

## LAMPIRAN 1

**PERHITUNGAN**  
*DISPLACEMENT PADA ARAH X*

### 1. Cek Terhadap Defleksi

- Untuk tingkat 1 (P1A)

$$\begin{aligned}\delta_{1e} &= \delta_{1e} - \delta_{0e} \\ &= 0.001 - 0 \\ &= 0.001 \text{ mm}\end{aligned}$$

- Untuk tingkat 2 (Lt 2\_P1B)

$$\begin{aligned}\delta_{2e} &= \delta_{2e} - \delta_{1e} \\ &= 0.002 - 0.001 \\ &= 0.001 \text{ mm}\end{aligned}$$

- Untuk tingkat 3 (Lt 2\_P2A)

$$\begin{aligned}\delta_{3e} &= \delta_{3e} - \delta_{2e} \\ &= 0.003 - 0.002 \\ &= 0.001 \text{ mm}\end{aligned}$$

- Untuk tingkat 4 (Lt 3\_P2B)

$$\begin{aligned}\delta_{4e} &= \delta_{4e} - \delta_{3e} \\ &= 0.005 - 0.003 \\ &= 0.002 \text{ mm}\end{aligned}$$

- Untuk tingkat 5 (Lt 3\_P3A)

$$\begin{aligned}\delta_{5e} &= \delta_{5e} - \delta_{4e} \\ &= 0.006 - 0.005 \\ &= 0.001 \text{ mm}\end{aligned}$$

- Untuk tingkat 6 (Lt 4\_P3B)

$$\begin{aligned}\delta_{6e} &= \delta_{6e} - \delta_{5e} \\ &= 0.008 - 0.006 \\ &= 0.002 \text{ mm}\end{aligned}$$

- Untuk tingkat 7 (Lt 5 Lower)

$$\begin{aligned}\delta_{7e} &= \delta_{7e} - \delta_{6e} \\ &= 0.013 - 0.008 \\ &= 0.005 \text{ mm}\end{aligned}$$

- Untuk tingkat 8 (Lt 5 Upper)

$$\begin{aligned}\delta_{8e} &= \delta_{8e} - \delta_{7e} \\ &= 0.019 - 0.013 \\ &= 0.006 \text{ mm}\end{aligned}$$

- Untuk tingkat 9 (Lt 6 Unit)

$$\begin{aligned}\delta_{9e} &= \delta_{9e} - \delta_{8e} \\ &= 0.025 - 0.019\end{aligned}$$

$$= 0.006 \text{ mm}$$

- Untuk tingkat 10 (Lt 7 Unit)

$$\begin{aligned}\delta_{10e} &= \delta_{10e} - \delta_{9e} \\ &= 0.032 - 0.025 \\ &= 0.007 \text{ mm}\end{aligned}$$

- Untuk tingkat 11 (Lt 8 Unit)

$$\begin{aligned}\delta_{11e} &= \delta_{11e} - \delta_{10e} \\ &= 0.039 - 0.032 \\ &= 0.007 \text{ mm}\end{aligned}$$

- Untuk tingkat 12 (Lt 9 Unit)

$$\begin{aligned}\delta_{12e} &= \delta_{12e} - \delta_{11e} \\ &= 0.045 - 0.039 \\ &= 0.006 \text{ mm}\end{aligned}$$

- Untuk tingkat 13 (Lt 10 Unit)

$$\begin{aligned}\delta_{13e} &= \delta_{13e} - \delta_{12e} \\ &= 0.052 - 0.045 \\ &= 0.007 \text{ mm}\end{aligned}$$

- Untuk tingkat 14 (Lt 11 Unit)

$$\begin{aligned}\delta_{14e} &= \delta_{14e} - \delta_{13e} \\ &= 0.058 - 0.052 \\ &= 0.006 \text{ mm}\end{aligned}$$

- Untuk tingkat 15 (Lt 12 Lower)

$$\begin{aligned}\delta_{15e} &= \delta_{15e} - \delta_{14e} \\ &= 0.064 - 0.058 \\ &= 0.006 \text{ mm}\end{aligned}$$

- Untuk tingkat 16 (Lt 12 Upper)

$$\begin{aligned}\delta_{16e} &= \delta_{16e} - \delta_{15e} \\ &= 0.07 - 0.064 \\ &= 0.006 \text{ mm}\end{aligned}$$

- Untuk tingkat 17 (Lt 13 Lower)

$$\begin{aligned}\delta_{17e} &= \delta_{17e} - \delta_{16e} \\ &= 0.075 - 0.07 \\ &= 0.005 \text{ mm}\end{aligned}$$

- Untuk tingkat 18 (Lt 13 Upper)

$$\begin{aligned}\delta_{18e} &= \delta_{18e} - \delta_{17e} \\ &= 0.08 - 0.075\end{aligned}$$

- = 0.005 mm
- Untuk tingkat 19 (Lt 14 Lower)
 
$$\begin{aligned}\delta_{19e} &= \delta_{19e} - \delta_{18e} \\ &= 0.084 - 0.08 \\ &= 0.004 \text{ mm}\end{aligned}$$
  - Untuk tingkat 20 (Lt 14 Upper)
 
$$\begin{aligned}\delta_{20e} &= \delta_{20e} - \delta_{19e} \\ &= 0.088 - 0.084 \\ &= 0.004 \text{ mm}\end{aligned}$$
  - Untuk tingkat 21 (Lt 15 Lower)
 
$$\begin{aligned}\delta_{21e} &= \delta_{21e} - \delta_{20e} \\ &= 0.092 - 0.088 \\ &= 0.004 \text{ mm}\end{aligned}$$
  - Untuk tingkat 22 (Lt 15 Upper)
 
$$\begin{aligned}\delta_{22e} &= \delta_{22e} - \delta_{21e} \\ &= 0.096 - 0.092 \\ &= 0.004 \text{ mm}\end{aligned}$$
  - Untuk tingkat 23 (Lt 15 Upper)
 
$$\begin{aligned}\delta_{23e} &= \delta_{23e} - \delta_{22e} \\ &= 0.099 - 0.096 \\ &= 0.003 \text{ mm}\end{aligned}$$

Simpangan pusat massa di tingkat-x ( $\delta_x$ ) (mm) harus ditentukan sesuai dengan Persamaan 3.1. pada Bab III

- Untuk tingkat 1 (P1A)
 
$$\delta_1 = \frac{C_d \cdot \delta_{1e}}{I_e}$$

$$\delta_1 = \frac{5,5 \times 0.001}{1.0} = 0.0055 \text{ mm}$$
- Untuk tingkat 2 (Lt 2\_P1B)
 
$$\delta_2 = \frac{C_d \cdot \delta_{2e}}{I_e}$$

$$\delta_2 = \frac{5,5 \times 0.001}{1.0} = 0,0055 \text{ mm}$$
- Untuk tingkat 3 (Lt 2\_P2A)
 
$$\delta_3 = \frac{C_d \cdot \delta_{3e}}{I_e}$$

$$\delta_3 = \frac{5,5 \times 0,001}{1,0} = 0,0055 \text{ mm}$$

- Untuk tingkat 4 (Lt 3\_P2B)

$$\delta_4 = \frac{C_d \cdot \delta_{4e}}{I_e}$$

$$\delta_4 = \frac{5,5 \times 0,002}{1,0} = 0,011 \text{ mm}$$

- Untuk tingkat 5 (Lt 3\_P3A)

$$\delta_5 = \frac{C_d \cdot \delta_{5e}}{I_e}$$

$$\delta_5 = \frac{5,5 \times 0,001}{1,0} = 0,0055 \text{ mm}$$

- Untuk tingkat 6 (Lt 4\_P3B)

$$\delta_6 = \frac{C_d \cdot \delta_{6e}}{I_e}$$

$$\delta_6 = \frac{5,5 \times 0,002}{1,0} = 0,011 \text{ mm}$$

- Untuk tingkat 7 (Lt 5 Lower)

$$\delta_7 = \frac{C_d \cdot \delta_{7e}}{I_e}$$

$$\delta_7 = \frac{5,5 \times 0,005}{1,0} = 0,0275 \text{ mm}$$

- Untuk tingkat 8 (Lt 5 Upper)

$$\delta_8 = \frac{C_d \cdot \delta_{8e}}{I_e}$$

$$\delta_8 = \frac{5,5 \times 0,006}{1,0} = 0,033 \text{ mm}$$

- Untuk tingkat 9 (Lt 6 Unit)

$$\delta_9 = \frac{C_d \cdot \delta_{9e}}{I_e}$$

$$\delta_9 = \frac{5,5 \times 0,006}{1,0} = 0,033 \text{ mm}$$

- Untuk tingkat 10 (Lt 7 Unit)

$$\delta_{10} = \frac{C_d \cdot \delta_{10e}}{I_e}$$

$$\delta_{10} = \frac{5,5 \times 0,007}{1,0} = 0,0385 \text{ mm}$$

- Untuk tingkat 11 (Lt 8 Unit)

$$\delta_{11} = \frac{C_d \cdot \delta_{11e}}{I_e}$$

$$\delta_{11} = \frac{5,5 \times 0,007}{1,0} = 0,0385 \text{ mm}$$

- Untuk tingkat 12 (Lt 9 Unit)

$$\delta_{12} = \frac{C_d \cdot \delta_{12e}}{I_e}$$

$$\delta_{12} = \frac{5,5 \times 0,006}{1,0} = 0,033 \text{ mm}$$

- Untuk tingkat 13 (Lt 10 Unit)

$$\delta_{13} = \frac{C_d \cdot \delta_{13e}}{I_e}$$

$$\delta_{13} = \frac{5,5 \times 0,007}{1,0} = 0,0385 \text{ mm}$$

- Untuk tingkat 14 (Lt 11 Unit)

$$\delta_{14} = \frac{C_d \cdot \delta_{14e}}{I_e}$$

$$\delta_{14} = \frac{5,5 \times 0,006}{1,0} = 0,033 \text{ mm}$$

- Untuk tingkat 15 (Lt 12 Lower)

$$\delta_{15} = \frac{C_d \cdot \delta_{15e}}{I_e}$$

$$\delta_{15} = \frac{5,5 \times 0,006}{1,0} = 0,033 \text{ mm}$$

- Untuk tingkat 16 (Lt 12 Upper)

$$\delta_{16} = \frac{C_d \cdot \delta_{16e}}{I_e}$$

$$\delta_{16} = \frac{5,5 \times 0,006}{1,0} = 0,033 \text{ mm}$$

- Untuk tingkat 17 (Lt 13 Lower)

$$\delta_{17} = \frac{C_d \cdot \delta_{17e}}{I_e}$$

$$\delta_{17} = \frac{5,5 \times 0,005}{1,0} = 0,0275 \text{ mm}$$

- Untuk tingkat 18 (Lt 13 Upper)

$$\delta_{18} = \frac{C_d \cdot \delta_{18e}}{I_e}$$

$$\delta_{18} = \frac{5,5 \times 0,005}{1,0} = 0,0275 \text{ mm}$$

- Untuk tingkat 19 (Lt 14 Lower)

$$\delta_{19} = \frac{C_d \cdot \delta_{19e}}{I_e}$$

$$\delta_{19} = \frac{5,5 \times 0,004}{1,0} = 0,022 \text{ mm}$$

- Untuk tingkat 20 (Lt 14 Upper)

$$\delta_{20} = \frac{C_d \cdot \delta_{20e}}{I_e}$$

$$\delta_{20} = \frac{5,5 \times 0,004}{1,0} = 0,022 \text{ mm}$$

- Untuk tingkat 21 (Lt 15 Lower)

$$\delta_{21} = \frac{C_d \cdot \delta_{21e}}{I_e}$$

$$\delta_{21} = \frac{5,5 \times 0,004}{1,0} = 0,022 \text{ mm}$$

- Untuk tingkat 22 (Lt 15 Upper)

$$\delta_{22} = \frac{C_d \cdot \delta_{22e}}{I_e}$$

$$\delta_{22} = \frac{5,5 \times 0,004}{1,0} = 0,022 \text{ mm}$$

- Untuk tingkat 23 (RoofDeck)

$$\delta_{23} = \frac{C_d \cdot \delta_{23e}}{I_e}$$

$$\delta_{23} = \frac{5,5 \times 0,003}{1,0} = 0,0165 \text{ mm}$$

“Halaman Sengaja Dikosongkan”



## LAMPIRAN 2

PERHITUNGAN  
*DISPLACEMENT* PADA ARAH Y

## 1. Cek Terhadap Defleksi

- Untuk tingkat 1 (P1A)

$$\begin{aligned}\delta_{1e} &= \delta_{1e} - \delta_{0e} \\ &= 0.001 - 0 \\ &= 0.001 \text{ mm}\end{aligned}$$

- Untuk tingkat 2 (Lt 2\_P1B)

$$\begin{aligned}\delta_{2e} &= \delta_{2e} - \delta_{1e} \\ &= 0.002 - 0.001 \\ &= 0.001 \text{ mm}\end{aligned}$$

- Untuk tingkat 3 (Lt 2\_P2A)

$$\begin{aligned}\delta_{3e} &= \delta_{3e} - \delta_{2e} \\ &= 0.003 - 0.002 \\ &= 0.001 \text{ mm}\end{aligned}$$

- Untuk tingkat 4 (Lt 3\_P2B)

$$\begin{aligned}\delta_{4e} &= \delta_{4e} - \delta_{3e} \\ &= 0.004 - 0.003 \\ &= 0.001 \text{ mm}\end{aligned}$$

- Untuk tingkat 5 (Lt 3\_P3A)

$$\begin{aligned}\delta_{5e} &= \delta_{5e} - \delta_{4e} \\ &= 0.005 - 0.004 \\ &= 0.001 \text{ mm}\end{aligned}$$

- Untuk tingkat 6 (Lt 4\_P3B)

$$\begin{aligned}\delta_{6e} &= \delta_{6e} - \delta_{5e} \\ &= 0.006 - 0.005 \\ &= 0.001 \text{ mm}\end{aligned}$$

- Untuk tingkat 7 (Lt 5 Lower)

$$\begin{aligned}\delta_{7e} &= \delta_{7e} - \delta_{6e} \\ &= 0.009 - 0.006 \\ &= 0.003 \text{ mm}\end{aligned}$$

- Untuk tingkat 8 (Lt 5 Upper)

$$\begin{aligned}\delta_{8e} &= \delta_{8e} - \delta_{7e} \\ &= 0.013 - 0.009 \\ &= 0.004 \text{ mm}\end{aligned}$$

- Untuk tingkat 9 (Lt 6 Unit)

$$\begin{aligned}\delta_{9e} &= \delta_{9e} - \delta_{8e} \\ &= 0.017 - 0.013 \\ &= 0.004 \text{ mm}\end{aligned}$$

- Untuk tingkat 10 (Lt 7 Unit)

$$\begin{aligned}\delta_{10e} &= \delta_{10e} - \delta_{9e} \\ &= 0.021 - 0.017 \\ &= 0.004 \text{ mm}\end{aligned}$$

- Untuk tingkat 11 (Lt 8 Unit)

$$\begin{aligned}\delta_{11e} &= \delta_{11e} - \delta_{10e} \\ &= 0.025 - 0.021 \\ &= 0.004 \text{ mm}\end{aligned}$$

- Untuk tingkat 12 (Lt 9 Unit)

$$\begin{aligned}\delta_{12e} &= \delta_{12e} - \delta_{11e} \\ &= 0.03 - 0.025 \\ &= 0.005 \text{ mm}\end{aligned}$$

- Untuk tingkat 13 (Lt 10 Unit)

$$\begin{aligned}\delta_{13e} &= \delta_{13e} - \delta_{12e} \\ &= 0.034 - 0.03 \\ &= 0.004 \text{ mm}\end{aligned}$$

- Untuk tingkat 14 (Lt 11 Unit)

$$\begin{aligned}\delta_{14e} &= \delta_{14e} - \delta_{13e} \\ &= 0.038 - 0.034 \\ &= 0.004 \text{ mm}\end{aligned}$$

- Untuk tingkat 15 (Lt 12 Lower)

$$\begin{aligned}\delta_{15e} &= \delta_{15e} - \delta_{14e} \\ &= 0.042 - 0.038 \\ &= 0.004 \text{ mm}\end{aligned}$$

- Untuk tingkat 16 (Lt 12 Upper)

$$\begin{aligned}\delta_{16e} &= \delta_{16e} - \delta_{15e} \\ &= 0.045 - 0.042 \\ &= 0.003 \text{ mm}\end{aligned}$$

- Untuk tingkat 17 (Lt 13 Lower)

$$\begin{aligned}\delta_{17e} &= \delta_{17e} - \delta_{16e} \\ &= 0.049 - 0.045 \\ &= 0.004 \text{ mm}\end{aligned}$$

- Untuk tingkat 18 (Lt 13 Upper)

$$\begin{aligned}\delta_{18e} &= \delta_{18e} - \delta_{17e} \\ &= 0.052 - 0.049 \\ &= 0.003 \text{ mm}\end{aligned}$$

- Untuk tingkat 19 (Lt 14 Lower)

$$\begin{aligned}\delta_{19e} &= \delta_{19e} - \delta_{18e} \\ &= 0.055 - 0.052 \\ &= 0.003 \text{ mm}\end{aligned}$$

- Untuk tingkat 20 (Lt 14 Upper)

$$\begin{aligned}\delta_{20e} &= \delta_{20e} - \delta_{19e} \\ &= 0.057 - 0.055 \\ &= 0.002 \text{ mm}\end{aligned}$$

- Untuk tingkat 21 (Lt 15 Lower)

$$\begin{aligned}\delta_{21e} &= \delta_{21e} - \delta_{20e} \\ &= 0.06 - 0.057 \\ &= 0.003 \text{ mm}\end{aligned}$$

- Untuk tingkat 22 (Lt 15 Upper)

$$\begin{aligned}\delta_{22e} &= \delta_{22e} - \delta_{21e} \\ &= 0.062 - 0.06 \\ &= 0.002 \text{ mm}\end{aligned}$$

- Untuk tingkat 23 (RoofDeck)

$$\begin{aligned}\delta_{23e} &= \delta_{23e} - \delta_{22e} \\ &= 0.065 - 0.062 \\ &= 0.003 \text{ mm}\end{aligned}$$

Simpangan pusat massa di tingkat-y ( $\delta_y$ ) (mm) harus ditentukan sesuai dengan Persamaan 3.1. pada Bab III

- Untuk tingkat 1 (P1A)

$$\begin{aligned}\delta_1 &= \frac{C_d \cdot \delta_{1e}}{I_e} \\ \delta_1 &= \frac{5,5 \times 0.001}{1.0} = 0.0055 \text{ mm}\end{aligned}$$

- Untuk tingkat 2 (Lt 2\_P1B)

$$\delta_2 = \frac{C_d \cdot \delta_{2e}}{I_e}$$

$$\delta_2 = \frac{5,5 \times 0,001}{1,0} = 0,0055 \text{ mm}$$

- Untuk tingkat 3 (Lt 2\_P2A)

$$\delta_3 = \frac{C_d \cdot \delta_{3e}}{I_e}$$

$$\delta_3 = \frac{5,5 \times 0,001}{1,0} = 0,0055 \text{ mm}$$

- Untuk tingkat 4 (Lt 3\_P2B)

$$\delta_4 = \frac{C_d \cdot \delta_{4e}}{I_e}$$

$$\delta_4 = \frac{5,5 \times 0,001}{1,0} = 0,0055 \text{ mm}$$

- Untuk tingkat 5 (Lt 3\_P3A)

$$\delta_5 = \frac{C_d \cdot \delta_{5e}}{I_e}$$

$$\delta_5 = \frac{5,5 \times 0,001}{1,0} = 0,0055 \text{ mm}$$

- Untuk tingkat 6 (Lt 4\_P3B)

$$\delta_6 = \frac{C_d \cdot \delta_{6e}}{I_e}$$

$$\delta_6 = \frac{5,5 \times 0,001}{1,0} = 0,0055 \text{ mm}$$

- Untuk tingkat 7 (Lt 5 Lower)

$$\delta_7 = \frac{C_d \cdot \delta_{7e}}{I_e}$$

$$\delta_7 = \frac{5,5 \times 0,003}{1,0} = 0,0165 \text{ mm}$$

- Untuk tingkat 8 (Lt 5 Upper)

$$\delta_8 = \frac{C_d \cdot \delta_{8e}}{I_e}$$

$$\delta_8 = \frac{5,5 \times 0,004}{1,0} = 0,022 \text{ mm}$$

- Untuk tingkat 9 (Lt 6 Unit)

$$\delta_9 = \frac{C_d \cdot \delta_{9e}}{I_e}$$

$$\delta_9 = \frac{5,5 \times 0,004}{1,0} = 0,022 \text{ mm}$$

- Untuk tingkat 10 (Lt 7 Unit)

$$\delta_{10} = \frac{C_d \cdot \delta_{10e}}{I_e}$$

$$\delta_{10} = \frac{5,5 \times 0,004}{1,0} = 0,022 \text{ mm}$$

- Untuk tingkat 11 (Lt 8 Unit)

$$\delta_{11} = \frac{C_d \cdot \delta_{11e}}{I_e}$$

$$\delta_{11} = \frac{5,5 \times 0,004}{1,0} = 0,022 \text{ mm}$$

- Untuk tingkat 12 (Lt 9 Unit)

$$\delta_{12} = \frac{C_d \cdot \delta_{12e}}{I_e}$$

$$\delta_{12} = \frac{5,5 \times 0,005}{1,0} = 0,0275 \text{ mm}$$

- Untuk tingkat 13 (Lt 10 Unit)

$$\delta_{13} = \frac{C_d \cdot \delta_{13e}}{I_e}$$

$$\delta_{13} = \frac{5,5 \times 0,004}{1,0} = 0,022 \text{ mm}$$

- Untuk tingkat 14 (Lt 11 Unit)

$$\delta_{14} = \frac{C_d \cdot \delta_{14e}}{I_e}$$

$$\delta_{14} = \frac{5,5 \times 0,004}{1,0} = 0,022 \text{ mm}$$

- Untuk tingkat 15 (Lt 12 Lower)

$$\delta_{15} = \frac{C_d \cdot \delta_{15e}}{I_e}$$

$$\delta_{15} = \frac{5,5 \times 0,004}{1,0} = 0,022 \text{ mm}$$

- Untuk tingkat 16 (Lt 12 Upper)

$$\delta_{16} = \frac{C_d \cdot \delta_{16e}}{I_e}$$

$$\delta_{16} = \frac{5,5 \times 0,003}{1,0} = 0,0165 \text{ mm}$$

- Untuk tingkat 17 (Lt 13 Lower)

$$\delta_{17} = \frac{C_d \cdot \delta_{17e}}{I_e}$$

$$\delta_{17} = \frac{5,5 \times 0,004}{1,0} = 0,022 \text{ mm}$$

- Untuk tingkat 18 (Lt 13 Upper)

$$\delta_{18} = \frac{C_d \cdot \delta_{18e}}{I_e}$$

$$\delta_{18} = \frac{5,5 \times 0,003}{1,0} = 0,0165 \text{ mm}$$

- Untuk tingkat 19 (Lt 14 Lower)

$$\delta_{19} = \frac{C_d \cdot \delta_{19e}}{I_e}$$

$$\delta_{19} = \frac{5,5 \times 0,003}{1,0} = 0,0165 \text{ mm}$$

- Untuk tingkat 20 (Lt 14 Upper)

$$\delta_{20} = \frac{C_d \cdot \delta_{20e}}{I_e}$$

$$\delta_{20} = \frac{5,5 \times 0,002}{1,0} = 0,011 \text{ mm}$$

- Untuk tingkat 21 (Lt 15 Lower)

$$\delta_{21} = \frac{C_d \cdot \delta_{21e}}{I_e}$$

$$\delta_{21} = \frac{5,5 \times 0,003}{1,0} = 0,0165 \text{ mm}$$

- Untuk tingkat 22 (Lt 15 Upper)

$$\delta_{22} = \frac{C_d \cdot \delta_{22e}}{I_e}$$

$$\delta_{22} = \frac{5,5 \times 0,002}{1,0} = 0,011 \text{ mm}$$

- Untuk tingkat 23 (RoofDeck)

$$\delta_{23} = \frac{C_d \cdot \delta_{23e}}{I_e}$$

$$\delta_{23} = \frac{5,5 \times 0,003}{1,0} = 0,0165 \text{ mm}$$

“Halaman Sengaja Dikosongkan”



