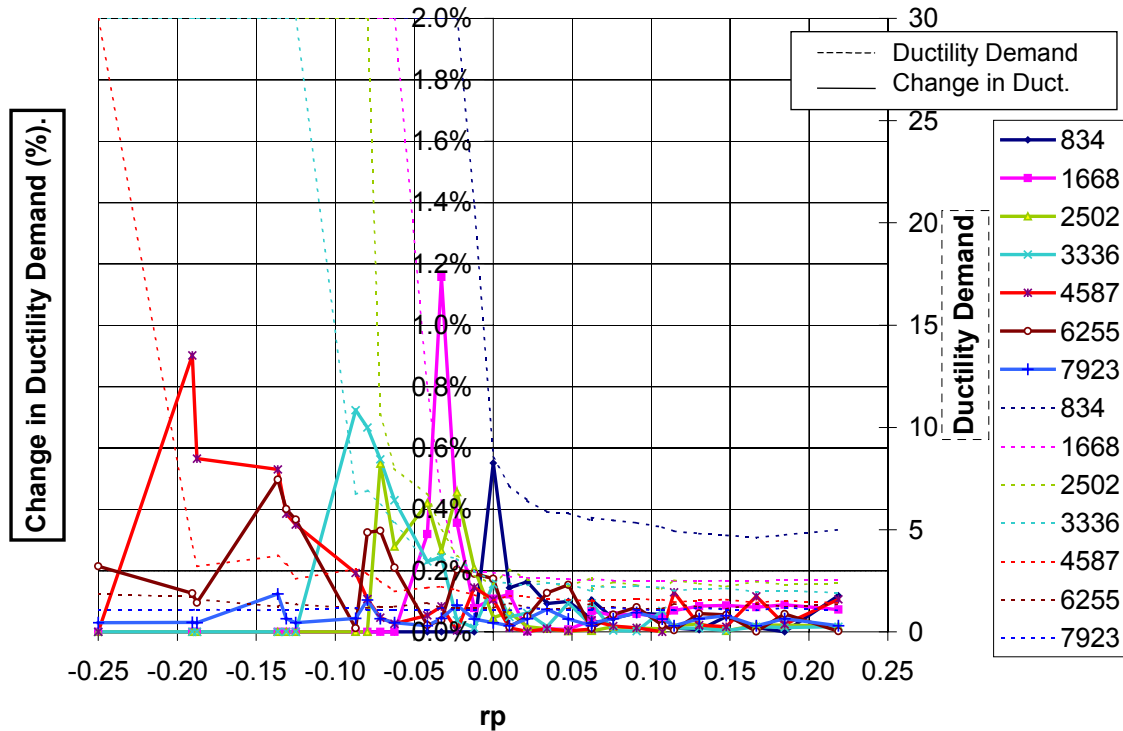


Figure C2.5.5.2c– EQ5, Lateral Scale = 0.2 g, Vertical Multiplier = 2.0, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.093 Seconds

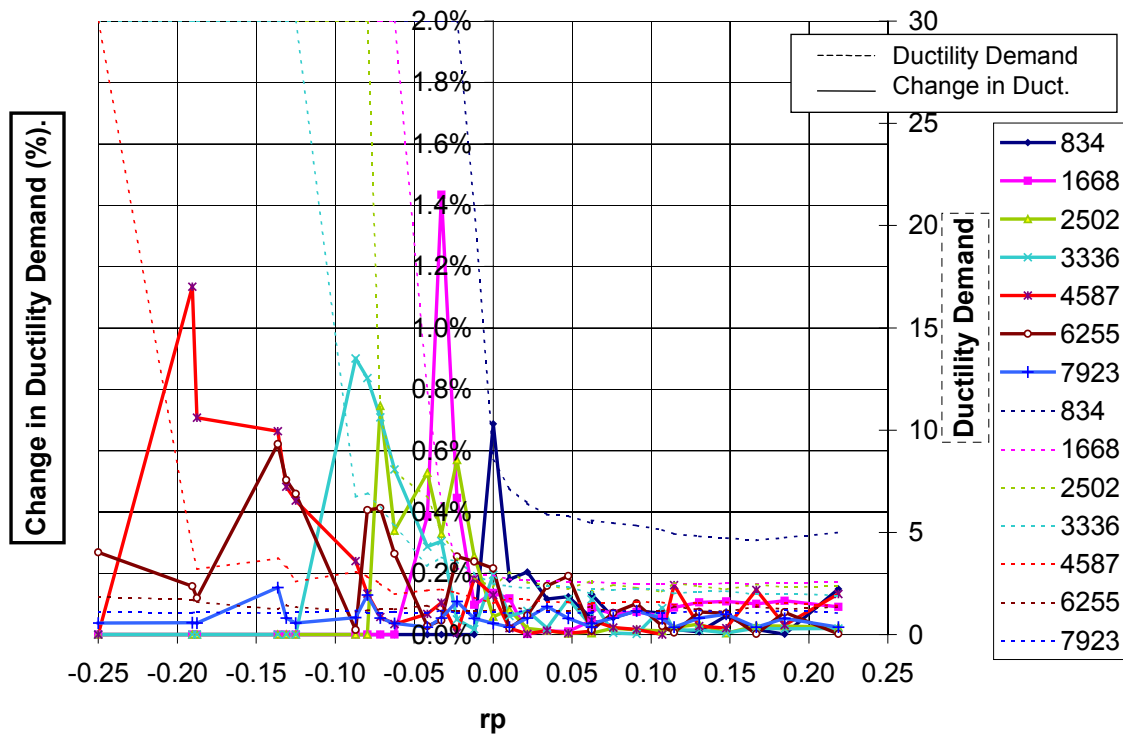


Figure C2.5.5.2d– EQ5, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.093 Seconds

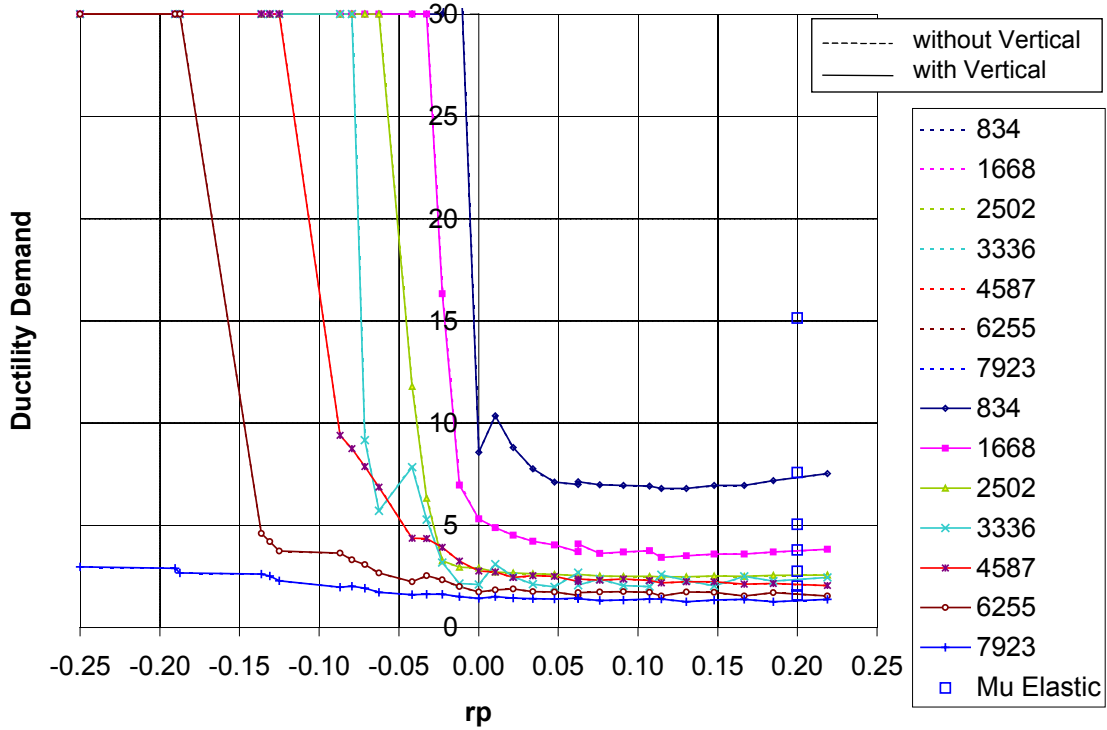


Figure C2.5.5.3a – EQ5, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.093 Seconds.

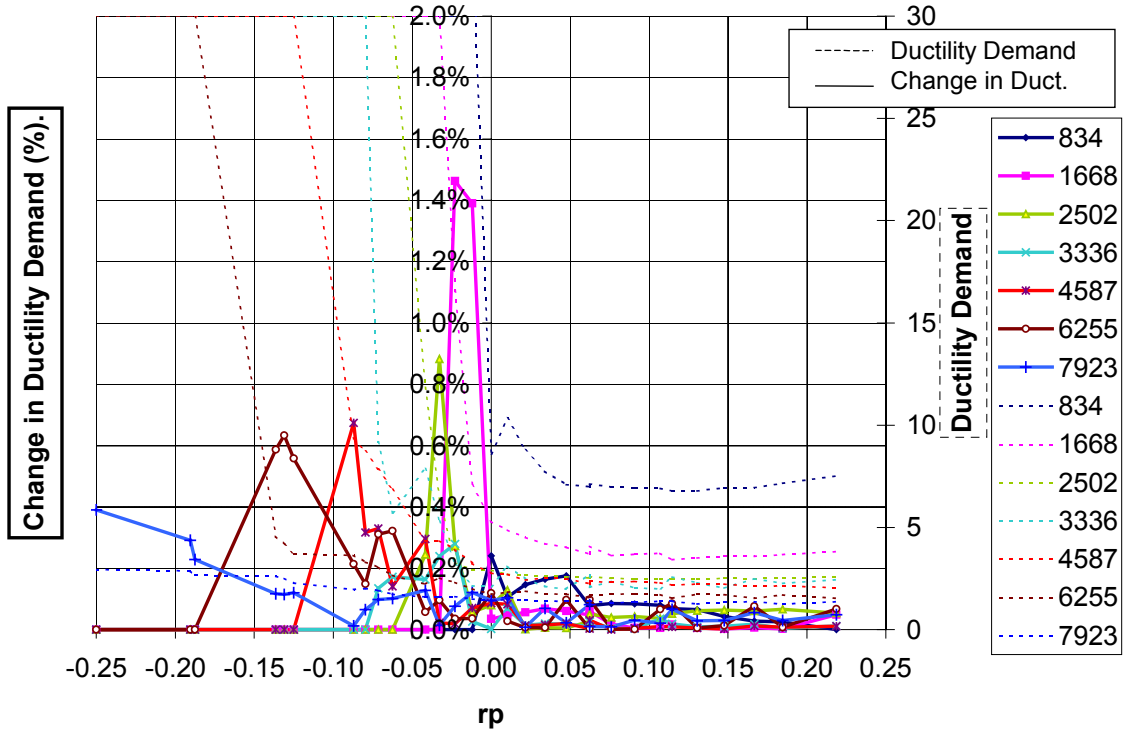


Figure C2.5.5.3b– EQ5, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.093 Seconds

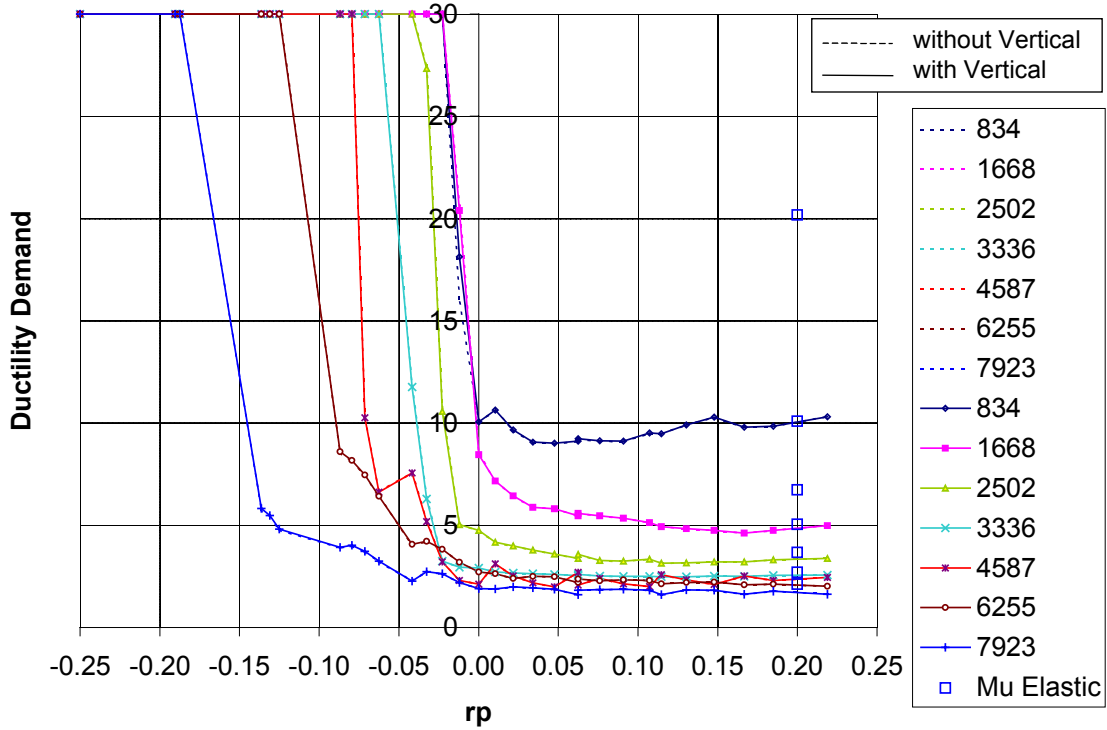


Figure C2.5.5.4a – EQ5, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.093 Seconds.

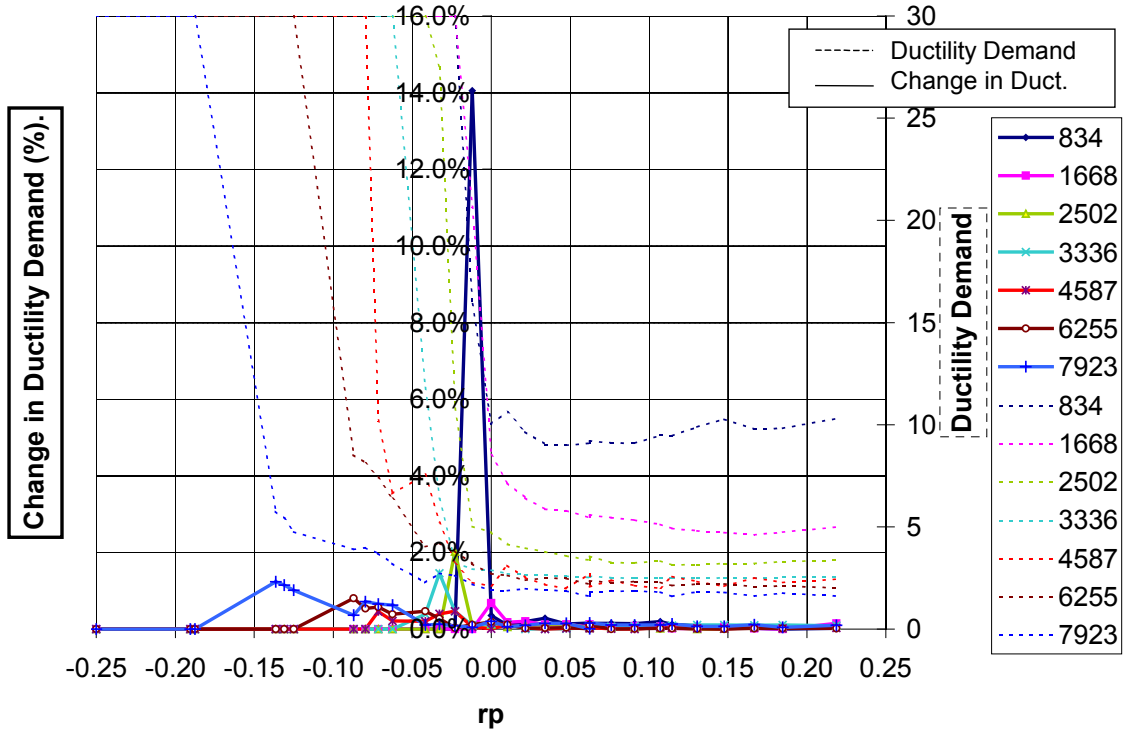


Figure C2.5.5.4b– EQ5, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.093 Seconds.

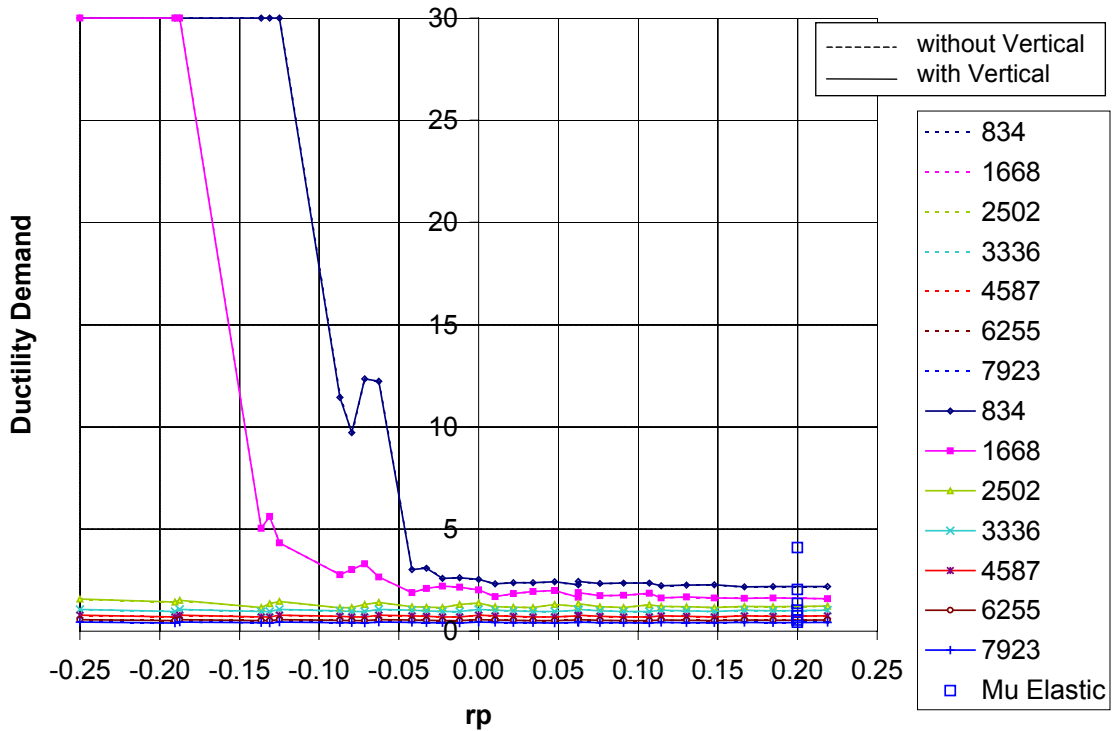


Figure C2.6.5.1a – EQ5, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.278 Seconds.

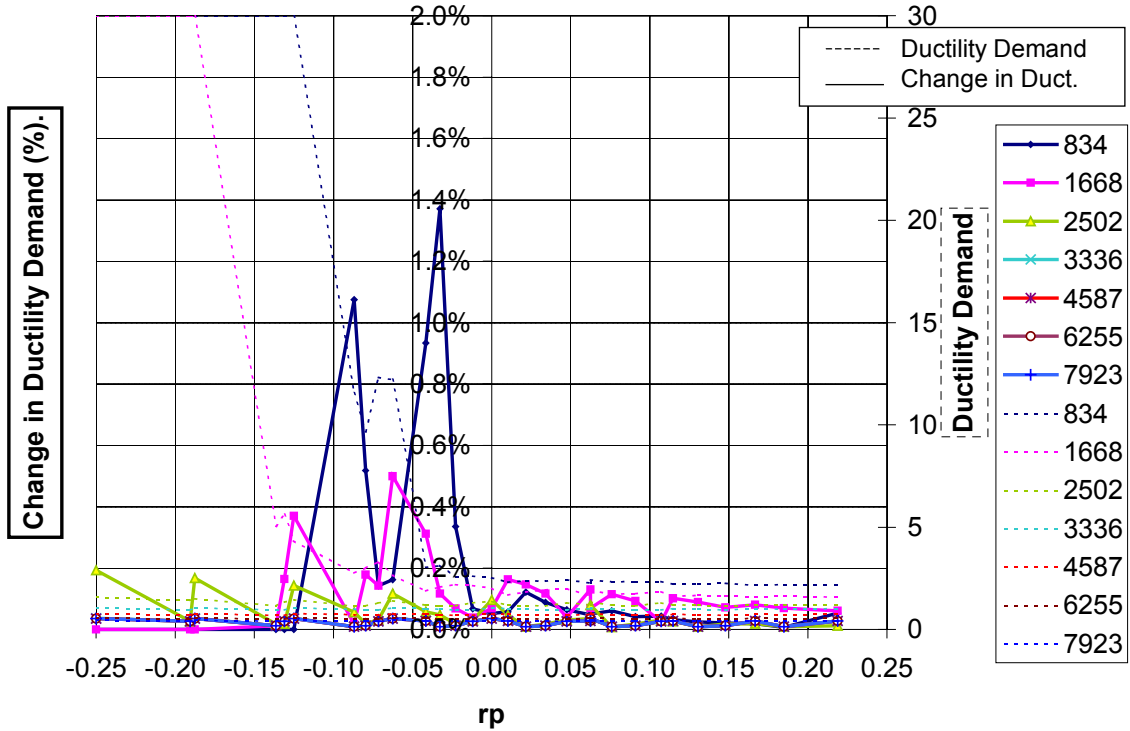


Figure C2.6.5.1b– EQ5, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.278 Seconds

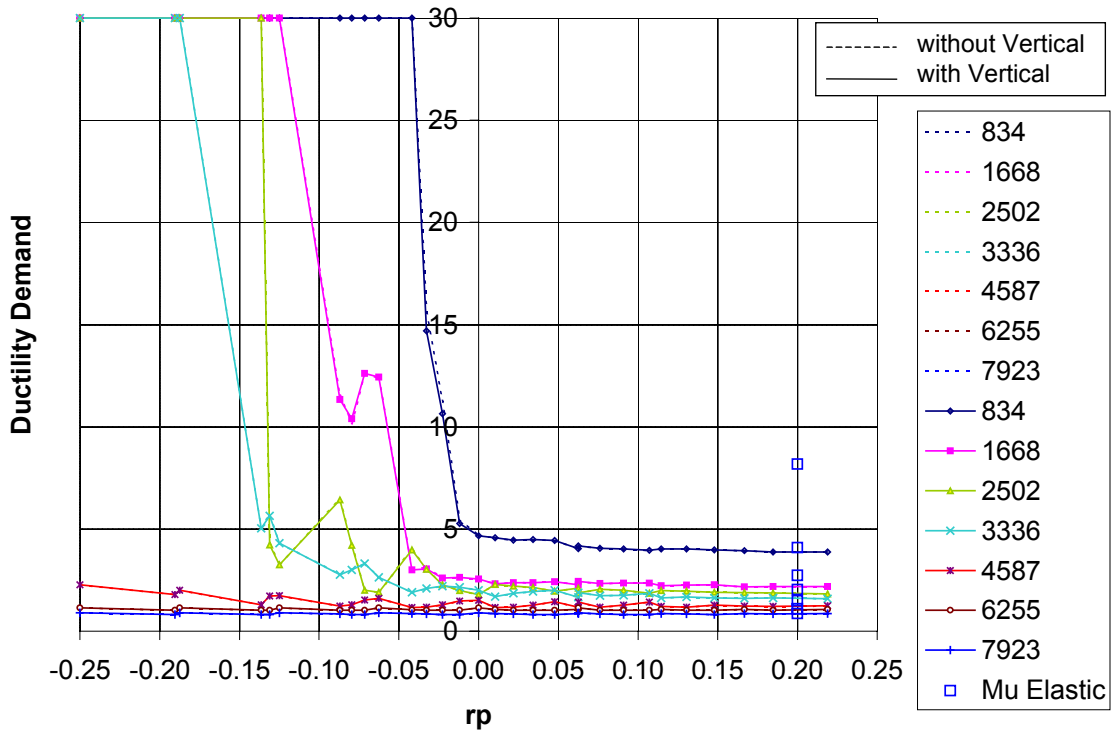


Figure C2.6.5.2a – EQ5, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.278 Seconds.

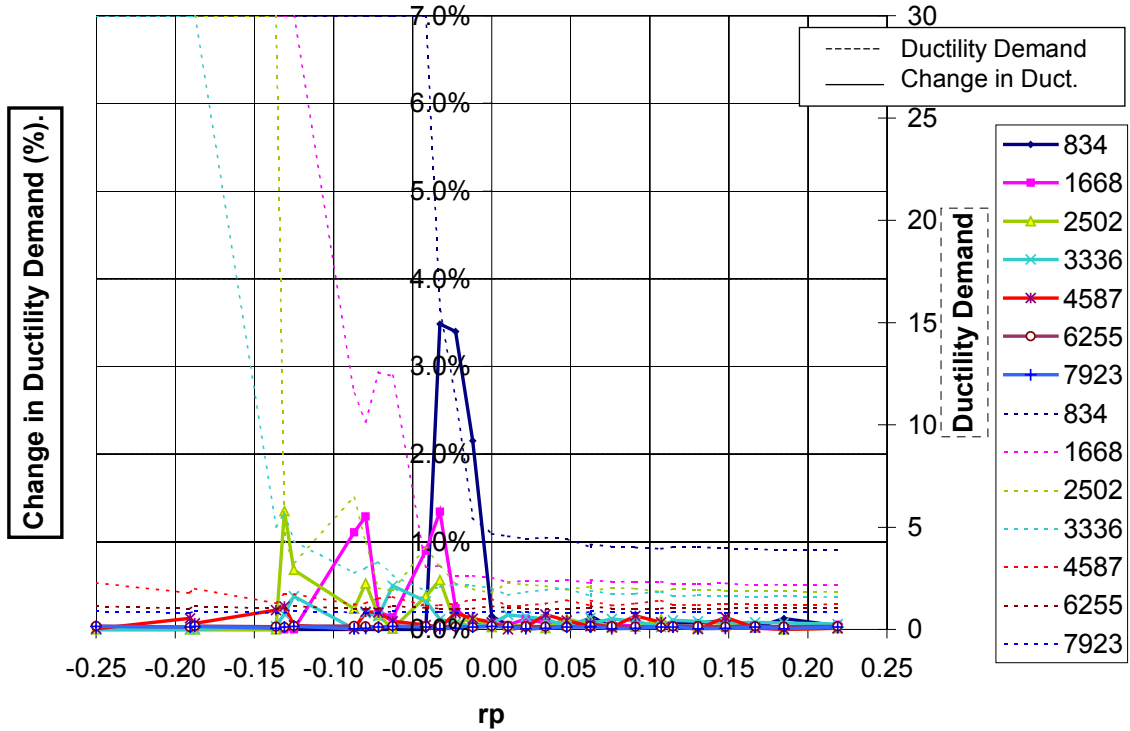


Figure C2.6.5.2b– EQ5, Lateral Scale = 0.2 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.278 Seconds

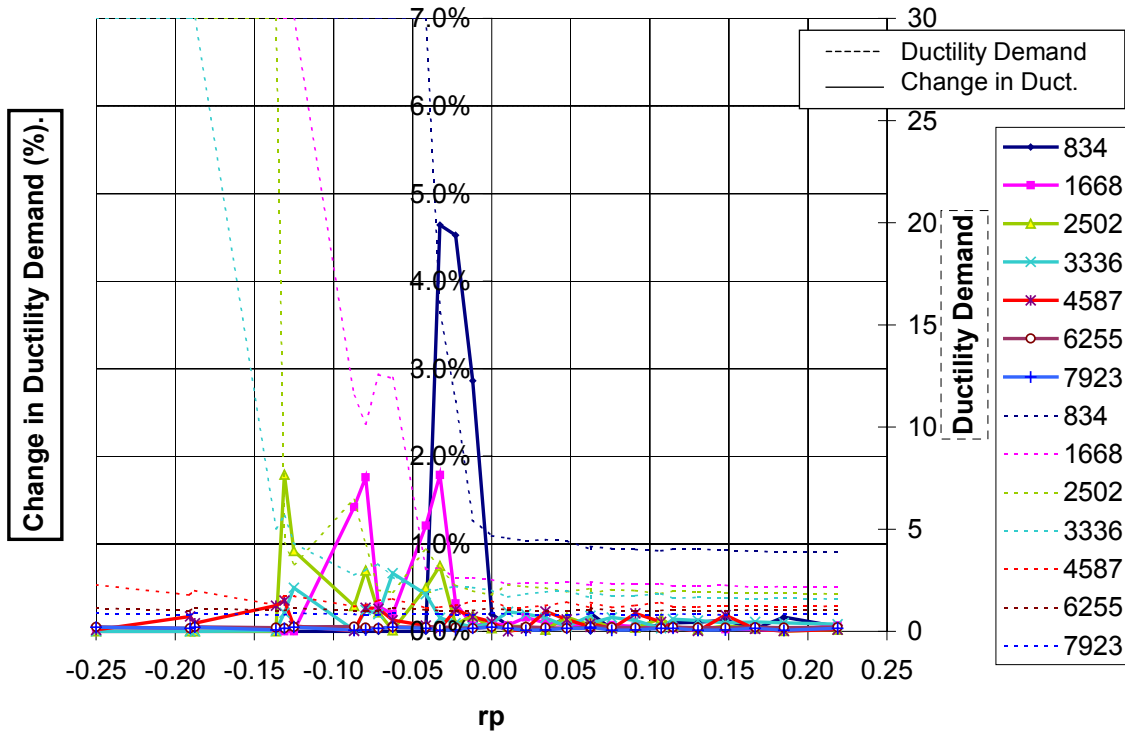


Figure C2.6.5.2c– EQ5, Lateral Scale = 0.2 g, Vertical Multiplier = 2.0, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.278 Seconds

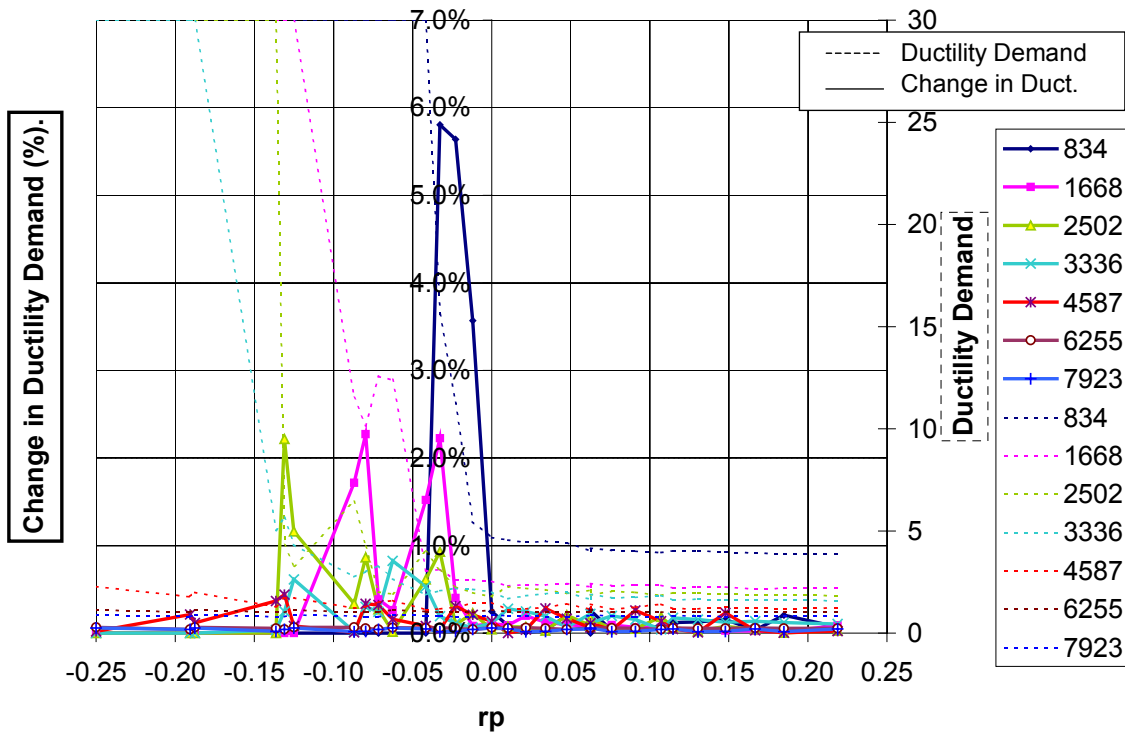


Figure C2.6.5.2d– EQ5, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.278 Seconds

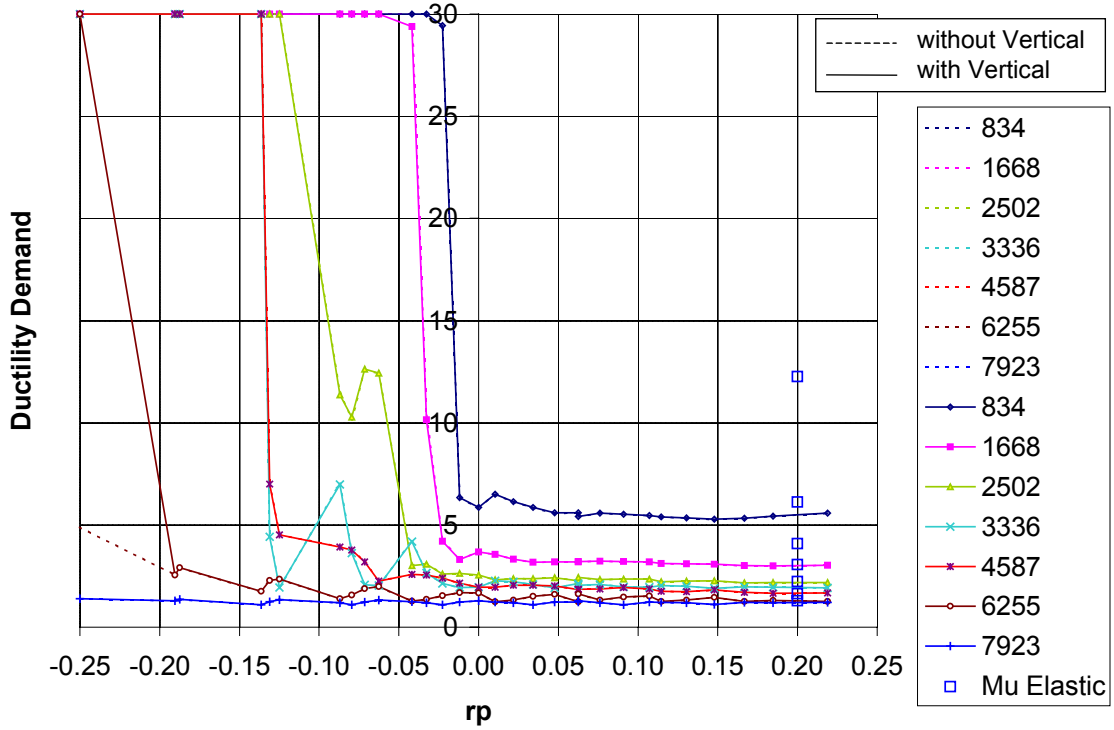


Figure C2.6.5.3a – EQ5, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.278 Seconds.

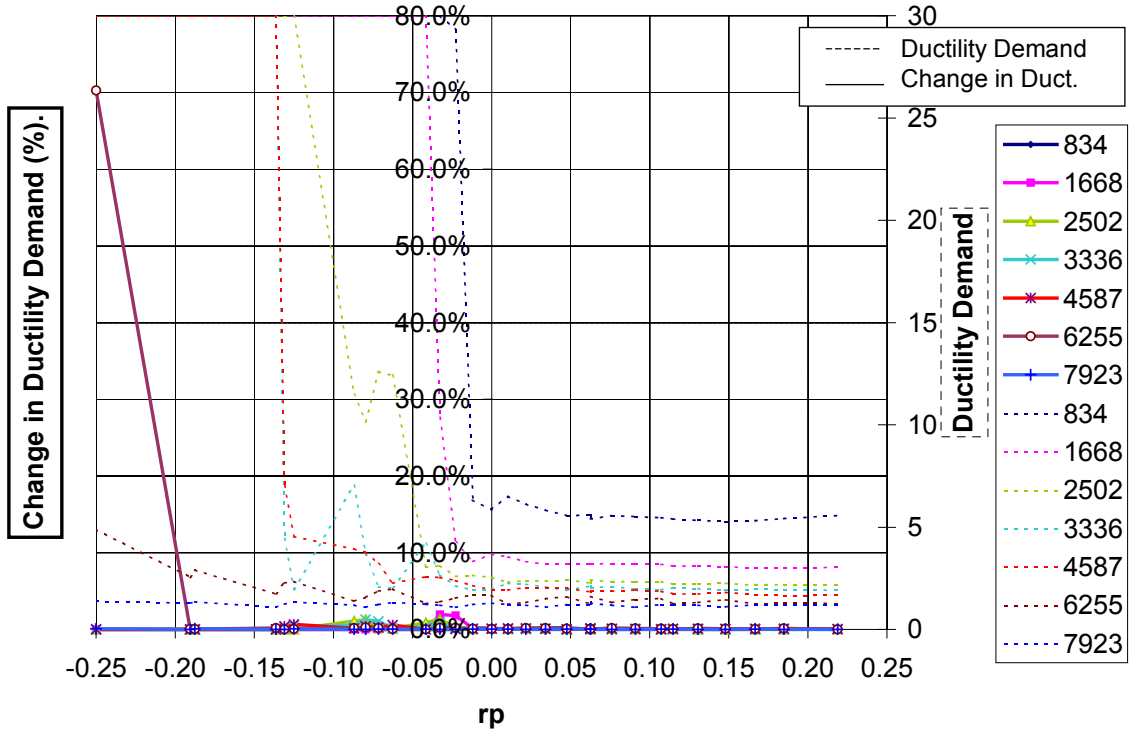


Figure C2.6.5.3b– EQ5, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.278 Seconds

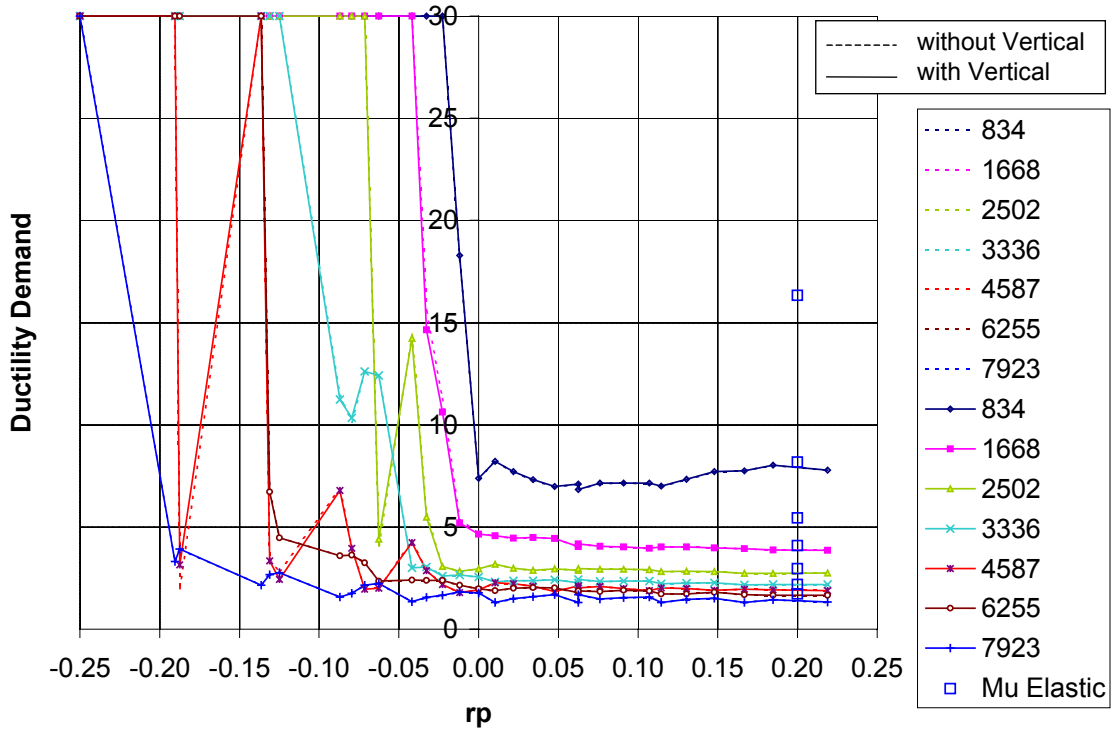


Figure C2.6.5.4a – EQ5, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.278 Seconds.

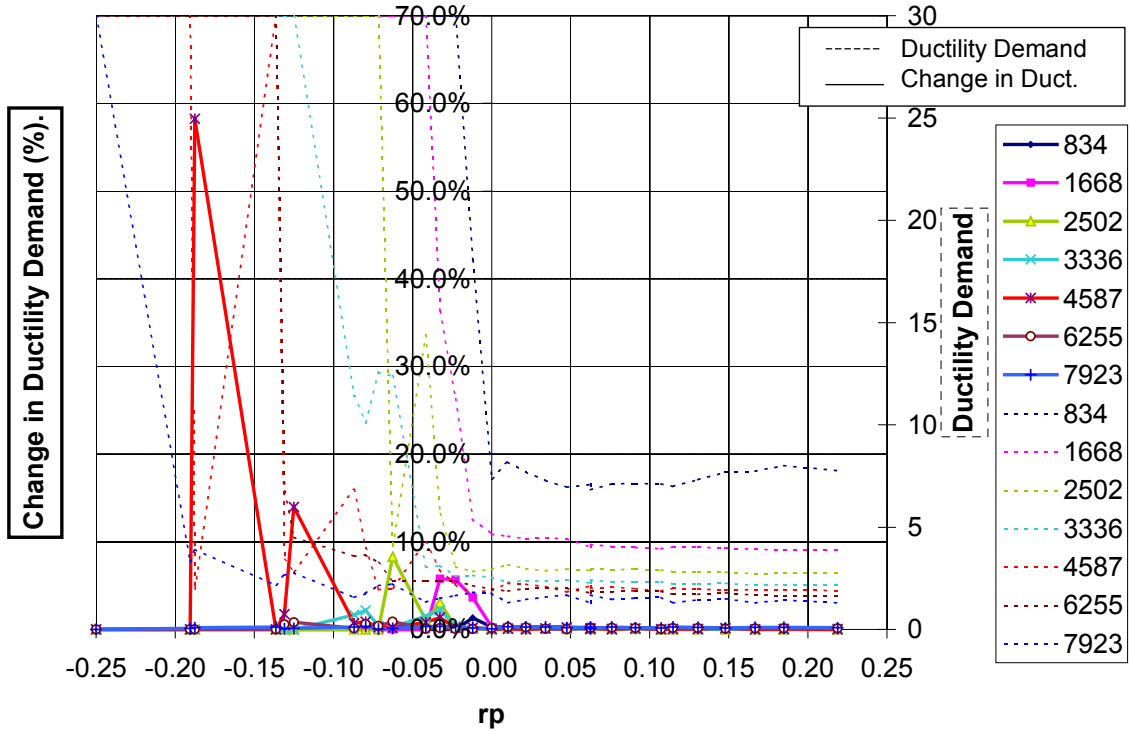


Figure C2.6.5.4b– EQ5, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.278 Seconds

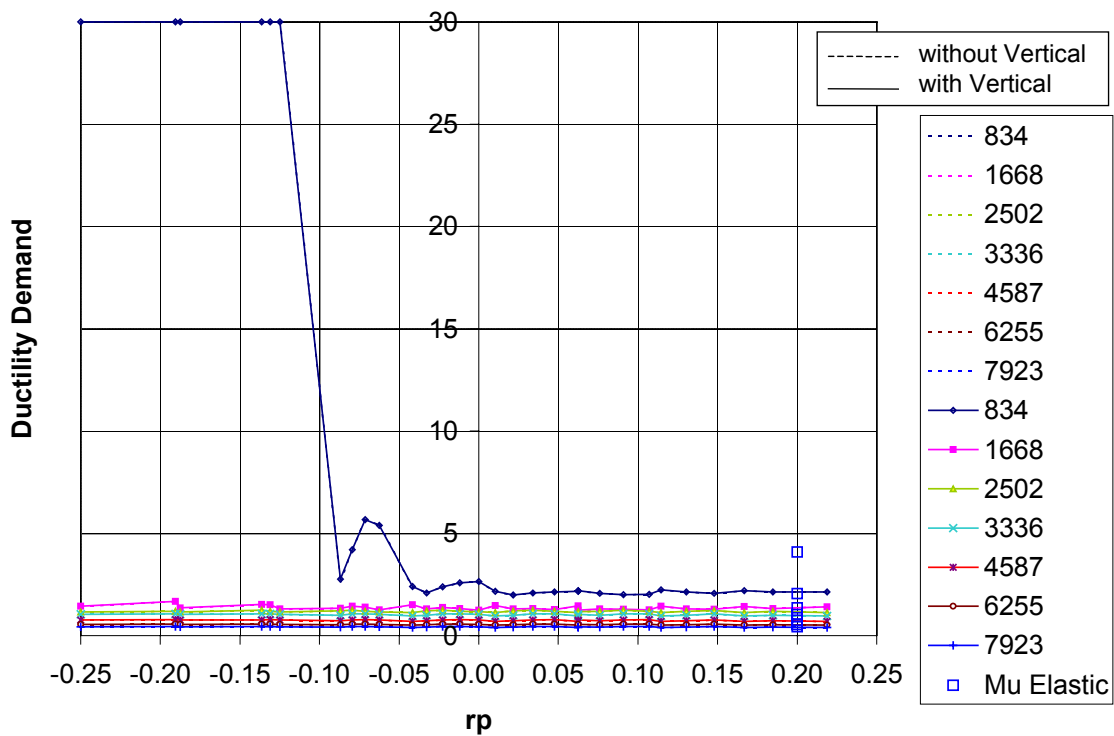


Figure C2.7.5.1a – EQ5, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.459 Seconds.

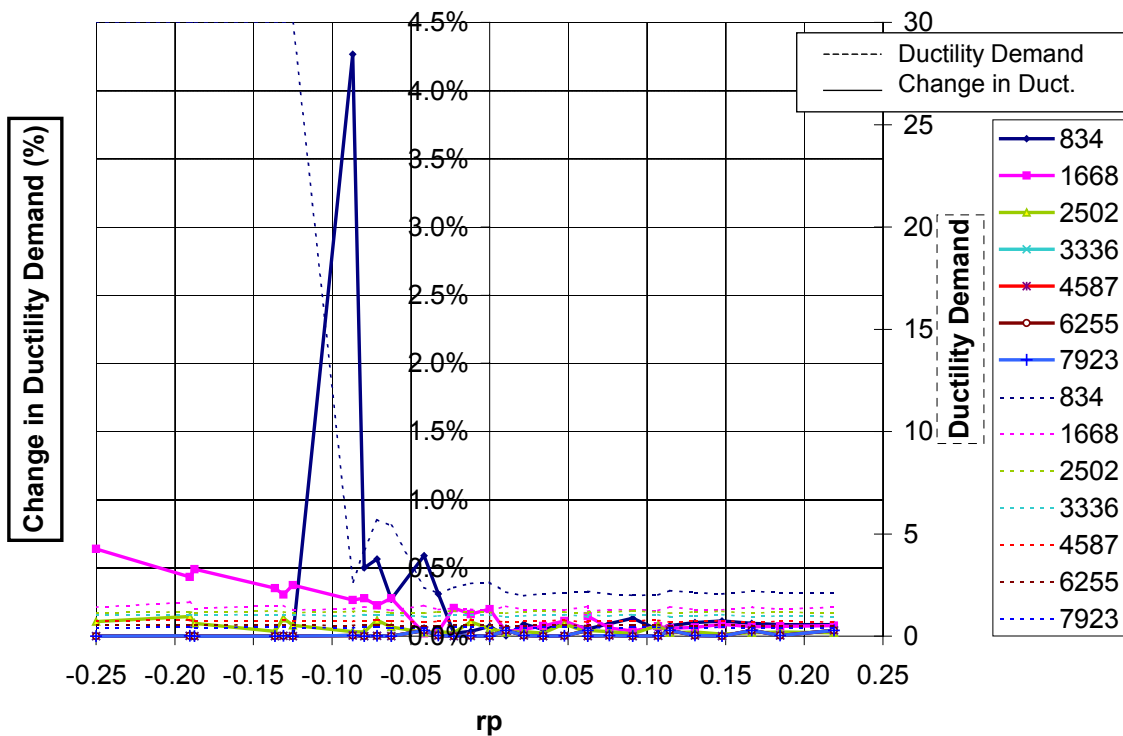


Figure C2.7.5.1b– EQ5, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.459 Seconds

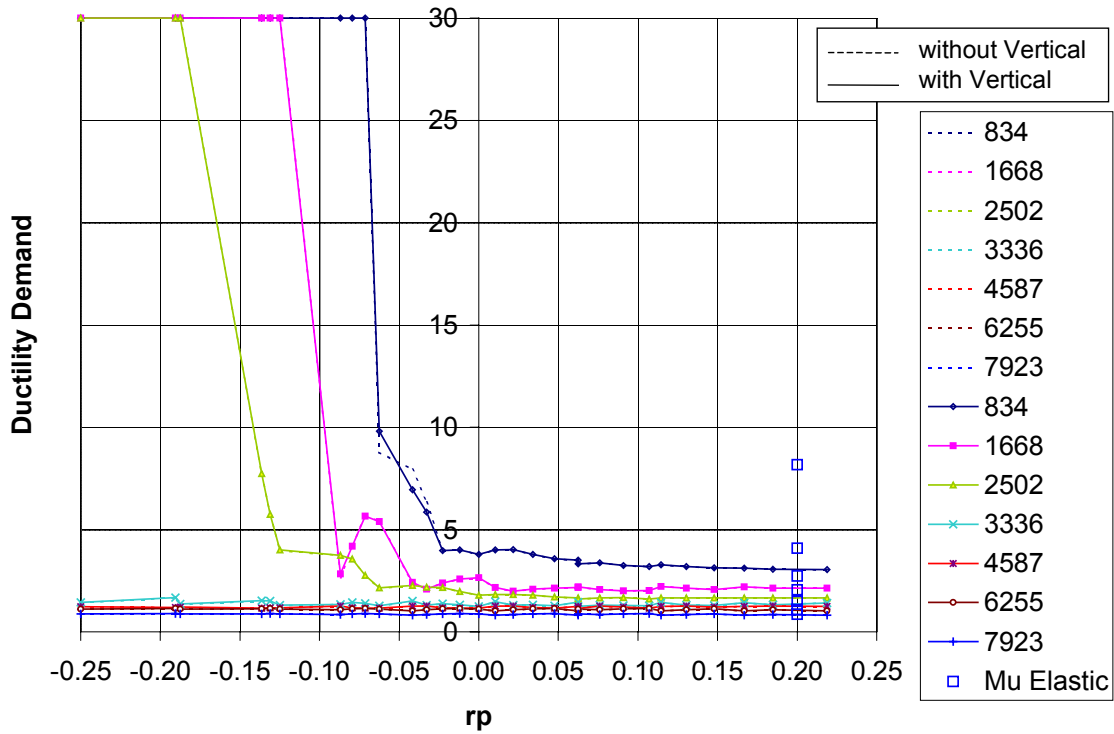


Figure C2.7.5.2a – EQ5, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.459 Seconds.

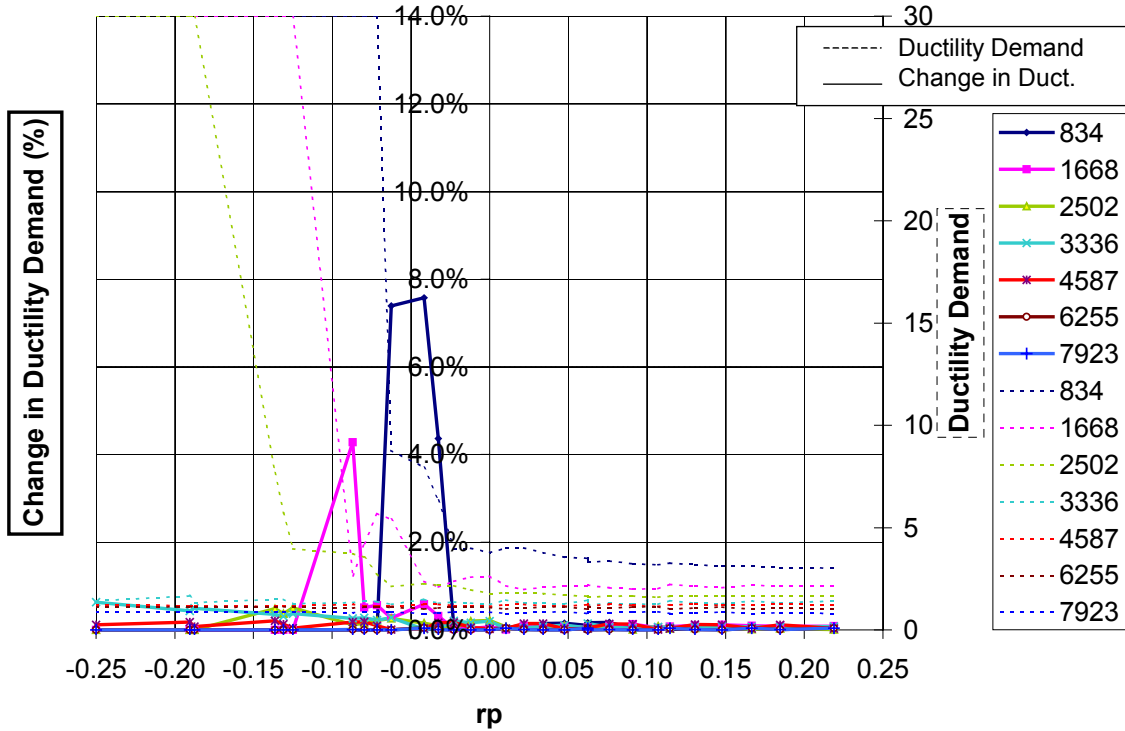
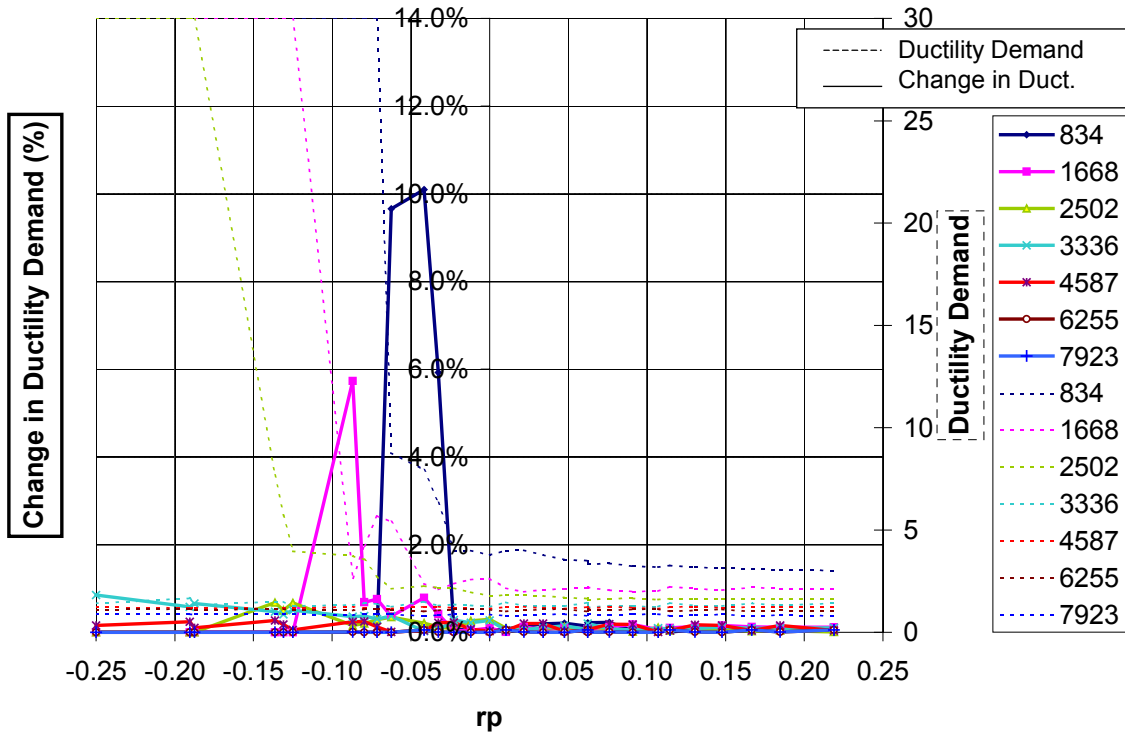
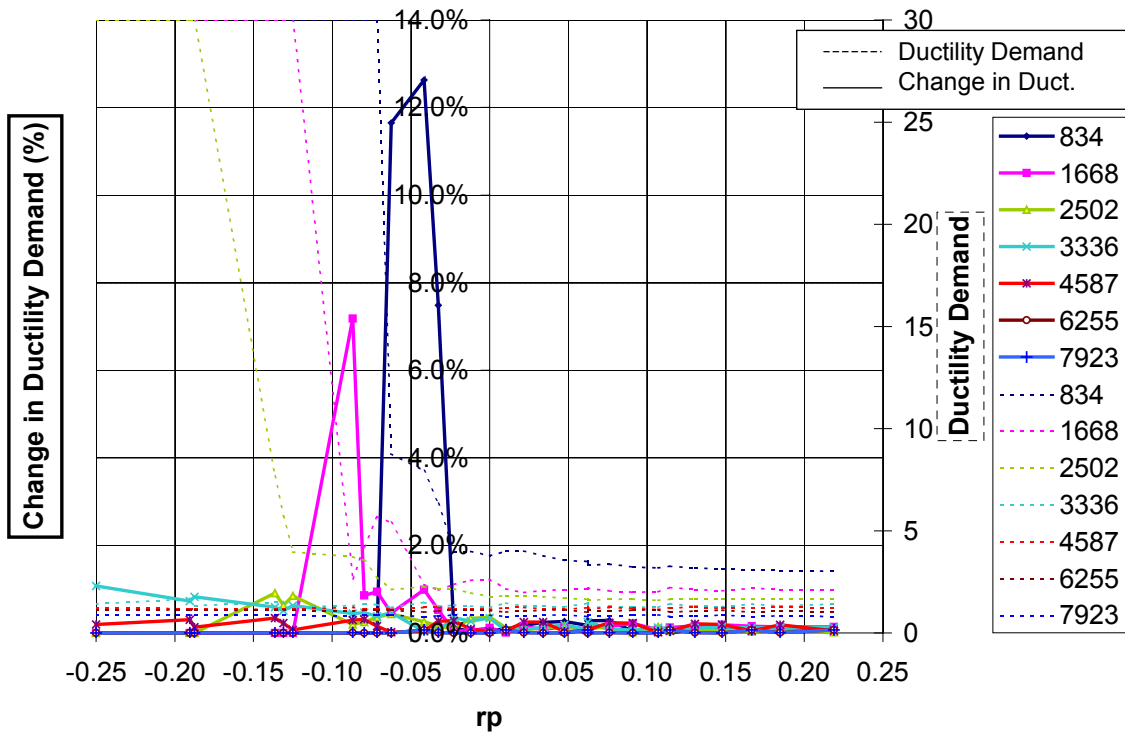


Figure C2.7.5.2b– EQ5, Lateral Scale = 0.2 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.459 Seconds



**Figure C2.7.5.2c– EQ5, Lateral Scale = 0.2 g, Vertical Multiplier = 2.0, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.459 Seconds**



**Figure C2.7.5.2d– EQ5, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.459 Seconds**

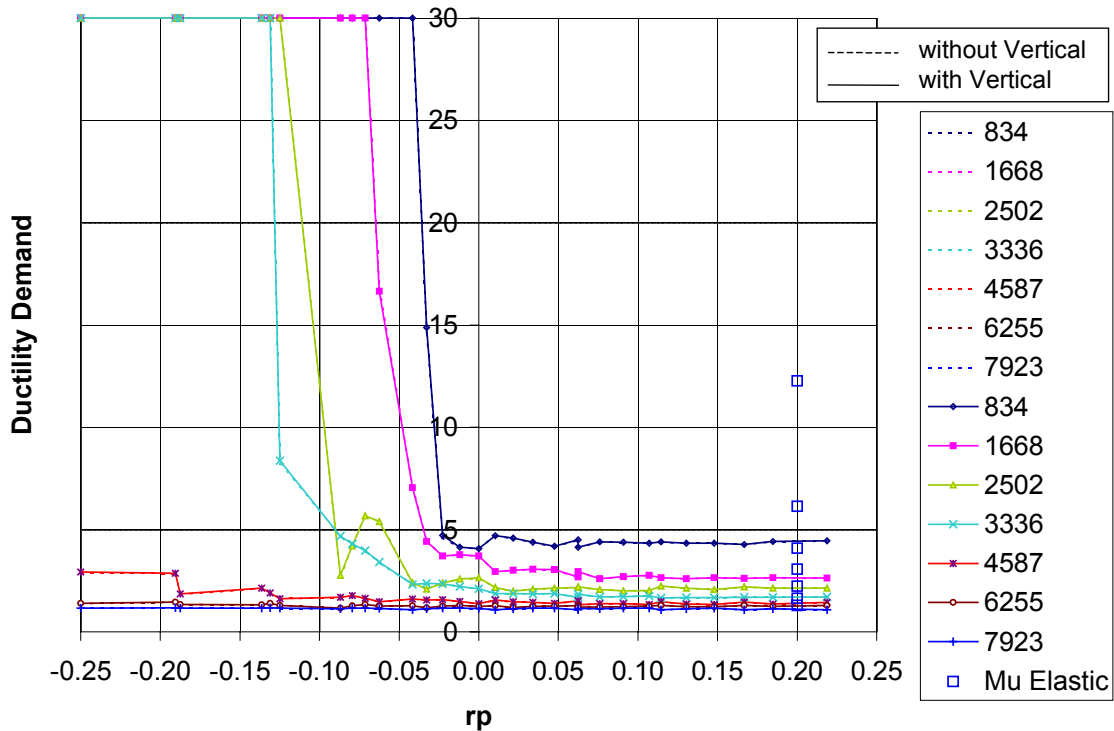


Figure C2.7.5.3a – EQ5, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.459 Seconds.

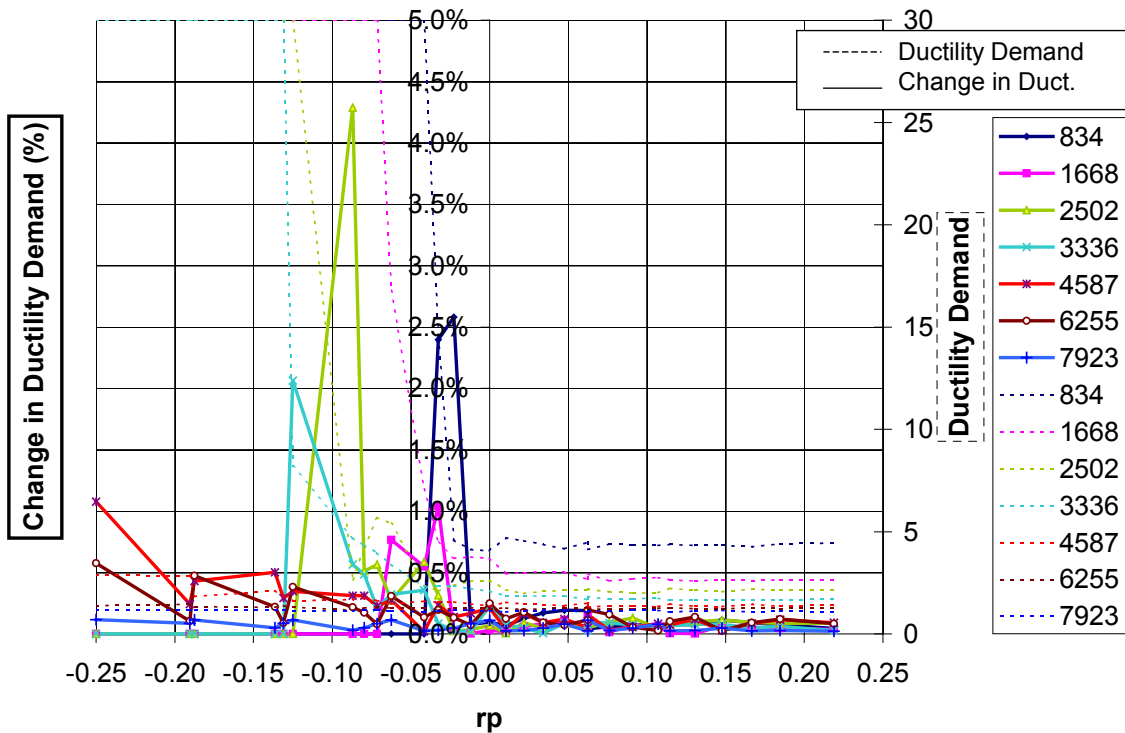


Figure C2.7.5.3b– EQ5, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.459 Seconds

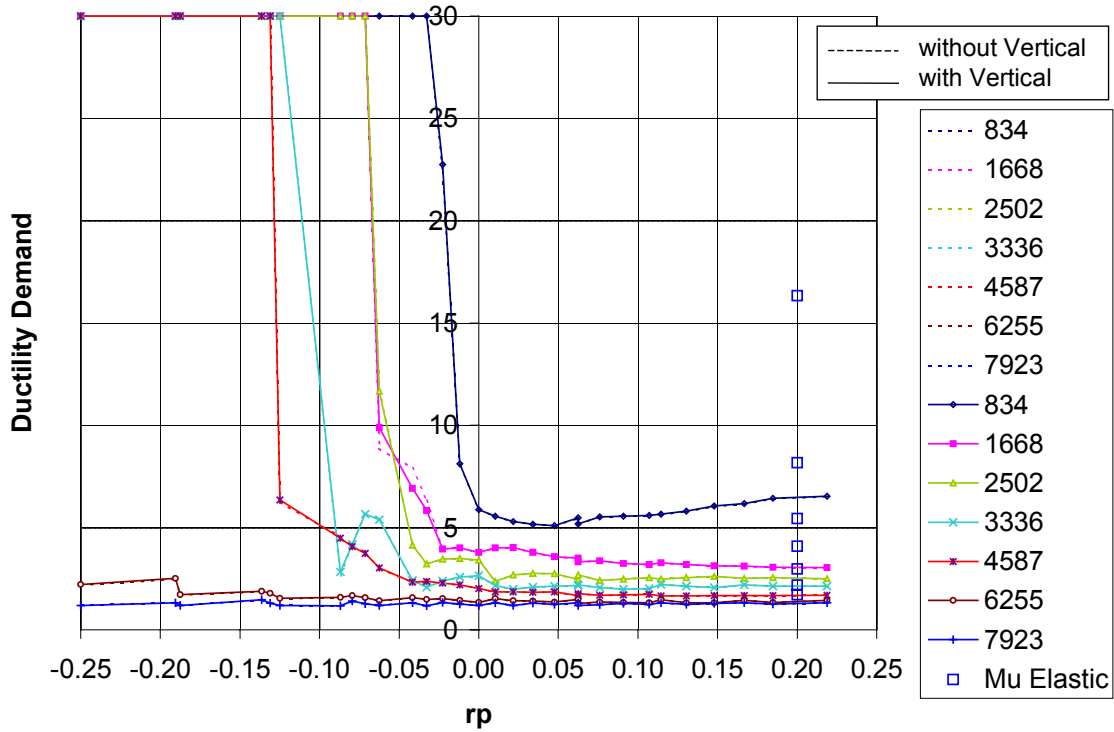


Figure C2.7.5.4a – EQ5, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.459 Seconds.

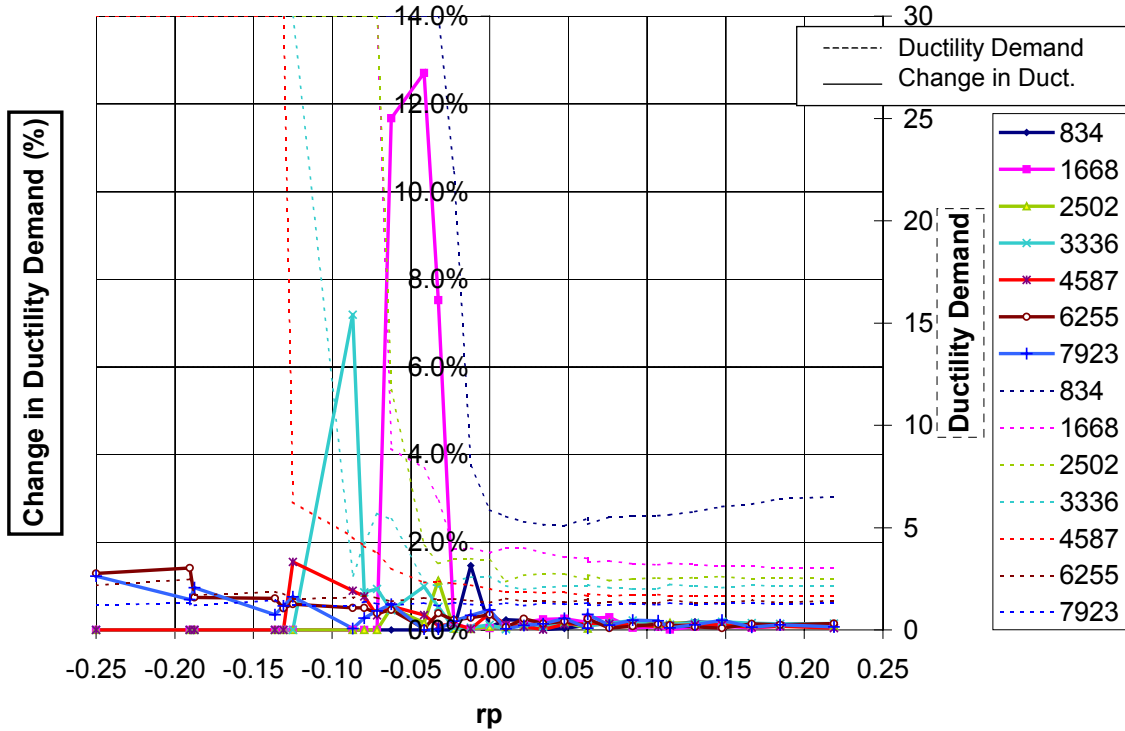


Figure C2.7.5.4b– EQ5, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.459 Seconds.

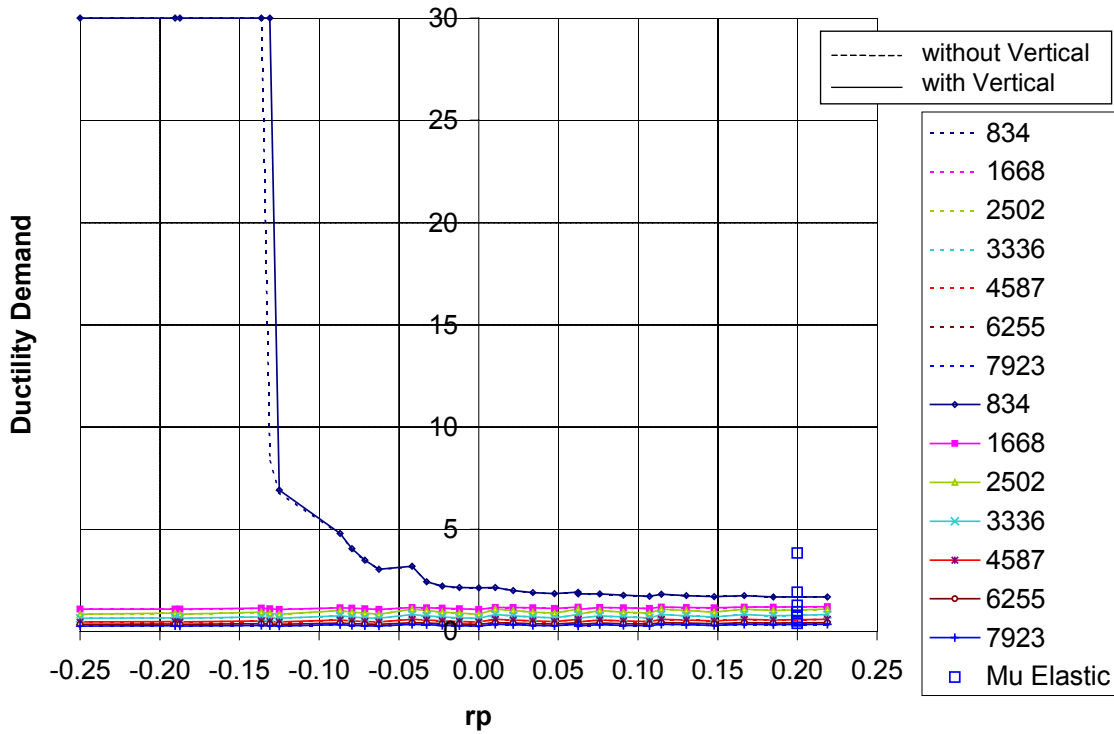


Figure C2.8.5.1a – EQ5, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.635 Seconds.

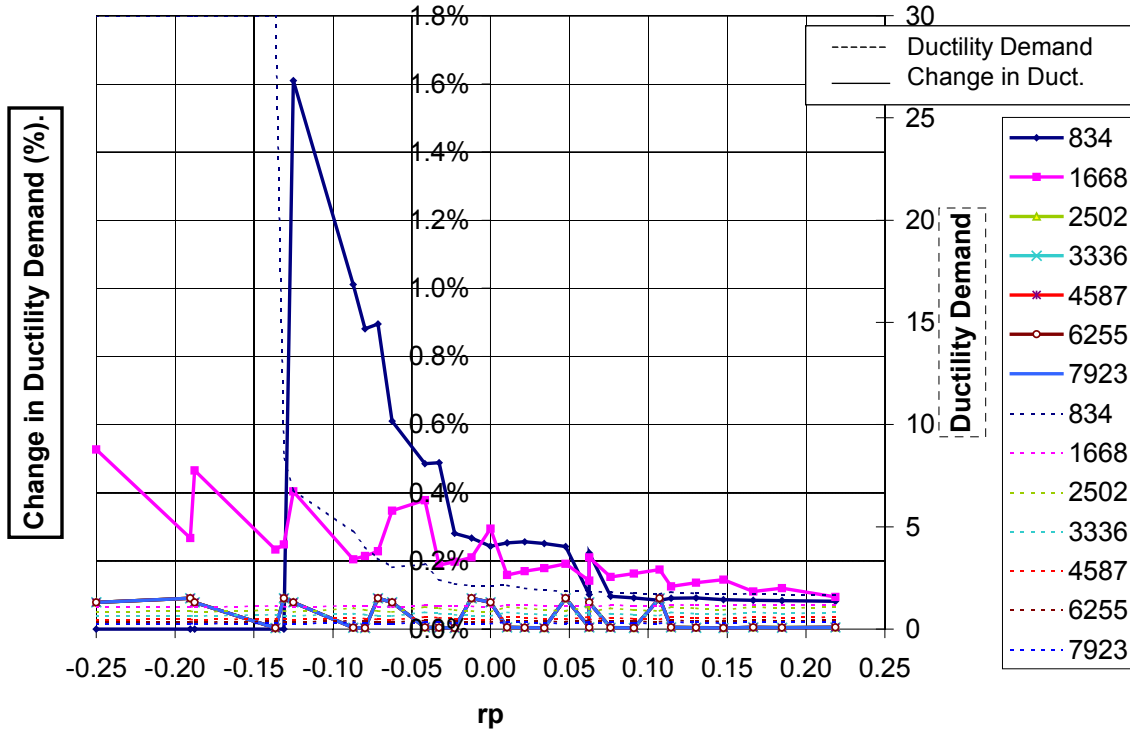


Figure C2.8.5.1b– EQ5, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.635 Seconds

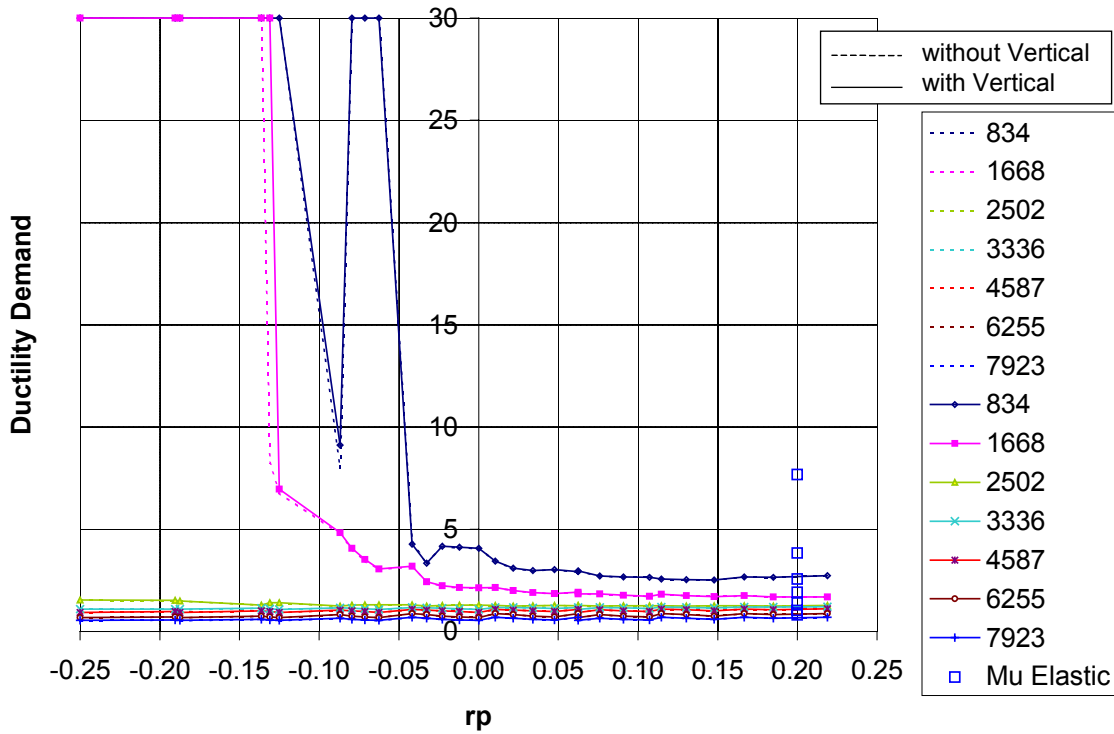


Figure C2.8.5.2a – EQ5, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.635 Seconds.

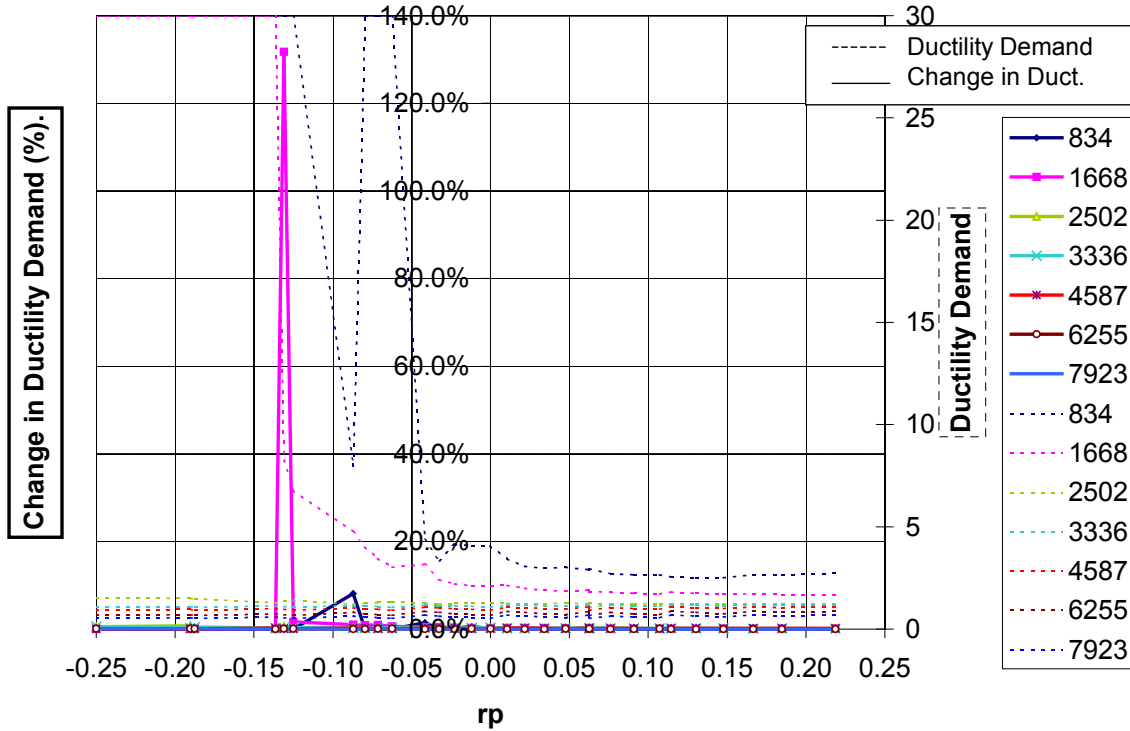
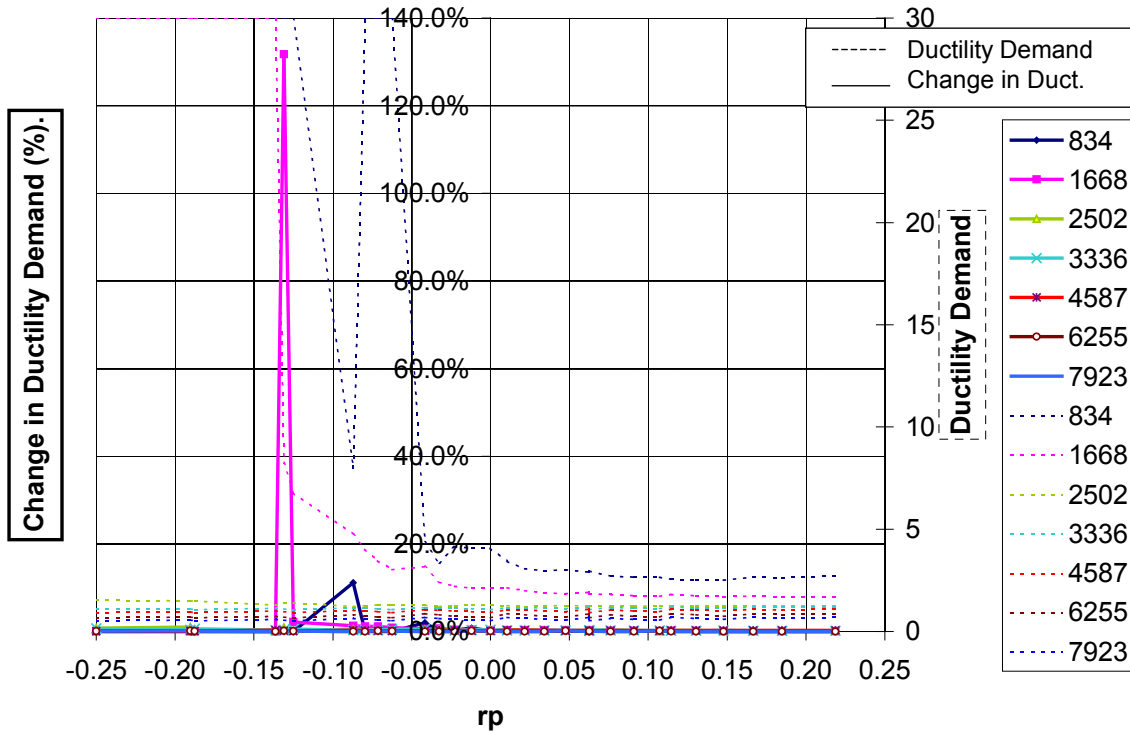
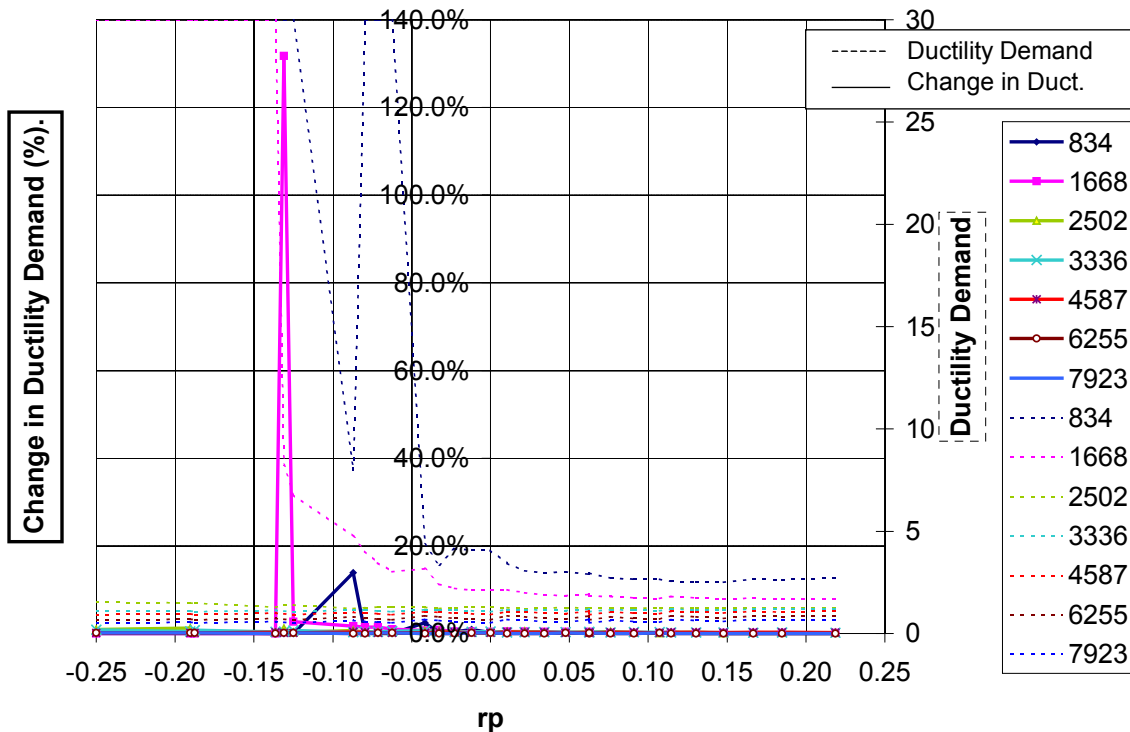


Figure C2.8.5.2b– EQ5, Lateral Scale = 0.2 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.635 Seconds



**Figure C2.8.5.2c– EQ5, Lateral Scale = 0.2 g, Vertical Multiplier = 2.0, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.635 Seconds**



**Figure C2.8.5.2d– EQ5, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.635 Seconds**

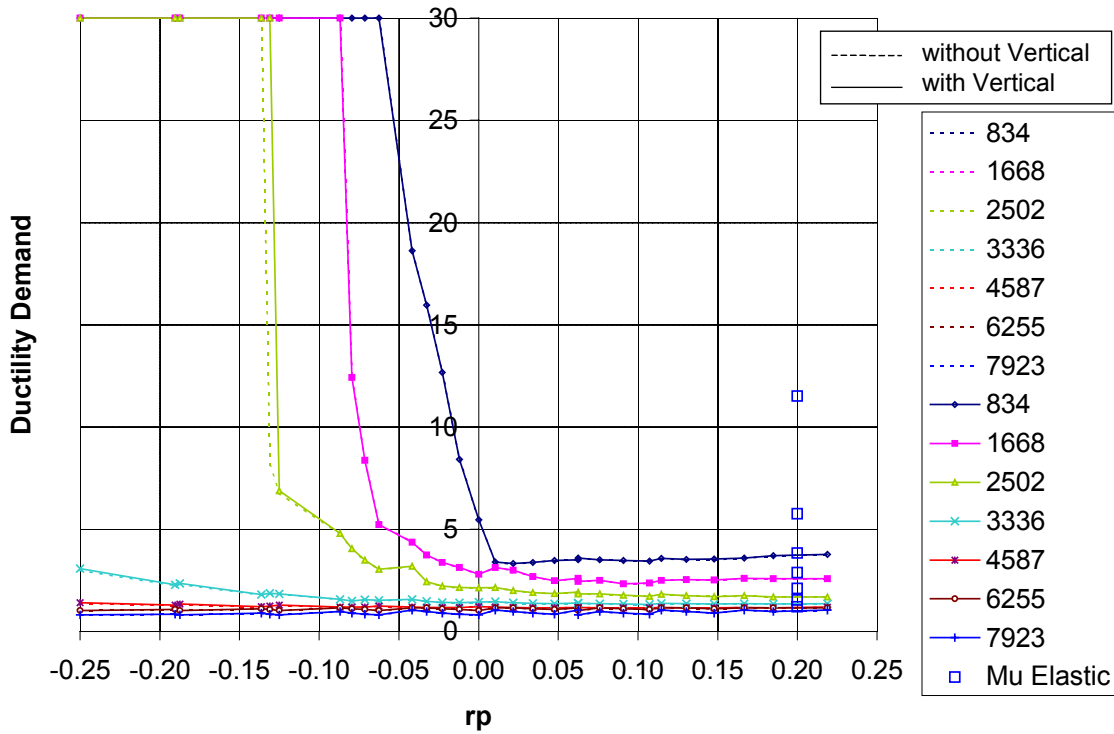


Figure C2.8.5.3a – EQ5, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.635 Seconds.

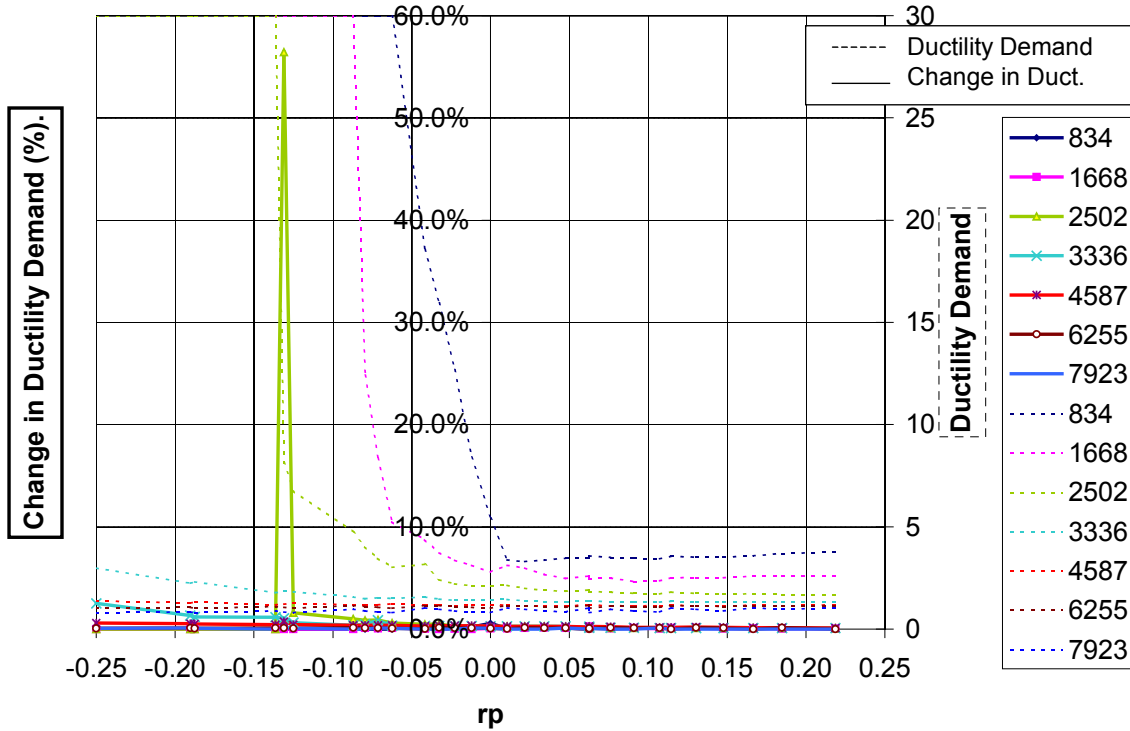


Figure C2.8.5.3b– EQ5, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.635 Seconds

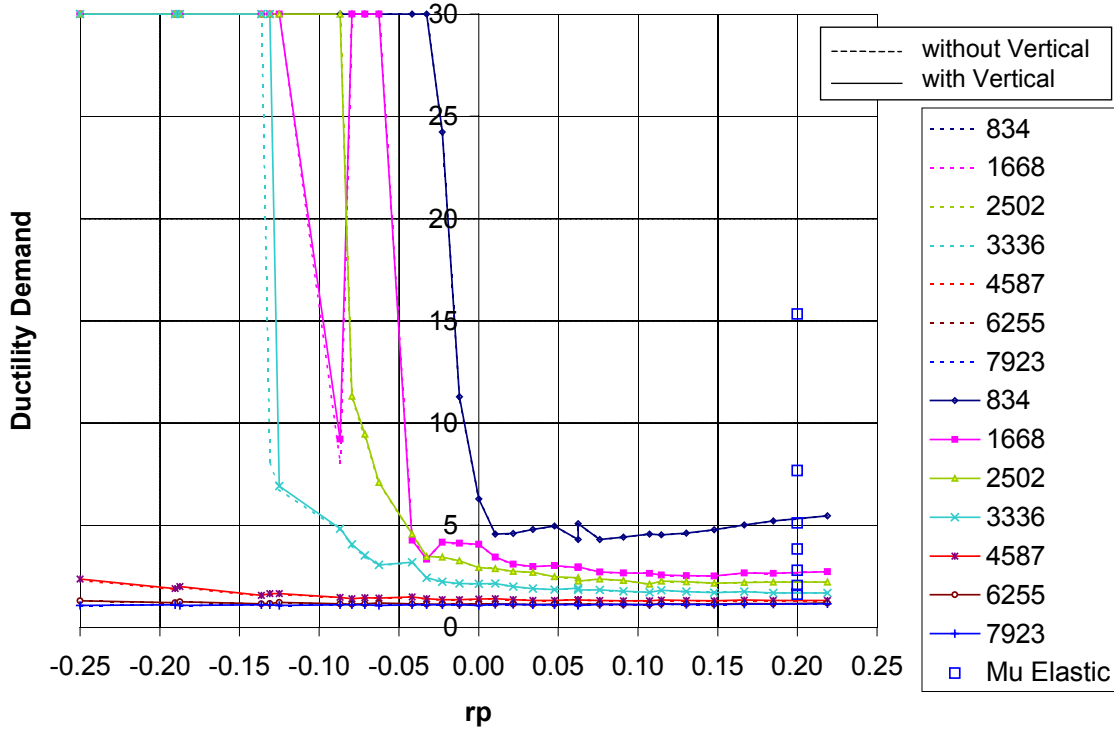


Figure C2.8.5.4a – EQ5, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.635 Seconds.

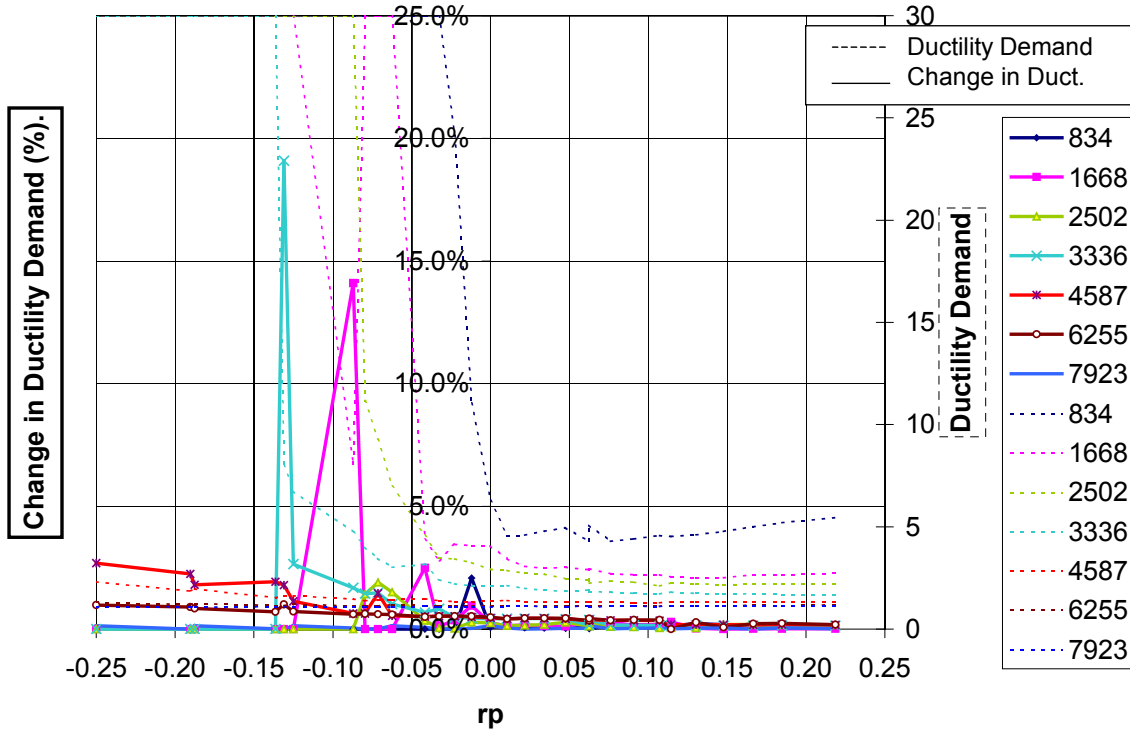


Figure C2.8.5.4b– EQ5, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.635 Seconds.

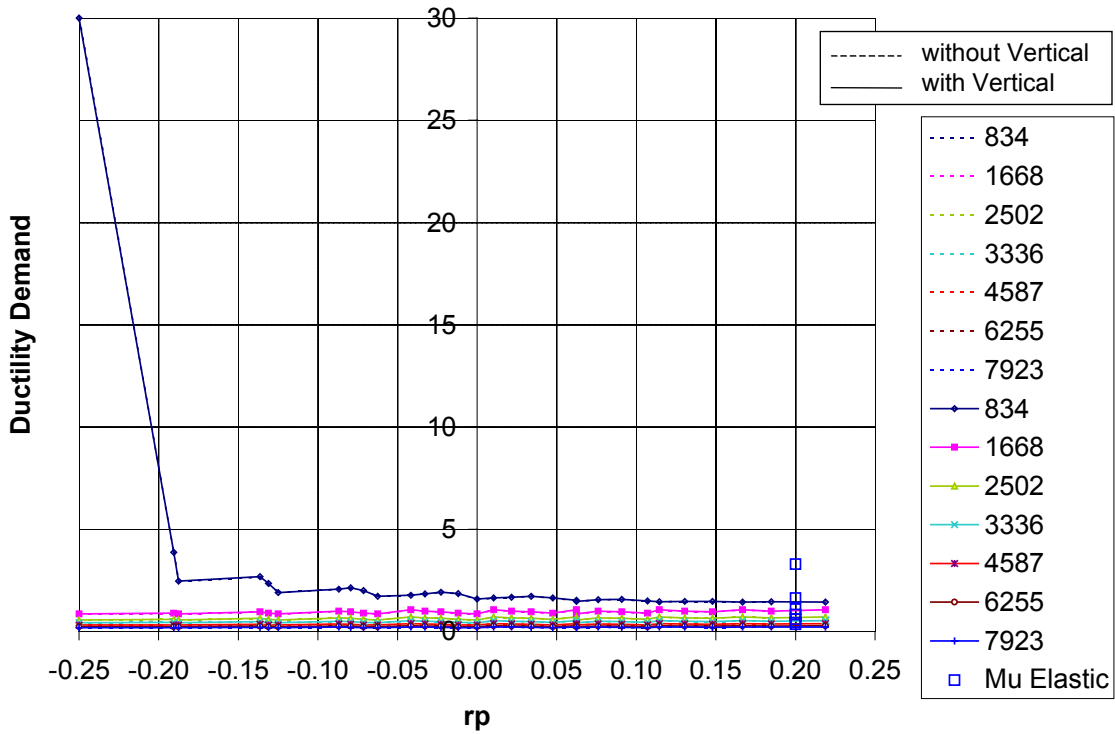


Figure C2.9.5.1a – EQ5, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.808 Seconds.

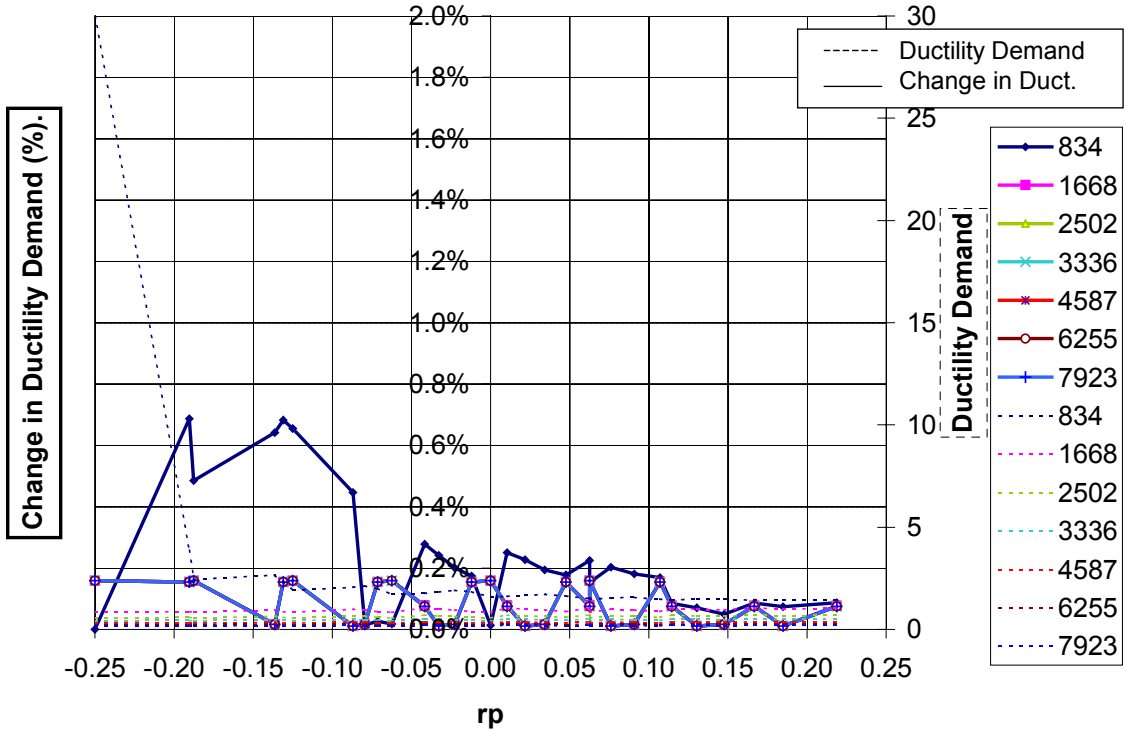


Figure C2.9.5.1b– EQ5, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.808 Seconds

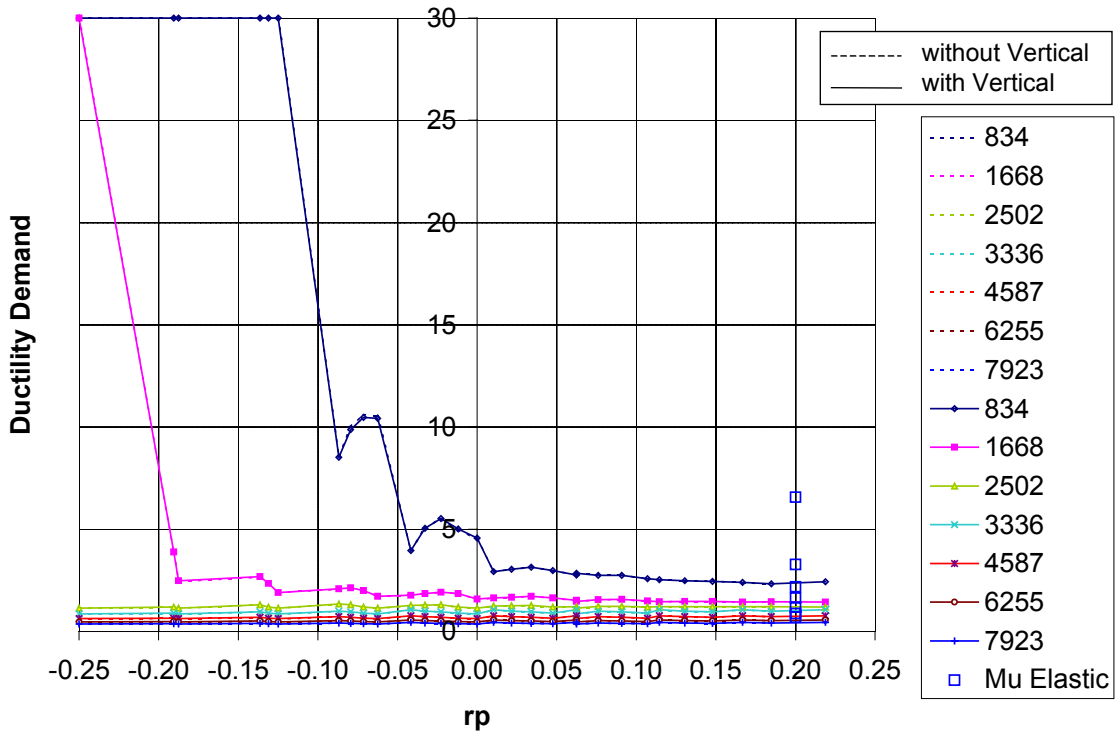


Figure C2.9.5.2a – EQ5, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.808 Seconds.

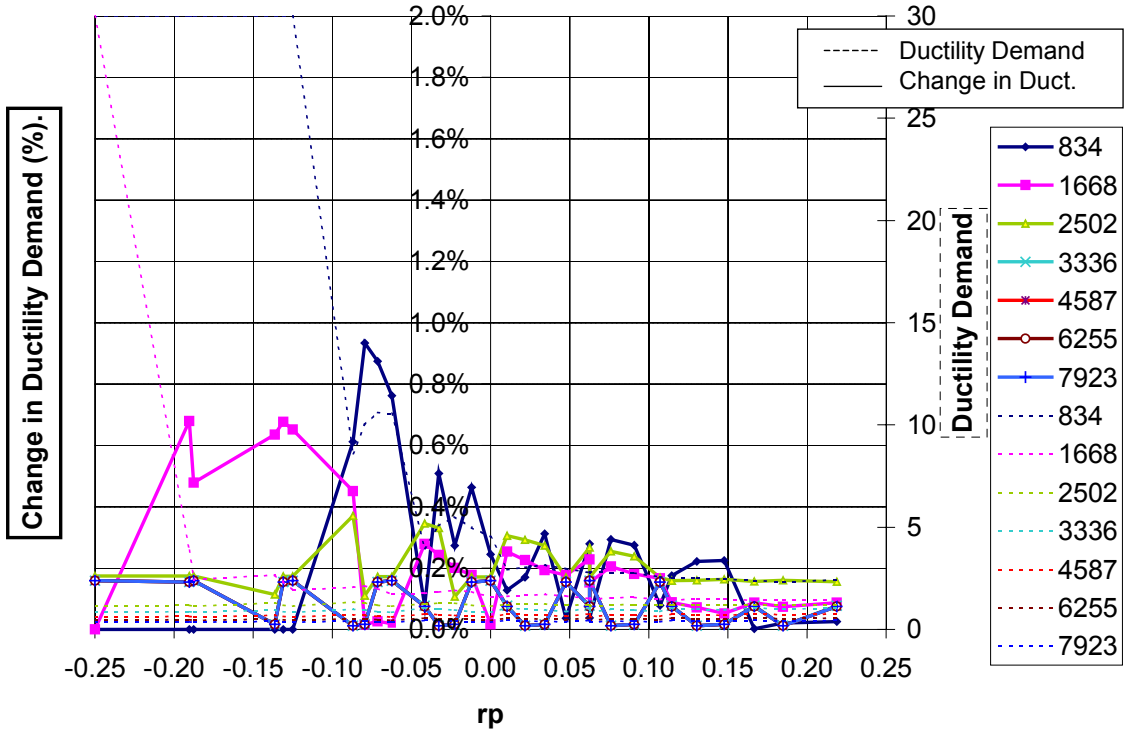
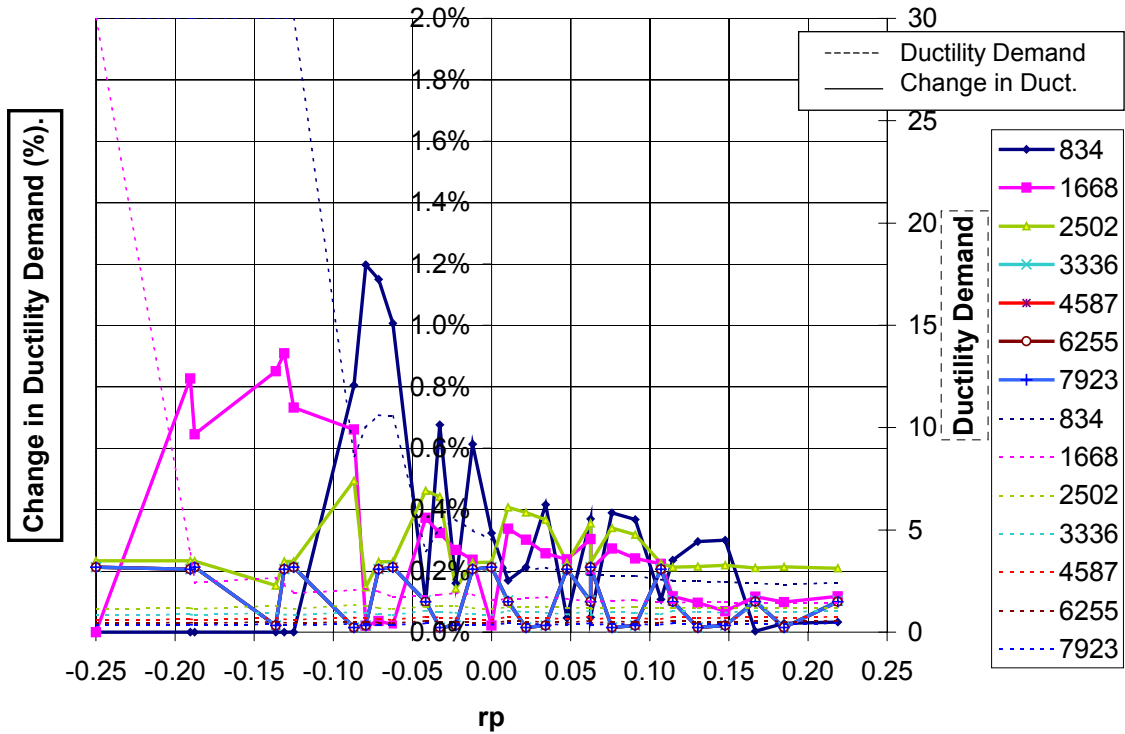
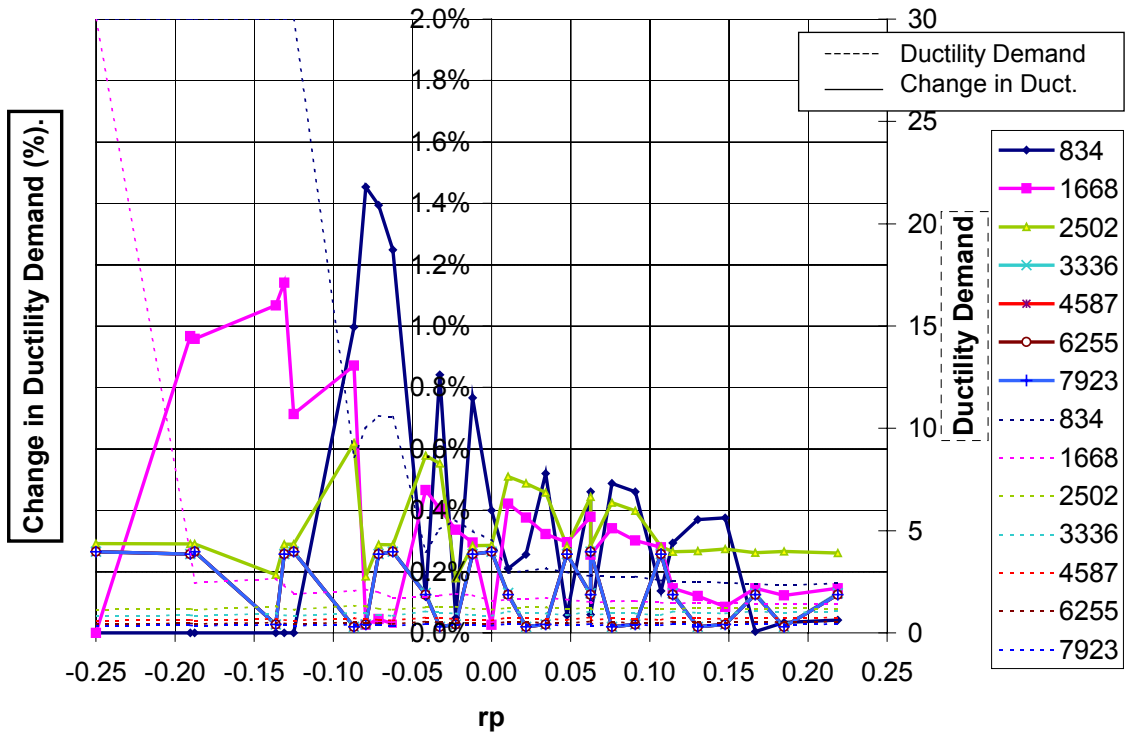


Figure C2.9.5.2b– EQ5, Lateral Scale = 0.2 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.808 Seconds



**Figure C2.9.5.2c– EQ5, Lateral Scale = 0.2 g, Vertical Multiplier = 2.0, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.808 Seconds**



**Figure C2.9.5.2d– EQ5, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.808 Seconds**

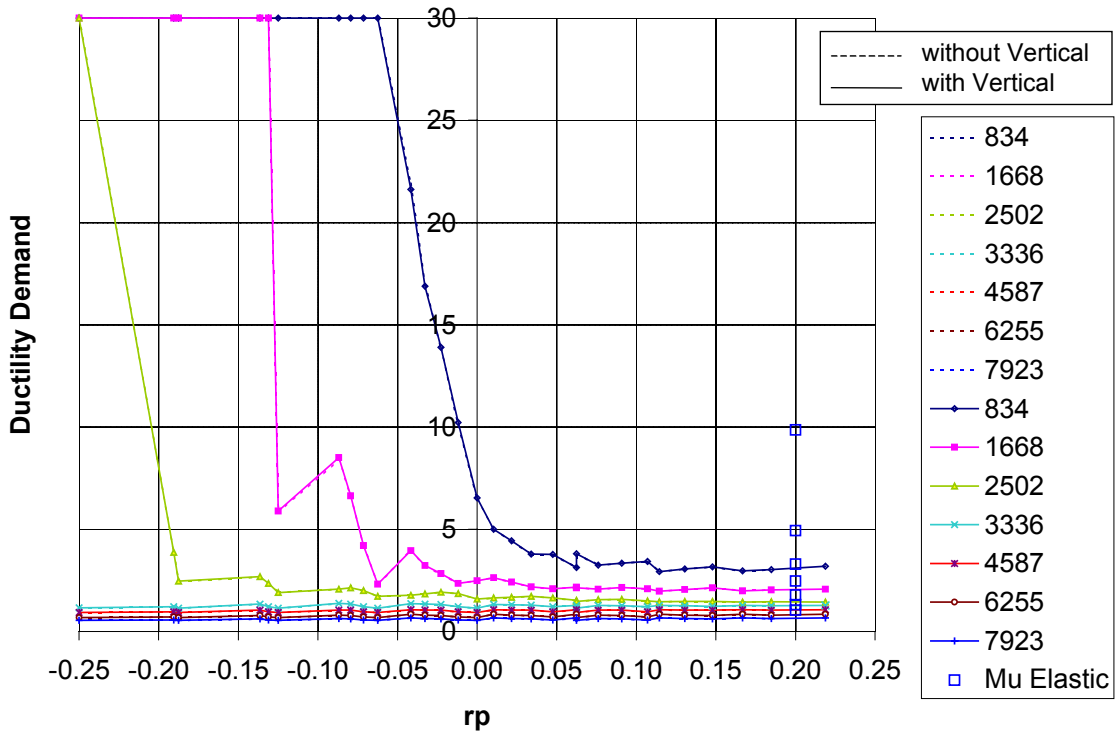


Figure C2.9.5.3a – EQ5, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.808 Seconds.

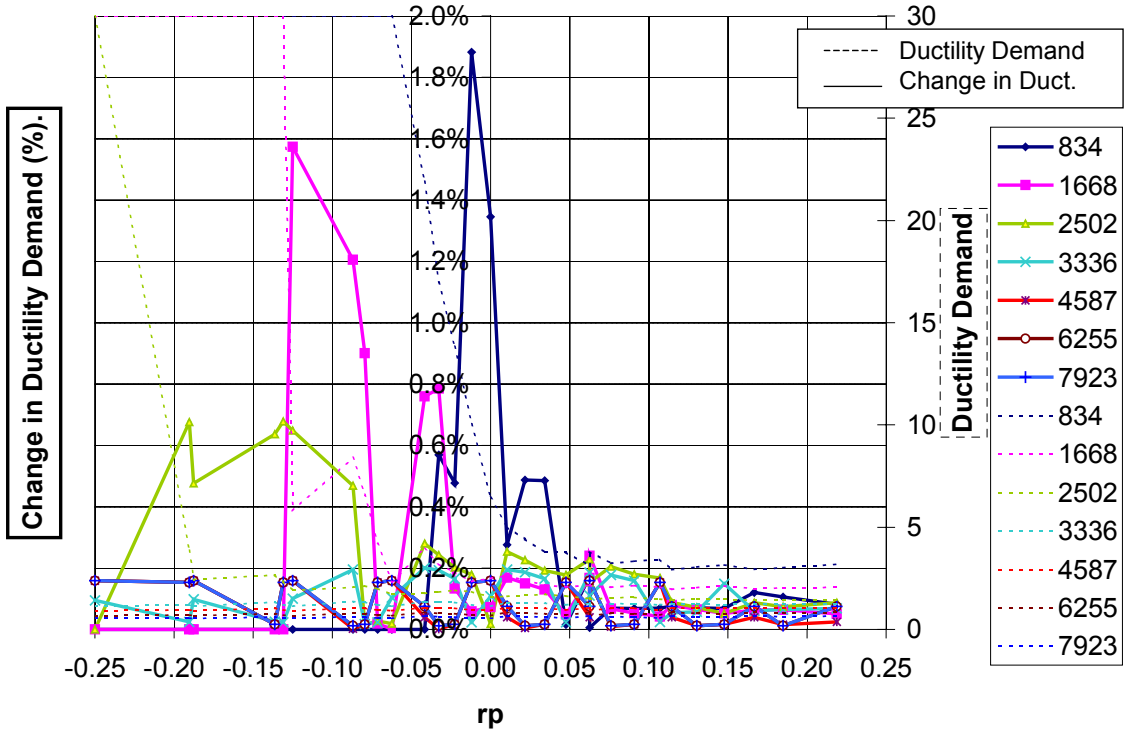


Figure C2.9.5.3b– EQ5, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.808 Seconds

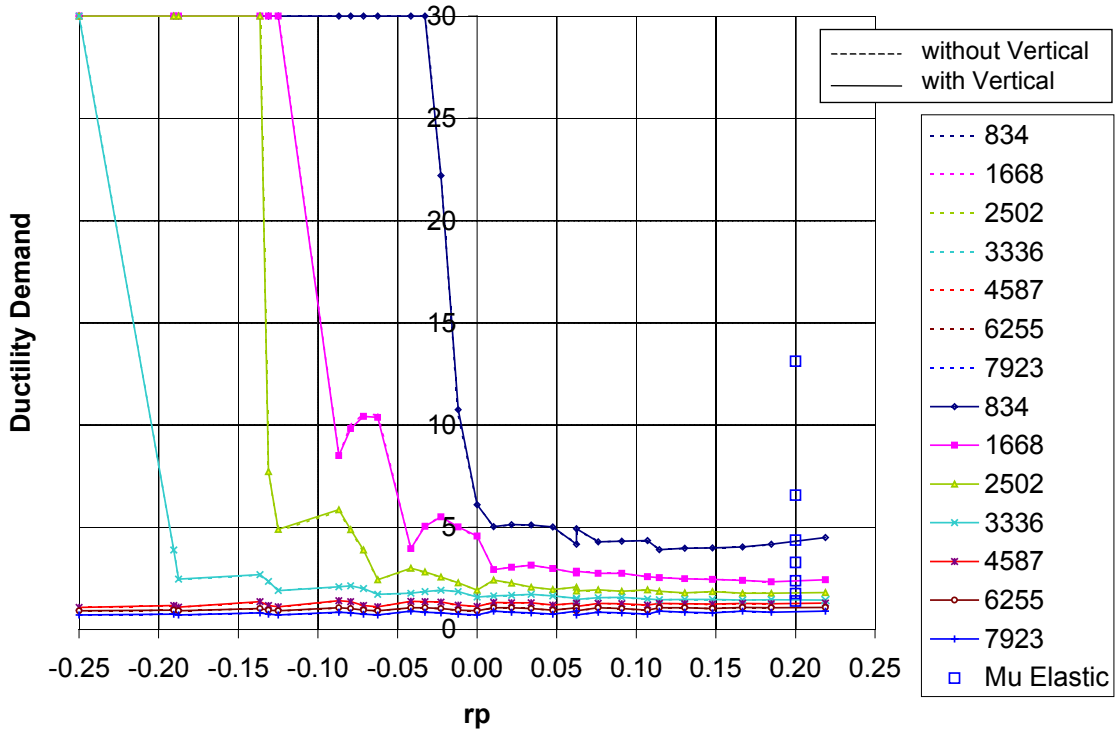


Figure C2.9.5.4a – EQ5, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.808 Seconds.

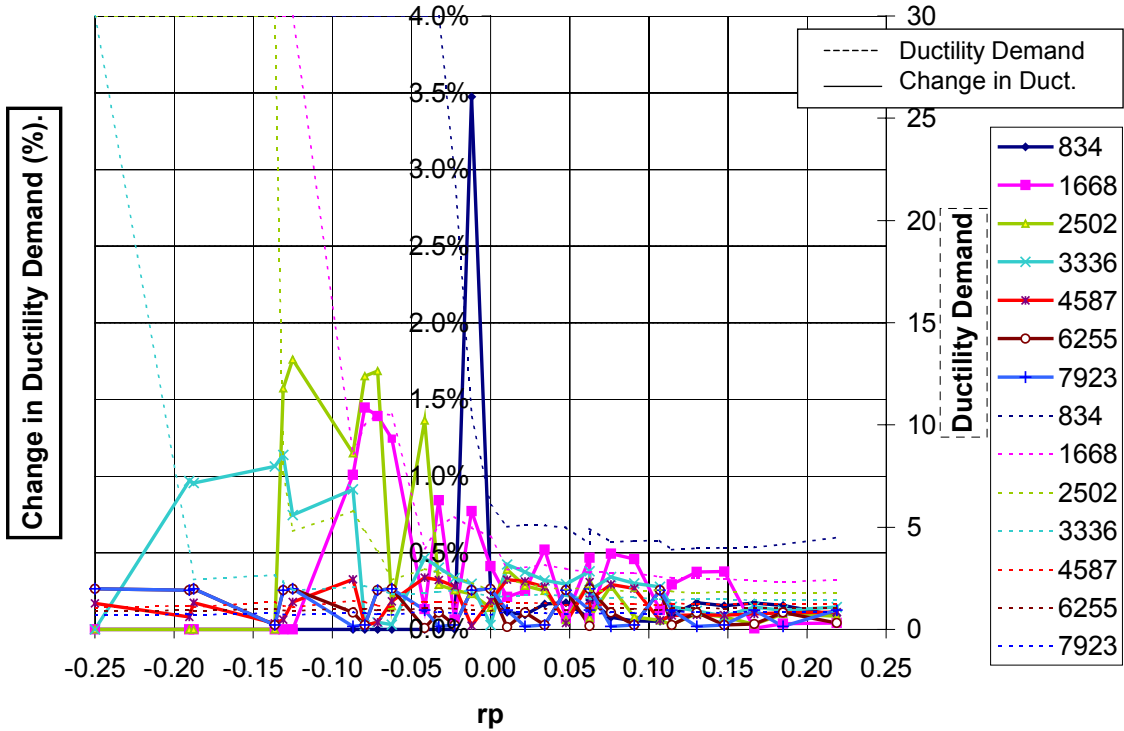


Figure C2.9.5.4b– EQ5, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.808 Seconds.

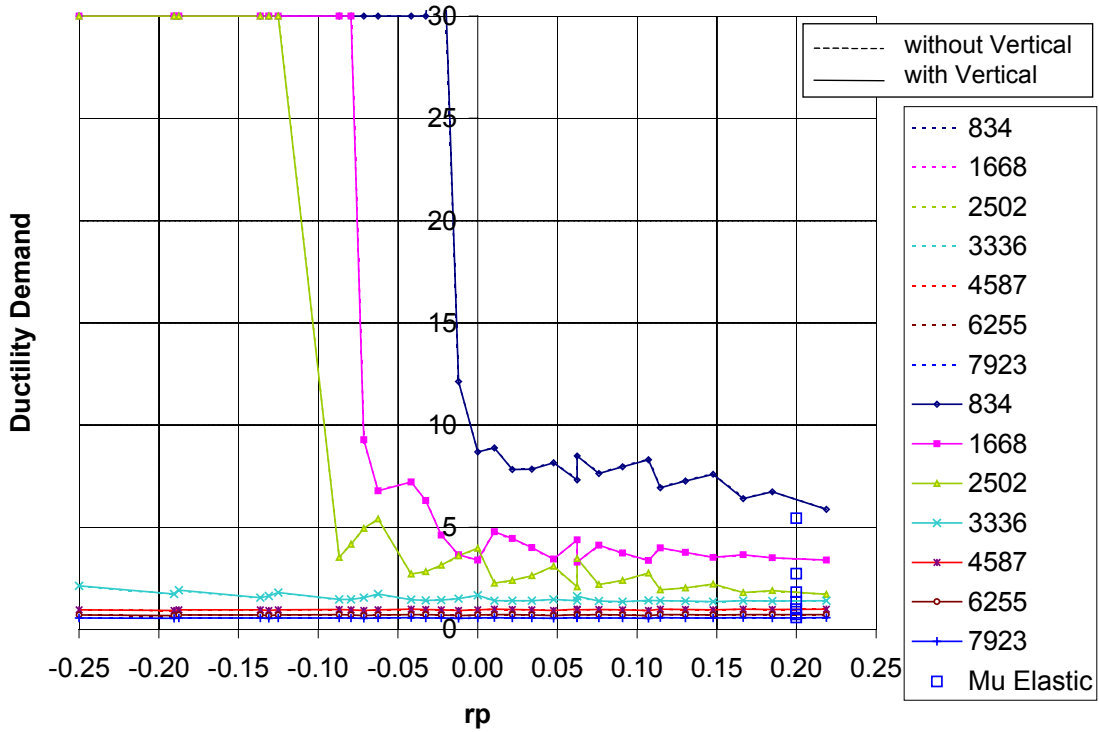


Figure C2.3.6.1a – EQ6, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 0.705 Seconds.

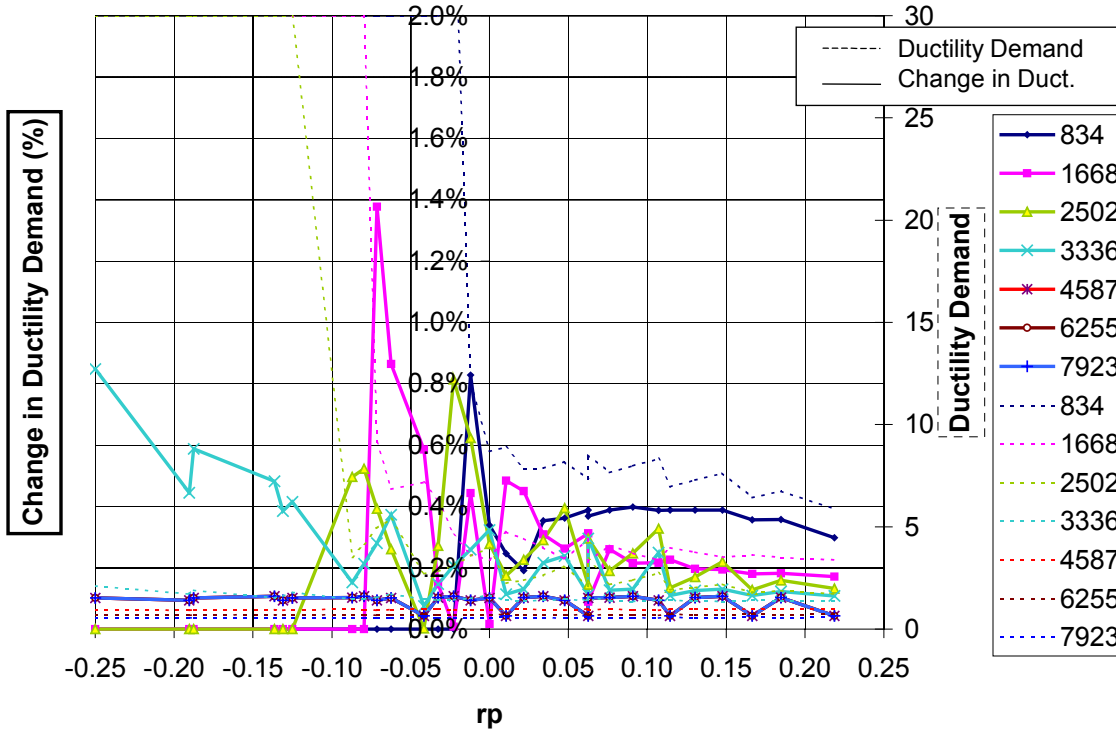


Figure C2.3.6.1b– EQ6, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 0.705 Seconds

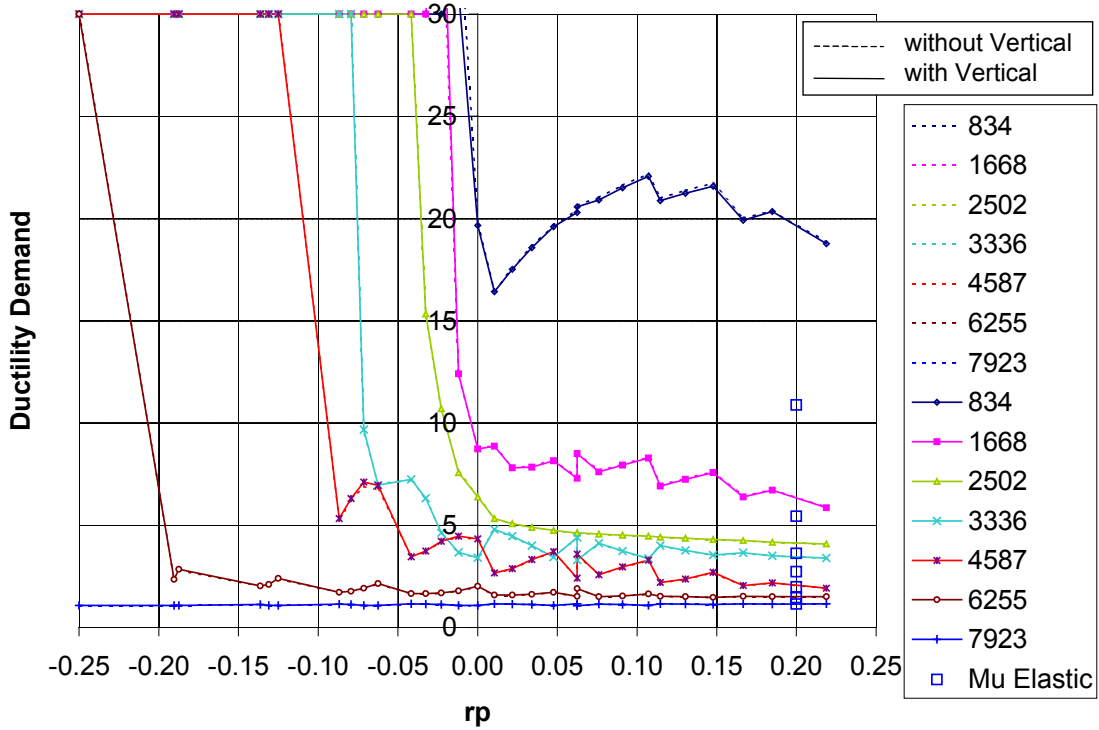


Figure C2.3.6.2a – EQ6, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 0.705 Seconds.

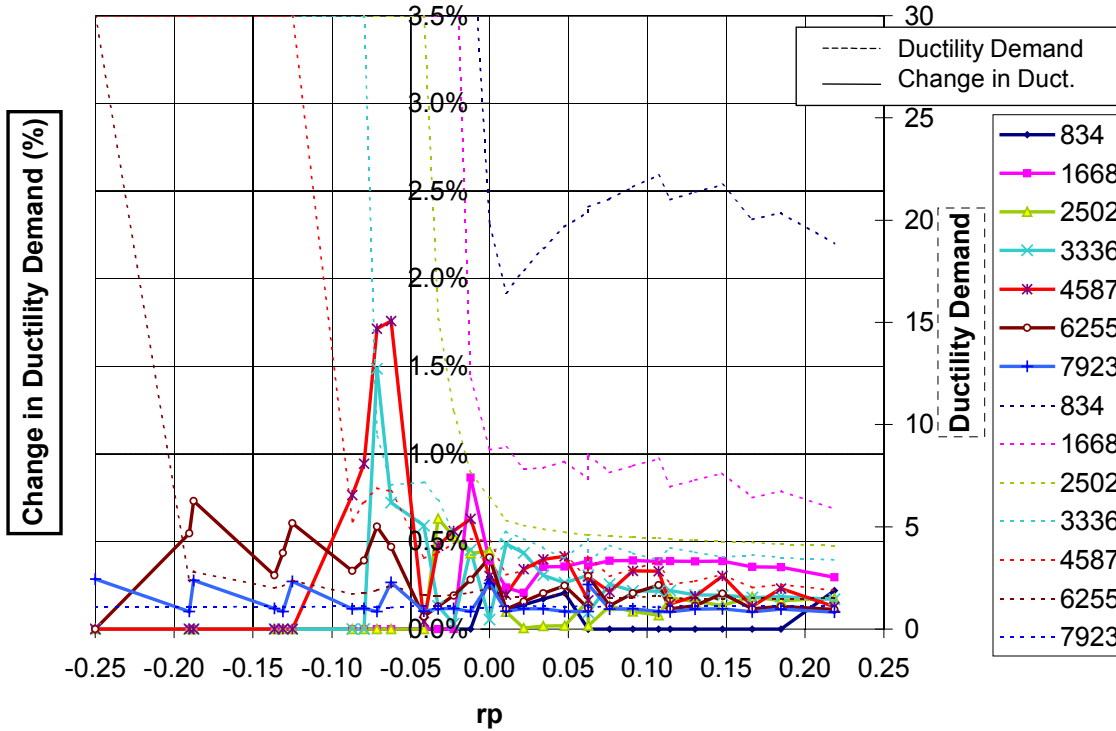
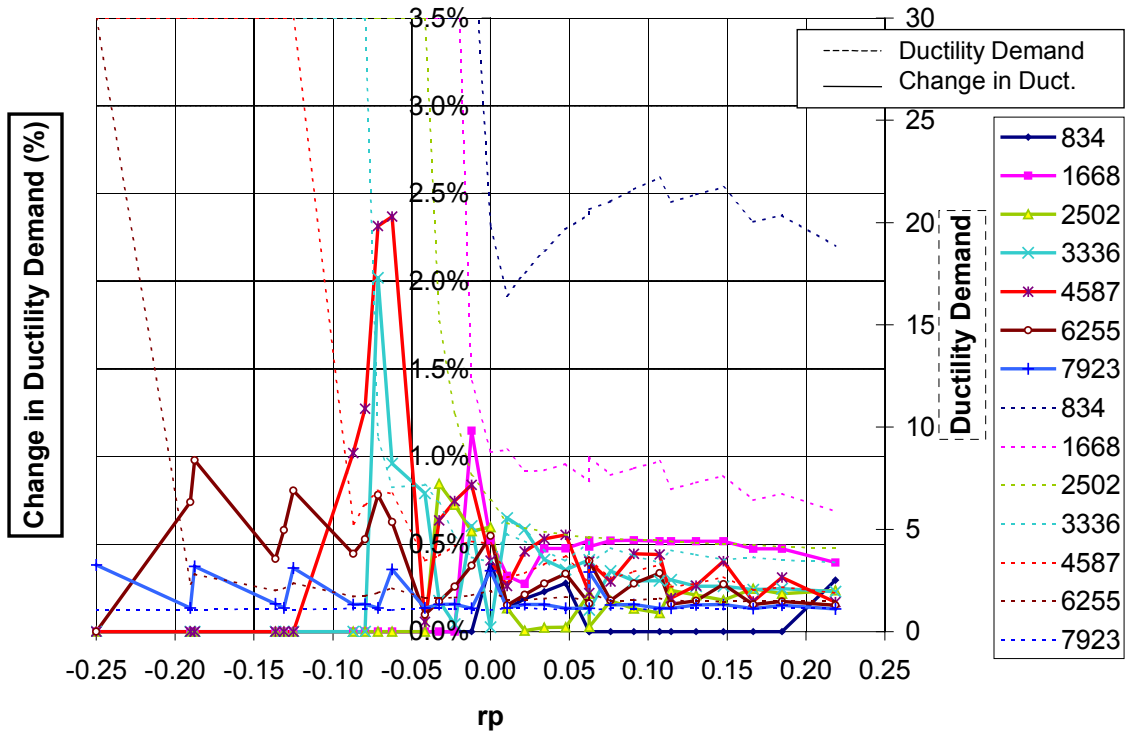
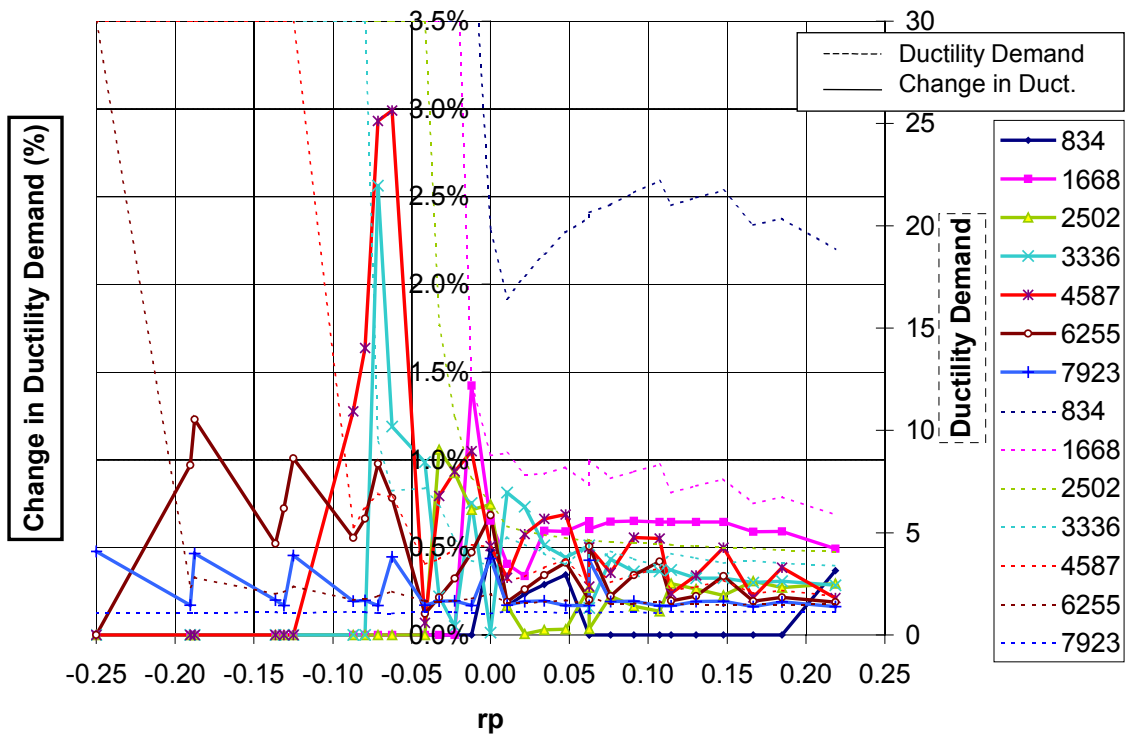


Figure C2.3.6.2b– EQ6, Lateral Scale = 0.2 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 0.705 Seconds



**Figure C2.3.6.2c– EQ6, Lateral Scale = 0.2 g, Vertical Multiplier = 2.0, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 0.705 Seconds**



**Figure C2.3.6.2d– EQ6, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 0.705 Seconds**

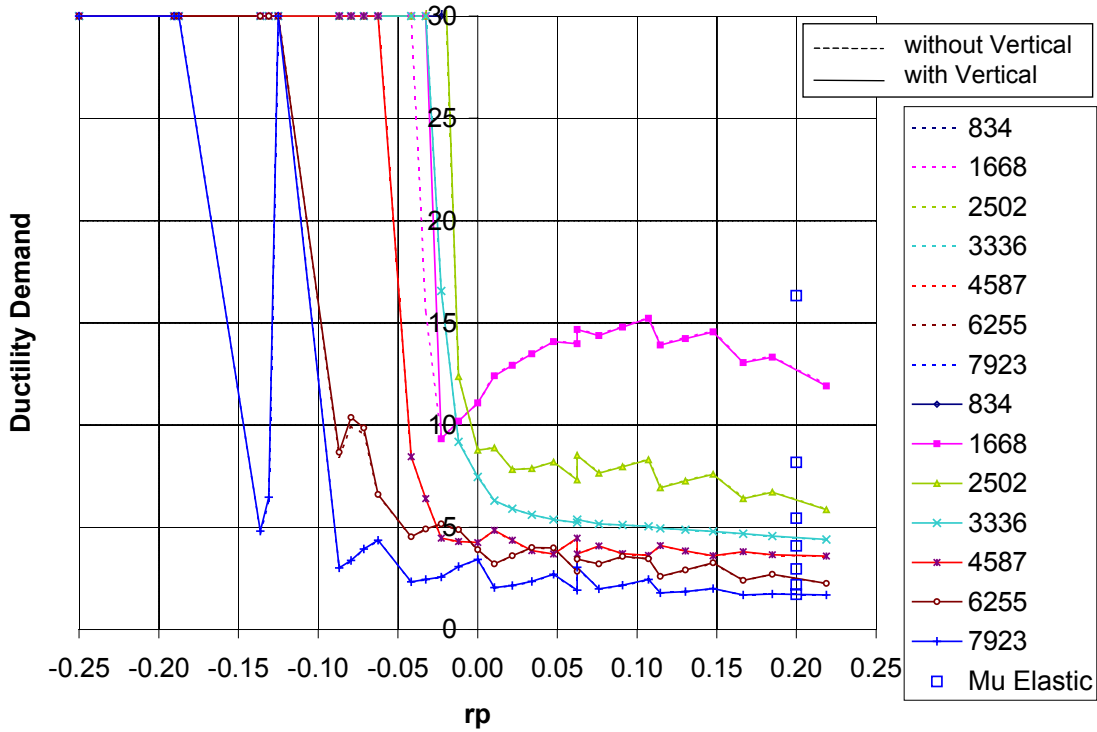


Figure C2.3.6.3a – EQ6, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 0.705 Seconds.

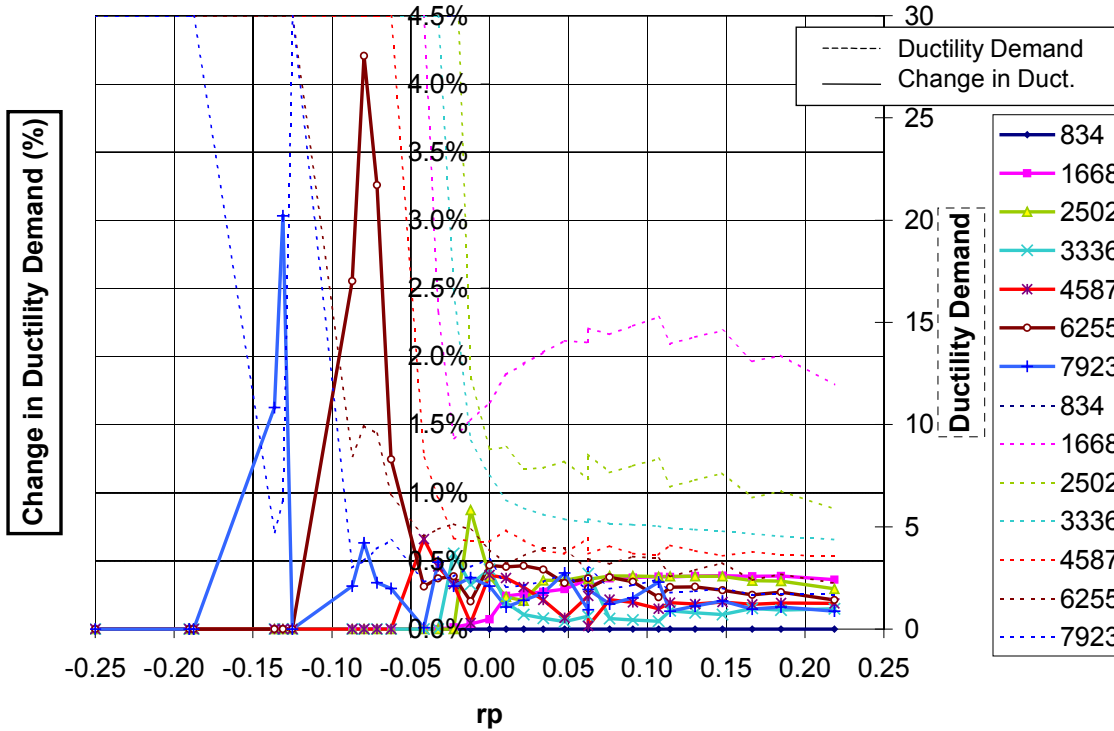


Figure C2.3.6.3b– EQ6, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 0.705 Seconds

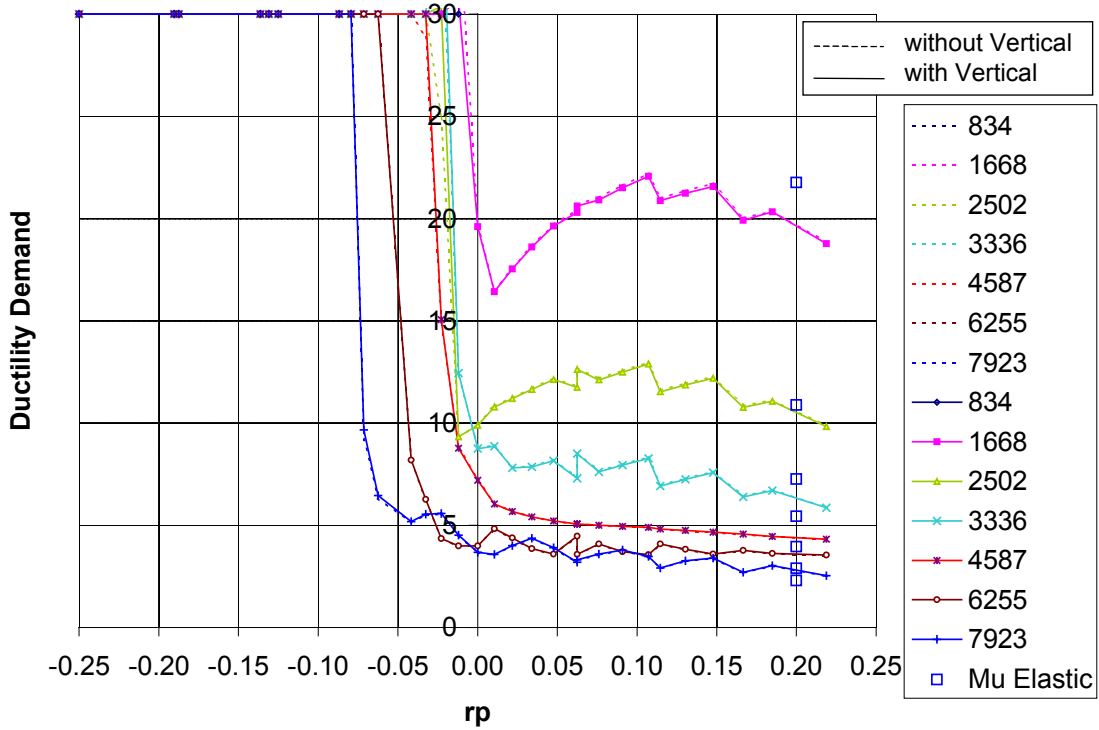


Figure C2.3.6.4a – EQ6, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 0.705 Seconds.

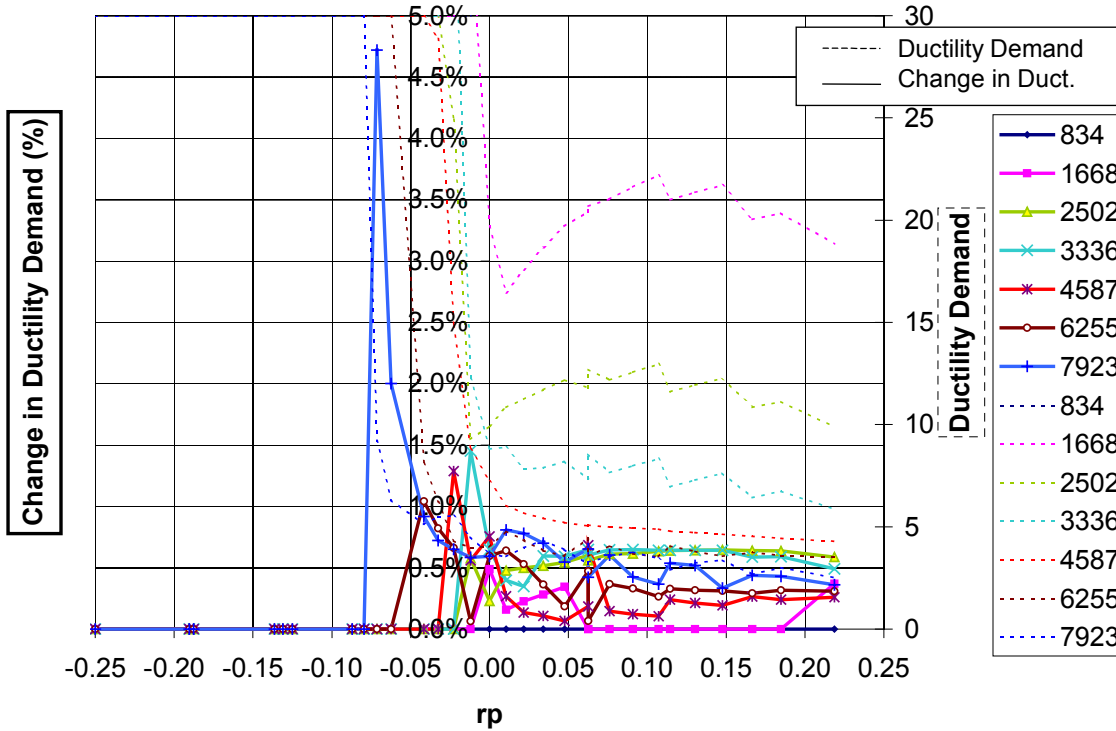


Figure C2.3.6.4b– EQ6, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 0.705 Seconds.

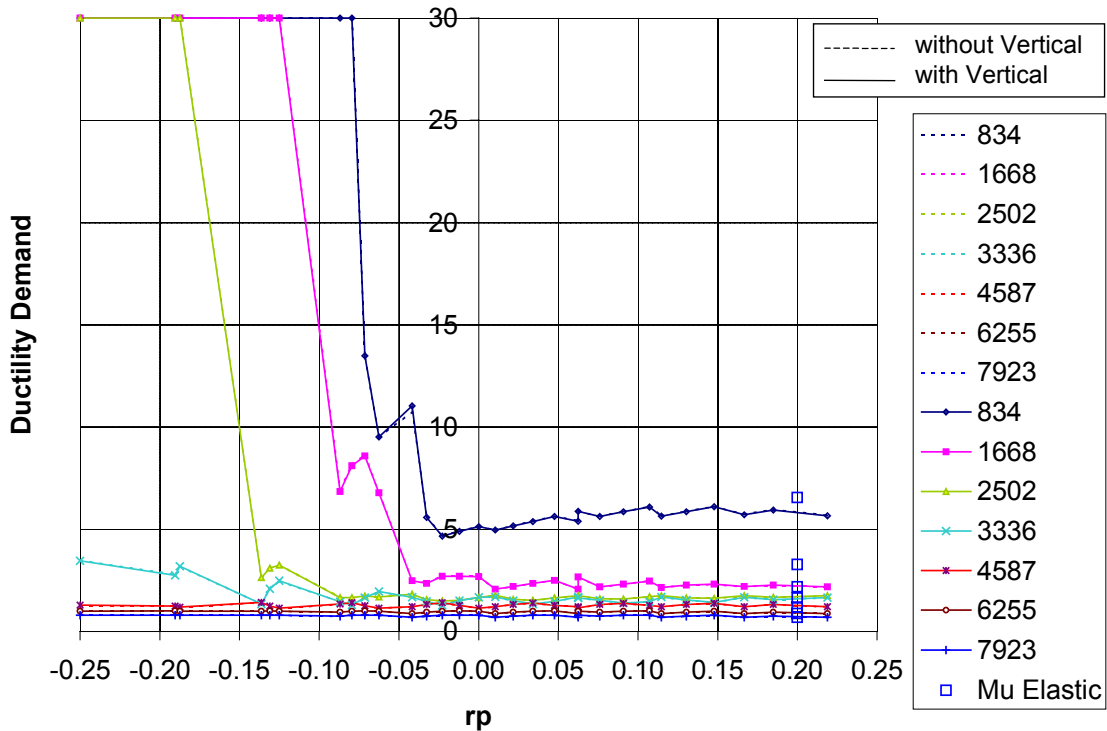


Figure C2.4.6.1a – EQ6, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 0.903 Seconds.

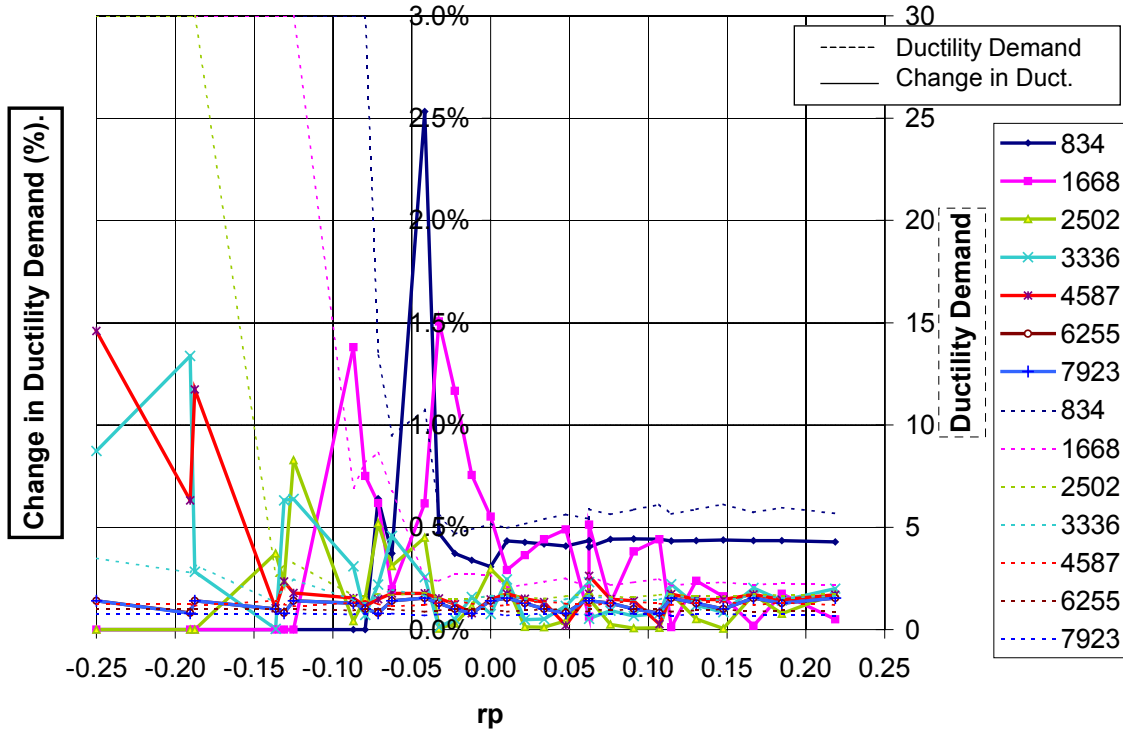


Figure C2.4.6.1b– EQ6, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 0.903 Seconds

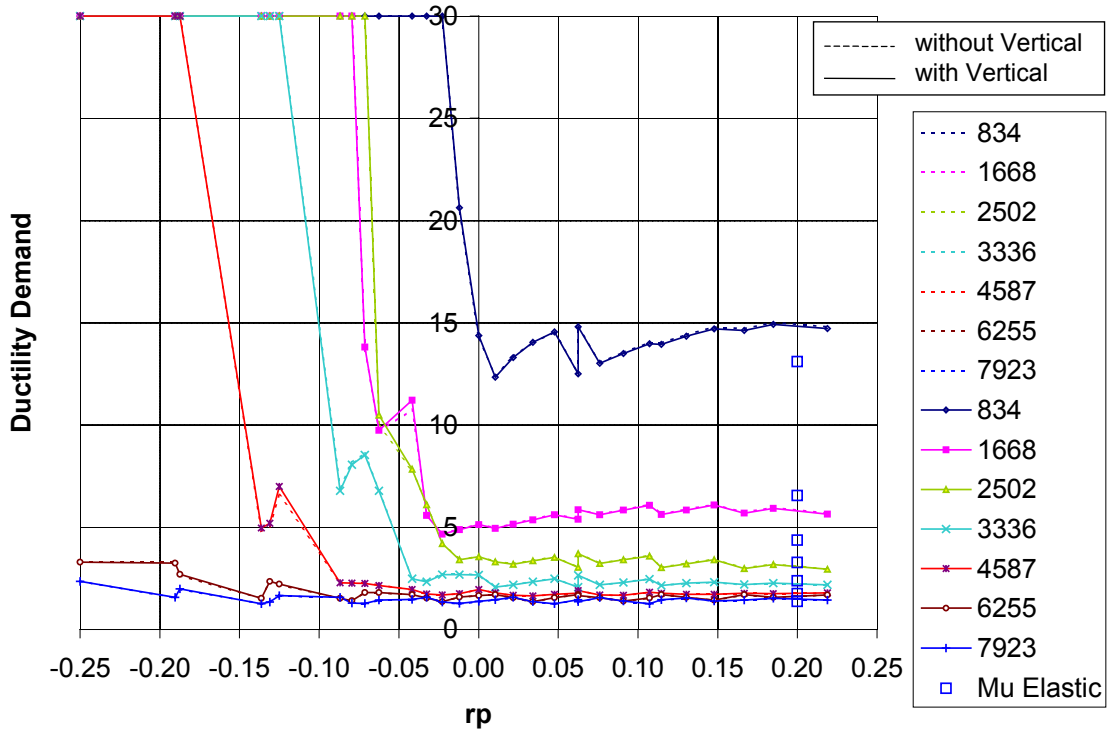


Figure C2.4.6.2a – EQ6, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 0.903 Seconds.

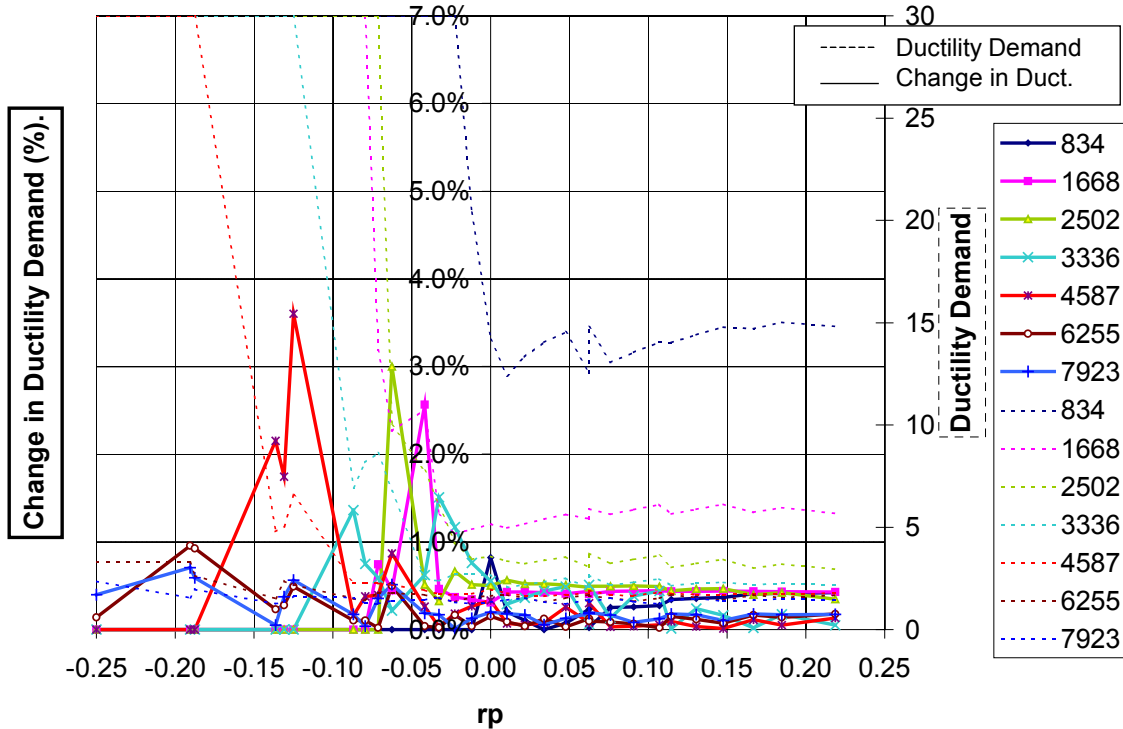
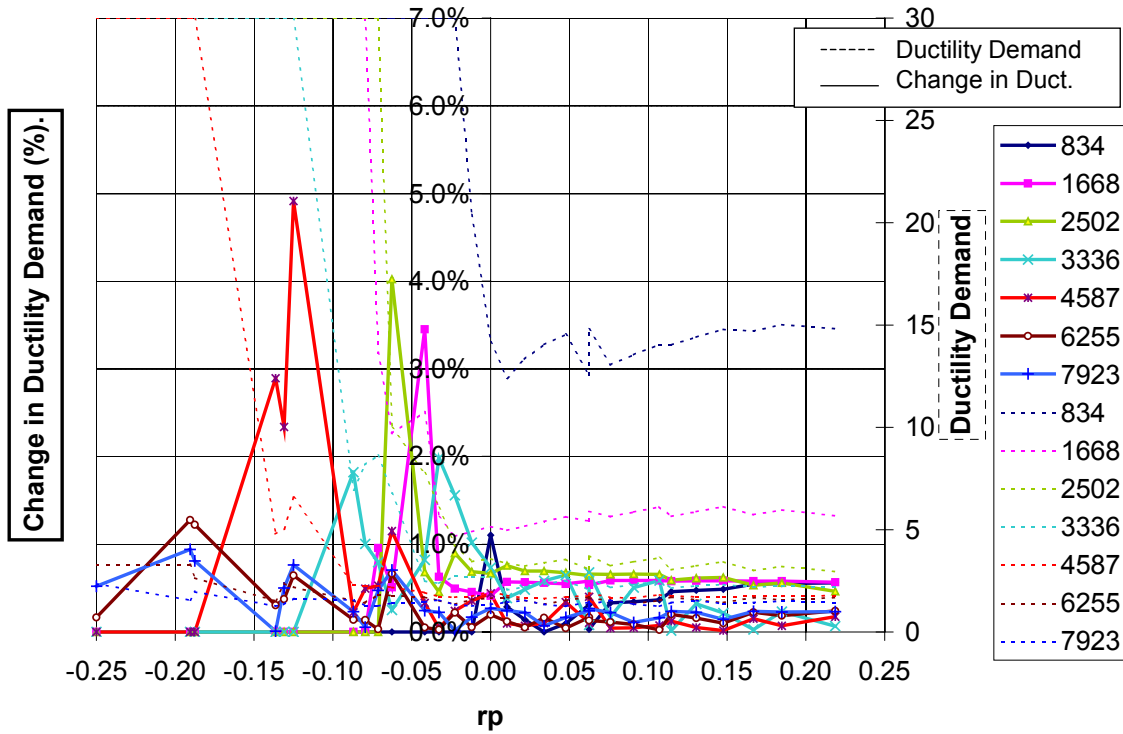
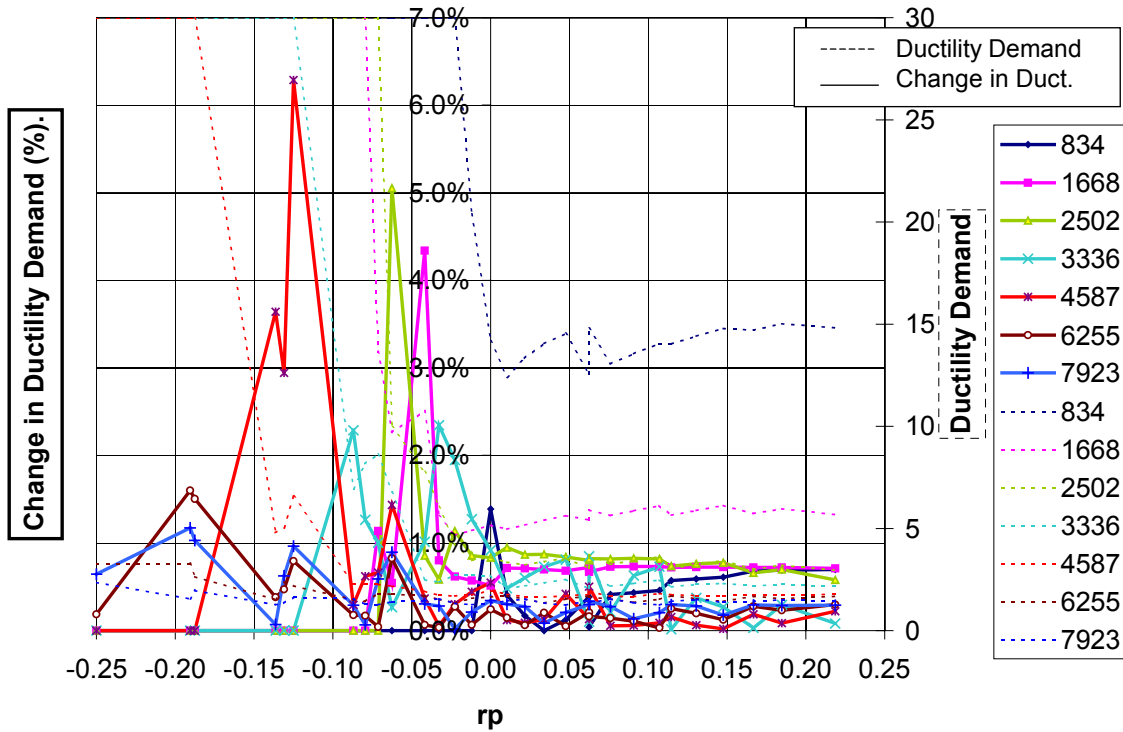


Figure C2.4.6.2b– EQ6, Lateral Scale = 0.2 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 0.903 Seconds



**Figure C2.4.6.2c– EQ6, Lateral Scale = 0.2 g, Vertical Multiplier = 2.0, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 0.903 Seconds**



**Figure C2.4.6.2d– EQ6, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 0.903 Seconds**

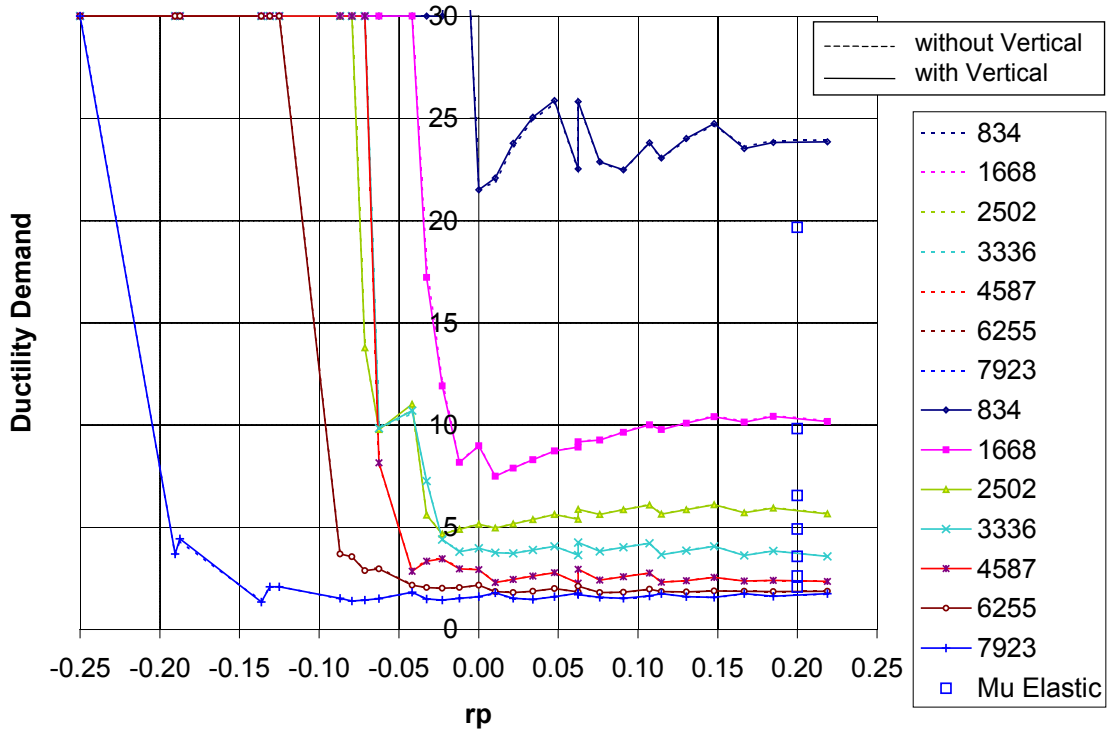


Figure C2.4.6.3a – EQ6, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 0.903 Seconds.

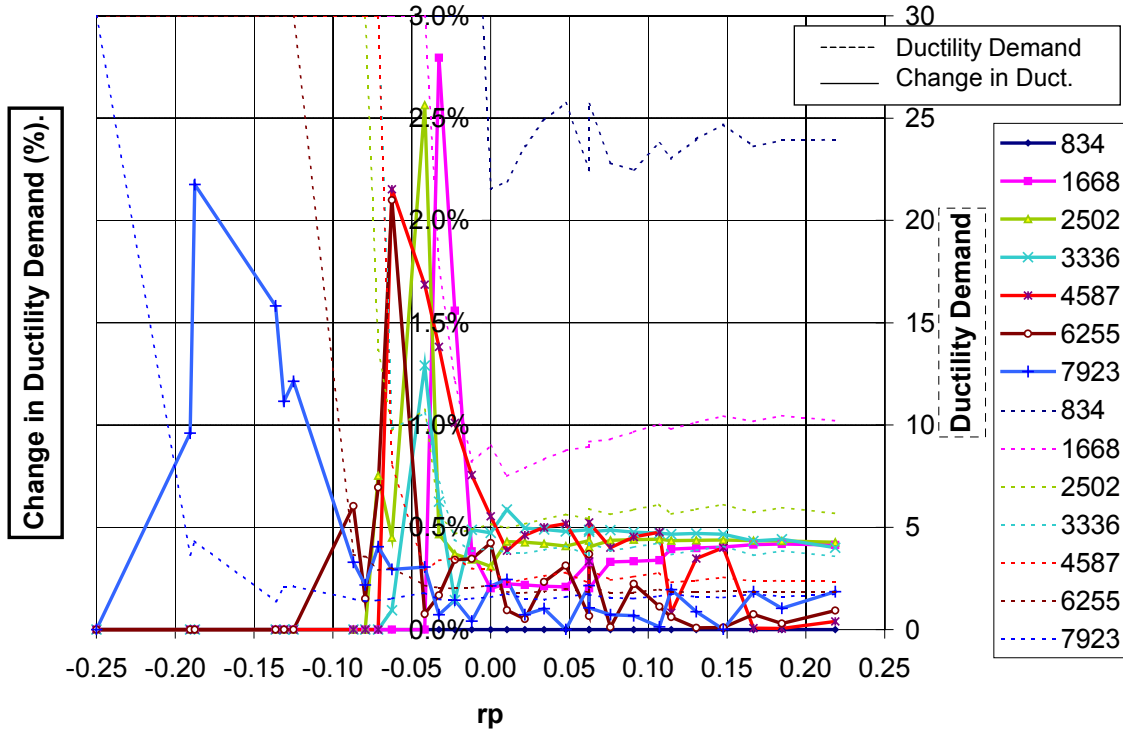


Figure C2.4.6.3b– EQ6, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 0.903 Seconds

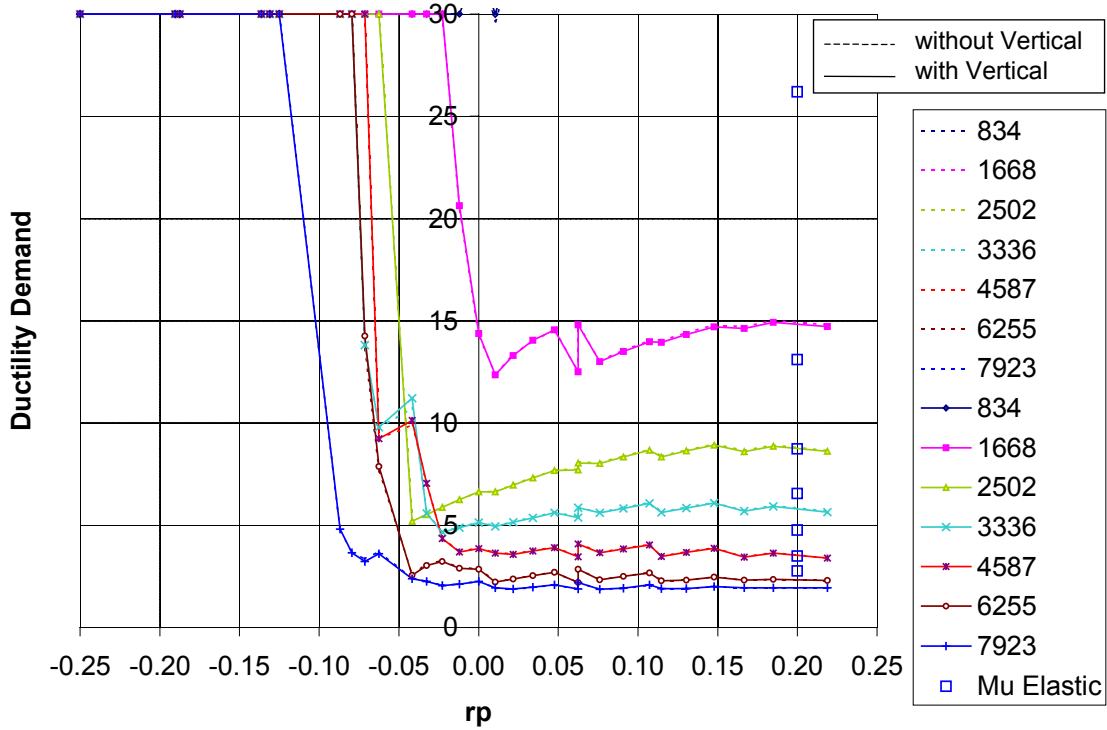


Figure C2.4.6.4a – EQ6, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 0.903 Seconds.