LAMPIRAN 3

**PERHITUNGAN**  
*PENGARUH P-DELTA ARAH-X*

## 1. Cek Pengaruh P-Delta akibat Beban Respon Spektra Arah X

- Cek Pengaruh P-Delta Pada Tingkat 1

$$\theta = \frac{P_x \times \Delta_x \times I_e}{V_x \times H_{s_x} \times C_d} \leq 0.1$$

$$\theta = \frac{128,627.741 \times 0.0055 \times 1.0}{9.2622 \times 2800 \times 5.5} \leq 0.1$$

$$\theta = 0.0050 \leq 0.1 \rightarrow (\text{Memenuhi Syarat})$$

- Cek Pengaruh P-Delta Pada Tingkat 2

$$\theta = \frac{P_x \times \Delta_x \times I_e}{V_x \times H_{s_x} \times C_d} \leq 0.1$$

$$\theta = \frac{154,939.474 \times 0.0055 \times 1.0}{9.8691 \times 1500 \times 5.5} \leq 0.1$$

$$\theta = 0.0105 \leq 0.1 \rightarrow (\text{Memenuhi Syarat})$$

- Cek Pengaruh P-Delta Pada Tingkat 3

$$\theta = \frac{P_x \times \Delta_x \times I_e}{V_x \times H_{s_x} \times C_d} \leq 0.1$$

$$\theta = \frac{147,150.593 \times 0.0055 \times 1.0}{10.1496 \times 1500 \times 5.5} \leq 0.1$$

$$\theta = 0.0097 \leq 0.1 \rightarrow (\text{Memenuhi Syarat})$$

- Cek Pengaruh P-Delta Pada Tingkat 4

$$\theta = \frac{P_x \times \Delta_x \times I_e}{V_x \times H_{s_x} \times C_d} \leq 0.1$$

$$\theta = \frac{139,375.893 \times 0.011 \times 1.0}{10.0449 \times 1500 \times 5.5} \leq 0.1$$

$$\theta = 0.0185 \leq 0.1 \rightarrow (\text{Memenuhi Syarat})$$

- Cek Pengaruh P-Delta Pada Tingkat 5

$$\theta = \frac{P_x \times \Delta_x \times I_e}{V_x \times H_{s_x} \times C_d} \leq 0.1$$

$$\theta = \frac{131,592.145 \times 0.0055 \times 1.0}{9.5279 \times 1500 \times 5.5} \leq 0.1$$

$$\theta = 0.0092 \leq 0.1 \rightarrow (\text{Memenuhi Syarat})$$

- Cek Pengaruh P-Delta Pada Tingkat 6

$$\theta = \frac{P_x \times \Delta_x \times I_e}{V_x \times H_{s_x} \times C_d} \leq 0.1$$

$$\theta = \frac{116,942.379 \times 0.011 \times 1.0}{7.2029 \times 1500 \times 5.5} \leq 0.1$$

$$\theta = 0.0216 \leq 0.1 \rightarrow (\text{Memenuhi Syarat})$$

- Cek Pengaruh P-Delta Pada Tingkat 7
 
$$\theta = \frac{P_x \times \Delta_x \times I_e}{V_x \times H_{s_x} \times C_d} \leq 0.1$$

$$\theta = \frac{108,283.403 \times 0.0275 \times 1.0}{12,4845 \times 3000 \times 5.5} \leq 0.1$$

$$\theta = 0.0145 \leq 0.1 \rightarrow (\text{Memenuhi Syarat})$$
- Cek Pengaruh P-Delta Pada Tingkat 8
 
$$\theta = \frac{P_x \times \Delta_x \times I_e}{V_x \times H_{s_x} \times C_d} \leq 0.1$$

$$\theta = \frac{98,734.082 \times 0.033 \times 1.0}{10,5269 \times 3100 \times 5.5} \leq 0.1$$

$$\theta = 0.0182 \leq 0.1 \rightarrow (\text{Memenuhi Syarat})$$
- Cek Pengaruh P-Delta Pada Tingkat 9
 
$$\theta = \frac{P_x \times \Delta_x \times I_e}{V_x \times H_{s_x} \times C_d} \leq 0.1$$

$$\theta = \frac{92,039.082 \times 0.033 \times 1.0}{10,2226 \times 2900 \times 5.5} \leq 0.1$$

$$\theta = 0.0186 \leq 0.1 \rightarrow (\text{Memenuhi Syarat})$$
- Cek Pengaruh P-Delta Pada Tingkat 10
 
$$\theta = \frac{P_x \times \Delta_x \times I_e}{V_x \times H_{s_x} \times C_d} \leq 0.1$$

$$\theta = \frac{85,262.165 \times 0.0385 \times 1.0}{9,9166 \times 3100 \times 5.5} \leq 0.1$$

$$\theta = 0.0194 \leq 0.1 \rightarrow (\text{Memenuhi Syarat})$$
- Cek Pengaruh P-Delta Pada Tingkat 11
 
$$\theta = \frac{P_x \times \Delta_x \times I_e}{V_x \times H_{s_x} \times C_d} \leq 0.1$$

$$\theta = \frac{78,497.061 \times 0.0385 \times 1.0}{9,6625 \times 3100 \times 5.5} \leq 0.1$$

$$\theta = 0.0183 \leq 0.1 \rightarrow (\text{Memenuhi Syarat})$$
- Cek Pengaruh P-Delta Pada Tingkat 12
 
$$\theta = \frac{P_x \times \Delta_x \times I_e}{V_x \times H_{s_x} \times C_d} \leq 0.1$$

$$\theta = \frac{71,741.375 \times 0.033 \times 1.0}{9,367 \times 3100 \times 5.5} \leq 0.1$$

$$\theta = 0.0148 \leq 0.1 \rightarrow (\text{Memenuhi Syarat})$$

- Cek Pengaruh P-Delta Pada Tingkat 13
 
$$\theta = \frac{P_x \times \Delta_x \times I_e}{V_x \times H_{s_x} \times C_d} \leq 0.1$$

$$\theta = \frac{64,993.641 \times 0.0385 \times 1.0}{9,0393 \times 3100 \times 5.5} \leq 0.1$$

$$\theta = 0.0162 \leq 0.1 \rightarrow (\text{Memenuhi Syarat})$$
- Cek Pengaruh P-Delta Pada Tingkat 14
 
$$\theta = \frac{P_x \times \Delta_x \times I_e}{V_x \times H_{s_x} \times C_d} \leq 0.1$$

$$\theta = \frac{58,252.845 \times 0.033 \times 1.0}{8,7002 \times 3100 \times 5.5} \leq 0.1$$

$$\theta = 0.0130 \leq 0.1 \rightarrow (\text{Memenuhi Syarat})$$
- Cek Pengaruh P-Delta Pada Tingkat 15
 
$$\theta = \frac{P_x \times \Delta_x \times I_e}{V_x \times H_{s_x} \times C_d} \leq 0.1$$

$$\theta = \frac{51,518.049 \times 0.033 \times 1.0}{8,336 \times 3100 \times 5.5} \leq 0.1$$

$$\theta = 0.0120 \leq 0.1 \rightarrow (\text{Memenuhi Syarat})$$
- Cek Pengaruh P-Delta Pada Tingkat 16
 
$$\theta = \frac{P_x \times \Delta_x \times I_e}{V_x \times H_{s_x} \times C_d} \leq 0.1$$

$$\theta = \frac{44,787.846 \times 0.033 \times 1.0}{7,9548 \times 3100 \times 5.5} \leq 0.1$$

$$\theta = 0.0109 \leq 0.1 \rightarrow (\text{Memenuhi Syarat})$$
- Cek Pengaruh P-Delta Pada Tingkat 17
 
$$\theta = \frac{P_x \times \Delta_x \times I_e}{V_x \times H_{s_x} \times C_d} \leq 0.1$$

$$\theta = \frac{37,465.979 \times 0.0275 \times 1.0}{7,6204 \times 2900 \times 5.5} \leq 0.1$$

$$\theta = 0.0085 \leq 0.1 \rightarrow (\text{Memenuhi Syarat})$$
- Cek Pengaruh P-Delta Pada Tingkat 18
 
$$\theta = \frac{P_x \times \Delta_x \times I_e}{V_x \times H_{s_x} \times C_d} \leq 0.1$$

$$\theta = \frac{26,460.010 \times 0.0275 \times 1.0}{6.352 \times 3100 \times 5.5} \leq 0.1$$

$$\theta = 0.0067 \leq 0.1 \rightarrow (\text{Memenuhi Syarat})$$

- Cek Pengaruh P-Delta Pada Tingkat 19
 
$$\theta = \frac{P_x \times \Delta_x \times I_e}{V_x \times H_{s_x} \times C_d} \leq 0.1$$

$$\theta = \frac{24,743.919 \times 0.022 \times 1.0}{6.5428 \times 2900 \times 5.5} \leq 0.1$$

$$\theta = 0.0052 \leq 0.1 \rightarrow (\text{Memenuhi Syarat})$$
- Cek Pengaruh P-Delta Pada Tingkat 20
 
$$\theta = \frac{P_x \times \Delta_x \times I_e}{V_x \times H_{s_x} \times C_d} \leq 0.1$$

$$\theta = \frac{18,024.429 \times 0.022 \times 1.0}{5,7945 \times 3100 \times 5.5} \leq 0.1$$

$$\theta = 0.0040 \leq 0.1 \rightarrow (\text{Memenuhi Syarat})$$
- Cek Pengaruh P-Delta Pada Tingkat 21
 
$$\theta = \frac{P_x \times \Delta_x \times I_e}{V_x \times H_{s_x} \times C_d} \leq 0.1$$

$$\theta = \frac{11,307.940 \times 0.022 \times 1.0}{4,8679 \times 3100 \times 5.5} \leq 0.1$$

$$\theta = 0.0030 \leq 0.1 \rightarrow (\text{Memenuhi Syarat})$$
- Cek Pengaruh P-Delta Pada Tingkat 22
 
$$\theta = \frac{P_x \times \Delta_x \times I_e}{V_x \times H_{s_x} \times C_d} \leq 0.1$$

$$\theta = \frac{4,596.470 \times 0.022 \times 1.0}{2,5565 \times 3100 \times 5.5} \leq 0.1$$

$$\theta = 0.0023 \leq 0.1 \rightarrow (\text{Memenuhi Syarat})$$
- Cek Pengaruh P-Delta Pada Tingkat 23
 
$$\theta = \frac{P_x \times \Delta_x \times I_e}{V_x \times H_{s_x} \times C_d} \leq 0.1$$

$$\theta = \frac{1,572.862 \times 0.0165 \times 1.0}{1,8636 \times 3100 \times 5.5} \leq 0.1$$

$$\theta = 0.0008 \leq 0.1 \rightarrow (\text{Memenuhi Syarat})$$

LAMPIRAN 4

**PERHITUNGAN**  
*PENGARUH P-DELTA ARAH-Y*

## 1. Cek Pengaruh P-Delta akibat Beban Respon Spektra Arah Y

- Cek Pengaruh P-Delta Pada Tingkat 1

$$\theta = \frac{P_x \times \Delta_x \times I_e}{V_x \times H_{s_x} \times C_d} \leq 0.1$$

$$\theta = \frac{128,627,741 \times 0.0055 \times 1.0}{9,2622 \times 2800 \times 5.5} \leq 0.1$$

$$\theta = 0.0056 \leq 0.1 \rightarrow (\text{Memenuhi Syarat})$$

- Cek Pengaruh P-Delta Pada Tingkat 2

$$\theta = \frac{P_x \times \Delta_x \times I_e}{V_x \times H_{s_x} \times C_d} \leq 0.1$$

$$\theta = \frac{154,939,474 \times 0.0055 \times 1.0}{10,3308 \times 1500 \times 5.5} \leq 0.1$$

$$\theta = 0.0100 \leq 0.1 \rightarrow (\text{Memenuhi Syarat})$$

- Cek Pengaruh P-Delta Pada Tingkat 3

$$\theta = \frac{P_x \times \Delta_x \times I_e}{V_x \times H_{s_x} \times C_d} \leq 0.1$$

$$\theta = \frac{147,150,593 \times 0.0055 \times 1.0}{10,6794 \times 1500 \times 5.5} \leq 0.1$$

$$\theta = 0.0092 \leq 0.1 \rightarrow (\text{Memenuhi Syarat})$$

- Cek Pengaruh P-Delta Pada Tingkat 4

$$\theta = \frac{P_x \times \Delta_x \times I_e}{V_x \times H_{s_x} \times C_d} \leq 0.1$$

$$\theta = \frac{139,375,893 \times 0.011 \times 1.0}{10,9173 \times 1500 \times 5.5} \leq 0.1$$

$$\theta = 0.0170 \leq 0.1 \rightarrow (\text{Memenuhi Syarat})$$

- Cek Pengaruh P-Delta Pada Tingkat 5

$$\theta = \frac{P_x \times \Delta_x \times I_e}{V_x \times H_{s_x} \times C_d} \leq 0.1$$

$$\theta = \frac{131,592,145 \times 0.0055 \times 1.0}{10,7057 \times 1500 \times 5.5} \leq 0.1$$

$$\theta = 0.0082 \leq 0.1 \rightarrow (\text{Memenuhi Syarat})$$

- Cek Pengaruh P-Delta Pada Tingkat 6

$$\theta = \frac{P_x \times \Delta_x \times I_e}{V_x \times H_{s_x} \times C_d} \leq 0.1$$

$$\theta = \frac{116,942,379 \times 0.011 \times 1.0}{10,1672 \times 1500 \times 5.5} \leq 0.1$$

$$\theta = 0.0153 \leq 0.1 \rightarrow (\text{Memenuhi Syarat})$$

- Cek Pengaruh P-Delta Pada Tingkat 7
 
$$\theta = \frac{P_x \times \Delta_x \times I_e}{V_x \times H_{s_x} \times C_d} \leq 0.1$$

$$\theta = \frac{108,283.403 \times 0.0275 \times 1.0}{10.4462 \times 3000 \times 5.5} \leq 0.1$$

$$\theta = 0.0173 \leq 0.1 \rightarrow (\text{Memenuhi Syarat})$$
- Cek Pengaruh P-Delta Pada Tingkat 8
 
$$\theta = \frac{P_x \times \Delta_x \times I_e}{V_x \times H_{s_x} \times C_d} \leq 0.1$$

$$\theta = \frac{98,734.082 \times 0.033 \times 1.0}{9.092 \times 3100 \times 5.5} \leq 0.1$$

$$\theta = 0.0173 \leq 0.1 \rightarrow (\text{Memenuhi Syarat})$$
- Cek Pengaruh P-Delta Pada Tingkat 9
 
$$\theta = \frac{P_x \times \Delta_x \times I_e}{V_x \times H_{s_x} \times C_d} \leq 0.1$$

$$\theta = \frac{92,039.082 \times 0.033 \times 1.0}{8.9313 \times 2900 \times 5.5} \leq 0.1$$

$$\theta = 0.0213 \leq 0.1 \rightarrow (\text{Memenuhi Syarat})$$
- Cek Pengaruh P-Delta Pada Tingkat 10
 
$$\theta = \frac{P_x \times \Delta_x \times I_e}{V_x \times H_{s_x} \times C_d} \leq 0.1$$

$$\theta = \frac{85,262.165 \times 0.0385 \times 1.0}{8.6391 \times 3100 \times 5.5} \leq 0.1$$

$$\theta = 0.0223 \leq 0.1 \rightarrow (\text{Memenuhi Syarat})$$
- Cek Pengaruh P-Delta Pada Tingkat 11
 
$$\theta = \frac{P_x \times \Delta_x \times I_e}{V_x \times H_{s_x} \times C_d} \leq 0.1$$

$$\theta = \frac{78,497.061 \times 0.0385 \times 1.0}{8.5066 \times 3100 \times 5.5} \leq 0.1$$

$$\theta = 0.0208 \leq 0.1 \rightarrow (\text{Memenuhi Syarat})$$
- Cek Pengaruh P-Delta Pada Tingkat 12
 
$$\theta = \frac{P_x \times \Delta_x \times I_e}{V_x \times H_{s_x} \times C_d} \leq 0.1$$

$$\theta = \frac{71,741.375 \times 0.033 \times 1.0}{8.3545 \times 3100 \times 5.5} \leq 0.1$$

$$\theta = 0.0166 \leq 0.1 \rightarrow (\text{Memenuhi Syarat})$$



- Cek Pengaruh P-Delta Pada Tingkat 13
 
$$\theta = \frac{P_x \times \Delta_x \times I_e}{V_x \times H_{s_x} \times C_d} \leq 0.1$$

$$\theta = \frac{64,993.641 \times 0.0385 \times 1.0}{8.1703 \times 3100 \times 5.5} \leq 0.1$$

$$\theta = 0.0180 \leq 0.1 \rightarrow (\text{Memenuhi Syarat})$$
- Cek Pengaruh P-Delta Pada Tingkat 14
 
$$\theta = \frac{P_x \times \Delta_x \times I_e}{V_x \times H_{s_x} \times C_d} \leq 0.1$$

$$\theta = \frac{58,252.845 \times 0.033 \times 1.0}{7.9502 \times 3100 \times 5.5} \leq 0.1$$

$$\theta = 0.0142 \leq 0.1 \rightarrow (\text{Memenuhi Syarat})$$
- Cek Pengaruh P-Delta Pada Tingkat 15
 
$$\theta = \frac{P_x \times \Delta_x \times I_e}{V_x \times H_{s_x} \times C_d} \leq 0.1$$

$$\theta = \frac{51,518.049 \times 0.033 \times 1.0}{7.6884 \times 3100 \times 5.5} \leq 0.1$$

$$\theta = 0.0130 \leq 0.1 \rightarrow (\text{Memenuhi Syarat})$$
- Cek Pengaruh P-Delta Pada Tingkat 16
 
$$\theta = \frac{P_x \times \Delta_x \times I_e}{V_x \times H_{s_x} \times C_d} \leq 0.1$$

$$\theta = \frac{44,787.846 \times 0.033 \times 1.0}{7.3953 \times 3100 \times 5.5} \leq 0.1$$

$$\theta = 0.0117 \leq 0.1 \rightarrow (\text{Memenuhi Syarat})$$
- Cek Pengaruh P-Delta Pada Tingkat 17
 
$$\theta = \frac{P_x \times \Delta_x \times I_e}{V_x \times H_{s_x} \times C_d} \leq 0.1$$

$$\theta = \frac{37,465.979 \times 0.0275 \times 1.0}{7.2074 \times 2900 \times 5.5} \leq 0.1$$

$$\theta = 0.0090 \leq 0.1 \rightarrow (\text{Memenuhi Syarat})$$
- Cek Pengaruh P-Delta Pada Tingkat 18
 
$$\theta = \frac{P_x \times \Delta_x \times I_e}{V_x \times H_{s_x} \times C_d} \leq 0.1$$

$$\theta = \frac{26,460.010 \times 0.0275 \times 1.0}{5.7311 \times 3100 \times 5.5} \leq 0.1$$

$$\theta = 0.0074 \leq 0.1 \rightarrow (\text{Memenuhi Syarat})$$

- Cek Pengaruh P-Delta Pada Tingkat 19
 
$$\theta = \frac{P_x \times \Delta_x \times I_e}{V_x \times H_{s_x} \times C_d} \leq 0.1$$

$$\theta = \frac{24,743.919 \times 0.022 \times 1.0}{6.2982 \times 2900 \times 5.5} \leq 0.1$$

$$\theta = 0.0054 \leq 0.1 \rightarrow (\text{Memenuhi Syarat})$$
- Cek Pengaruh P-Delta Pada Tingkat 20
 
$$\theta = \frac{P_x \times \Delta_x \times I_e}{V_x \times H_{s_x} \times C_d} \leq 0.1$$

$$\theta = \frac{18,024.429 \times 0.022 \times 1.0}{5.5183 \times 3100 \times 5.5} \leq 0.1$$

$$\theta = 0.0042 \leq 0.1 \rightarrow (\text{Memenuhi Syarat})$$
- Cek Pengaruh P-Delta Pada Tingkat 21
 
$$\theta = \frac{P_x \times \Delta_x \times I_e}{V_x \times H_{s_x} \times C_d} \leq 0.1$$

$$\theta = \frac{11,307.940 \times 0.022 \times 1.0}{4.7606 \times 3100 \times 5.5} \leq 0.1$$

$$\theta = 0.0031 \leq 0.1 \rightarrow (\text{Memenuhi Syarat})$$
- Cek Pengaruh P-Delta Pada Tingkat 22
 
$$\theta = \frac{P_x \times \Delta_x \times I_e}{V_x \times H_{s_x} \times C_d} \leq 0.1$$

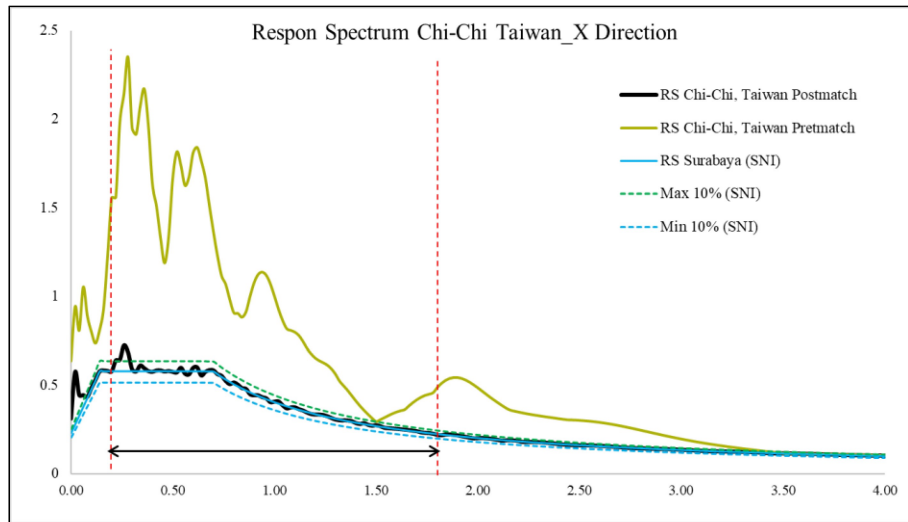
$$\theta = \frac{4,596.470 \times 0.022 \times 1.0}{2.461 \times 3100 \times 5.5} \leq 0.1$$

$$\theta = 0.0024 \leq 0.1 \rightarrow (\text{Memenuhi Syarat})$$
- Cek Pengaruh P-Delta Pada Tingkat 23
 
$$\theta = \frac{P_x \times \Delta_x \times I_e}{V_x \times H_{s_x} \times C_d} \leq 0.1$$

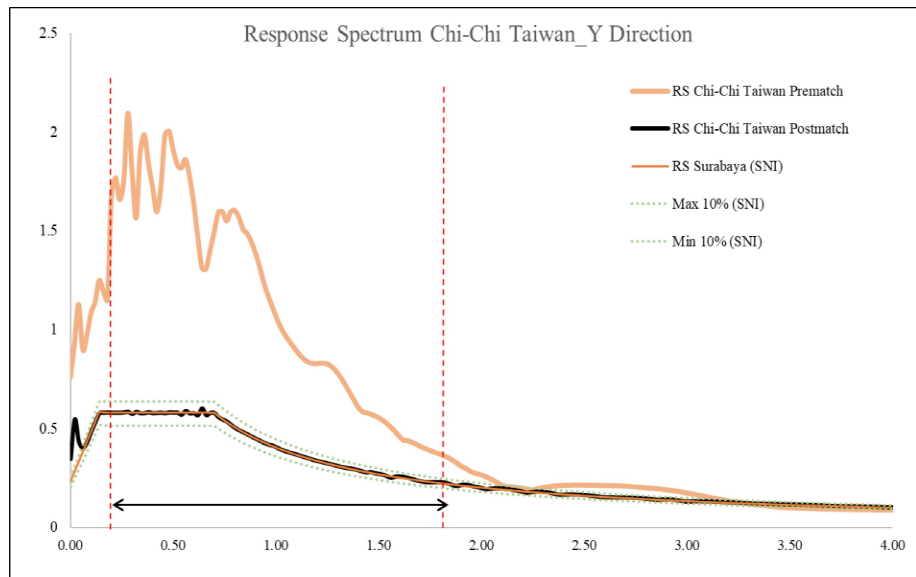
$$\theta = \frac{1,572.862 \times 0.0165 \times 1.0}{1.8816 \times 3100 \times 5.5} \leq 0.1$$

$$\theta = 0.0008 \leq 0.1 \rightarrow (\text{Memenuhi Syarat})$$

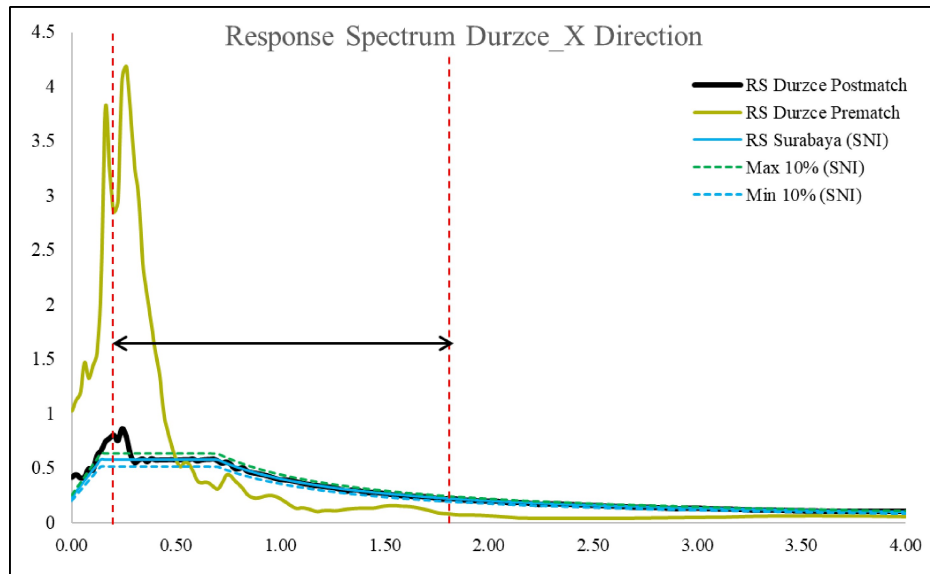
LAMPIRAN 5



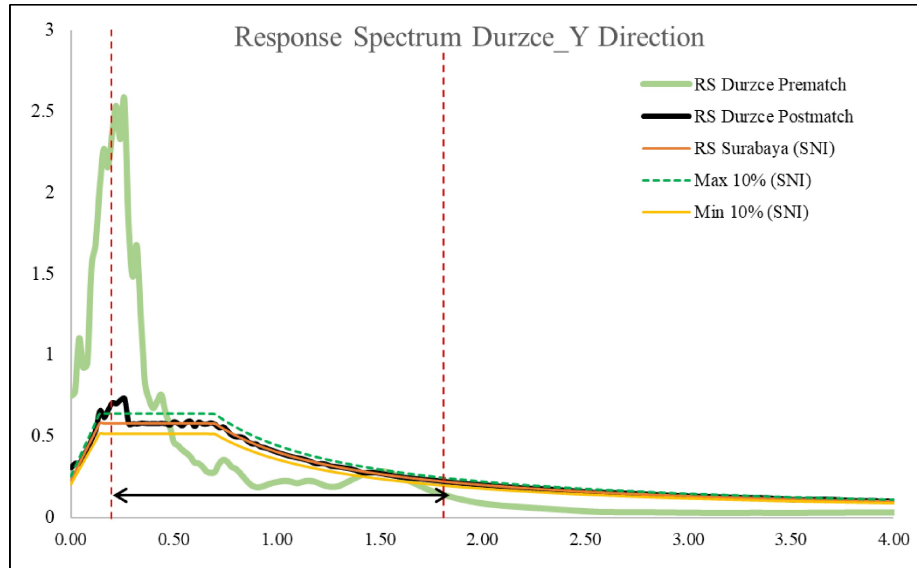
**Gambar** Response Spectra Chi-Chi Taiwan\_X Direction  
( Sumber: Kajian Penulis )



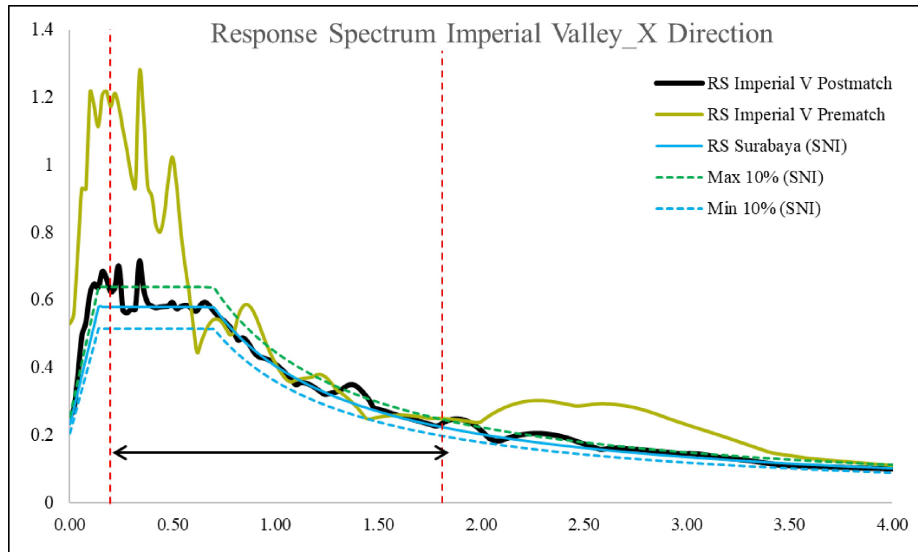
**Gambar** Response Spectra Chi-Chi Taiwan\_Y Direction  
( Sumber: Kajian Penulis )