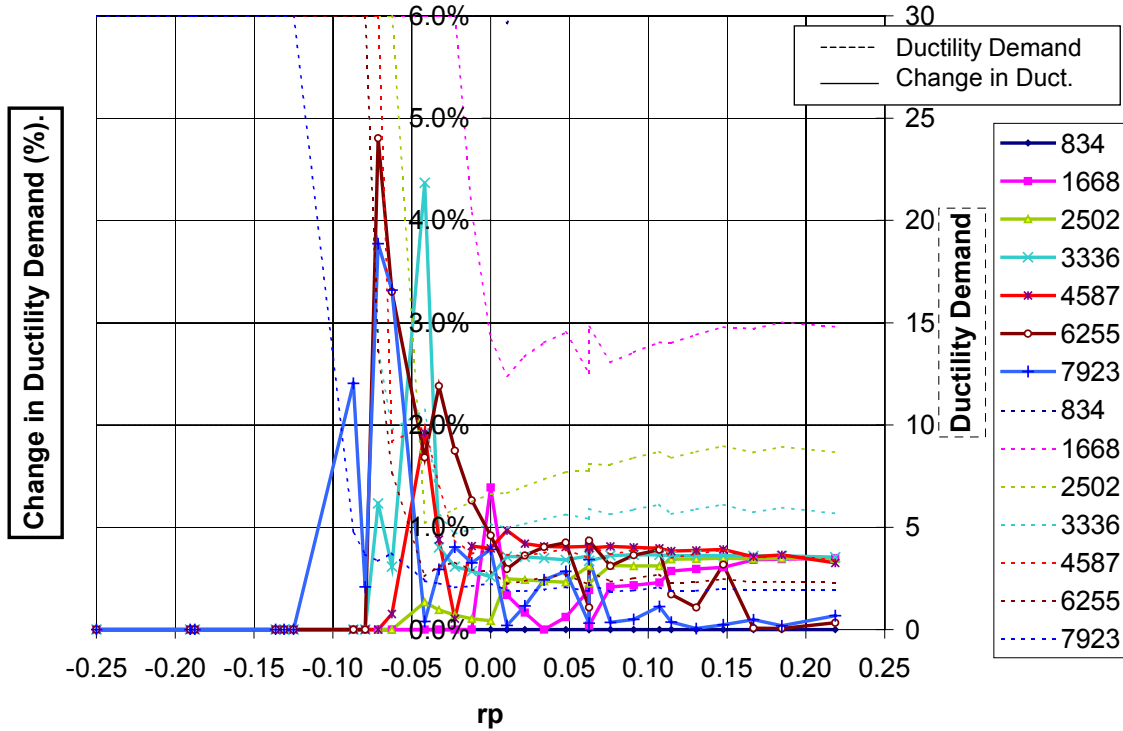


Figure C2.4.6.4b– EQ6, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 0.903 Seconds.

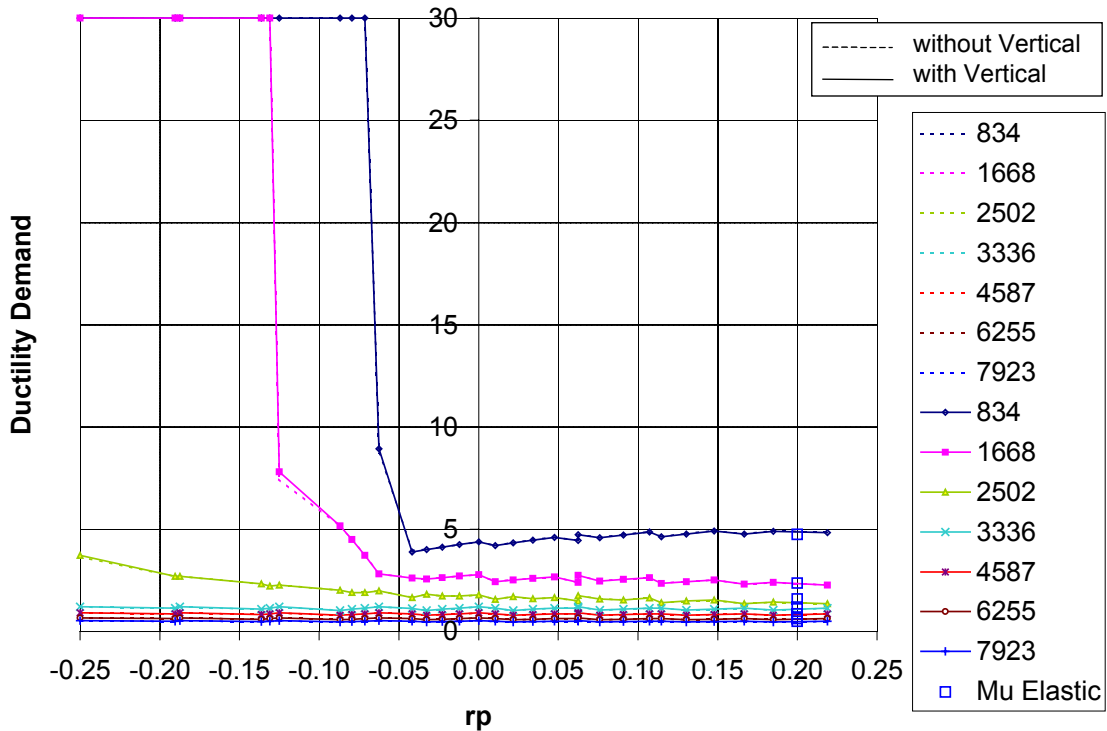


Figure C2.5.6.1a – EQ6, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.093 Seconds.

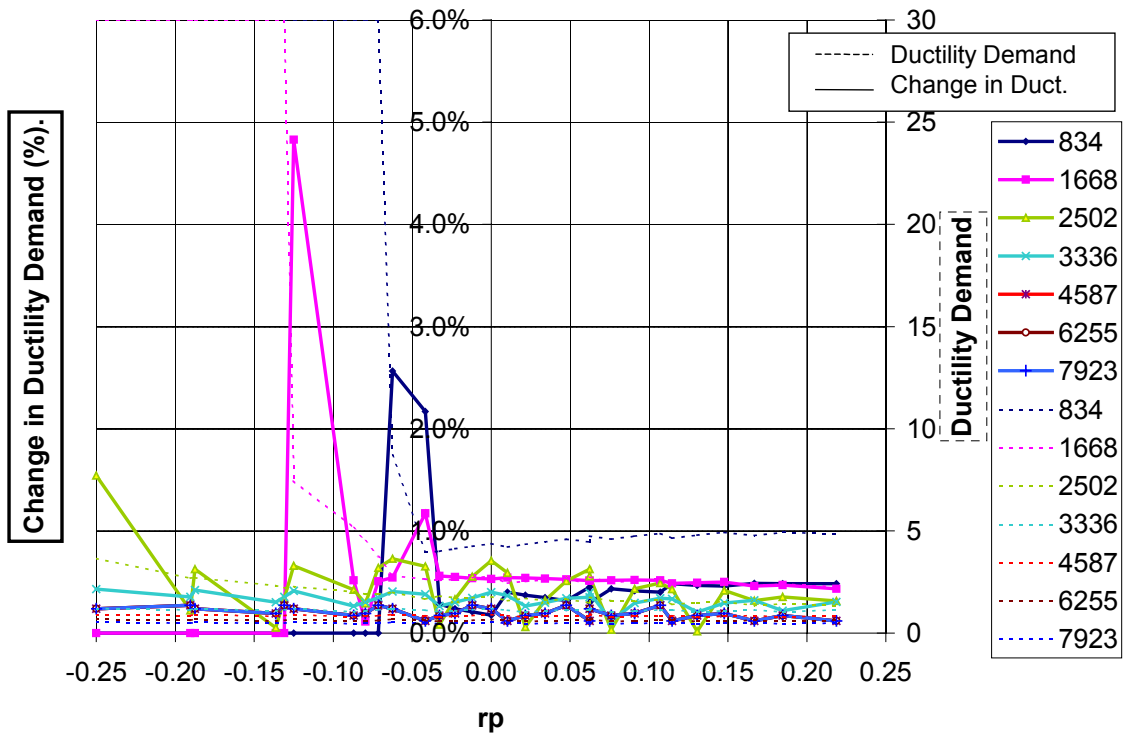


Figure C2.5.6.1b– EQ6, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.093 Seconds

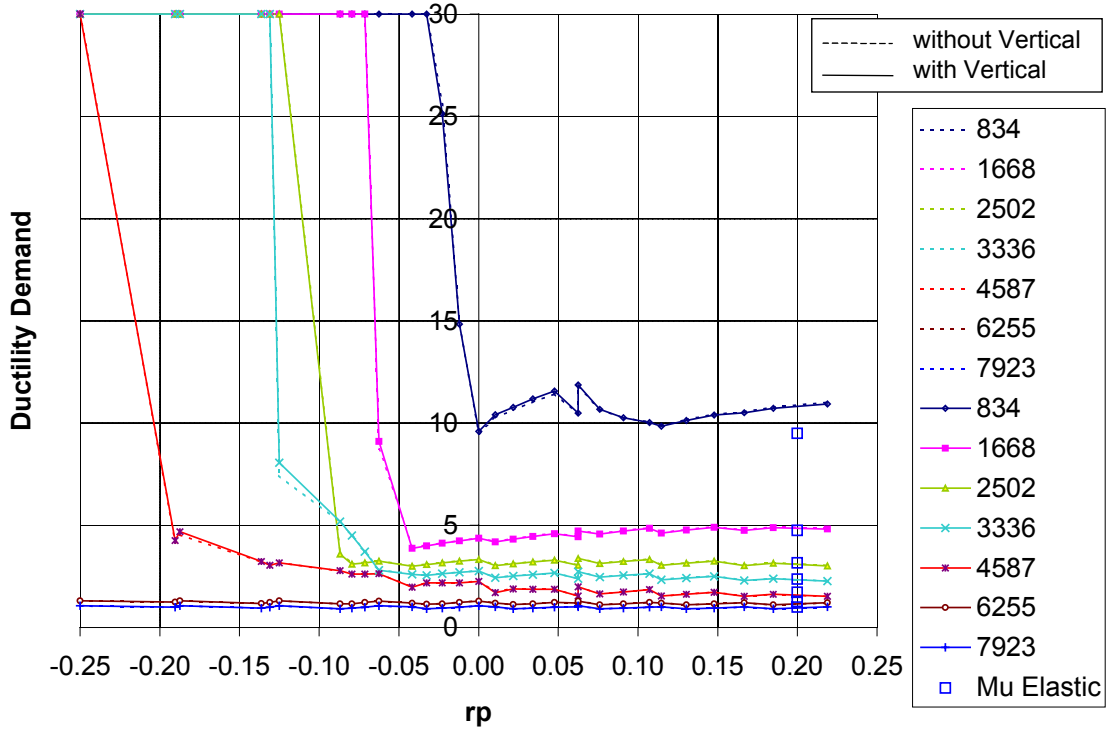


Figure C2.5.6.2a – EQ6, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.093 Seconds.

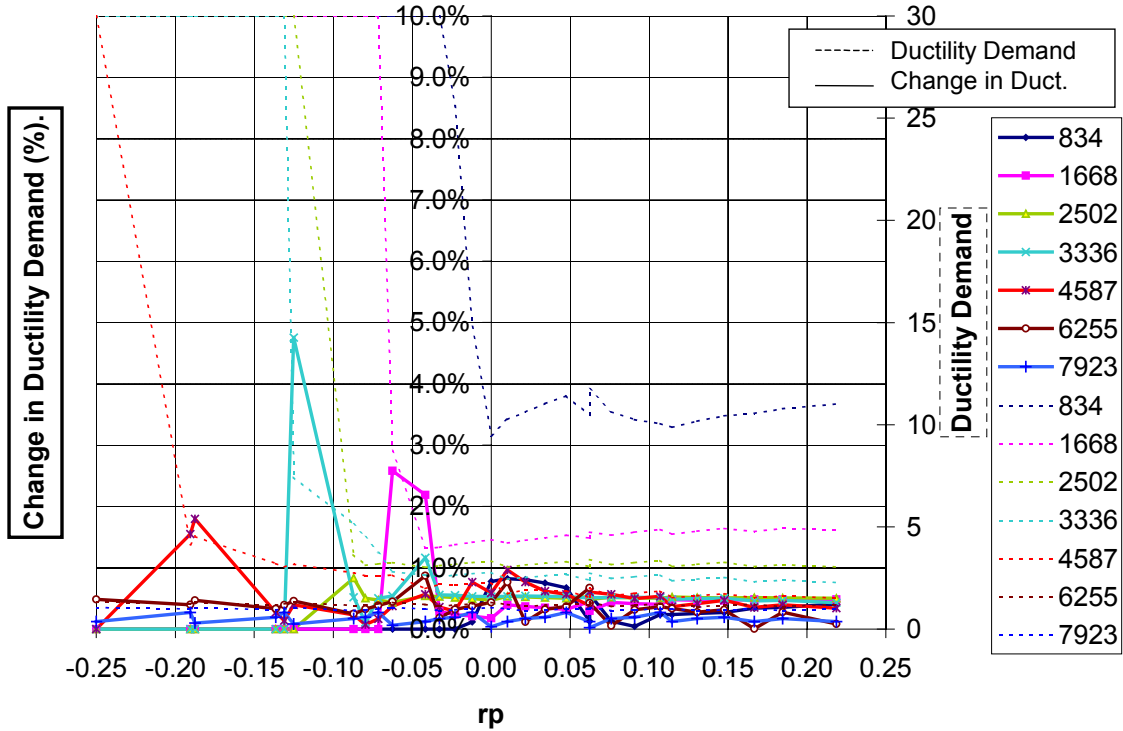
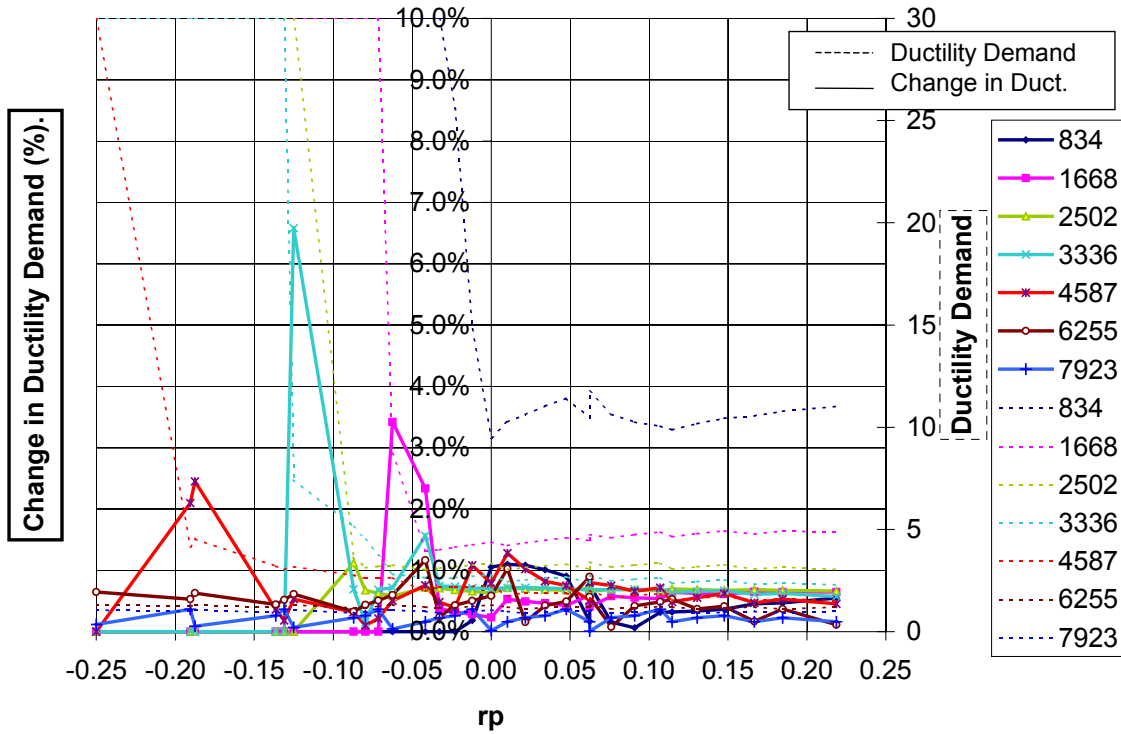
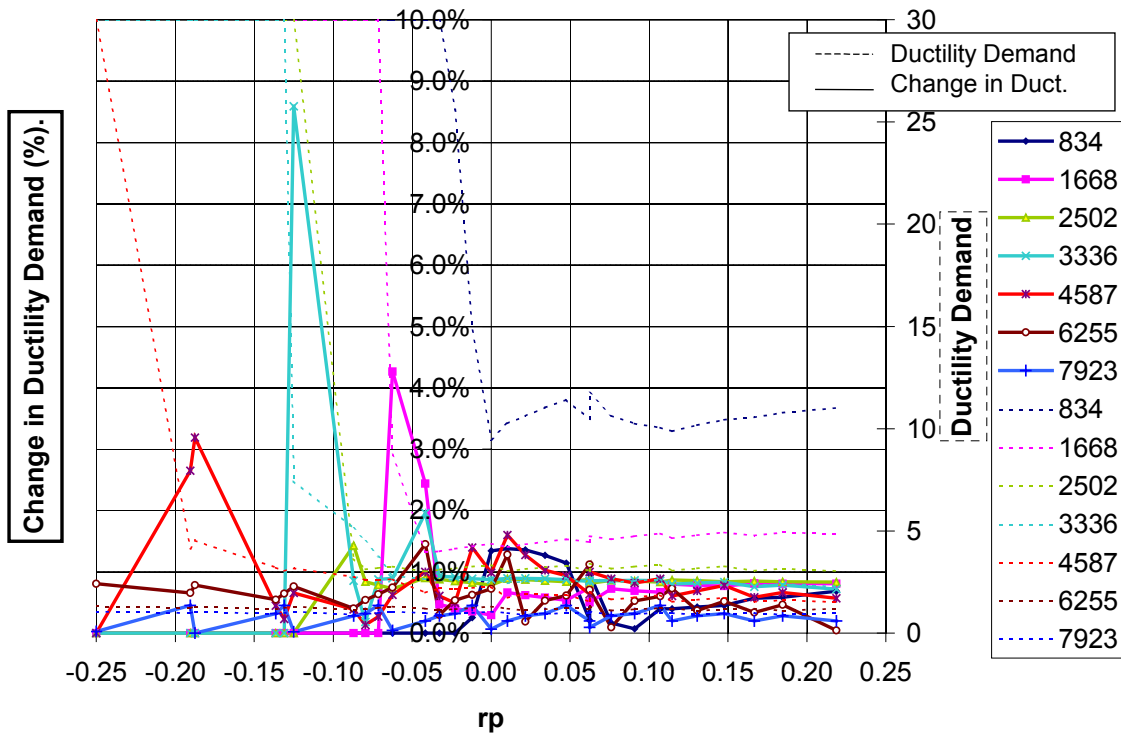


Figure C2.5.6.2b– EQ6, Lateral Scale = 0.2 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.093 Seconds



**Figure C2.5.6.2c– EQ6, Lateral Scale = 0.2 g, Vertical Multiplier = 2.0, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.093 Seconds**



**Figure C2.5.6.2d– EQ6, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.093 Seconds**

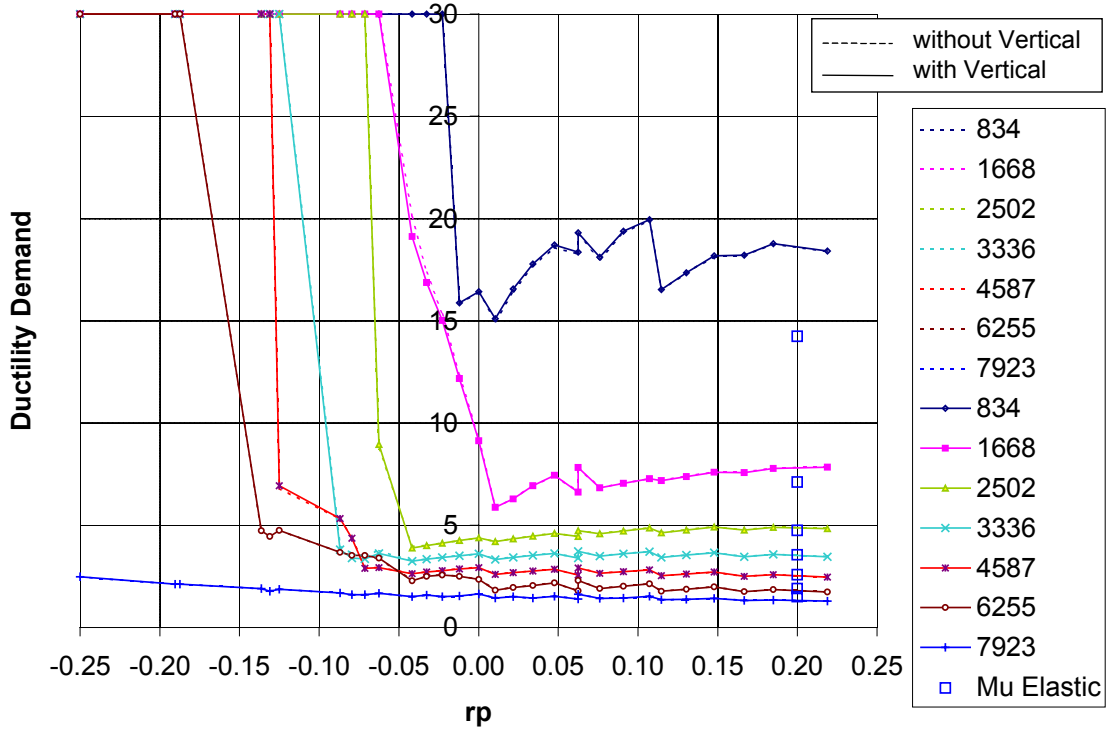


Figure C2.5.6.3a – EQ6, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.093 Seconds.

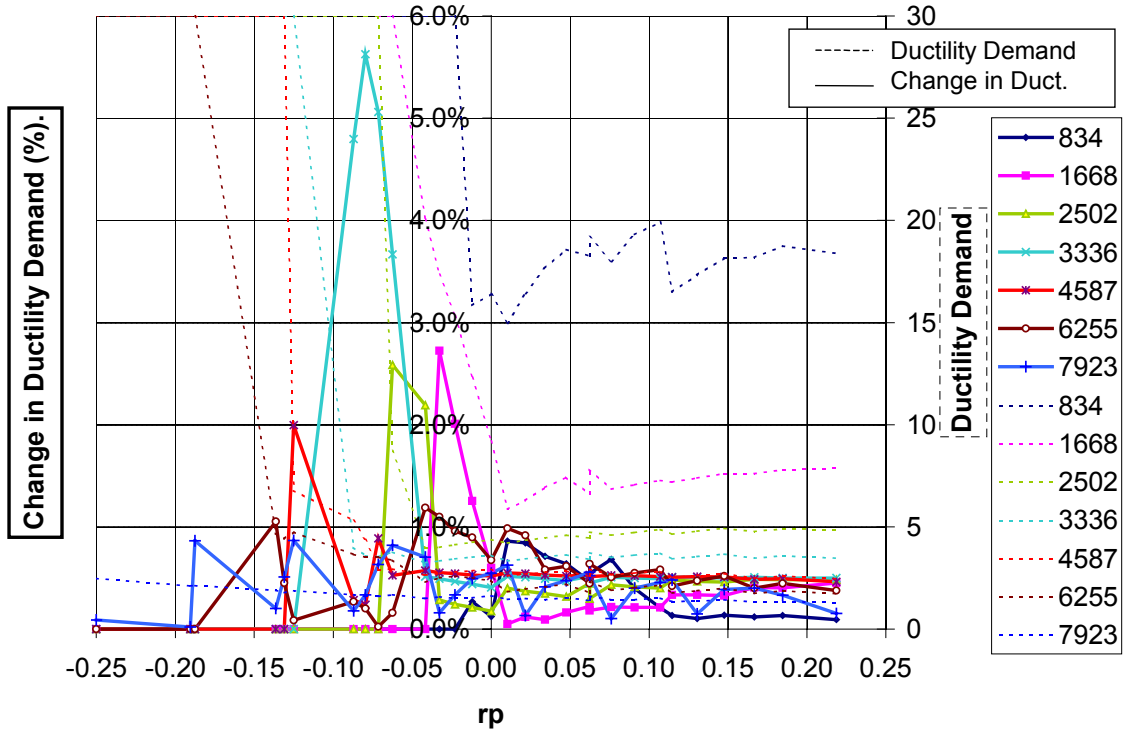


Figure C2.5.6.3b– EQ6, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.093 Seconds

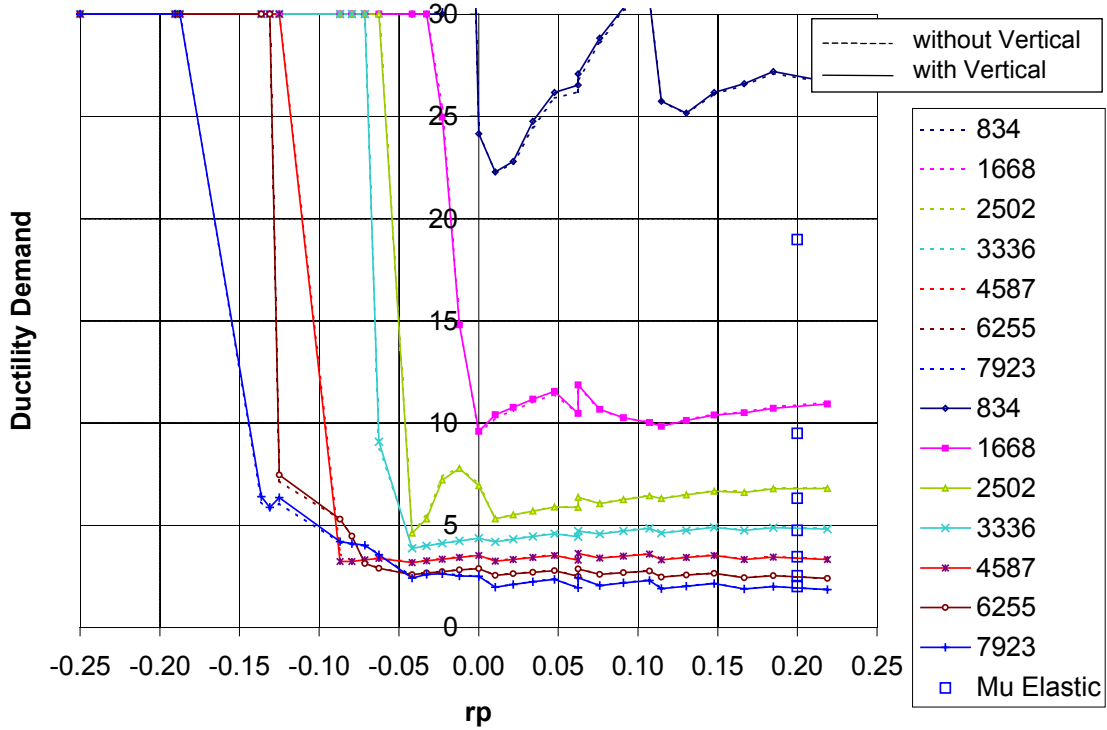


Figure C2.5.6.4a – EQ6, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.093 Seconds.

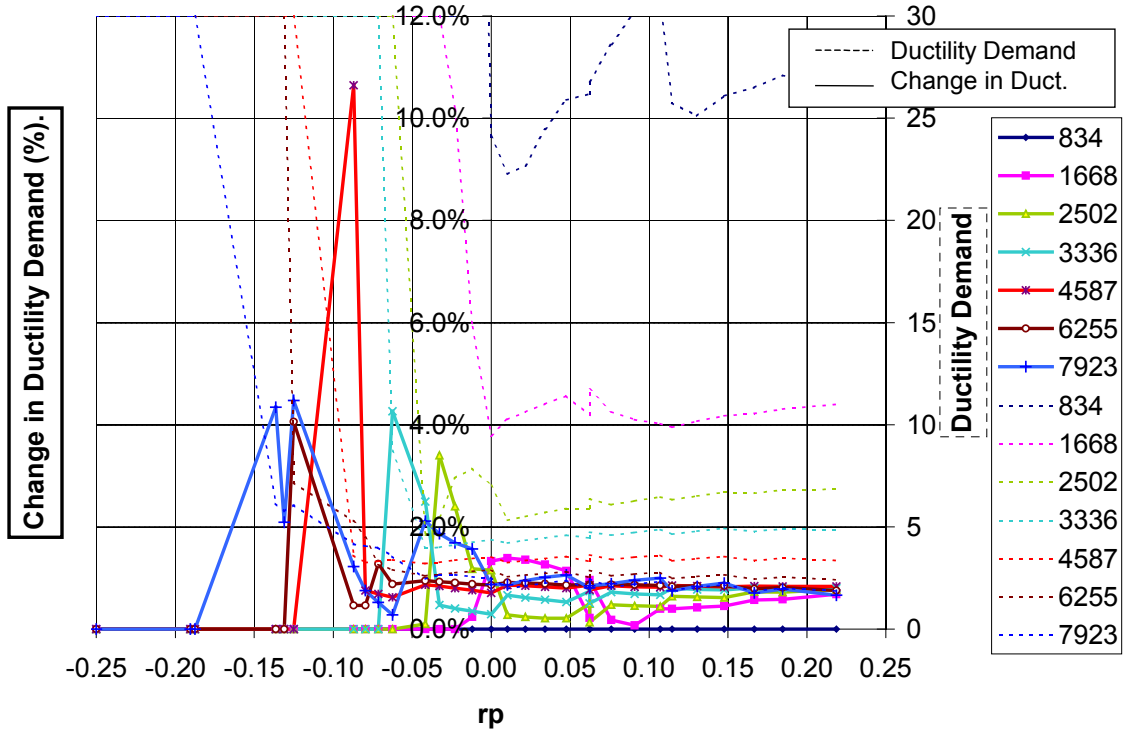


Figure C2.5.6.4b– EQ6, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.093 Seconds.

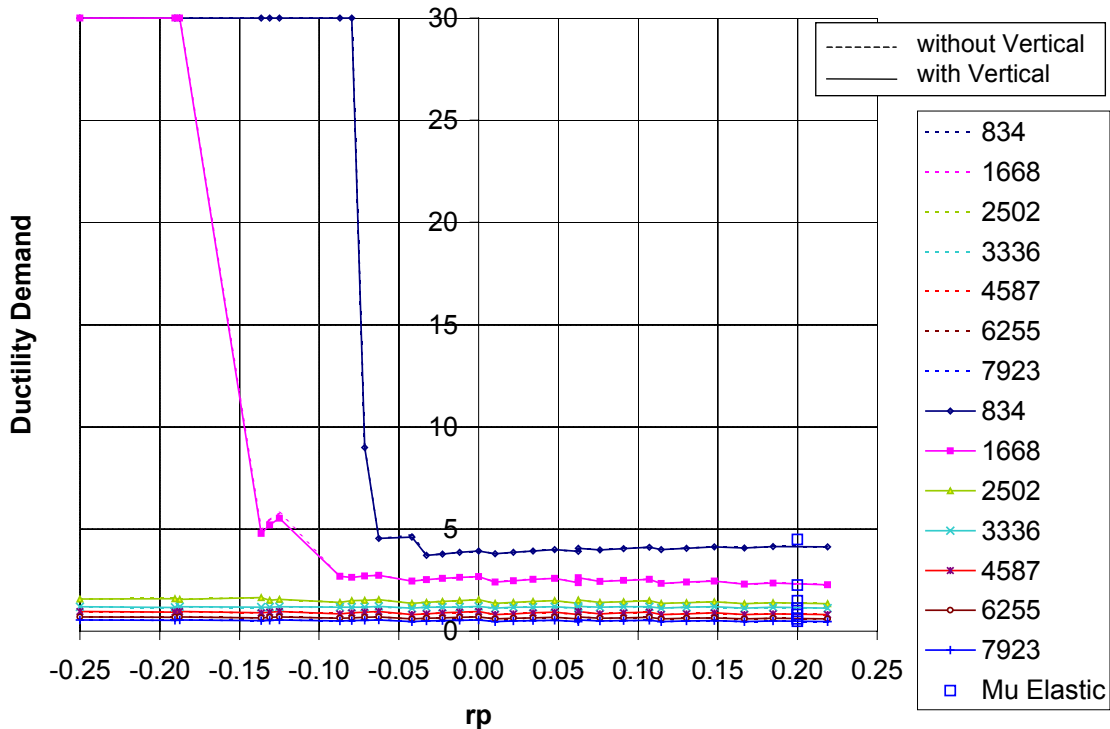


Figure C2.6.6.1a – EQ6, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.278 Seconds.

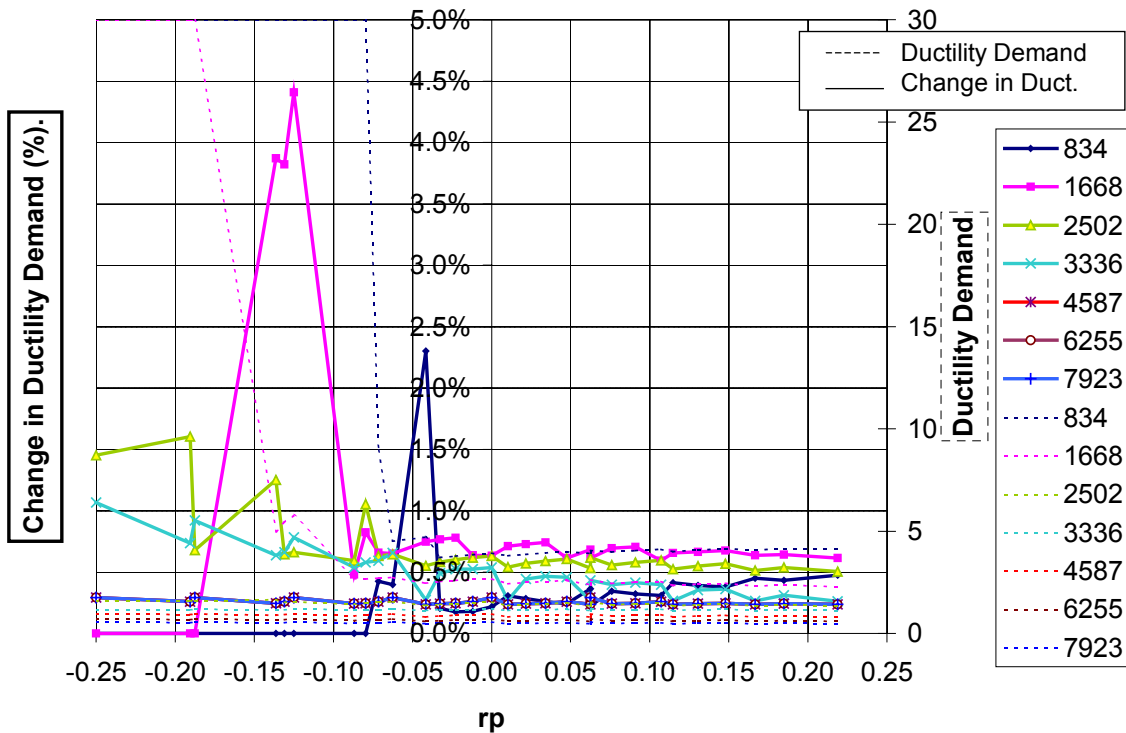


Figure C2.6.6.1b– EQ6, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.278 Seconds

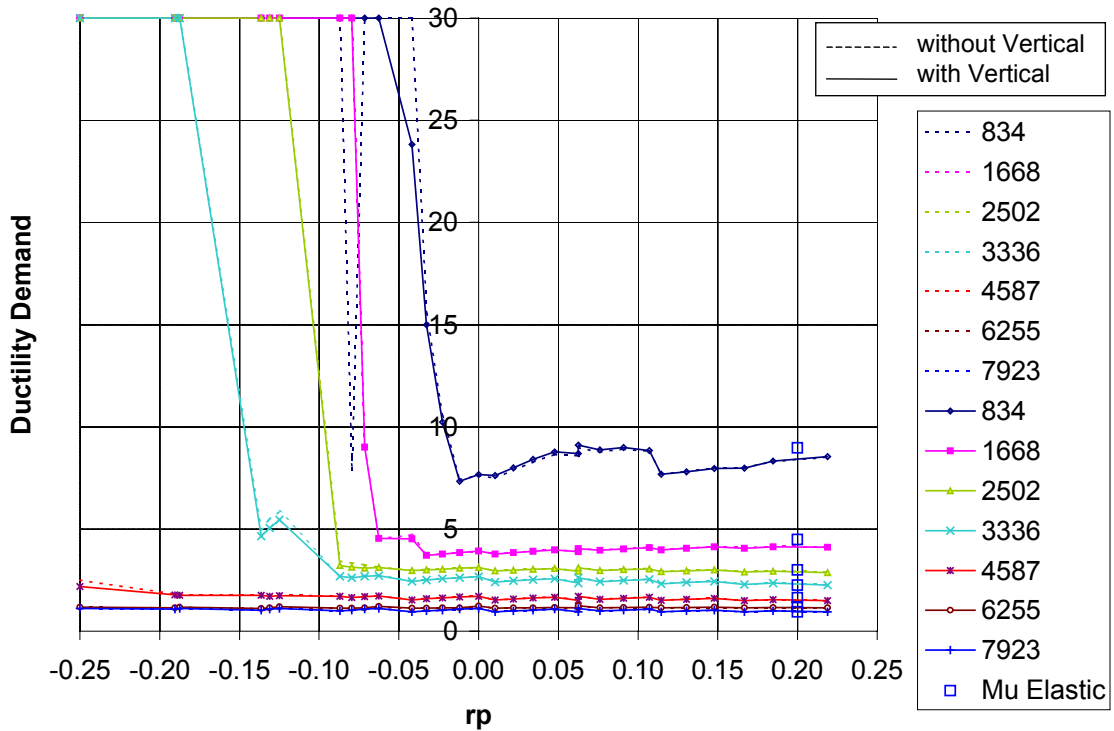


Figure C2.6.6.2a – EQ6, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.278 Seconds.

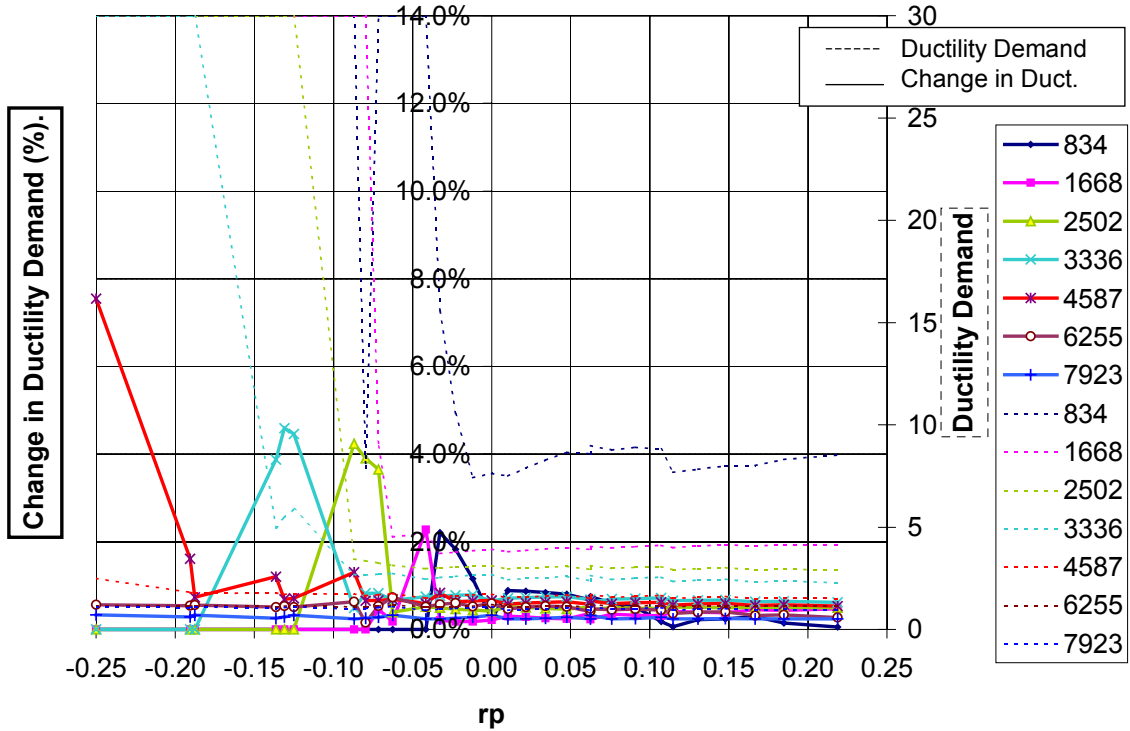
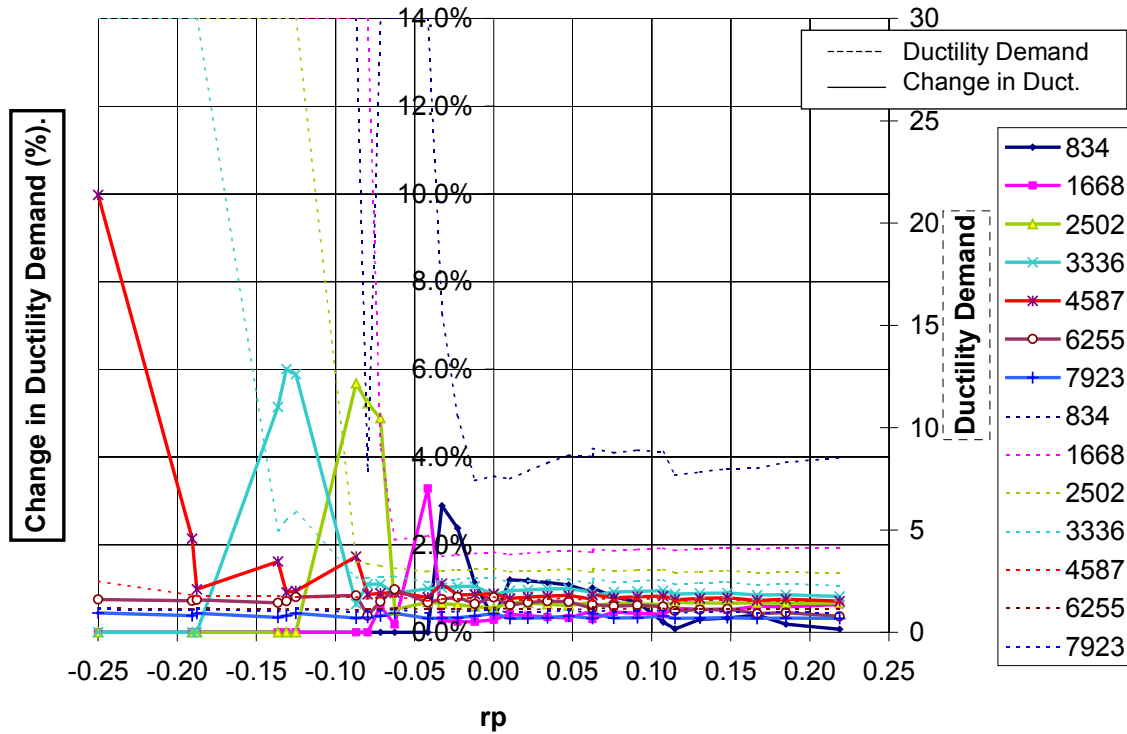
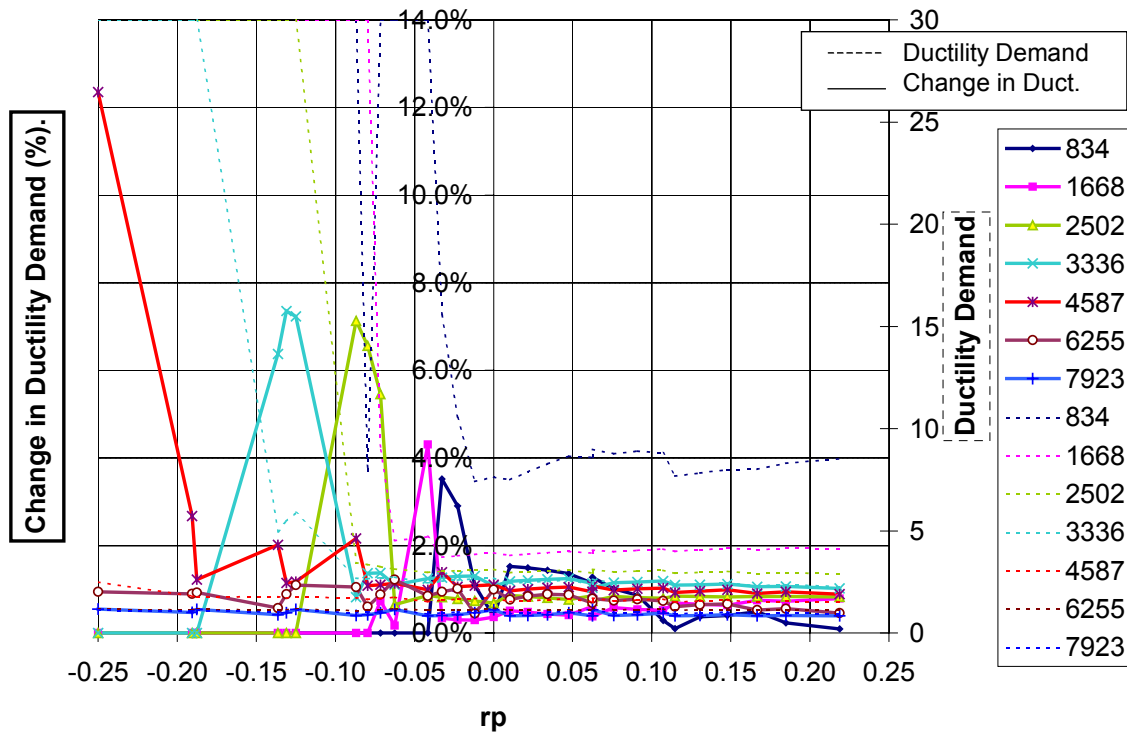


Figure C2.6.6.2b– EQ6, Lateral Scale = 0.2 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.278 Seconds



**Figure C2.6.6.2c– EQ6, Lateral Scale = 0.2 g, Vertical Multiplier = 2.0, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.278 Seconds**



**Figure C2.6.6.2d– EQ6, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.278 Seconds**

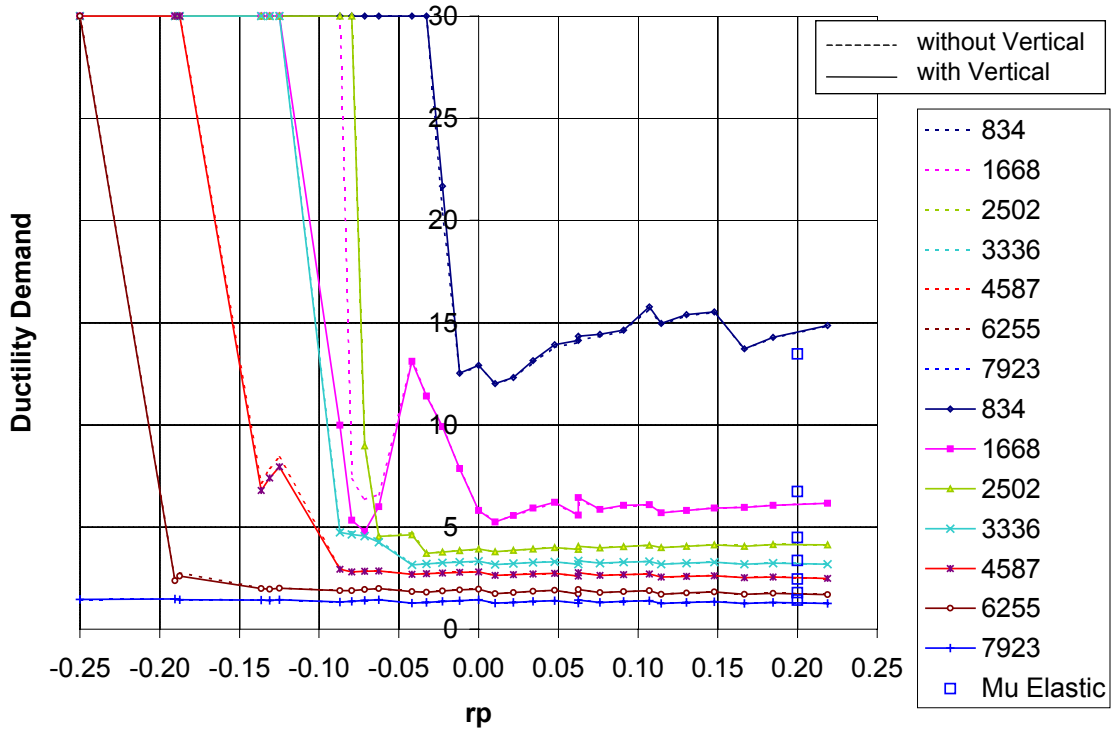


Figure C2.6.6.3a – EQ6, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.278 Seconds.

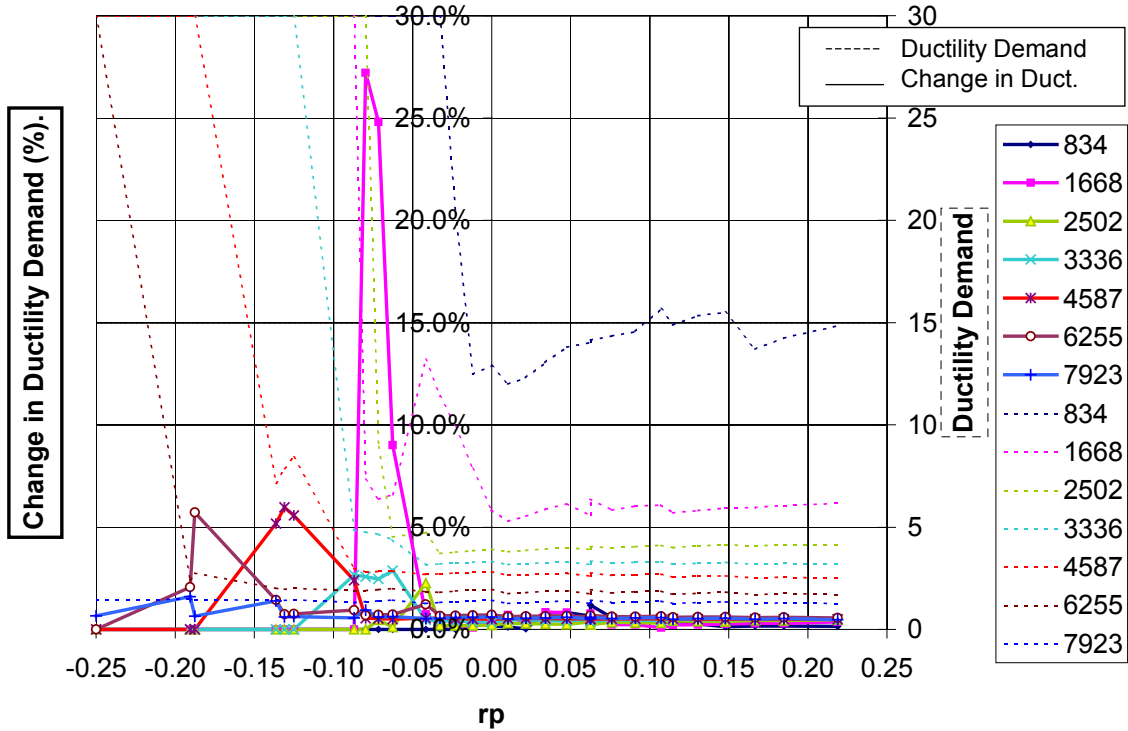


Figure C2.6.6.3b– EQ6, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.278 Seconds

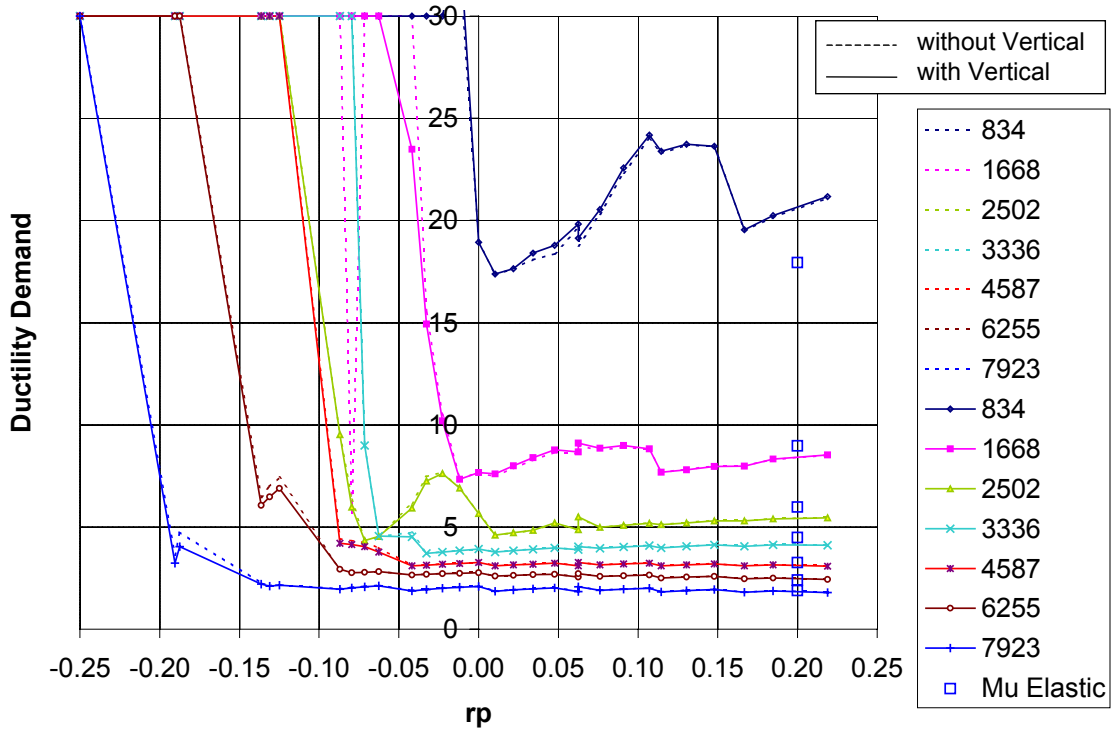


Figure C2.6.6.4a – EQ6, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.278 Seconds.

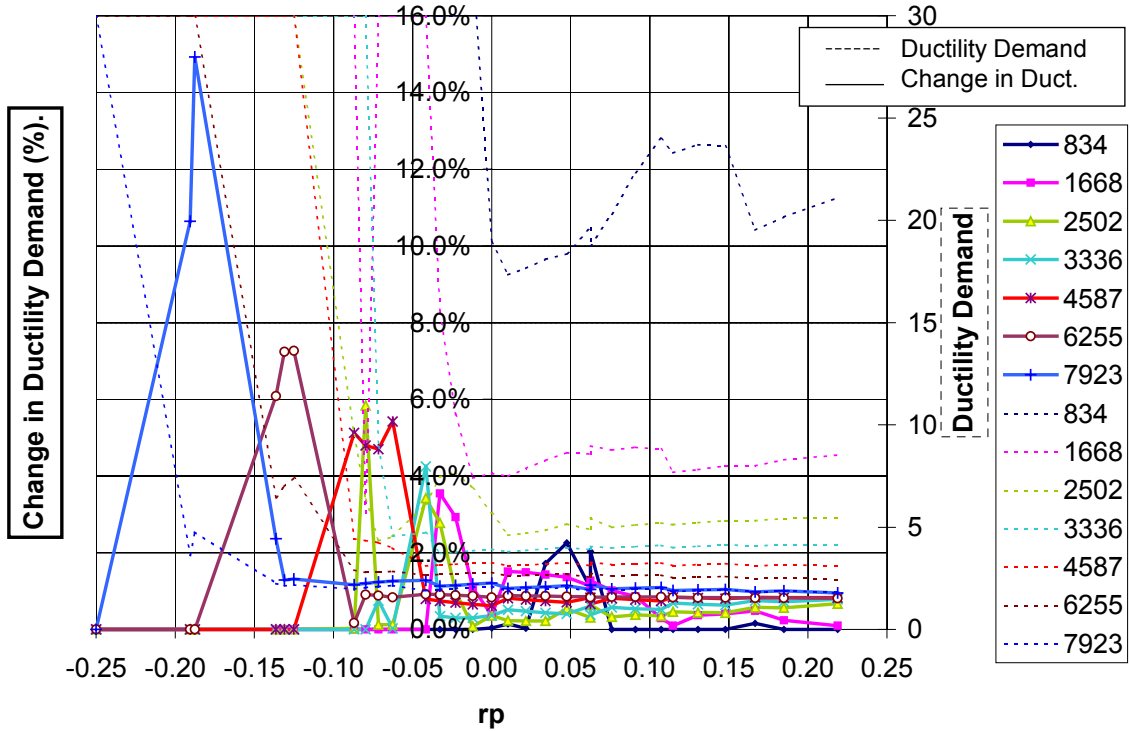


Figure C2.6.6.4b– EQ6, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.278 Seconds.

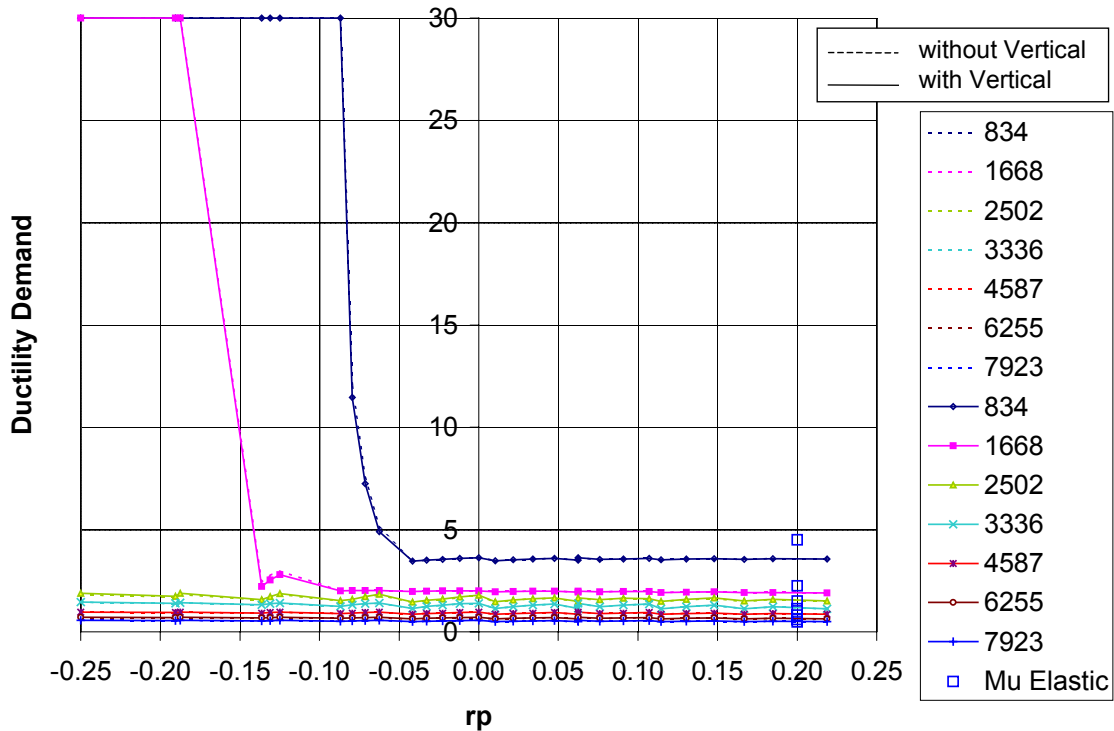


Figure C2.7.6.1a – EQ6, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.459 Seconds.

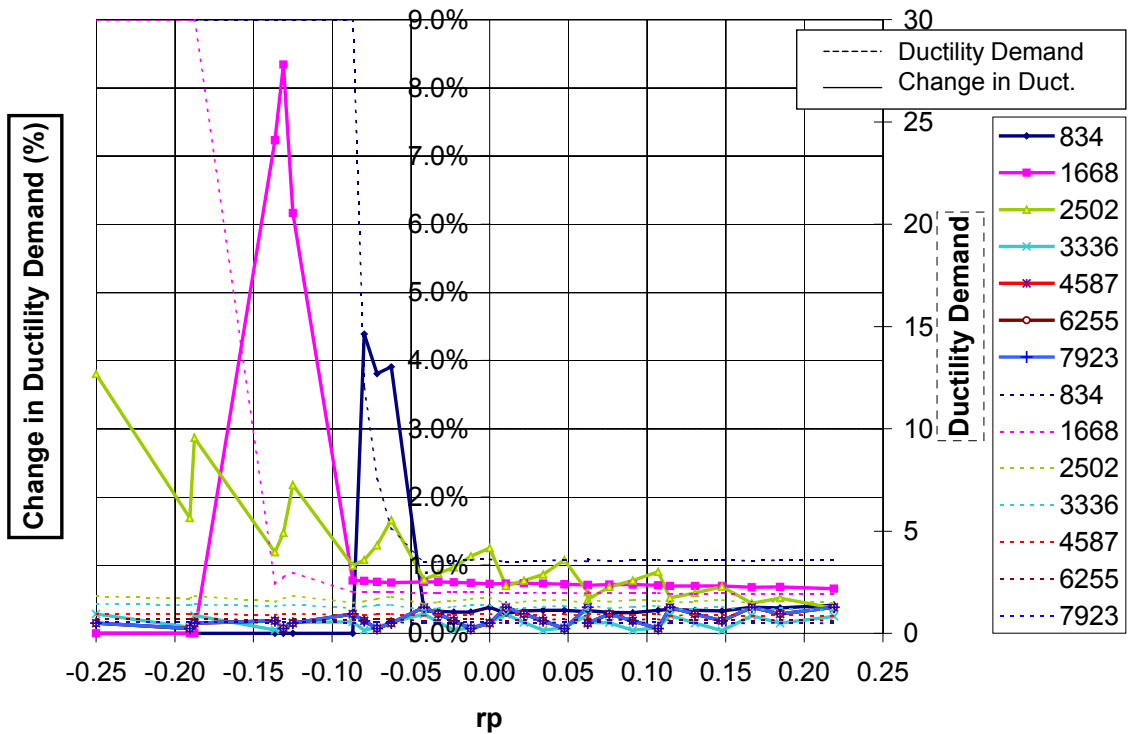


Figure C2.7.6.1b– EQ6, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.459 Seconds

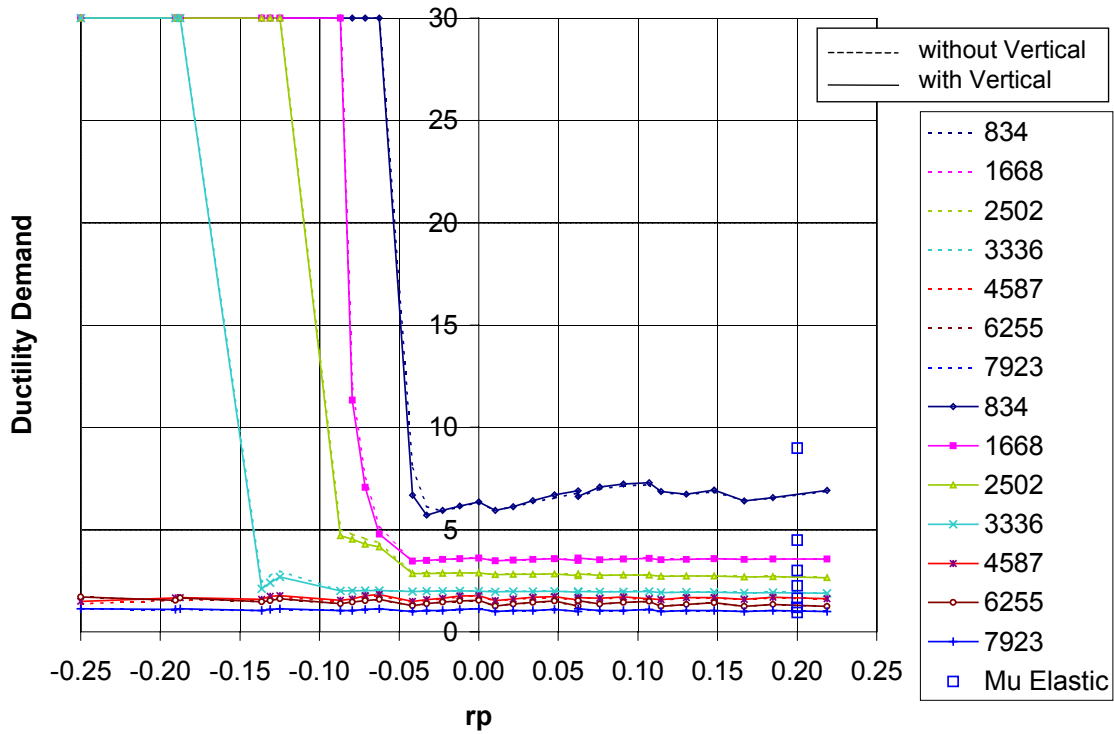


Figure C2.7.6.2a – EQ6, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.459 Seconds.

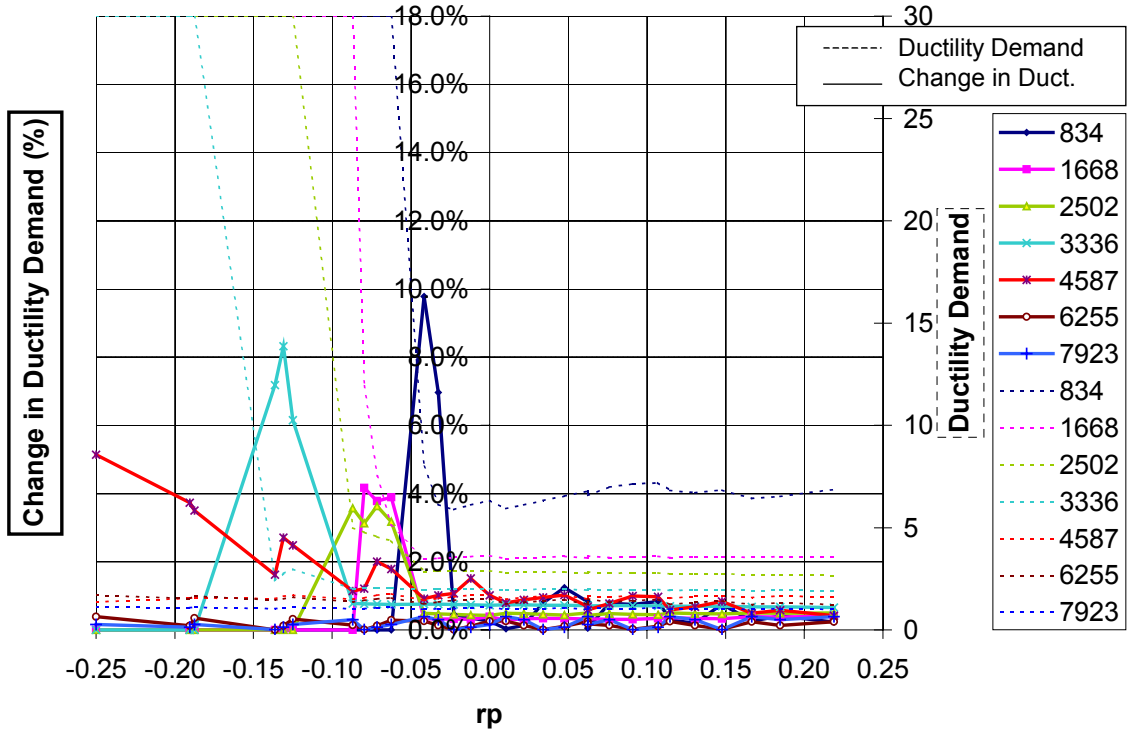
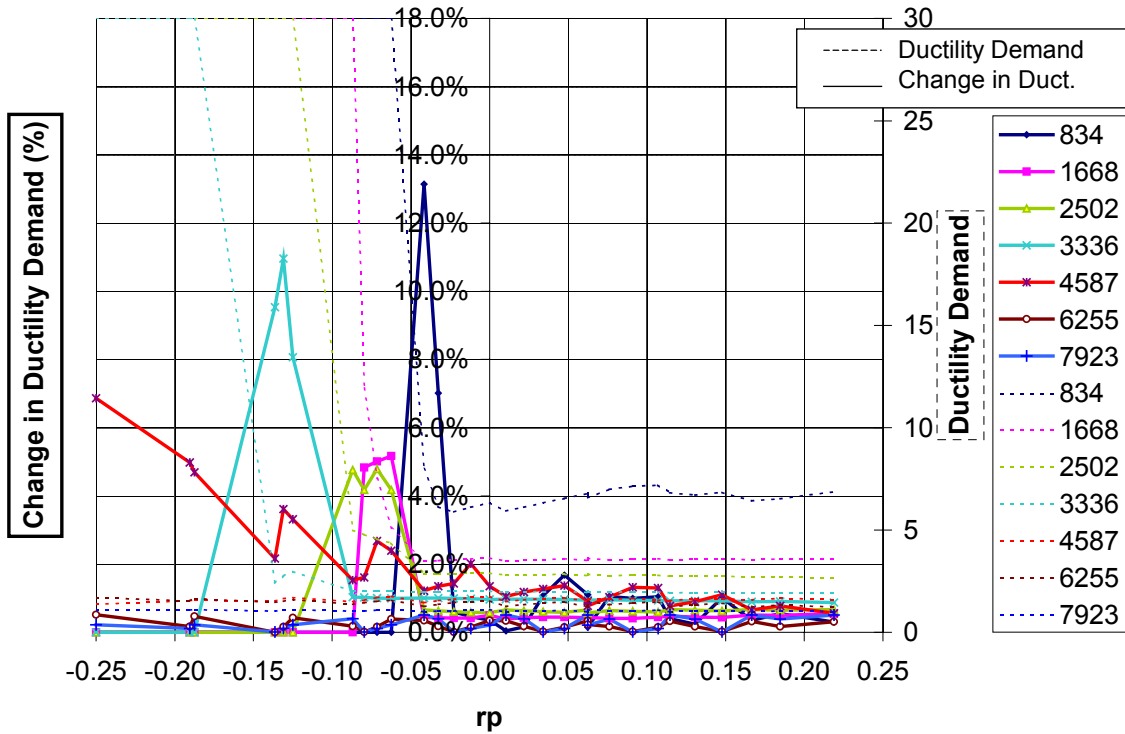
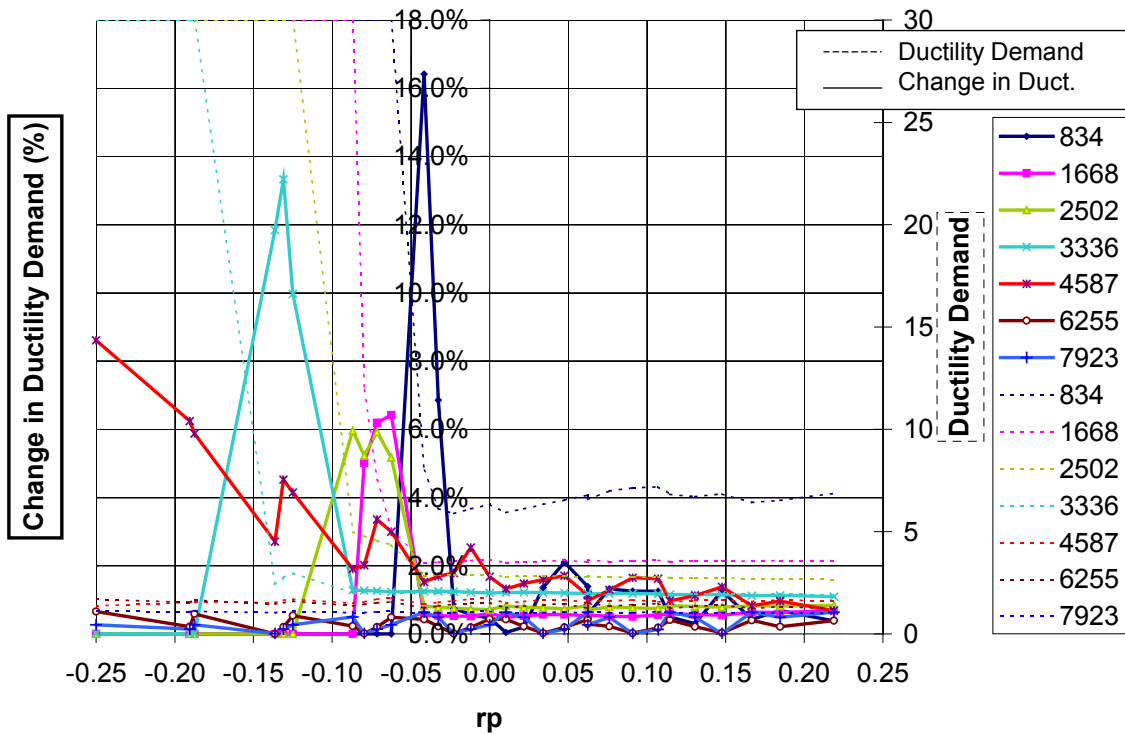


Figure C2.7.6.2b– EQ6, Lateral Scale = 0.2 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.459 Seconds



**Figure C2.7.6.2c– EQ6, Lateral Scale = 0.2 g, Vertical Multiplier = 2.0, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.459 Seconds**



**Figure C2.7.6.2d– EQ6, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.459 Seconds**

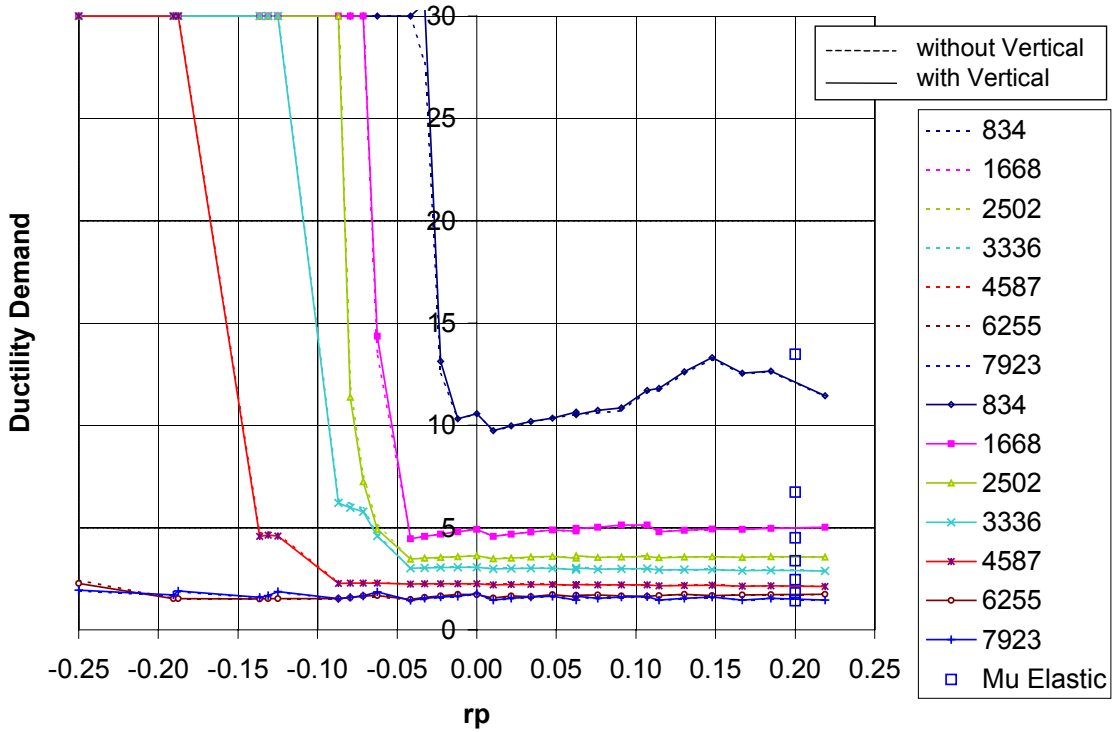


Figure C2.7.6.3a – EQ6, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.459 Seconds.

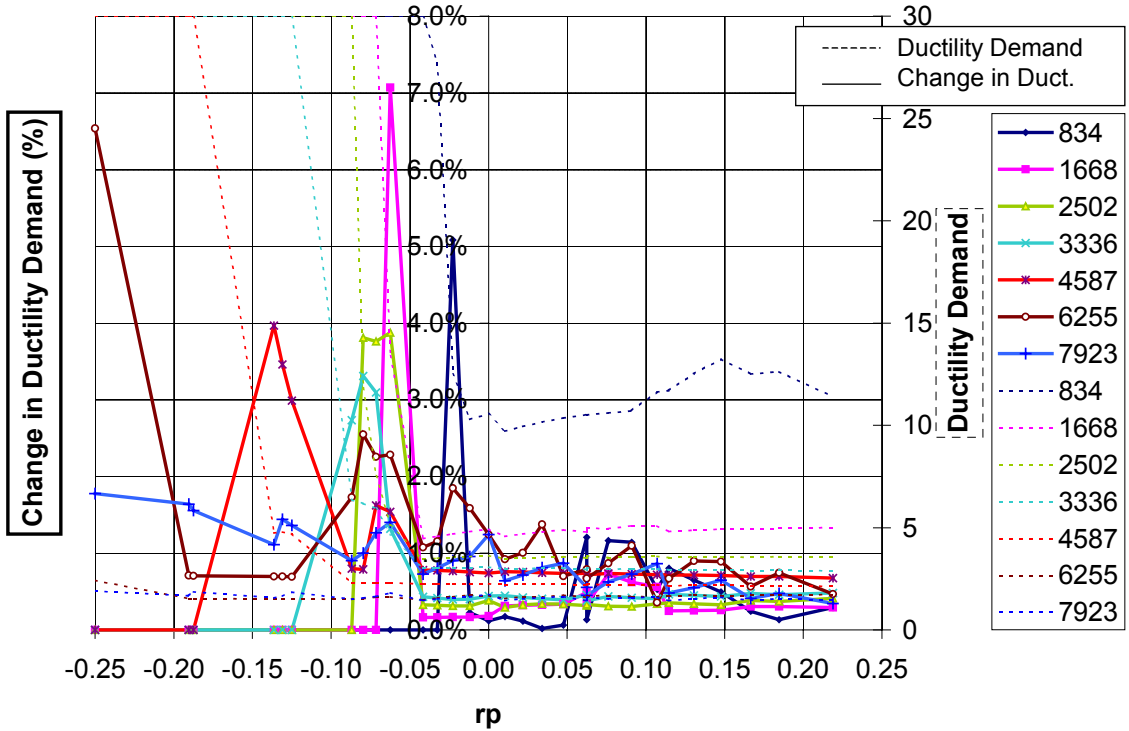


Figure C2.7.6.3b– EQ6, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.459 Seconds

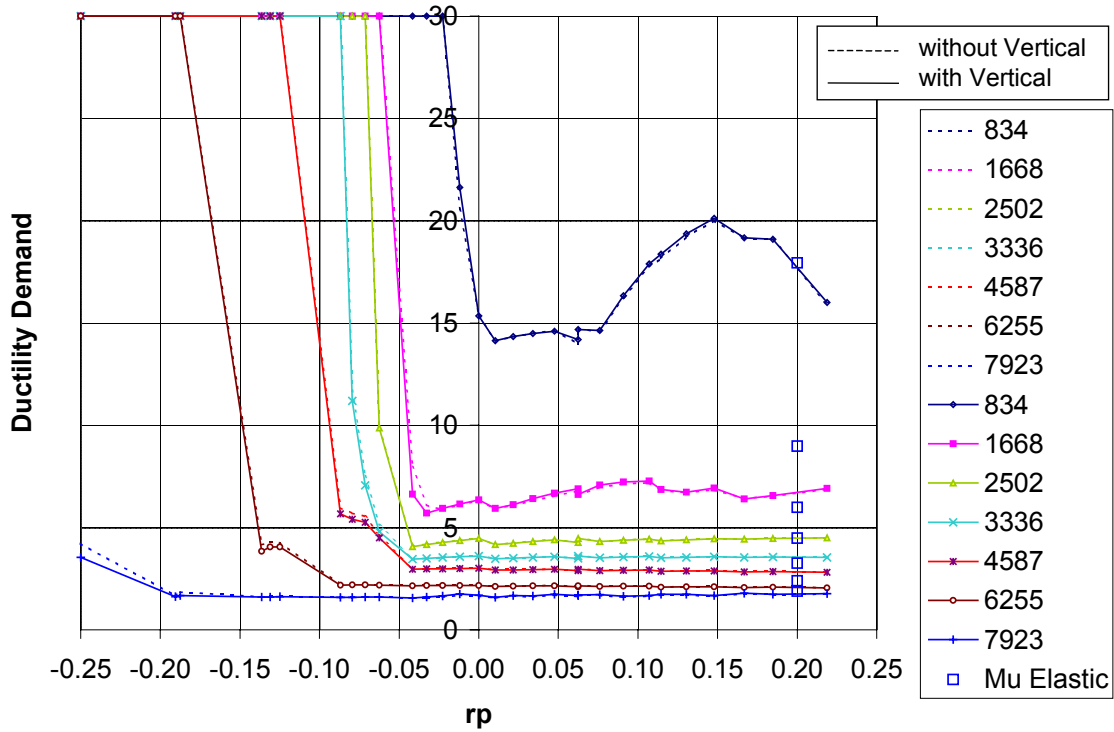


Figure C2.7.6.4a – EQ6, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.459 Seconds.

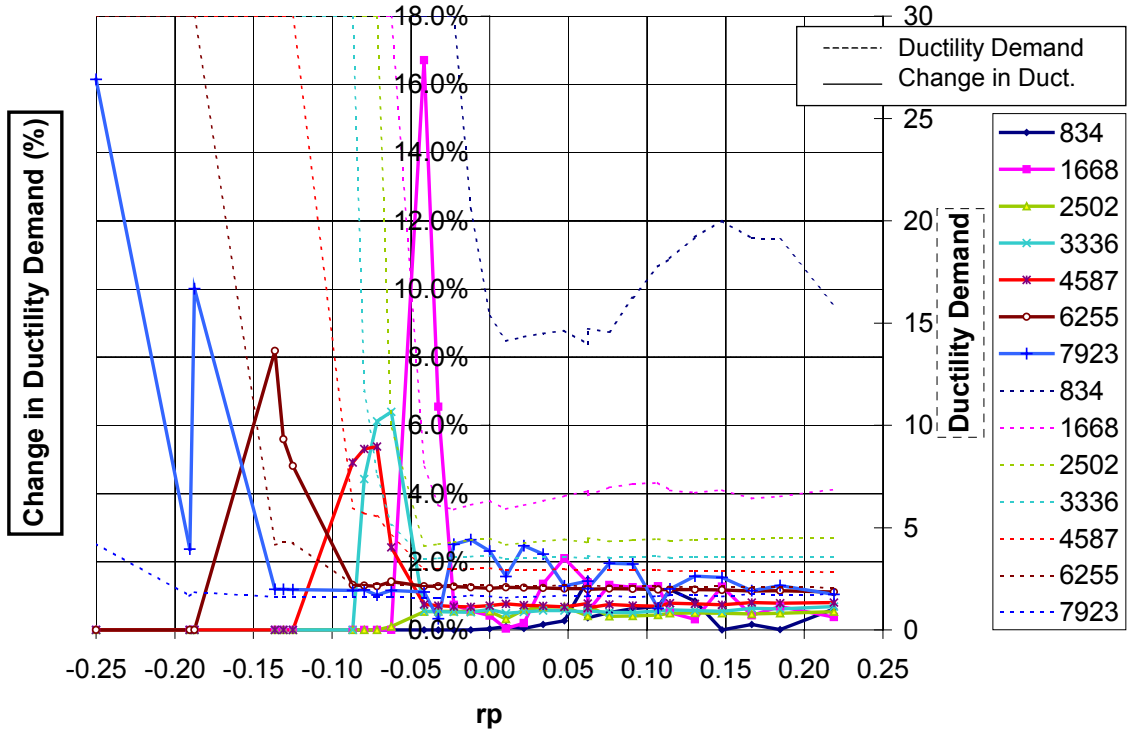


Figure C2.7.6.4b– EQ6, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.459 Seconds.