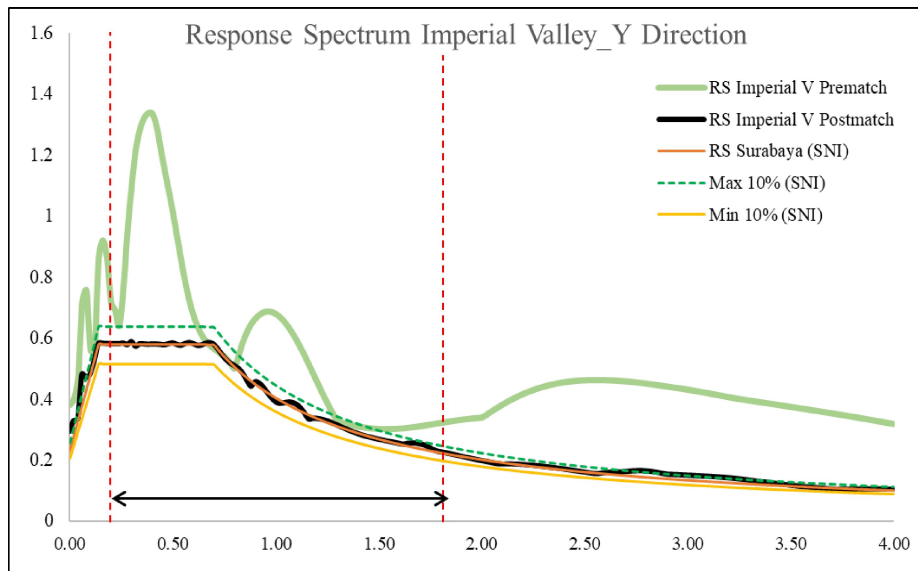
**Gambar Response Spectra Durzce, Turkey\_X Direction**  
 ( Sumber: Kajian Penulis )



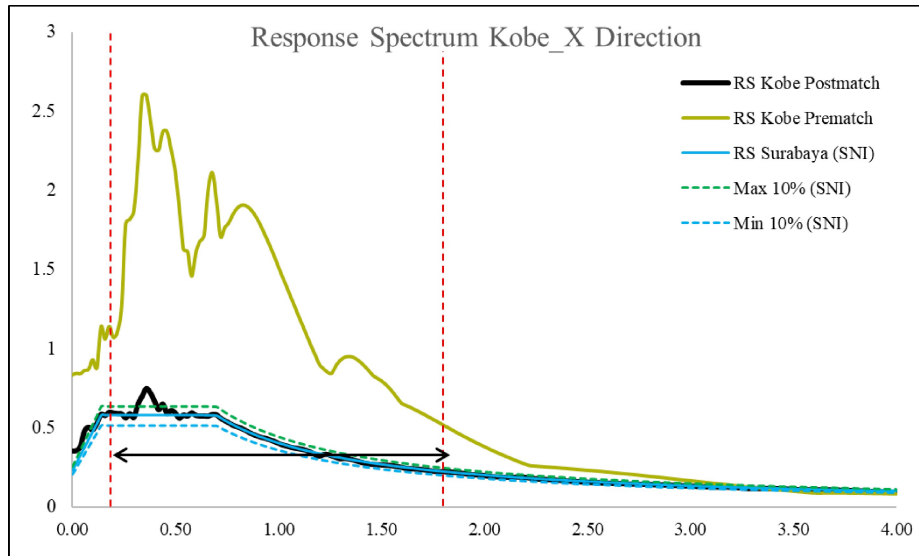
**Gambar Response Spectra Durzce, Turkey\_Y Direction**  
 ( Sumber: Kajian Penulis )



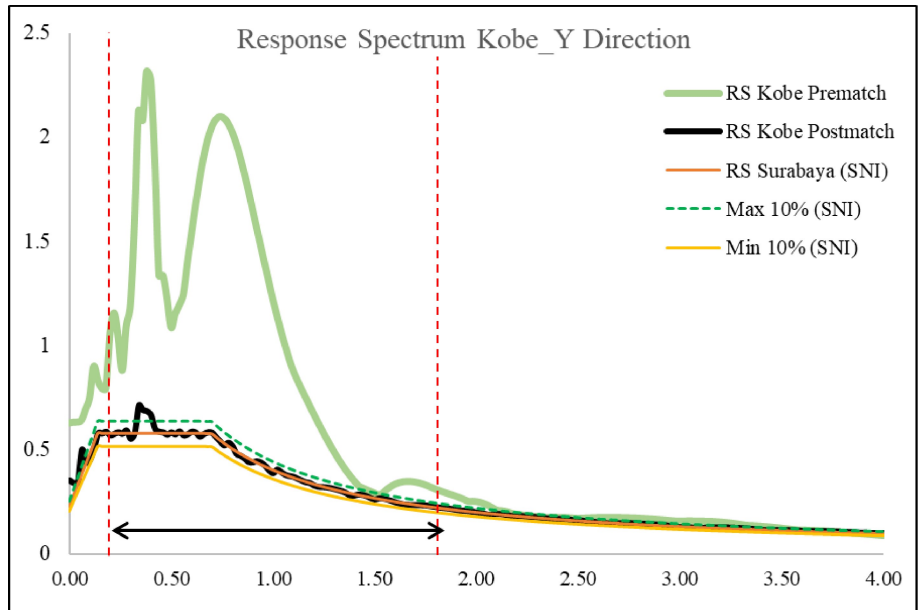
**Gambar** Response Spectra Imperial Valley\_X Direction  
( Sumber: Kajian Penulis )



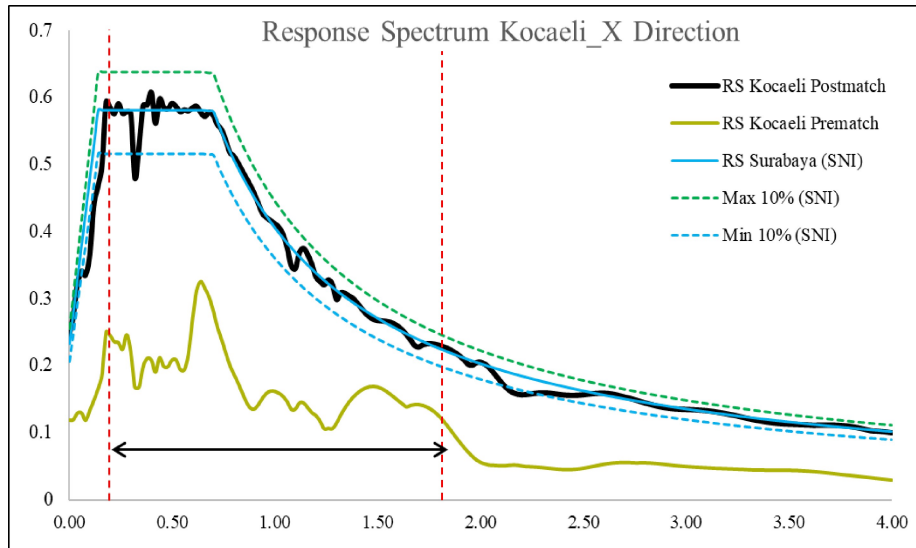
**Gambar** Response Spectra Imperial Valley\_Y Direction  
( Sumber: Kajian Penulis )



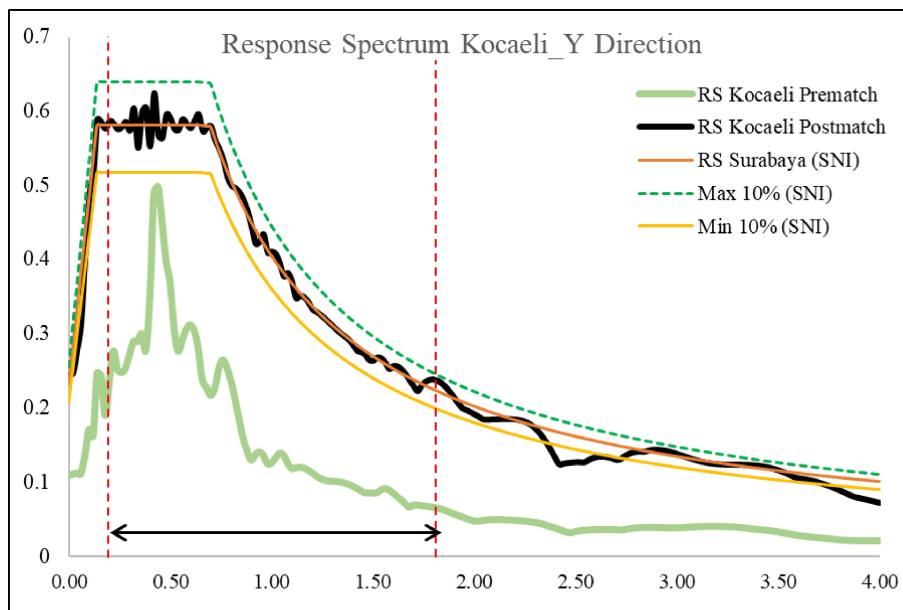
**Gambar** Response Spectra Kobe\_X Direction  
( Sumber: Kajian Penulis )



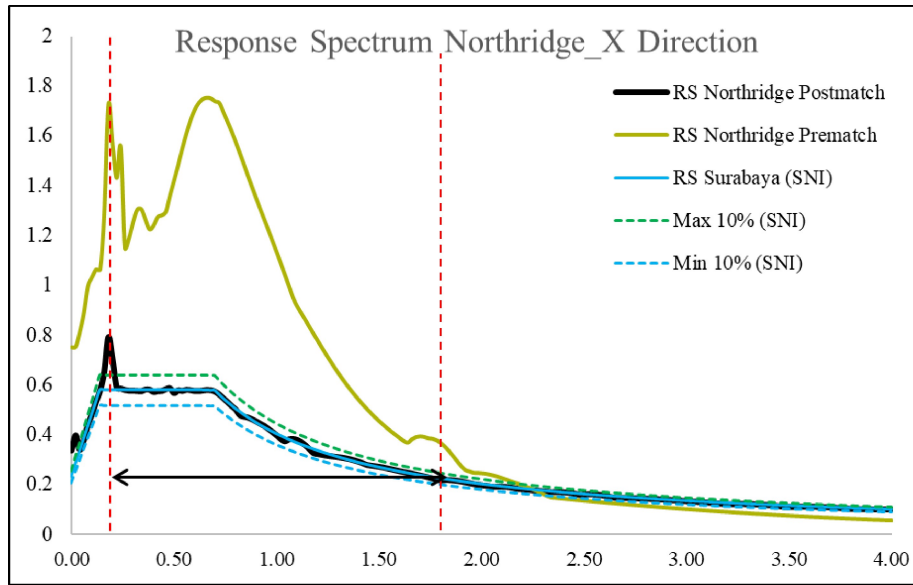
**Gambar** Response Spectra Kobe\_Y Direction  
( Sumber: Kajian Penulis )



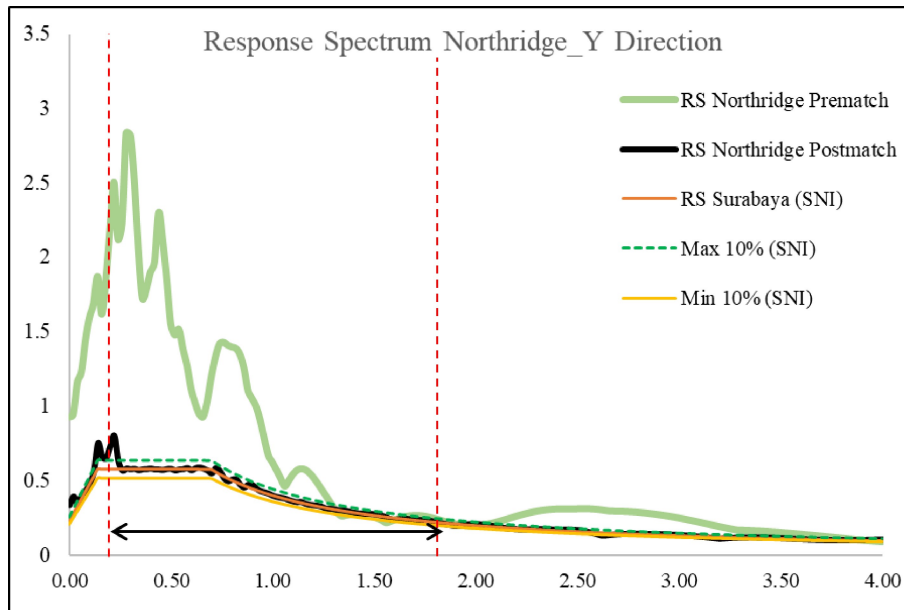
**Gambar** Response Spectra Kocaeli\_X Direction  
( Sumber: Kajian Penulis )



**Gambar** Response Spectra Kocaeli\_Y Direction  
( Sumber: Kajian Penulis )

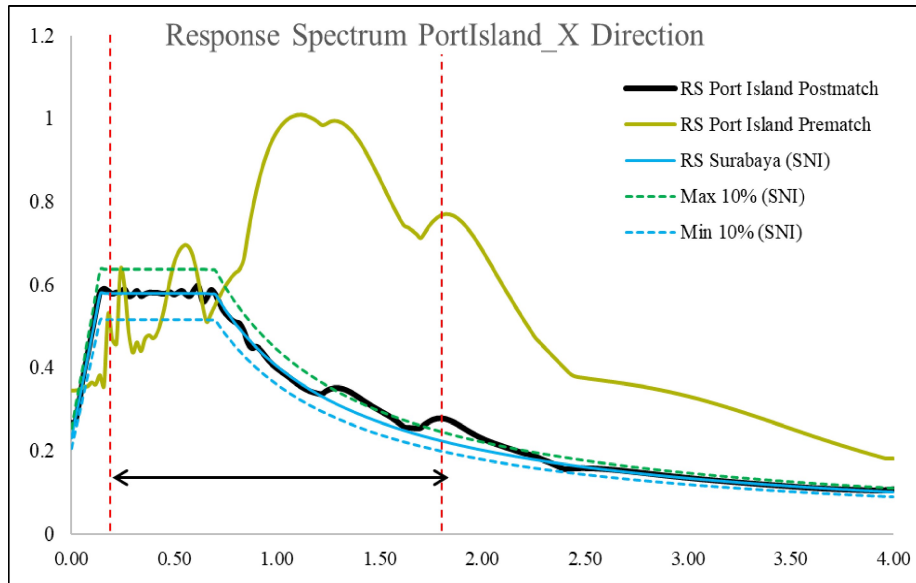


**Gambar** Response Spectra Northridge\_X Direction  
( Sumber: Kajian Penulis )

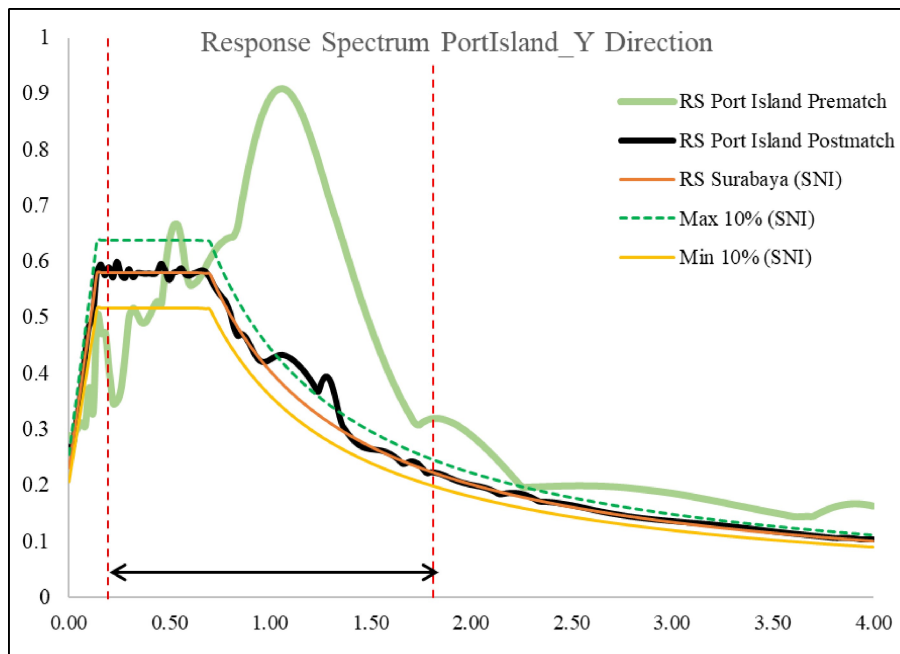


**Gambar** Response Spectra Northridge\_Y Direction  
( Sumber: Kajian Penulis )

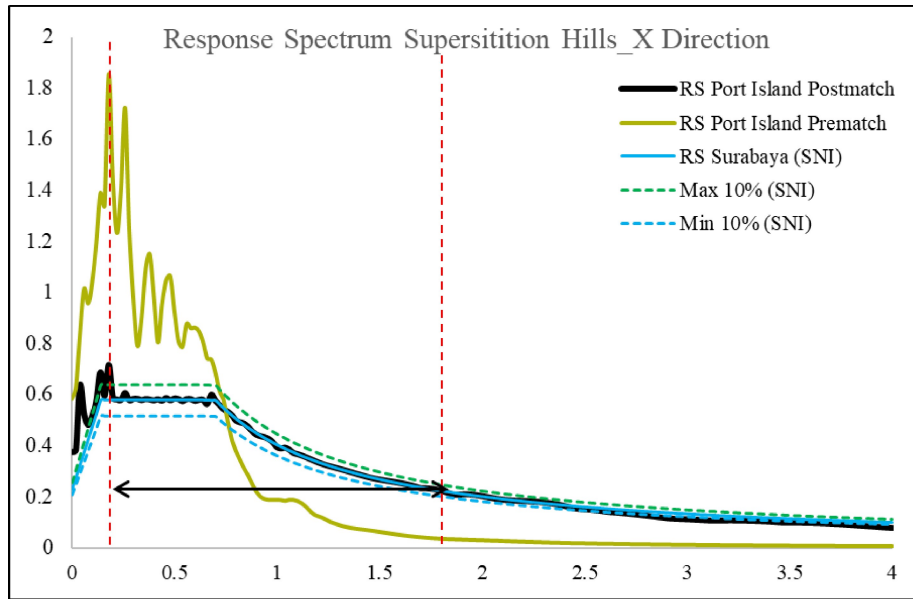




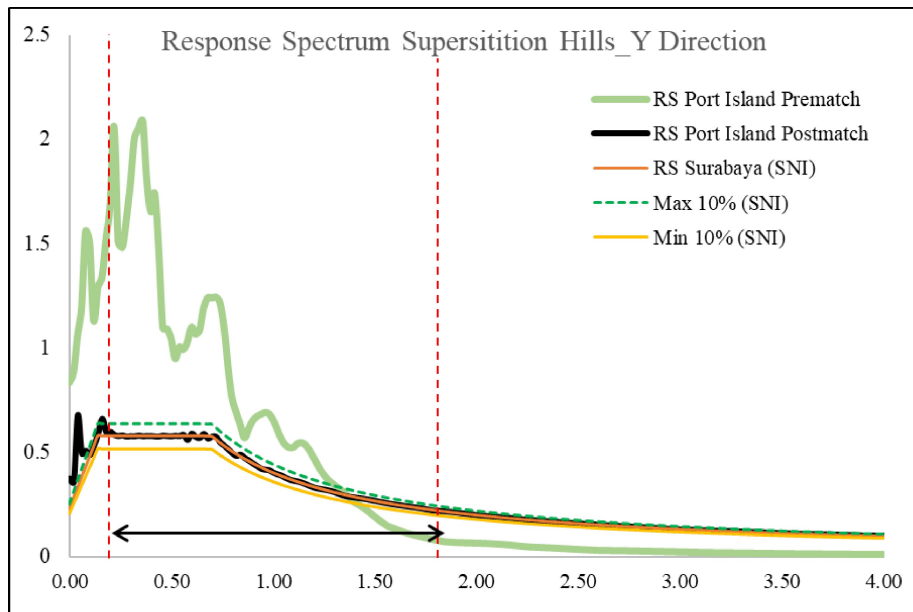
**Gambar** Response Spectra PortIsland\_X Direction  
( Sumber: Kajian Penulis )



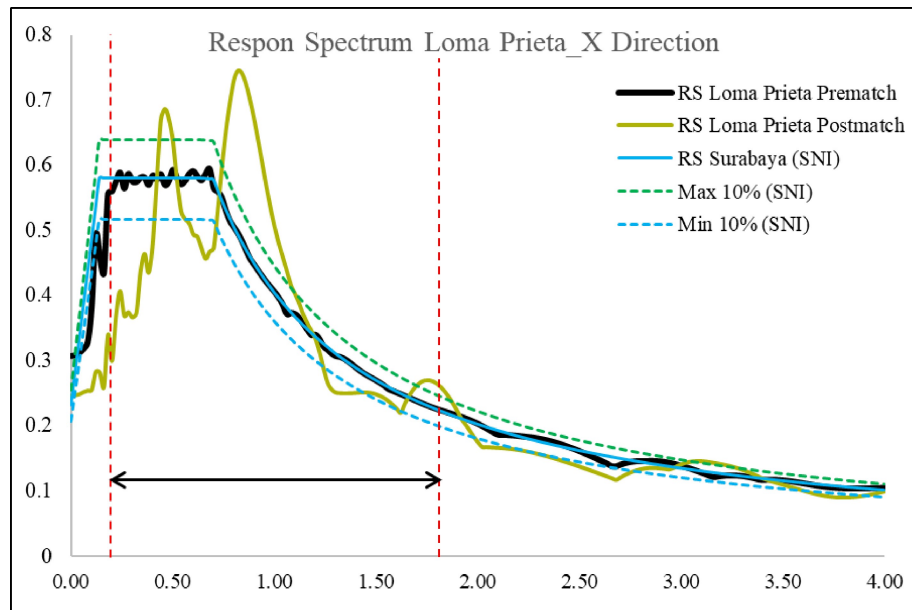
**Gambar** Response Spectra PortIsland\_Y Direction  
( Sumber: Kajian Penulis )



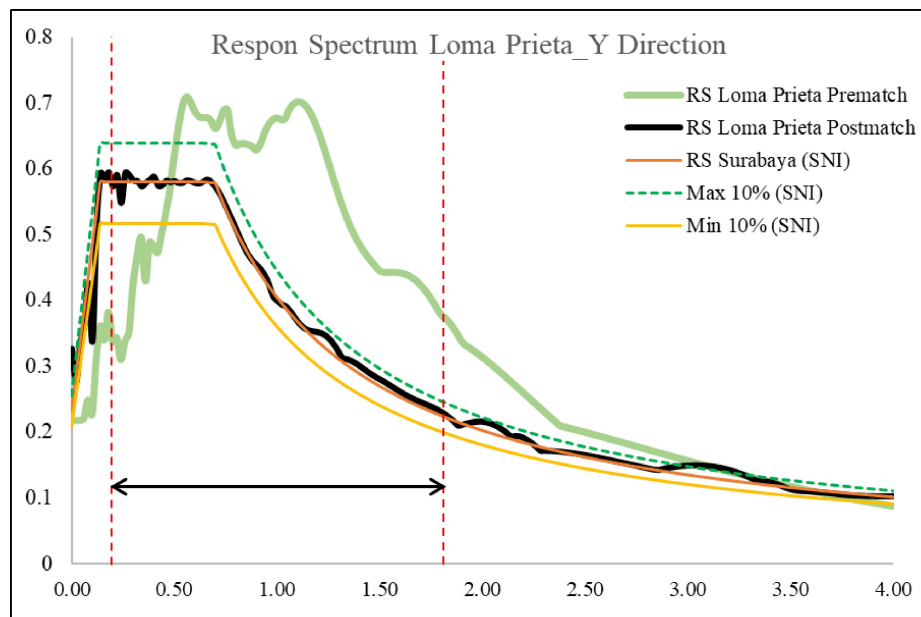
**Gambar** Response Spectra Supersition Hills\_X Direction  
( Sumber: Kajian Penulis )



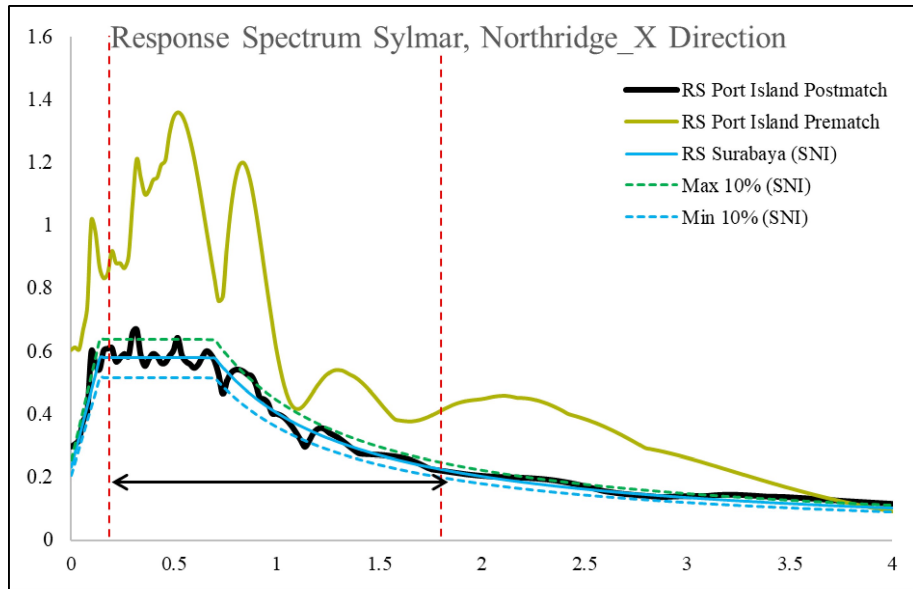
**Gambar** Response Spectra Supersition Hills\_Y Direction  
( Sumber: Kajian Penulis )