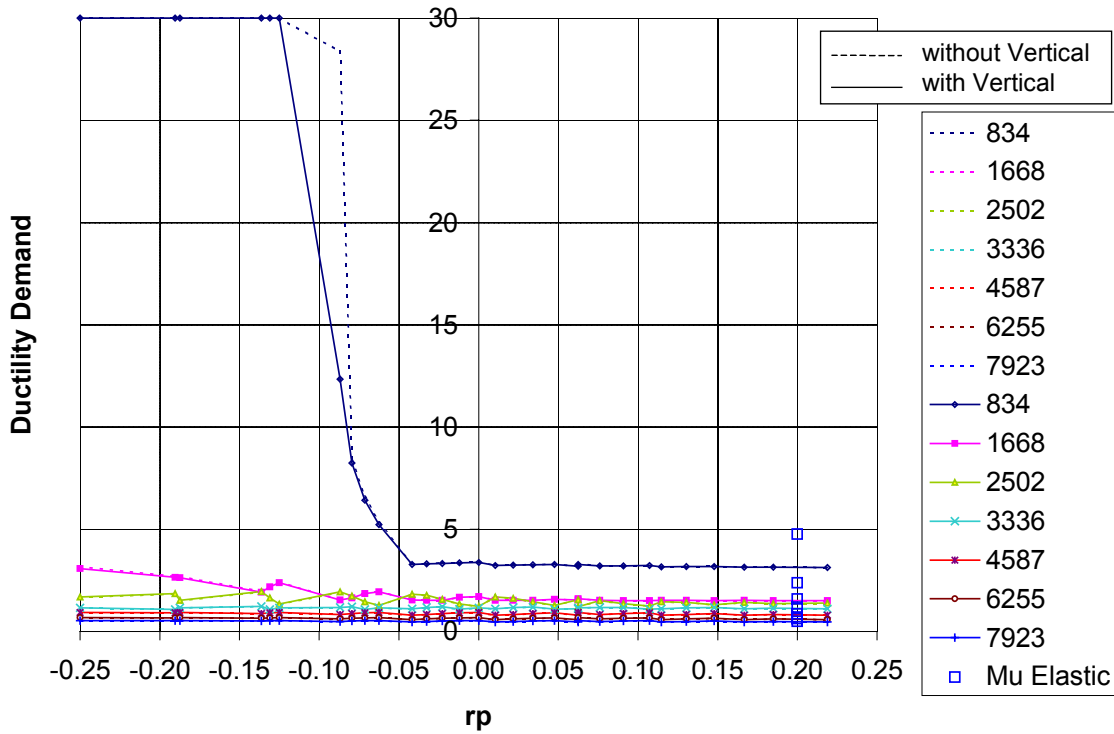


Figure C2.8.6.1a – EQ6, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.635 Seconds.

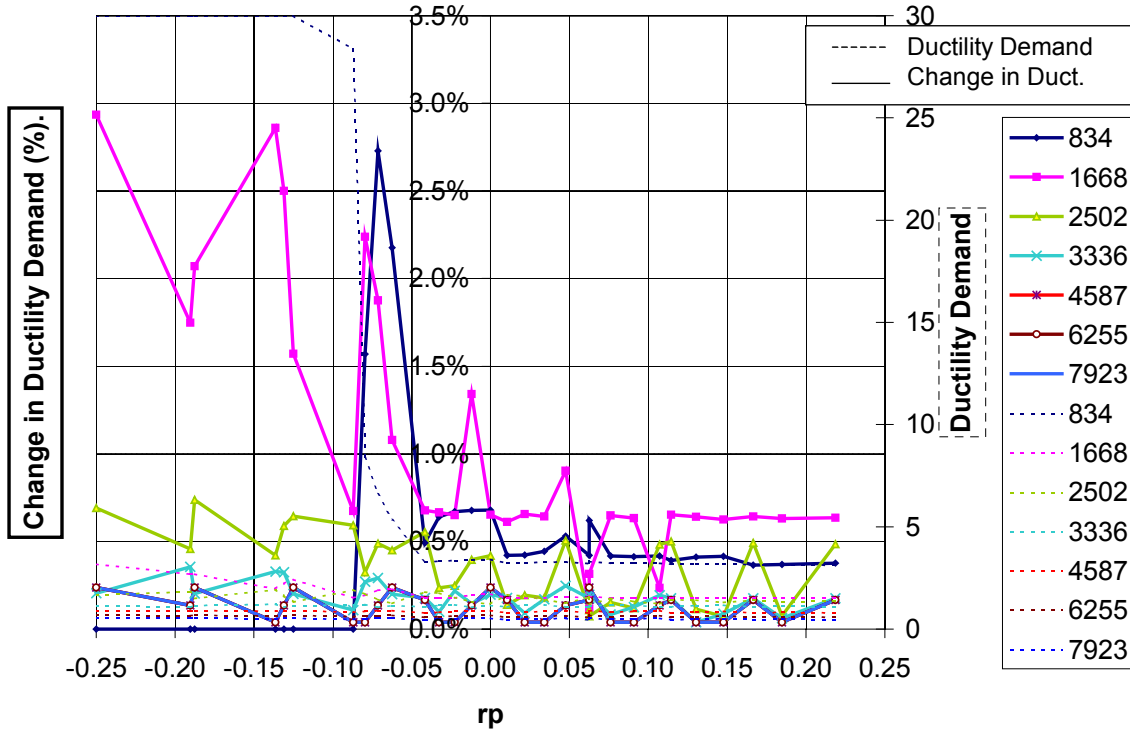


Figure C2.8.6.1b– EQ6, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.635 Seconds

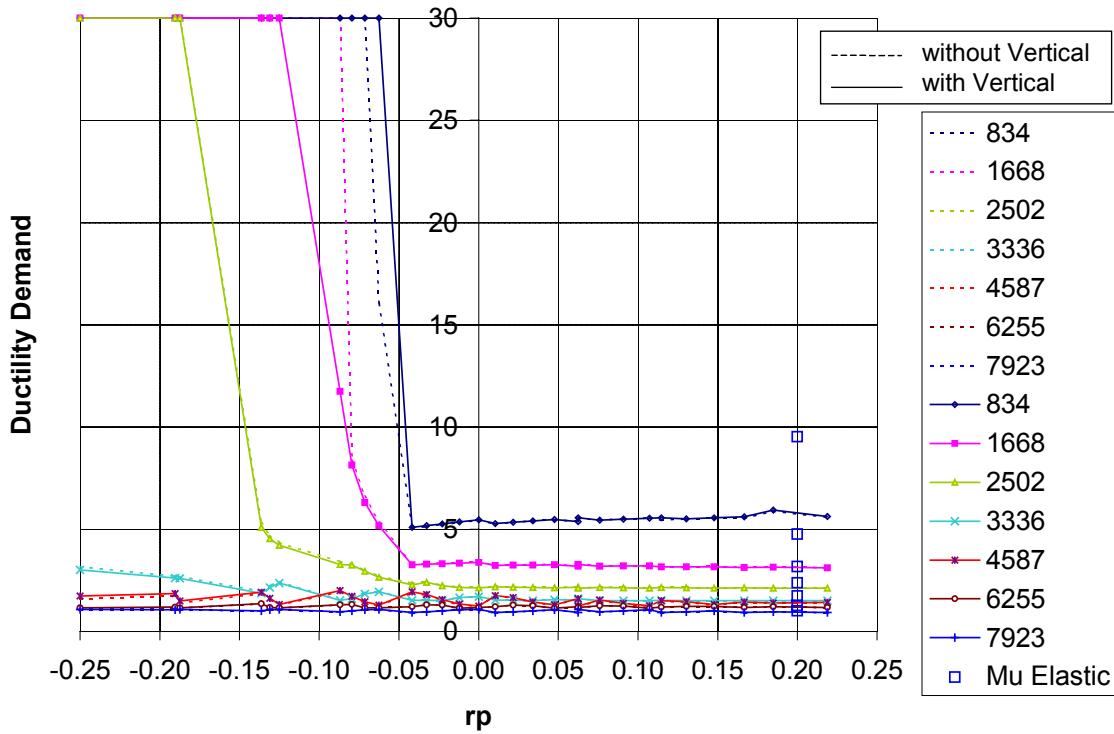


Figure C2.8.6.2a – EQ6, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.635 Seconds.

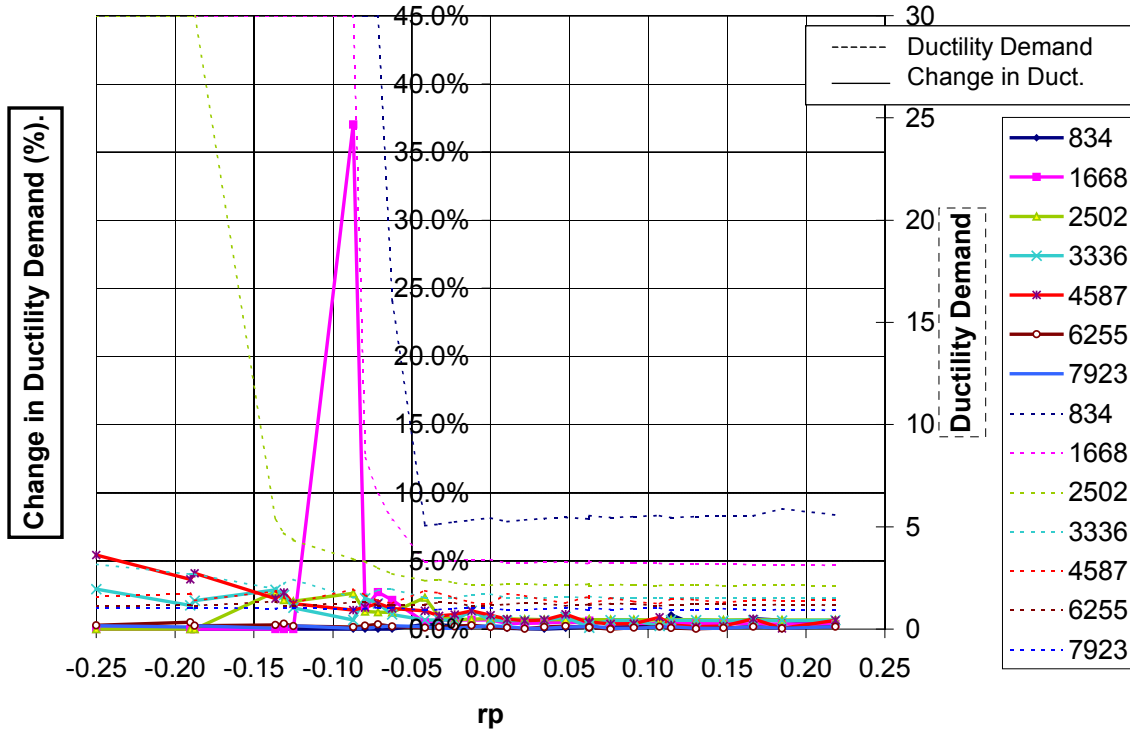
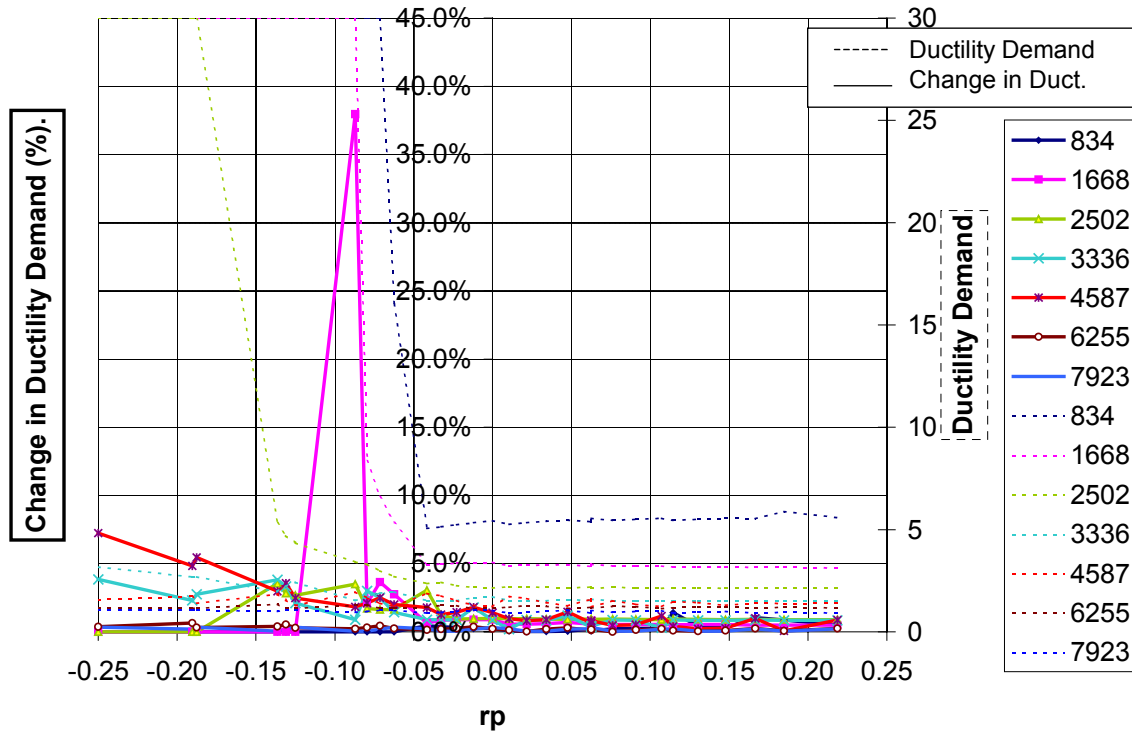
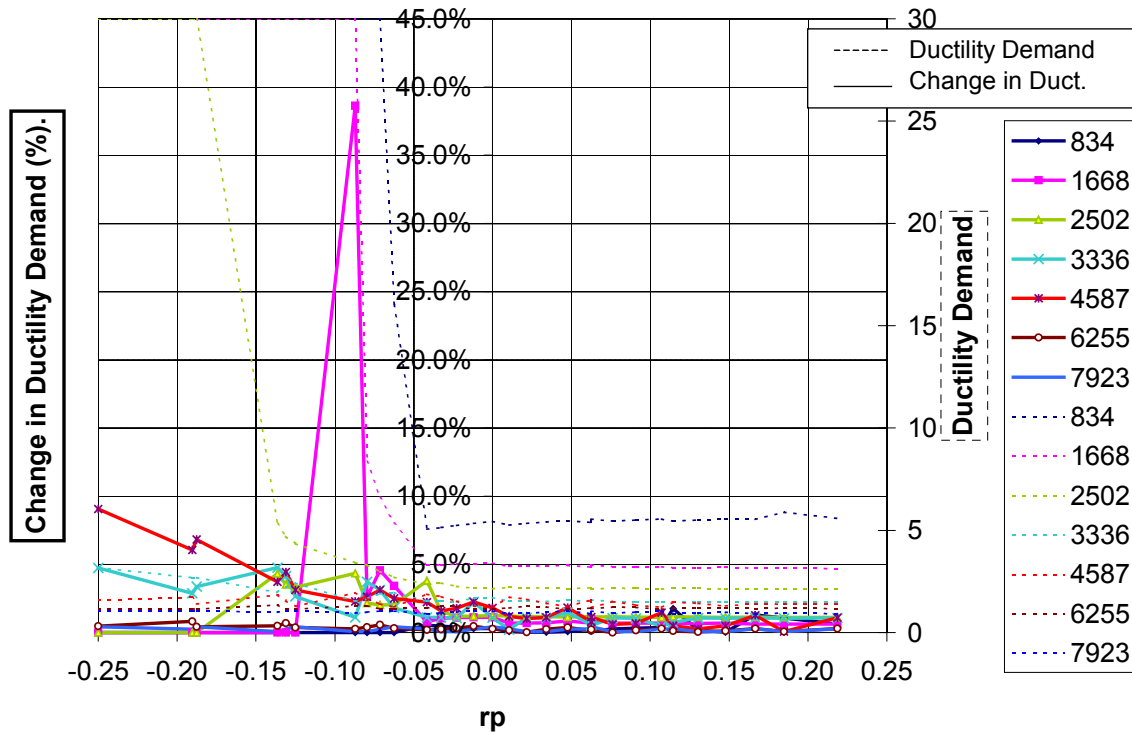


Figure C2.8.6.2b– EQ6, Lateral Scale = 0.2 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.635 Seconds



**Figure C2.8.6.2c– EQ6, Lateral Scale = 0.2 g, Vertical Multiplier = 2.0, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.635 Seconds**



**Figure C2.8.6.2d– EQ6, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.635 Seconds**

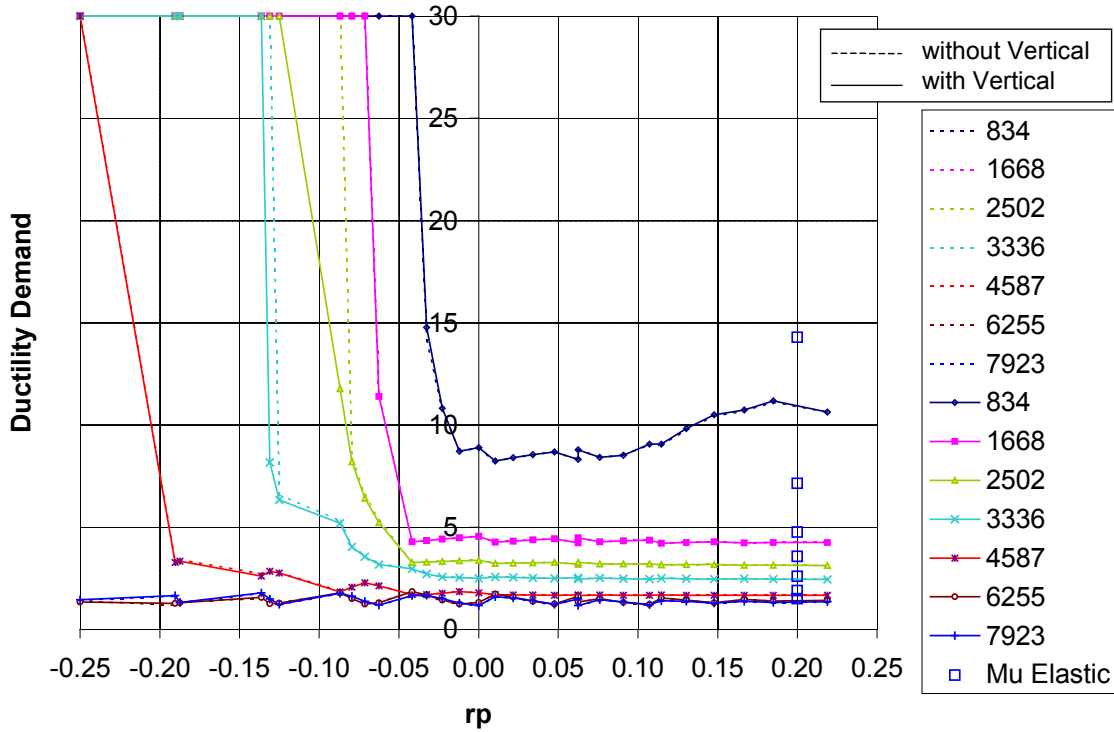


Figure C2.8.6.3a – EQ6, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.635 Seconds.

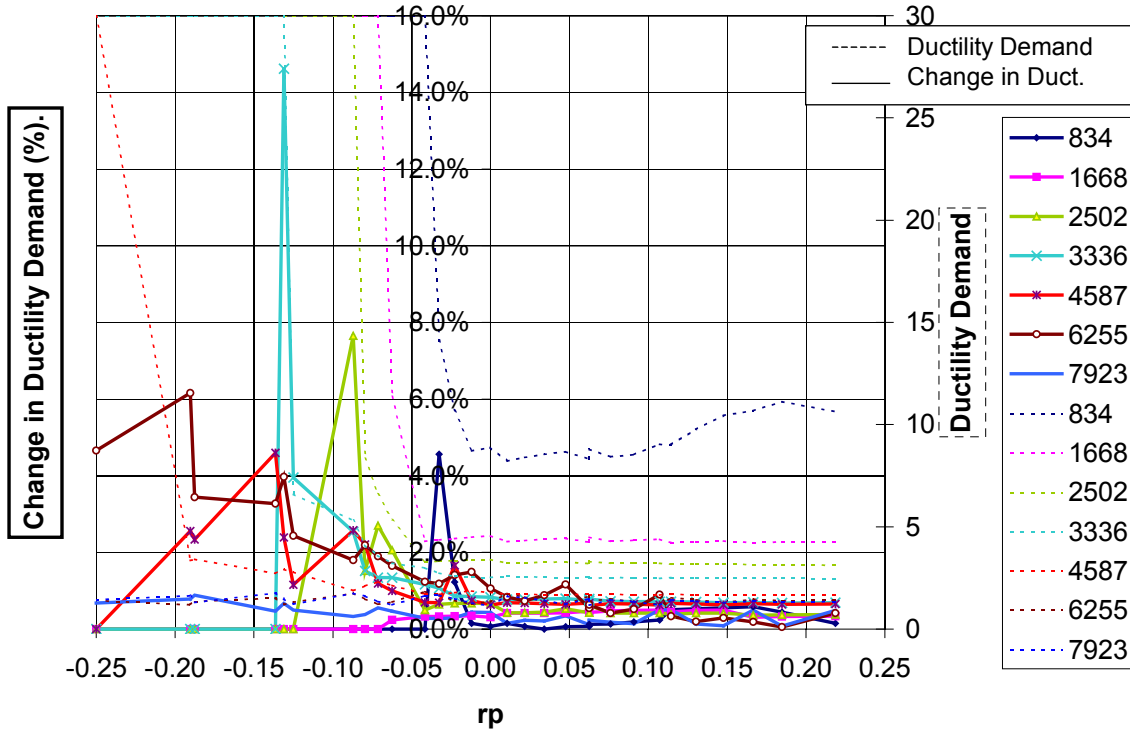


Figure C2.8.6.3b– EQ6, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.635 Seconds

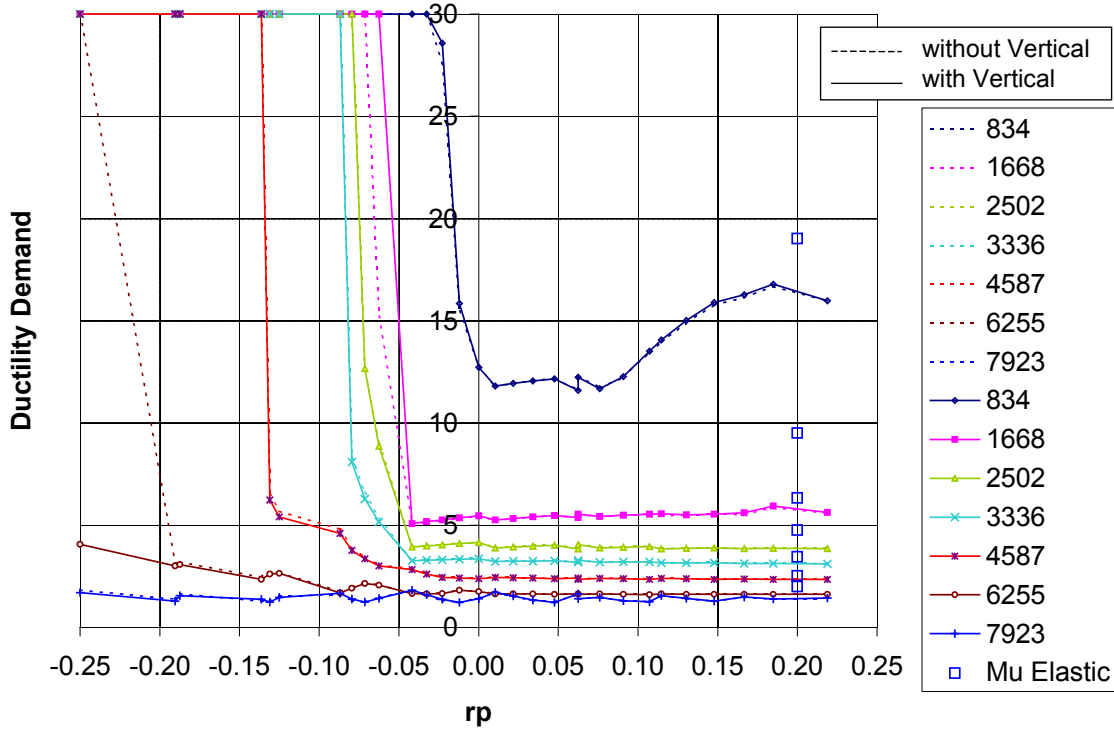


Figure C2.8.6.4a – EQ6, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.635 Seconds.

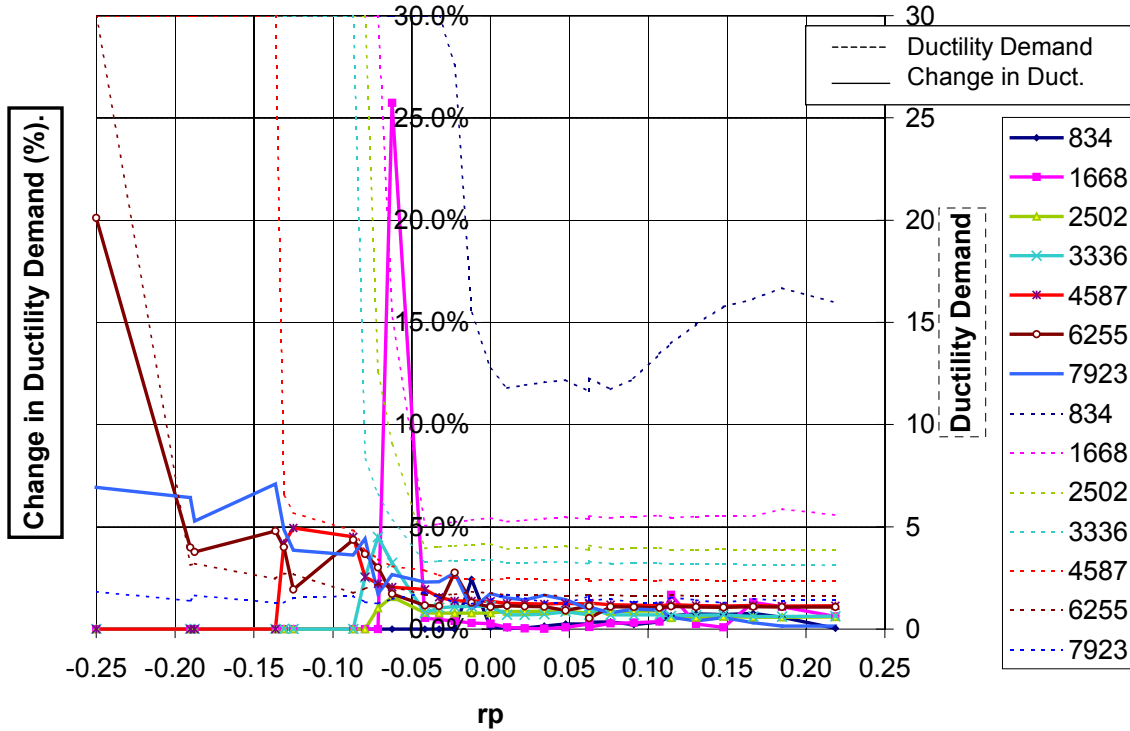


Figure C2.8.6.4b– EQ6, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.635 Seconds.

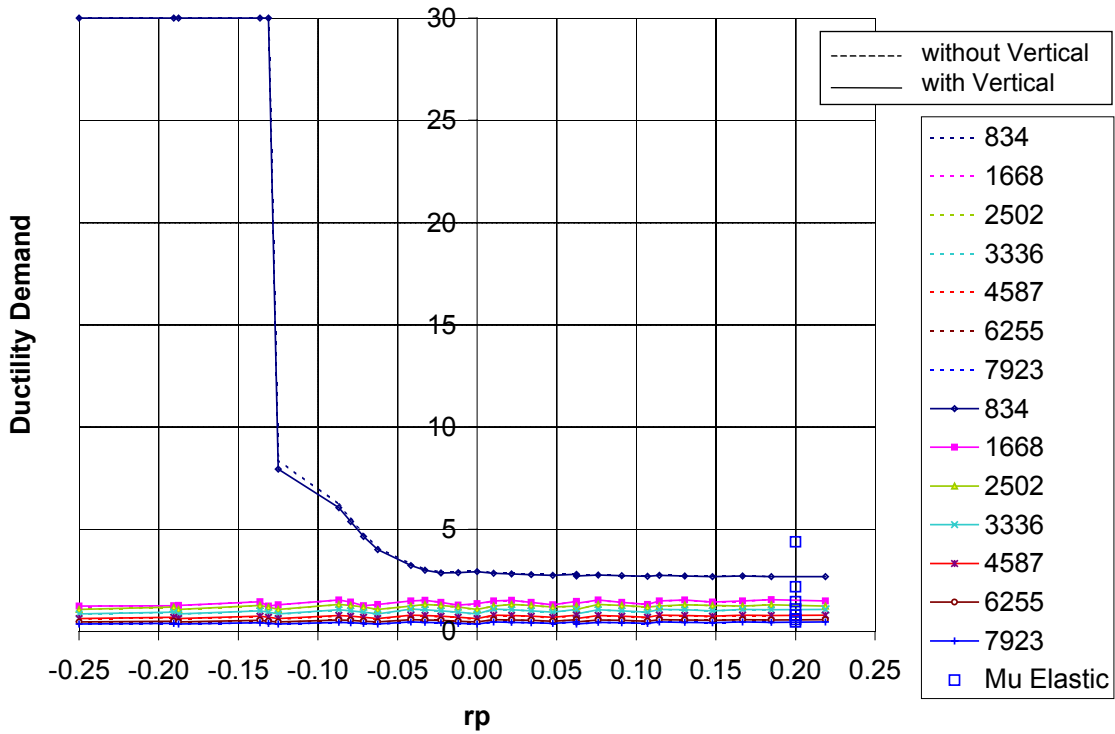


Figure C2.9.6.1a – EQ6, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.808 Seconds.

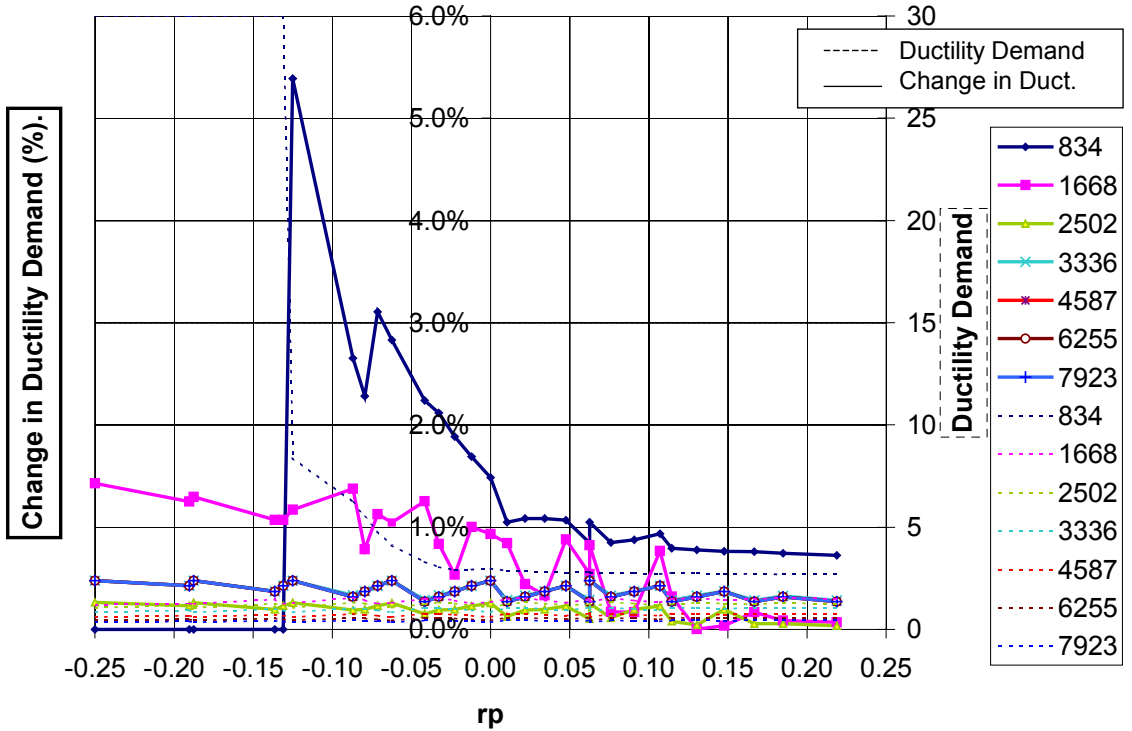


Figure C2.9.6.1b– EQ6, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.808 Seconds

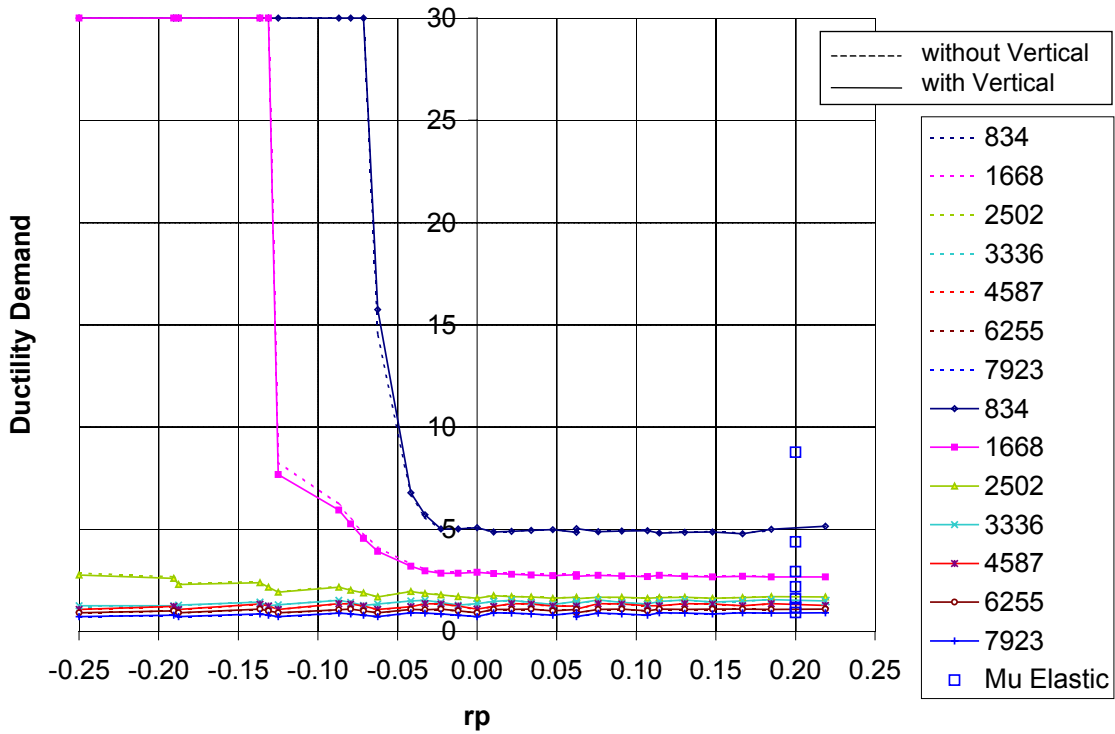


Figure C2.9.6.2a – EQ6, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.808 Seconds.

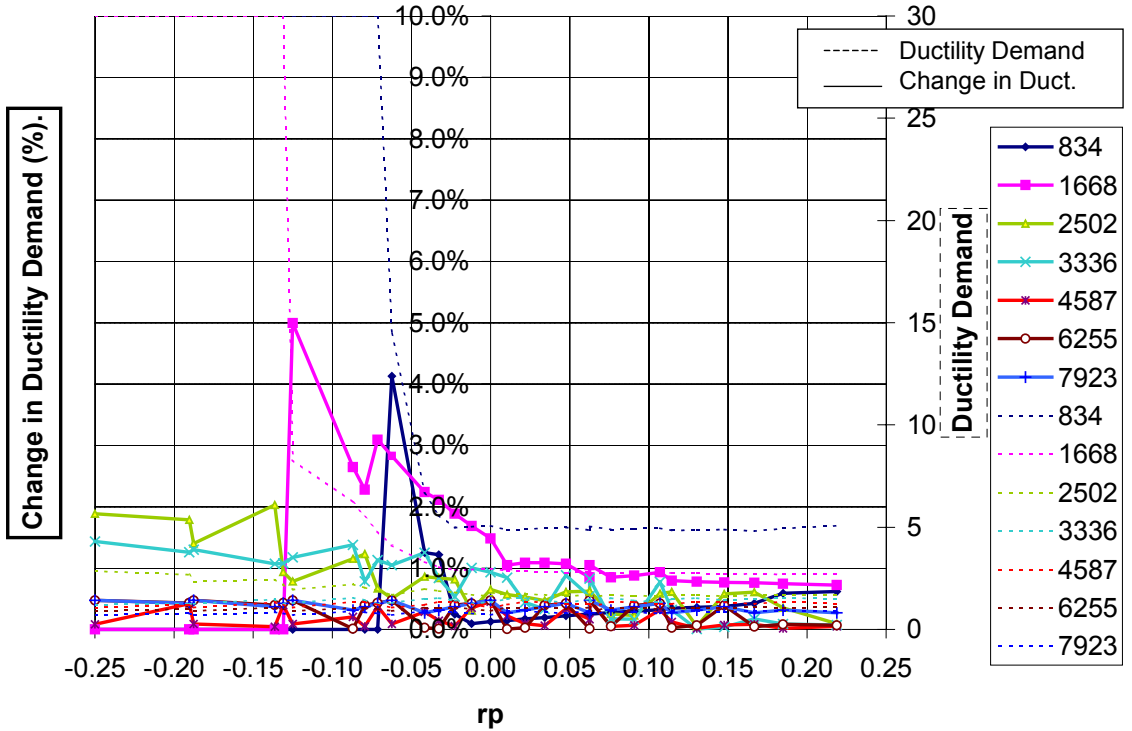
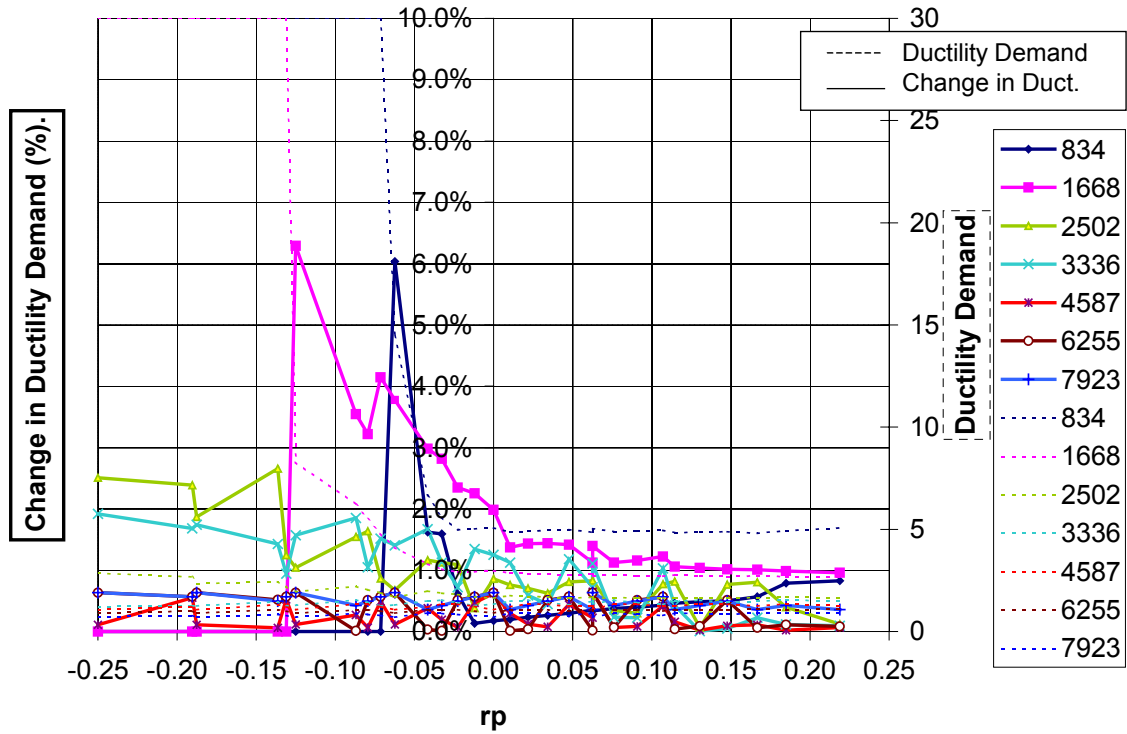
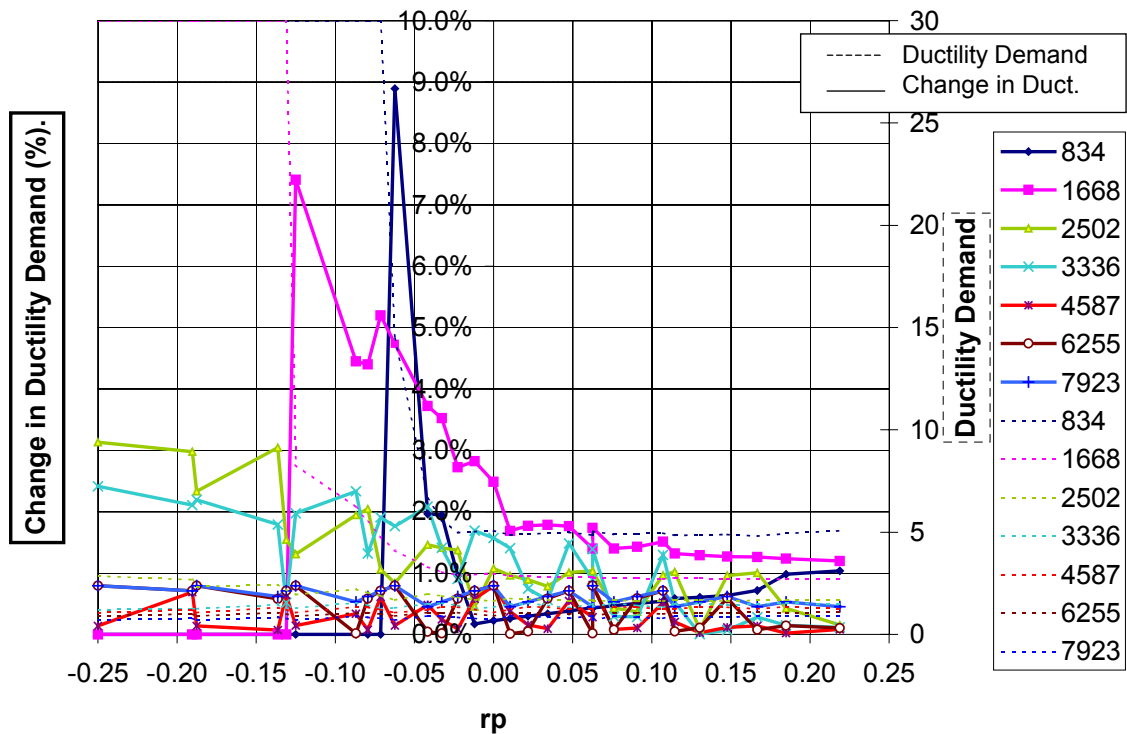


Figure C2.9.6.2b– EQ6, Lateral Scale = 0.2 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.808 Seconds



**Figure C2.9.6.2c– EQ6, Lateral Scale = 0.2 g, Vertical Multiplier = 2.0, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.808 Seconds**



**Figure C2.9.6.2d– EQ6, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.808 Seconds**

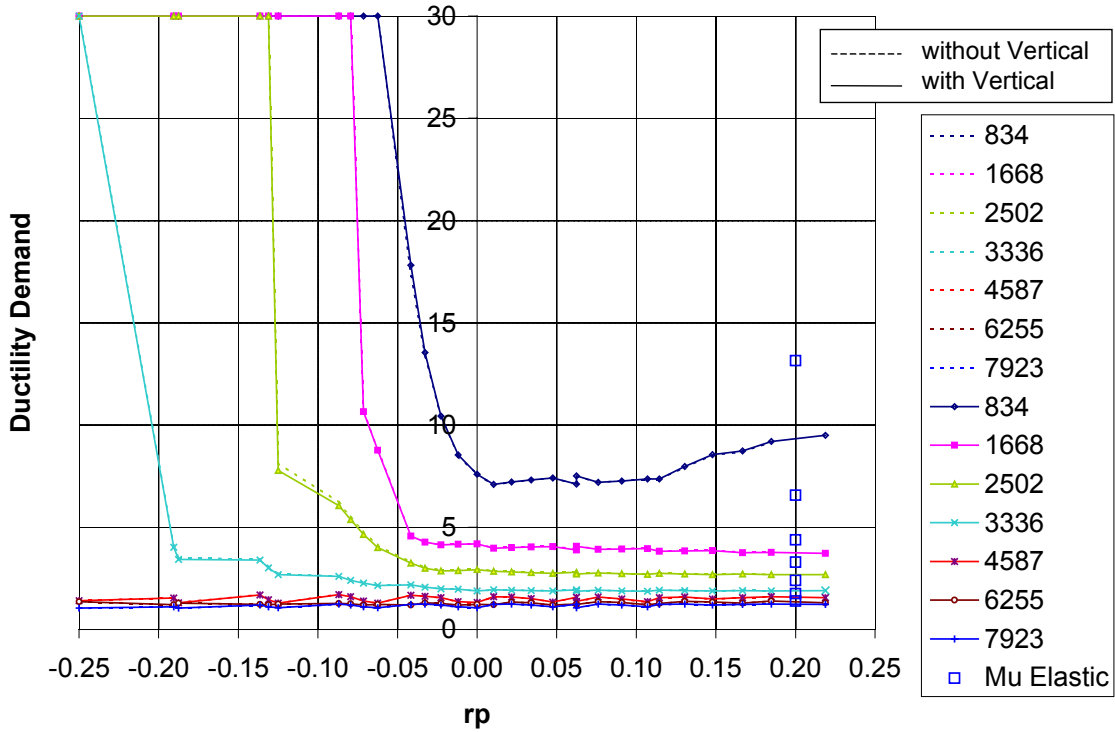


Figure C2.9.6.3a – EQ6, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.808 Seconds.

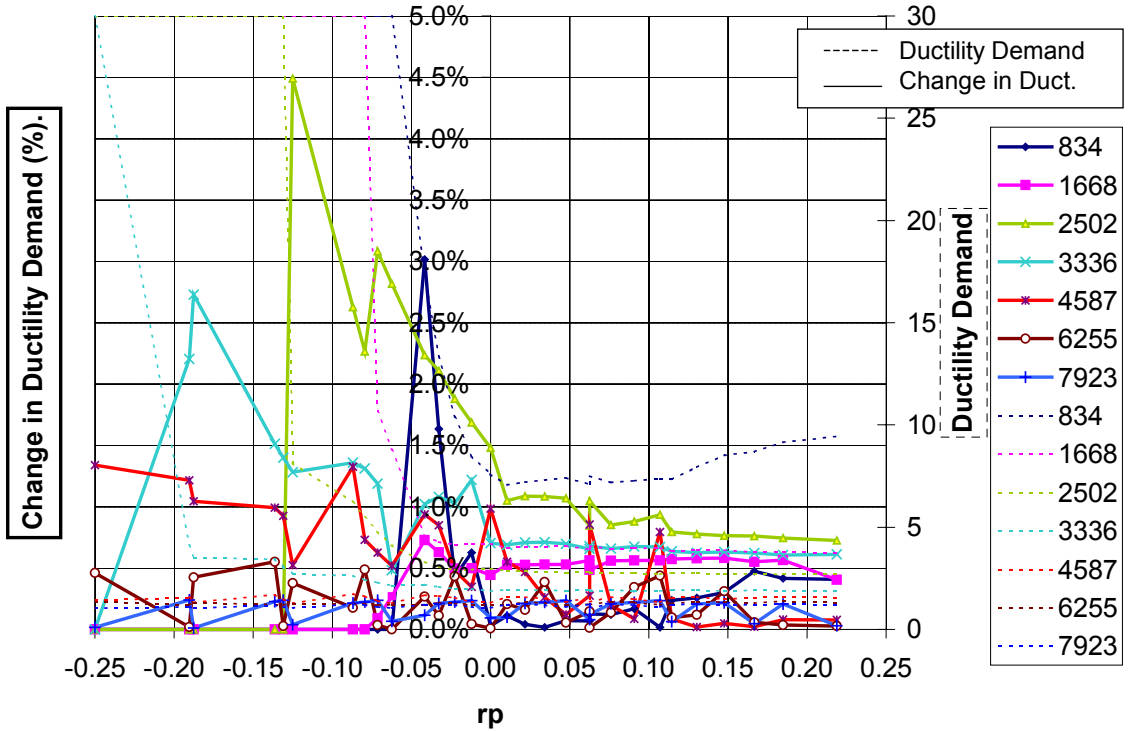


Figure C2.9.6.3b– EQ6, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.808 Seconds

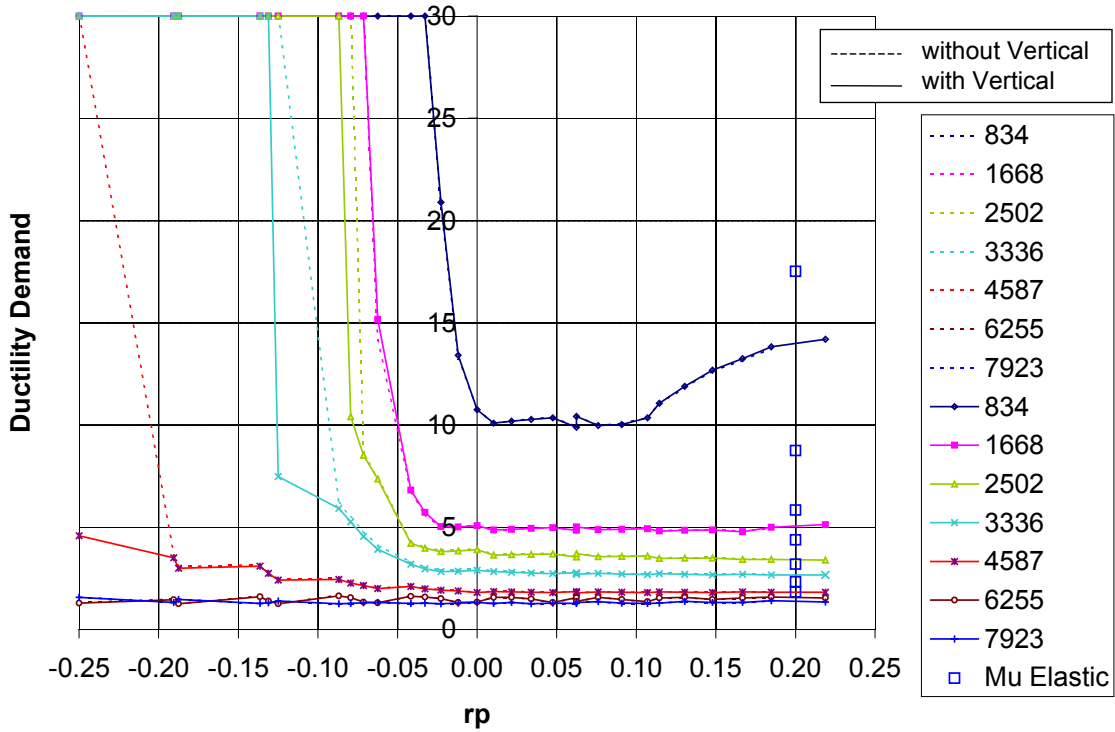


Figure C2.9.6.4a – EQ6, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.808 Seconds.

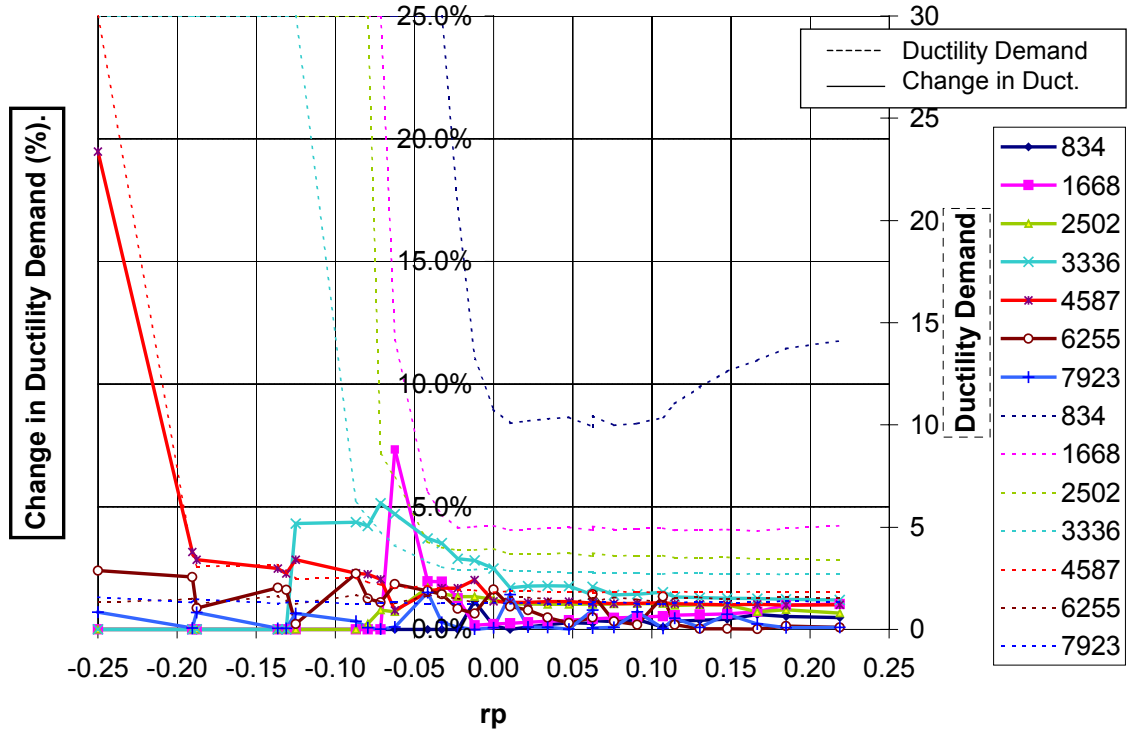


Figure C2.9.6.4b– EQ6, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.808 Seconds.

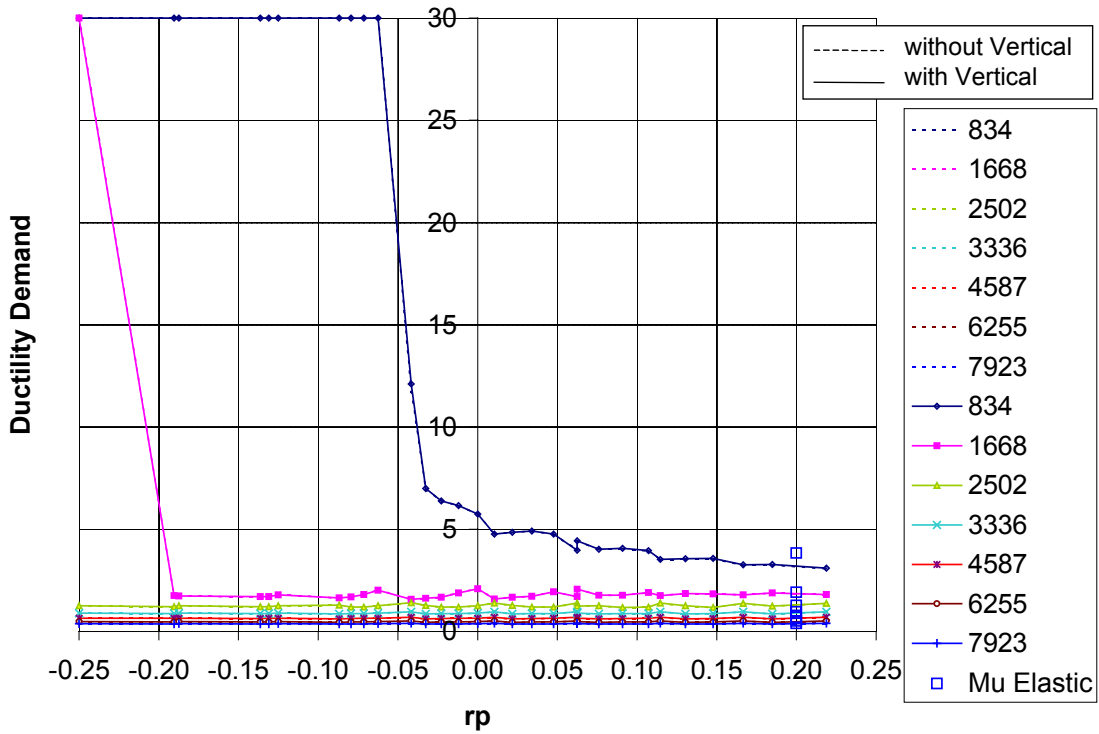


Figure C2.3.7.1a – EQ7, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 0.705 Seconds.

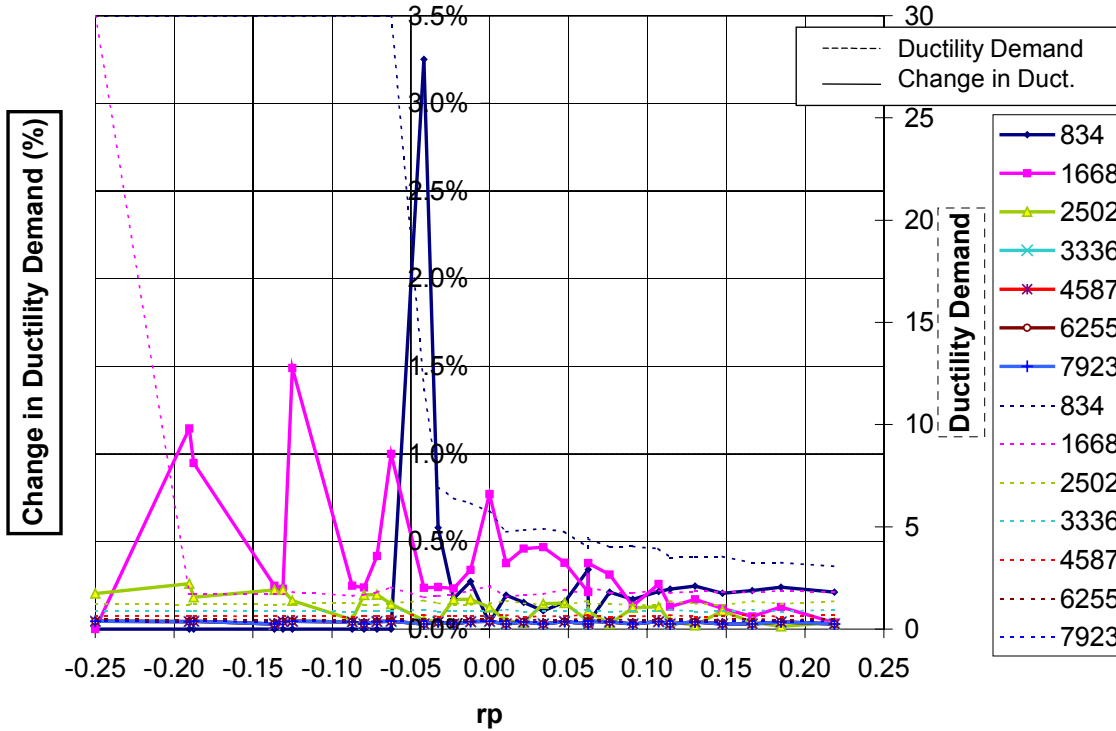


Figure C2.3.7.1b– EQ7, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 0.705 Seconds

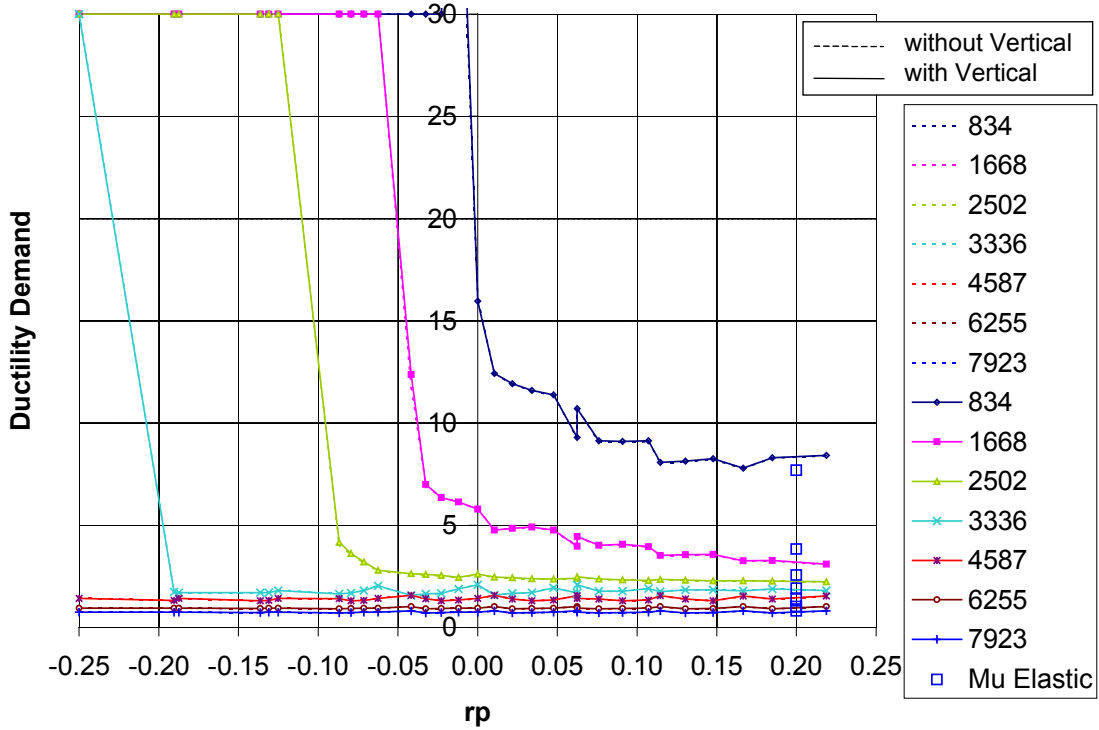


Figure C2.3.7.2a – EQ7, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 0.705 Seconds.

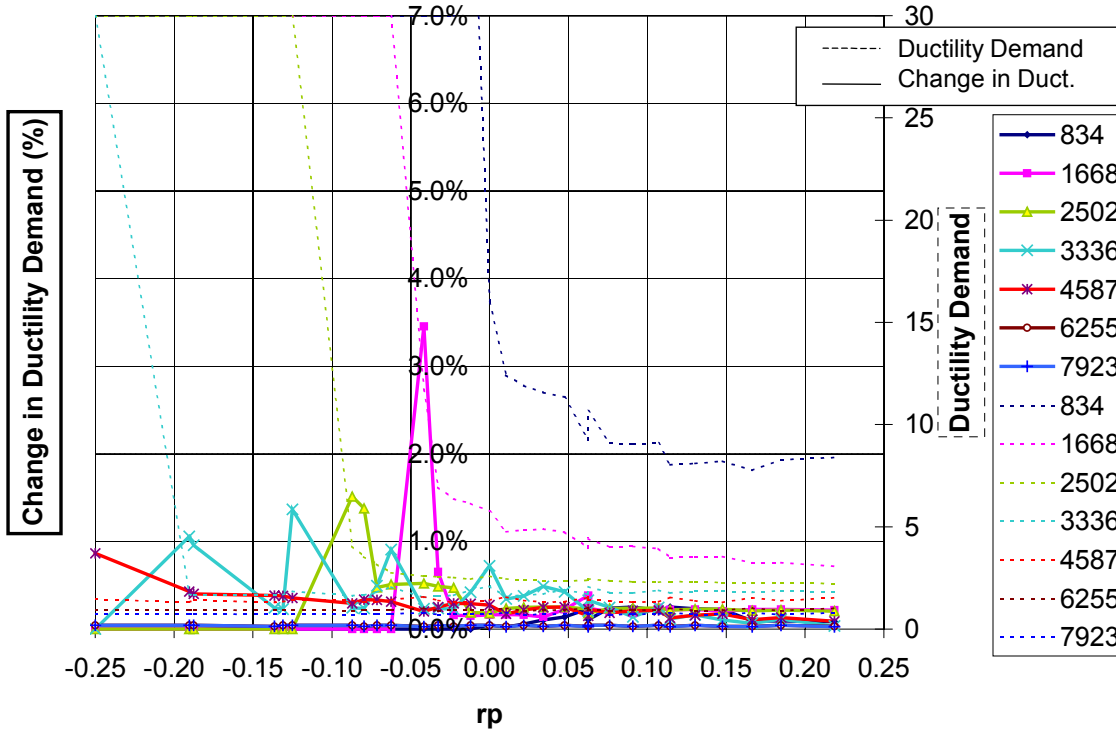
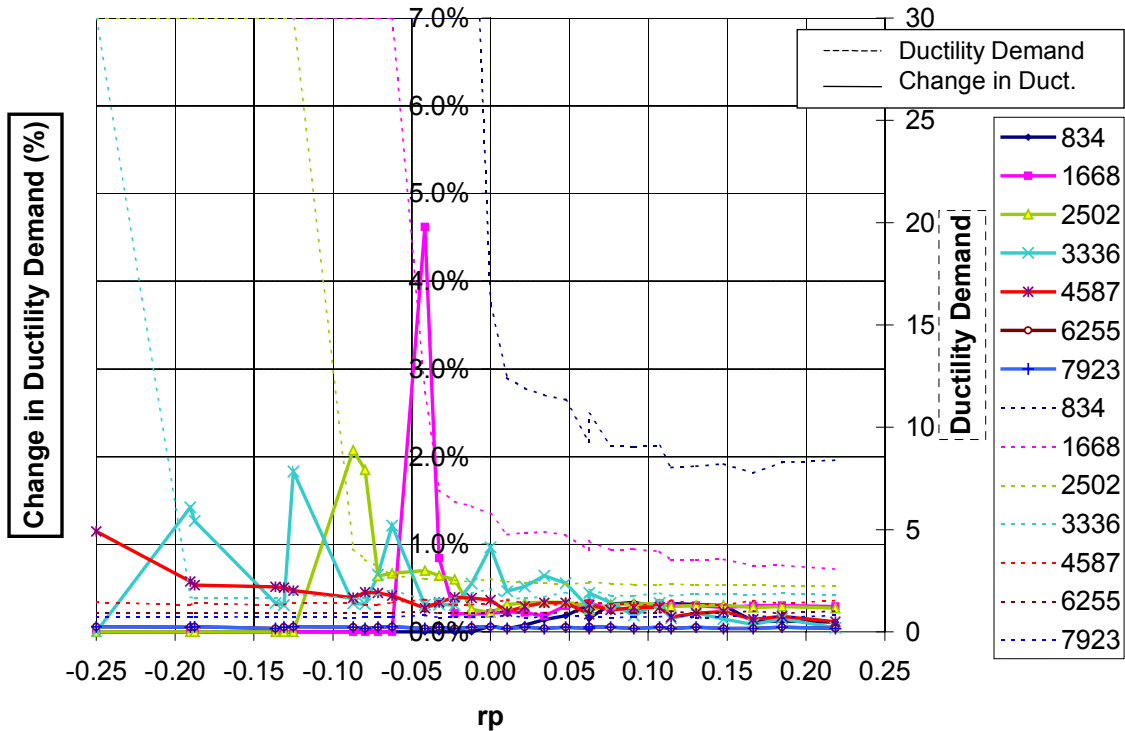
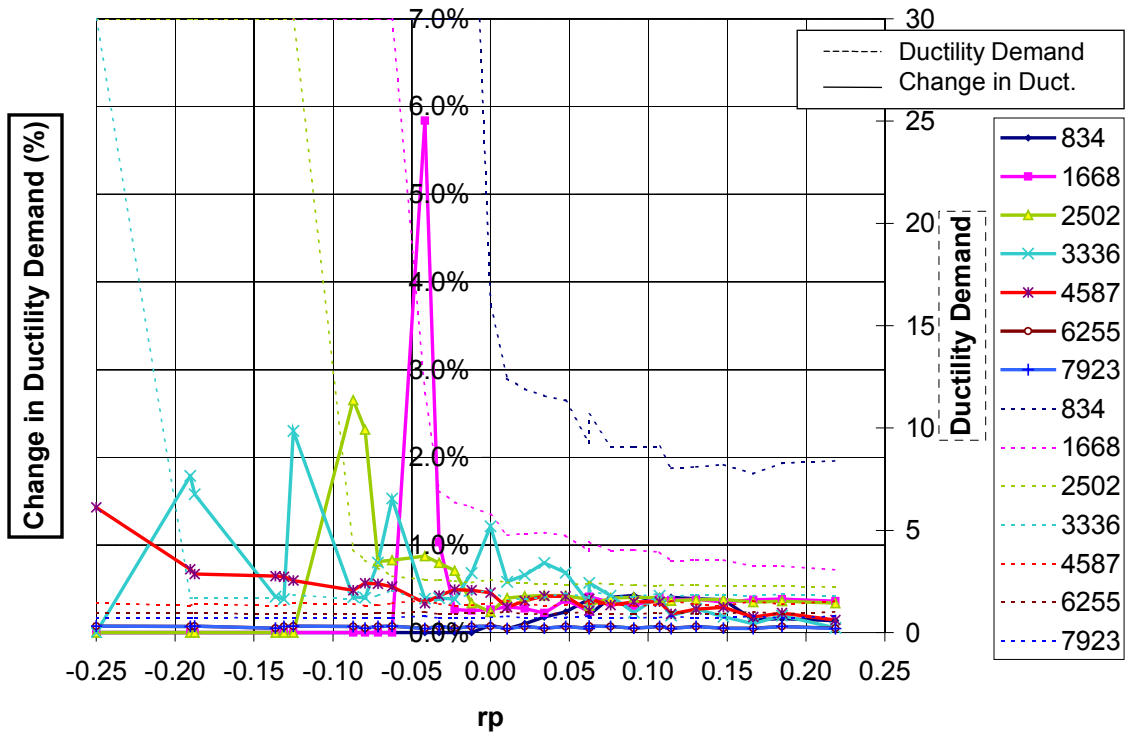


Figure C2.3.7.2b– EQ7, Lateral Scale = 0.2 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 0.705 Seconds



**Figure C2.3.7.2c– EQ7, Lateral Scale = 0.2 g, Vertical Multiplier = 2.0, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 0.705 Seconds**



**Figure C2.3.7.2d– EQ7, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 0.705 Seconds**

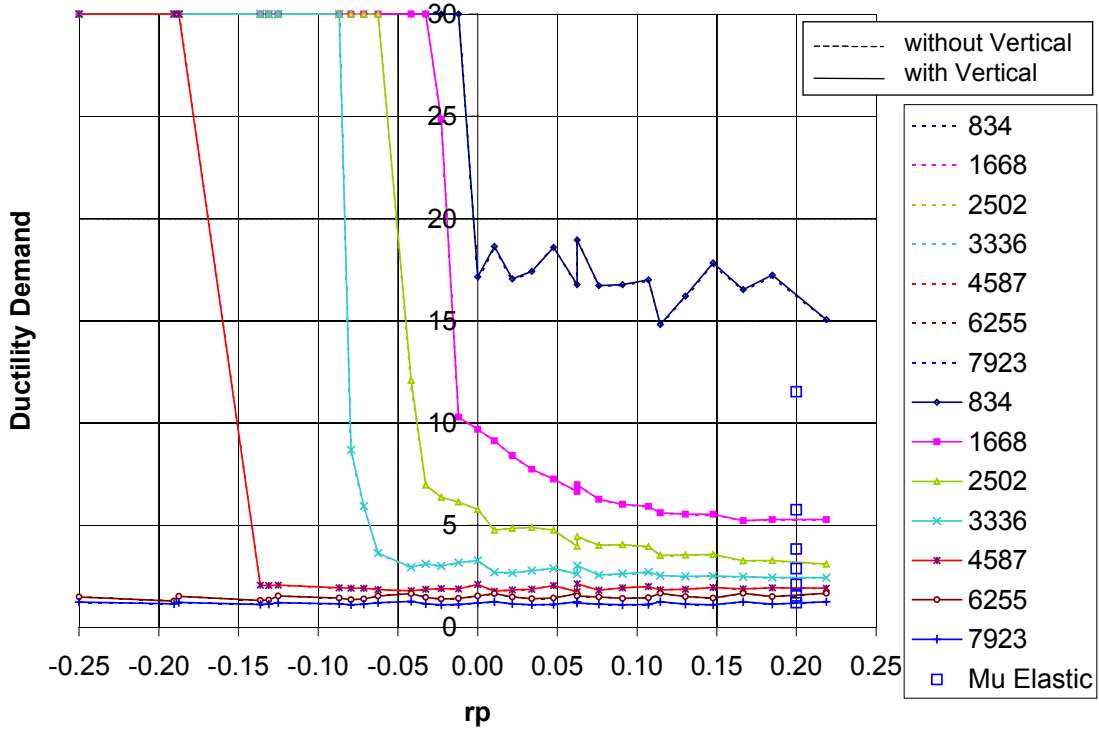


Figure C2.3.7.3a – EQ7, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 0.705 Seconds.

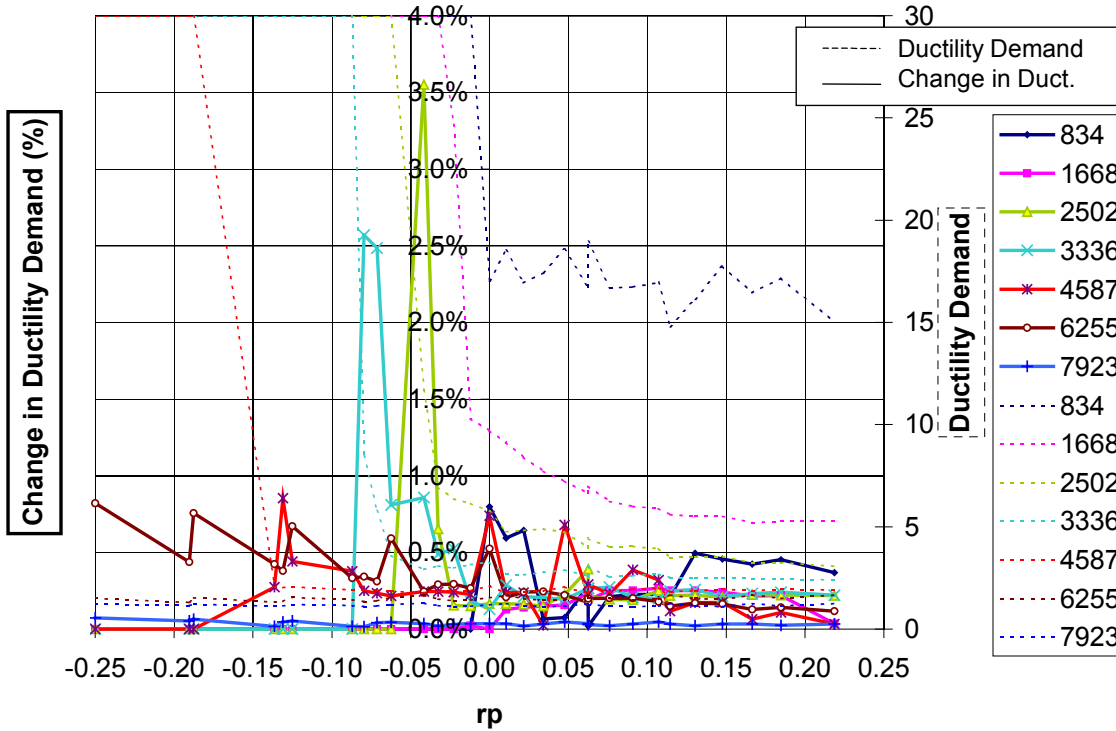


Figure C2.3.7.3b– EQ7, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 0.705 Seconds

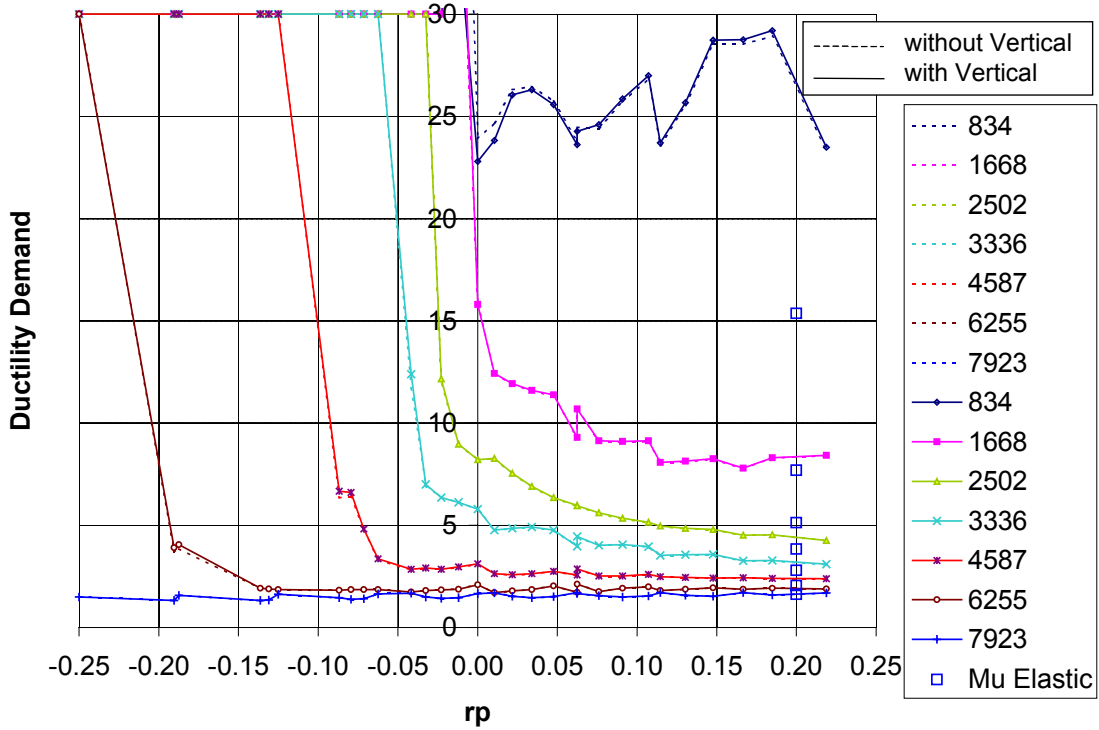


Figure C2.3.7.4a – EQ7, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 0.705 Seconds.

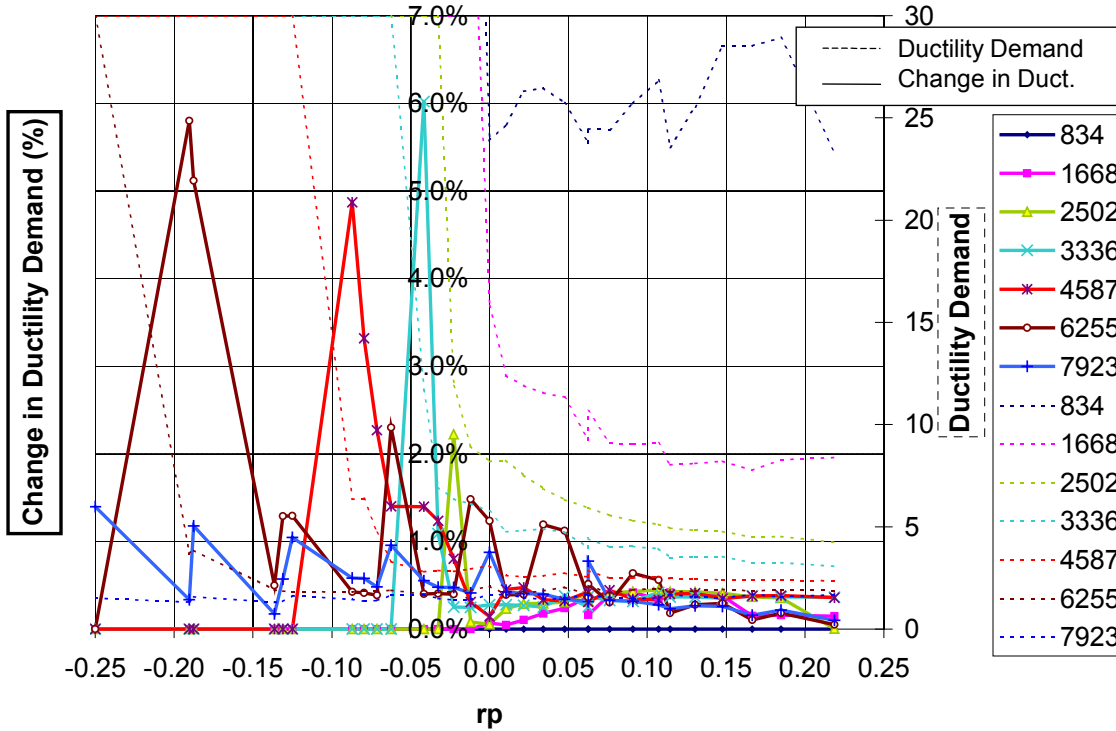


Figure C2.3.7.4b– EQ7, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 0.705 Seconds.

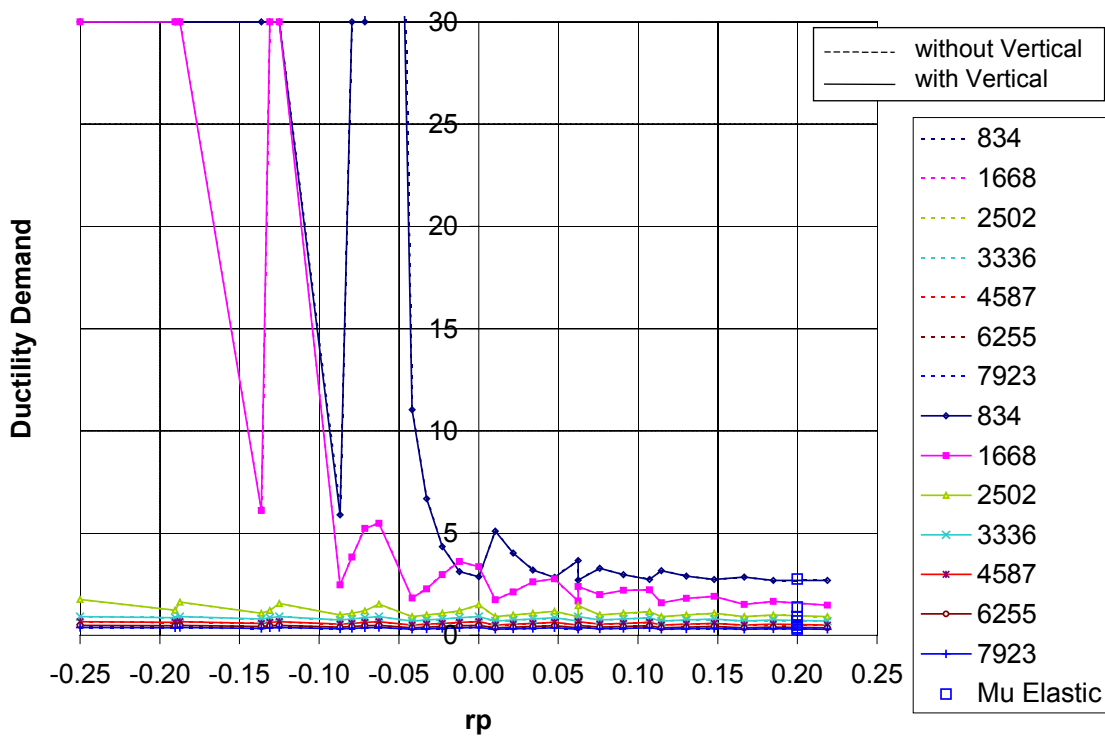


Figure C2.4.7.1a – EQ7, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 0.903 Seconds.

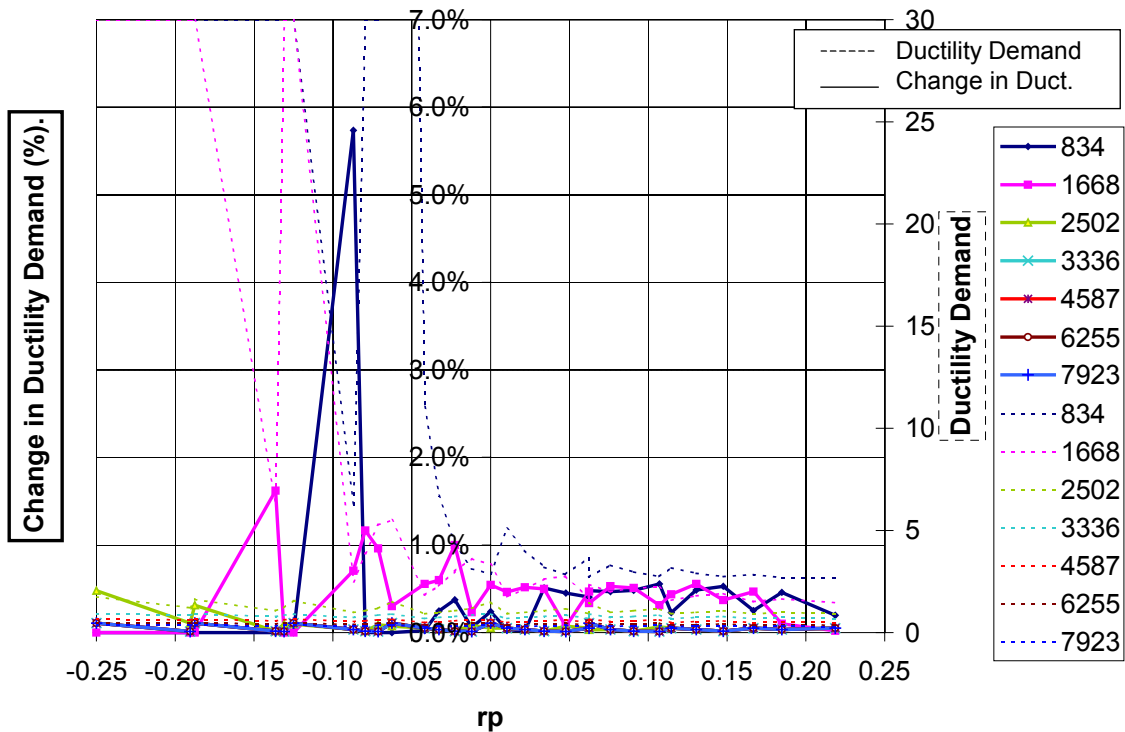


Figure C2.4.7.1b– EQ7, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 0.903 Seconds

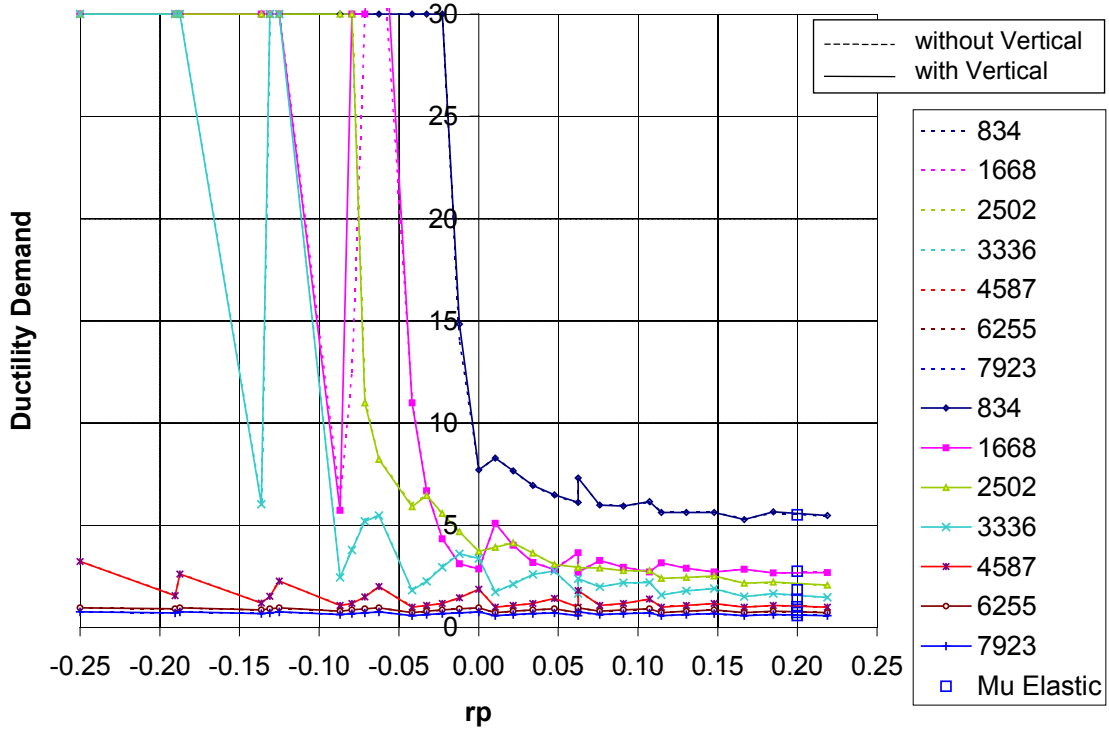


Figure C2.4.7.2a – EQ7, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 0.903 Seconds.