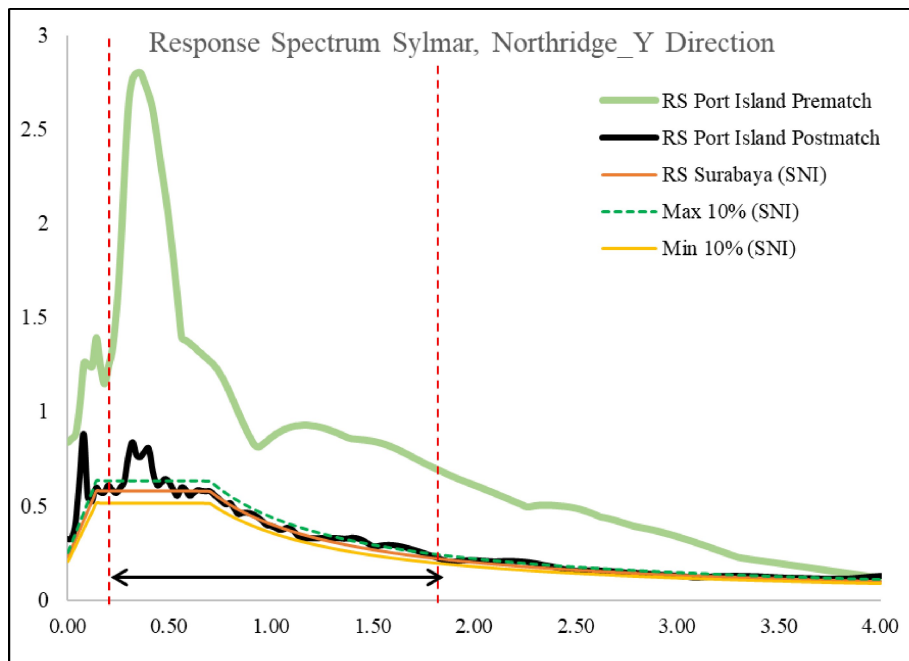
**Gambar** Response Spectra Loma Prieta\_X Direction  
( Sumber: Kajian Penulis )



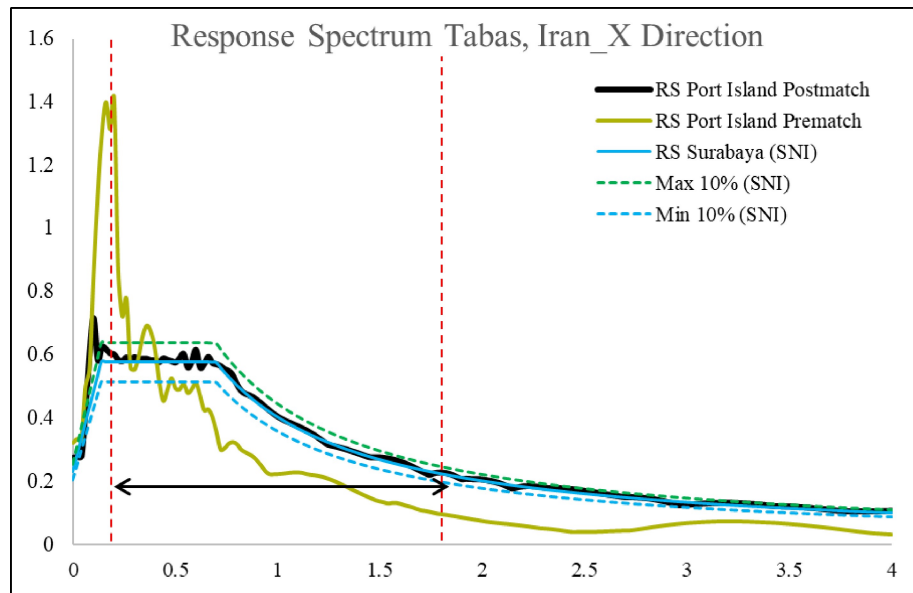
**Gambar** Response Spectra Loma Prieta\_Y Direction  
( Sumber: Kajian Penulis )



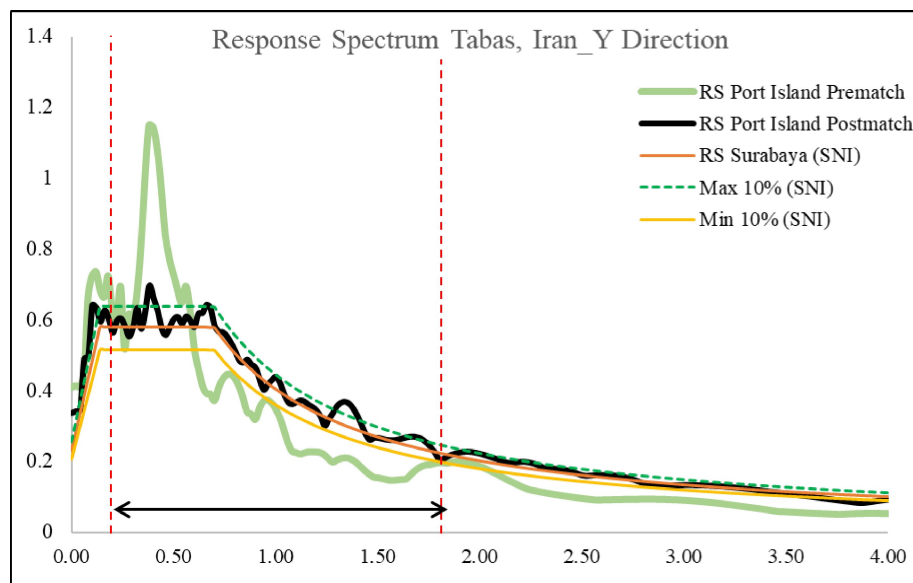
**Gambar** Response Spectra Sylmar, Northridge\_X Direction  
( Sumber: Kajian Penulis )



**Gambar** Response Spectra Sylmar, Northridge\_Y Direction  
( Sumber: Kajian Penulis )



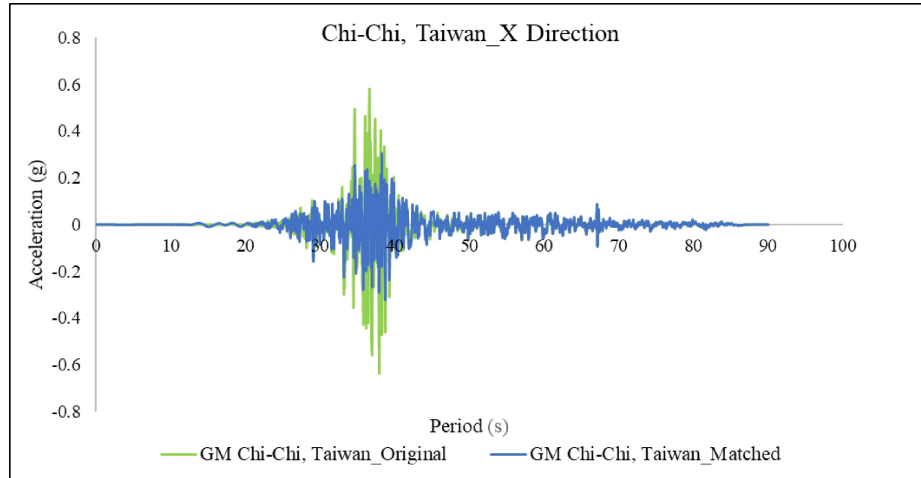
**Gambar** Response Spectra Tabas, Iran\_X Direction  
( Sumber: Kajian Penulis )



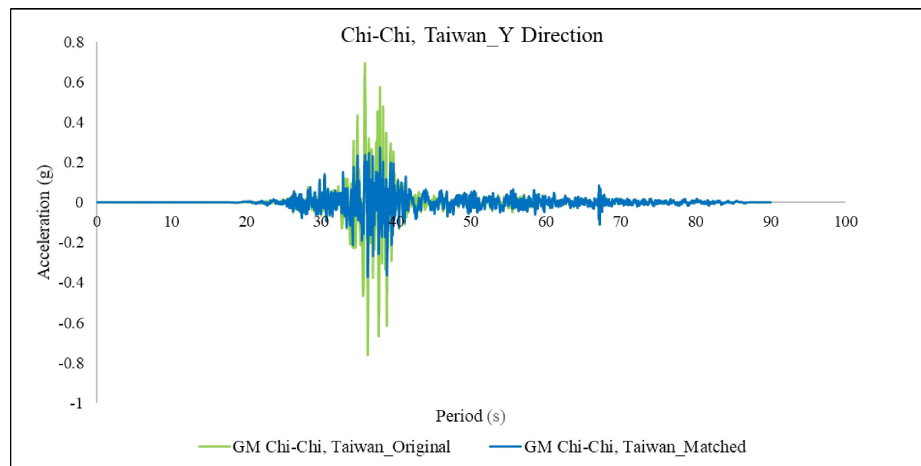
**Gambar** Response Spectra Tabas, Iran\_Y Direction  
( Sumber: Kajian Penulis )

Halaman Sengaja Dikosongkan

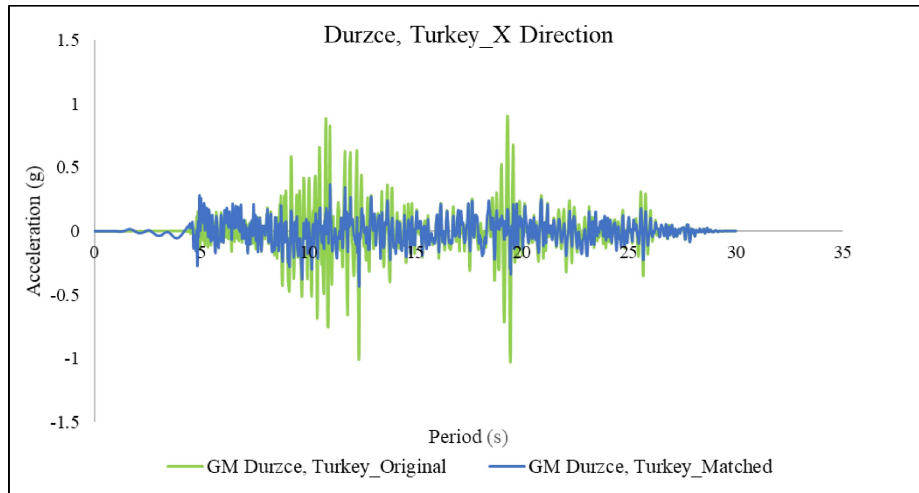
## LAMPIRAN 6



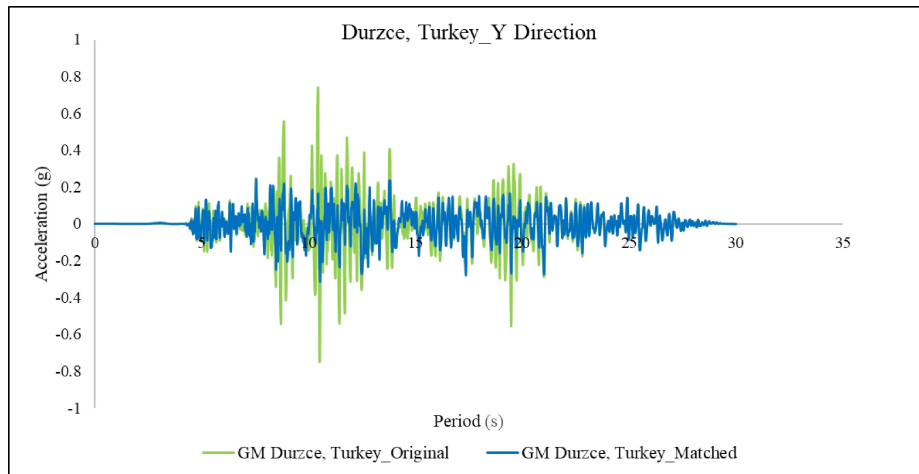
**Gambar** *Ground Motion Chi-Chi Tawain\_X Direction*  
( Sumber: Kajian Penulis )



**Gambar** *Ground Motion Chi-Chi Tawain\_Y Direction*  
( Sumber: Kajian Penulis )

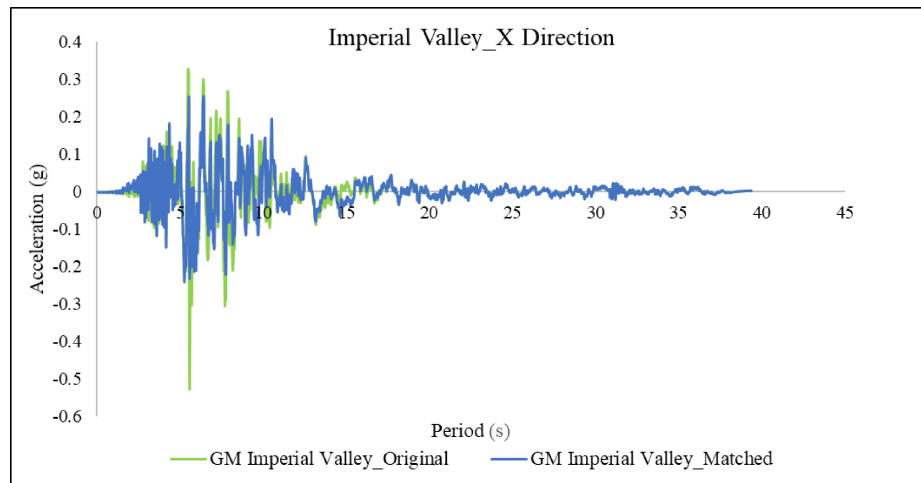


**Gambar** *Ground Motion Durzce, Iran\_X Direction*  
 ( Sumber: Kajian Penulis )

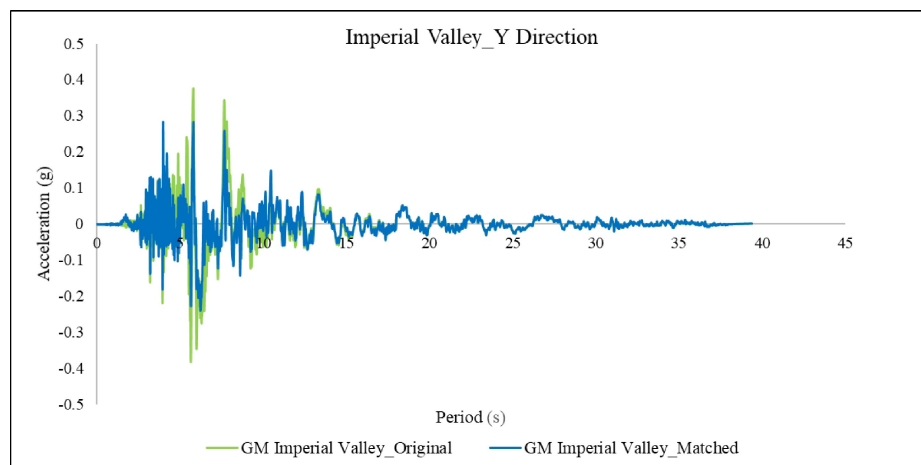


**Gambar** *Ground Motion Durzce, Iran\_Y Direction*  
 ( Sumber: Kajian Penulis )

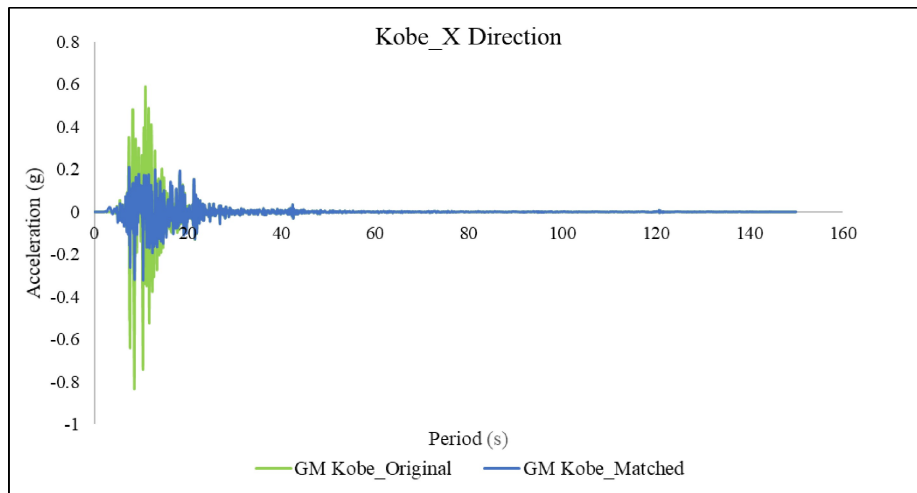




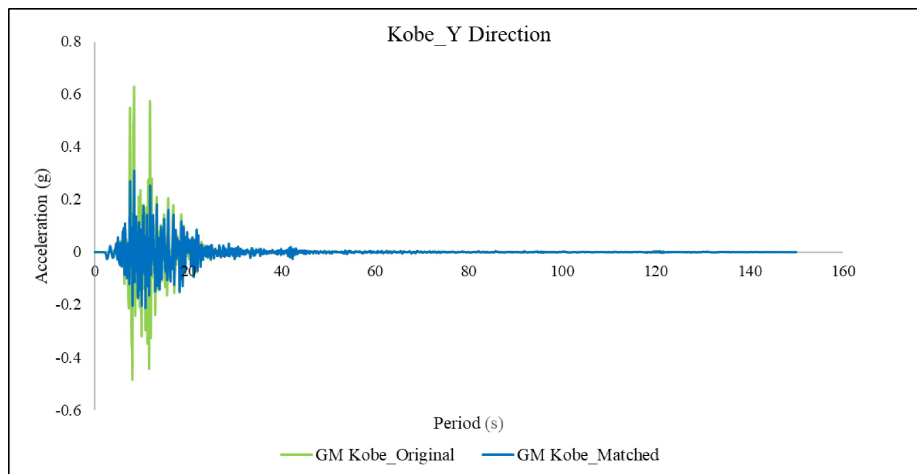
**Gambar** *Ground Motion Imperial Valley \_X Direction*  
( Sumber: Kajian Penulis )



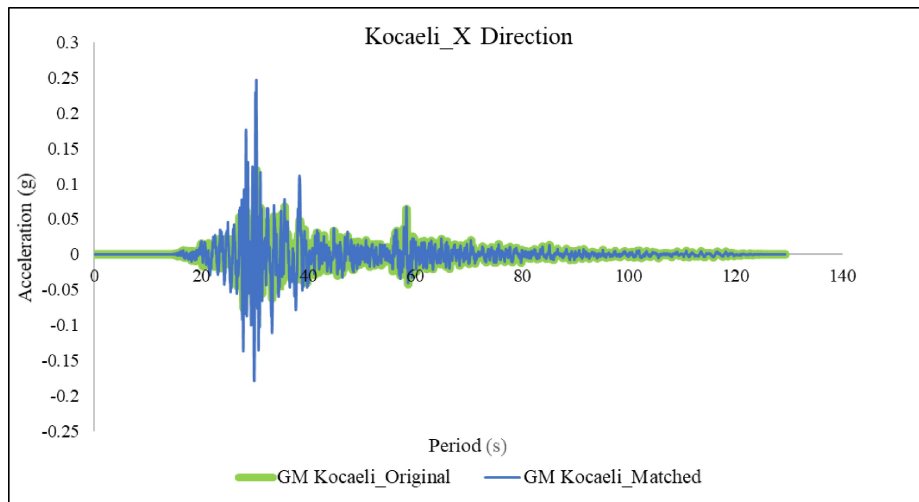
**Gambar** *Ground Motion Imperial Valley \_Y Direction*  
( Sumber: Kajian Penulis )



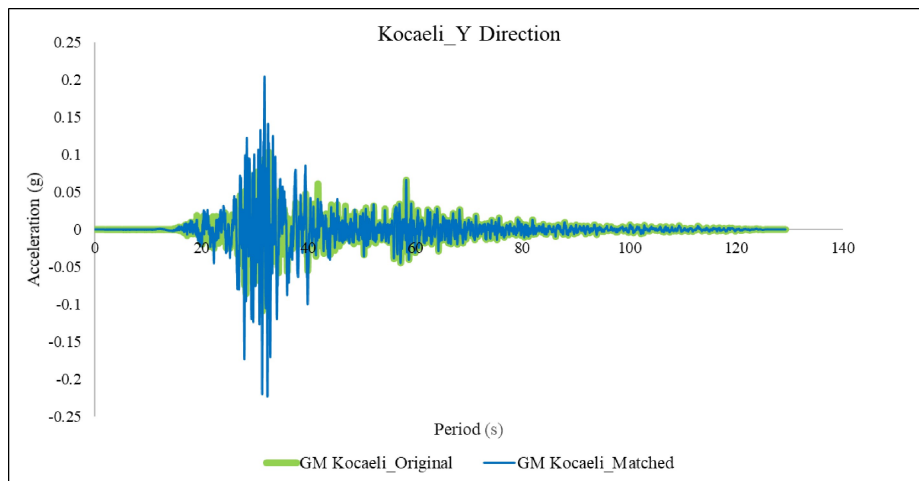
**Gambar** *Ground Motion Kobe \_X Direction*  
( Sumber: Kajian Penulis )



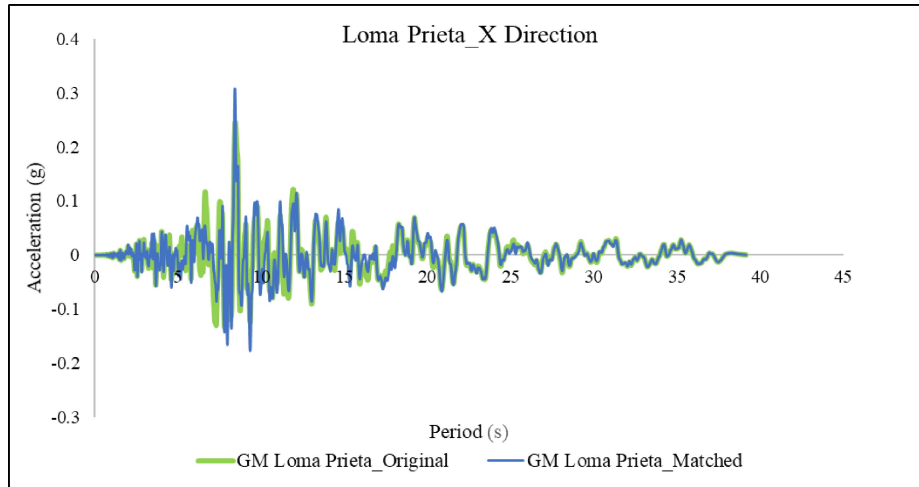
**Gambar** *Ground Motion Kobe \_Y Direction*  
( Sumber: Kajian Penulis )



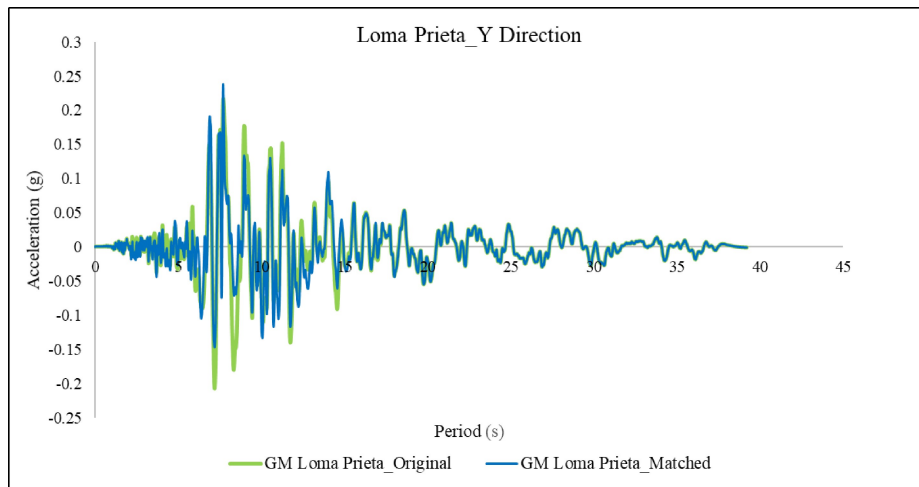
**Gambar** *Ground Motion Kocaeli \_X Direction*  
( Sumber: Kajian Penulis )



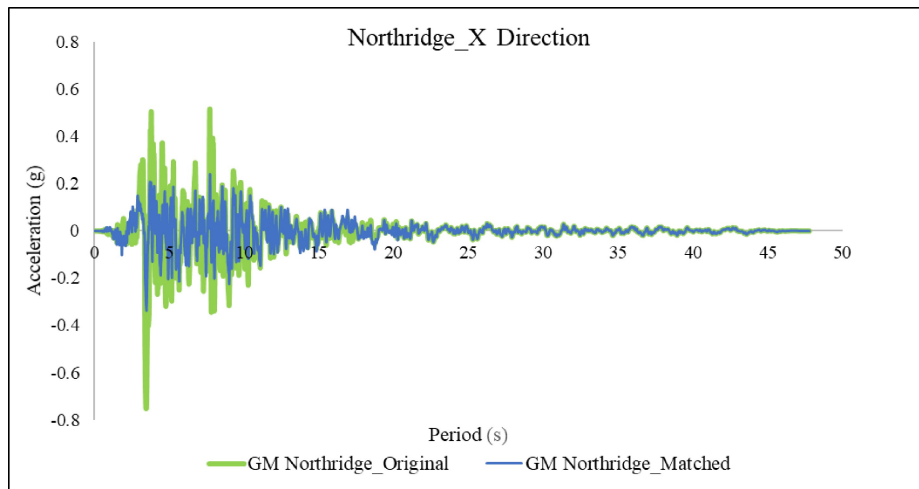
**Gambar** *Ground Motion Kocaeli \_Y Direction*  
( Sumber: Kajian Penulis )



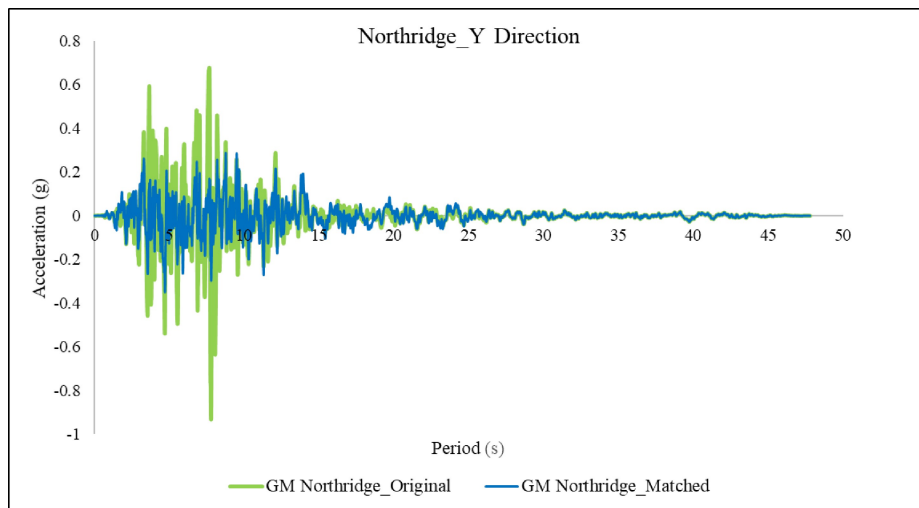
**Gambar** *Ground Motion Loma Prieta \_ Y Direction*  
 ( Sumber: Kajian Penulis )