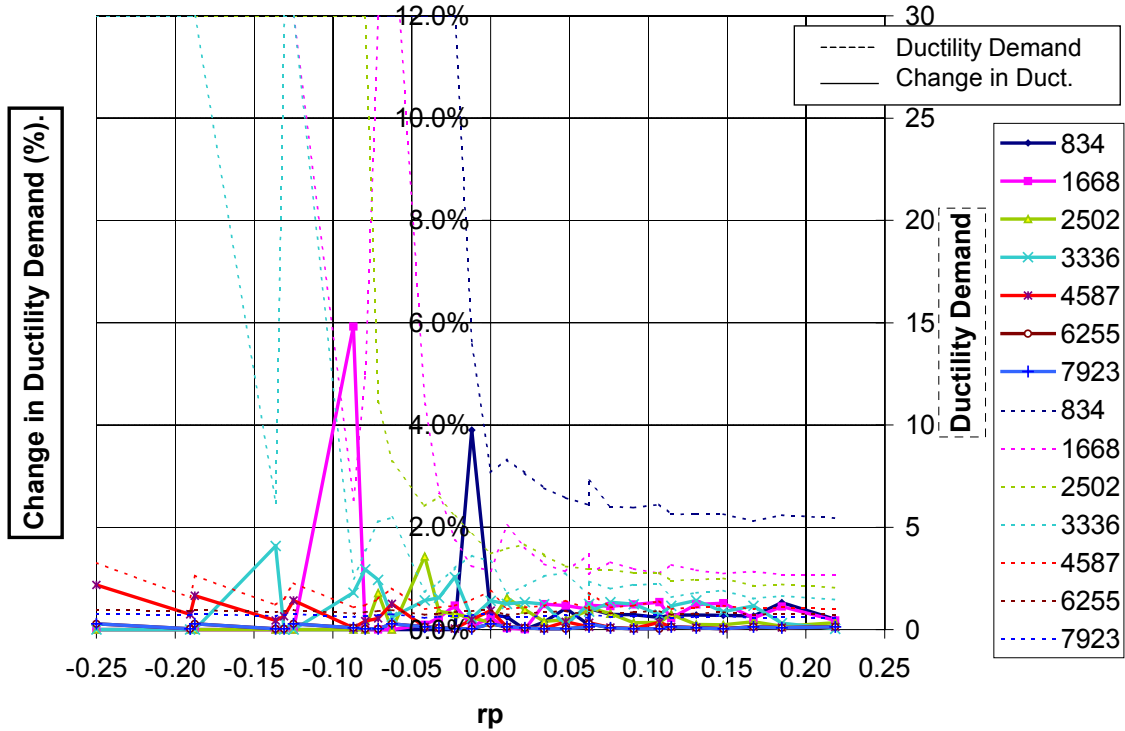
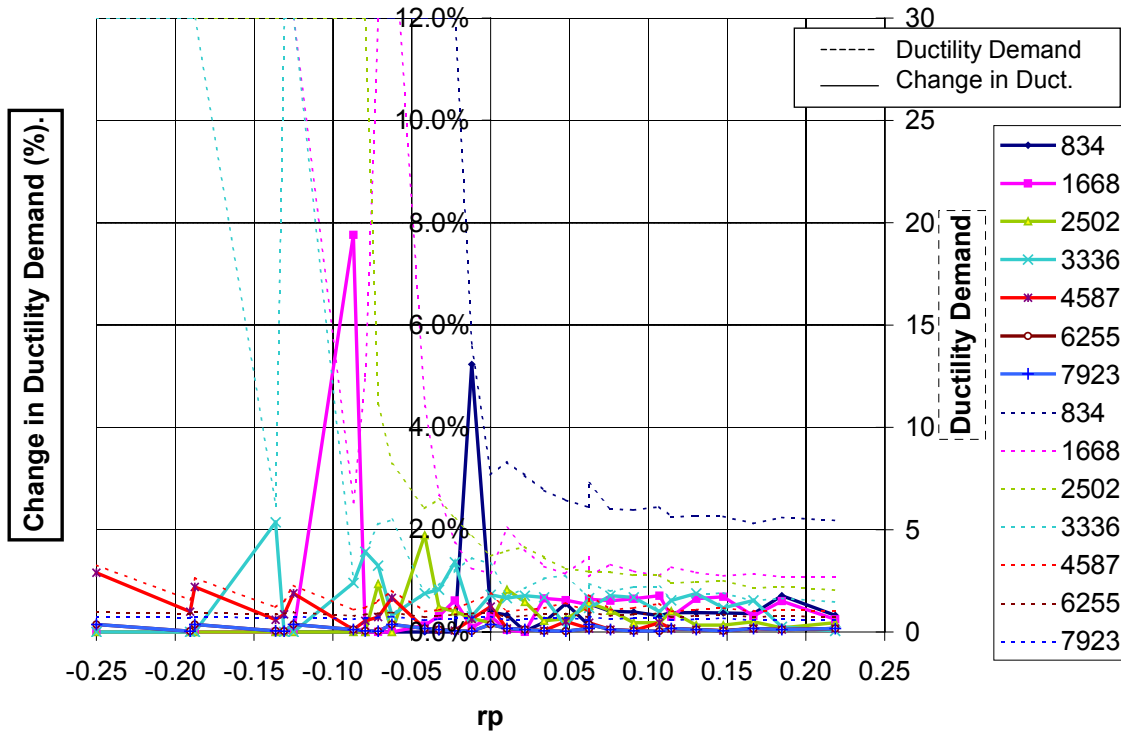
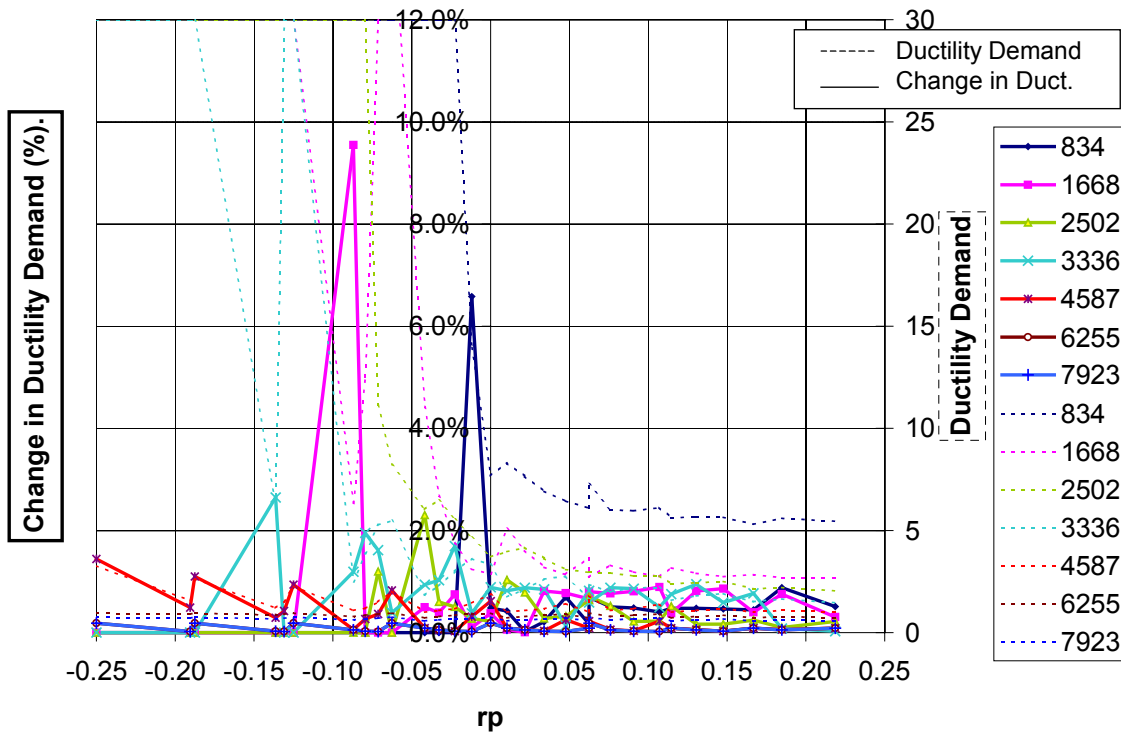


Figure C2.4.7.2b– EQ7, Lateral Scale = 0.2 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 0.903 Seconds



**Figure C2.4.7.2c– EQ7, Lateral Scale = 0.2 g, Vertical Multiplier = 2.0, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 0.903 Seconds**



**Figure C2.4.7.2d– EQ7, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 0.903 Seconds**

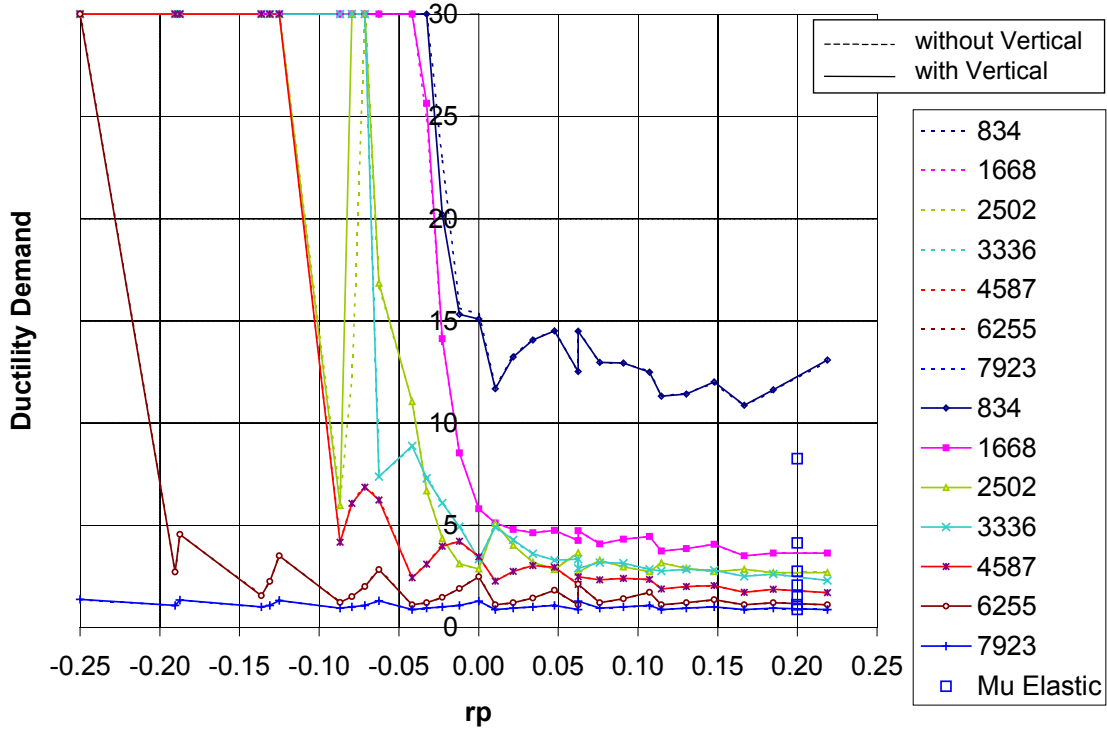


Figure C2.4.7.3a – EQ7, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 0.903 Seconds.

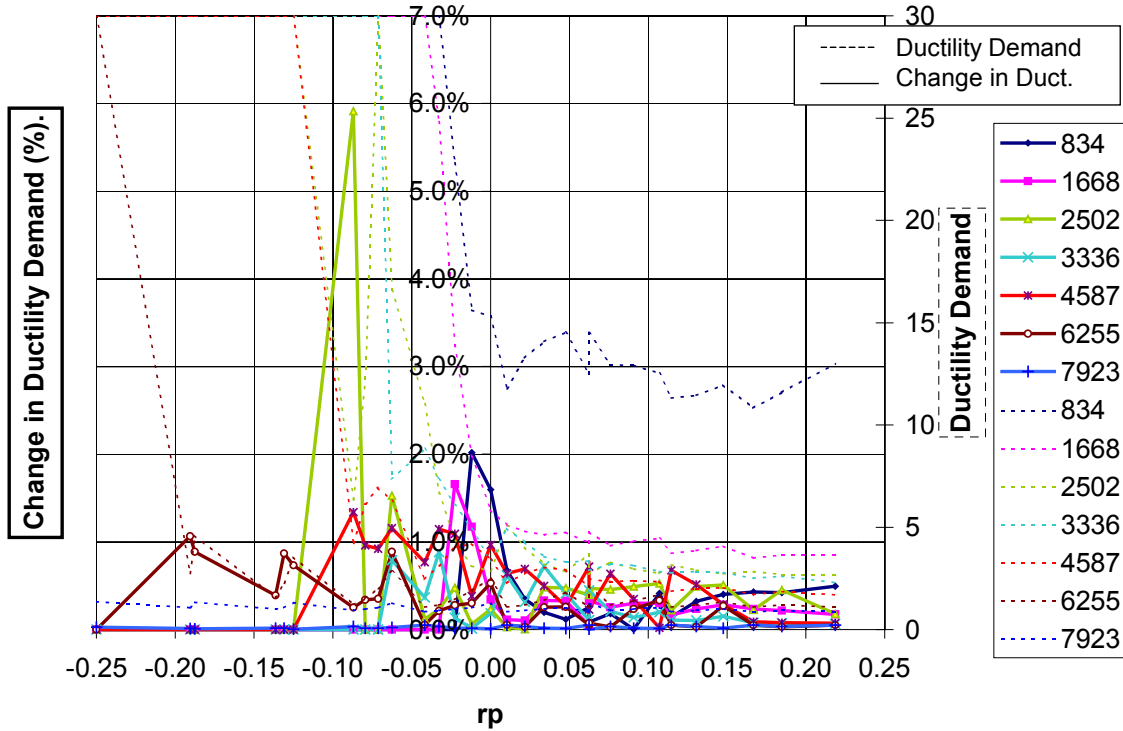


Figure C2.4.7.3b– EQ7, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 0.903 Seconds

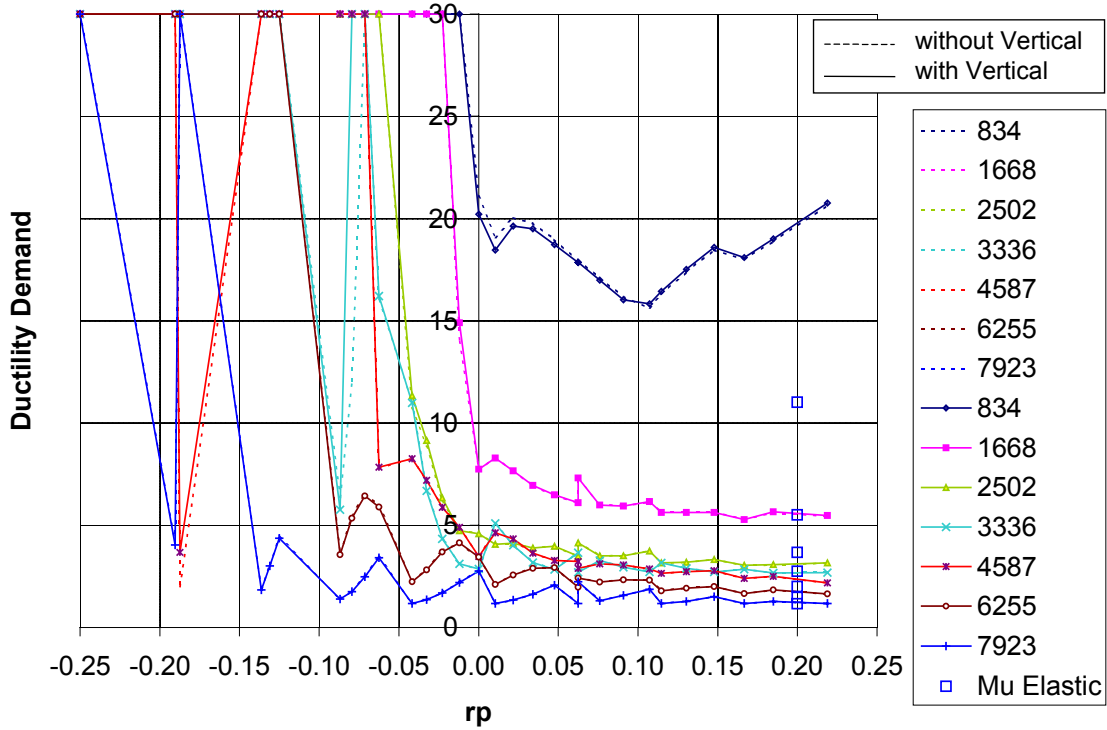


Figure C2.4.7.4a – EQ7, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 0.903 Seconds.

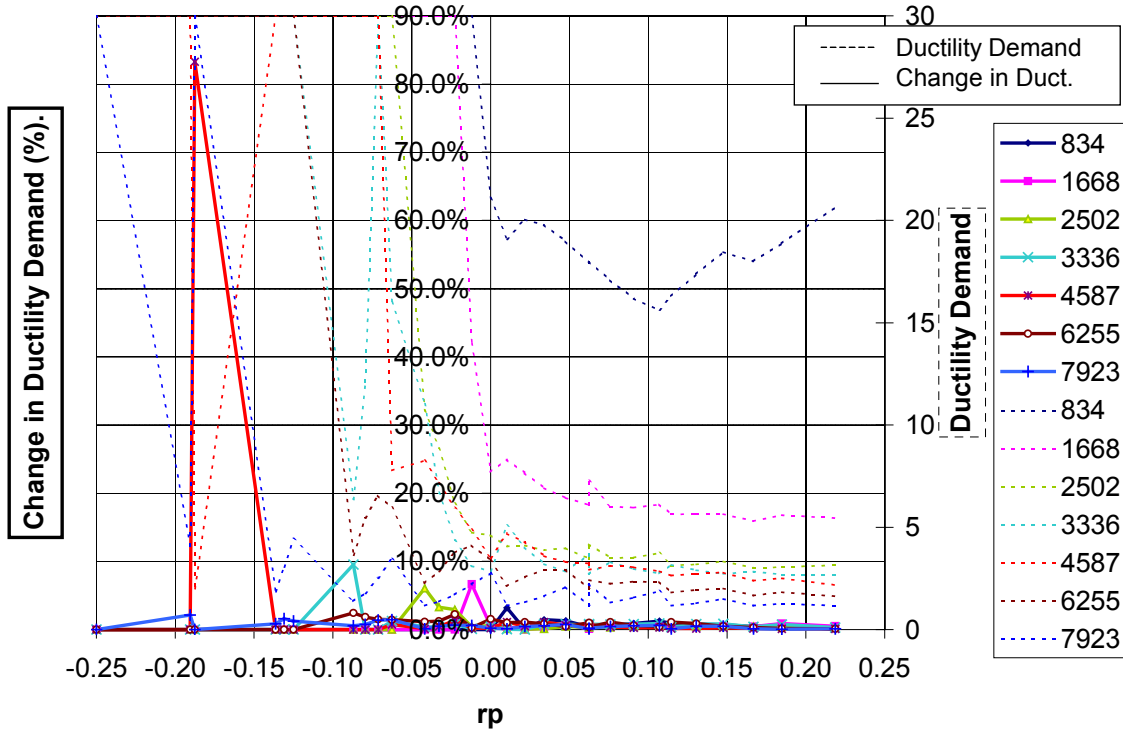


Figure C2.4.7.4b– EQ7, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 0.903 Seconds.

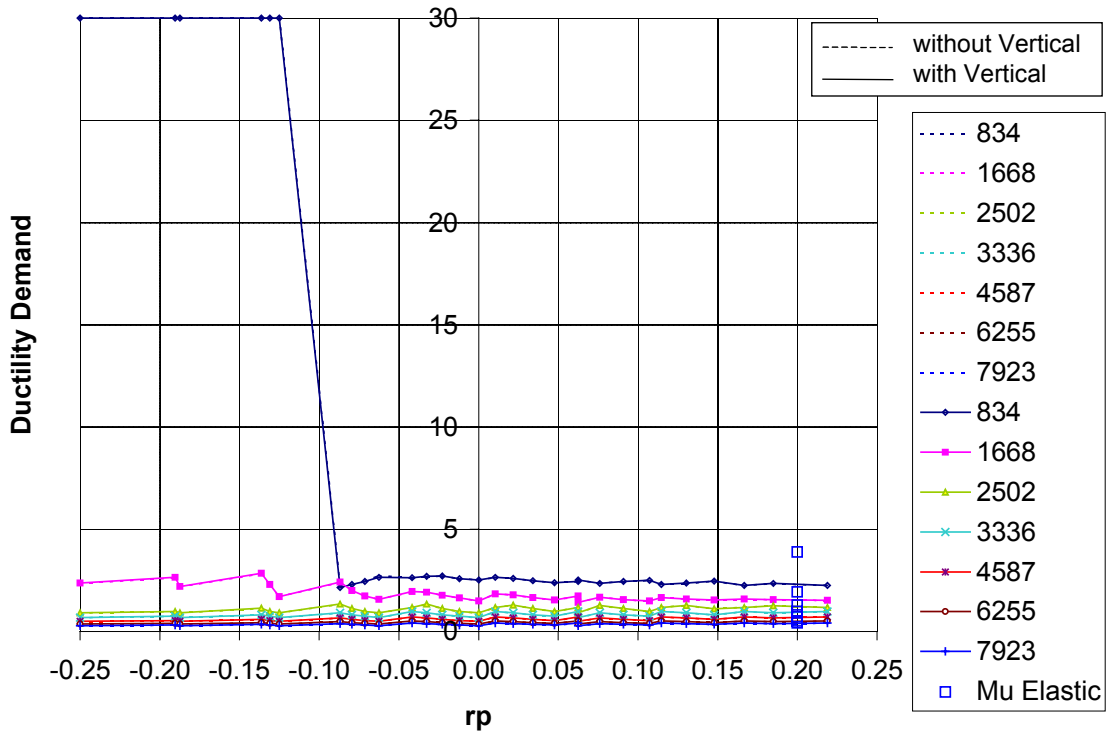


Figure C2.5.7.1a – EQ7, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.093 Seconds.

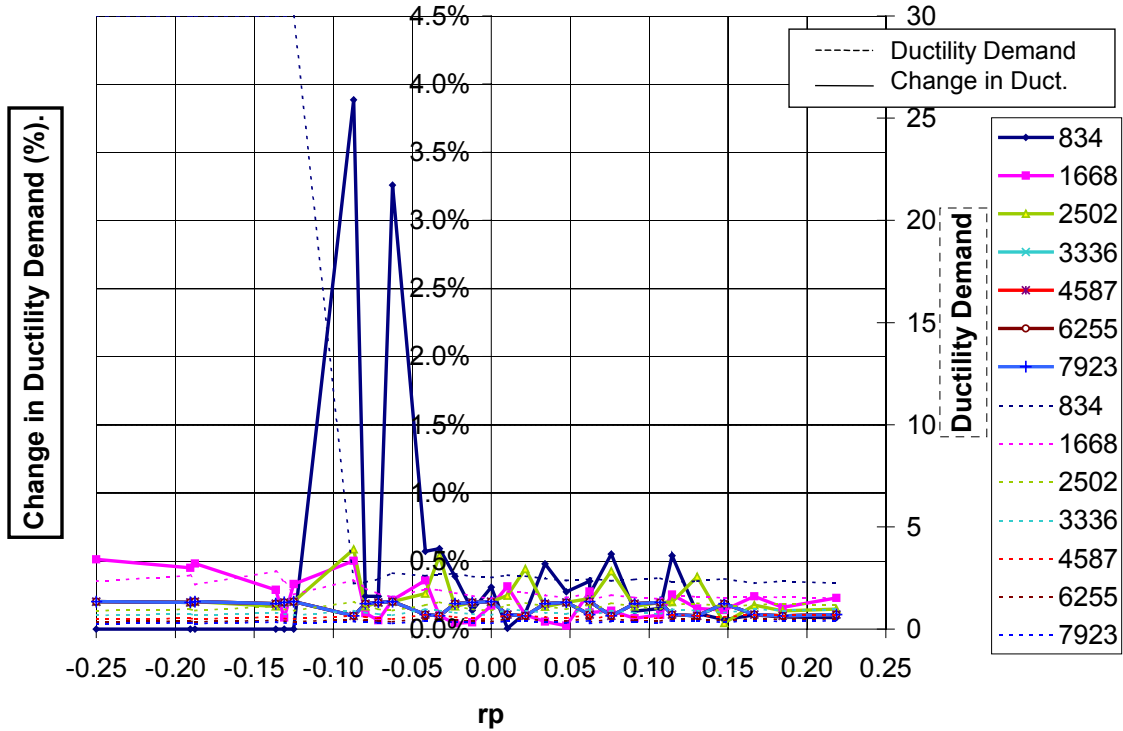


Figure C2.5.7.1b– EQ7, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.093 Seconds

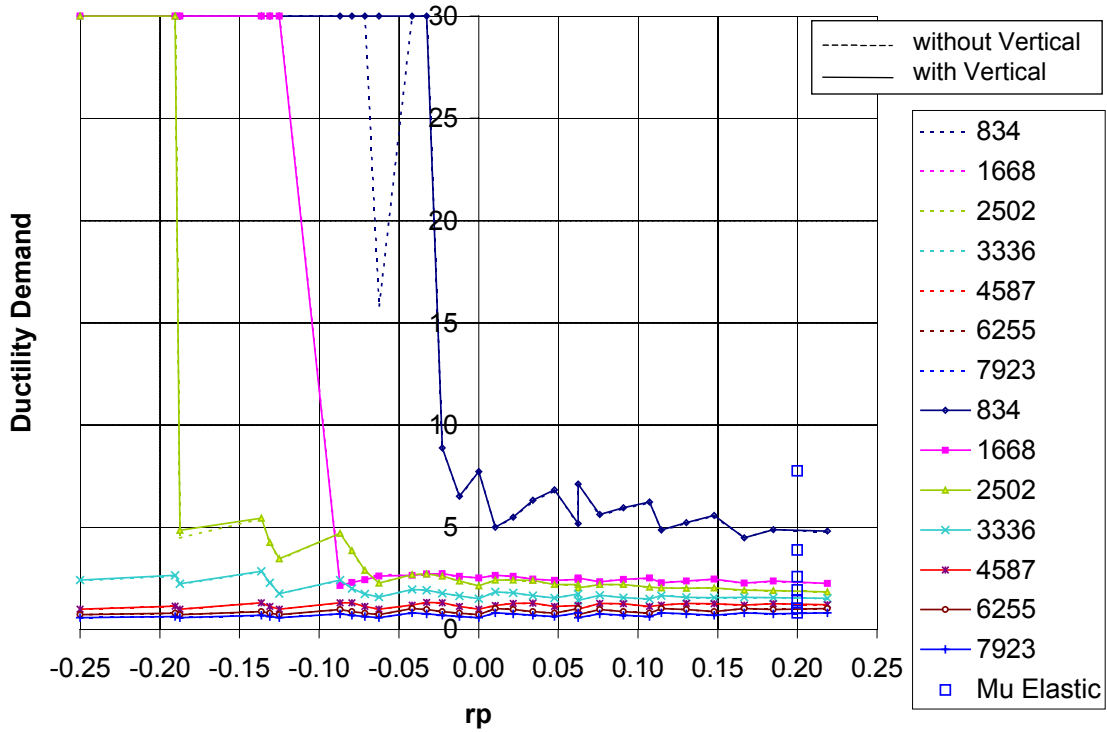


Figure C2.5.7.2a – EQ7, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.093 Seconds.

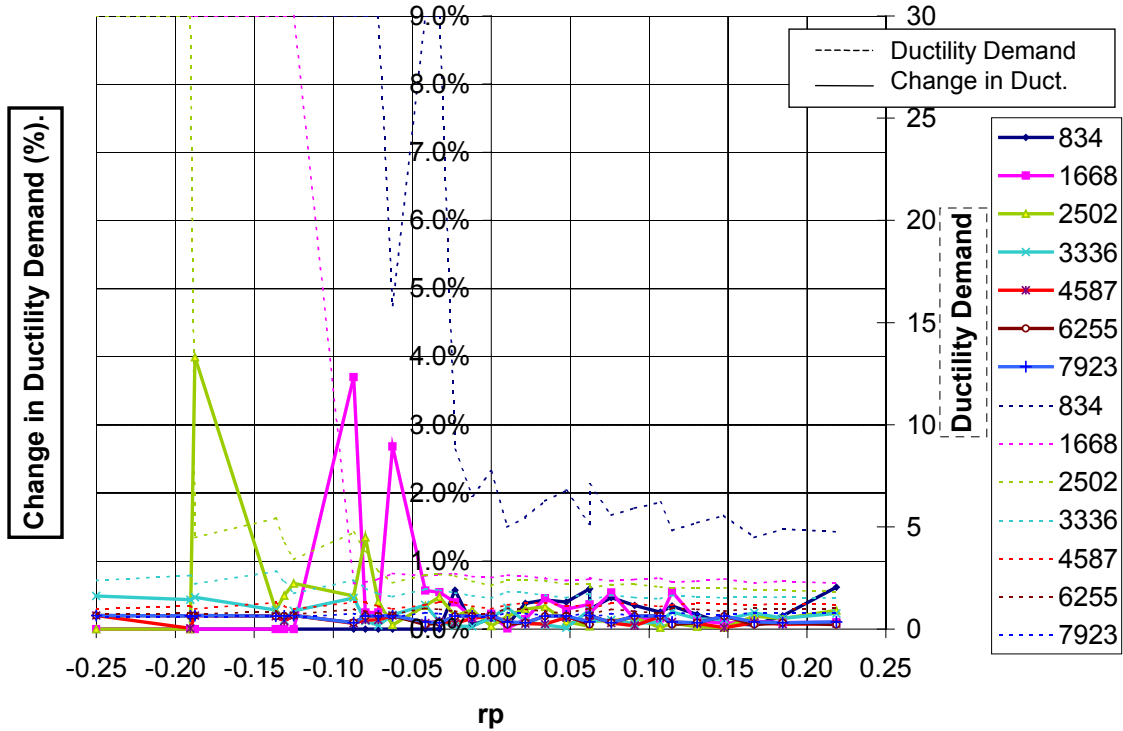


Figure C2.5.7.2b– EQ7, Lateral Scale = 0.2 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.093 Seconds

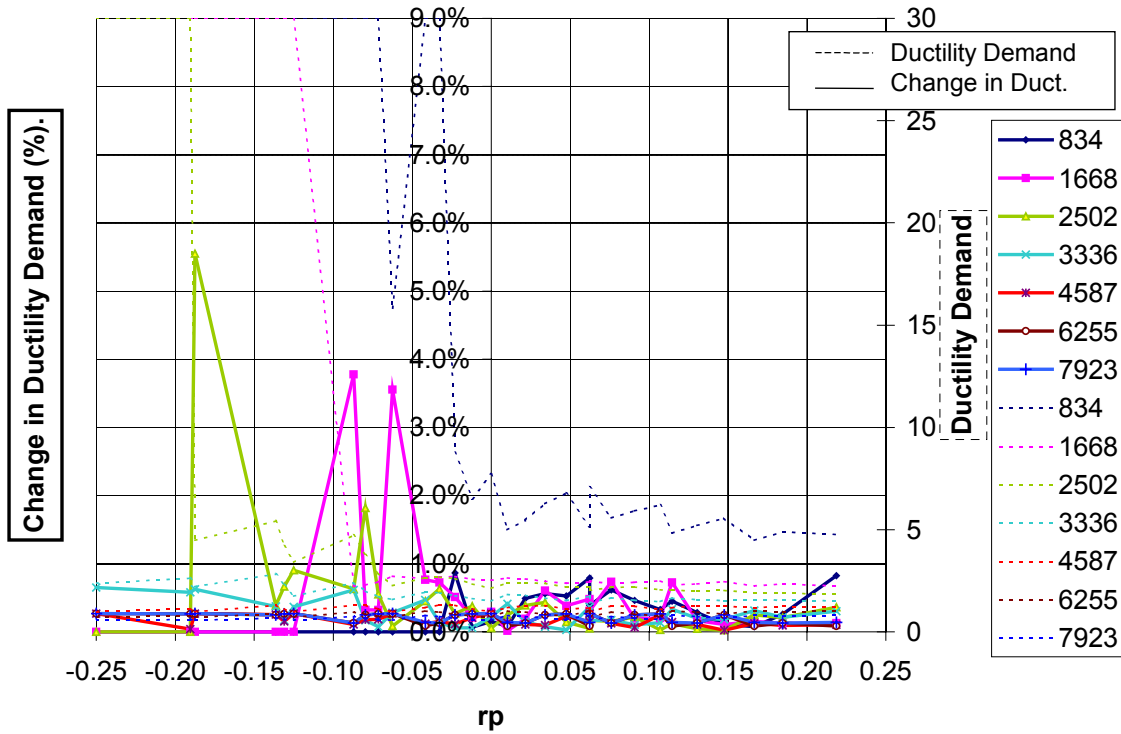


Figure C2.5.7.2c– EQ7, Lateral Scale = 0.2 g, Vertical Multiplier = 2.0, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.093 Seconds

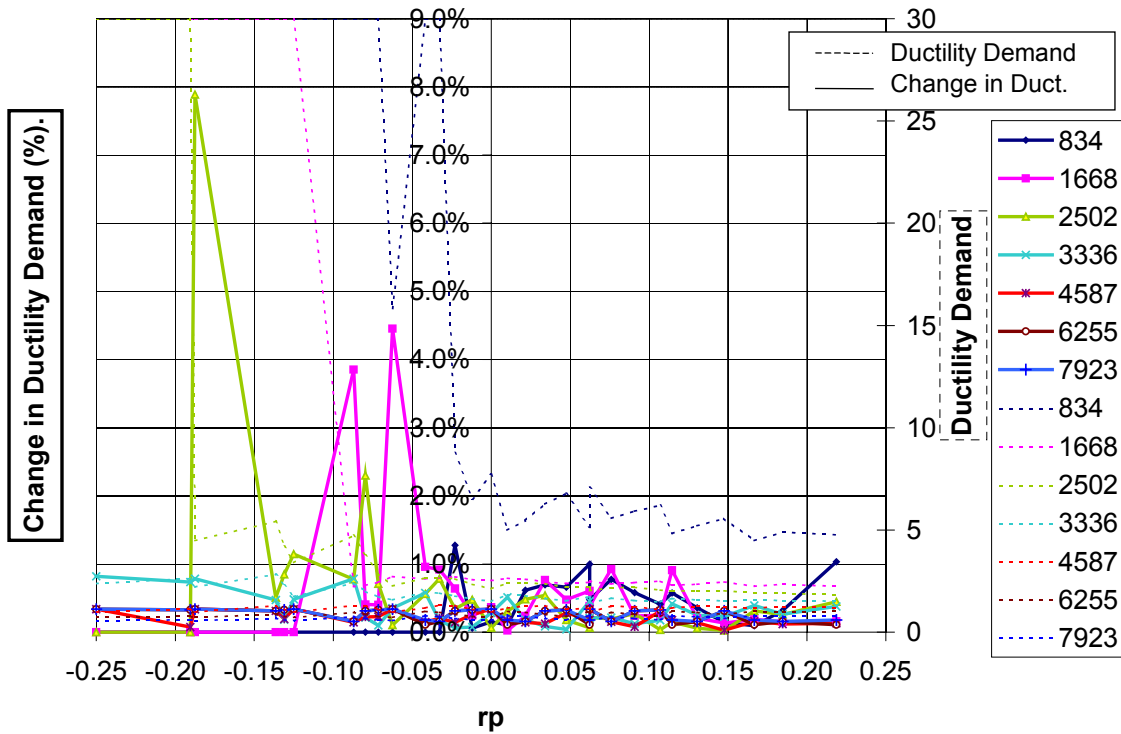


Figure C2.5.7.2d– EQ7, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.093 Seconds

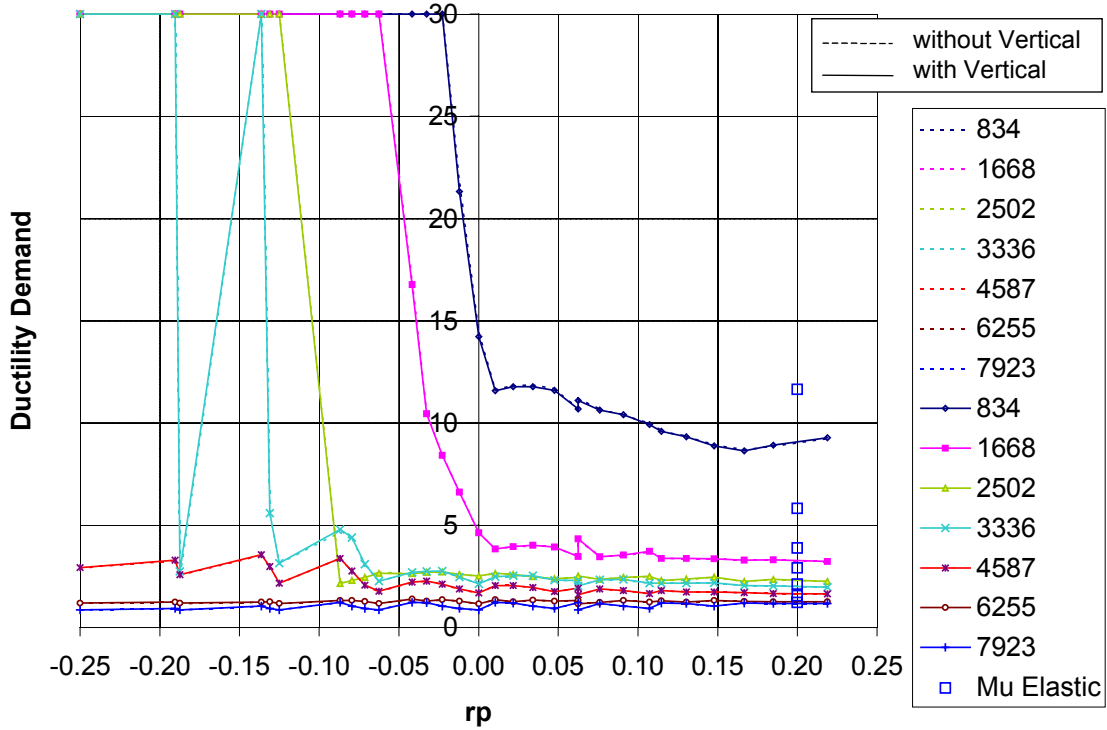


Figure C2.5.7.3a – EQ7, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.093 Seconds.

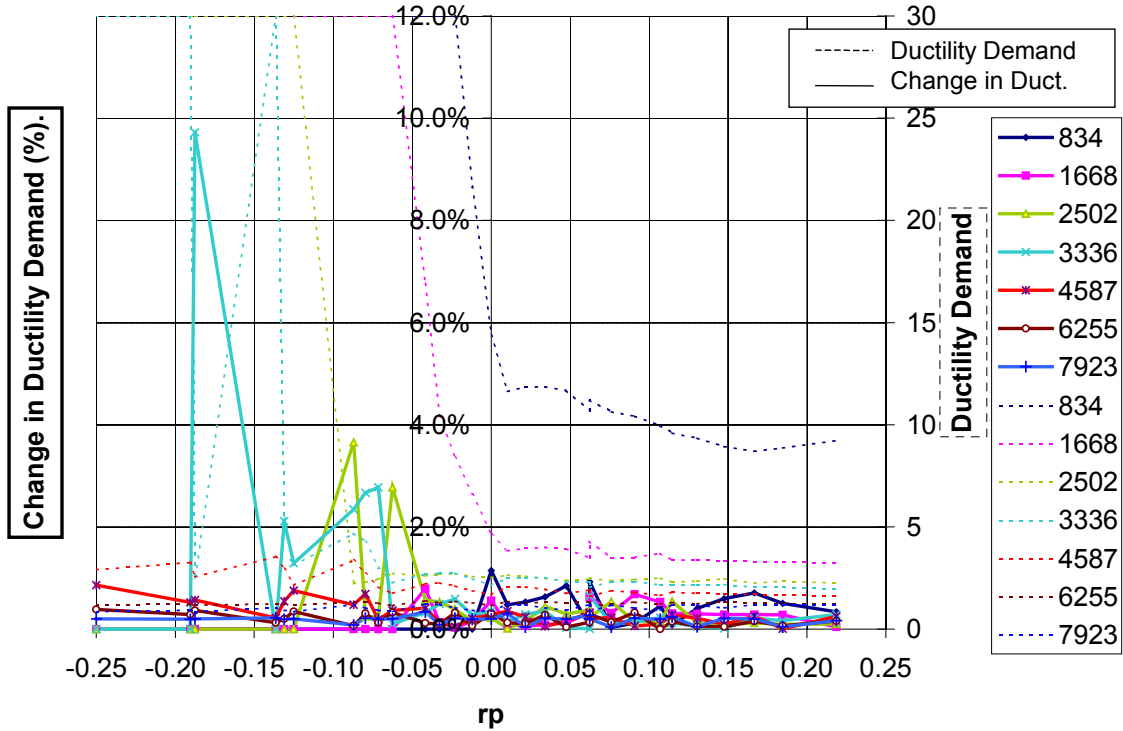


Figure C2.5.7.3b– EQ7, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.093 Seconds

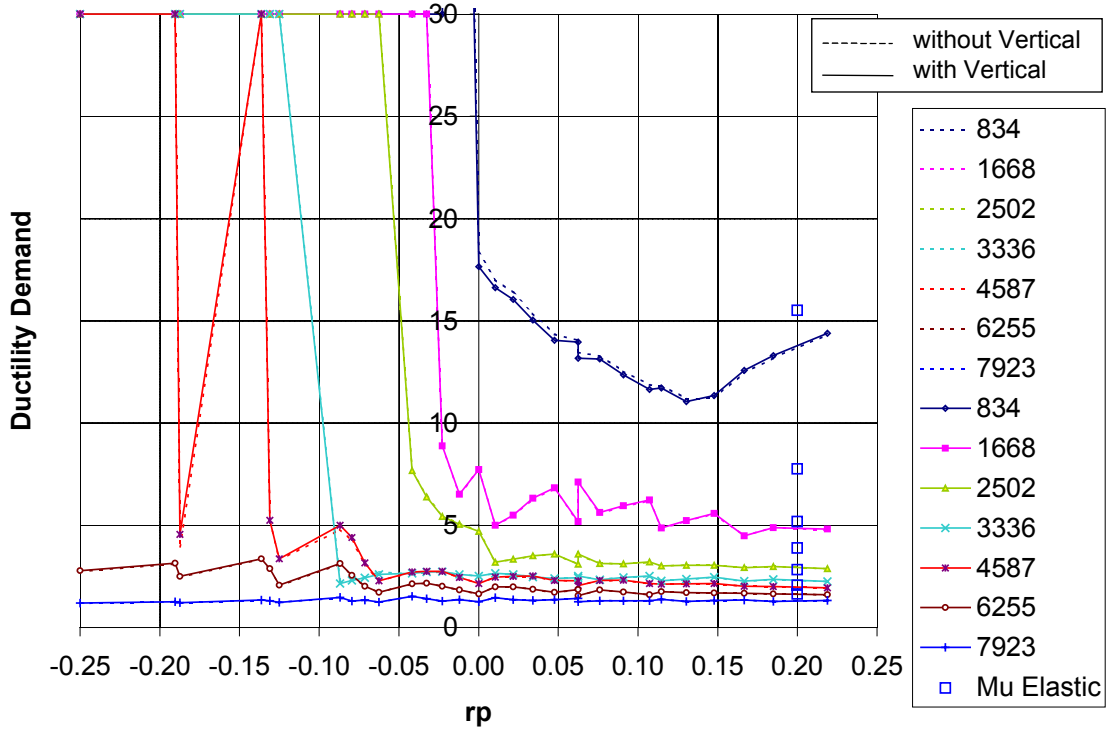


Figure C2.5.7.4a – EQ7, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.093 Seconds.

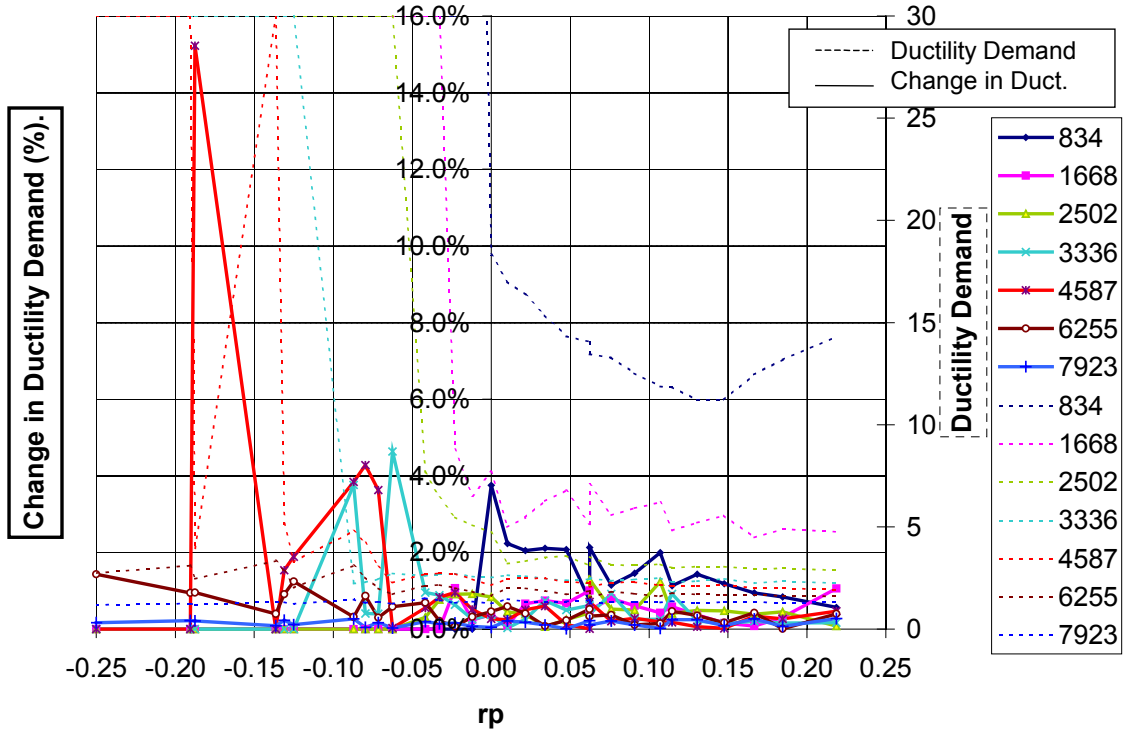


Figure C2.5.7.4b– EQ7, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.093 Seconds.

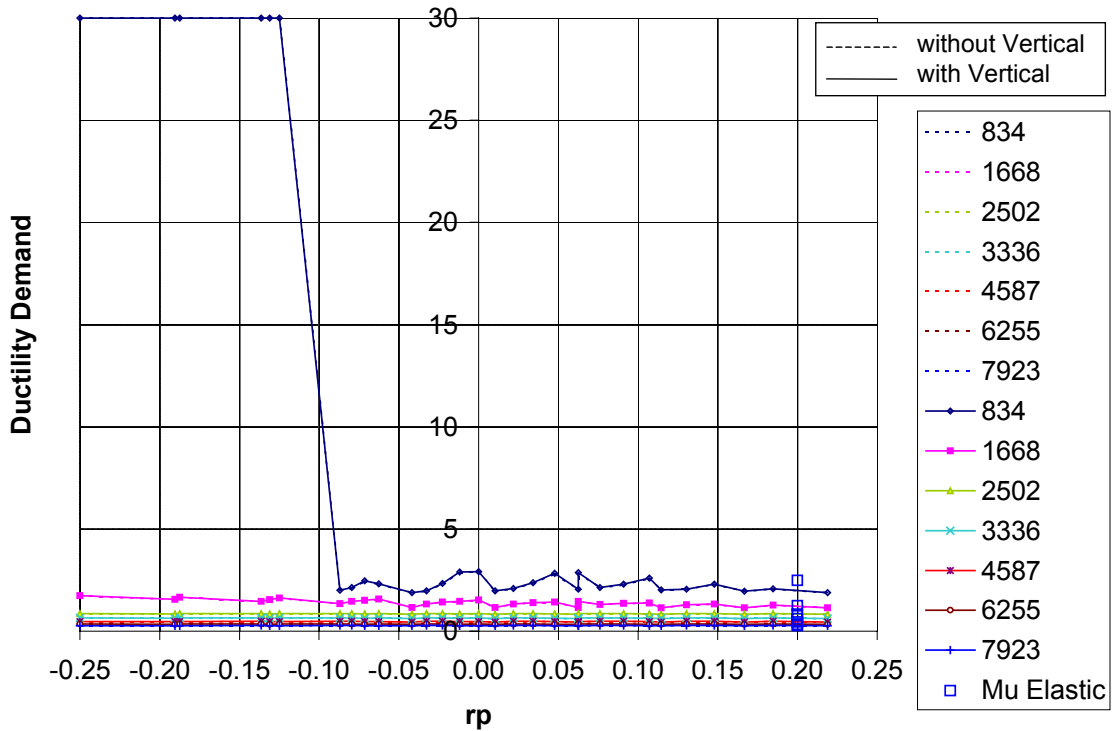


Figure C2.6.7.1a – EQ7, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.278 Seconds.

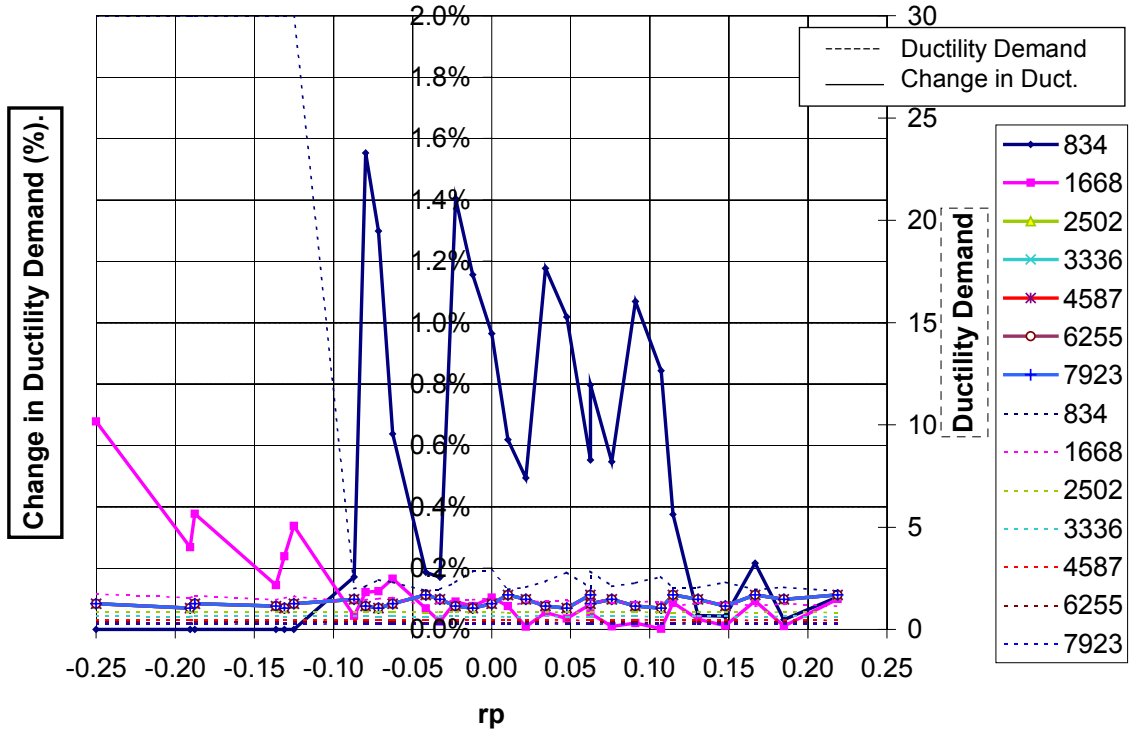


Figure C2.6.7.1b– EQ7, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.278 Seconds

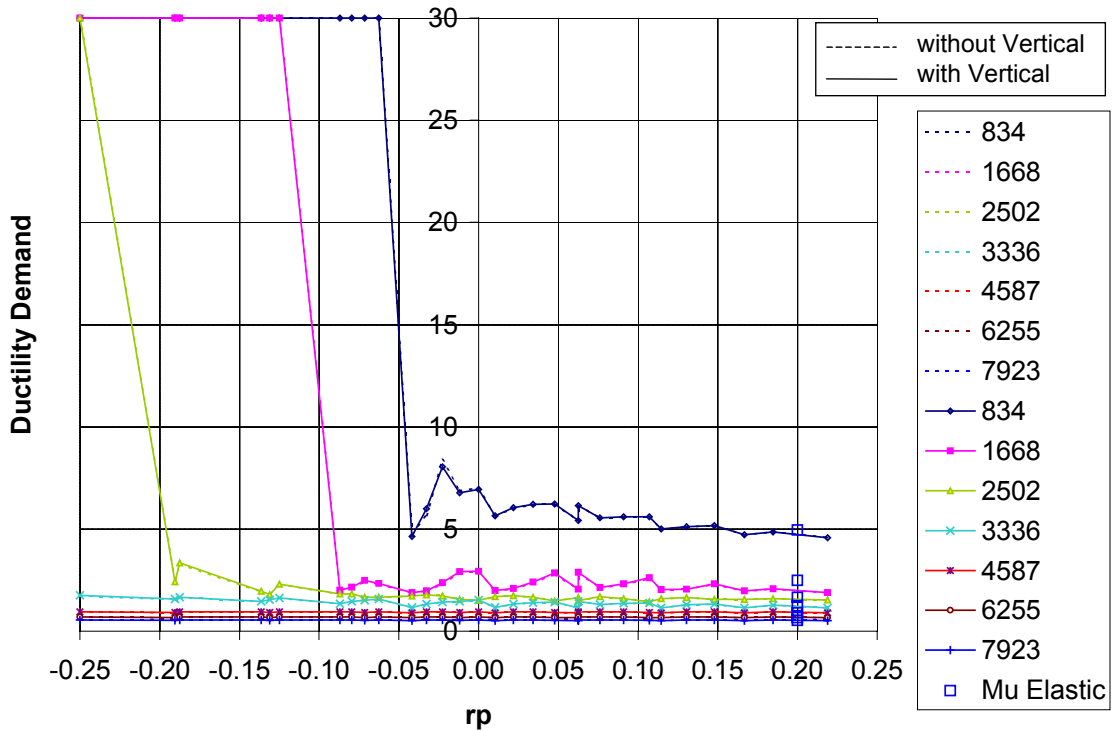


Figure C2.6.7.2a – EQ7, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.278 Seconds.

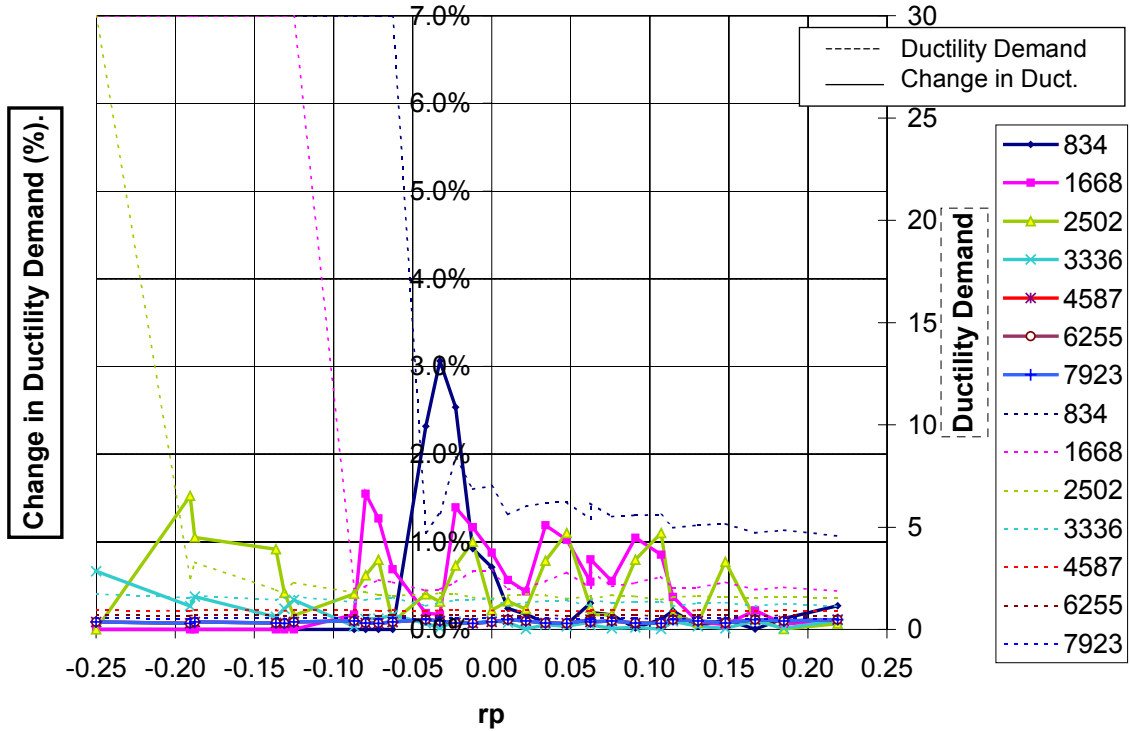


Figure C2.6.7.2b– EQ7, Lateral Scale = 0.2 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.278 Seconds

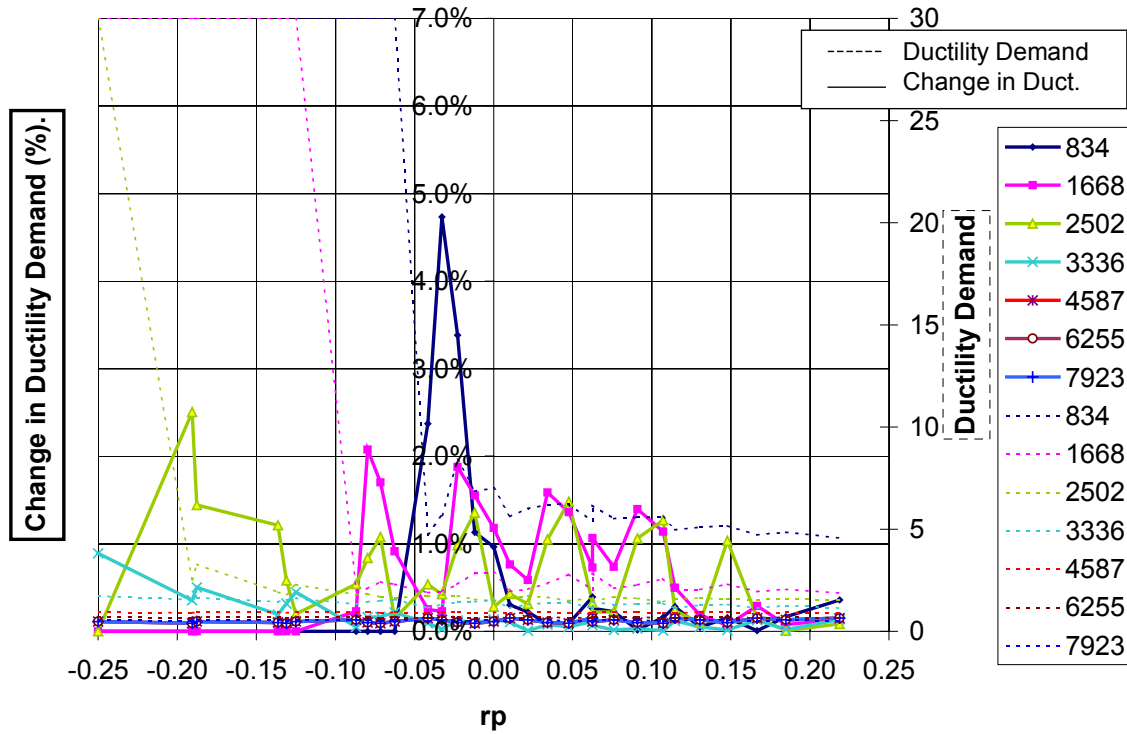


Figure C2.6.7.2c– EQ7, Lateral Scale = 0.2 g, Vertical Multiplier = 2.0, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.278 Seconds

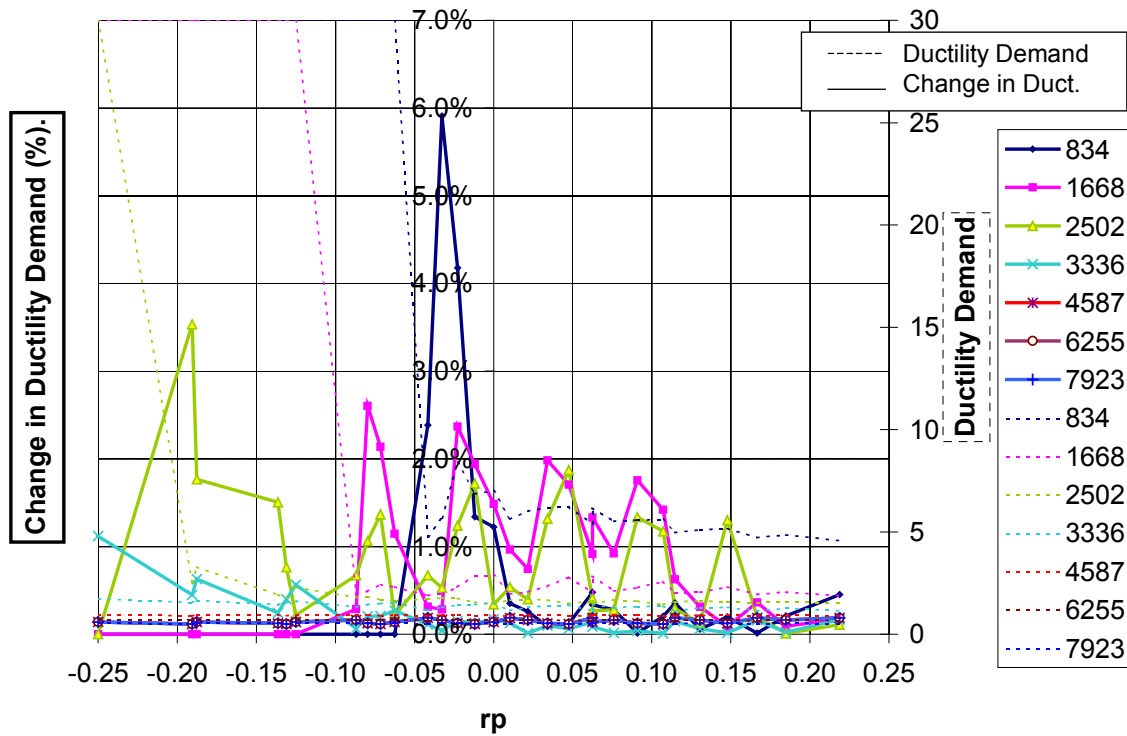


Figure C2.6.7.2d– EQ7, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.278 Seconds

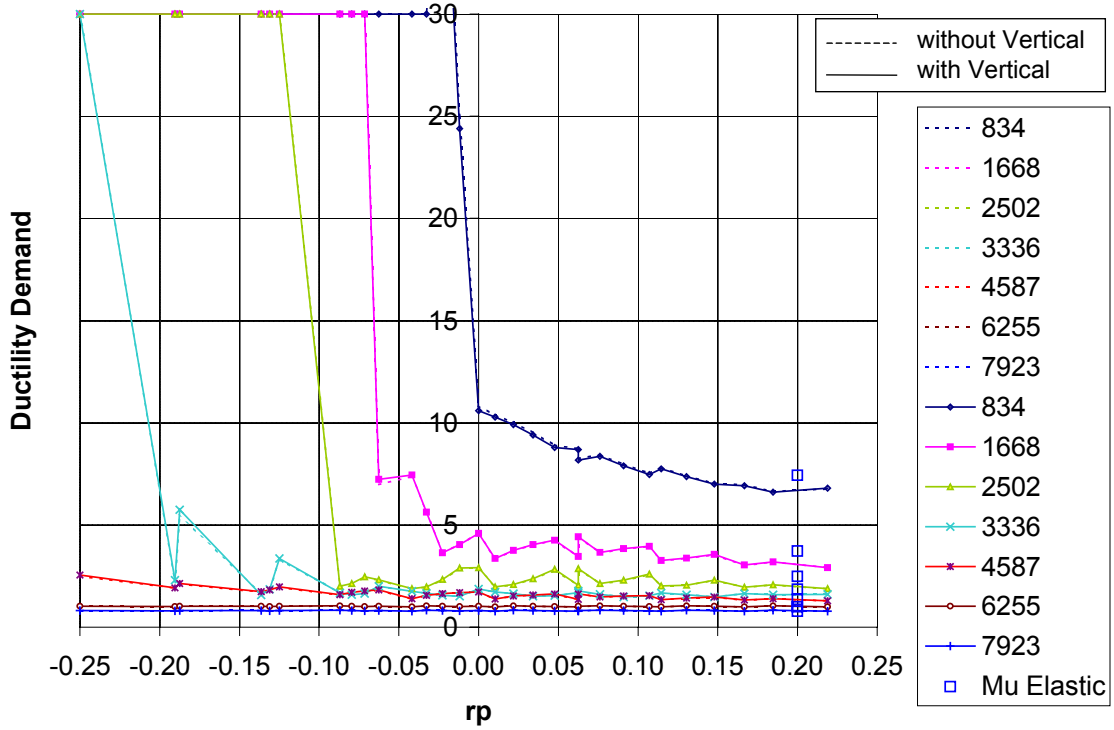


Figure C2.6.7.3a – EQ7, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.278 Seconds.

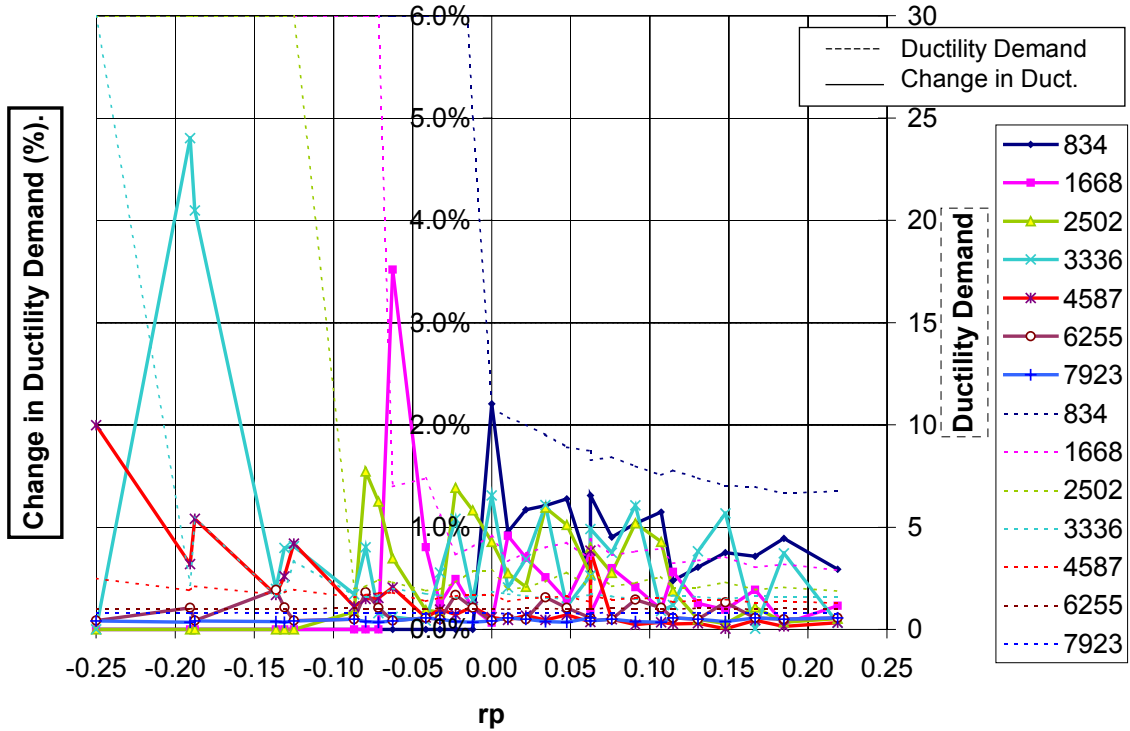


Figure C2.6.7.3b– EQ7, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.278 Seconds

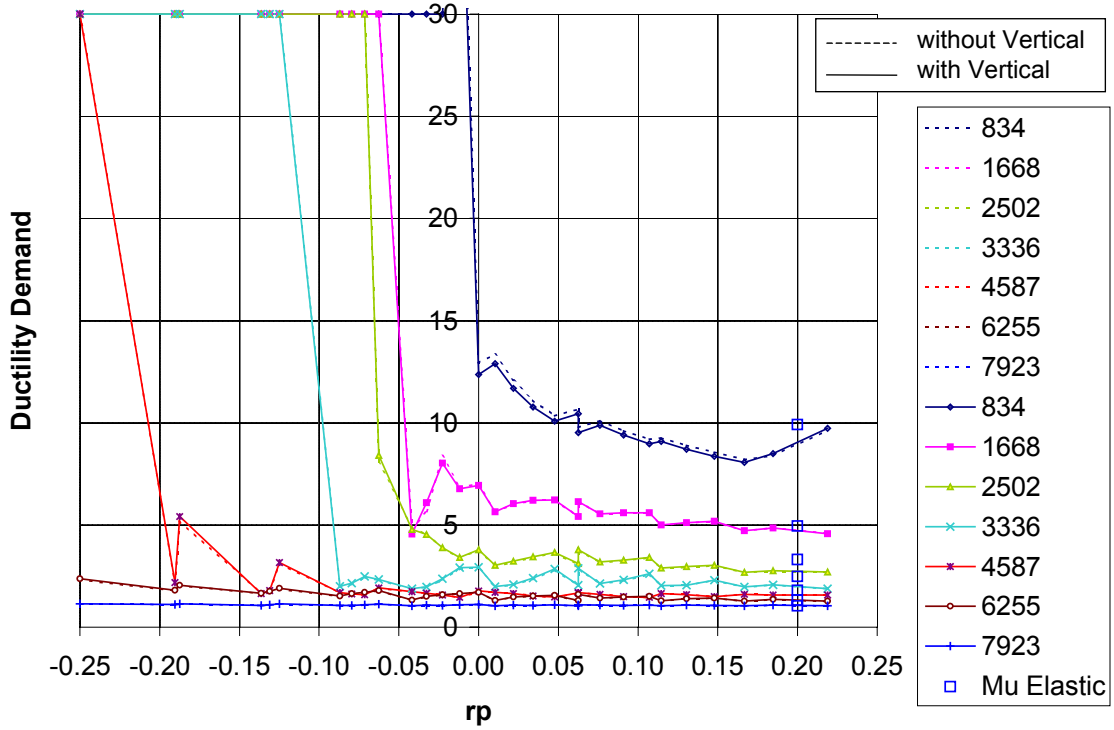


Figure C2.6.7.4a – EQ7, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.278 Seconds.

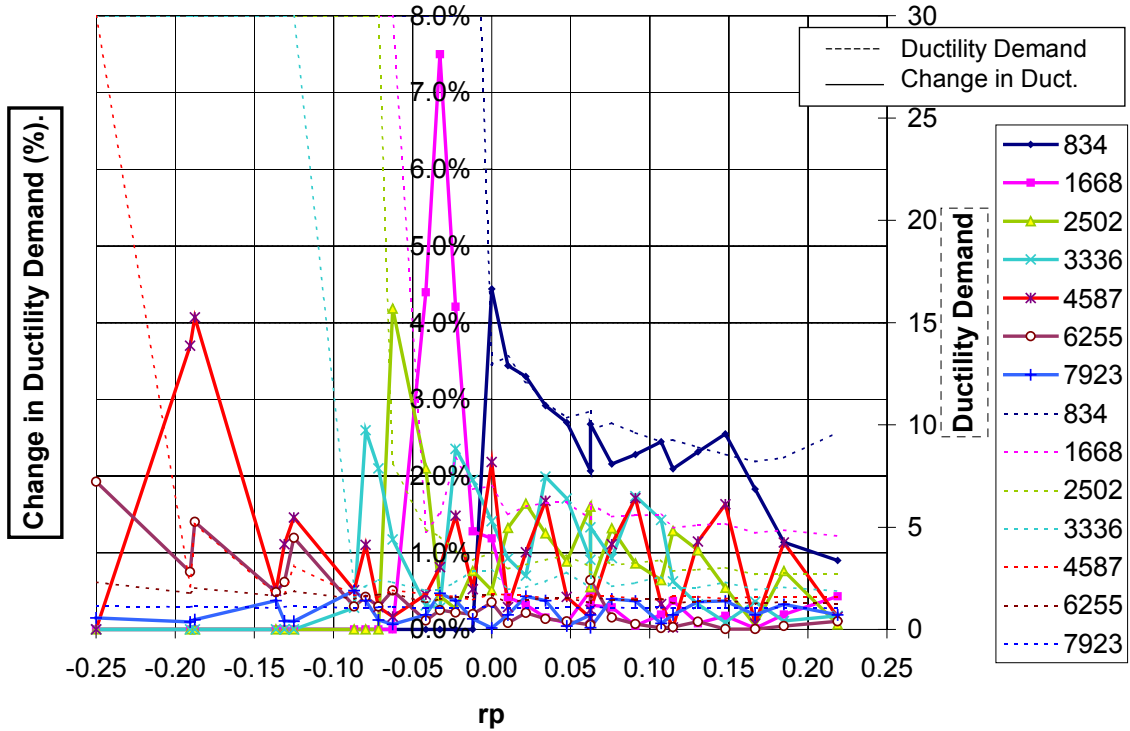


Figure C2.6.7.4b– EQ7, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.278 Seconds.

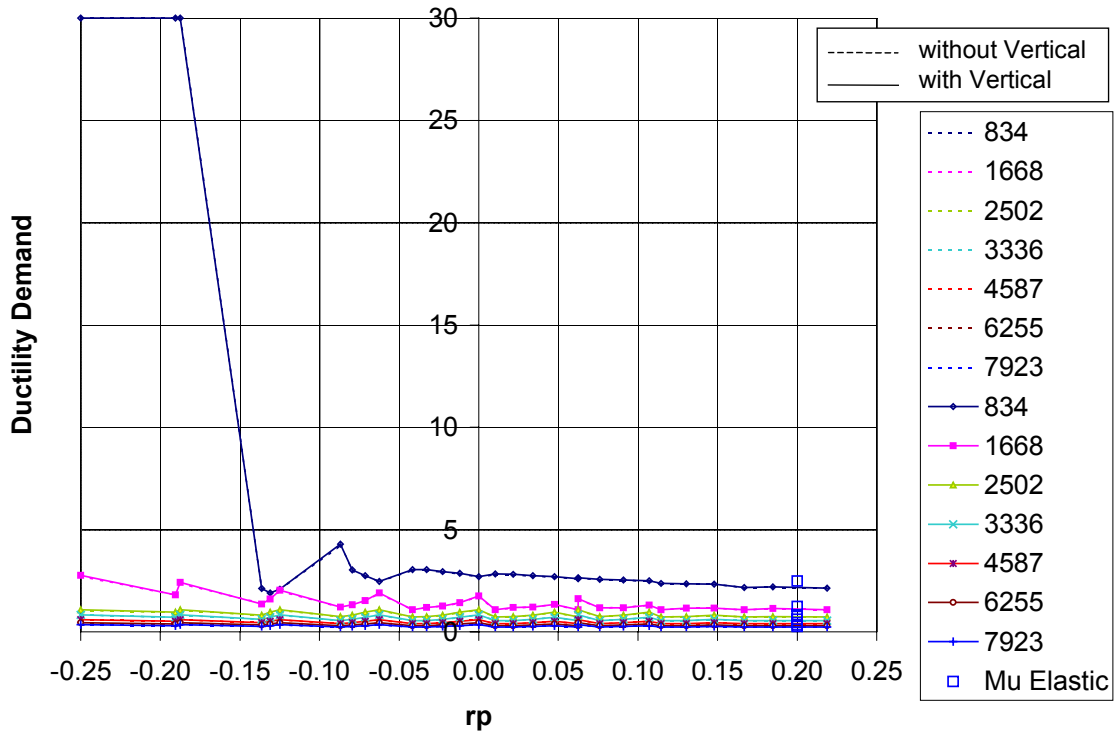


Figure C2.7.7.1a – EQ7, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.459 Seconds.

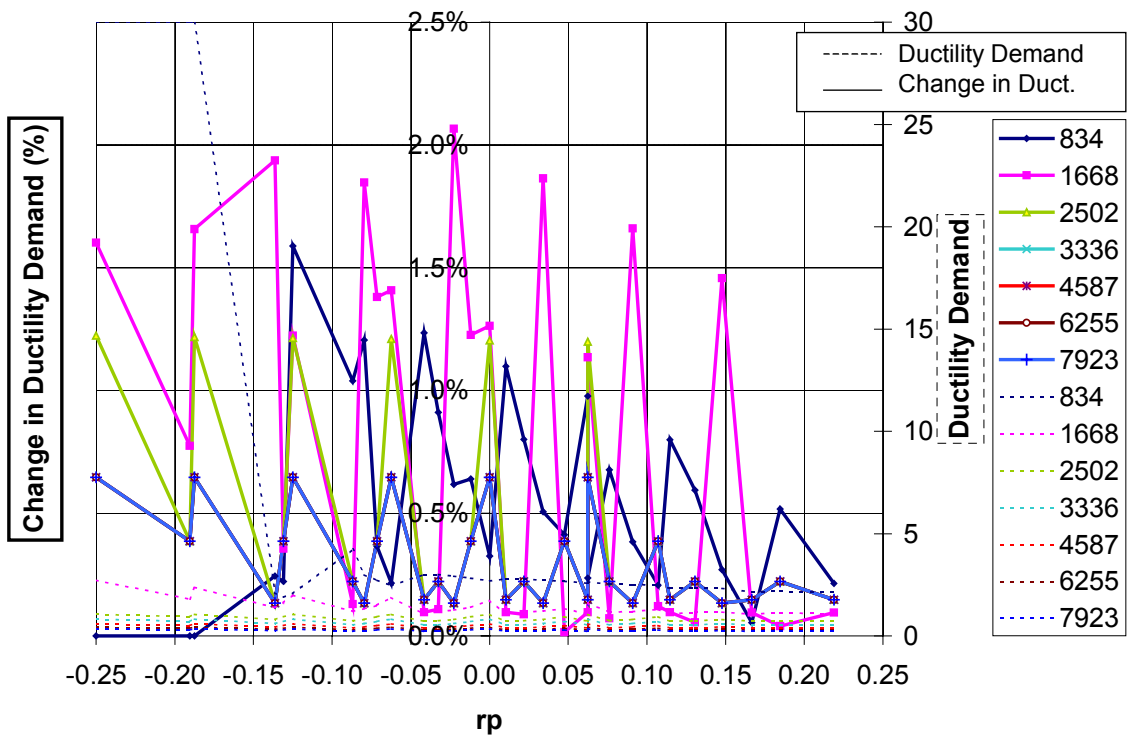


Figure C2.7.7.1b– EQ7, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.459 Seconds

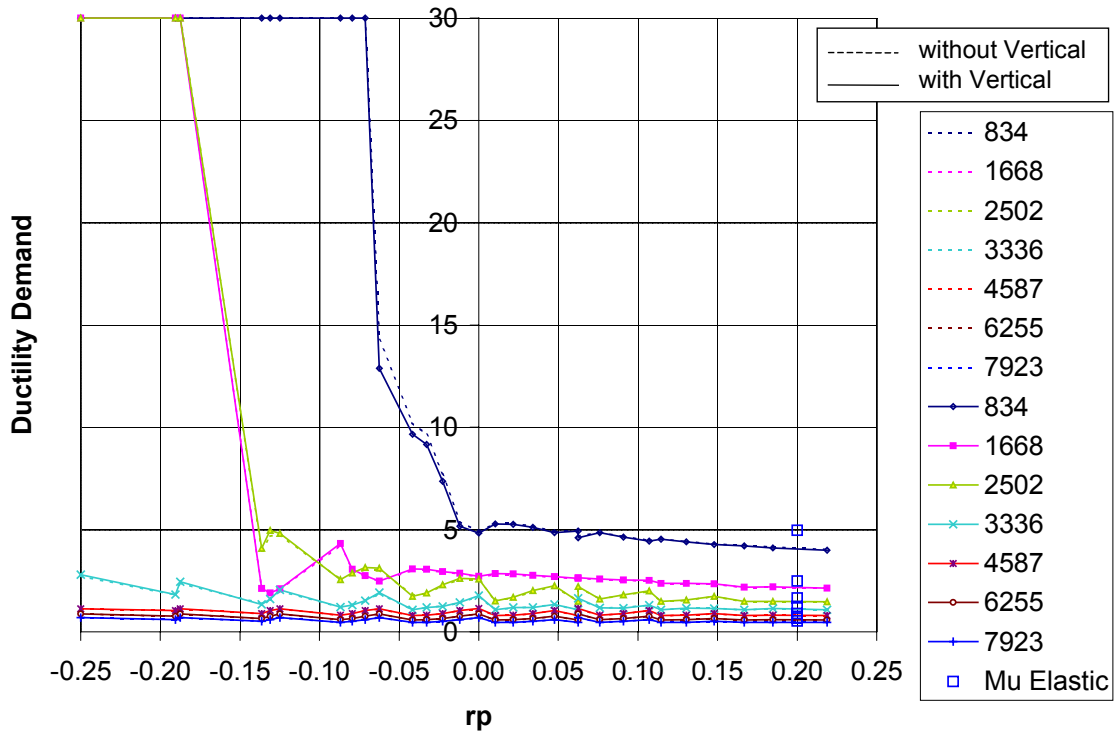


Figure C2.7.7.2a – EQ7, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.459 Seconds.

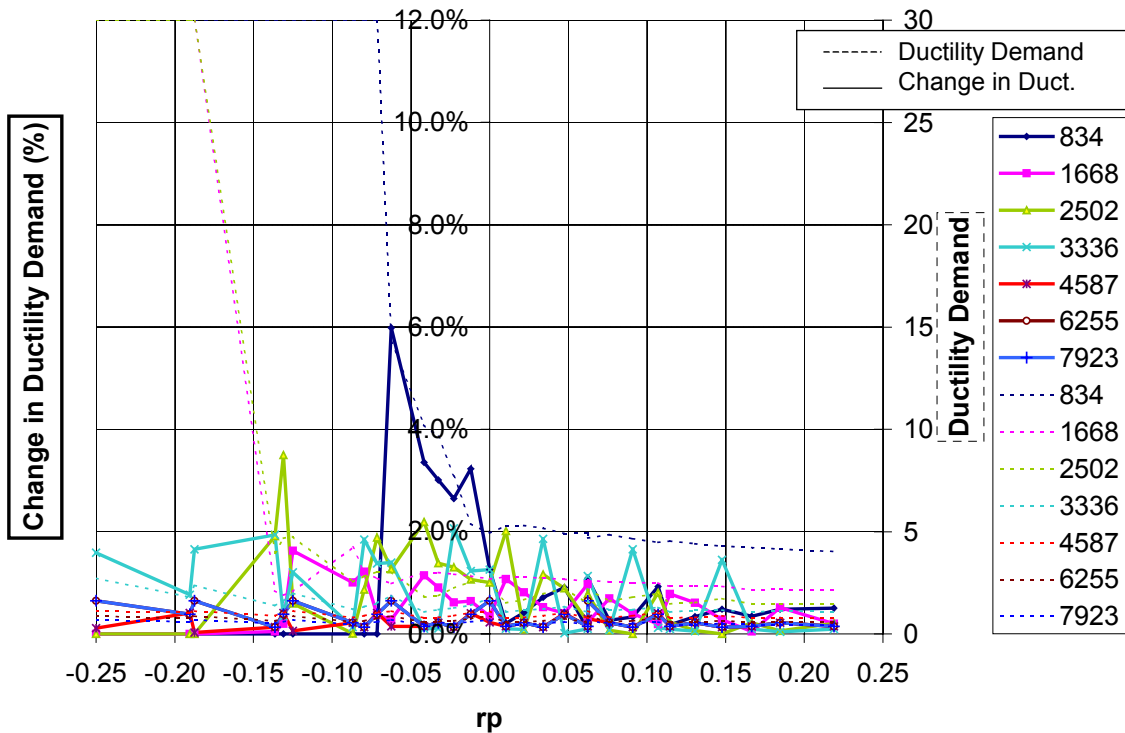


Figure C2.7.7.2b– EQ7, Lateral Scale = 0.2 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.459 Seconds

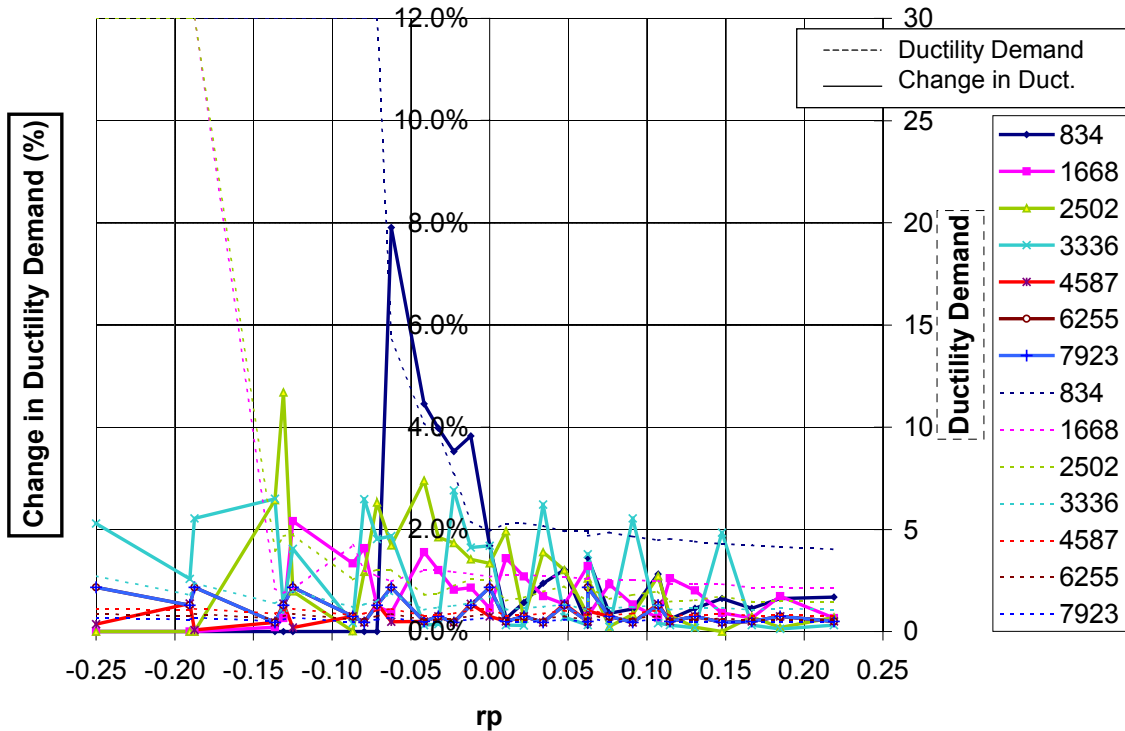


Figure C2.7.7.2c– EQ7, Lateral Scale = 0.2 g, Vertical Multiplier = 2.0, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.459 Seconds

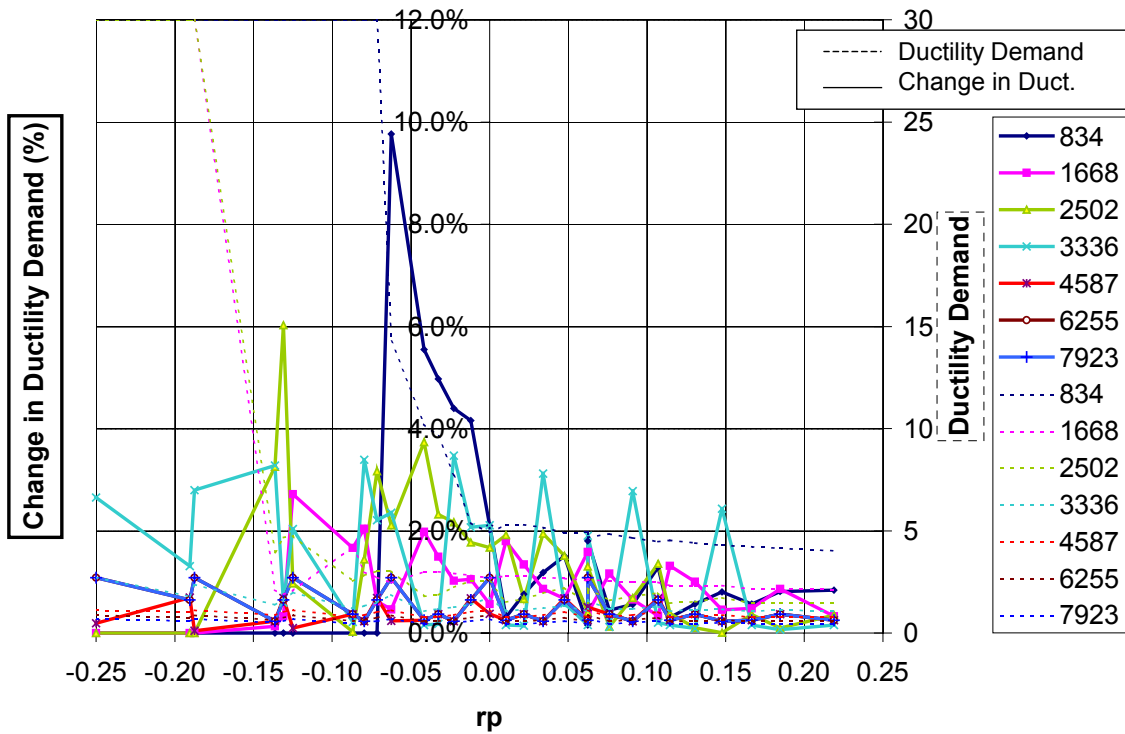


Figure C2.7.7.2d– EQ7, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.459 Seconds

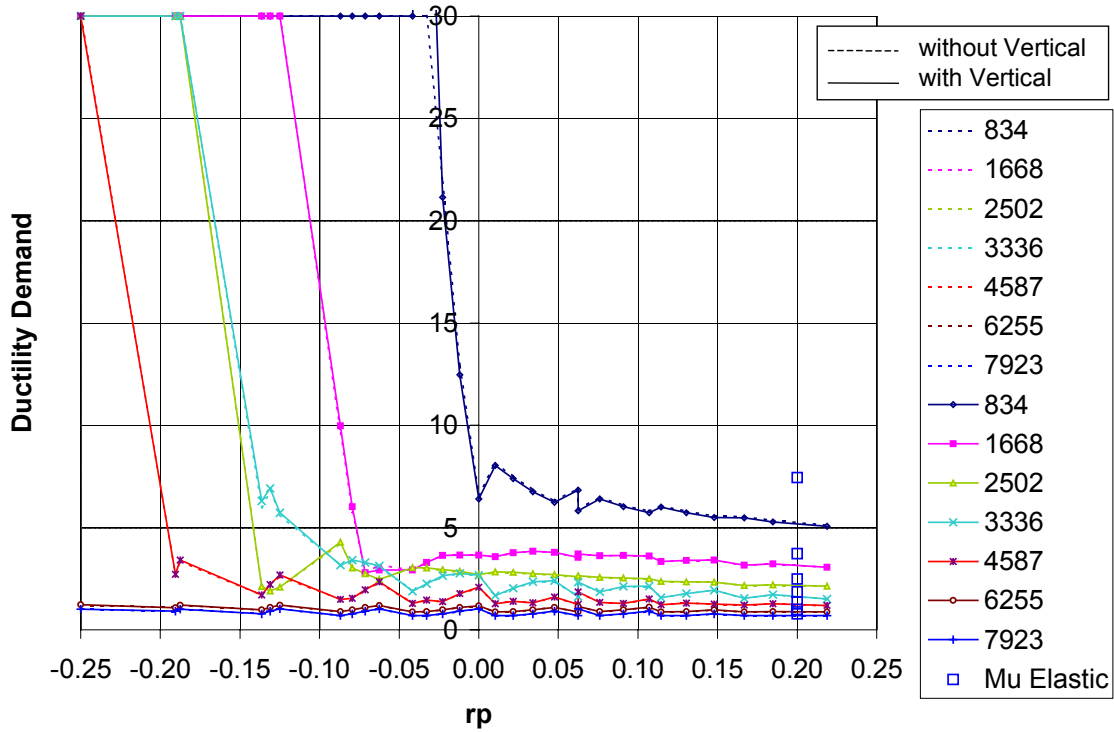


Figure C2.7.7.3a – EQ7, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.459 Seconds.

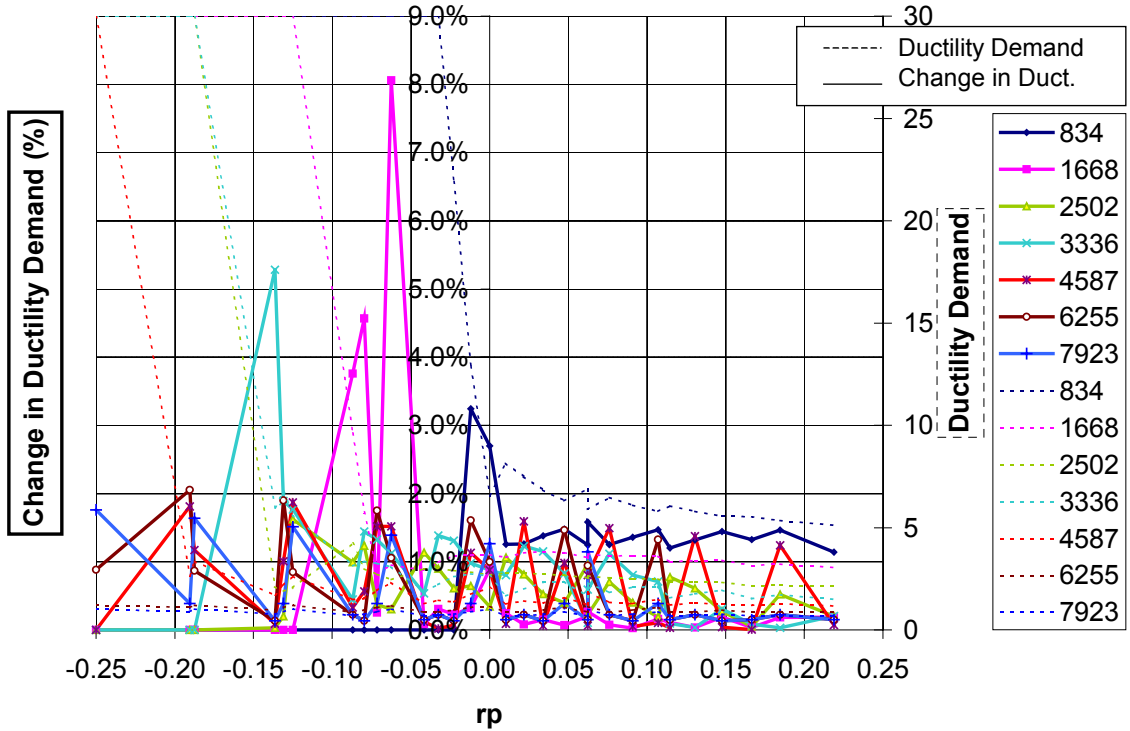


Figure C2.7.7.3b– EQ7, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.459 Seconds

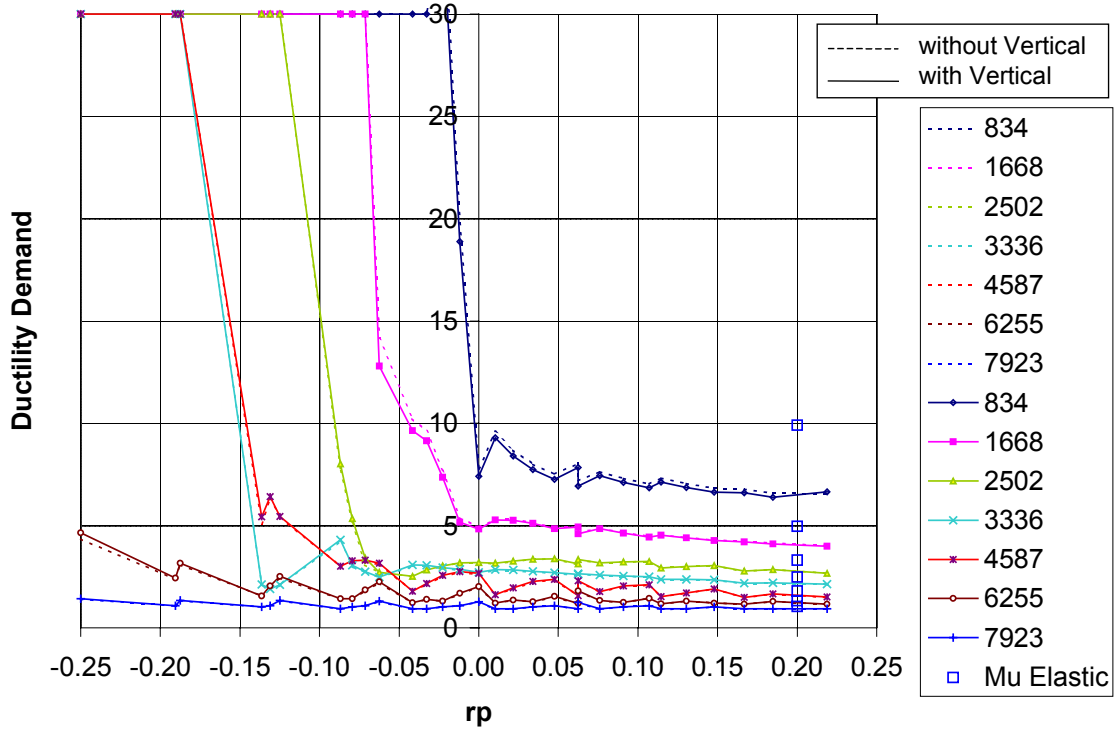


Figure C2.7.7.4a – EQ7, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.459 Seconds.

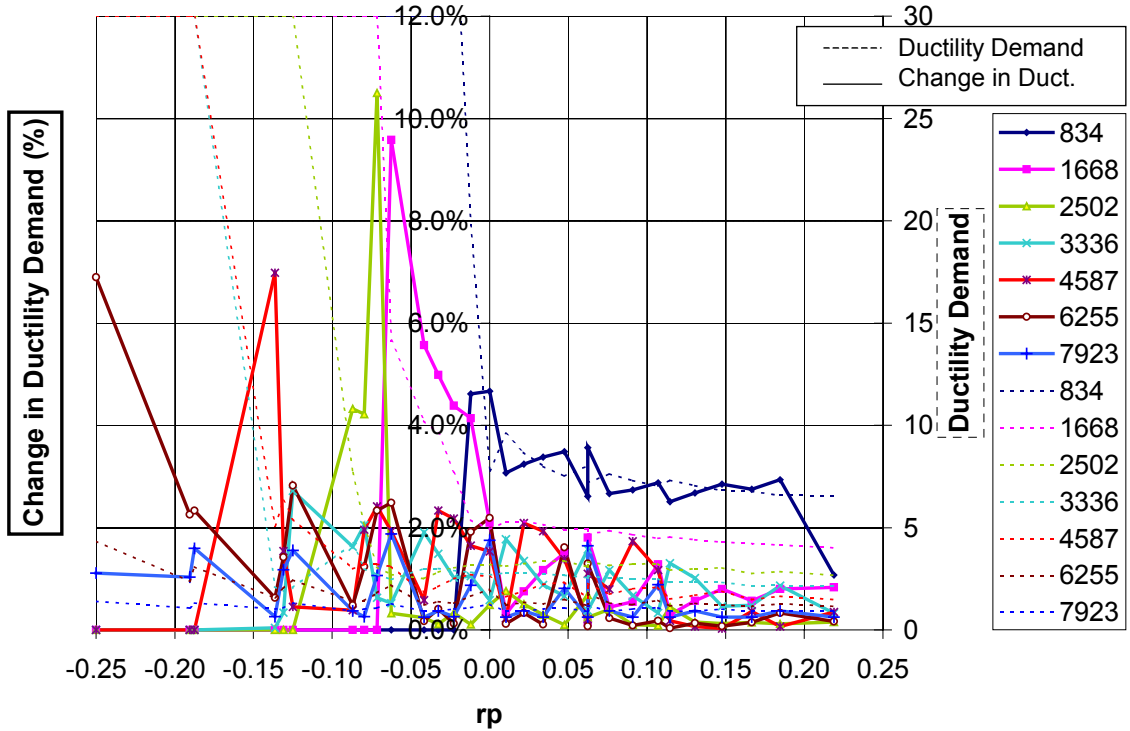


Figure C2.7.7.4b– EQ7, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.459 Seconds.

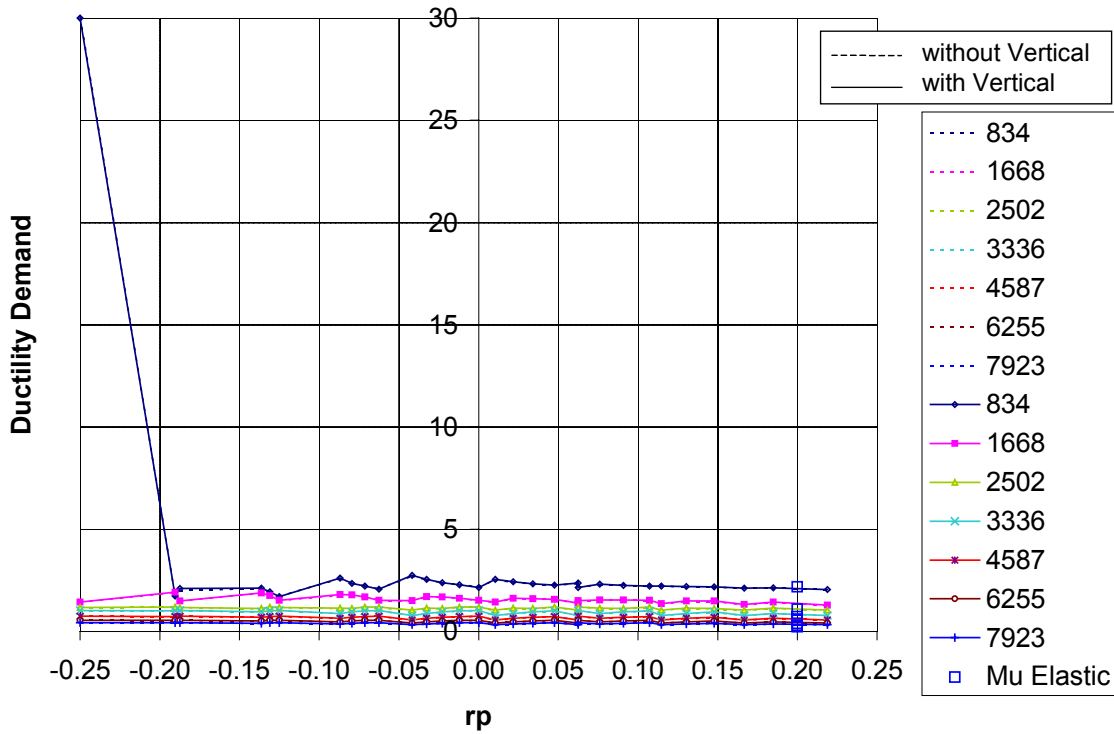


Figure C2.8.7.1a – EQ7, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.635 Seconds.

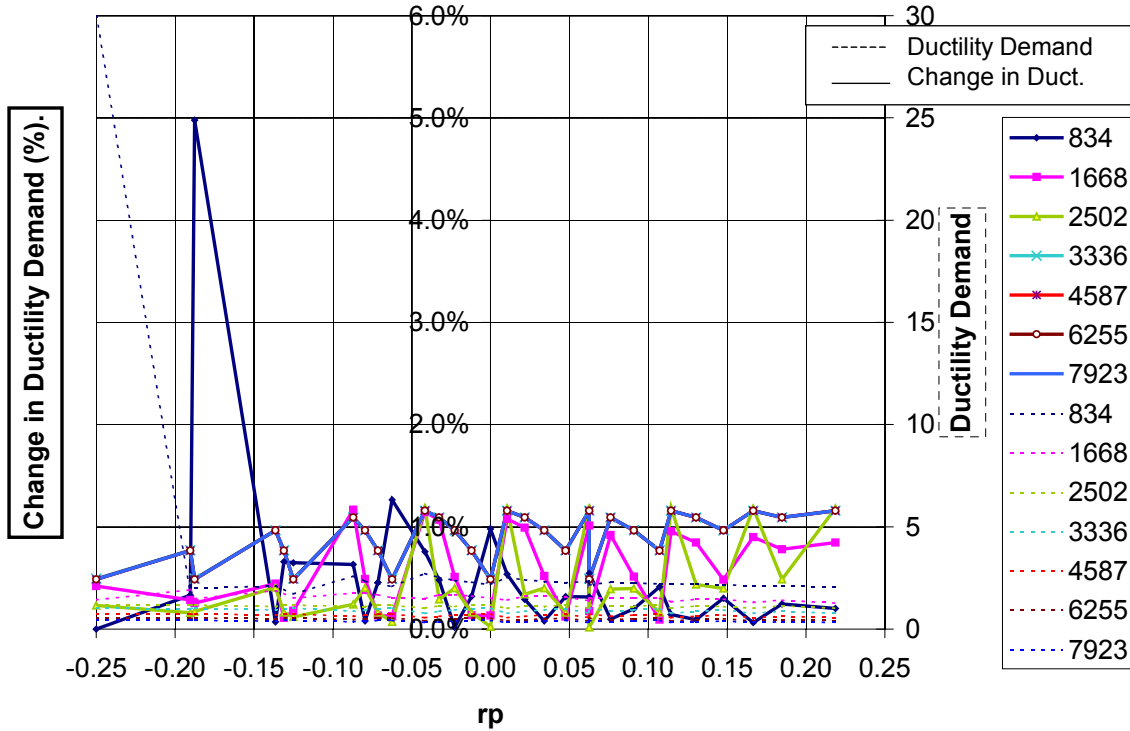


Figure C2.8.7.1b– EQ7, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.635 Seconds

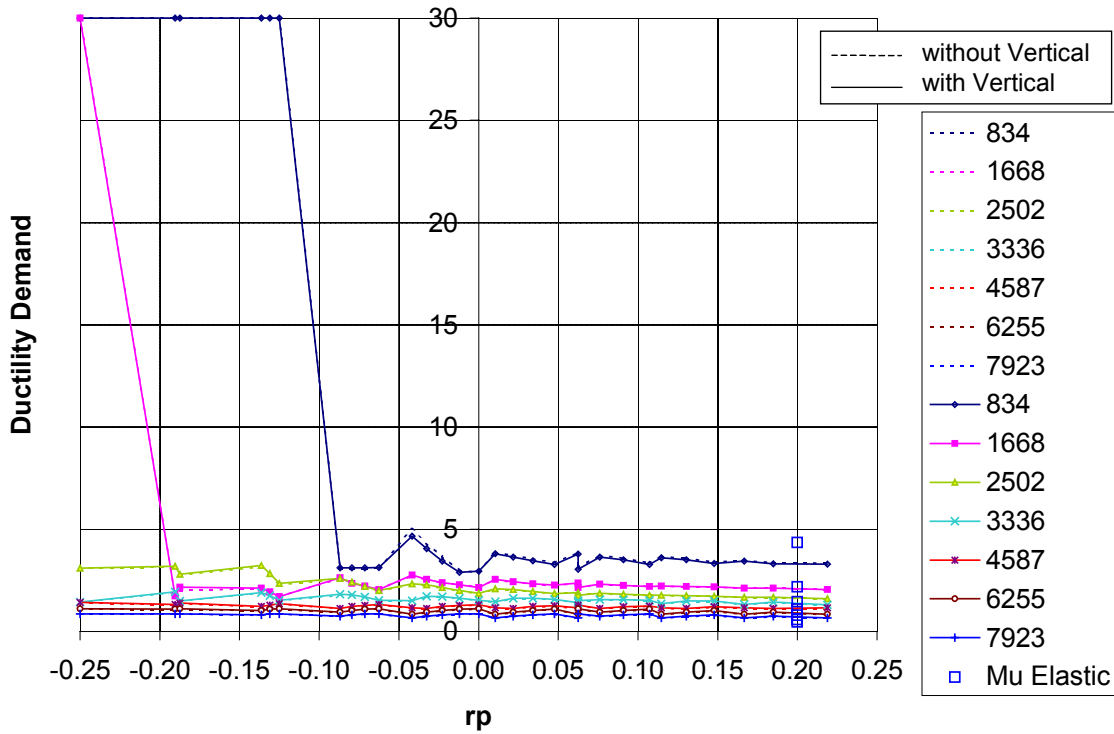


Figure C2.8.7.2a – EQ7, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.635 Seconds.

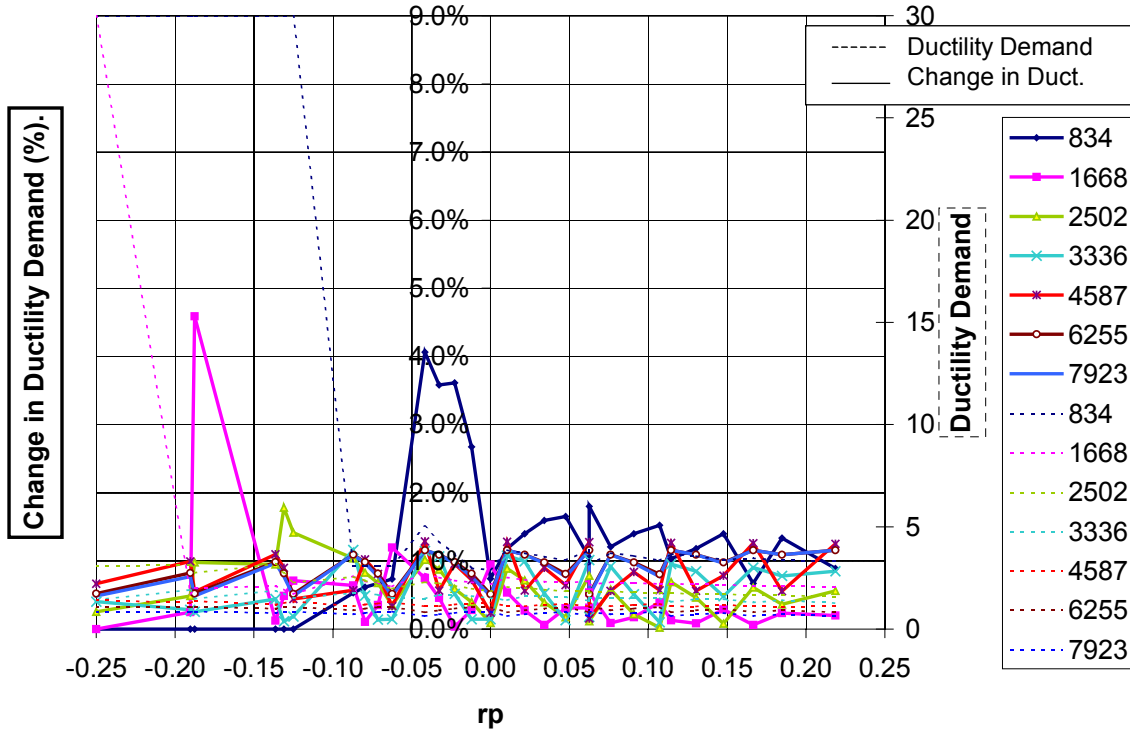
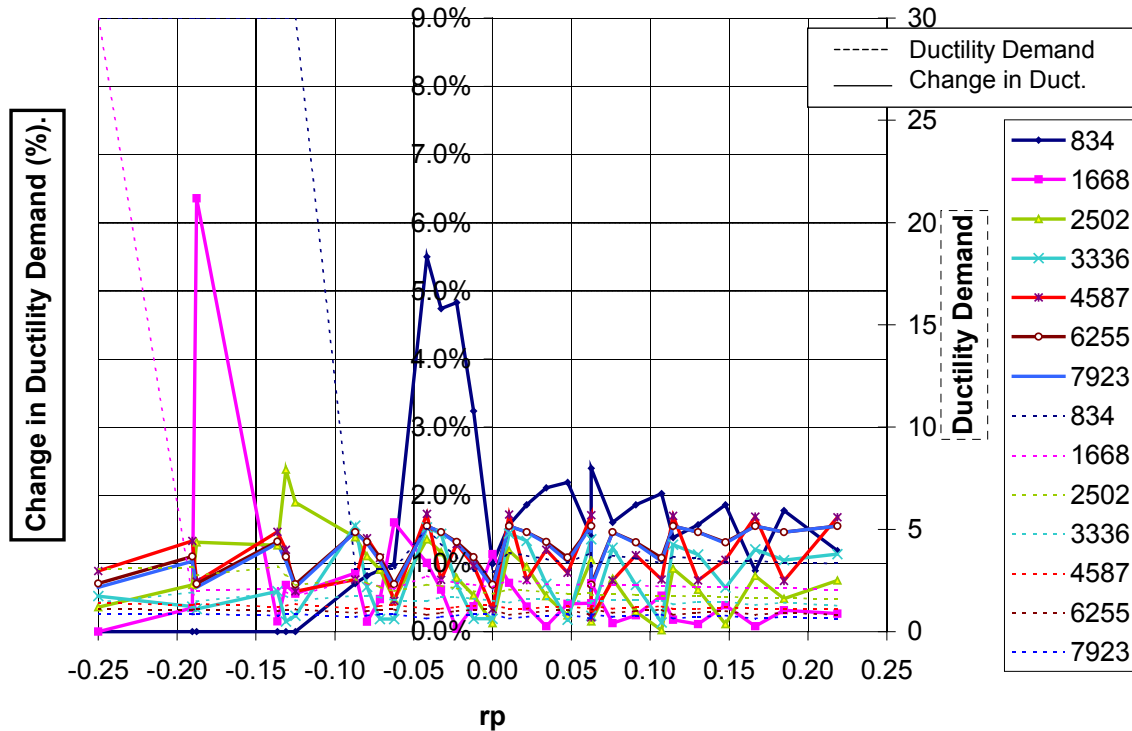
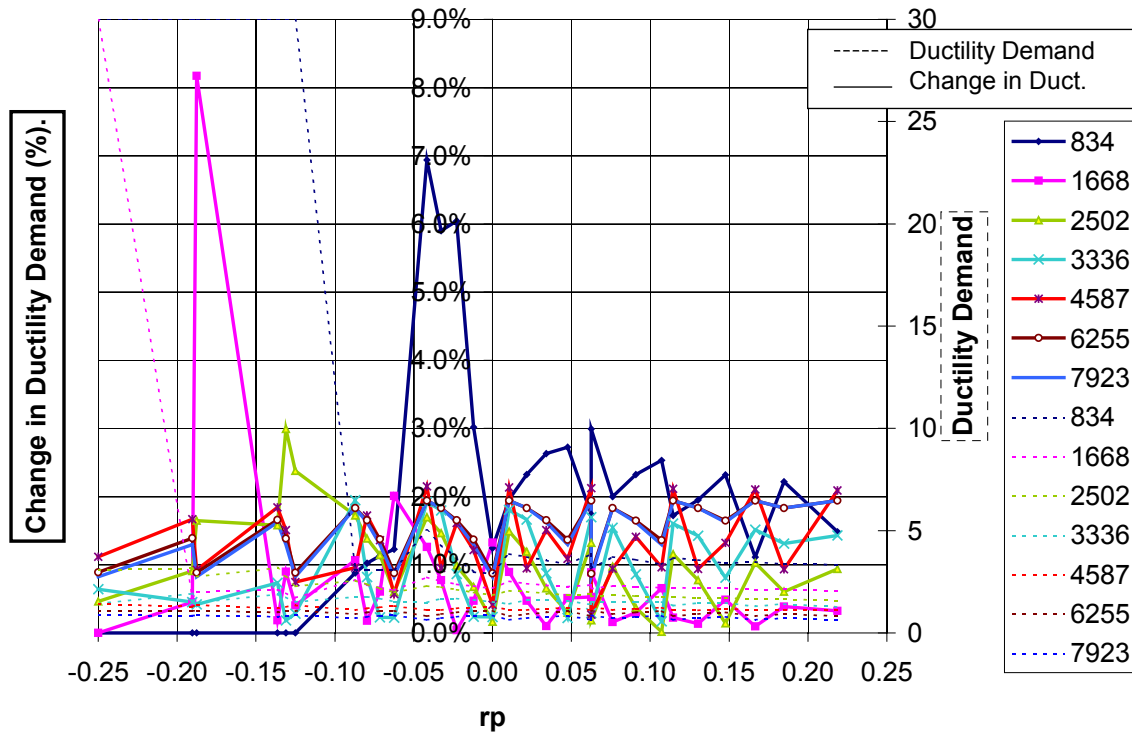


Figure C2.8.7.2b– EQ7, Lateral Scale = 0.2 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.635 Seconds



**Figure C2.8.7.2c– EQ7, Lateral Scale = 0.2 g, Vertical Multiplier = 2.0, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.635 Seconds**



**Figure C2.8.7.2d– EQ7, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.635 Seconds**

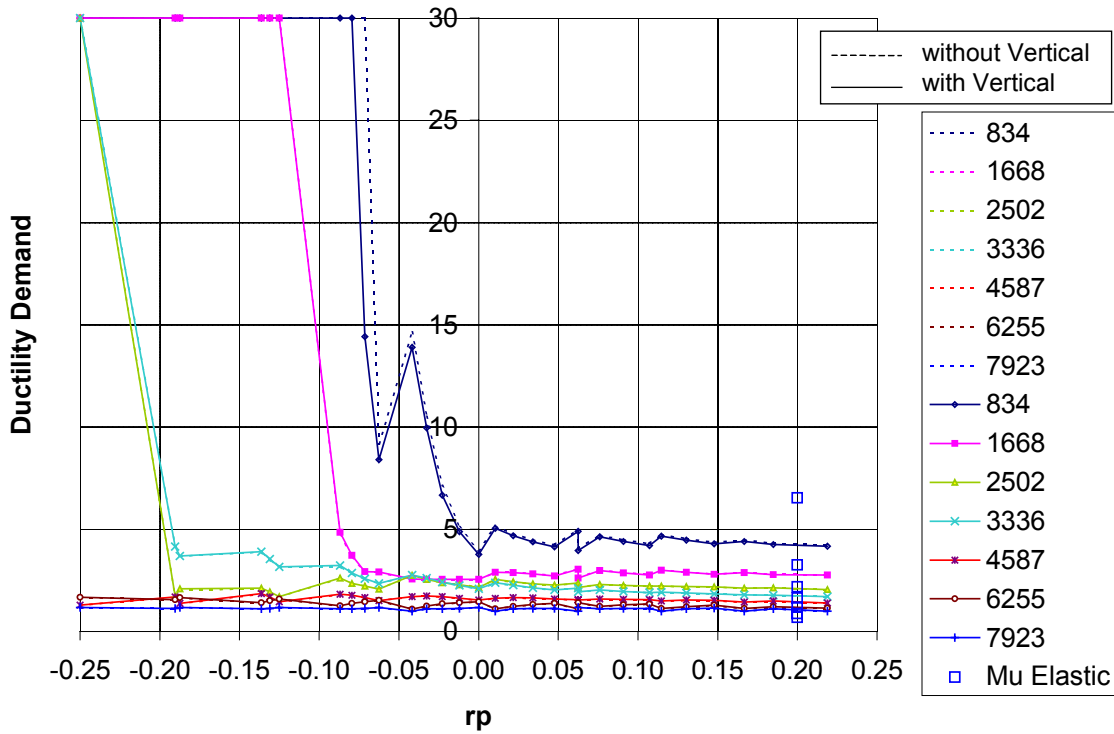


Figure C2.8.7.3a – EQ7, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.635 Seconds.

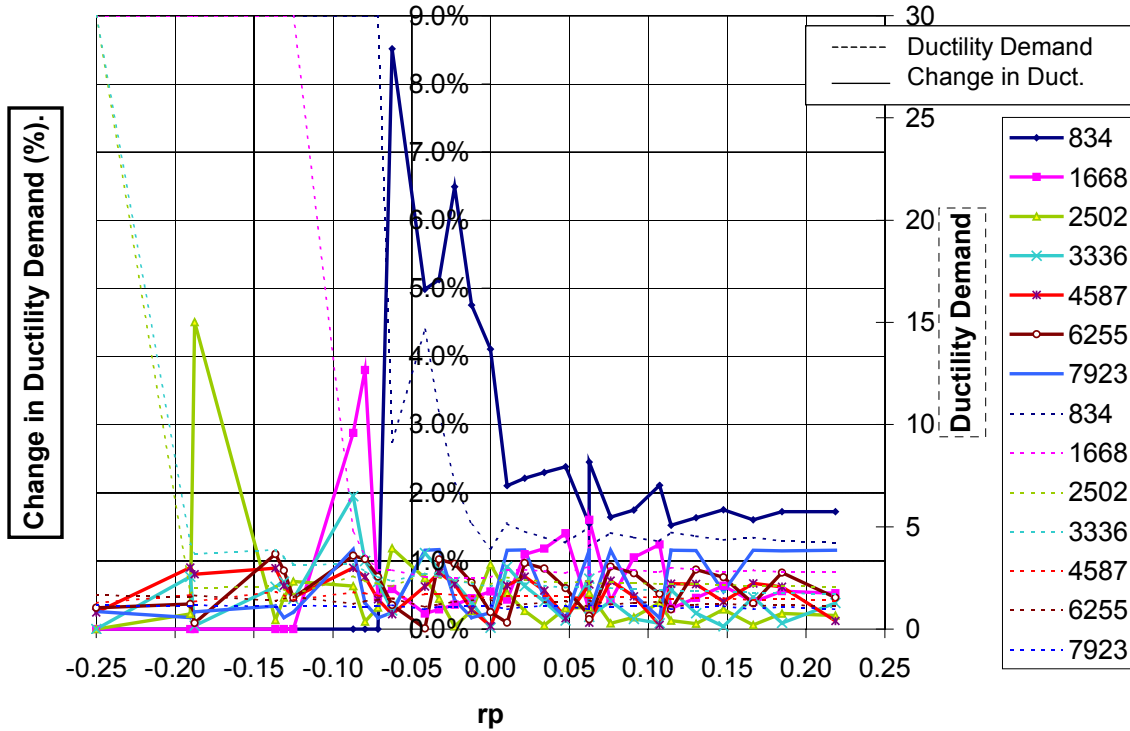


Figure C2.8.7.3b– EQ7, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.635 Seconds

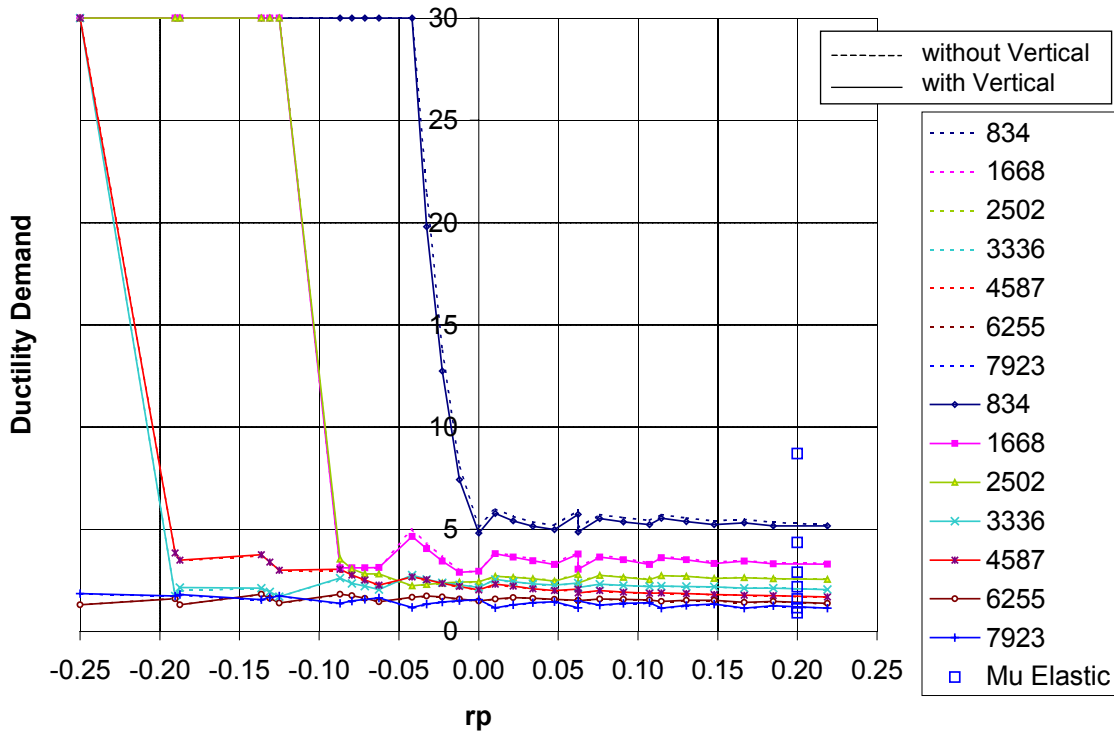


Figure C2.8.7.4a – EQ7, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.635 Seconds.

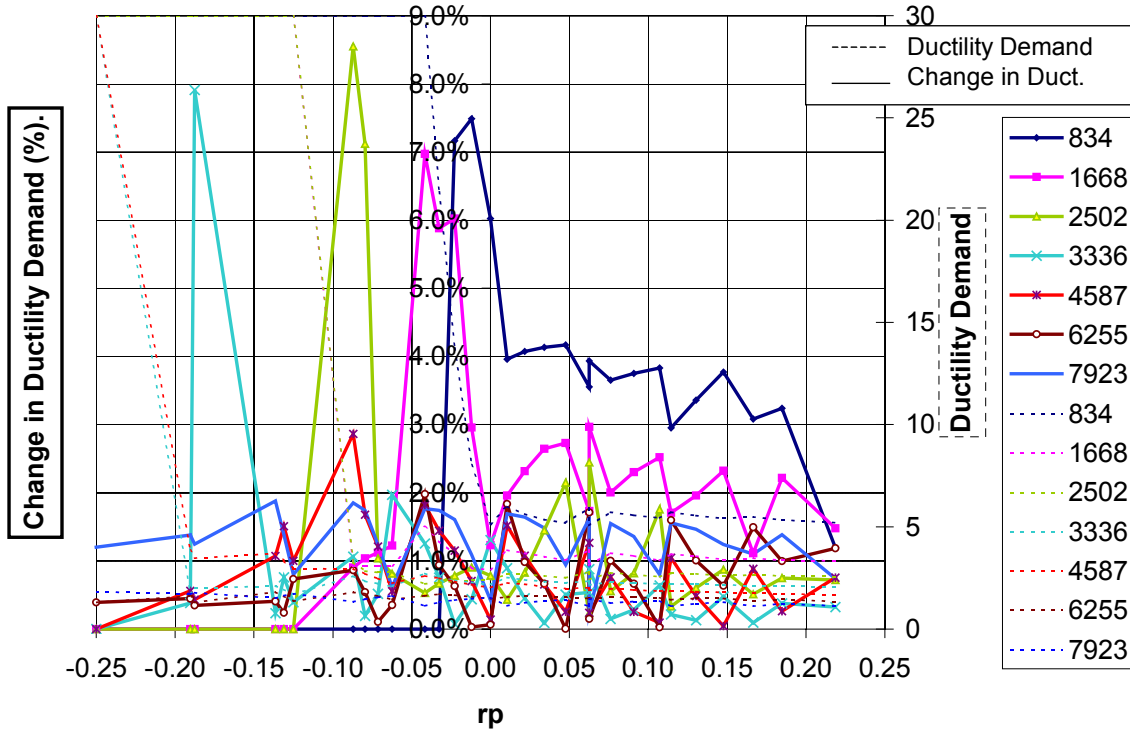


Figure C2.8.7.4b– EQ7, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.635 Seconds.

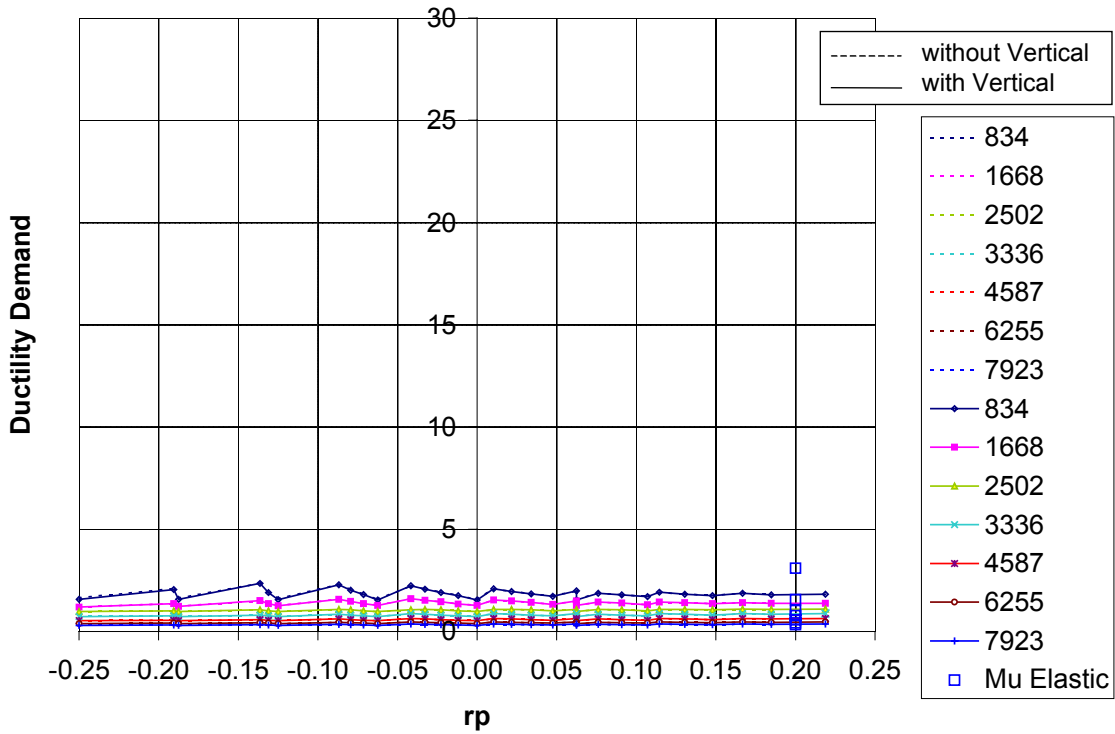


Figure C2.9.7.1a – EQ7, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.808 Seconds.

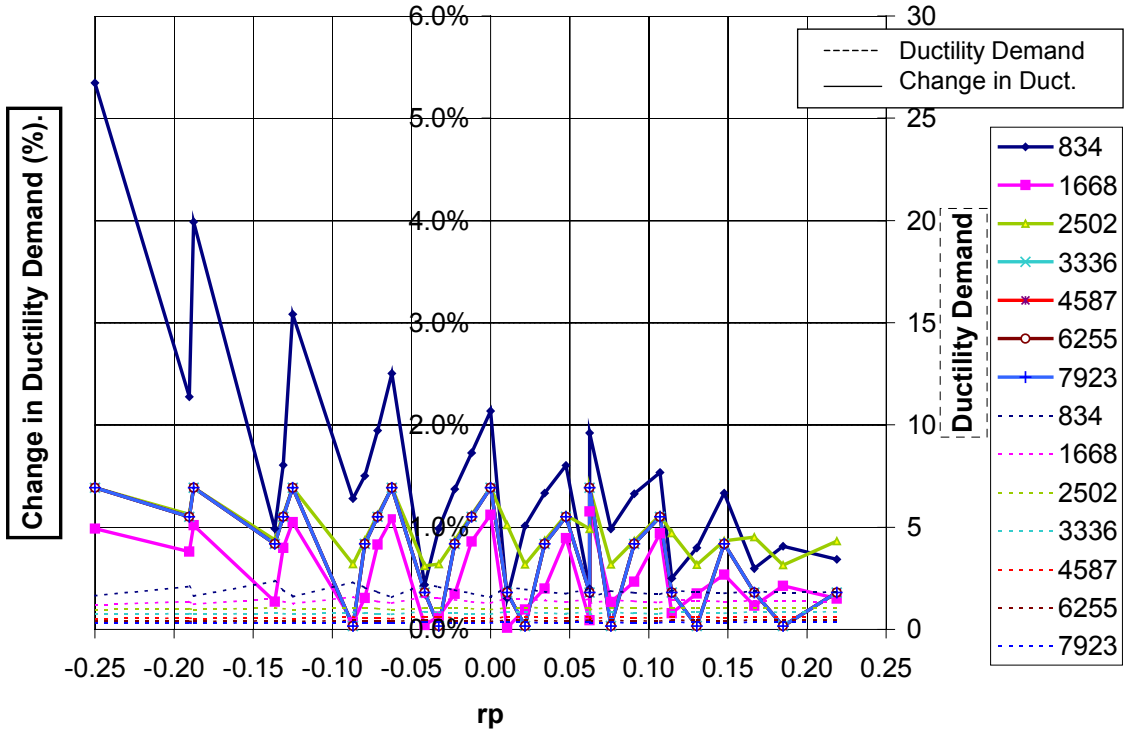


Figure C2.9.7.1b– EQ7, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.808 Seconds

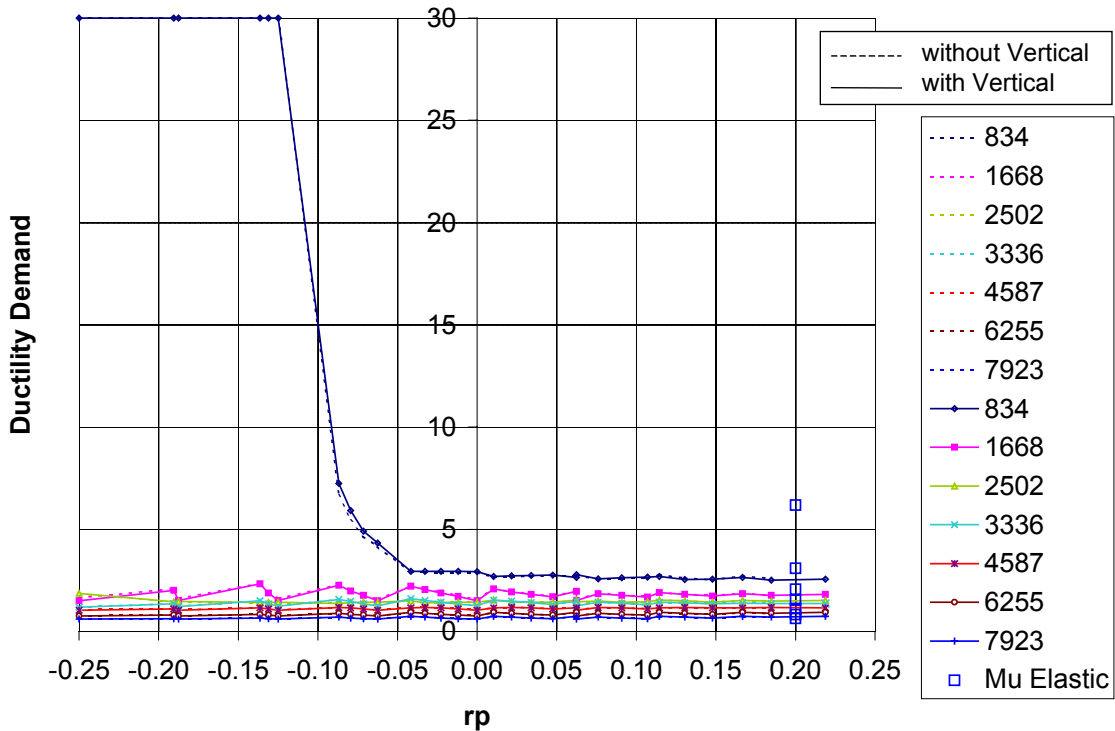


Figure C2.9.7.2a – EQ7, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.808 Seconds.

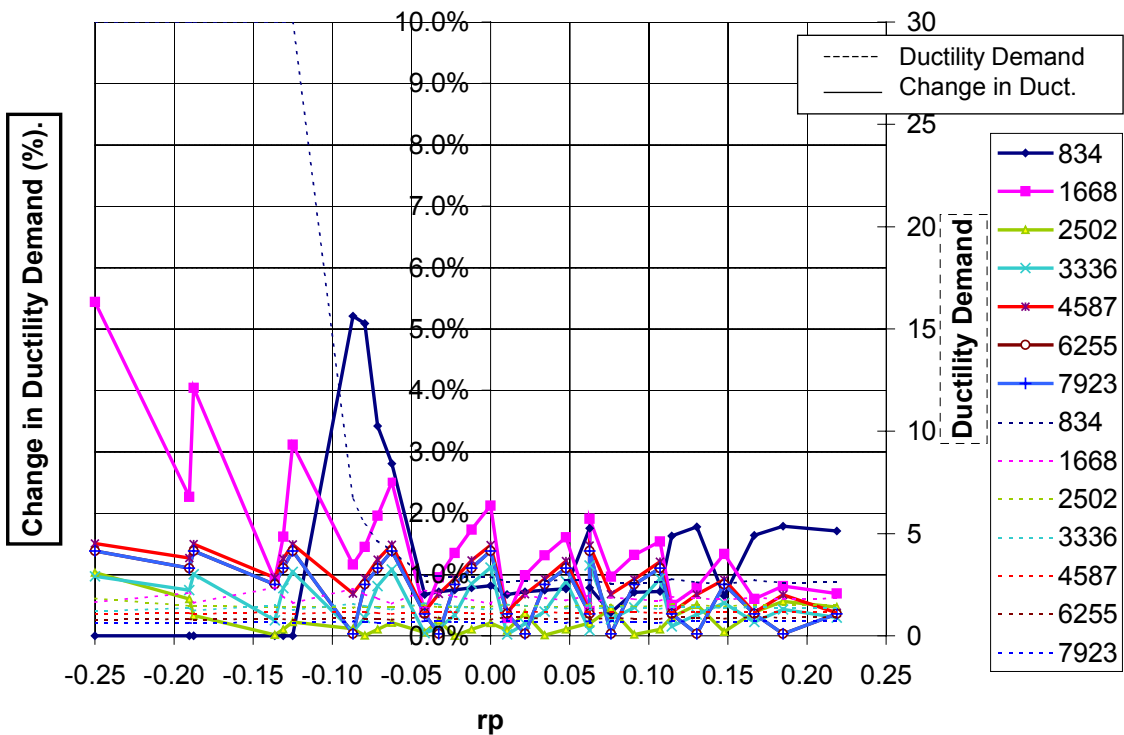
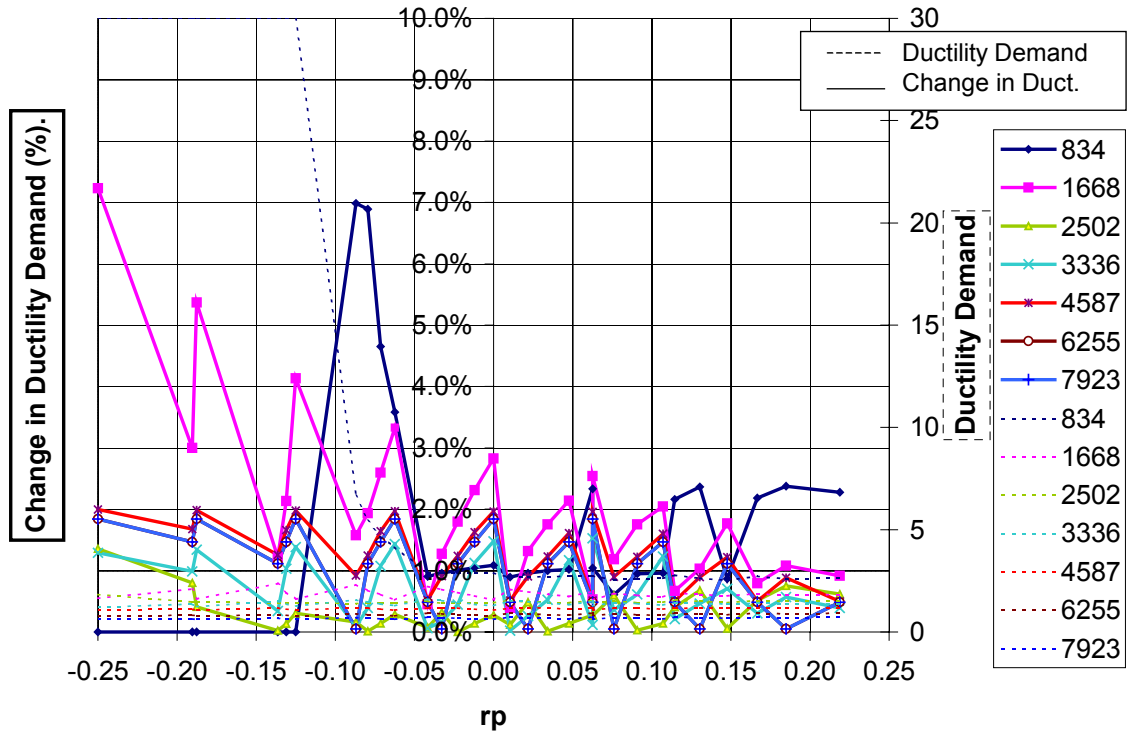
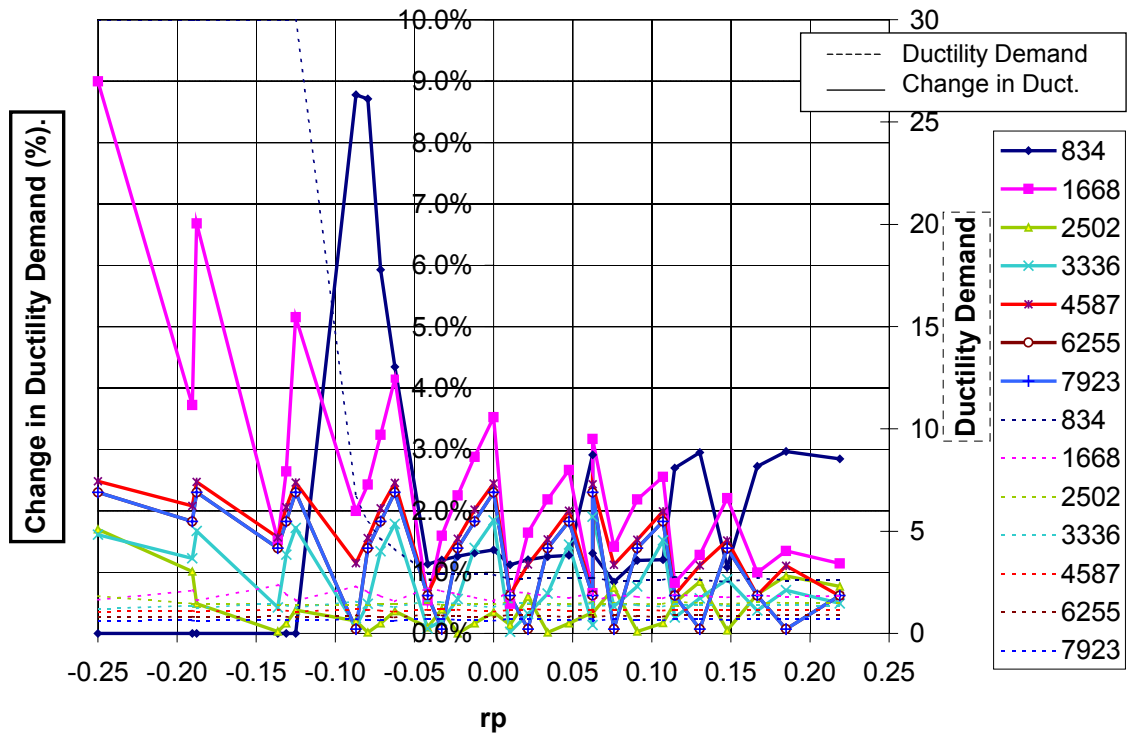


Figure C2.9.7.2b– EQ7, Lateral Scale = 0.2 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.808 Seconds



**Figure C2.9.7.2c– EQ7, Lateral Scale = 0.2 g, Vertical Multiplier = 2.0, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.808 Seconds**



**Figure C2.9.7.2d– EQ7, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.808 Seconds**

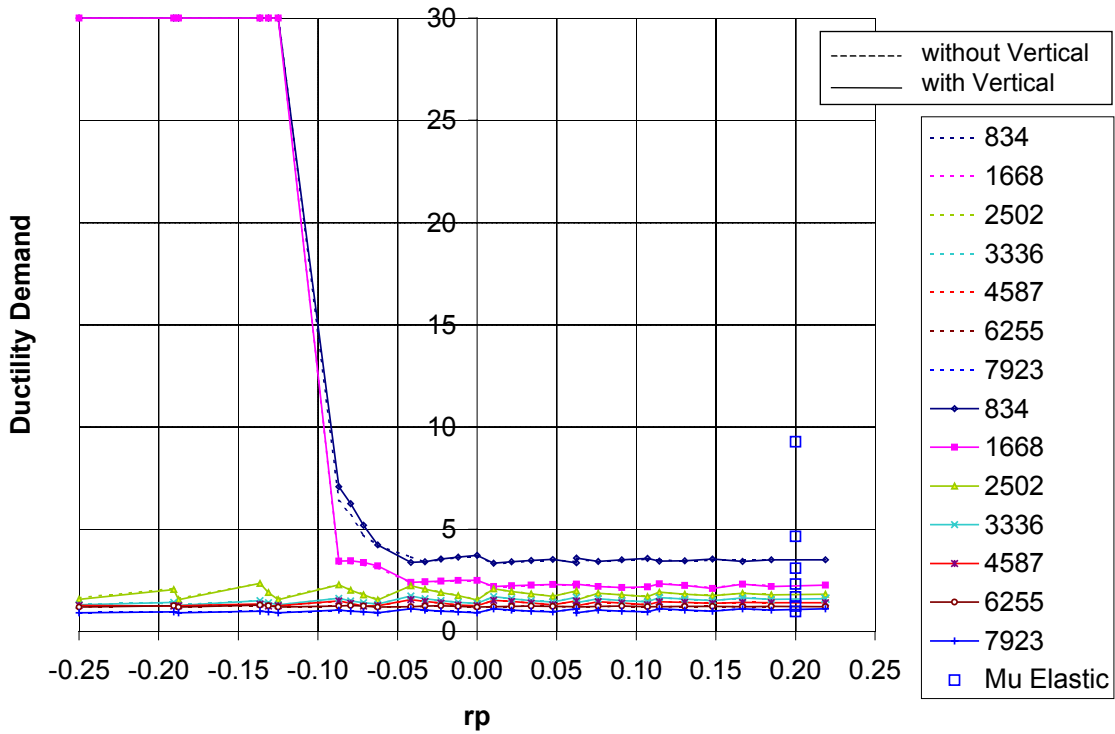


Figure C2.9.7.3a – EQ7, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.808 Seconds.

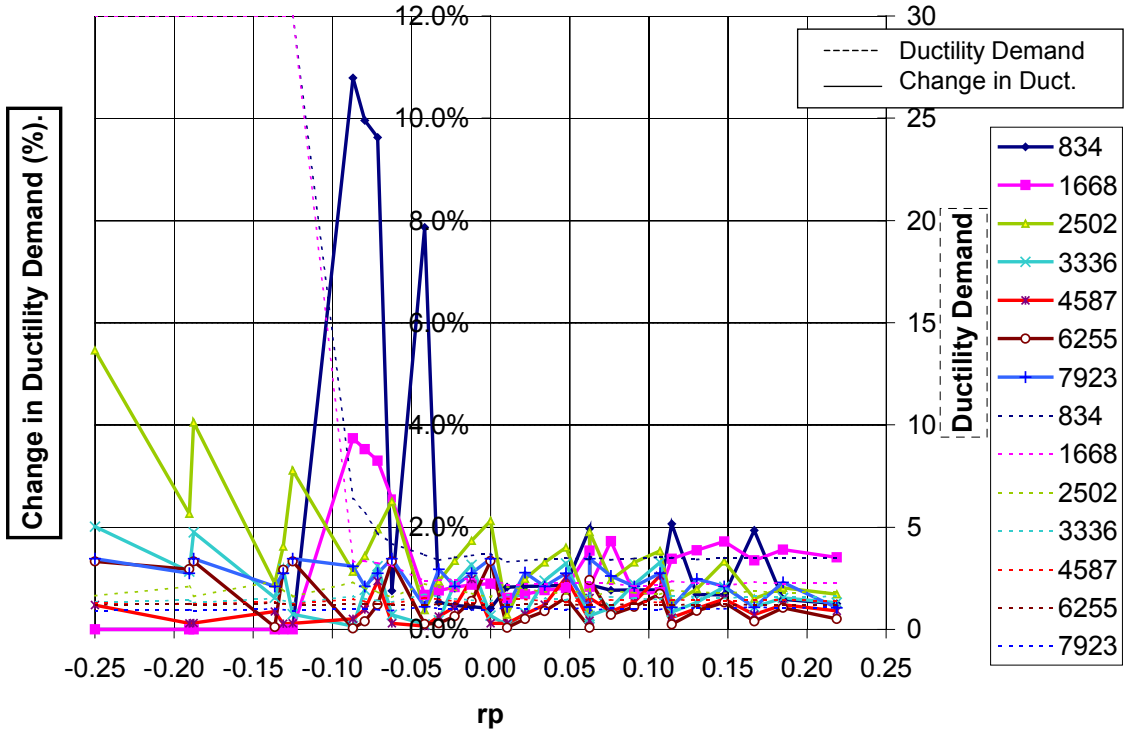


Figure C2.9.7.3b– EQ7, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.808 Seconds

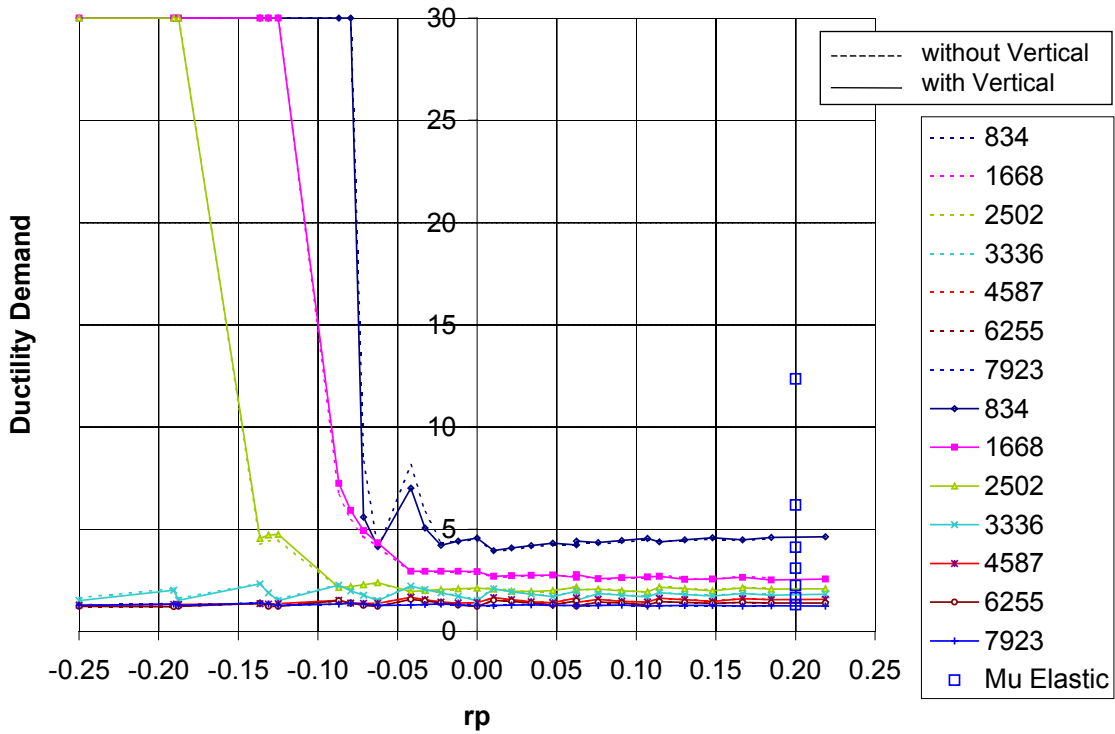


Figure C2.9.7.4a – EQ7, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.808 Seconds.

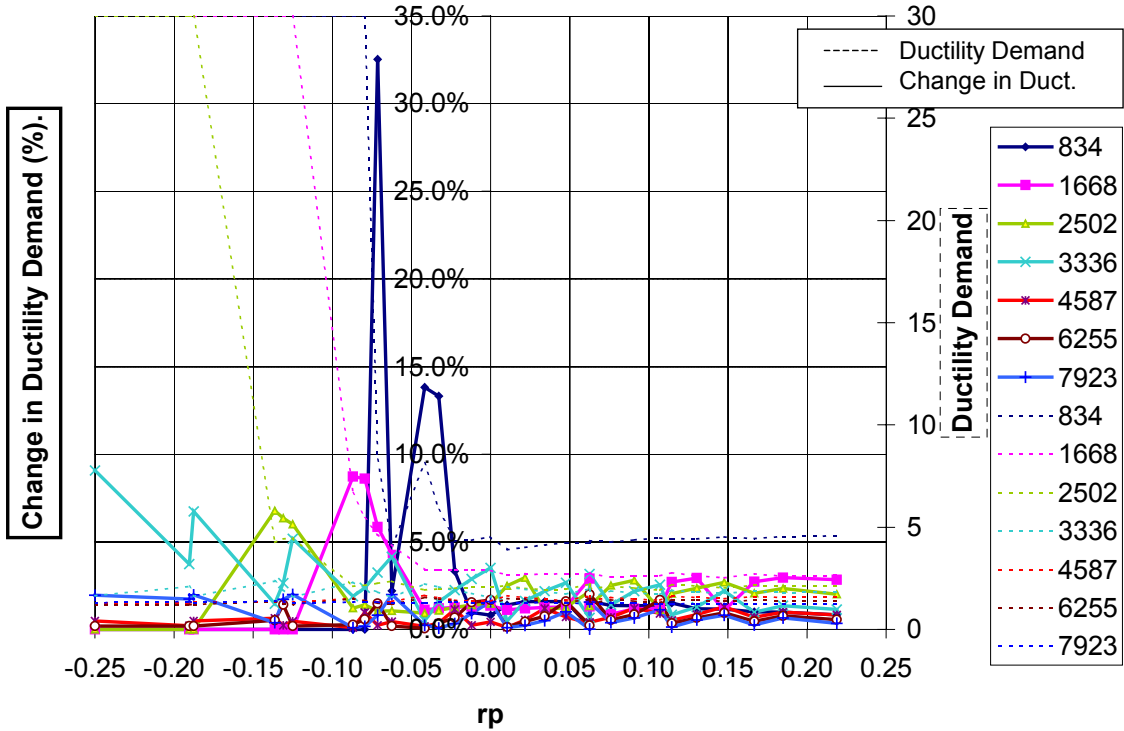


Figure C2.9.7.4b– EQ7, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.808 Seconds.

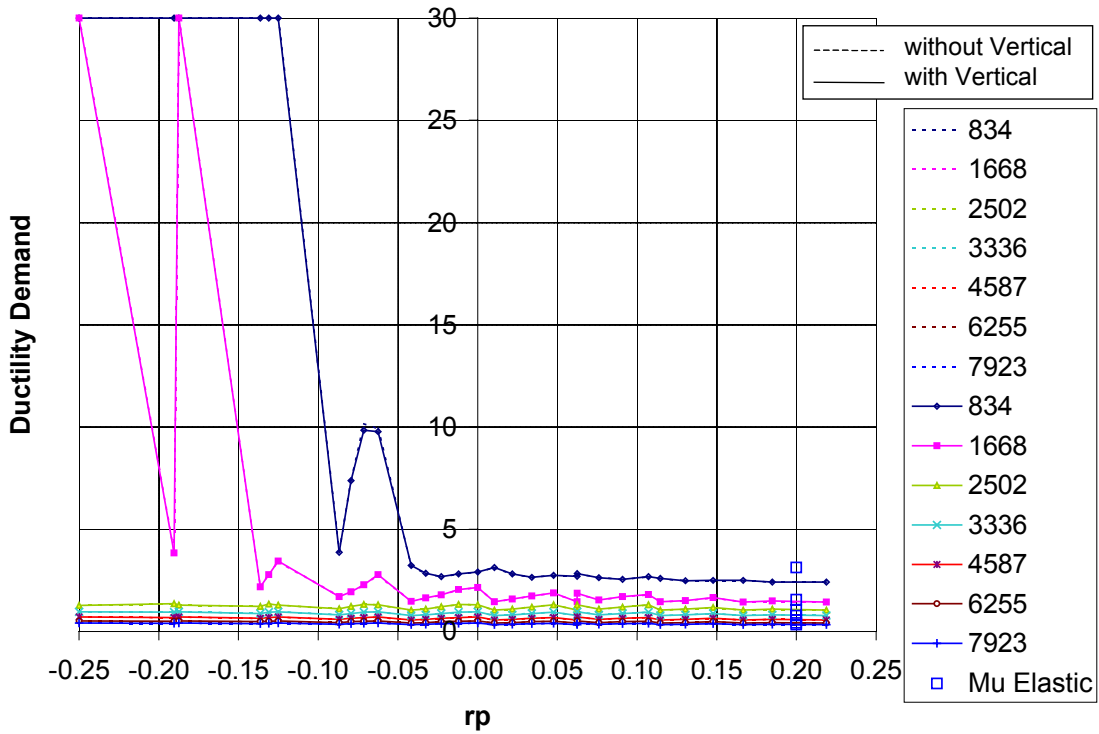


Figure C2.3.8.1a – EQ8, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 0.705 Seconds.

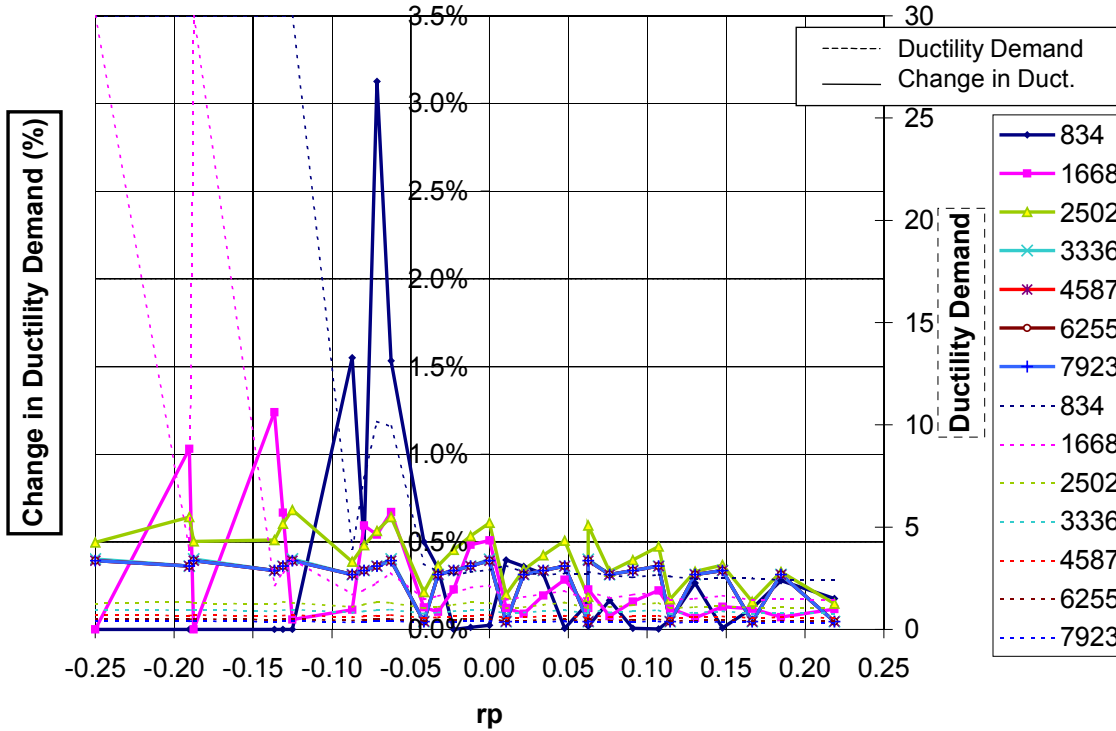


Figure C2.3.8.1b– EQ8, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 0.705 Seconds

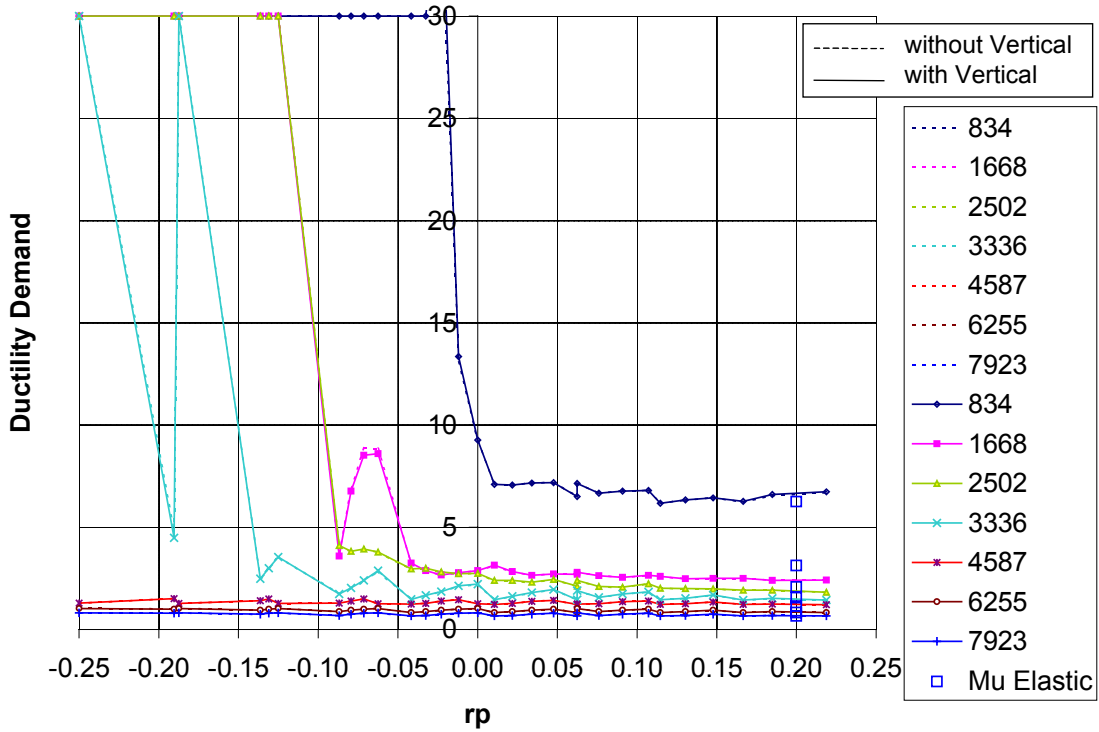


Figure C2.3.8.2a – EQ8, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 0.705 Seconds.

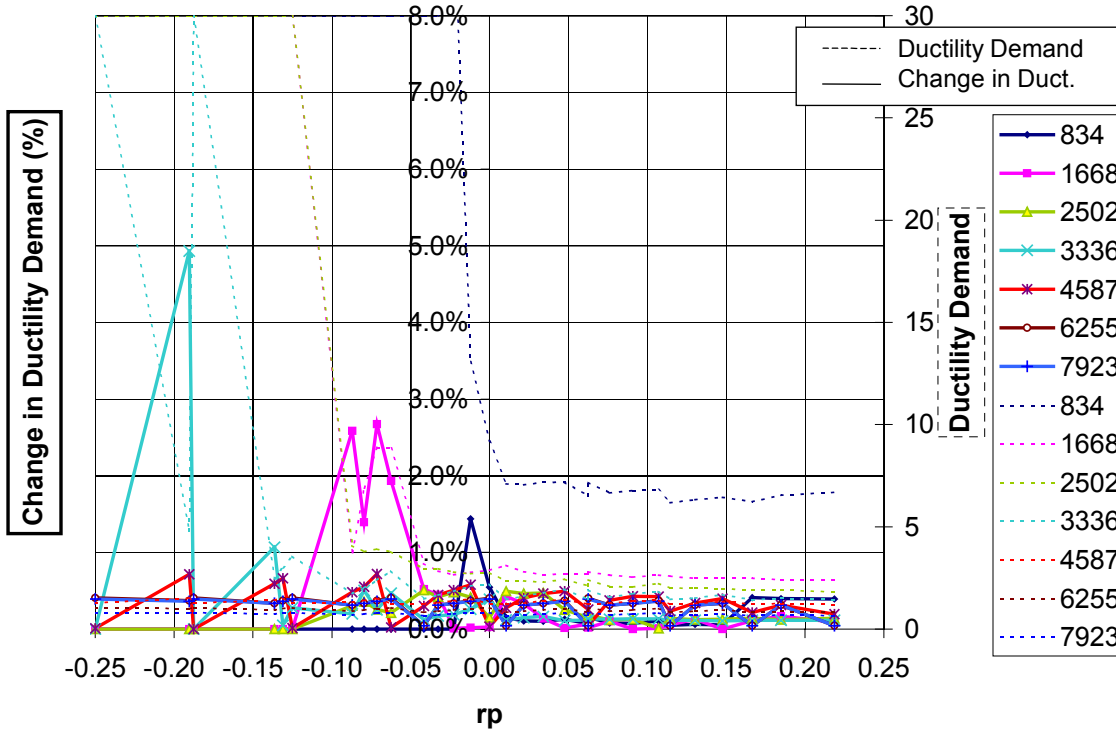
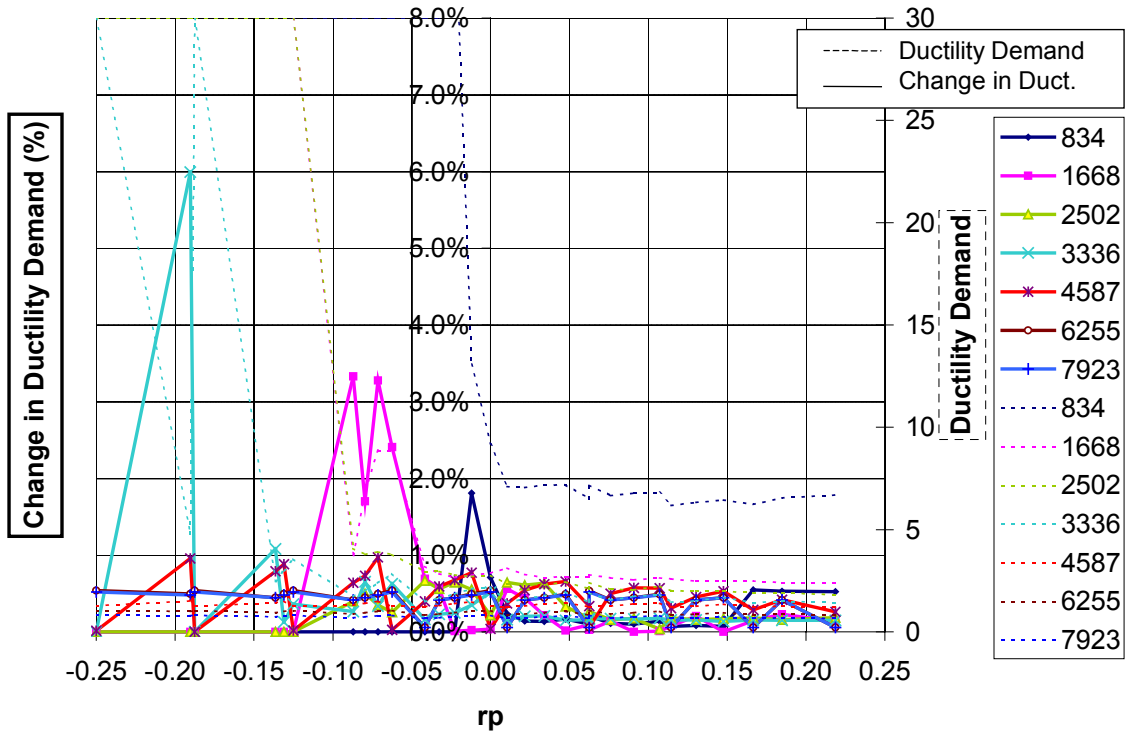
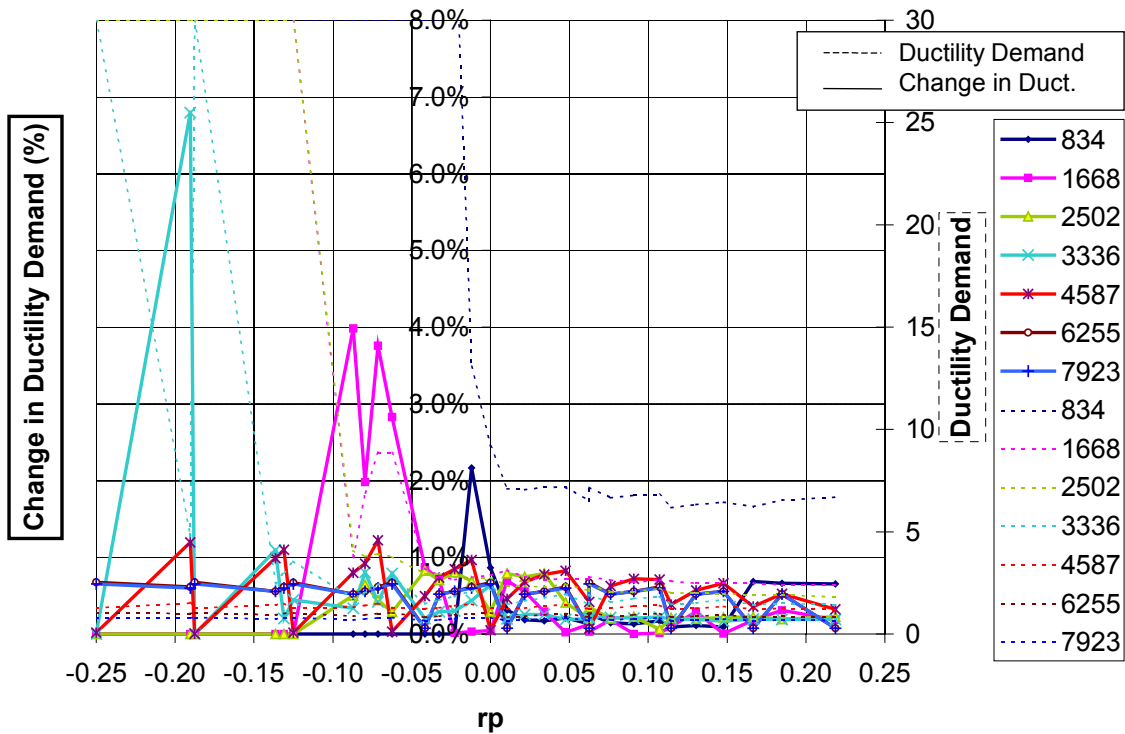


Figure C2.3.8.2b– EQ8, Lateral Scale = 0.2 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 0.705 Seconds



**Figure C2.3.8.2c– EQ8, Lateral Scale = 0.2 g, Vertical Multiplier = 2.0, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 0.705 Seconds**



**Figure C2.3.8.2d– EQ8, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 0.705 Seconds**

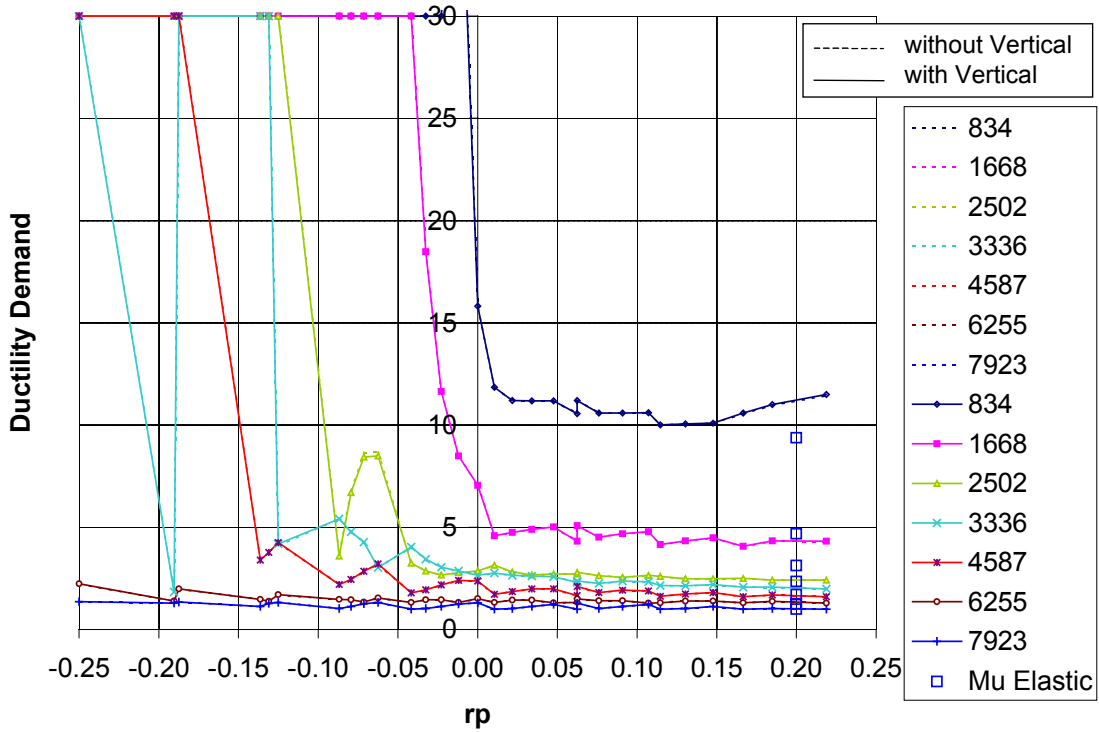


Figure C2.3.8.3a – EQ8, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 0.705 Seconds.