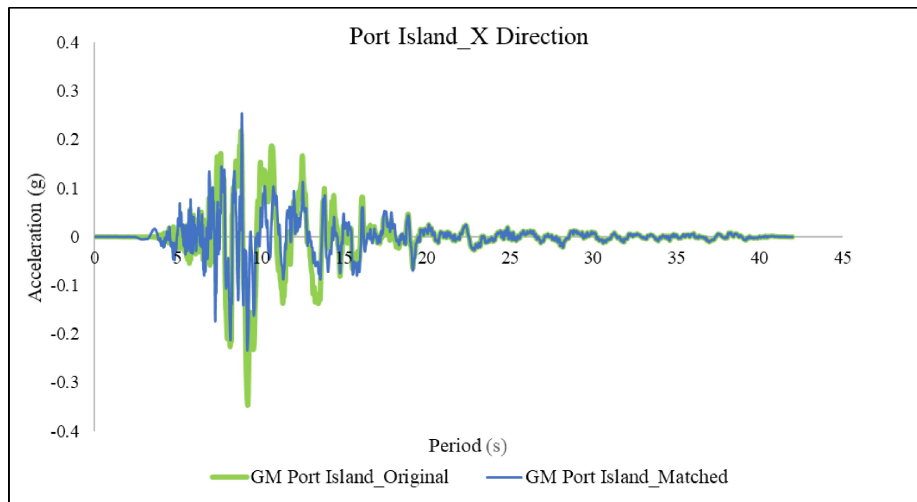
**Gambar** *Ground Motion Loma Prieta \_ Y Direction*  
 ( Sumber: Kajian Penulis )



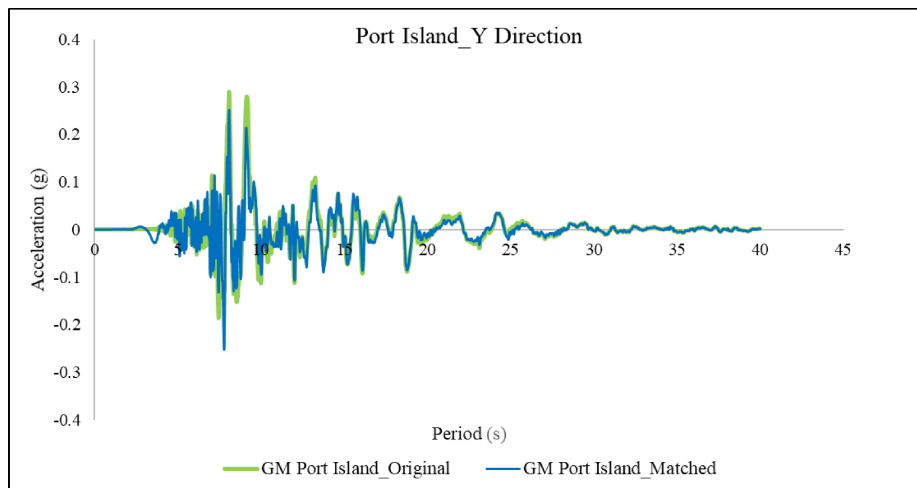
**Gambar** *Ground Motion Northridge \_X Direction*  
( Sumber: Kajian Penulis )



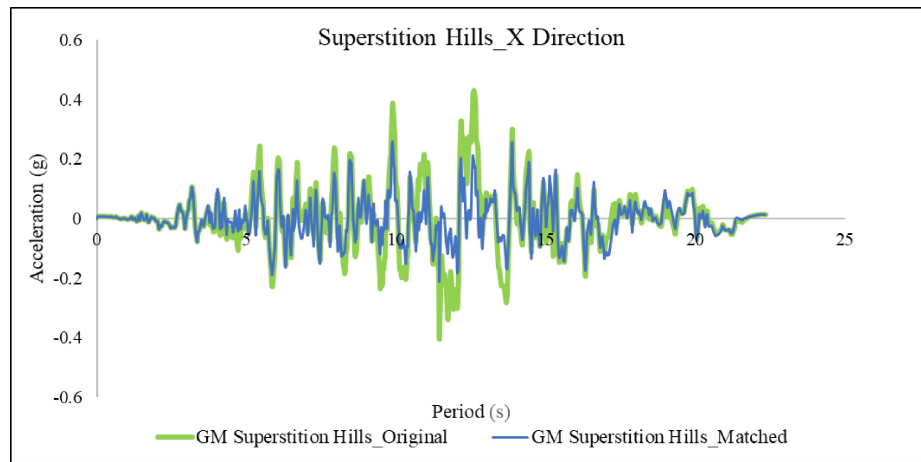
**Gambar** *Ground Motion Northridge \_Y Direction*  
( Sumber: Kajian Penulis )



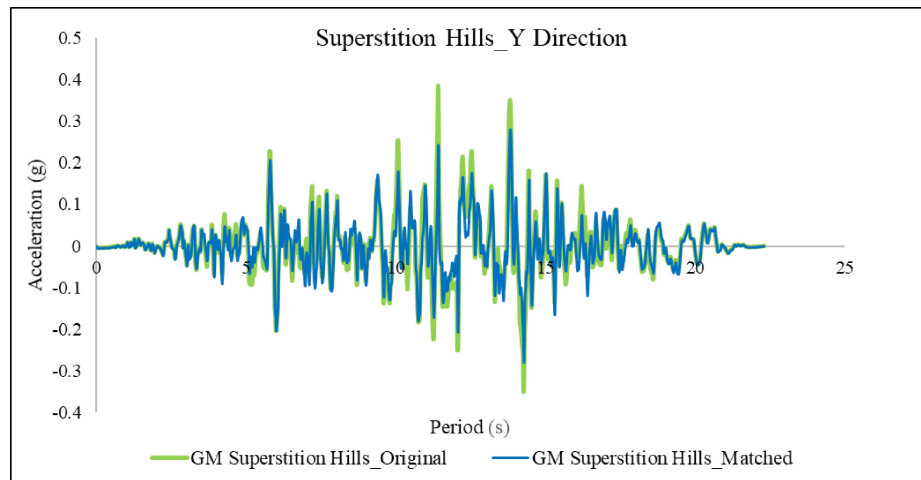
**Gambar** *Ground Motion Port Island \_ X Direction*  
( Sumber: Kajian Penulis )



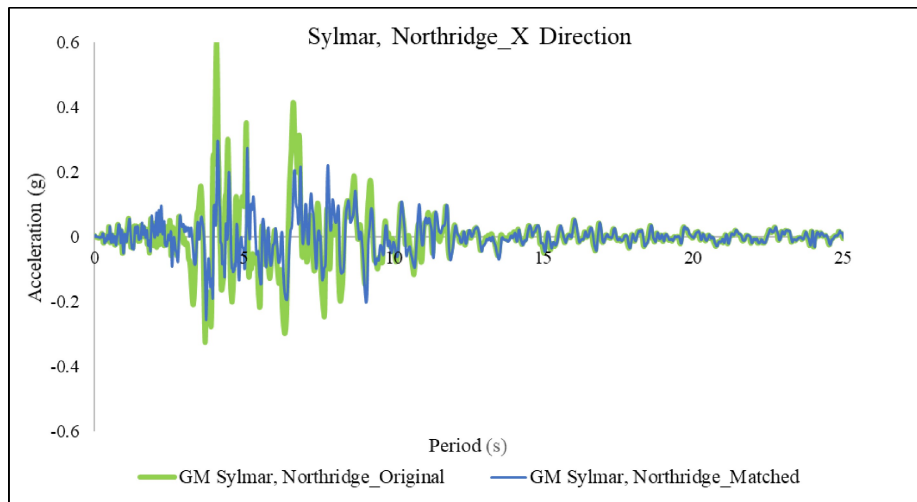
**Gambar** *Ground Motion Port Island \_ Y Direction*  
( Sumber: Kajian Penulis )



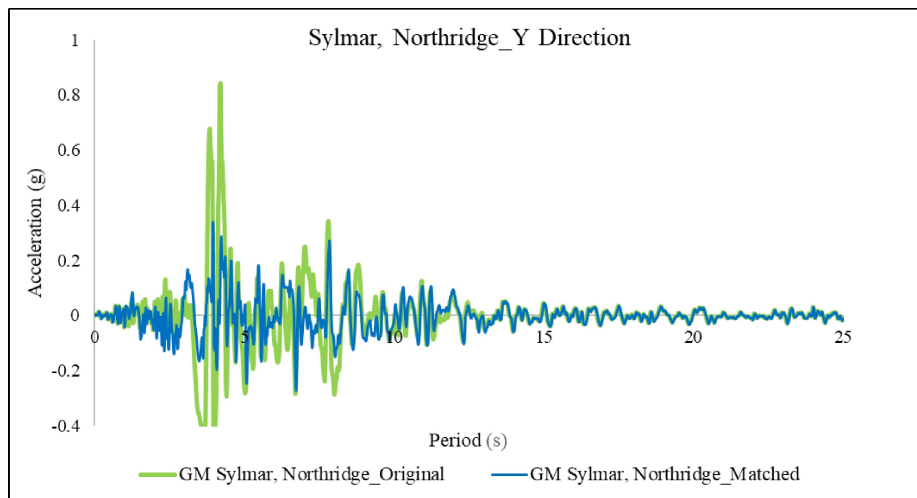
**Gambar** *Ground Motion* Supersition Hills \_*X Direction*  
( Sumber: Kajian Penulis )



**Gambar** *Ground Motion* Supersition Hills \_*Y Direction*  
( Sumber: Kajian Penulis )

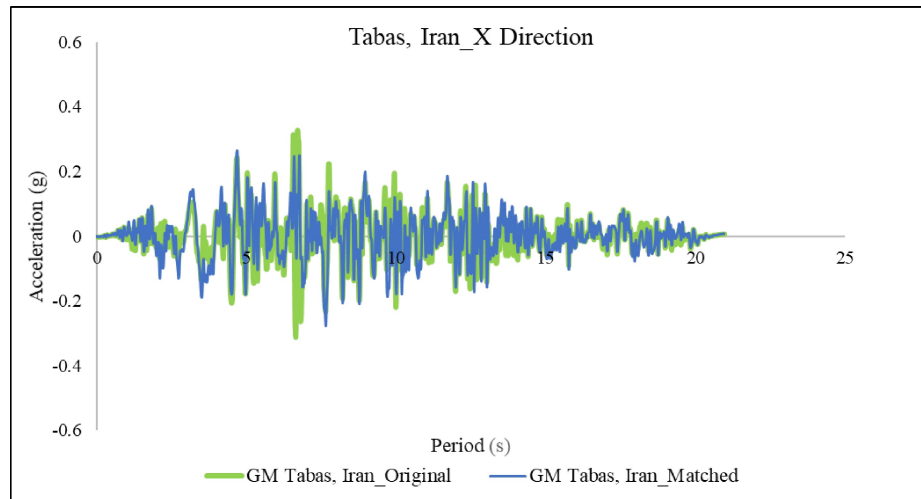


**Gambar** *Ground Motion Sylmar, Northridge \_X Direction*  
( Sumber: Kajian Penulis )

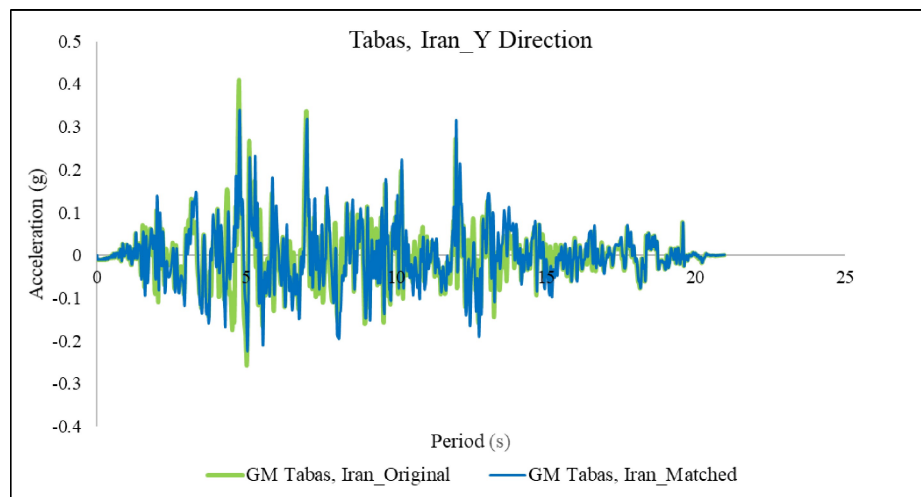


**Gambar** *Ground Motion Sylmar, Northridge \_Y Direction*  
( Sumber: Kajian Penulis )





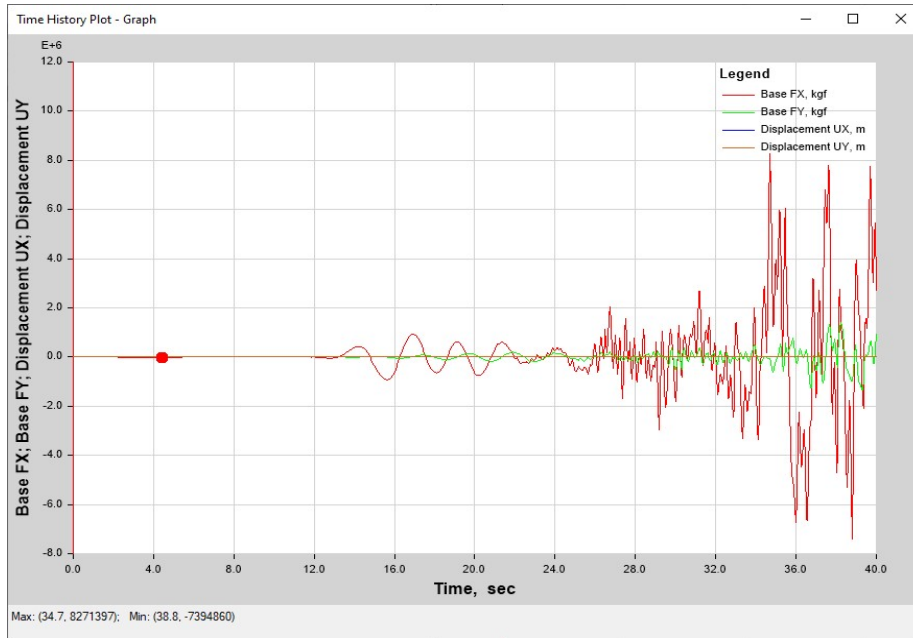
**Gambar** *Ground Motion* Tabas, Iran\_ *X* Direction  
( Sumber: Kajian Penulis )



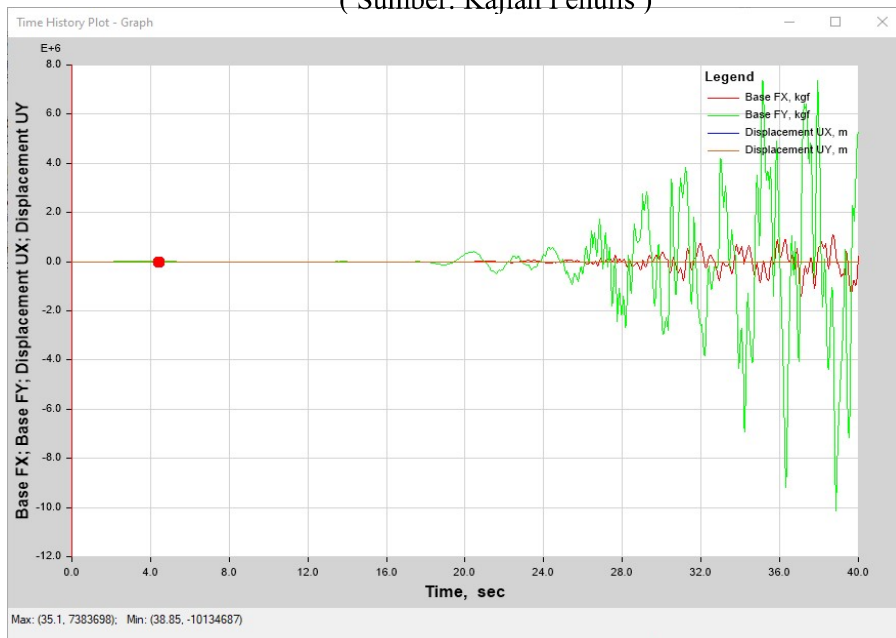
**Gambar** *Ground Motion* Tabas, Iran\_ *Y* Direction  
( Sumber: Kajian Penulis )

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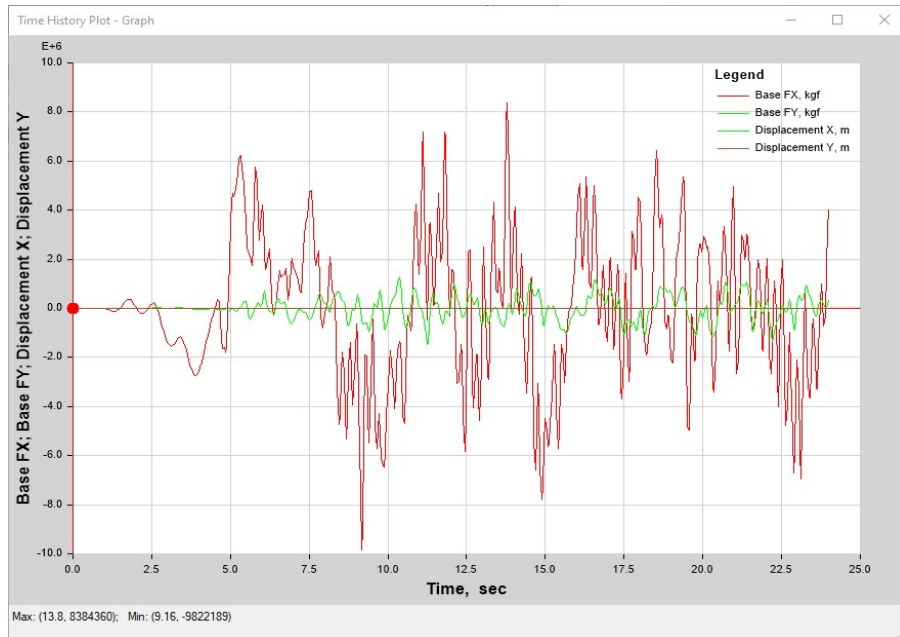
### LAMPIRAN 7



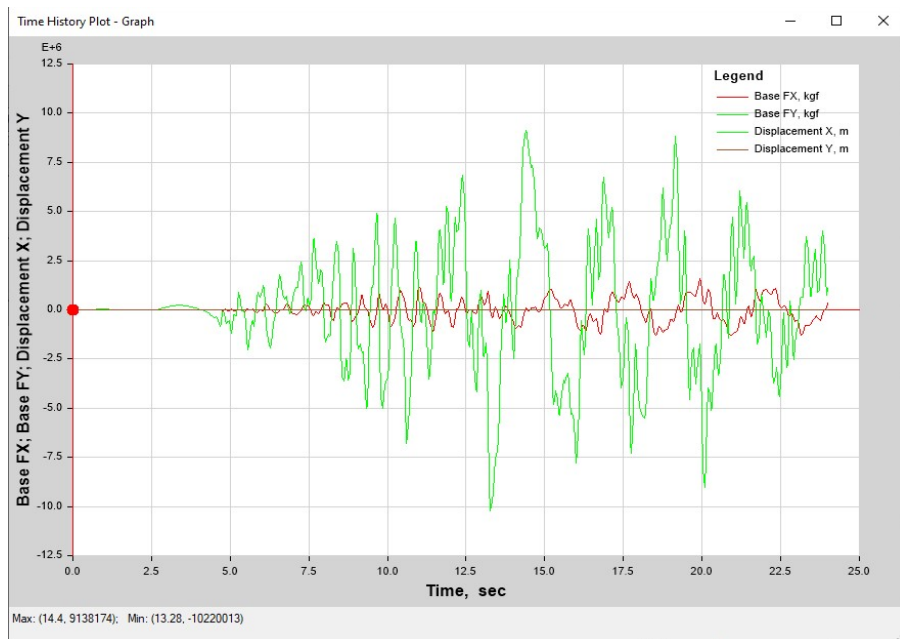
**Gambar 4.153.** *Plot Base Shear Reaction TH Chi-Chi Taiwan X Dirciton*  
( Sumber: Kajian Penulis )



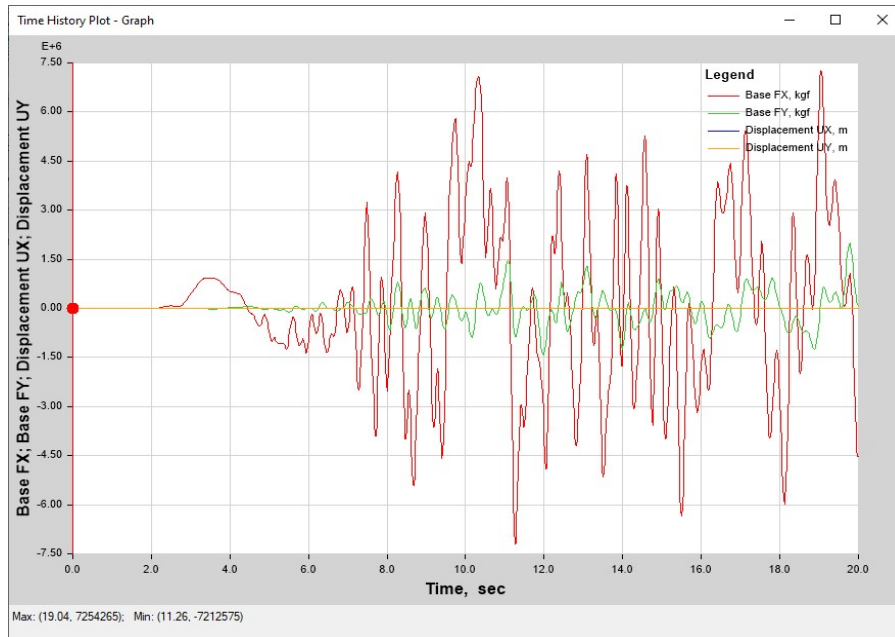
**Gambar** *Plot Base Shear Reaction TH Chi-Chi Taiwan Y Dirciton*  
( Sumber: Kajian Penulis )



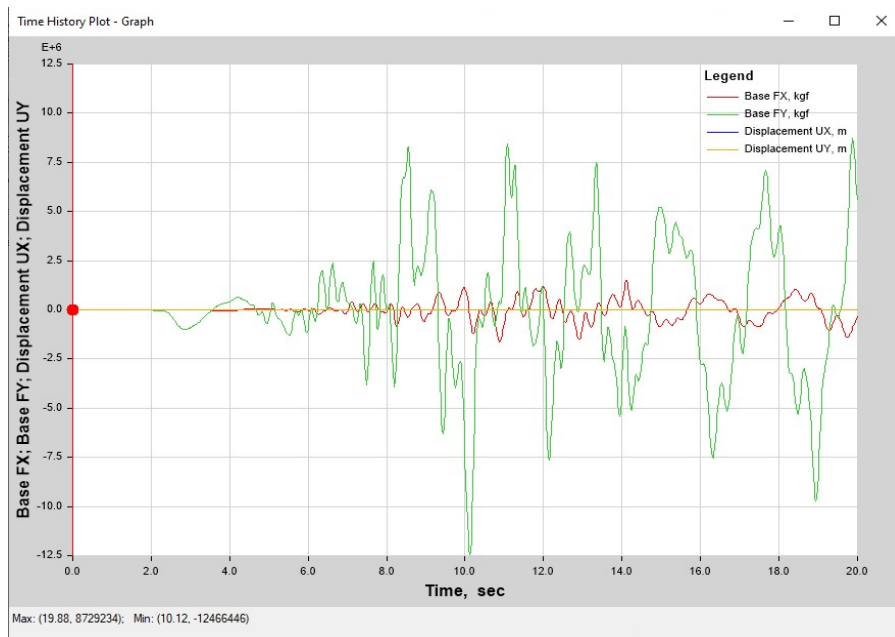
**Gambar Plot Base Shear Reaction TH Durze Turkey X Direction**  
( Sumber: Kajian Penulis )



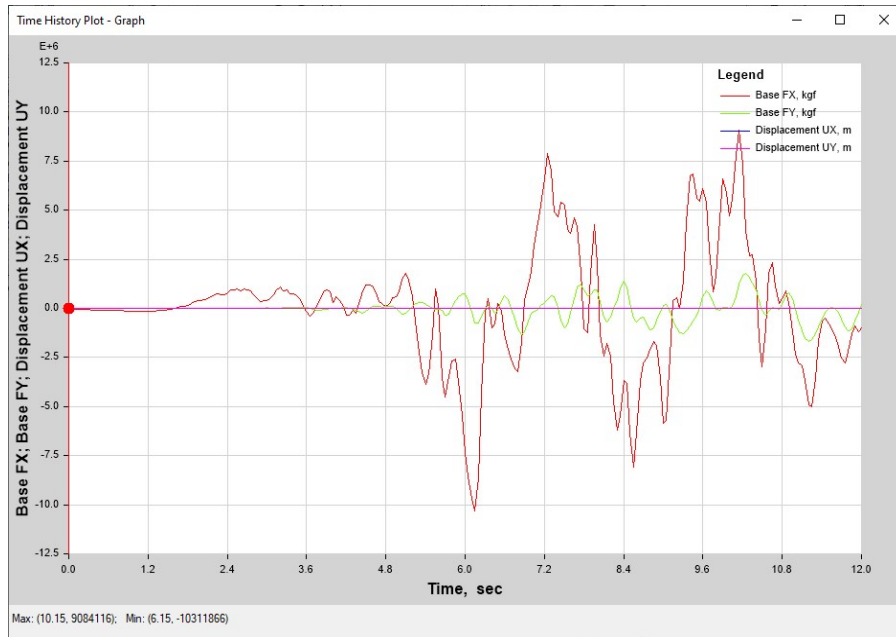
**Gambar Plot Base Shear Reaction TH Durze Turkey Y Direction**  
( Sumber: Kajian Penulis )



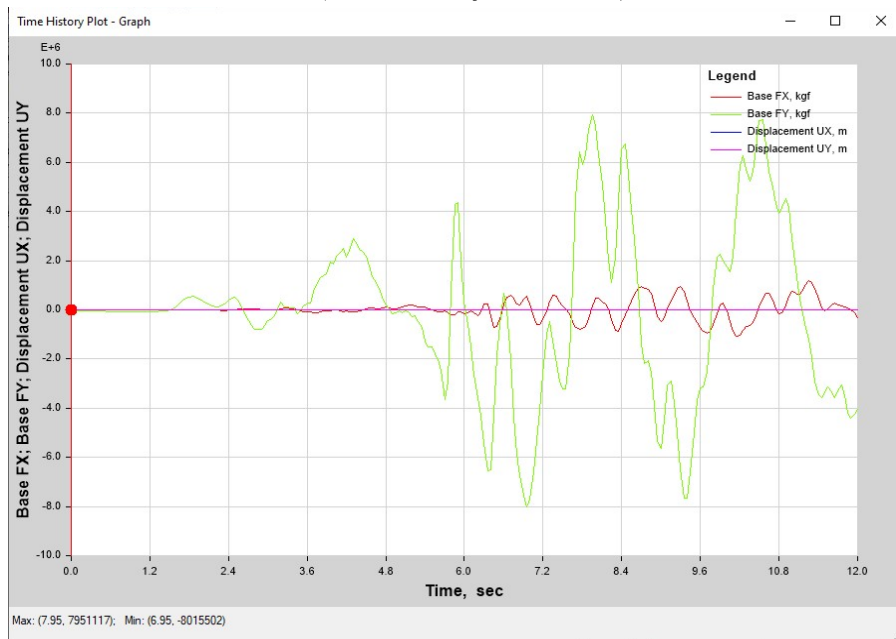
**Gambar Plot Base Shear Reaction TH Kobe X Direction**  
( Sumber: Kajian Penulis )



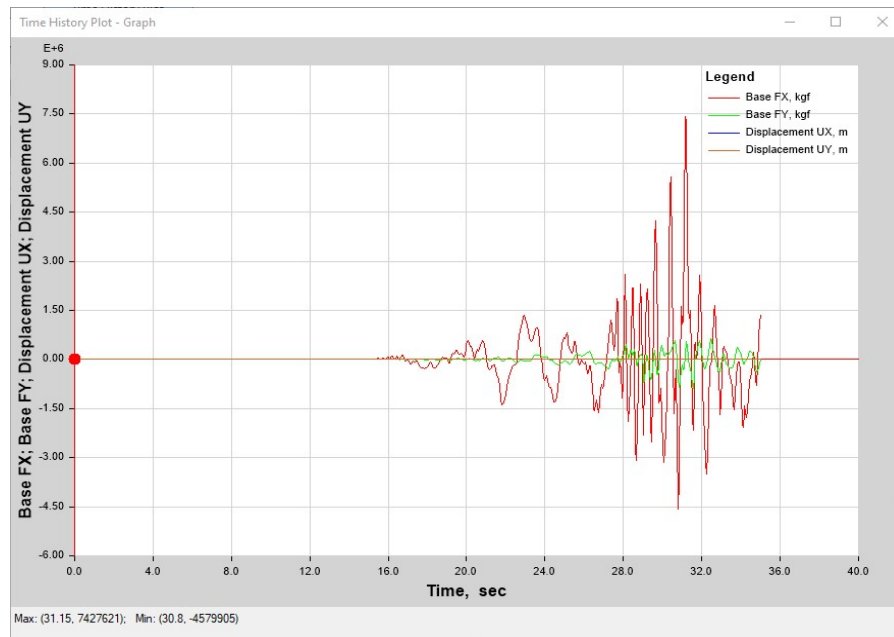
**Gambar Plot Base Shear Reaction TH Kobe Y Direction**  
( Sumber: Kajian Penulis )



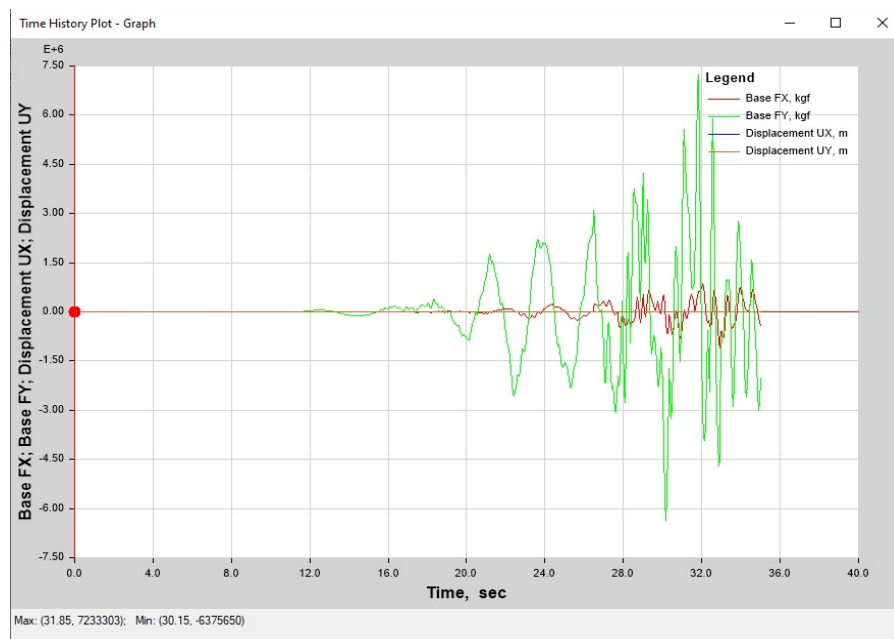
**Gambar Plot Base Shear Reaction TH Imperial Valley X Direction**  
 ( Sumber: Kajian Penulis )



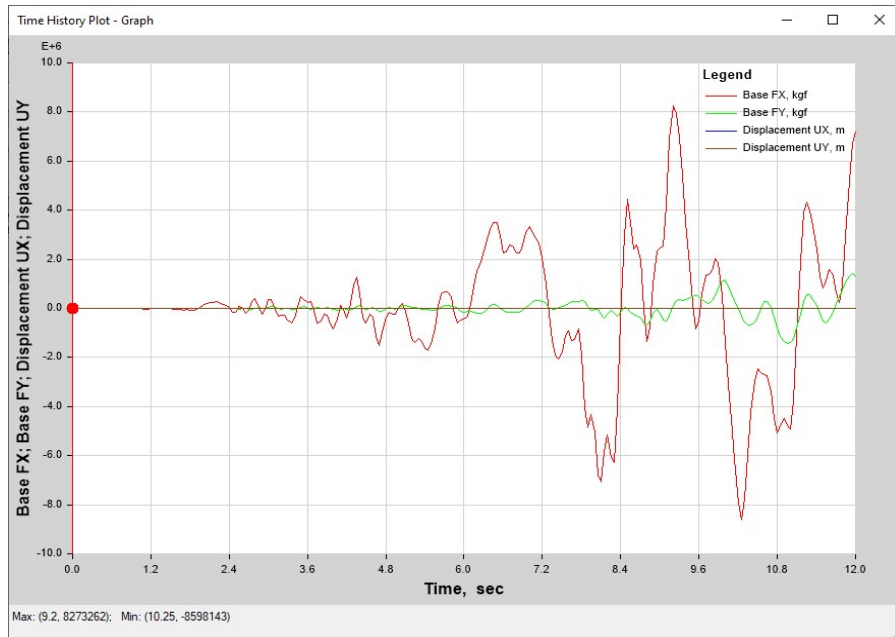
**Gambar Plot Base Shear Reaction TH Imperial Valley Y Direction**  
 ( Sumber: Kajian Penulis )



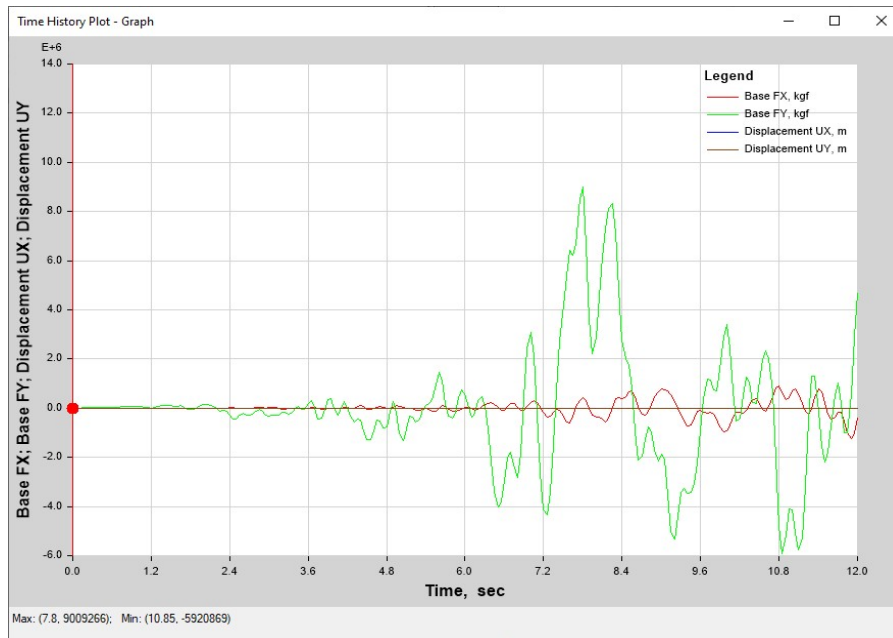
**Gambar** Plot Base Shear Reaction TH Kocaeli X Direction  
( Sumber: Kajian Penulis )



**Gambar** Plot Base Shear Reaction TH Kocaeli Y Direction  
( Sumber: Kajian Penulis )

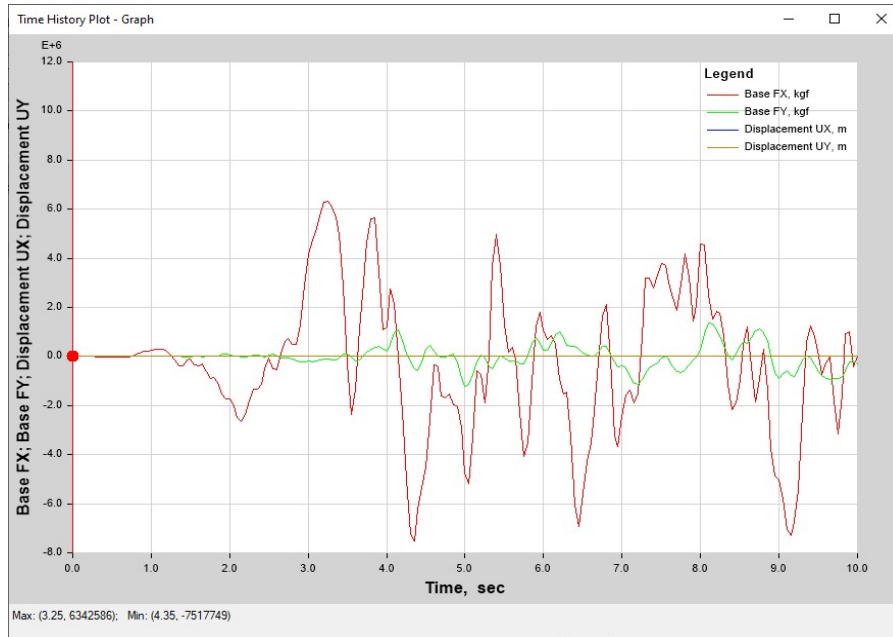


**Gambar** *Plot Base Shear Reaction TH Loma Prieta X Direction*  
( Sumber: Kajian Penulis )

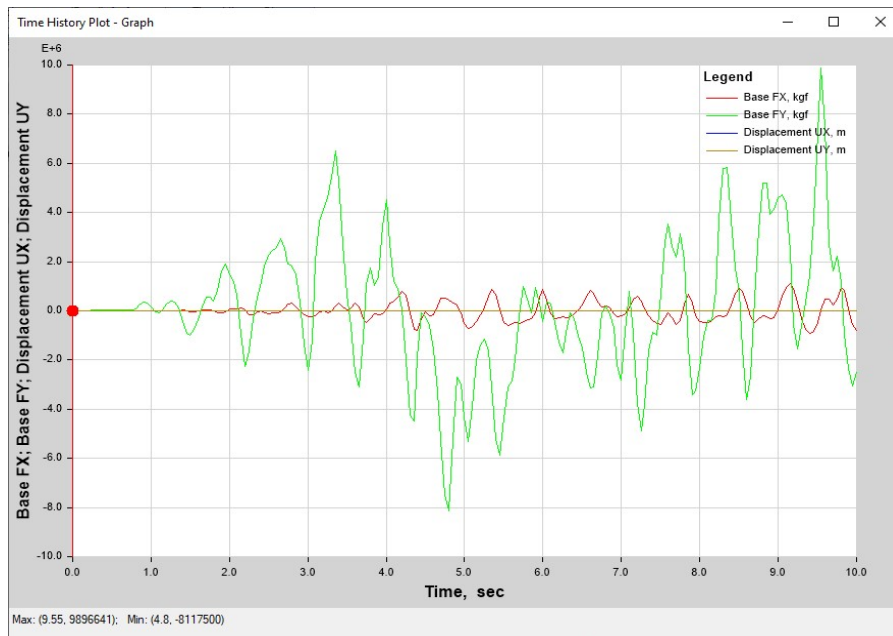


**Gambar** *Plot Base Shear Reaction TH Loma Prieta Y Direction*  
( Sumber: Kajian Penulis )

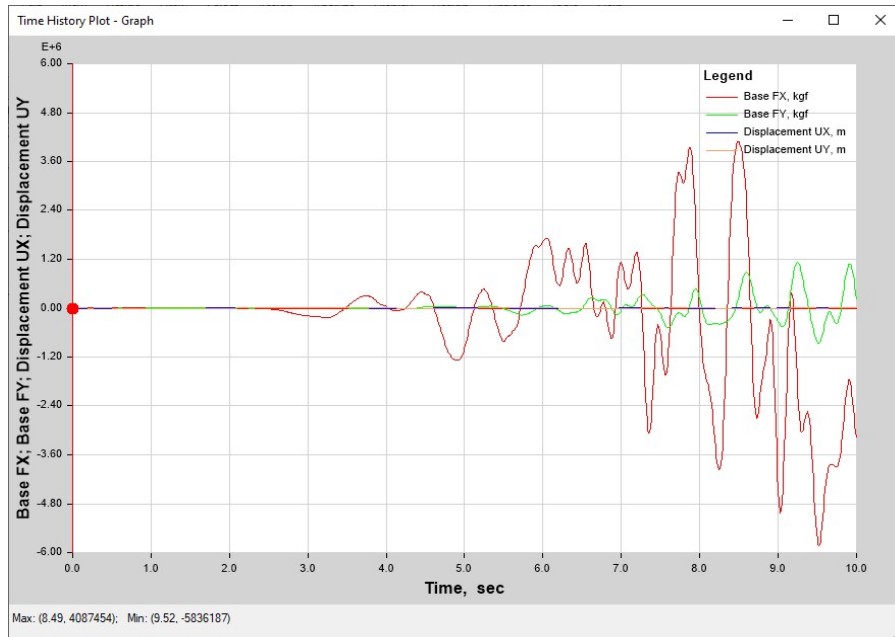




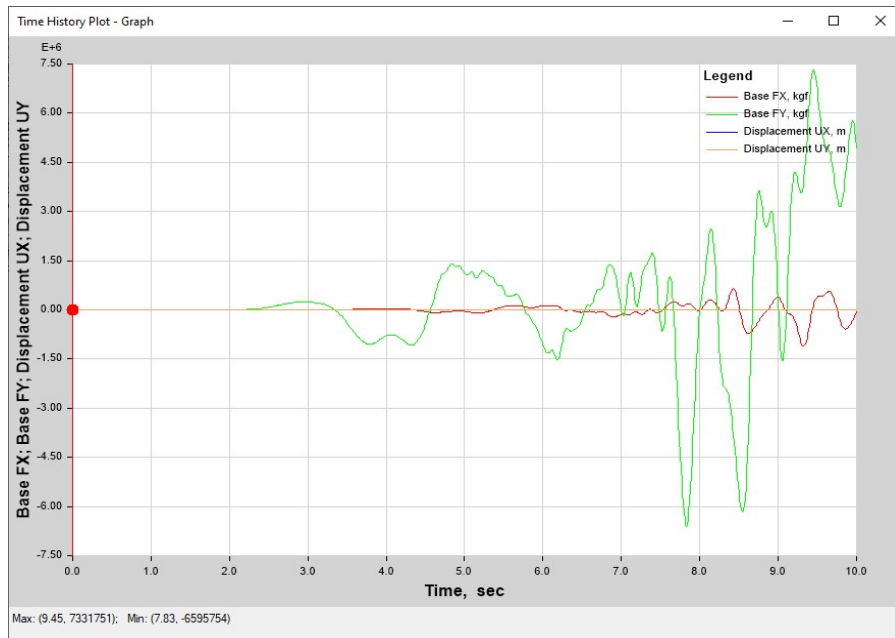
**Gambar Plot Base Shear Reaction TH Northridge X Direction**  
( Sumber: Kajian Penulis )



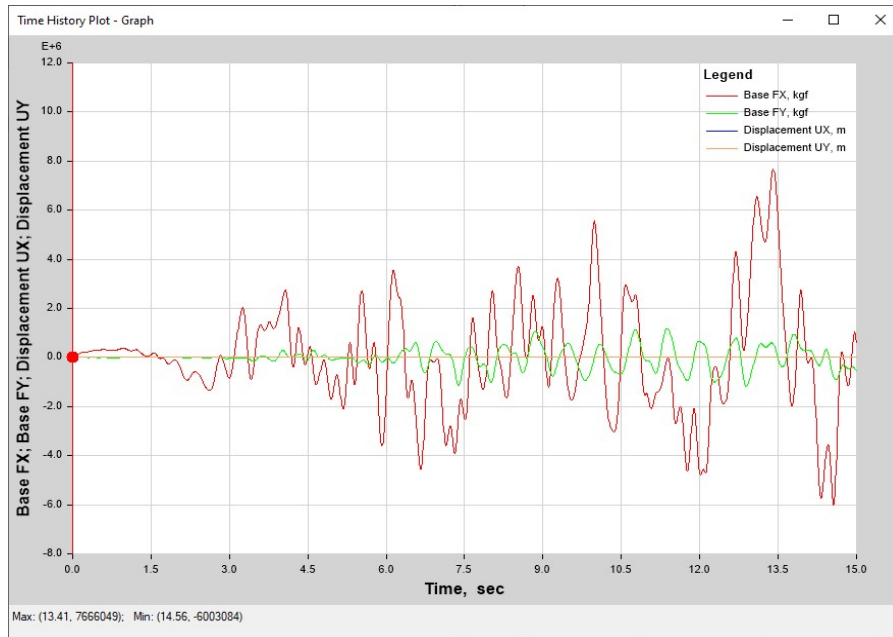
**Gambar Plot Base Shear Reaction TH Northridge Y Direction**  
( Sumber: Kajian Penulis )



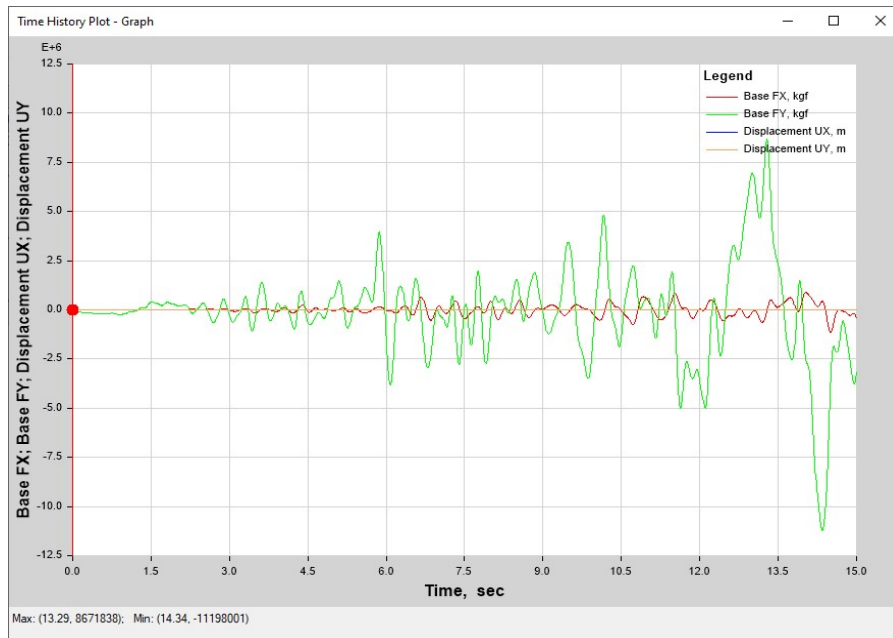
**Gambar Plot Base Shear Reaction TH Port Island X Direction**  
( Sumber: Kajian Penulis )



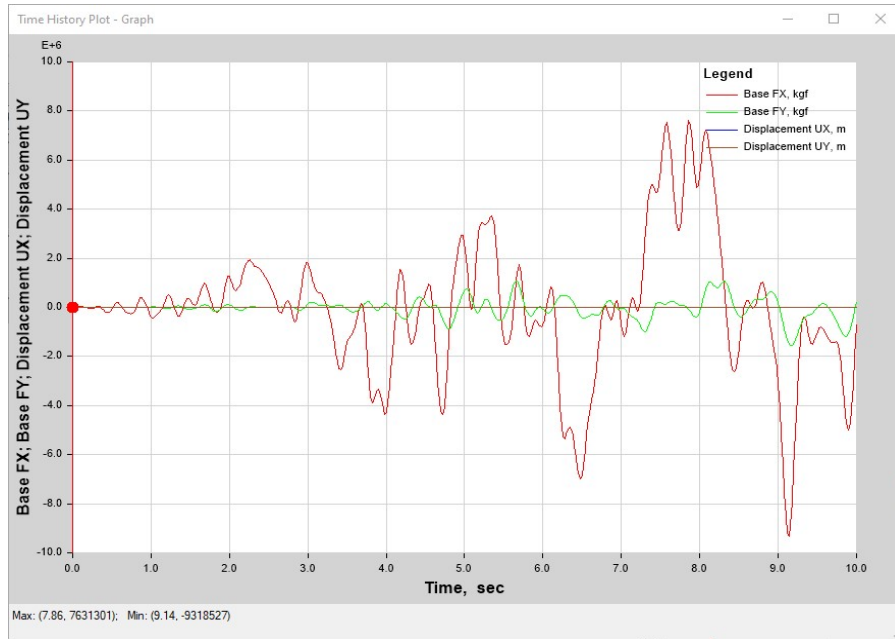
**Gambar Plot Base Shear Reaction TH Port Island Y Direction**  
( Sumber: Kajian Penulis )



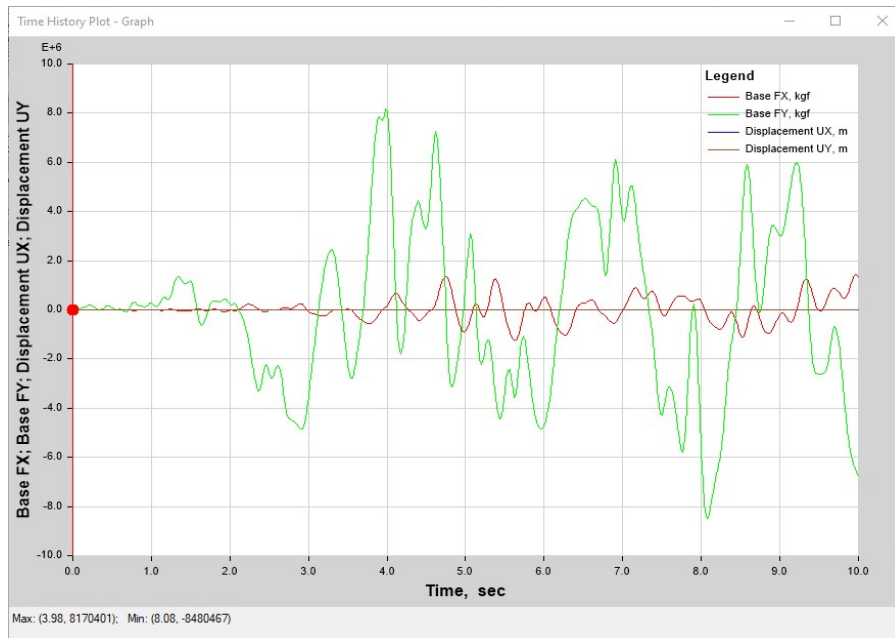
**Gambar** Plot Base Shear Reaction TH Supersition Hilss X Direction  
( Sumber: Kajian Penulis )



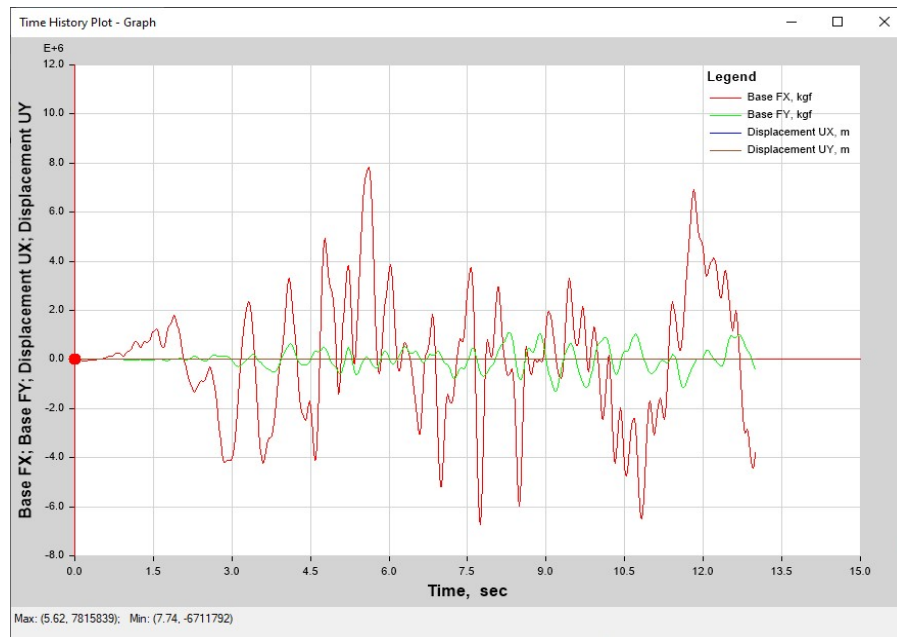
**Gambar** Plot Base Shear Reaction TH Supersition Hilss Y Direction  
( Sumber: Kajian Penulis )



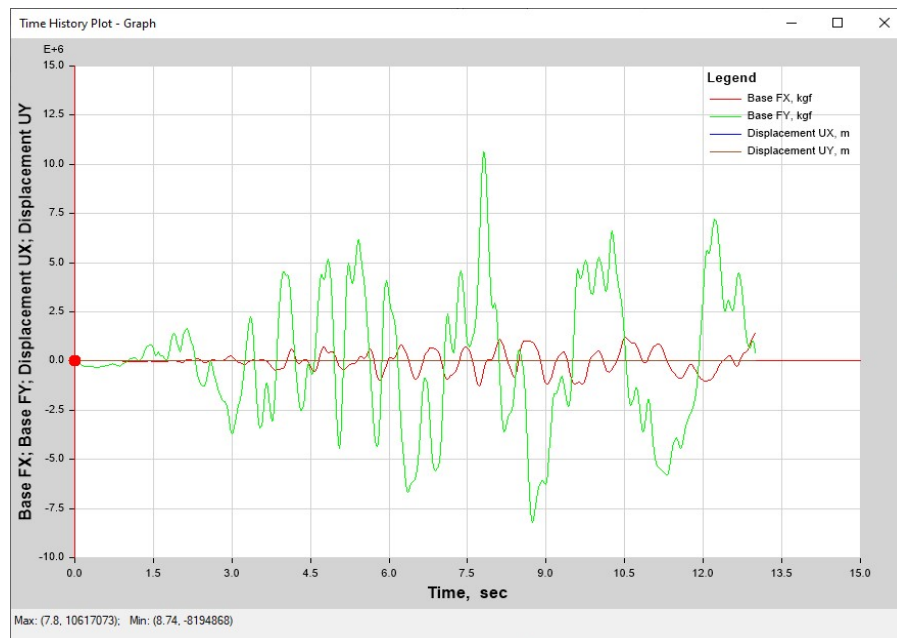
**Gambar Plot Base Shear Reaction TH Sylmar X Direction**  
( Sumber: Kajian Penulis )