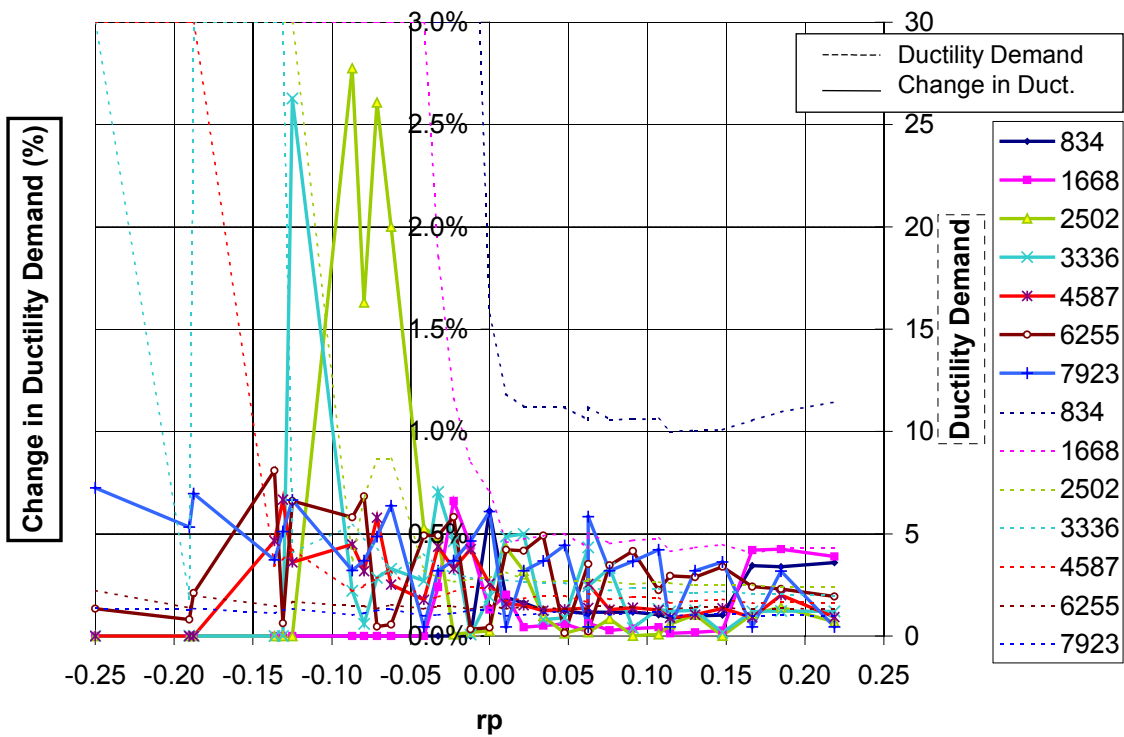


Figure C2.3.8.3b– EQ8, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 0.705 Seconds

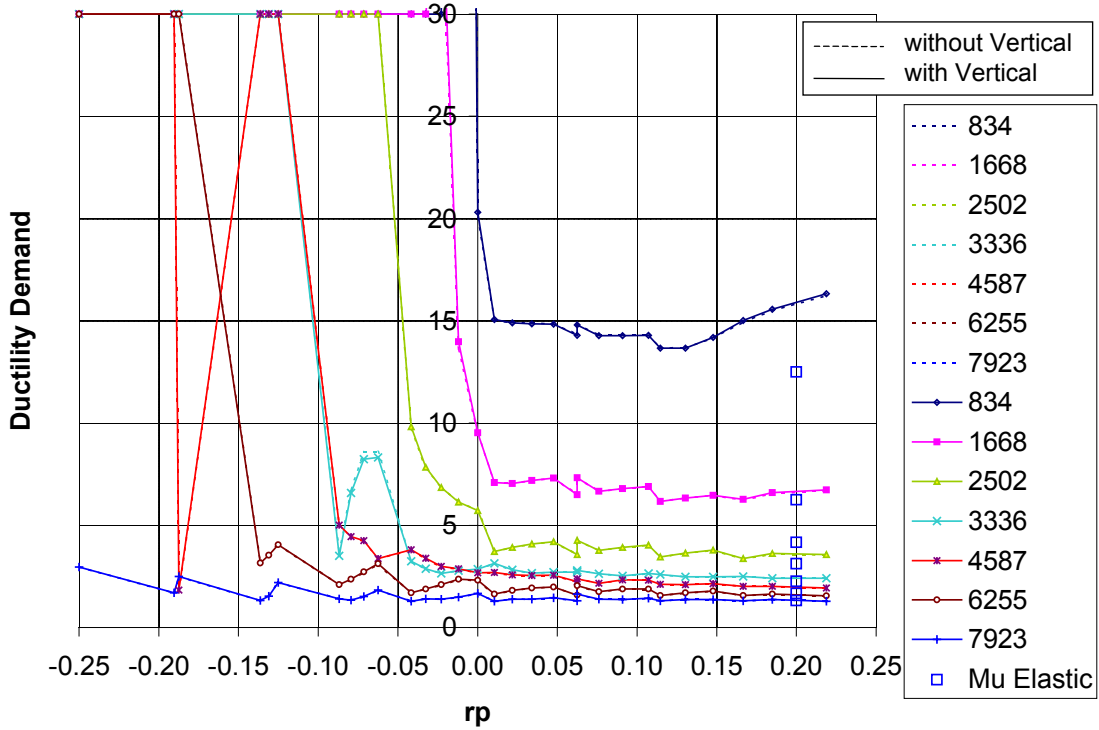


Figure C2.3.8.4a – EQ8, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 0.705 Seconds.

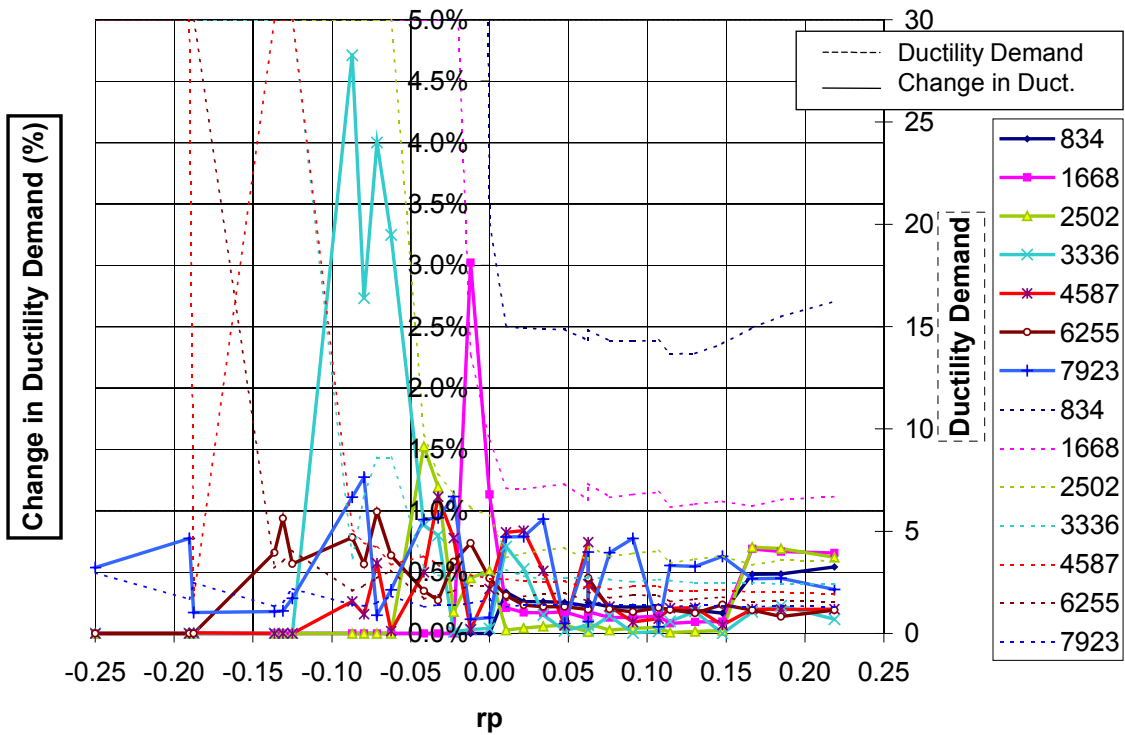


Figure C2.3.8.4b– EQ8, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 0.705 Seconds

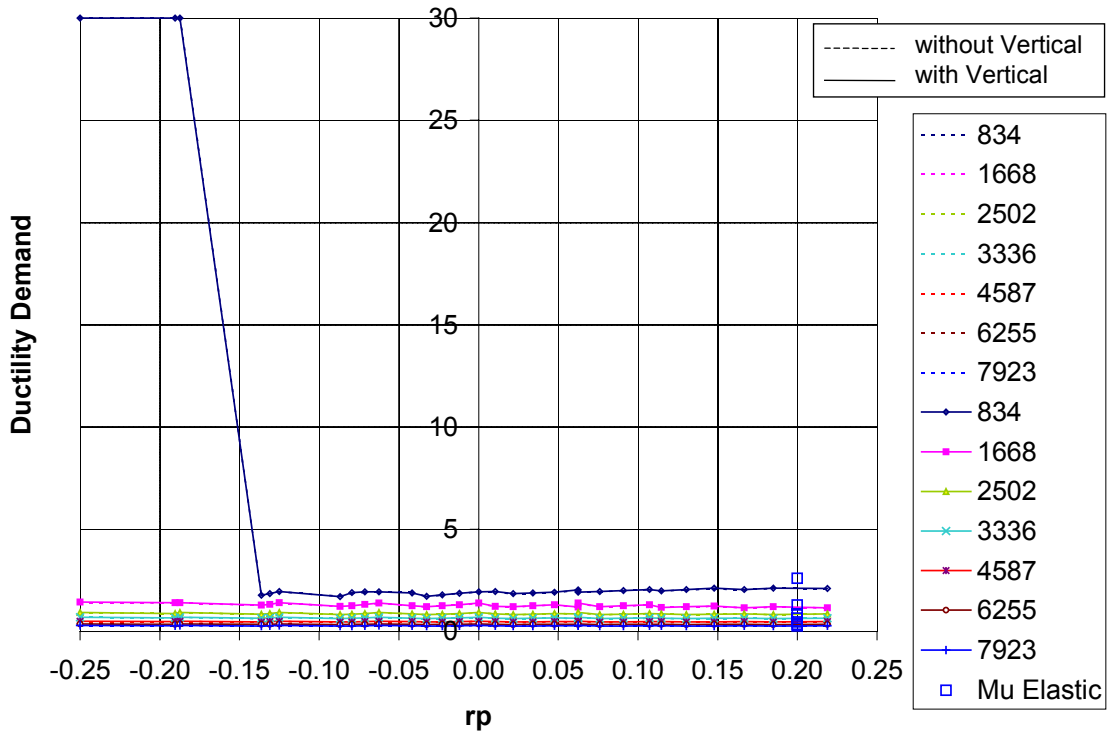


Figure C2.4.8.1a – EQ8, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 0.903 Seconds.

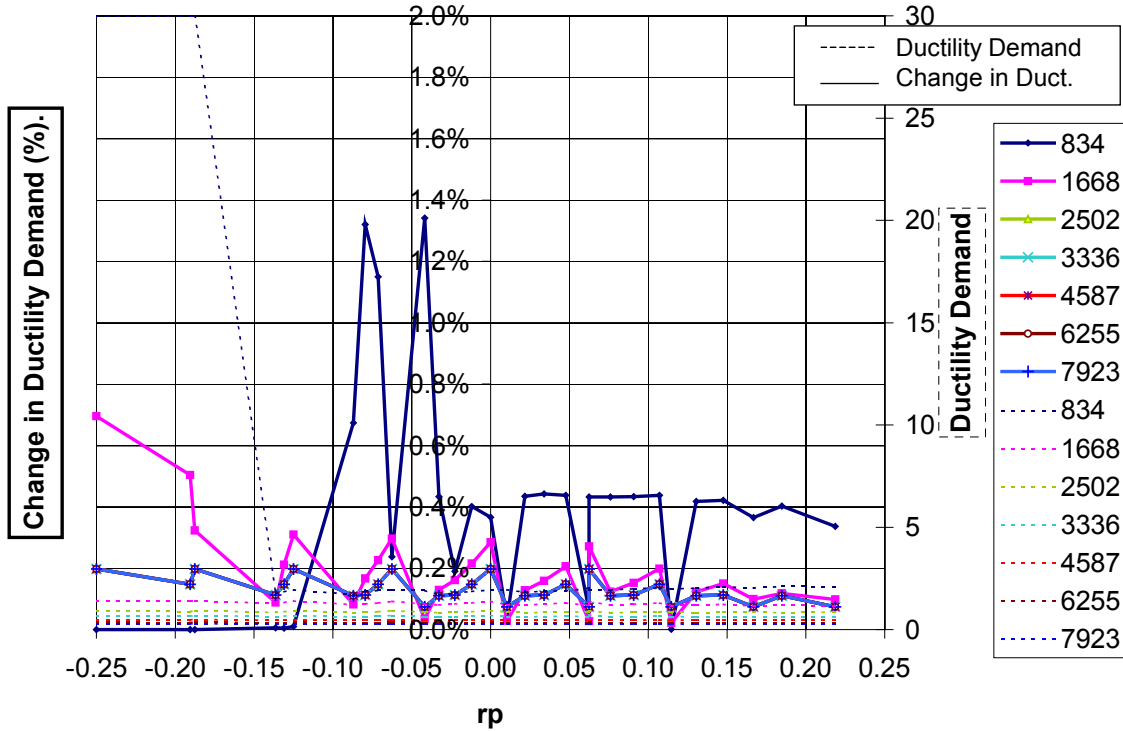


Figure C2.4.8.1b– EQ8, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 0.903 Seconds

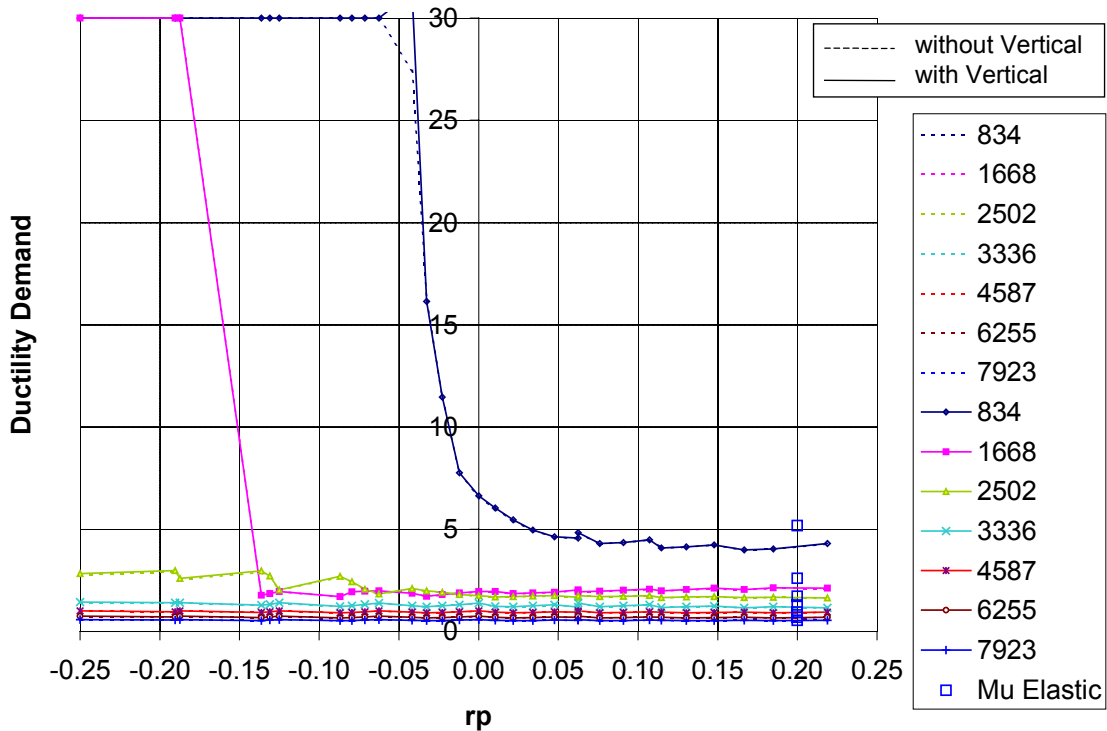


Figure C2.4.8.2a – EQ8, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 0.903 Seconds.

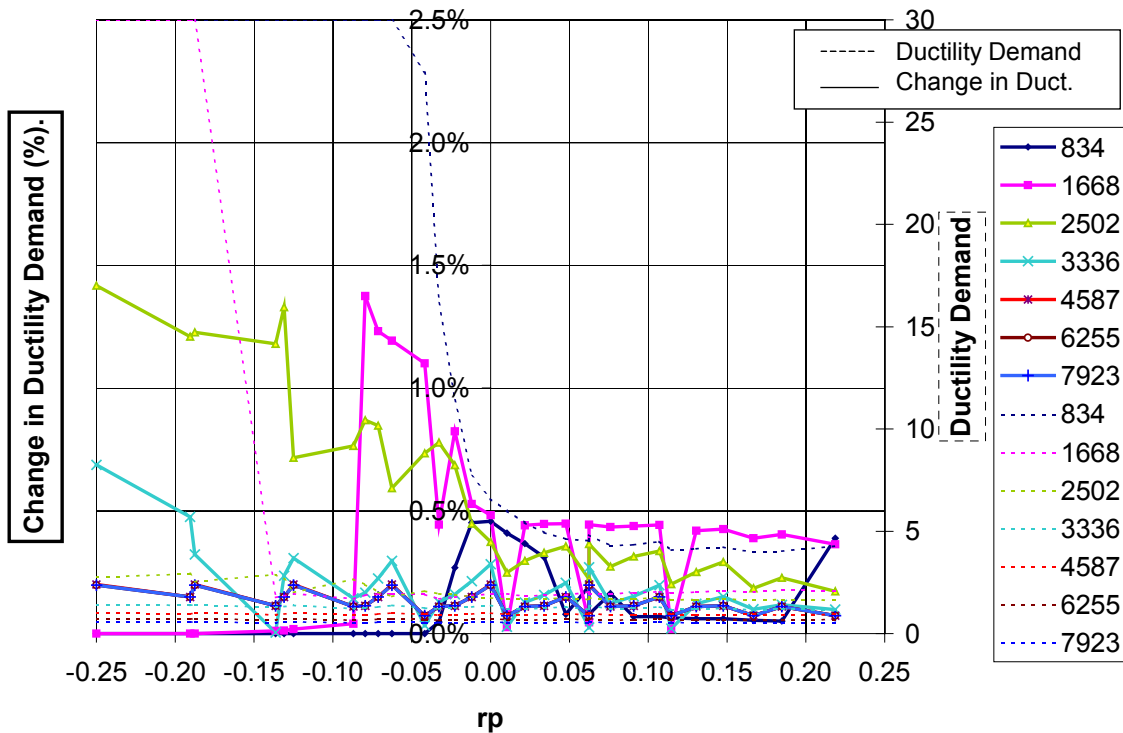


Figure C2.4.8.2b– EQ8, Lateral Scale = 0.2 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 0.903 Seconds

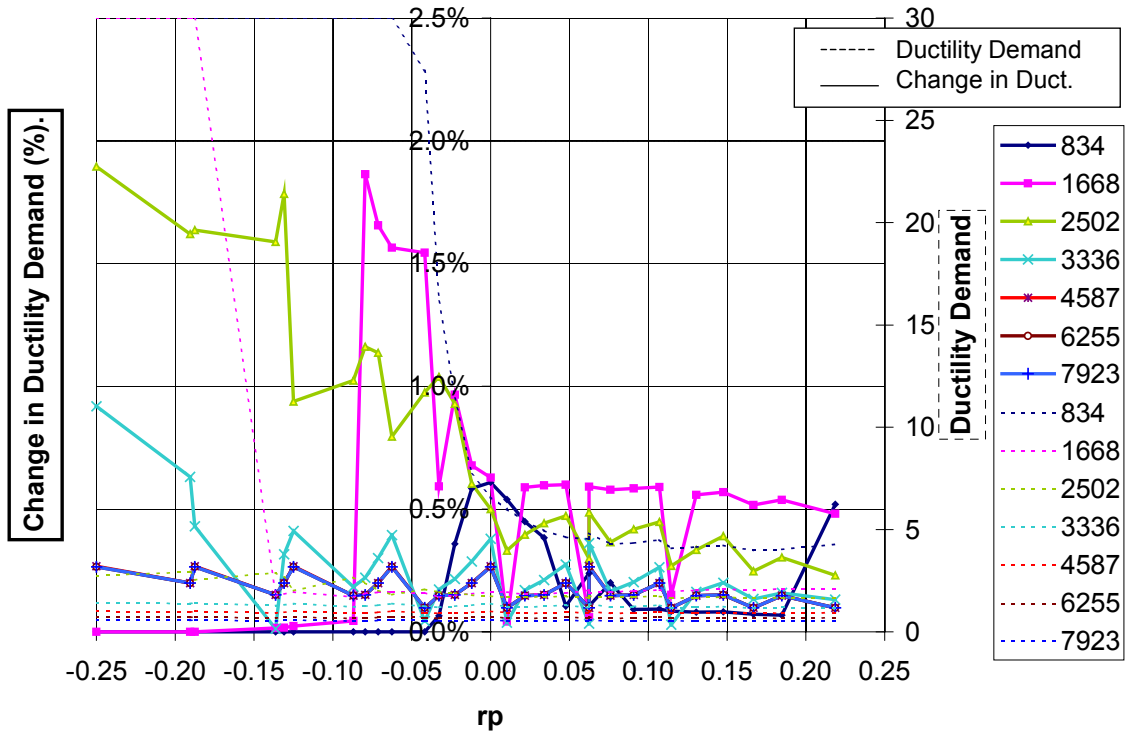


Figure C2.4.8.2c– EQ8, Lateral Scale = 0.2 g, Vertical Multiplier = 2.0, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 0.903 Seconds

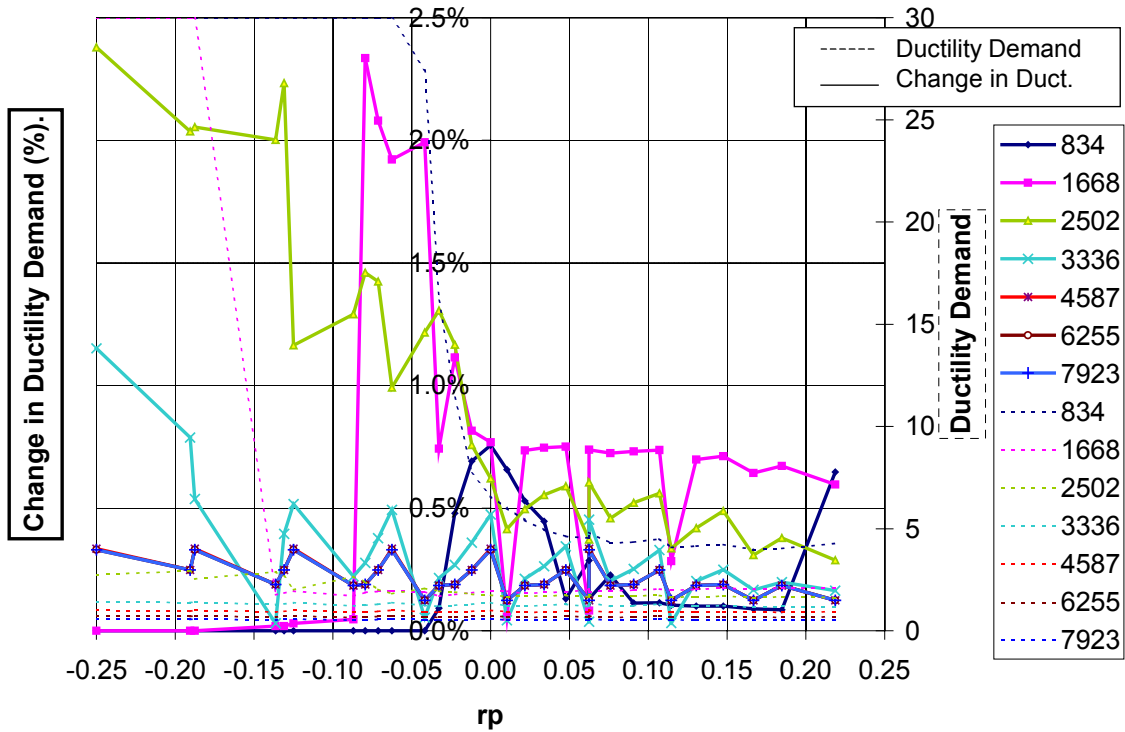


Figure C2.4.8.2d– EQ8, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 0.903 Seconds

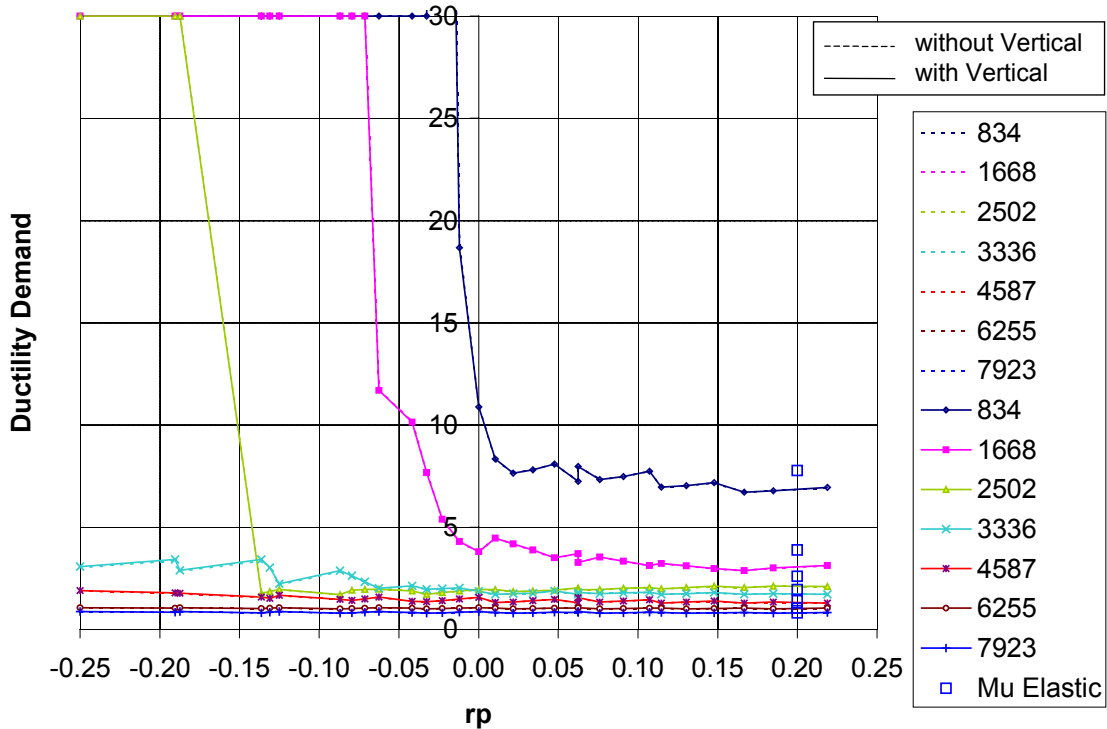


Figure C2.4.8.3a – EQ8, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 0.903 Seconds.

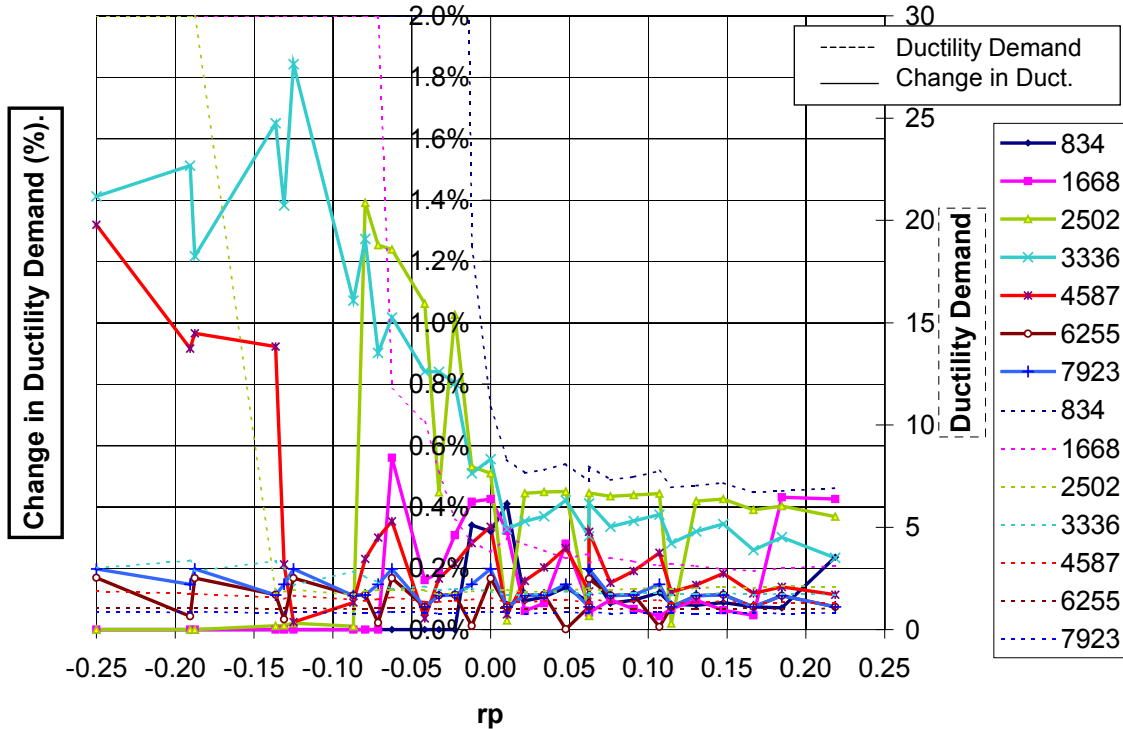


Figure C2.4.8.3b– EQ8, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 0.903 Seconds

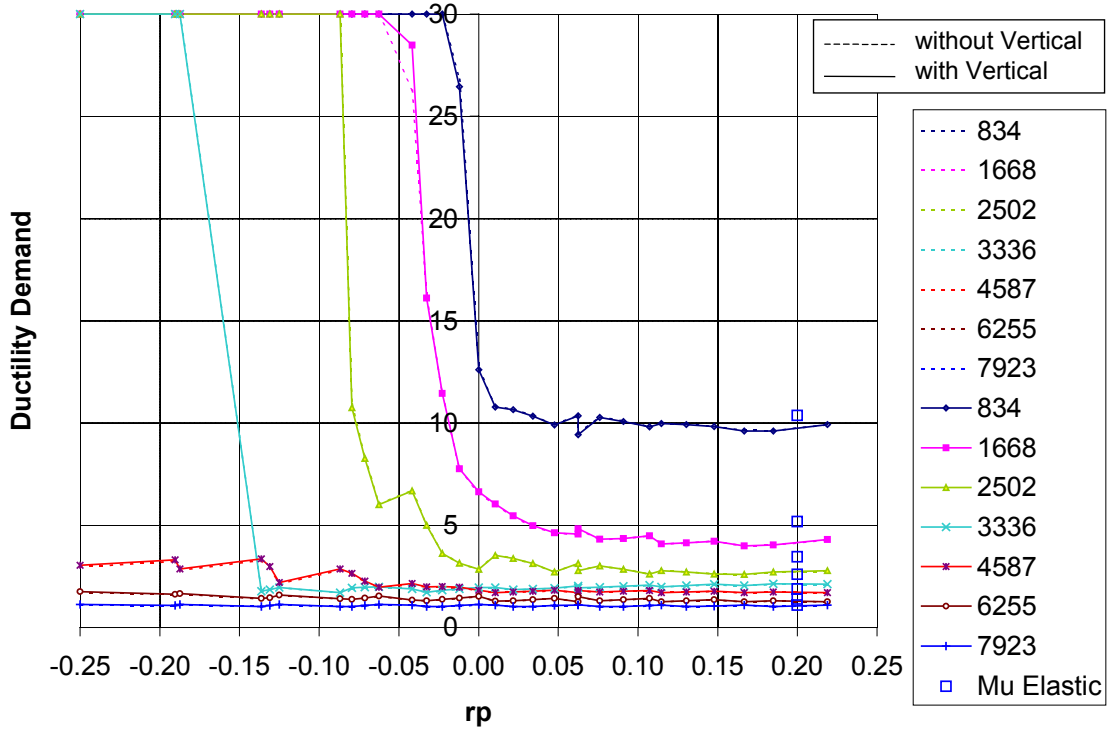


Figure C2.4.8.4a – EQ8, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 0.903 Seconds.

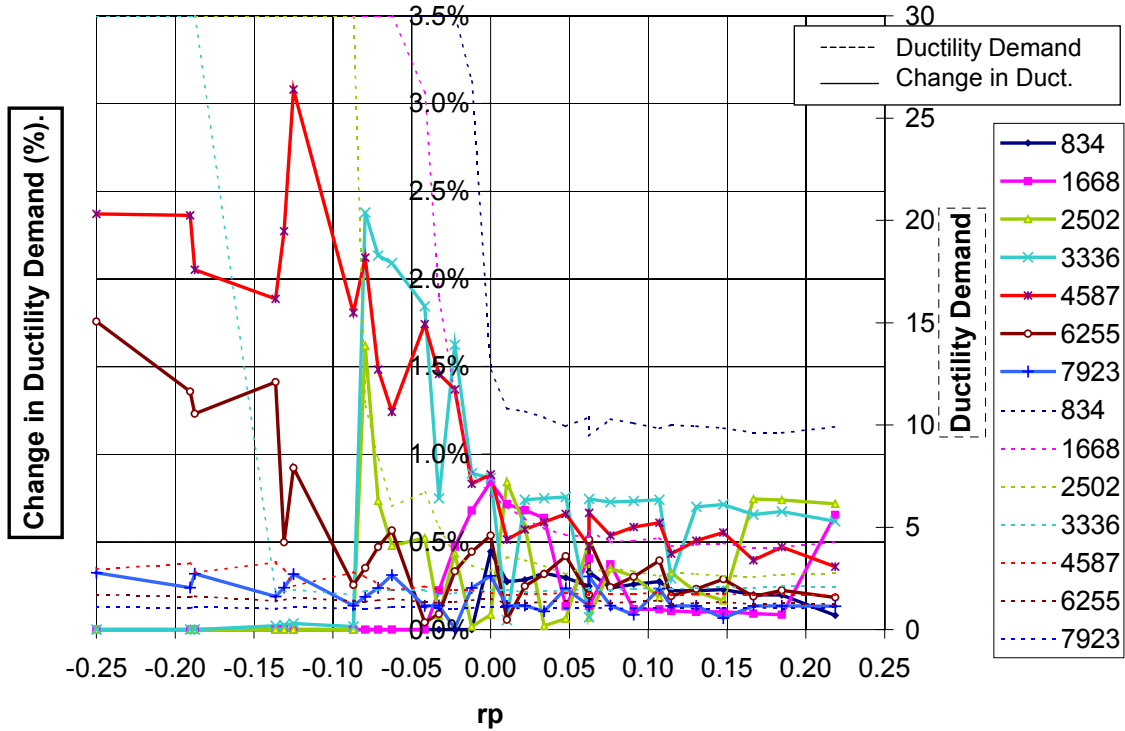


Figure C2.4.8.4b– EQ8, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 0.903 Seconds

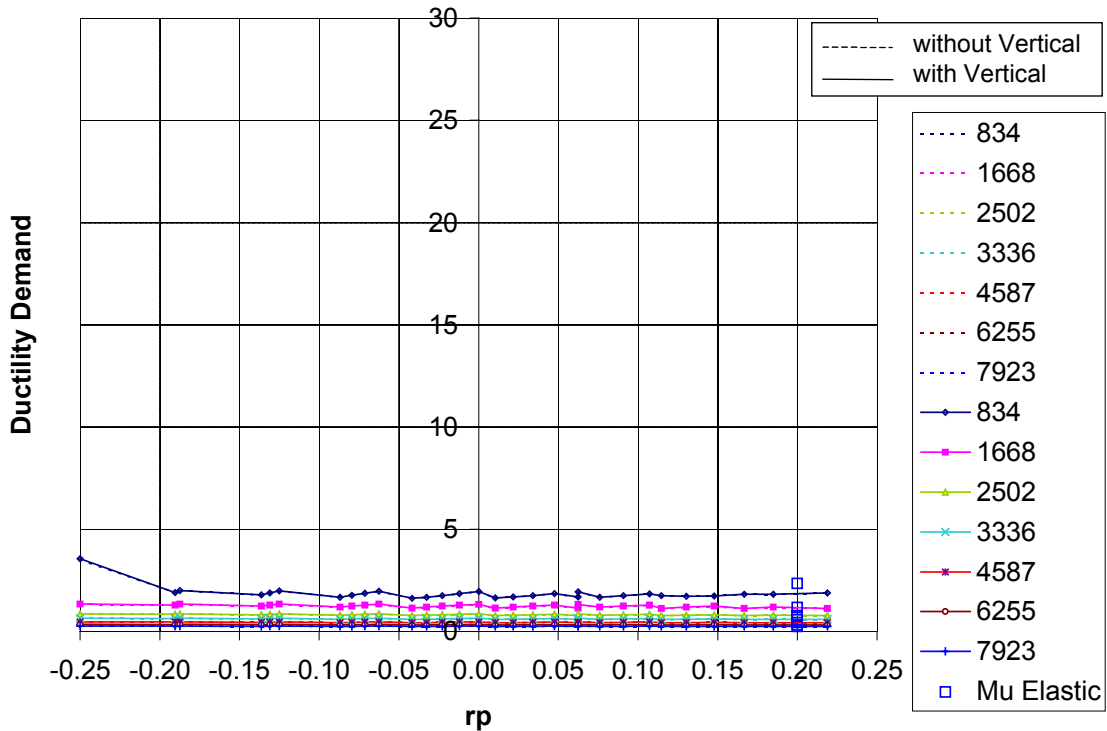


Figure C2.5.8.1a – EQ8, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.093 Seconds.

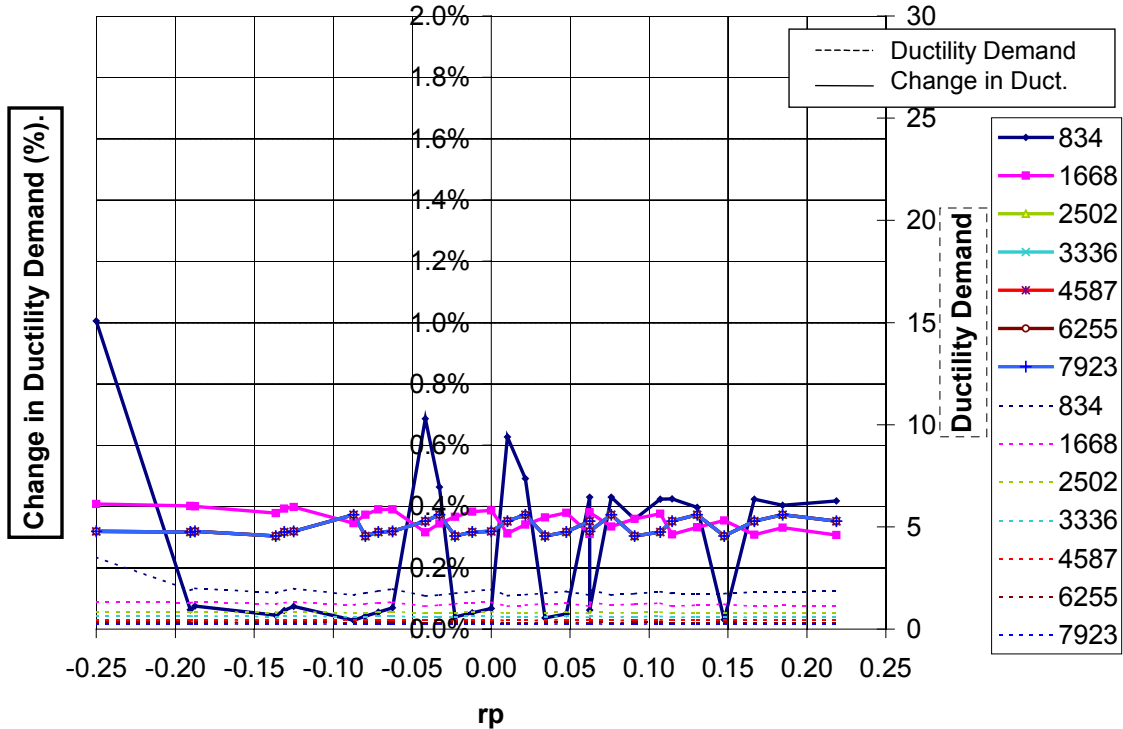


Figure C2.5.8.1b– EQ8, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.093 Seconds

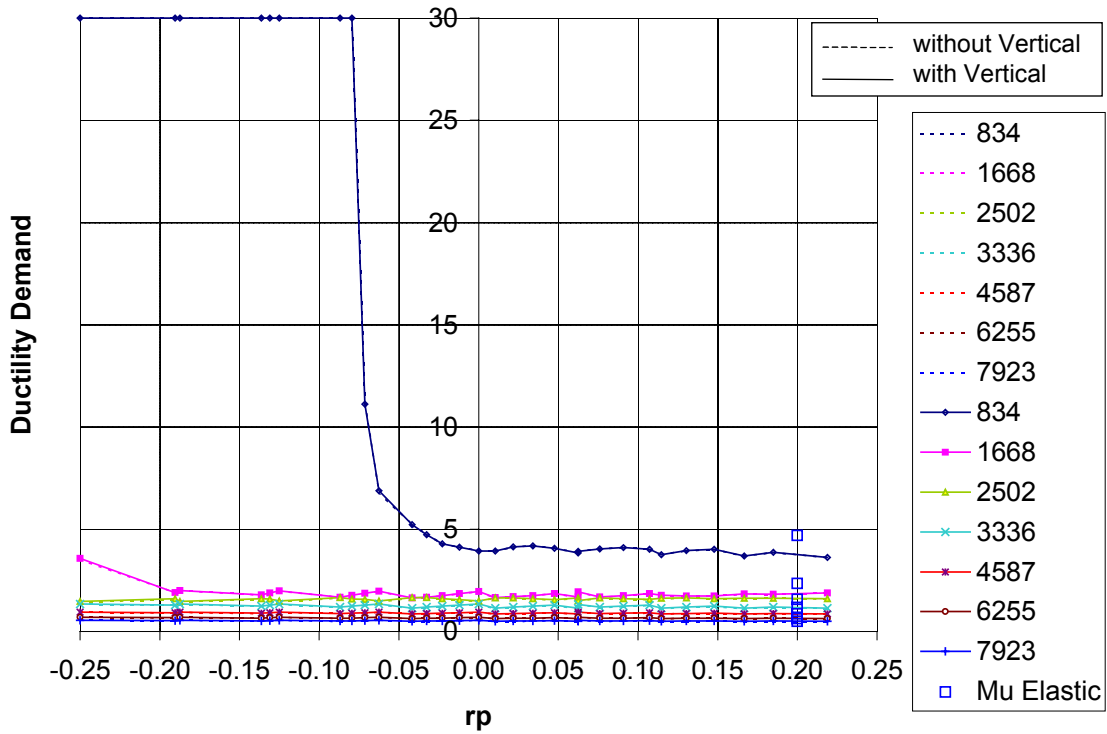


Figure C2.5.8.2a – EQ8, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.093 Seconds.

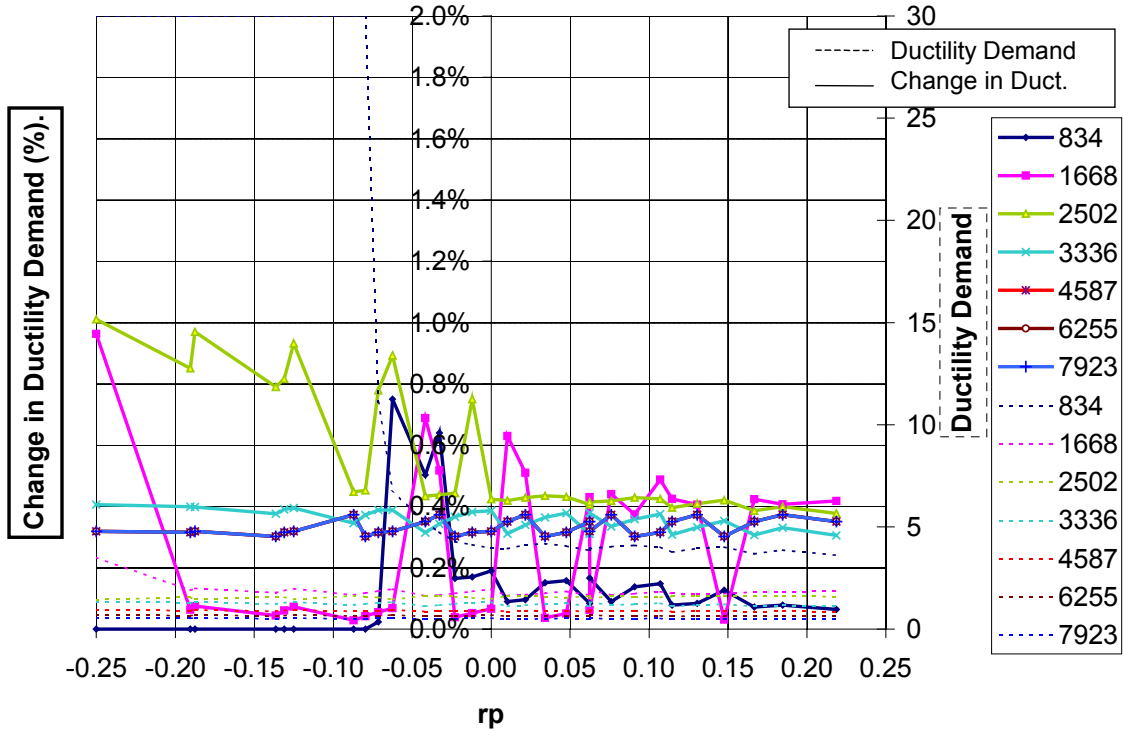
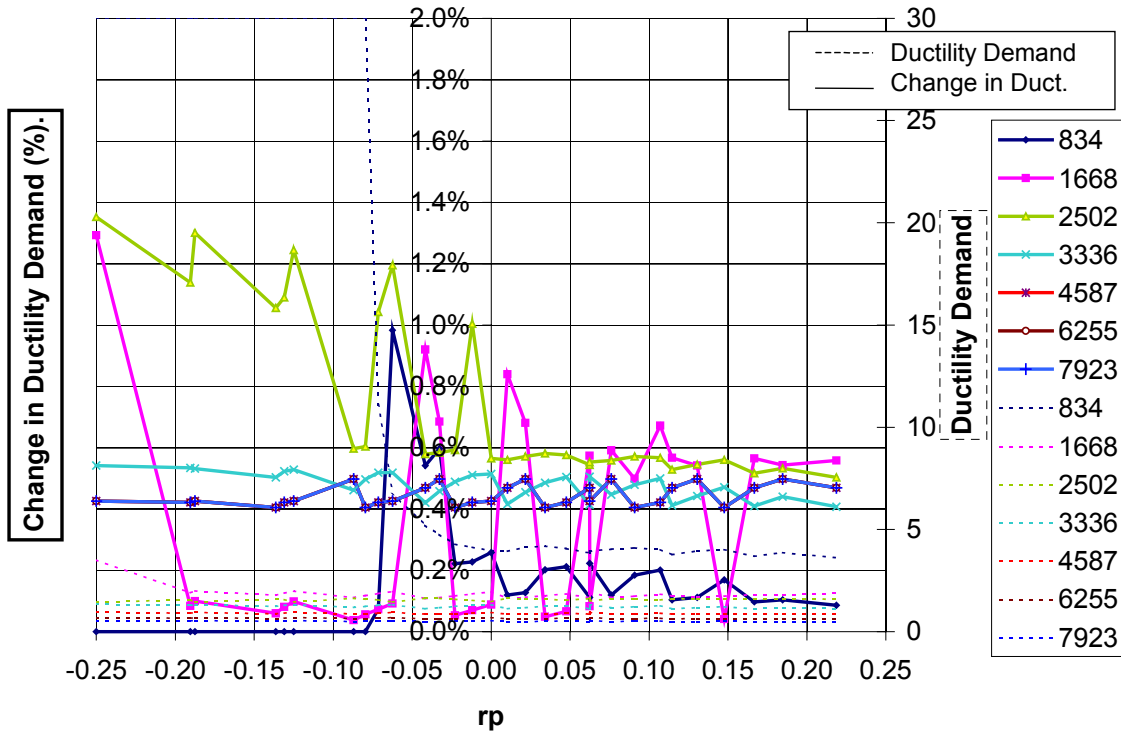
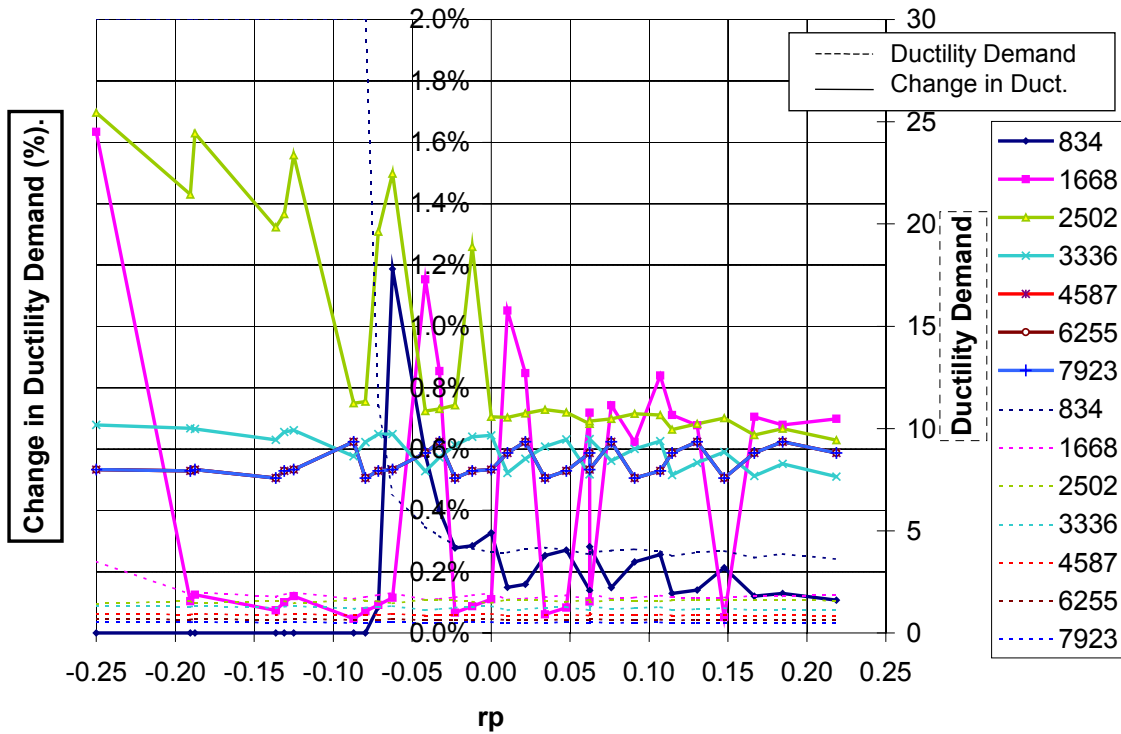


Figure C2.5.8.2b– EQ8, Lateral Scale = 0.2 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.093 Seconds



**Figure C2.5.8.2c– EQ8, Lateral Scale = 0.2 g, Vertical Multiplier = 2.0, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.093 Seconds**



**Figure C2.5.8.2d– EQ8, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.093 Seconds**

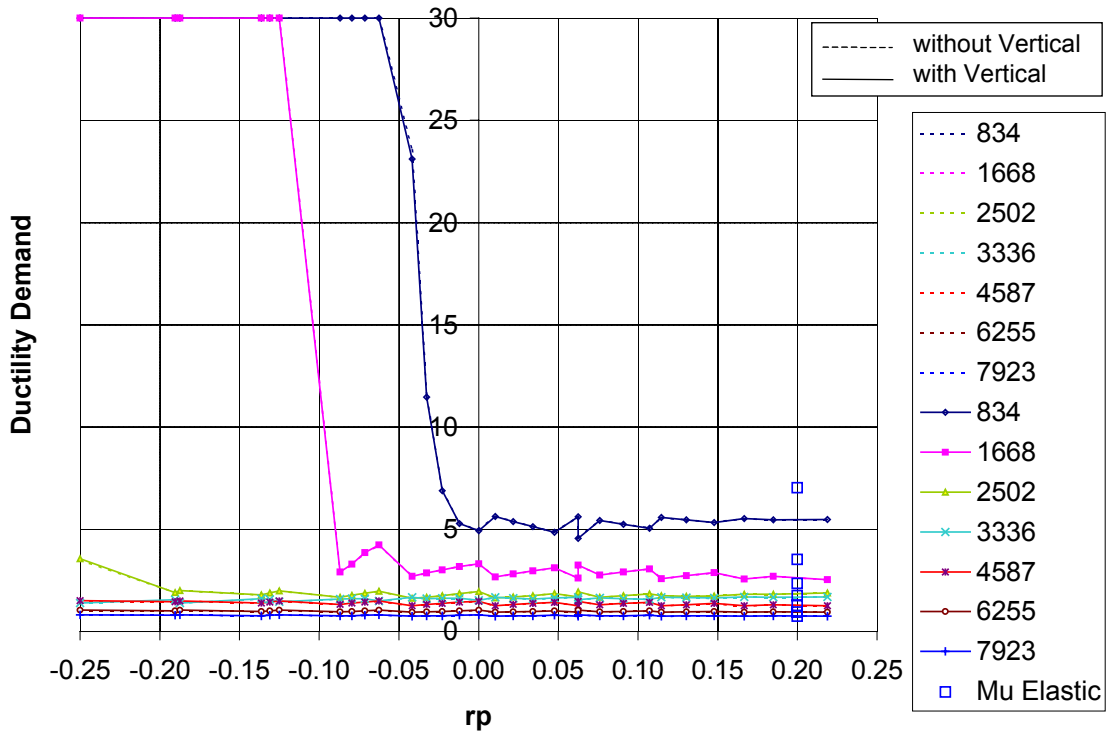


Figure C2.5.8.3a – EQ8, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.093 Seconds.

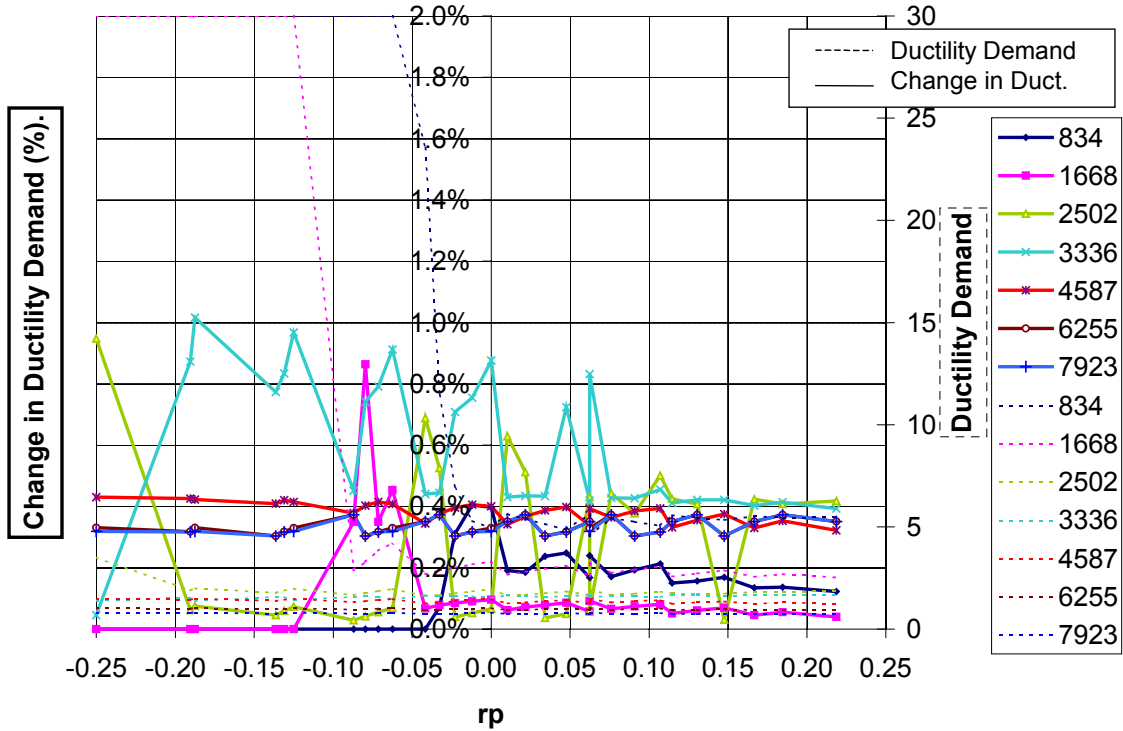


Figure C2.5.8.3b– EQ8, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.093 Seconds

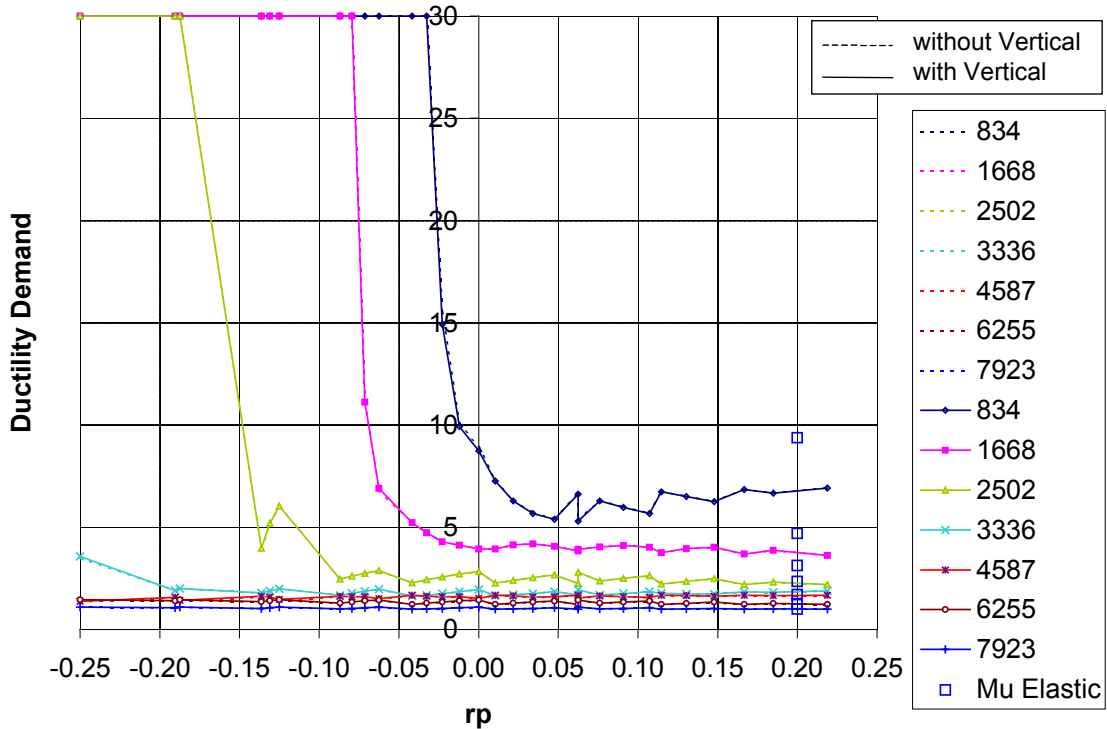


Figure C2.5.8.4a – EQ8, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.093 Seconds.

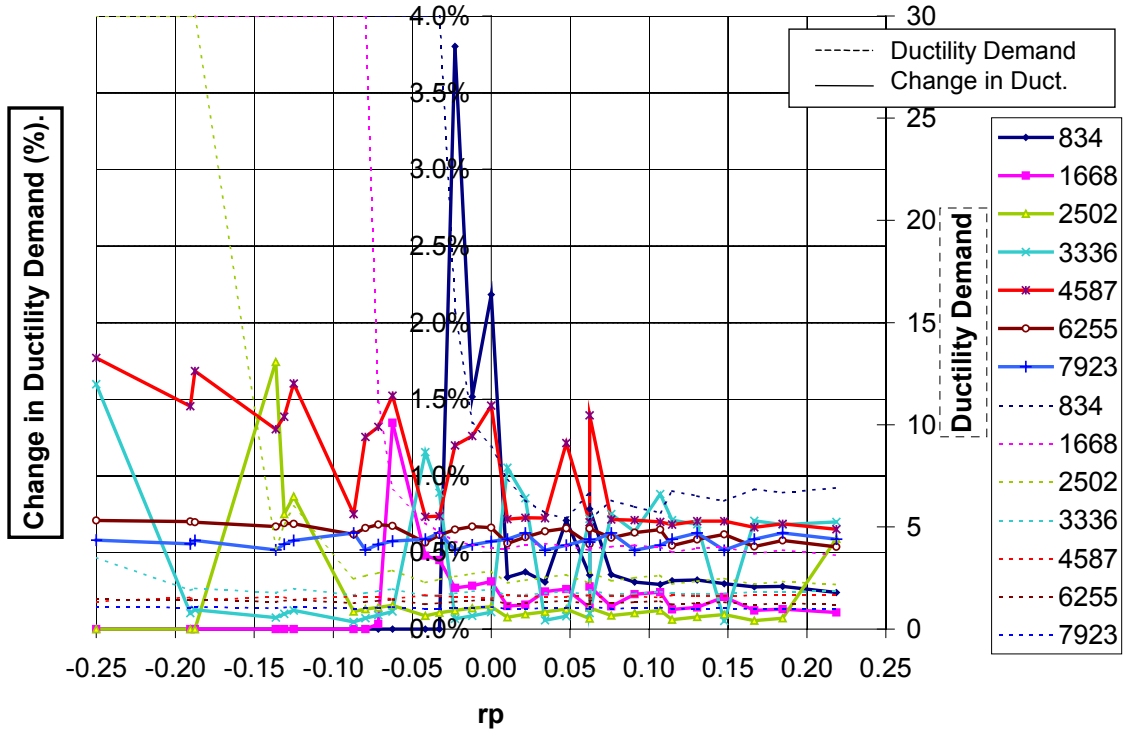


Figure C2.5.8.4b– EQ8, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.093 Seconds

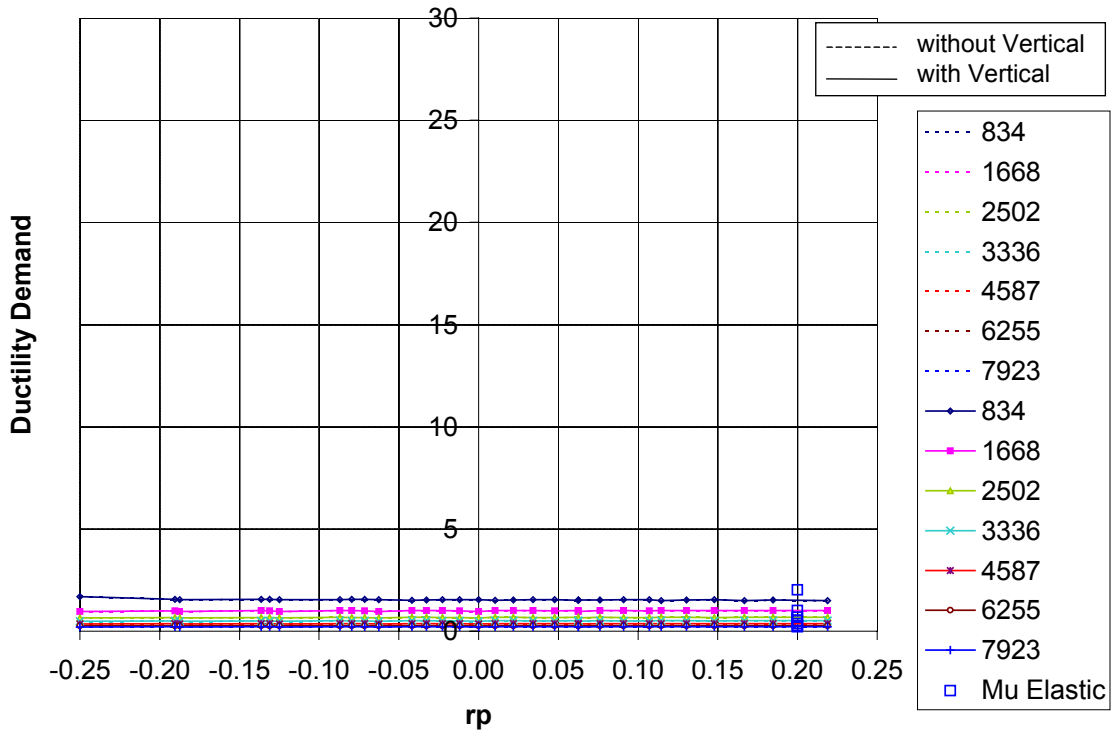


Figure C2.6.8.1a – EQ8, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.278 Seconds.

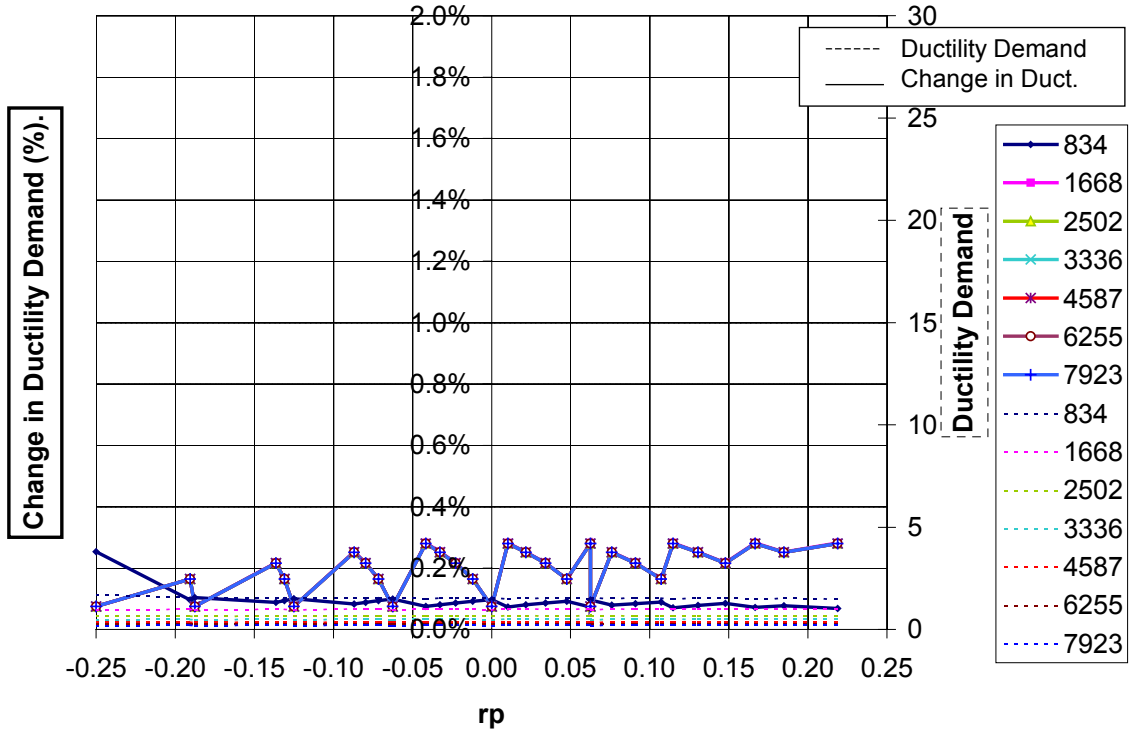


Figure C2.6.8.1b– EQ8, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.278 Seconds

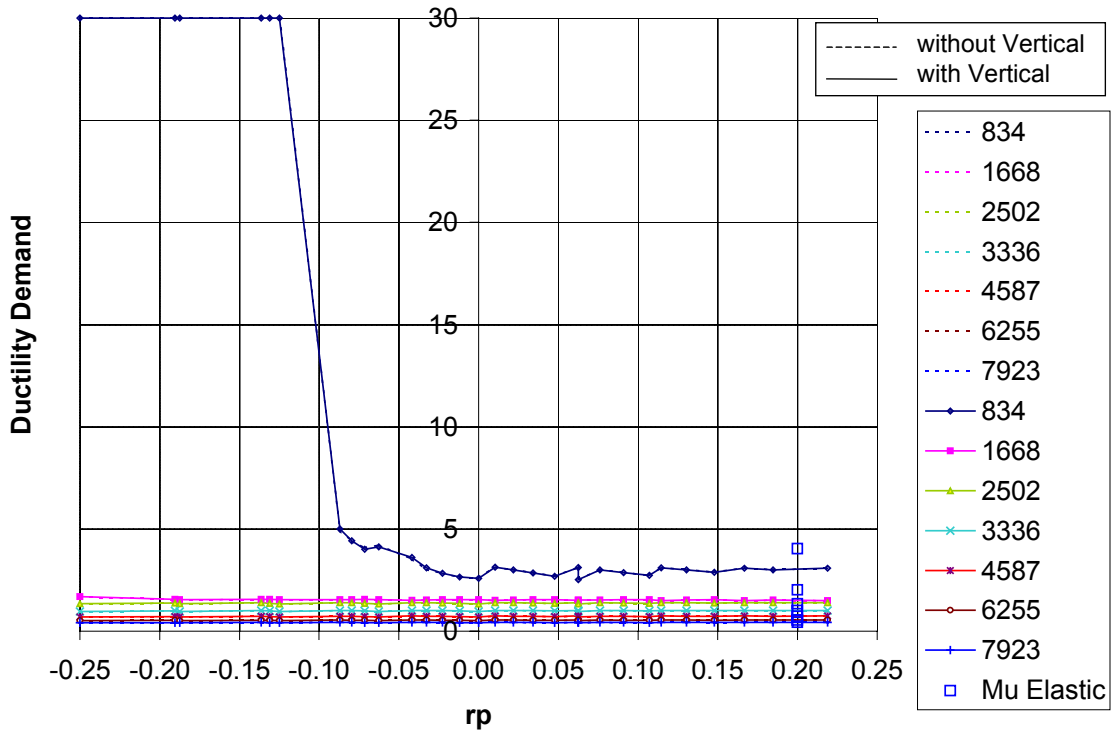


Figure C2.6.8.2a – EQ8, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.278 Seconds.

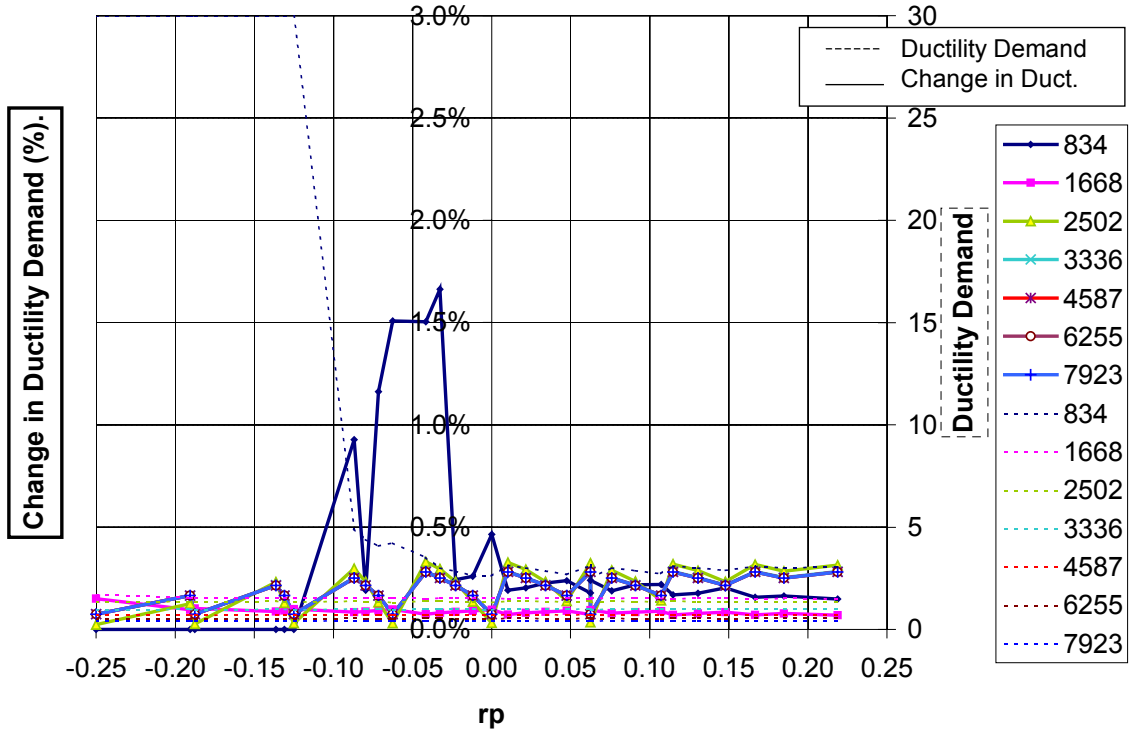


Figure C2.6.8.2b– EQ8, Lateral Scale = 0.2 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.278 Seconds

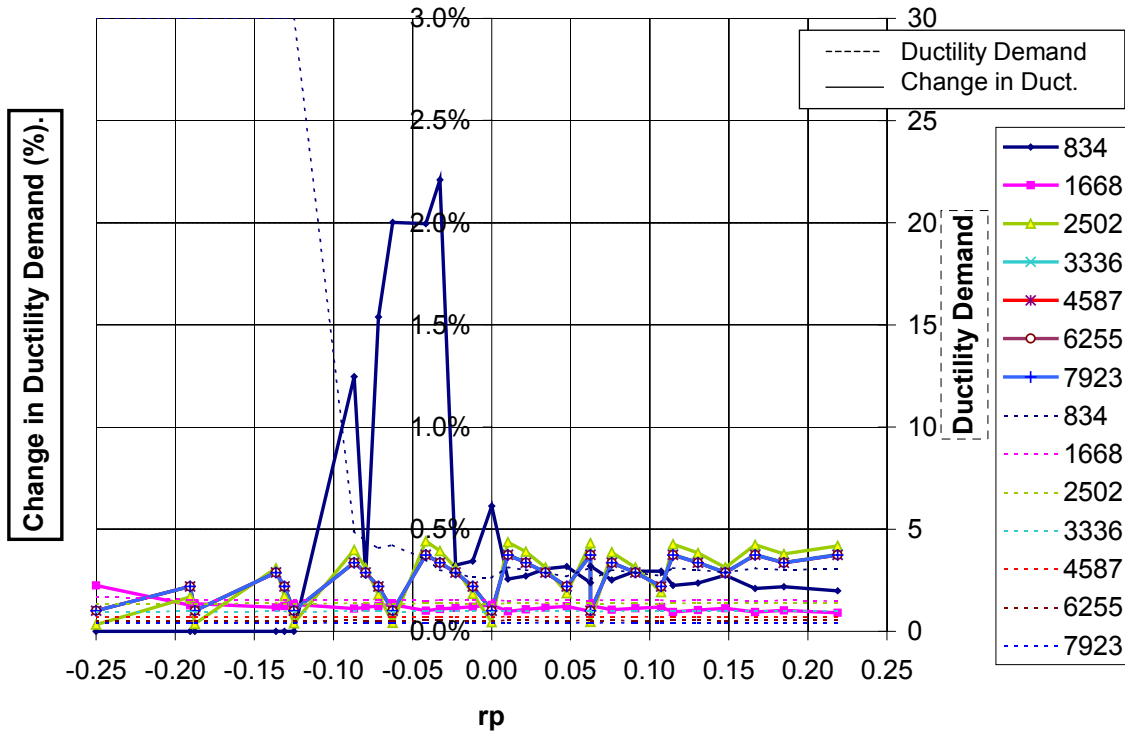


Figure C2.6.8.2c– EQ8, Lateral Scale = 0.2 g, Vertical Multiplier = 2.0, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.278 Seconds

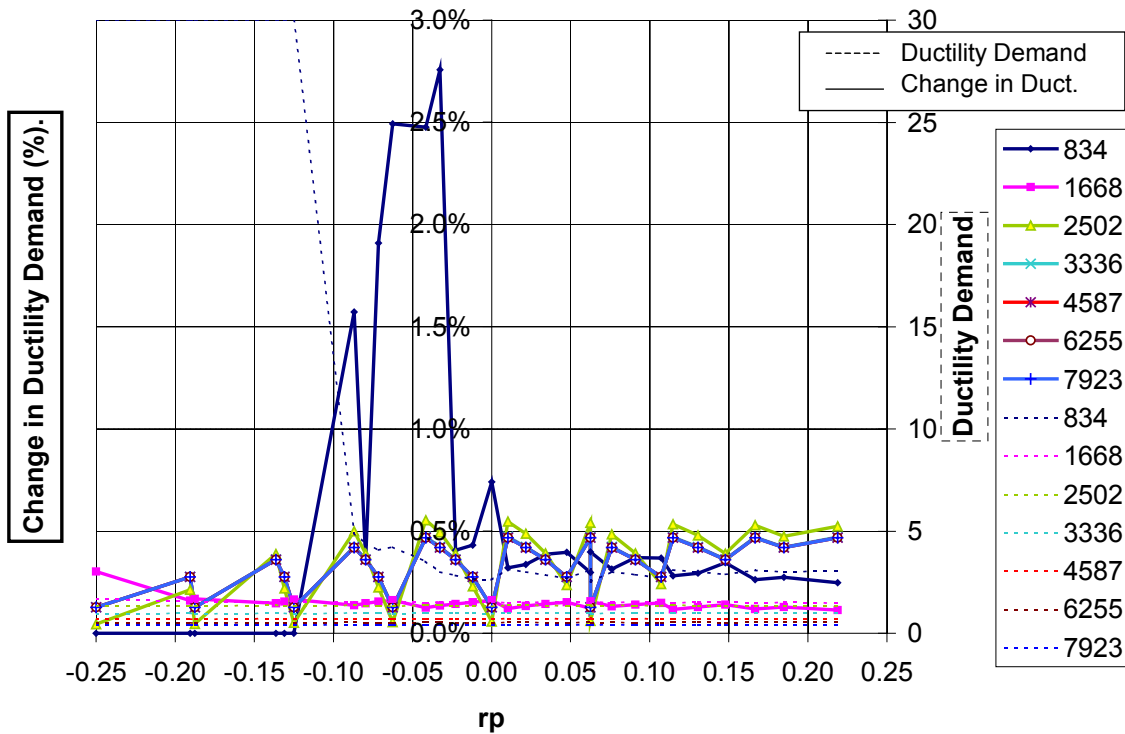


Figure C2.6.8.2d– EQ8, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.278 Seconds

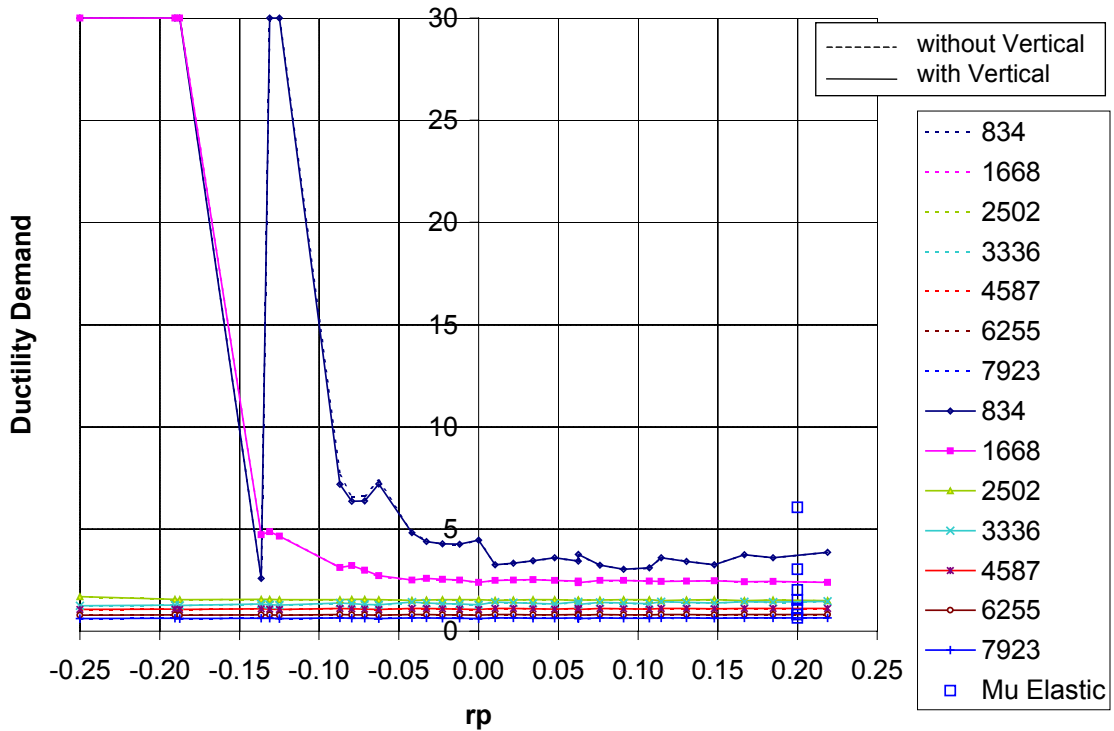


Figure C2.6.8.3a – EQ8, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.278 Seconds.

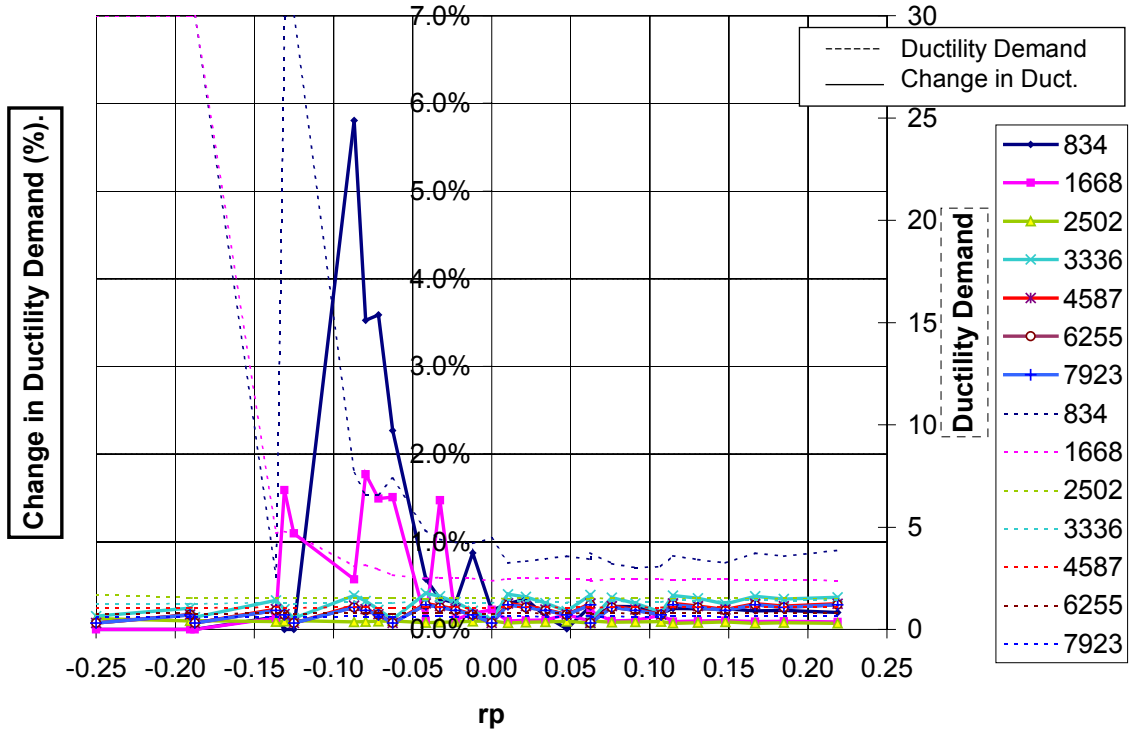


Figure C2.6.8.3b– EQ8, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.278 Seconds

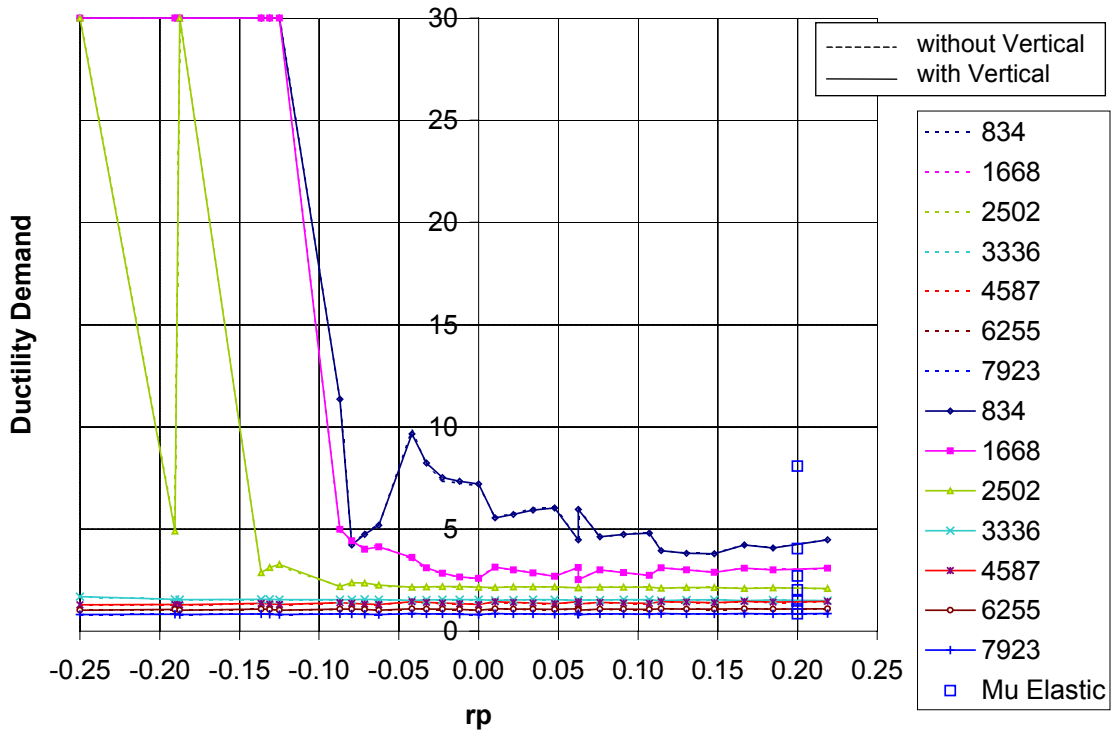


Figure C2.6.8.4a – EQ8, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.278 Seconds.

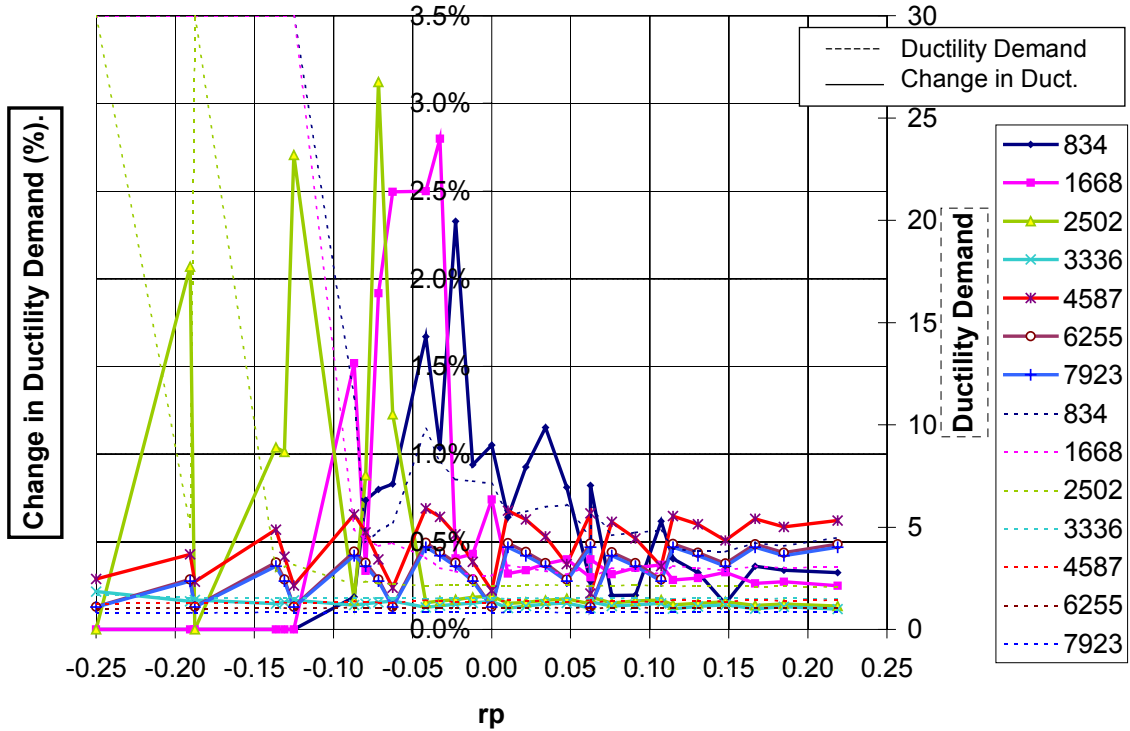


Figure C2.6.8.4b– EQ8, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.278 Seconds

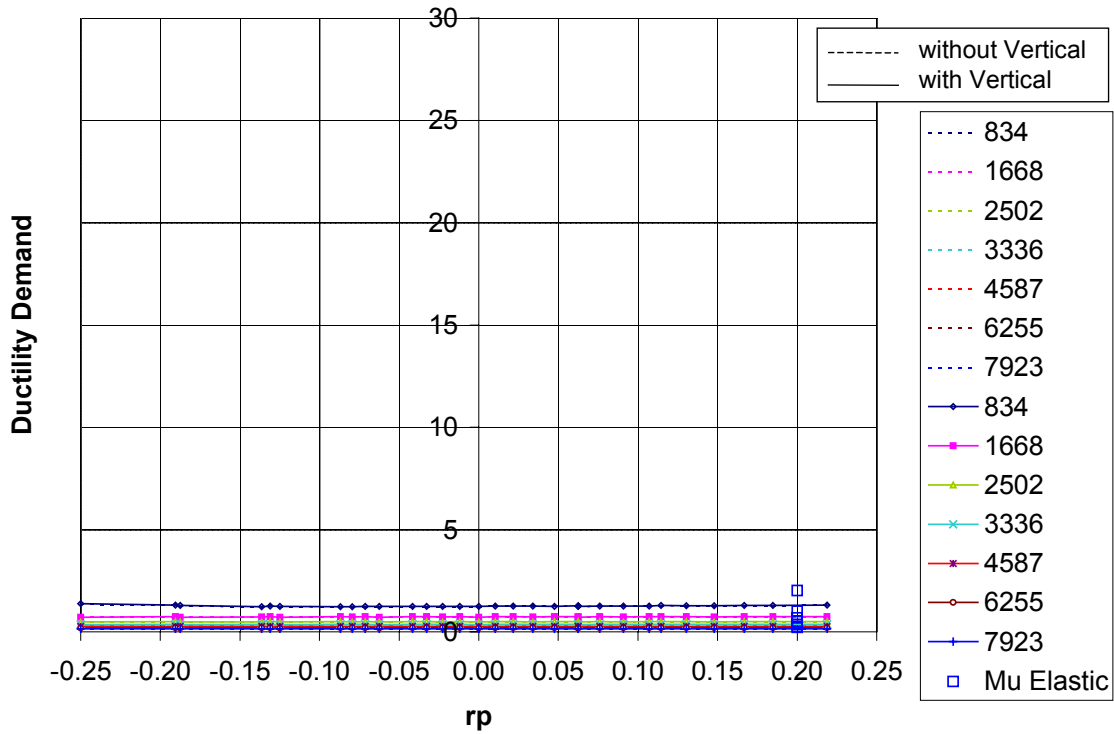


Figure C2.7.8.1a – EQ8, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.459 Seconds.

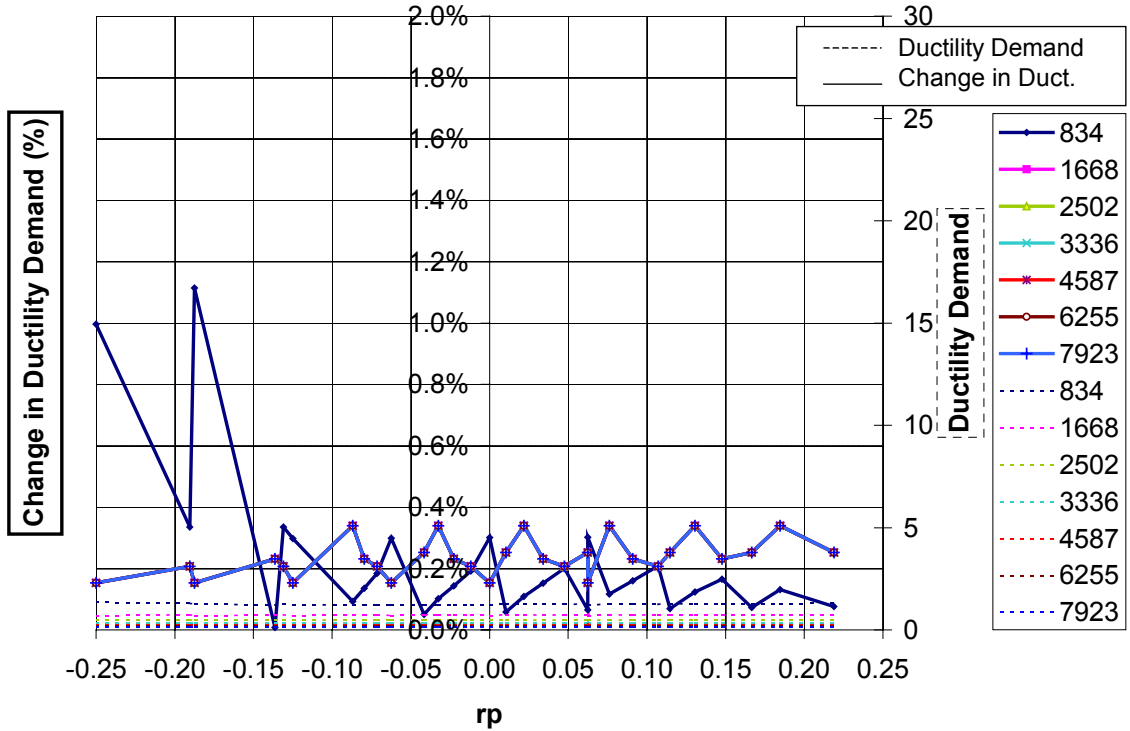


Figure C2.7.8.1b– EQ8, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.459 Seconds

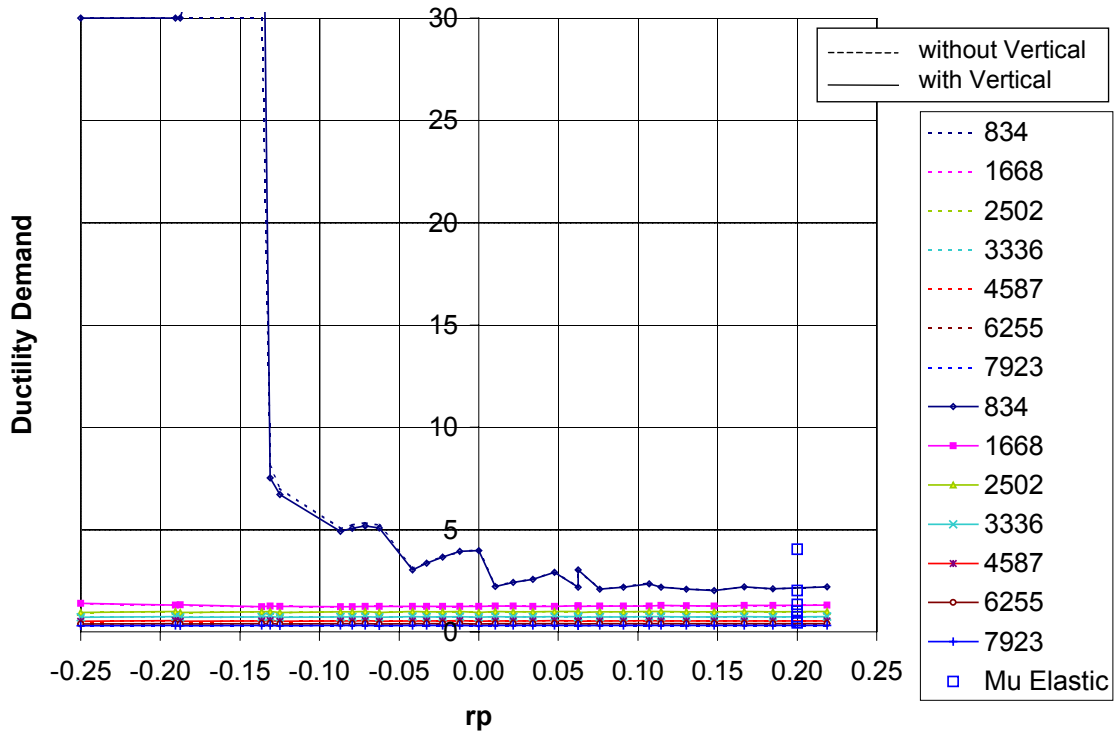


Figure C2.7.8.2a – EQ8, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.459 Seconds.

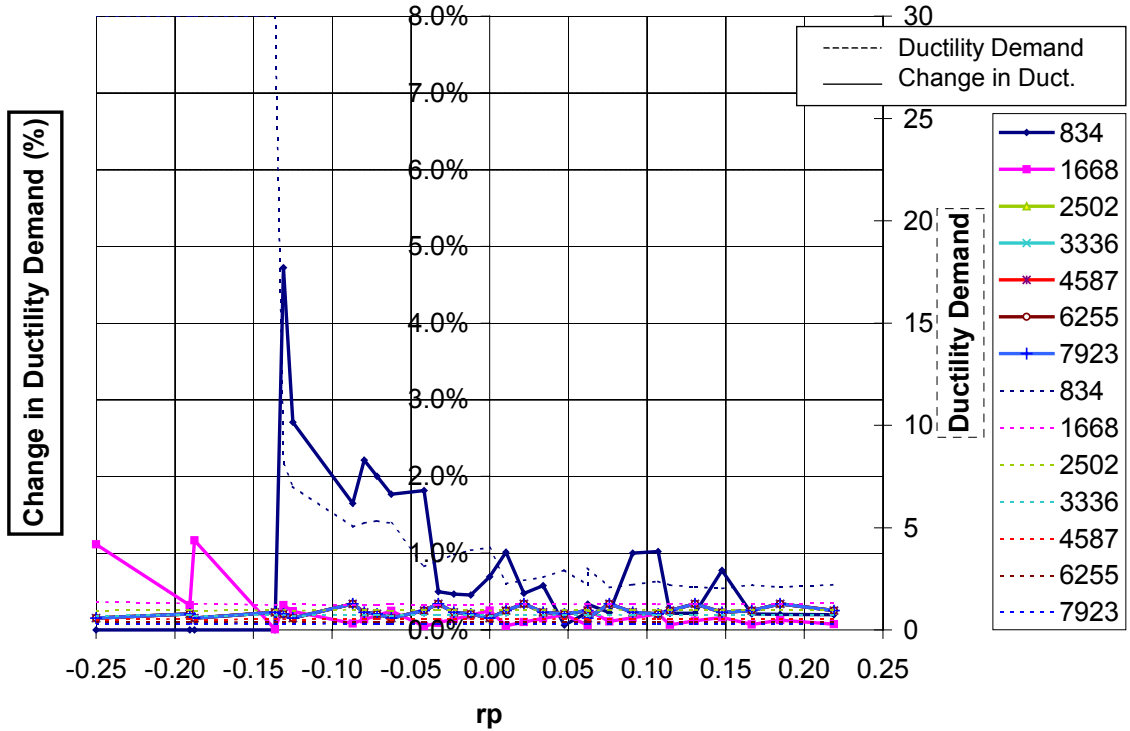
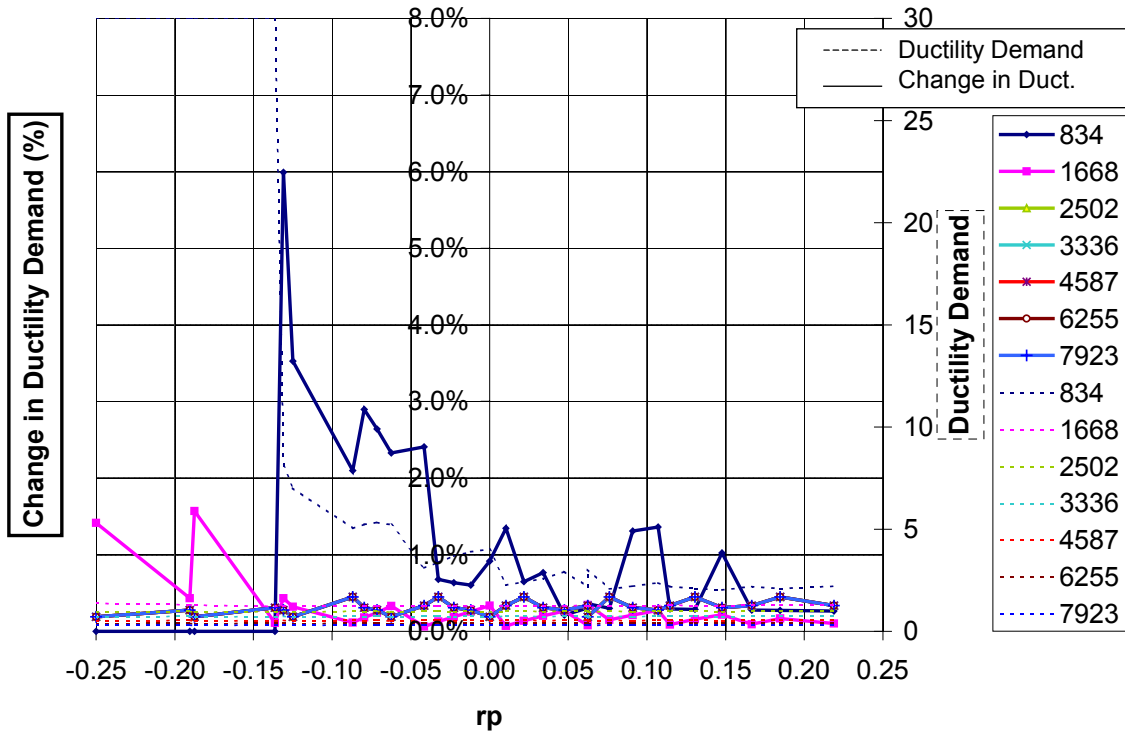
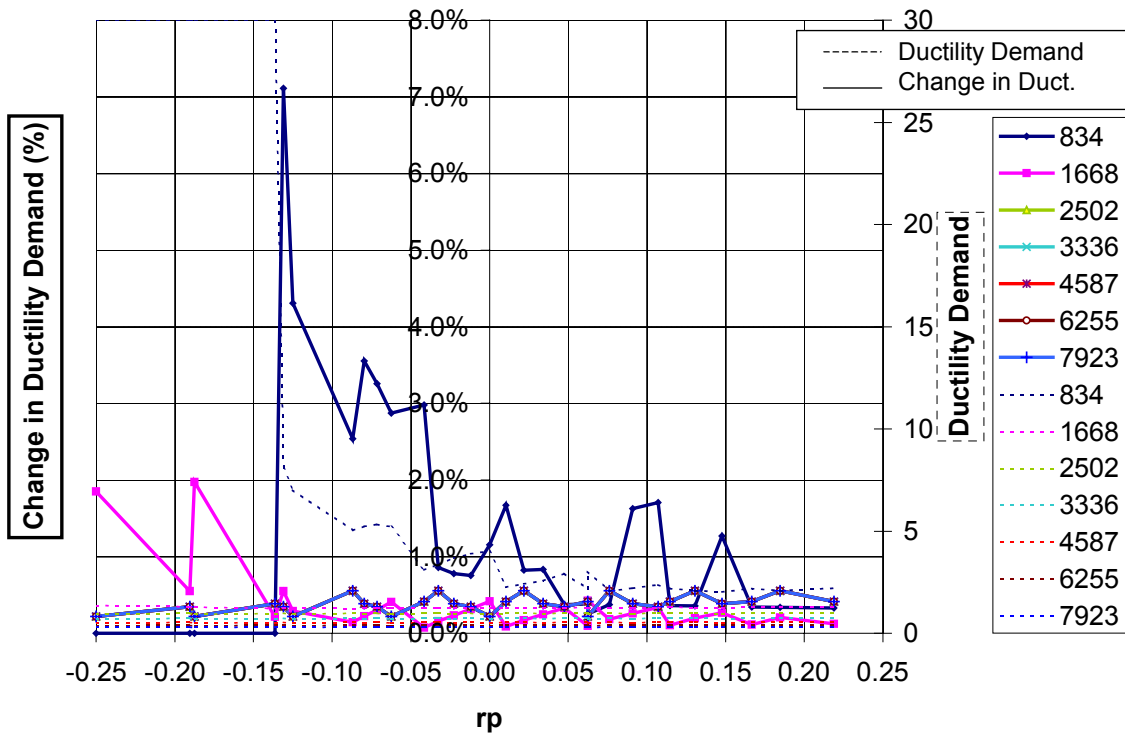


Figure C2.7.8.2b– EQ8, Lateral Scale = 0.2 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.459 Seconds



**Figure C2.7.8.2c– EQ8, Lateral Scale = 0.2 g, Vertical Multiplier = 2.0, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.459 Seconds**



**Figure C2.7.8.2d– EQ8, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.459 Seconds**

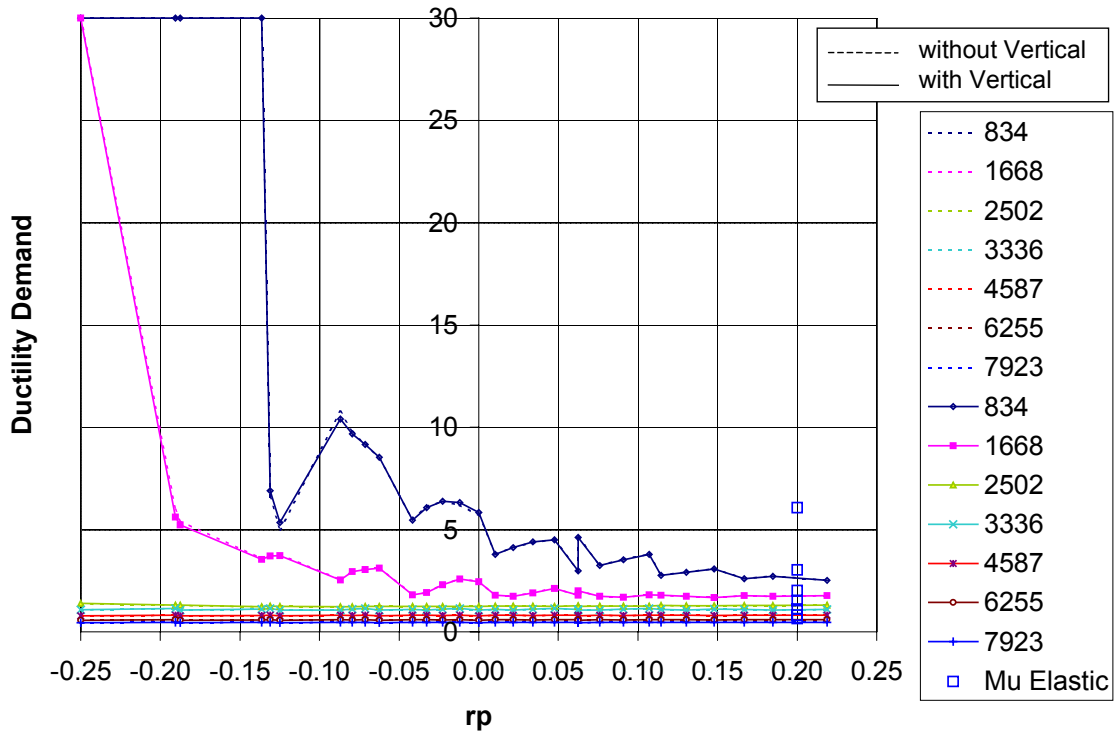


Figure C2.7.8.3a – EQ8, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.459 Seconds.

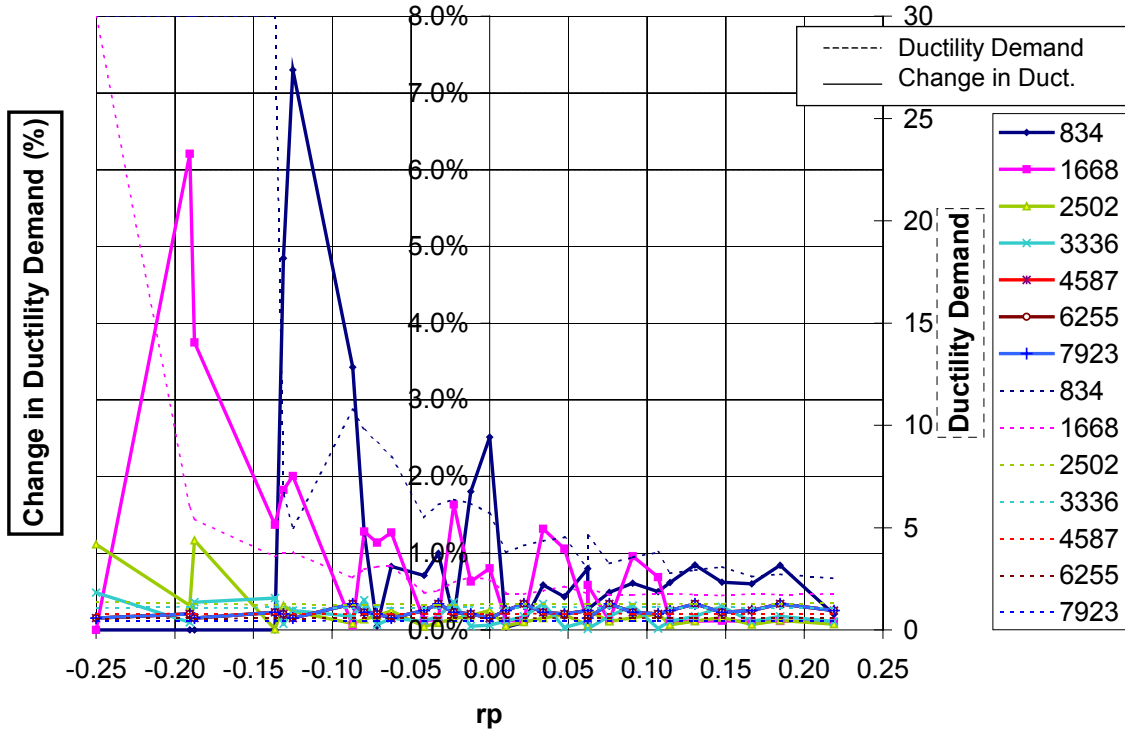


Figure C2.7.8.3b– EQ8, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.459 Seconds

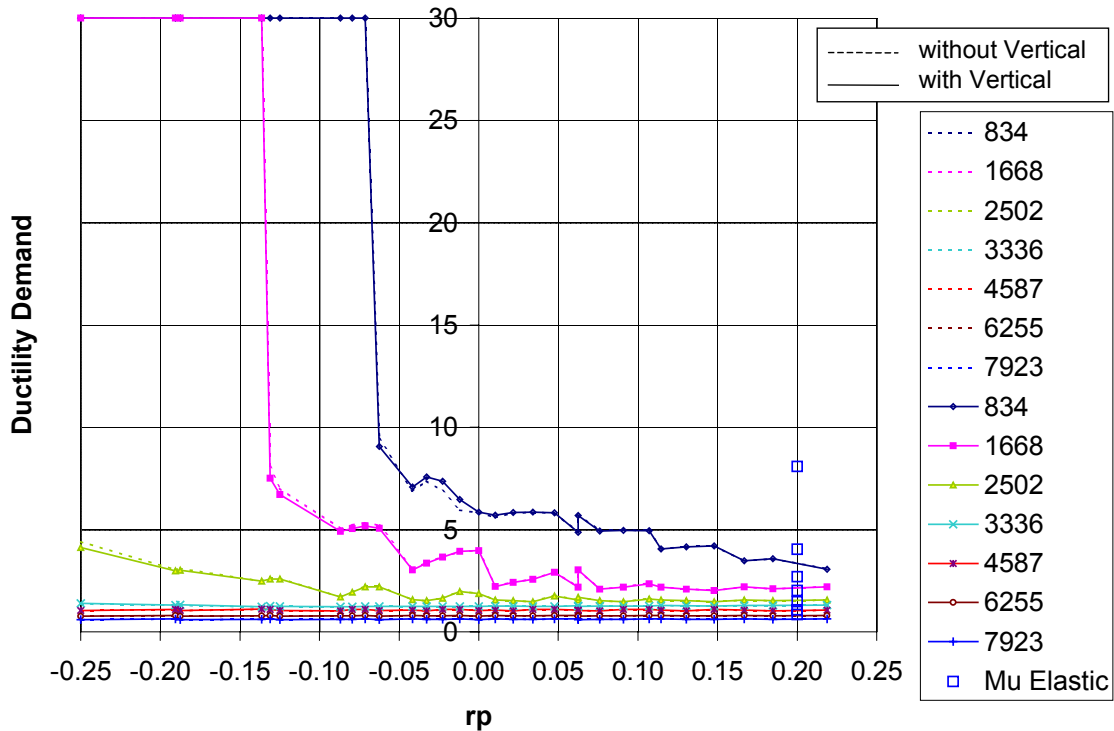


Figure C2.7.8.4a – EQ8, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.459 Seconds.

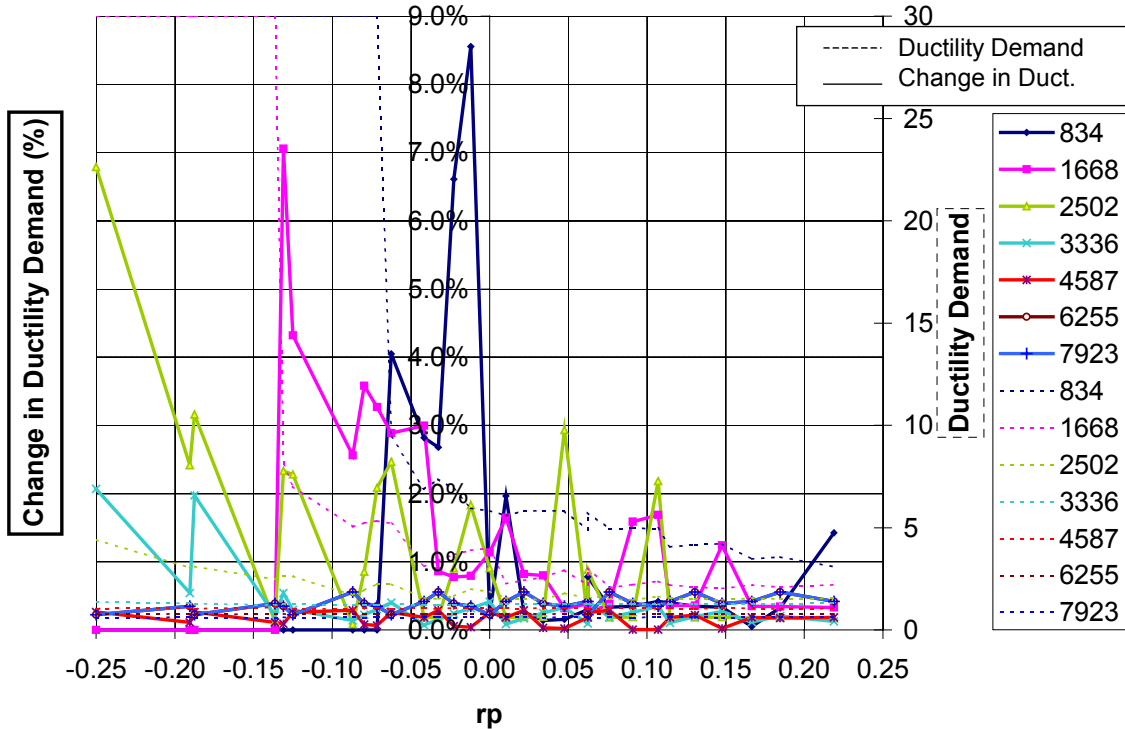


Figure C2.7.8.4b– EQ8, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.459 Seconds

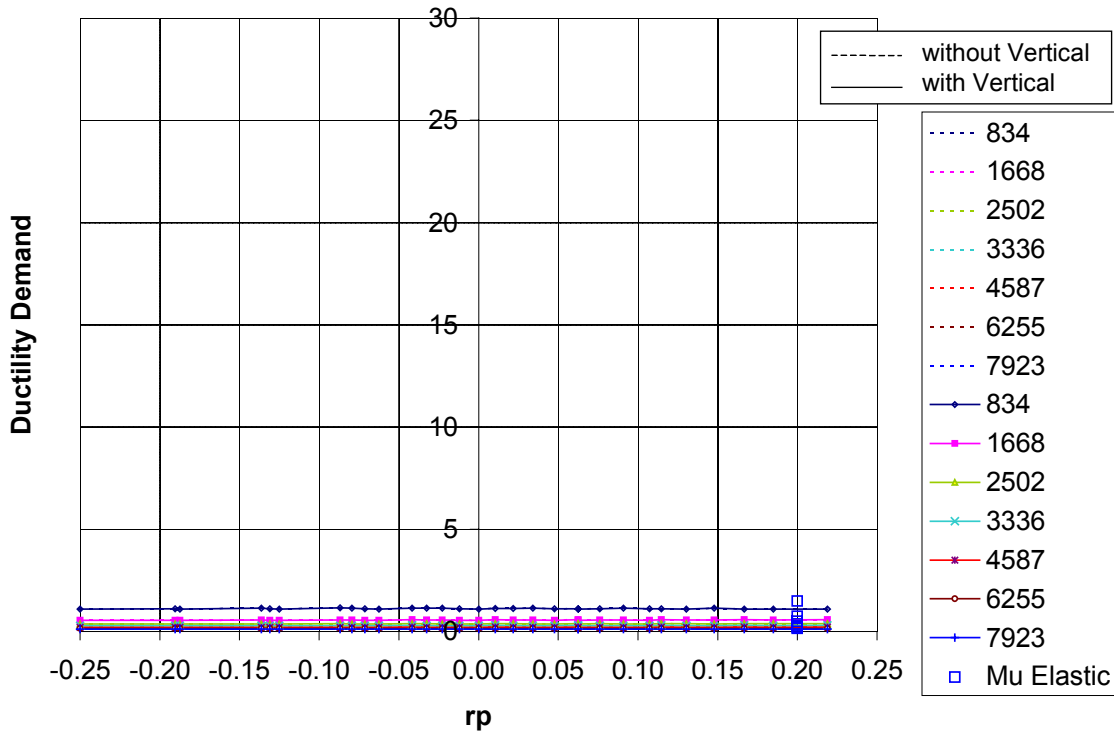


Figure C2.8.8.1a – EQ8, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.635 Seconds.

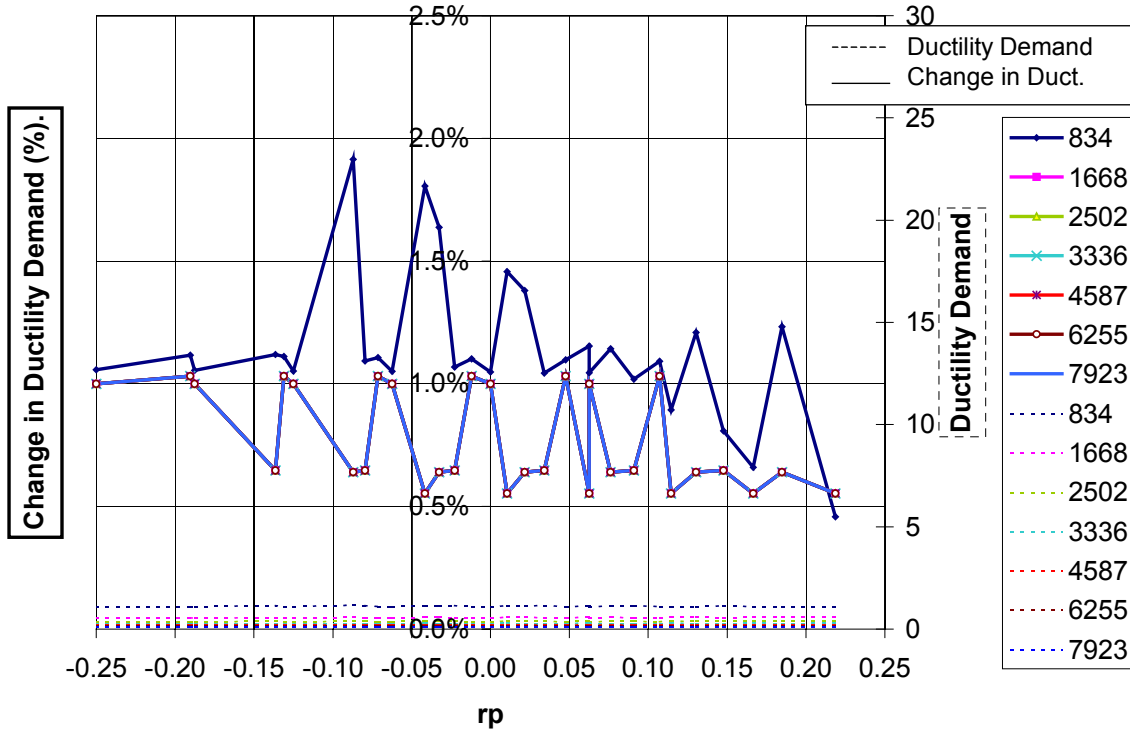


Figure C2.8.8.1b– EQ8, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.635 Seconds

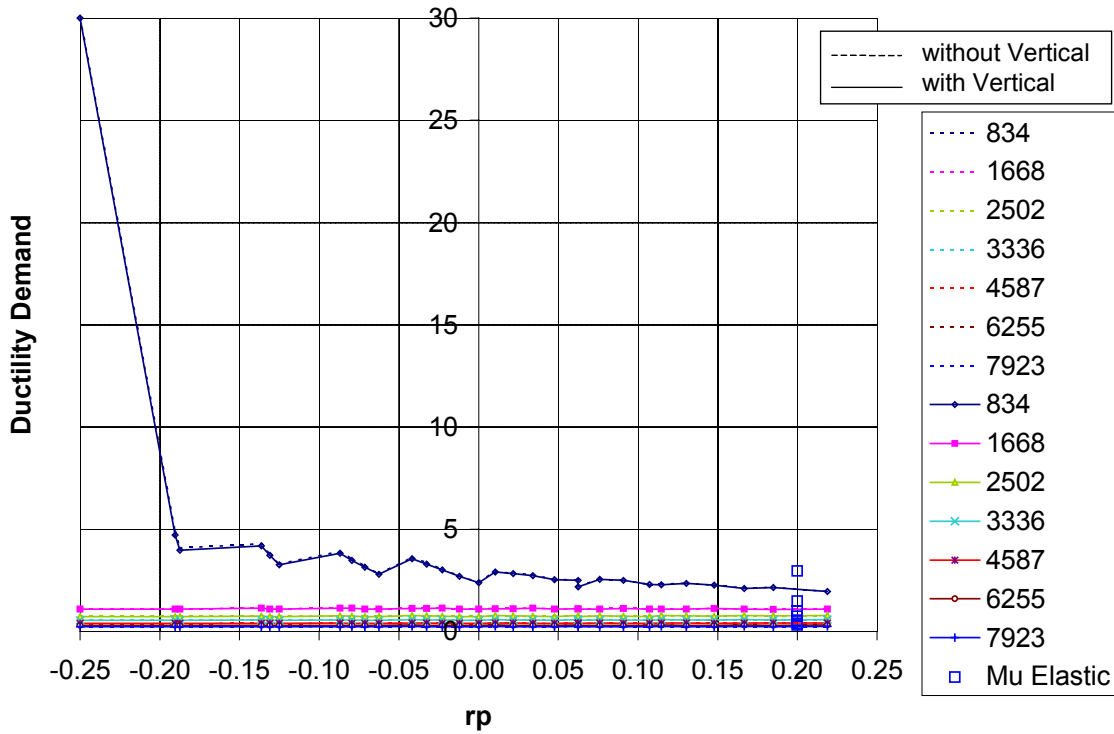


Figure C2.8.8.2a – EQ8, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.635 Seconds.

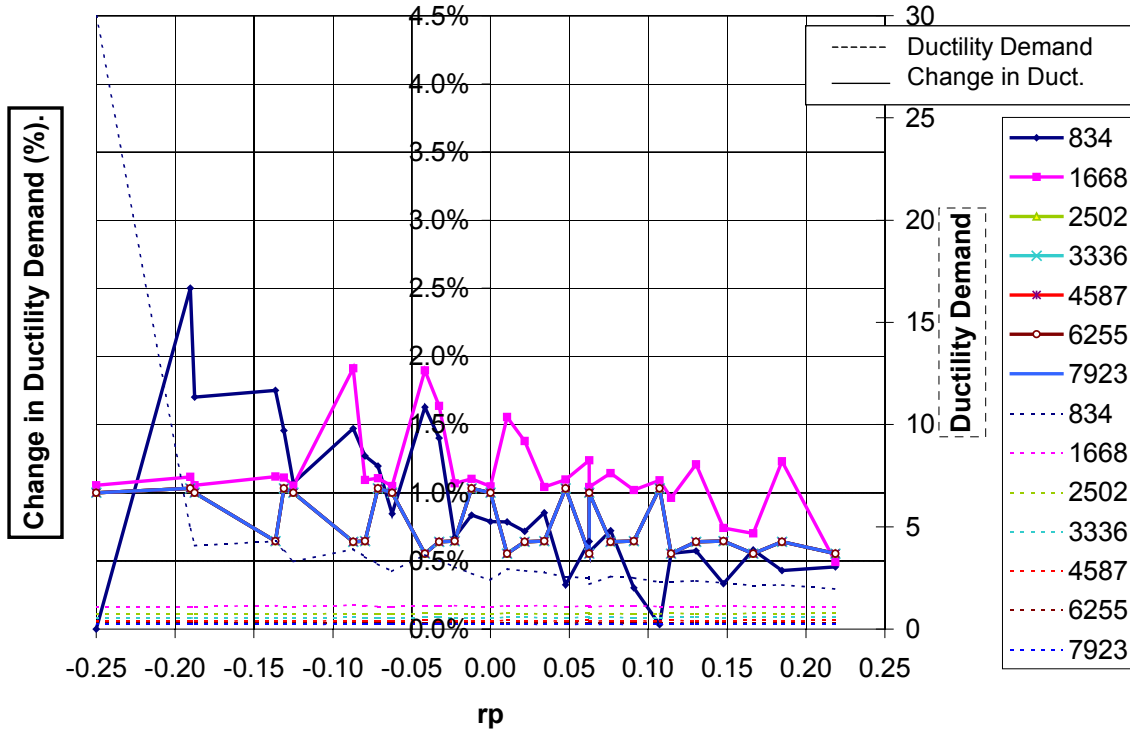
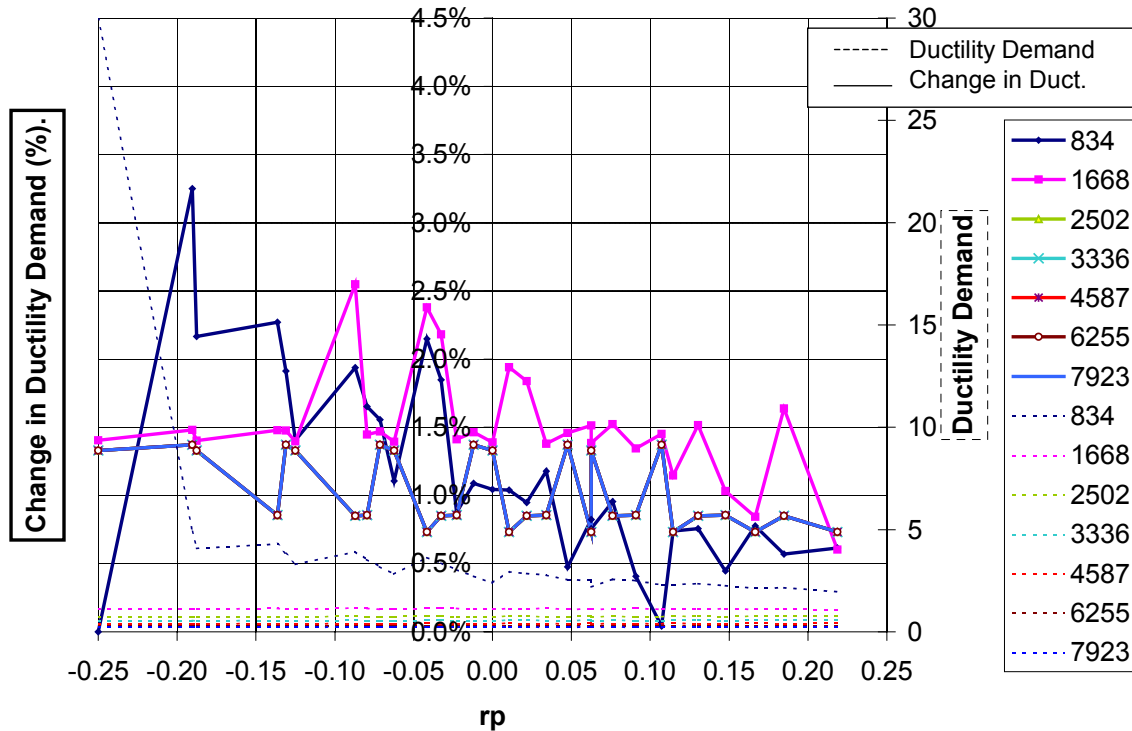
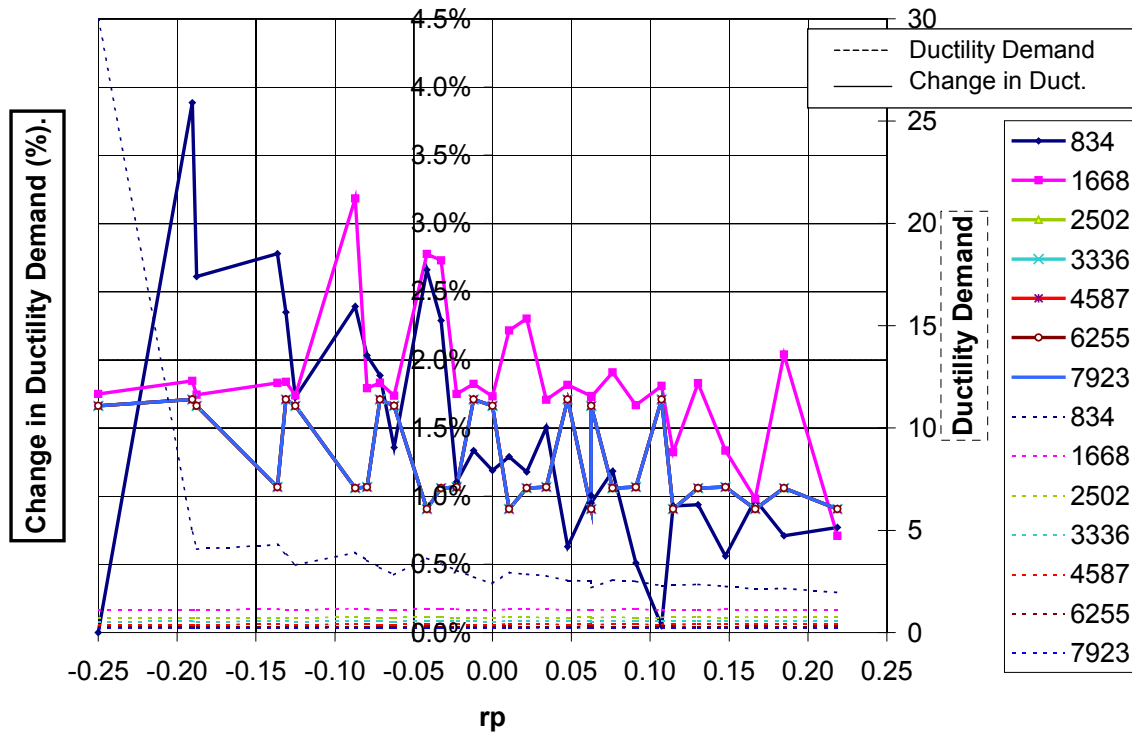


Figure C2.8.8.2b– EQ8, Lateral Scale = 0.2 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.635 Seconds



**Figure C2.8.8.2c– EQ8, Lateral Scale = 0.2 g, Vertical Multiplier = 2.0, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.635 Seconds**



**Figure C2.8.8.2d– EQ8, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.635 Seconds**

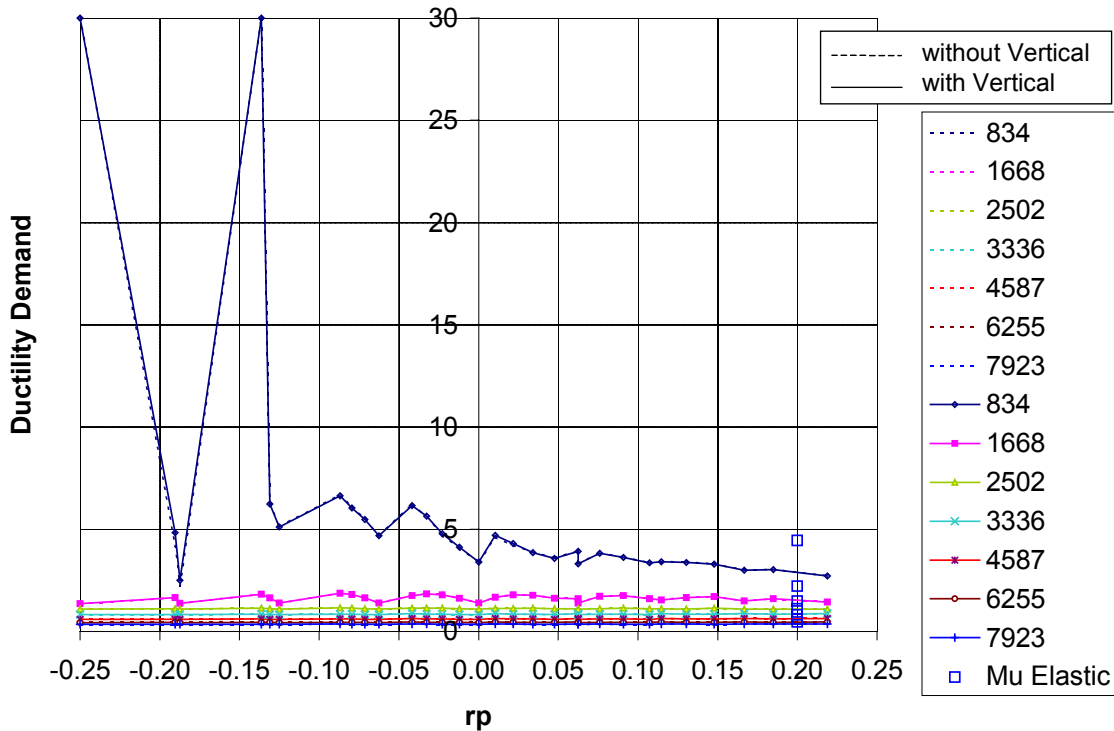


Figure C2.8.8.3a – EQ8, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.635 Seconds.

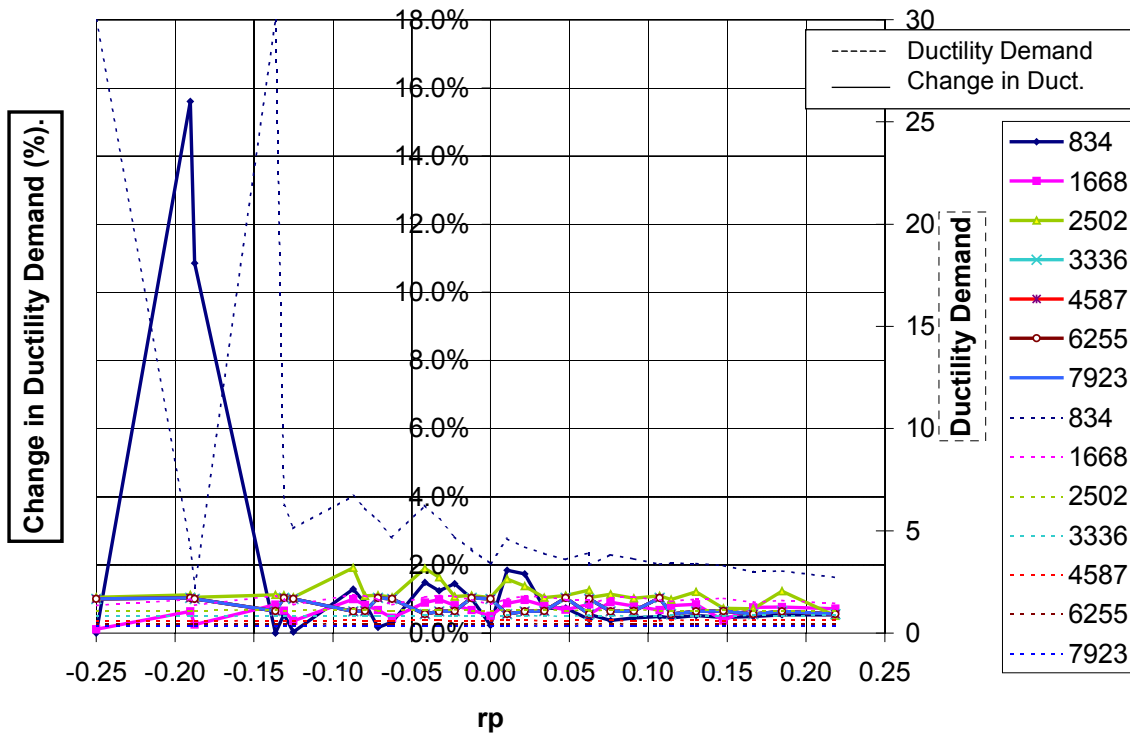


Figure C2.8.8.3b– EQ8, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.635 Seconds

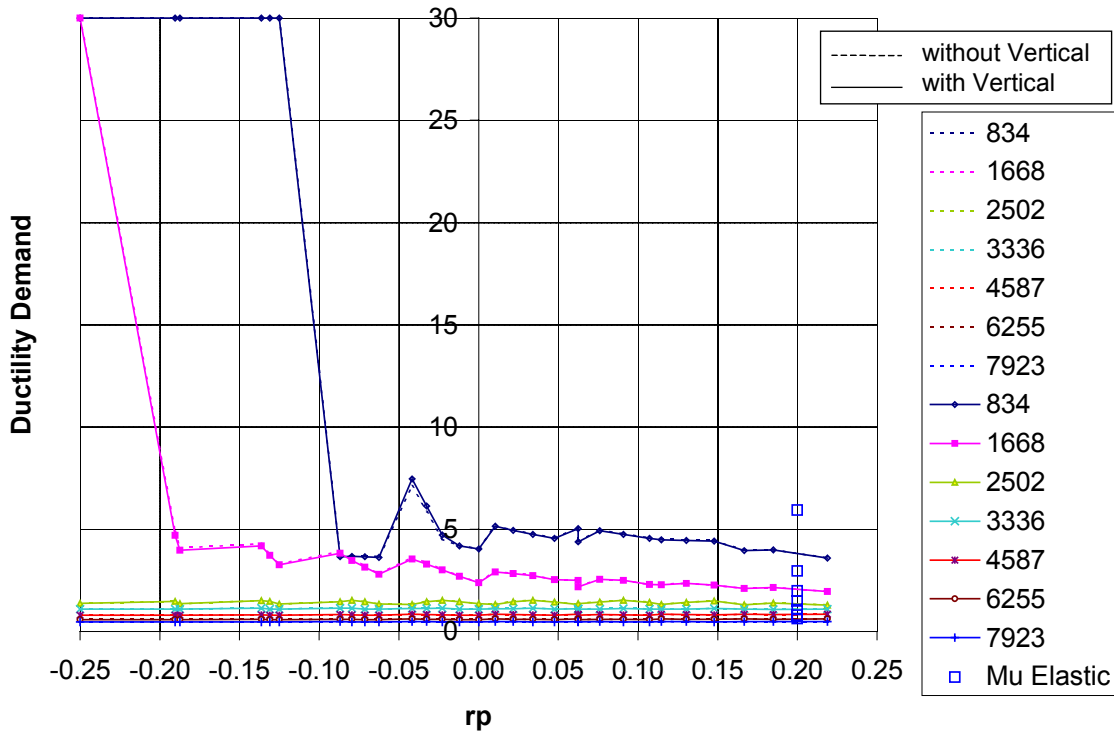


Figure C2.8.8.4a – EQ8, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.635 Seconds.

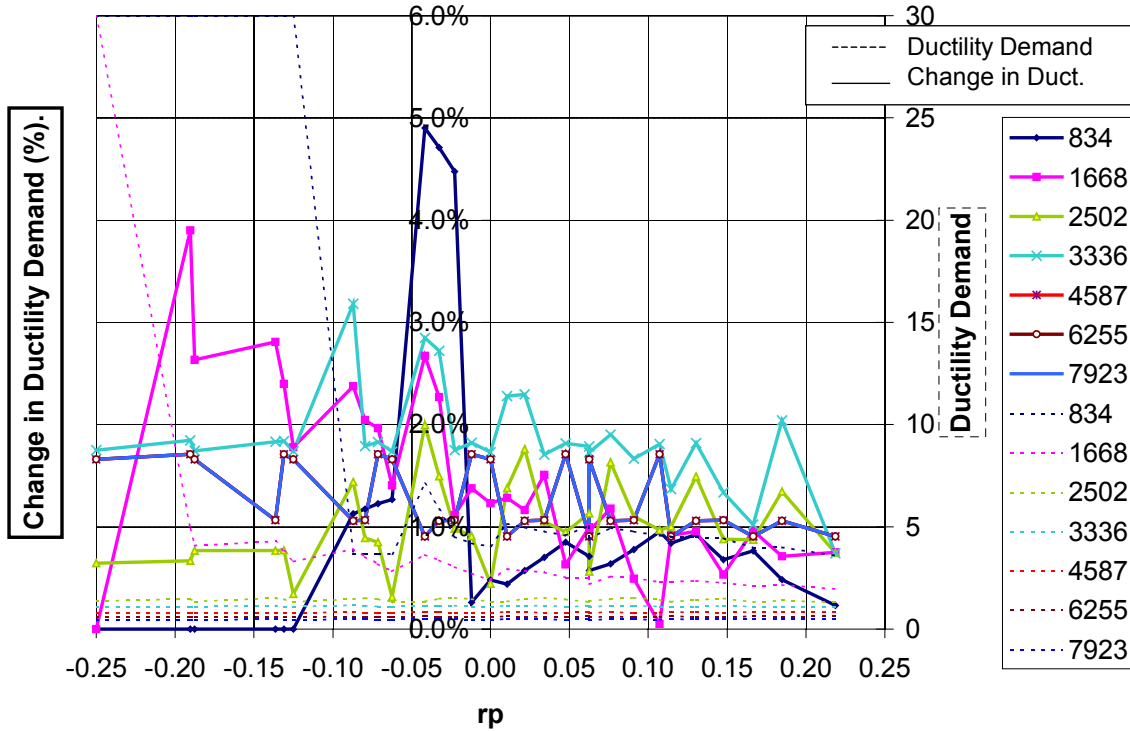


Figure C2.8.8.4b– EQ8, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.635 Seconds

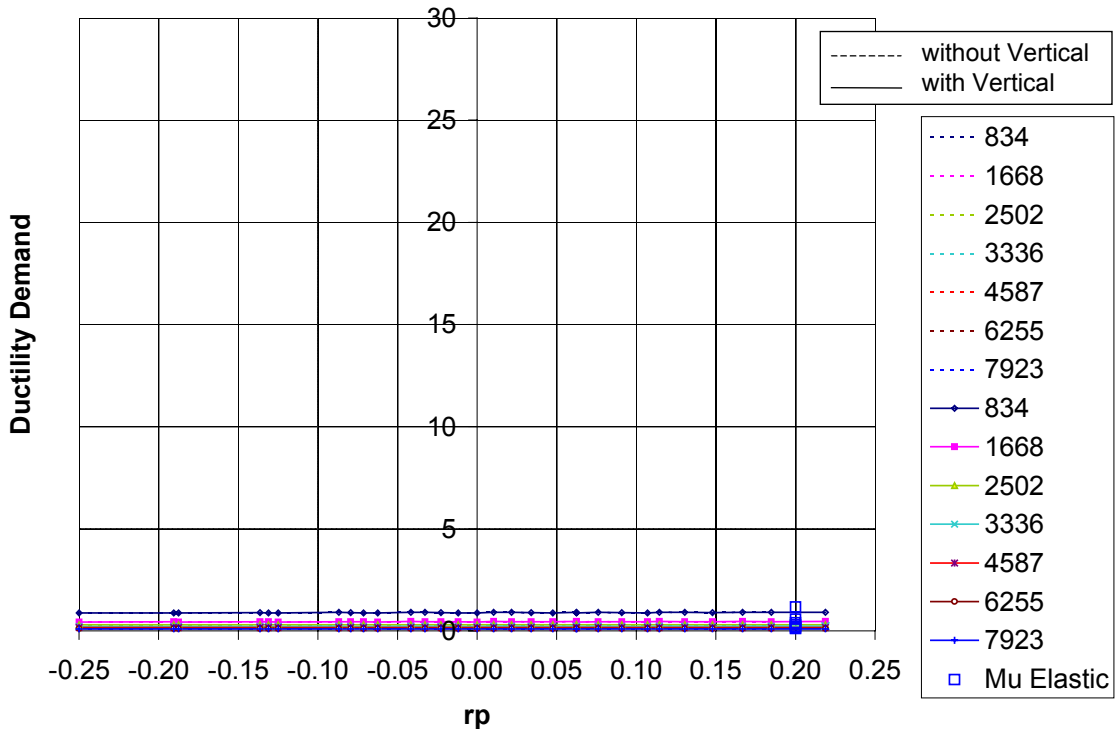


Figure C2.9.8.1a – EQ8, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.808 Seconds.

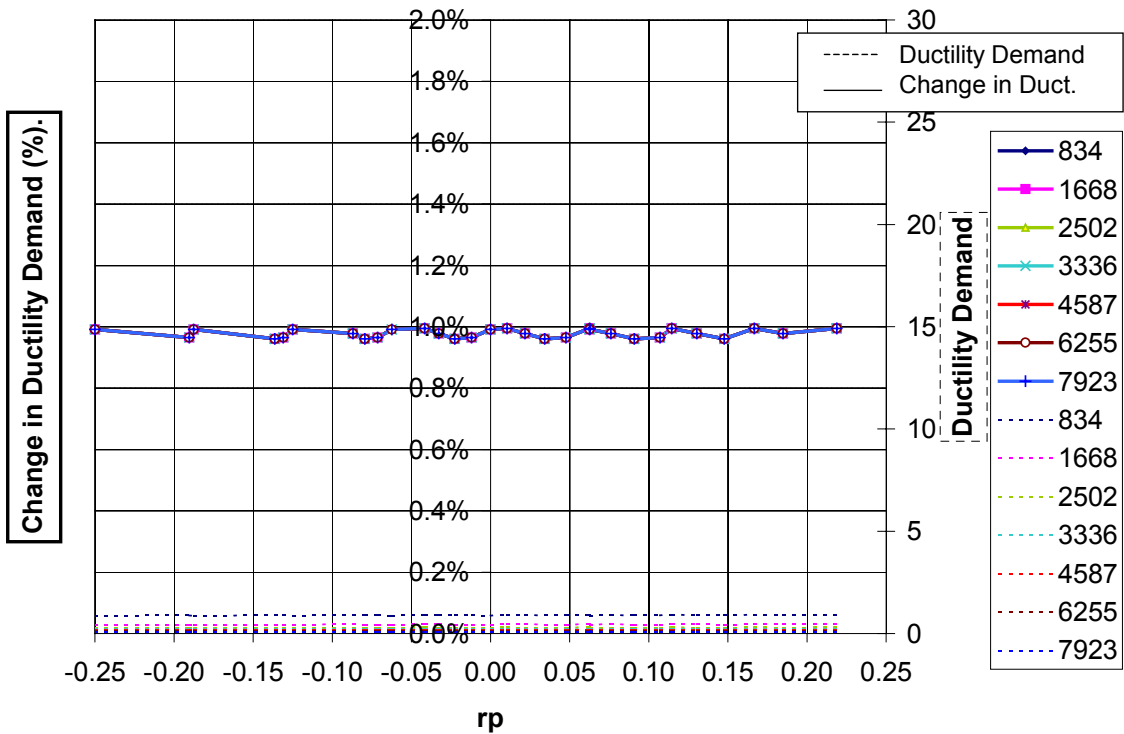


Figure C2.9.8.1b– EQ8, Lateral Scale = 0.1 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.808 Seconds

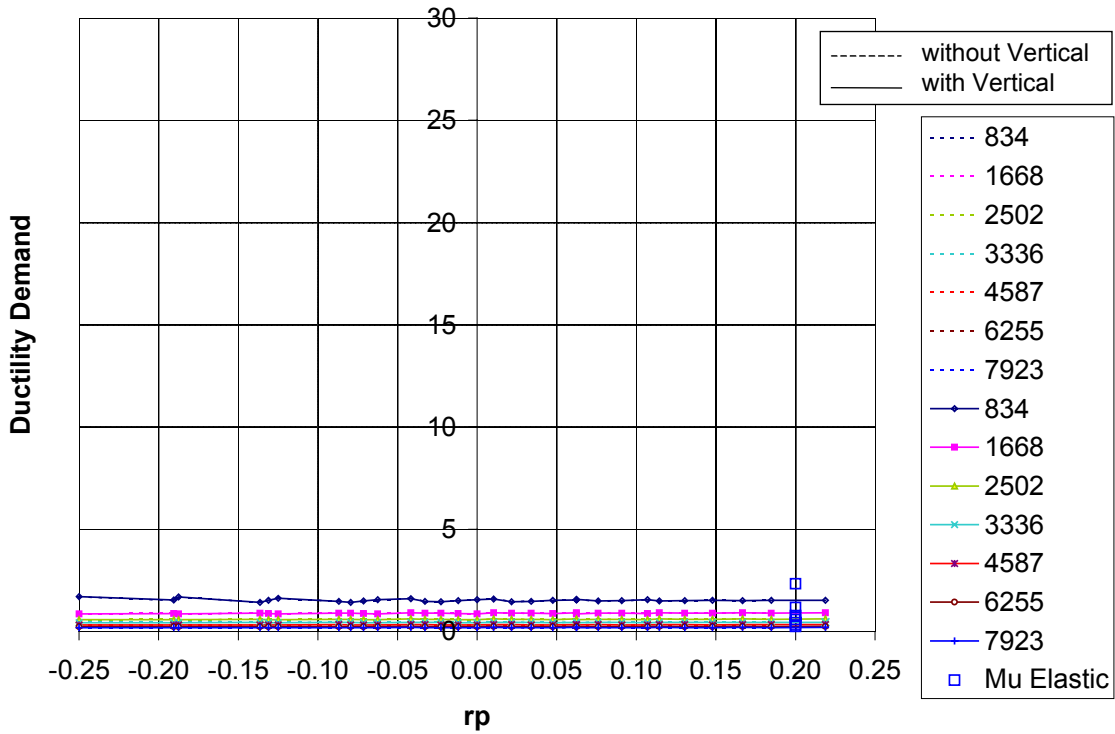


Figure C2.9.8.2a – EQ8, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.808 Seconds.

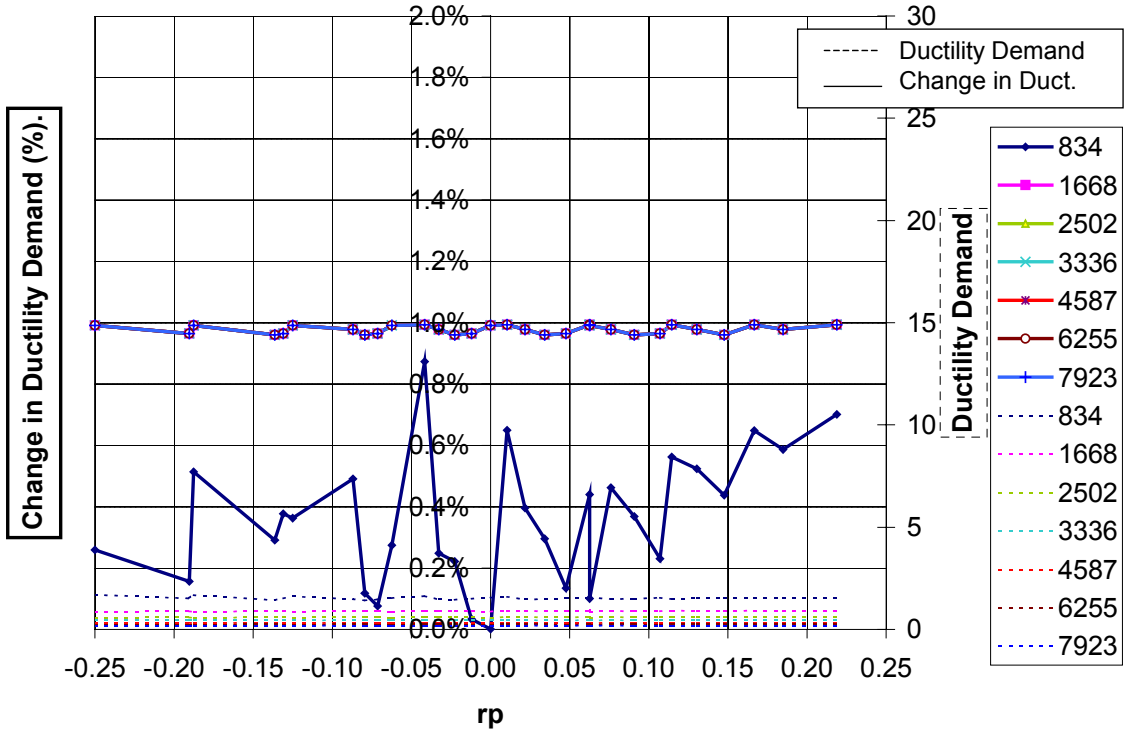
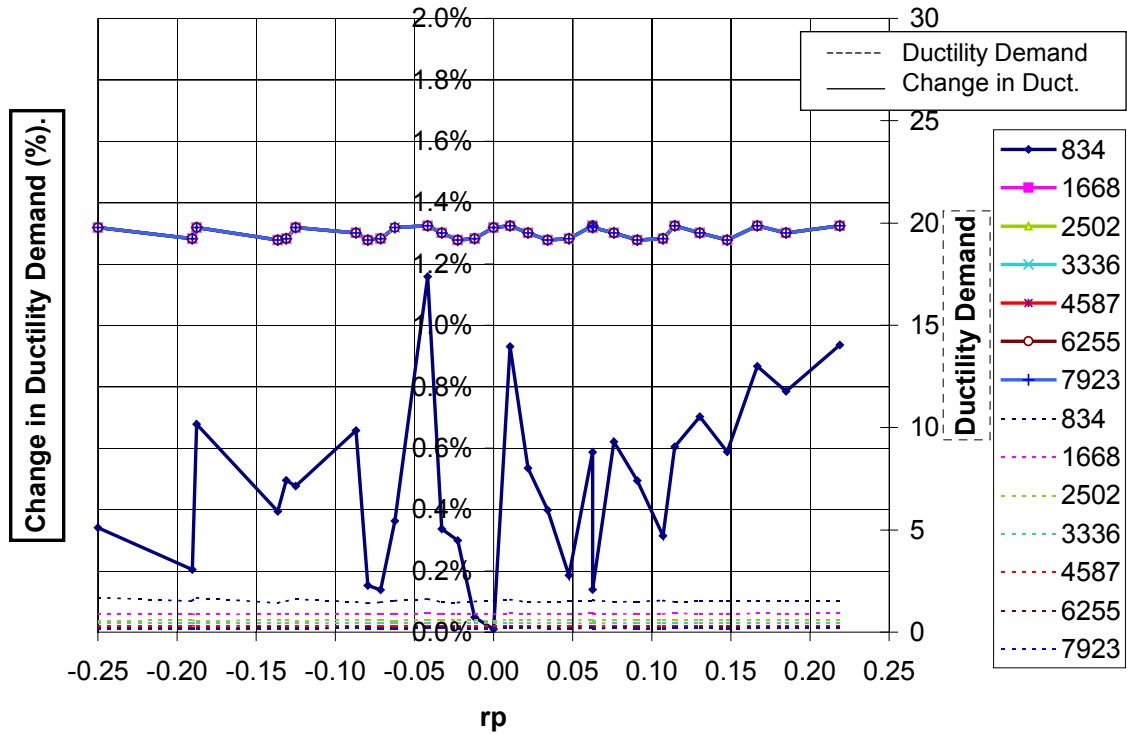
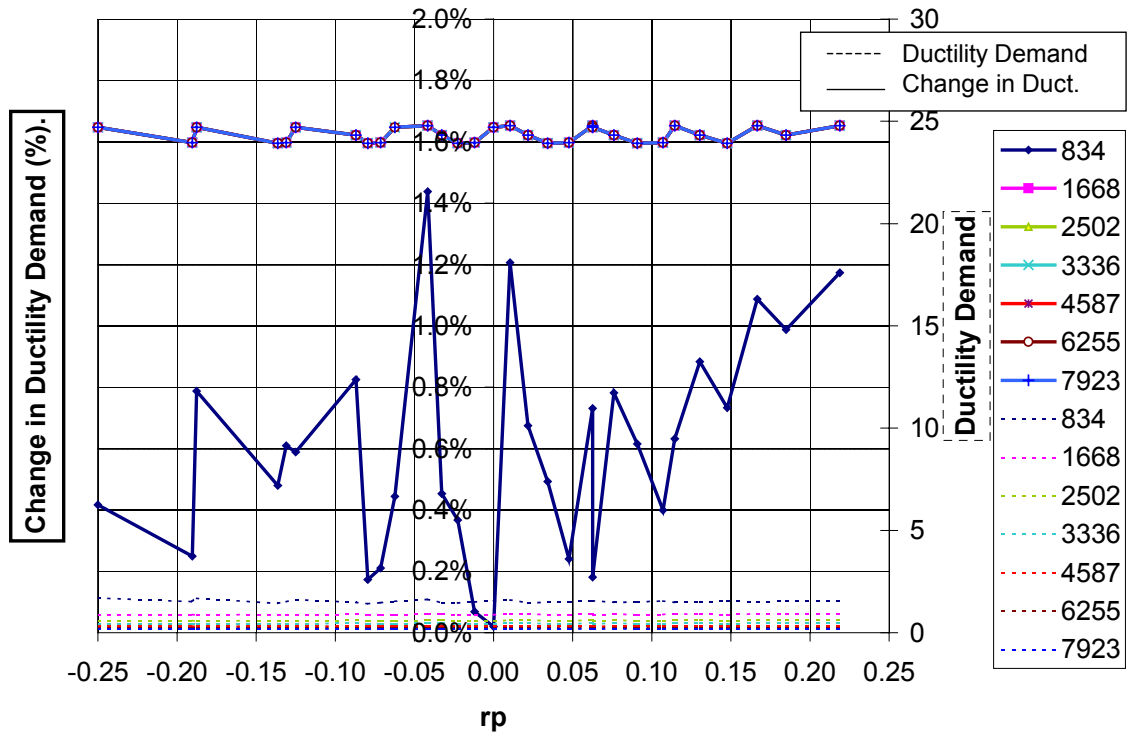


Figure C2.9.8.2b– EQ8, Lateral Scale = 0.2 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.808 Seconds



**Figure C2.9.8.2c– EQ8, Lateral Scale = 0.2 g, Vertical Multiplier = 2.0, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.808 Seconds**



**Figure C2.9.8.2d– EQ8, Lateral Scale = 0.2 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.808 Seconds**

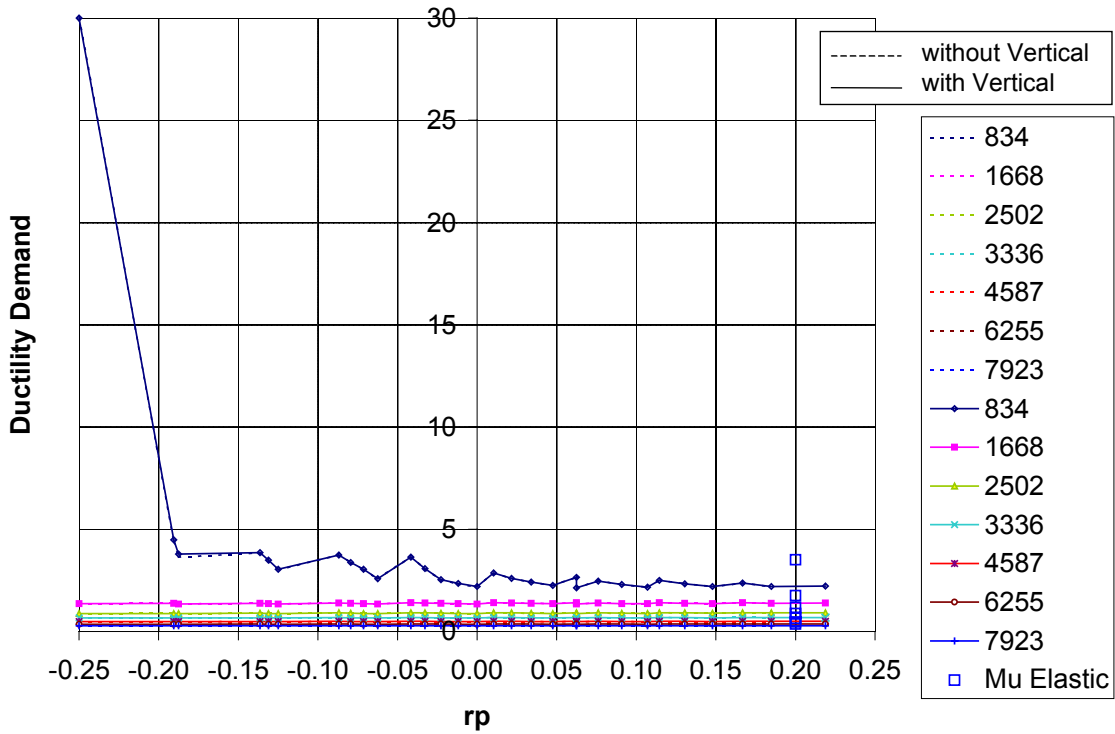


Figure C2.9.8.3a – EQ8, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.808 Seconds.

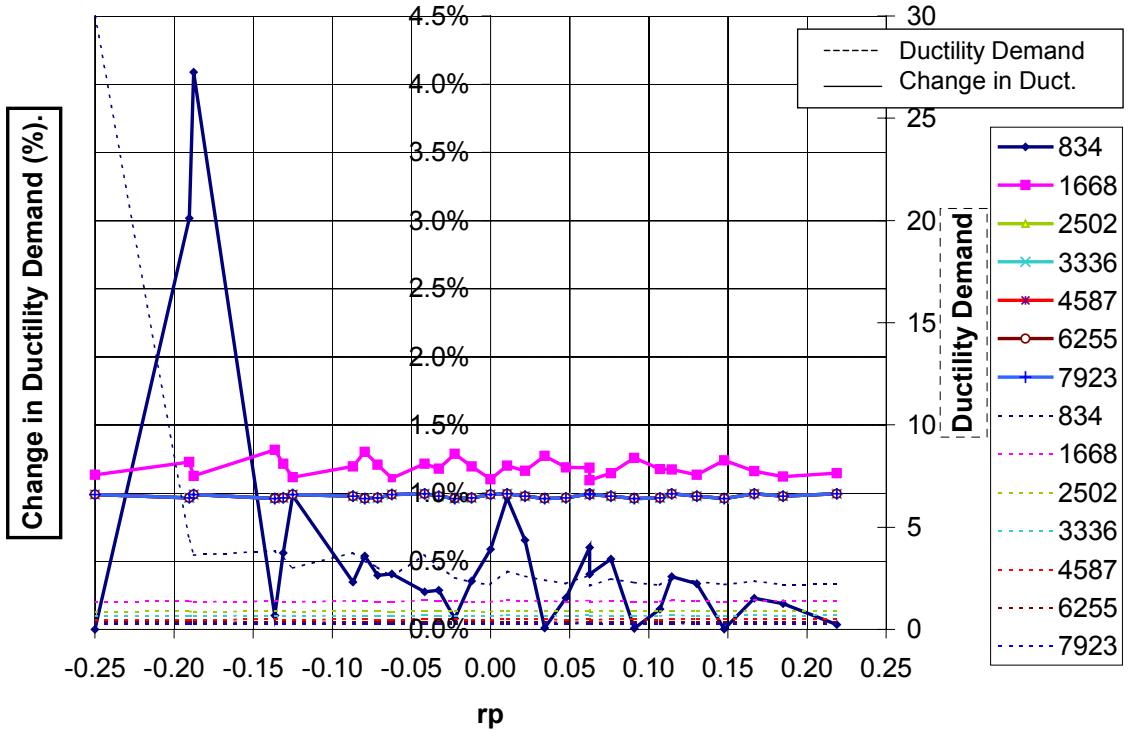


Figure C2.9.8.3b– EQ8, Lateral Scale = 0.3 g, Vertical Multiplier = 1.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.808 Seconds

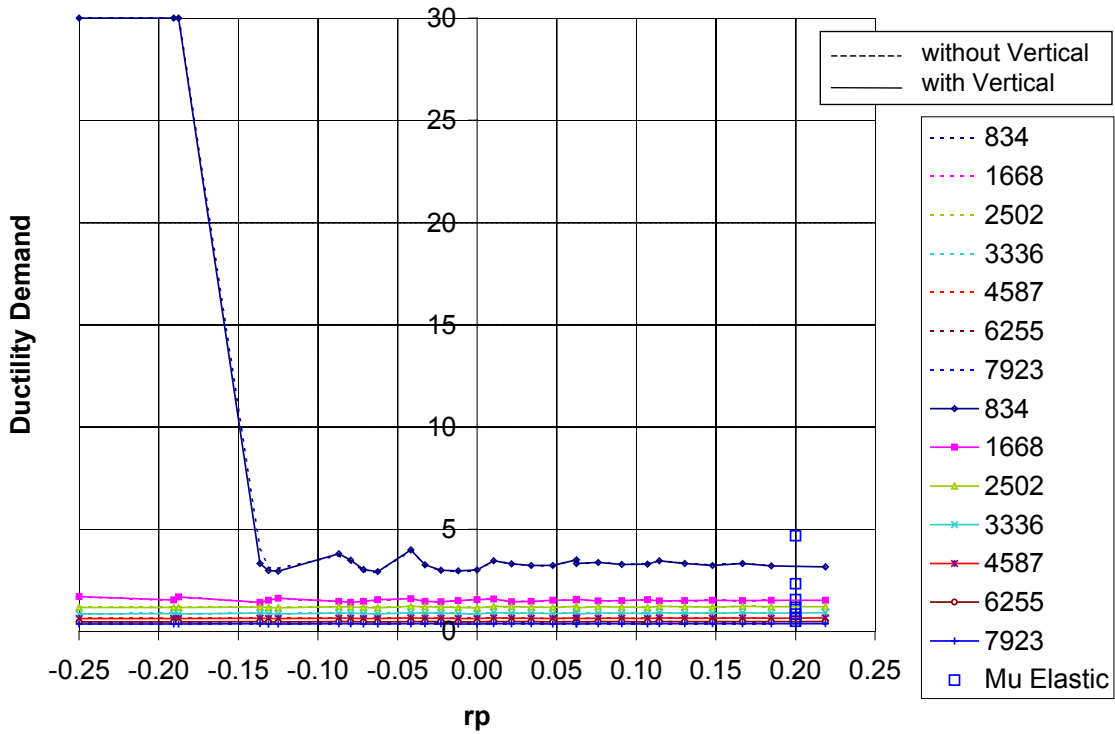


Figure C2.9.8.4a – EQ8, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Ductility Demand Versus  $r_p$  for Models with a Period of 1.808 Seconds.

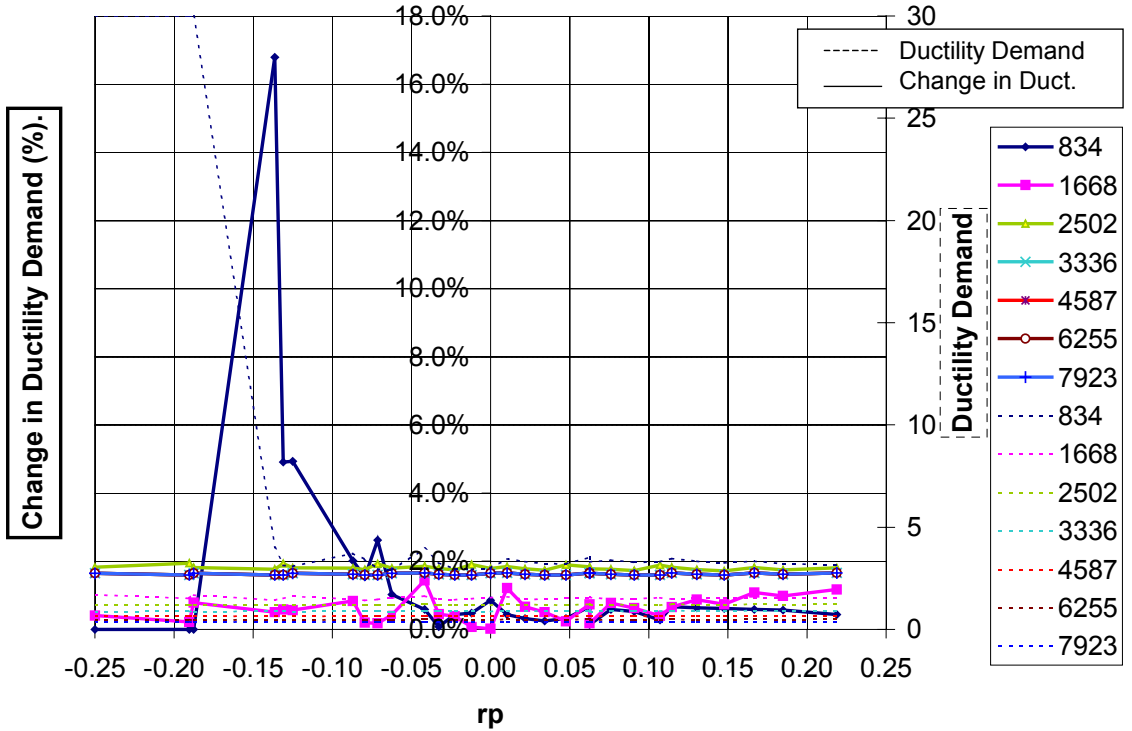


Figure C2.9.8.4b– EQ8, Lateral Scale = 0.4 g, Vertical Multiplier = 2.5, Change in Ductility Demand Due to the Inclusion of Vertical Accelerations for Models with a Period of 1.808 Seconds