**Gambar Plot Base Shear Reaction TH Sylmar Y Direction**  
( Sumber: Kajian Penulis )



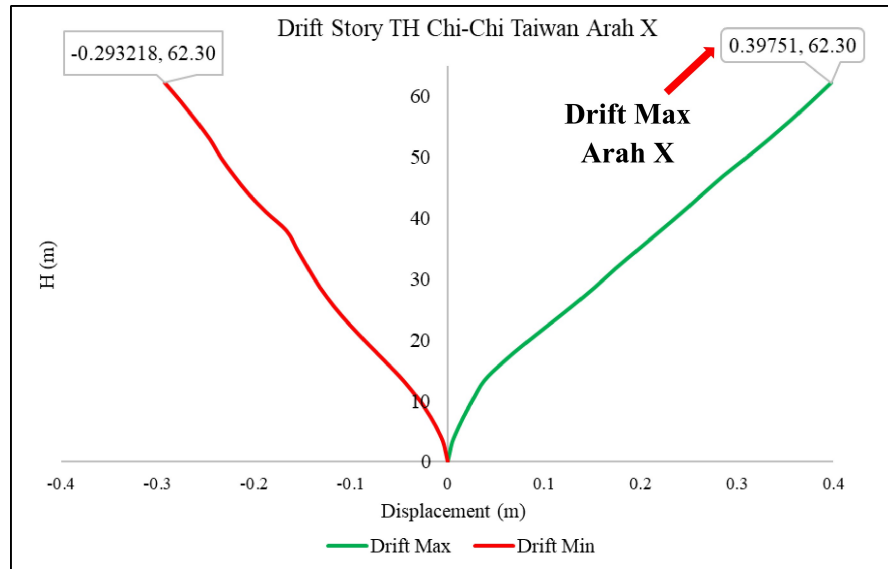
**Gambar Plot Base Shear Reaction TH Tabas Iran X Direction**  
( Sumber: Kajian Penulis )



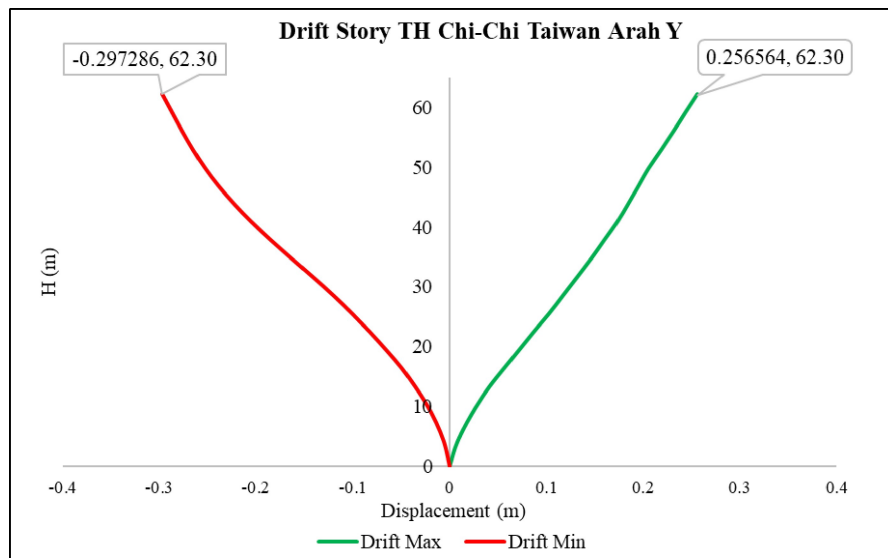
**Gambar Plot Base Shear Reaction TH Tabas Iran Y Direction**  
( Sumber: Kajian Penulis )

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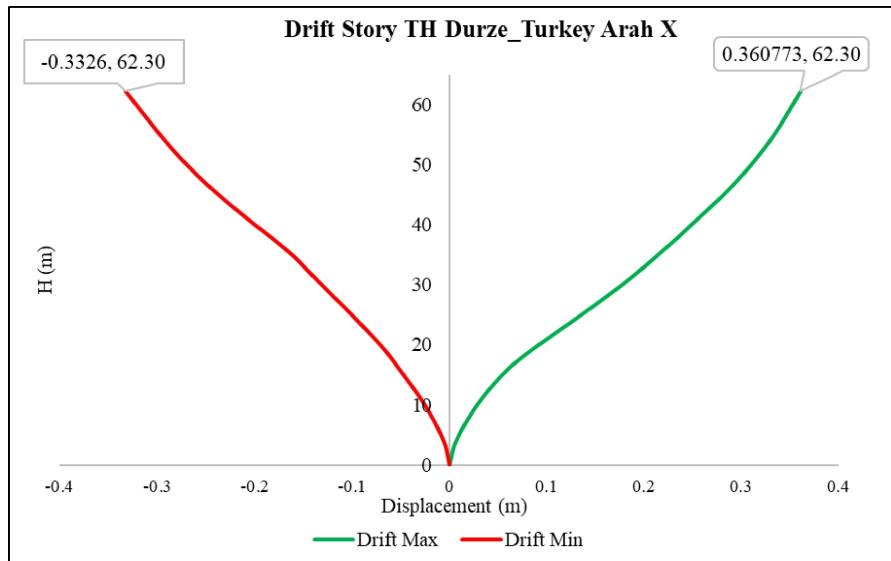
## LAMPIRAN 8



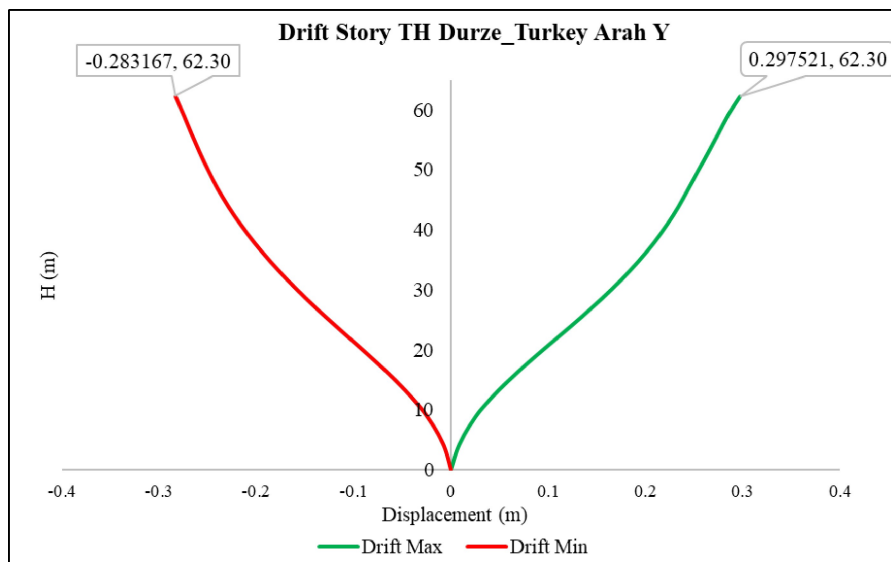
**Gambar** *Drift Story TH Chi-Chi Taiwan X Direction*  
( Sumber: Kajian Penulis )



**Gambar** *Drift Story TH Chi-Chi Taiwan Y Direction*  
( Sumber: Kajian Penulis )

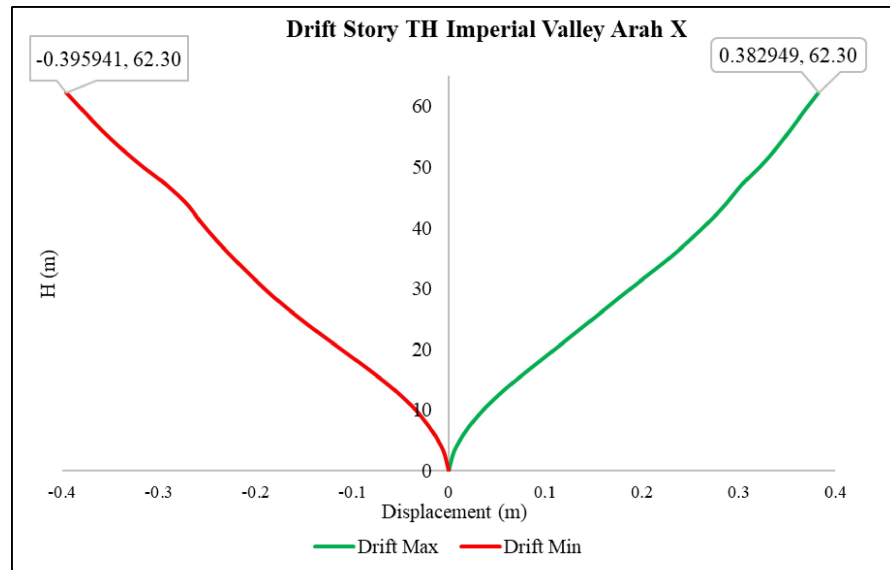


**Gambar** *Drift Story TH Durze Turkey X Direction*  
( Sumber: Kajian Penulis )

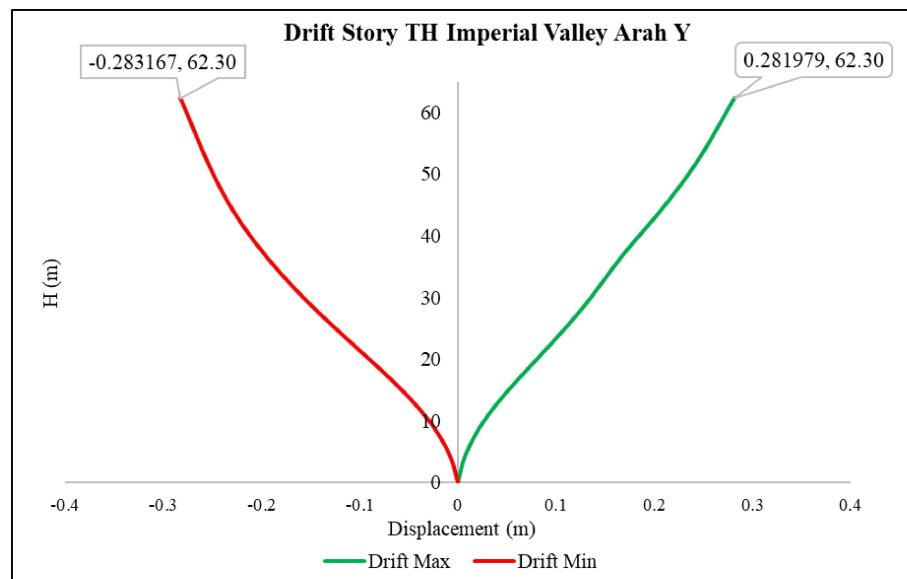


**Gambar** *Drift Story TH Durze Turkey Y Direction*  
( Sumber: Kajian Penulis )

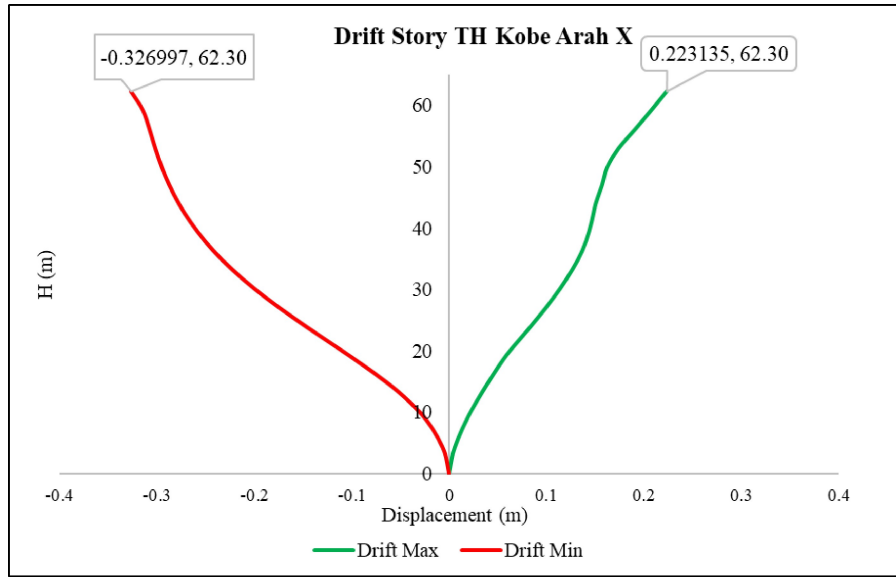




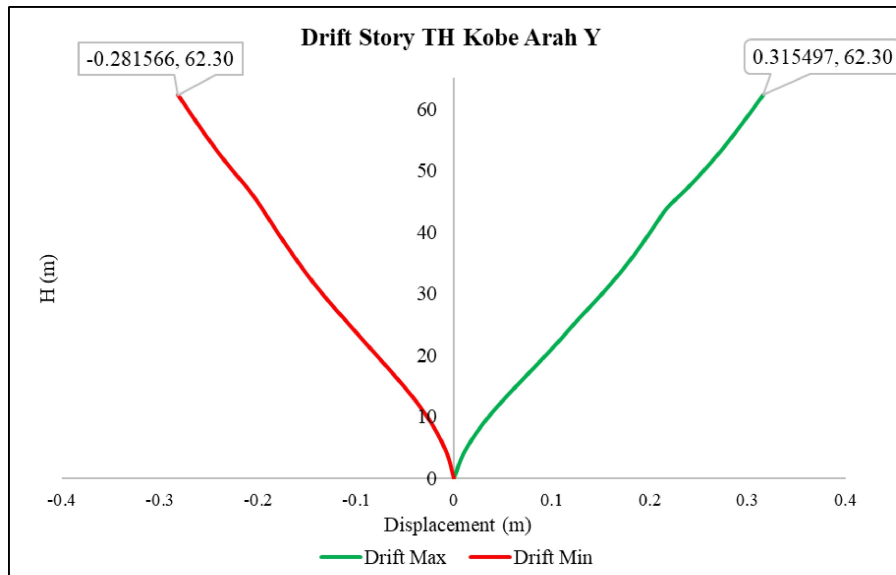
**Gambar** *Drift Story TH Imperial Valley X Direction*  
( Sumber: Kajian Penulis )



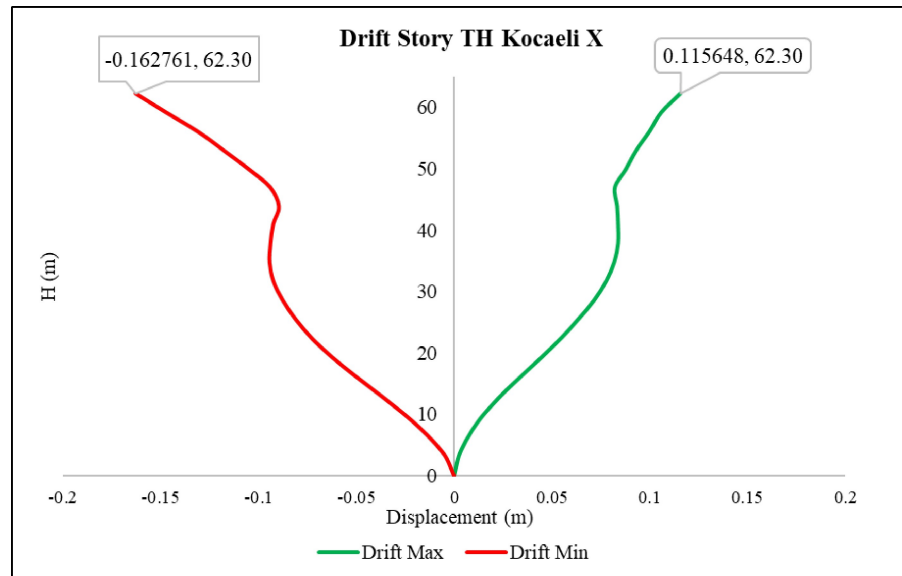
**Gambar** *Drift Story TH Imperial Valley Y Direction*  
( Sumber: Kajian Penulis )



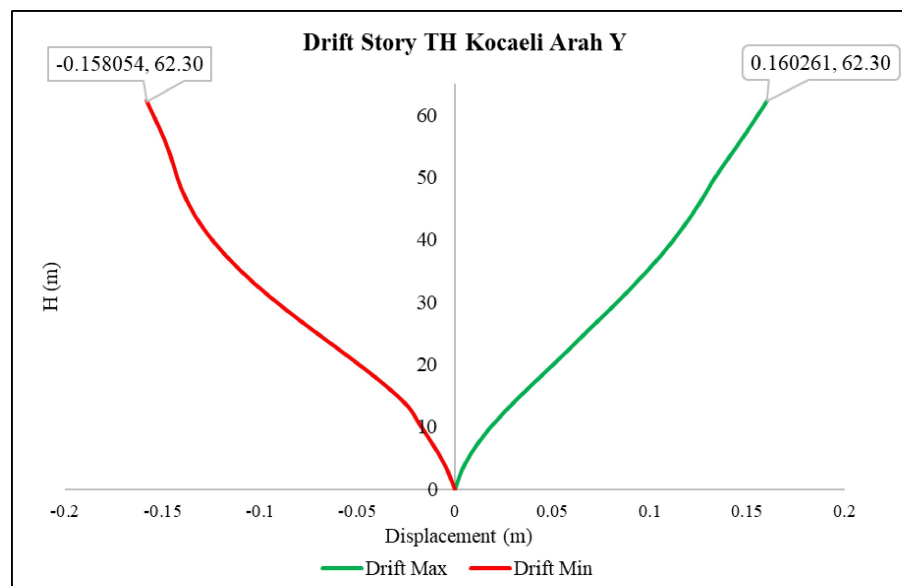
**Gambar** *Drift Story TH Kobe X Direction*  
 ( Sumber: Kajian Penulis )



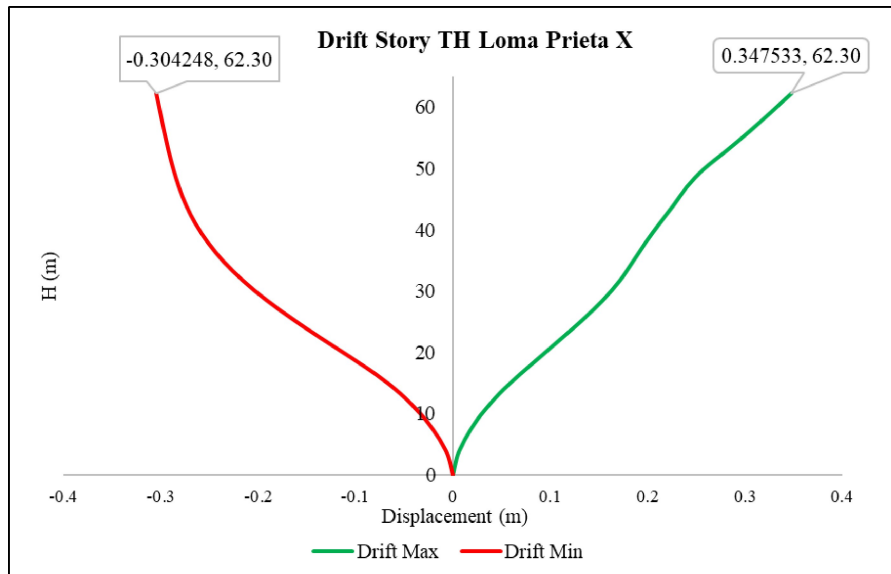
**Gambar** *Drift Story TH Kobe Y Direction*  
 ( Sumber: Kajian Penulis )



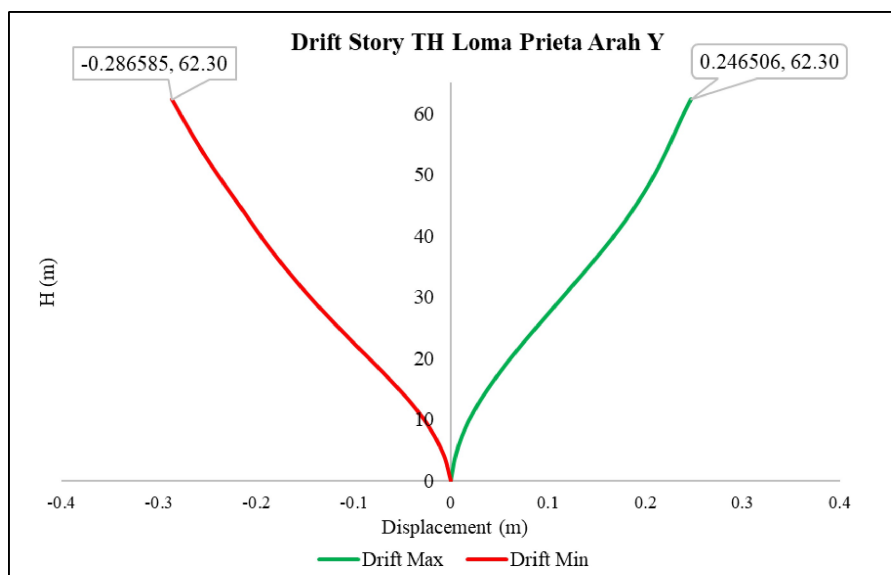
**Gambar** *Drift Story TH Kocaeli X Direction*  
( Sumber: Kajian Penulis )



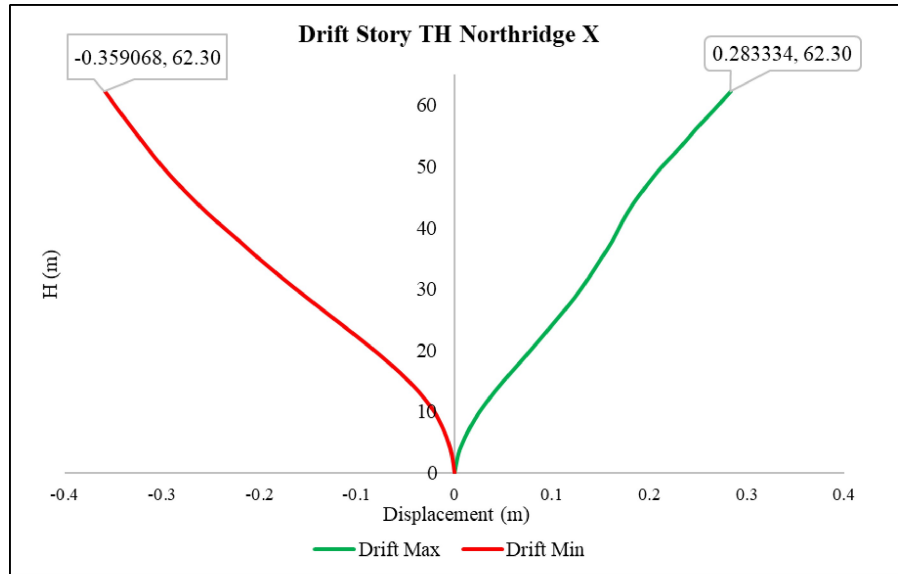
**Gambar** *Drift Story TH Kocaeli Y Direction*  
( Sumber: Kajian Penulis )



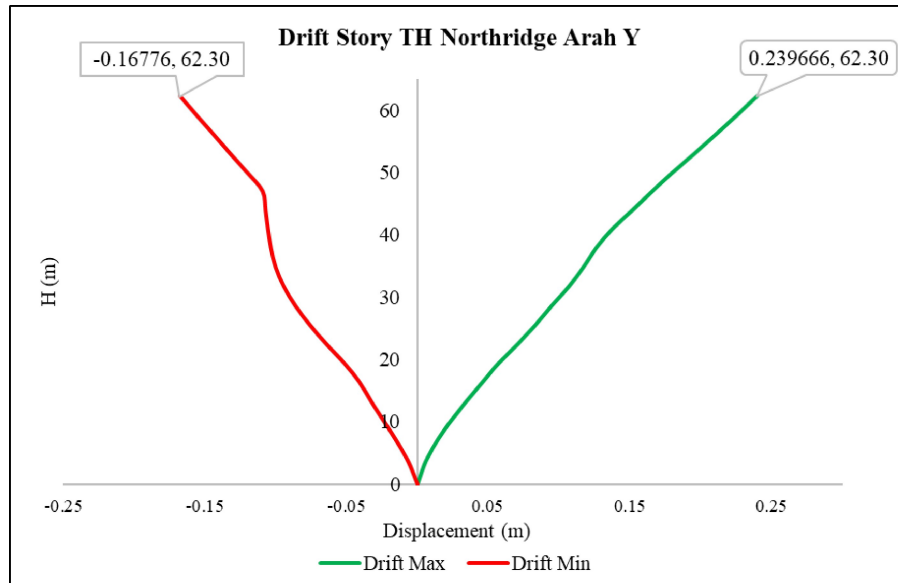
**Gambar** *Drift Story TH Loma Prieta X Direction*  
( Sumber: Kajian Penulis )



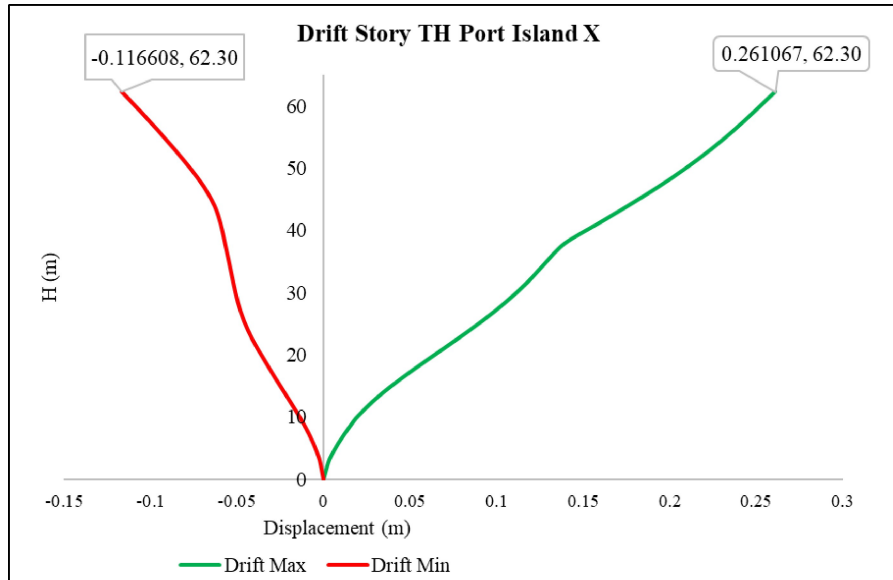
**Gambar** *Drift Story TH Loma Prieta Y Direction*  
( Sumber: Kajian Penulis )



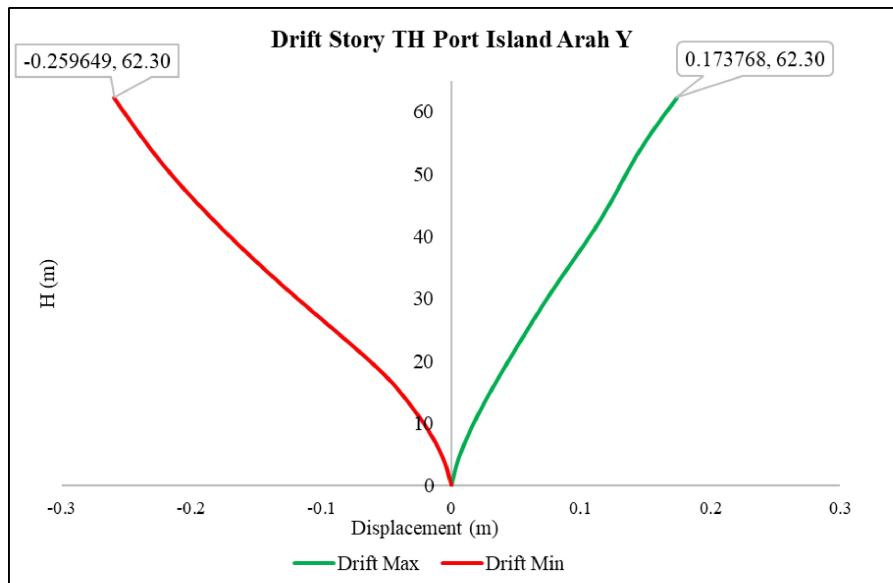
**Gambar** *Drift Story TH Northridge X Direction*  
 ( Sumber: Kajian Penulis )



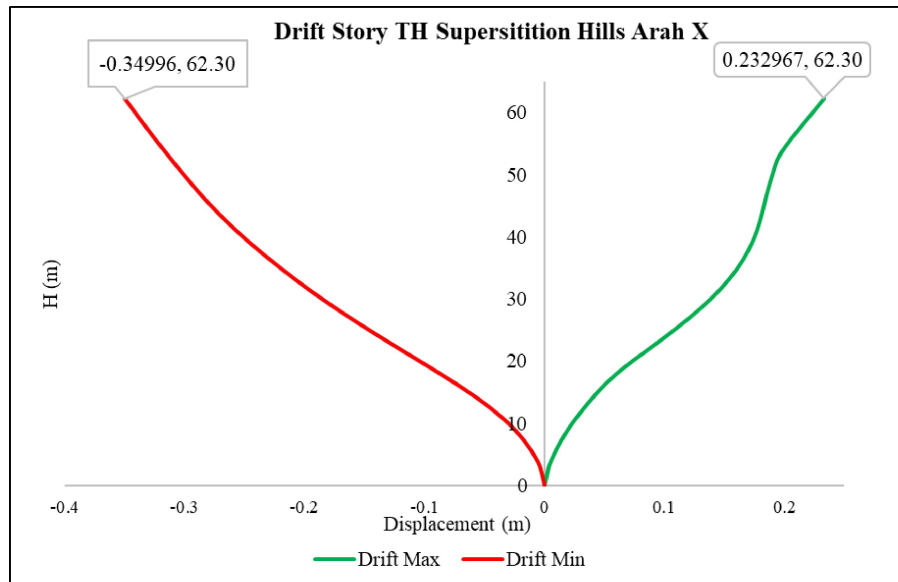
**Gambar 4.188.** *Drift Story TH Northridge Y Direction*  
 ( Sumber: Kajian Penulis )



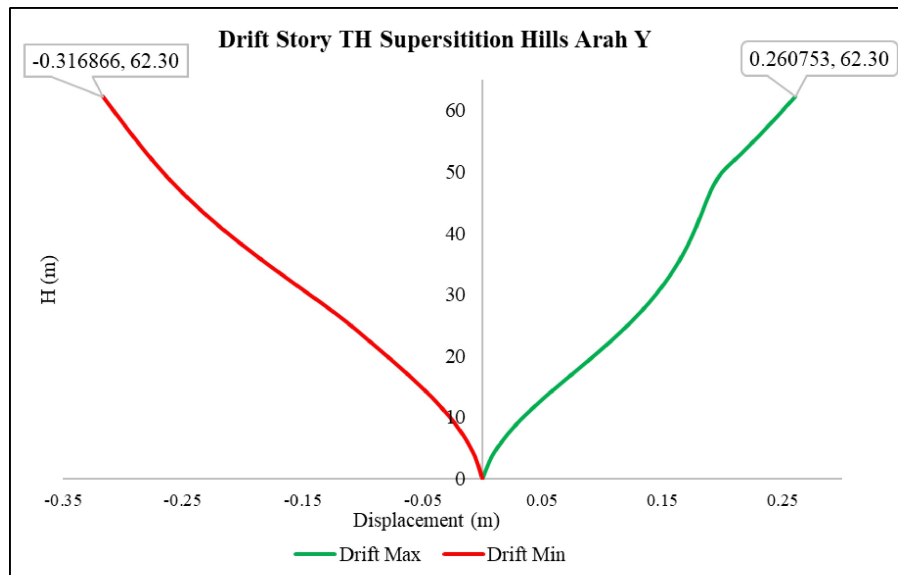
**Gambar** *Drift Story TH Port Island X Direction*  
 ( Sumber: Kajian Penulis )



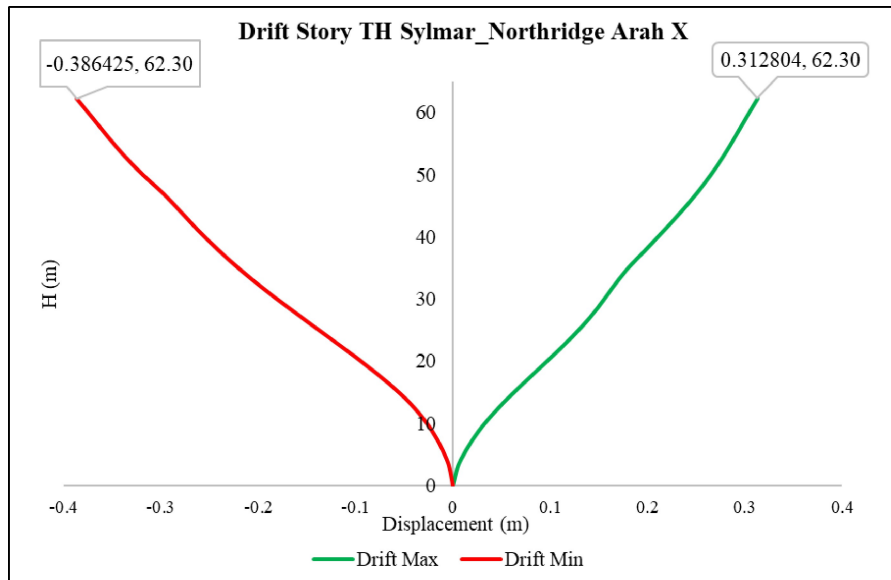
**Gambar** *Drift Story TH Port Island Y Direction*  
 ( Sumber: Kajian Penulis )



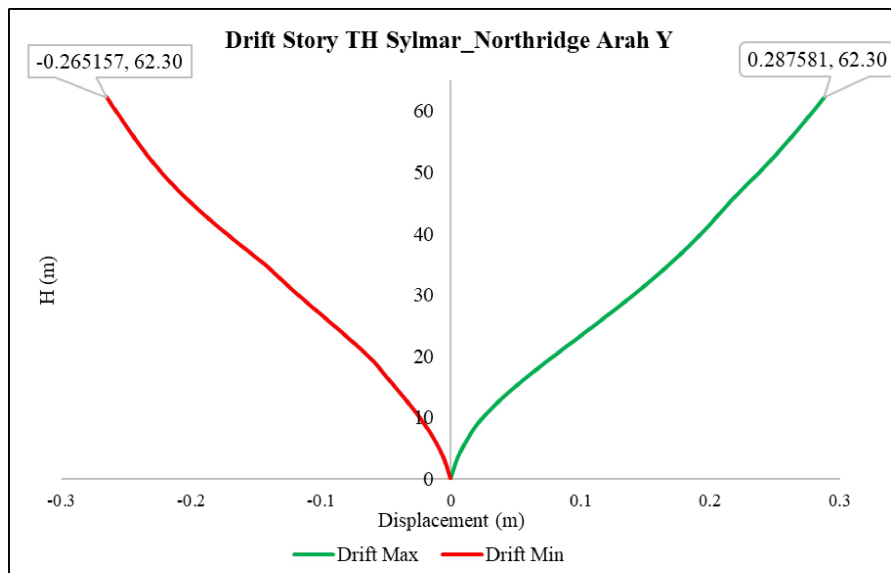
**Gambar** *Drift Story TH Supersition Hills X Direction*  
 ( Sumber: Kajian Penulis )



**Gambar** *Drift Story TH Supersition Hills Y Direction*  
 ( Sumber: Kajian Penulis )



**Gambar** *Drift Story TH Sylmar\_Northridge X Direction*  
( Sumber: Kajian Penulis )

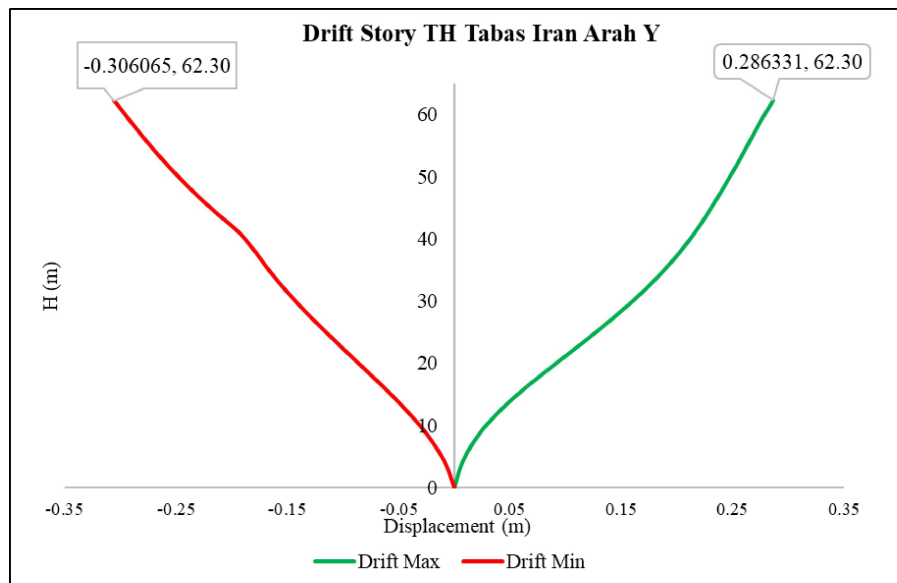


**Gambar** *Drift Story TH Sylmar\_Northridge Y Direction*  
( Sumber: Kajian Penulis )





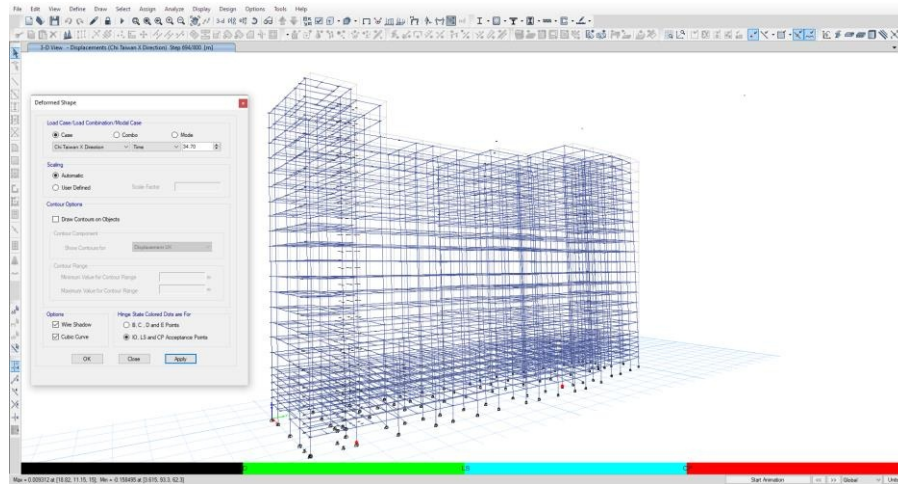
**Gambar** *Drift Story TH Tabas X Direction*  
( Sumber: Kajian Penulis )



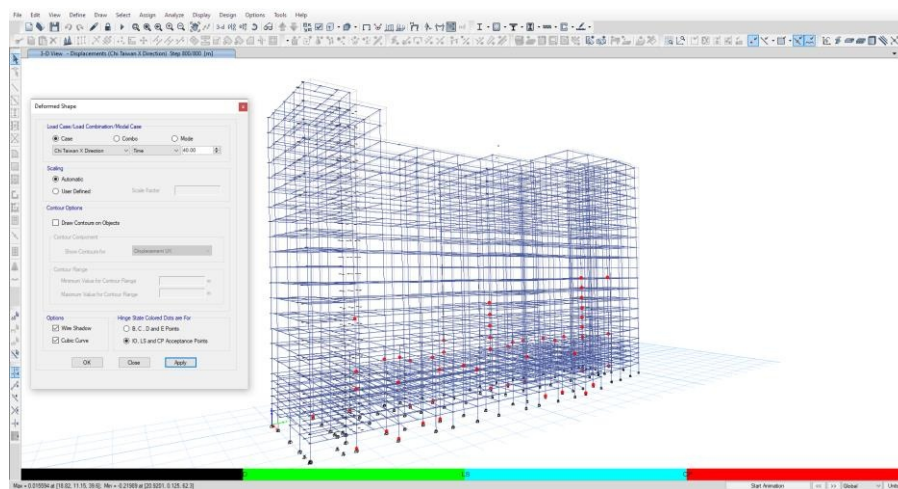
**Gambar** *Drift Story TH Tabas Y Direction*  
( Sumber: Kajian Penulis )

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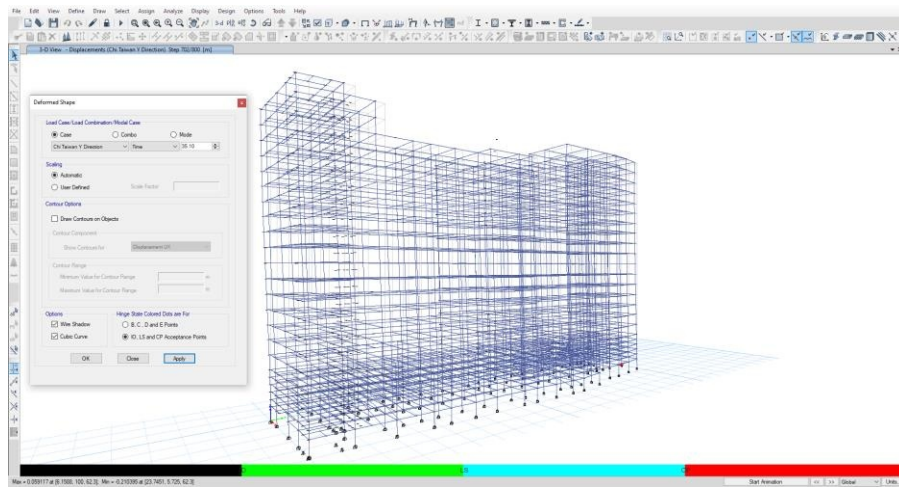
## LAMPIRAN 9



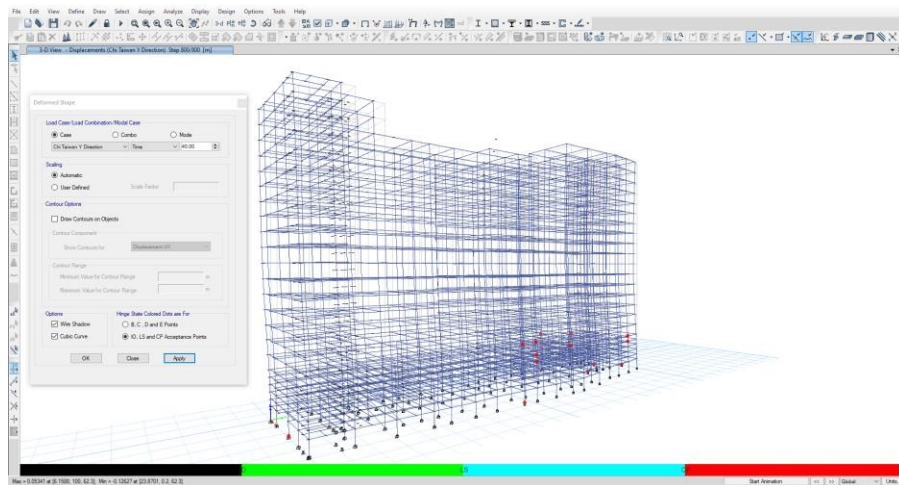
**Gambar Sendi Plastis Pertama *TH Chi-Chi Taiwan X Direction***  
( Sumber: Kajian Penulis )



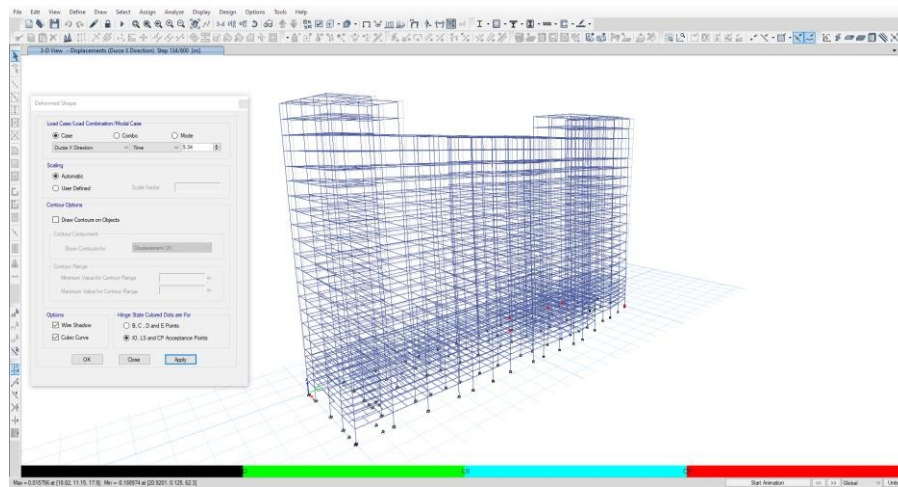
**Gambar Sendi Plastis Terakhir *TH Chi-Chi Taiwan X Direction***  
( Sumber: Kajian Penulis )



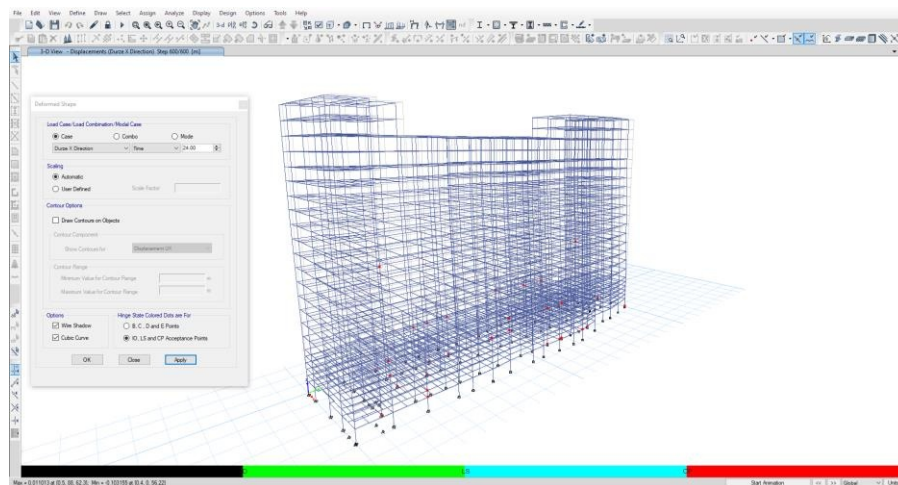
**Gambar Sendi Plastis Pertama *TH Chi-Chi Taiwan Y Direction***  
( Sumber: Kajian Penulis )



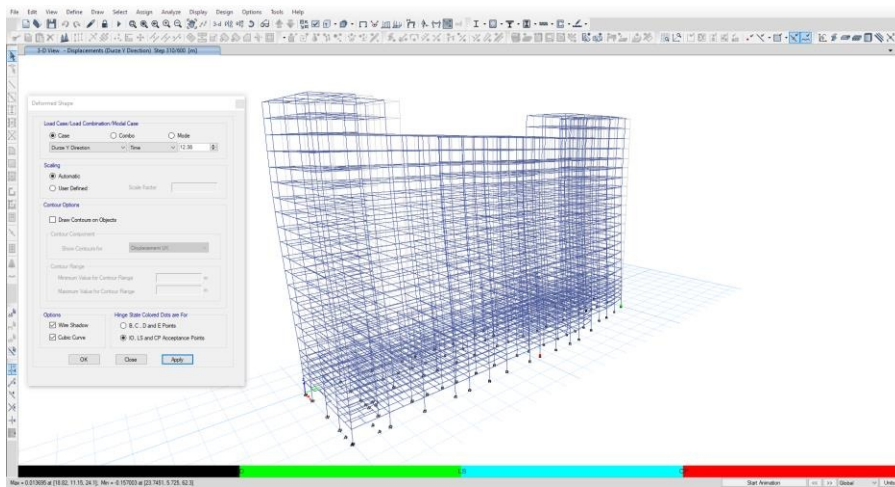
**Gambar Sendi Plastis Terakhir *TH Chi-Chi Taiwan Y Direction***  
( Sumber: Kajian Penulis )



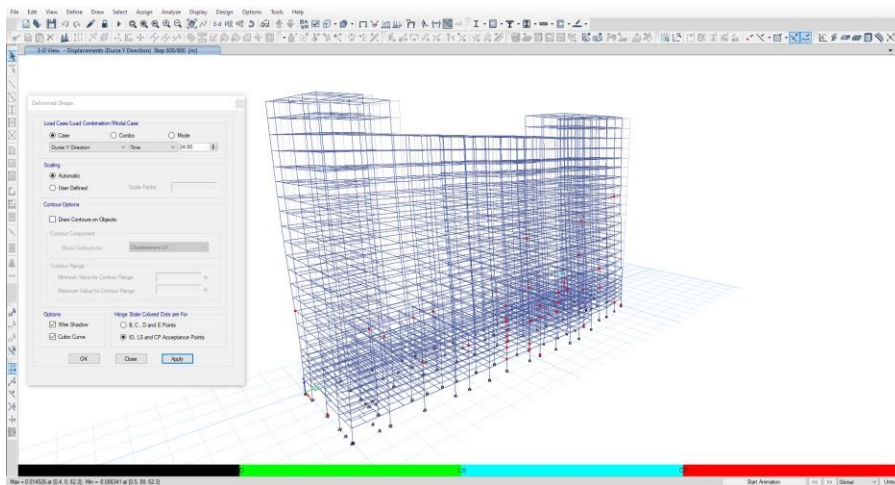
**Gambar Sendi Plastis Pertama *TH Durze X Direction***  
( Sumber: Kajian Penulis )



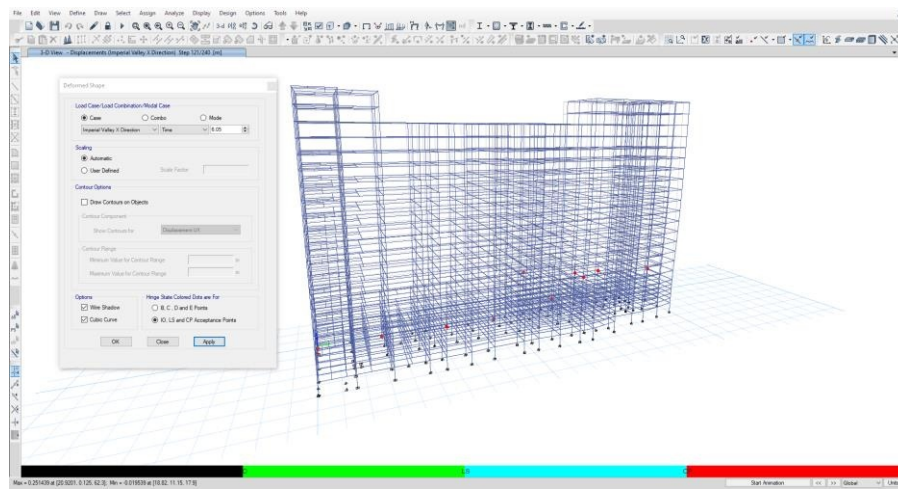
**Gambar Sendi Plastis Terakhir *TH Durze X Direction***  
( Sumber: Kajian Penulis )



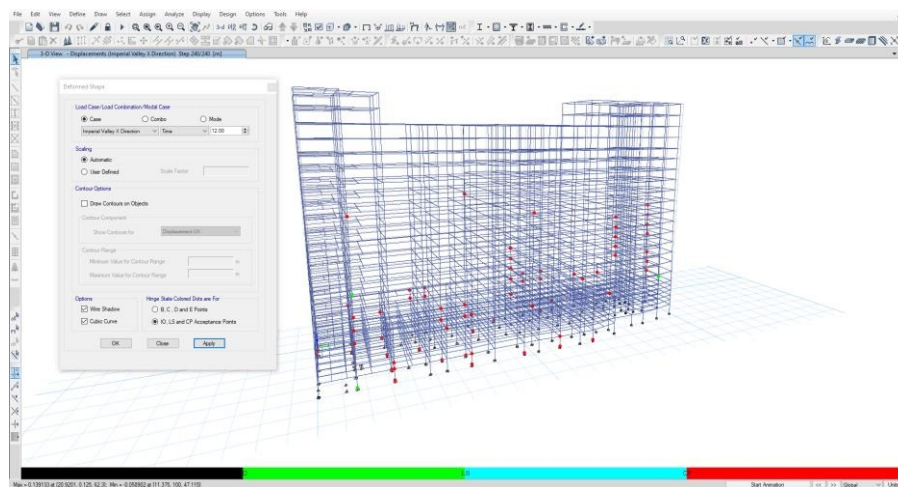
**Gambar Sendi Plastis Pertama *TH Durze Y Direction***  
( Sumber: Kajian Penulis )



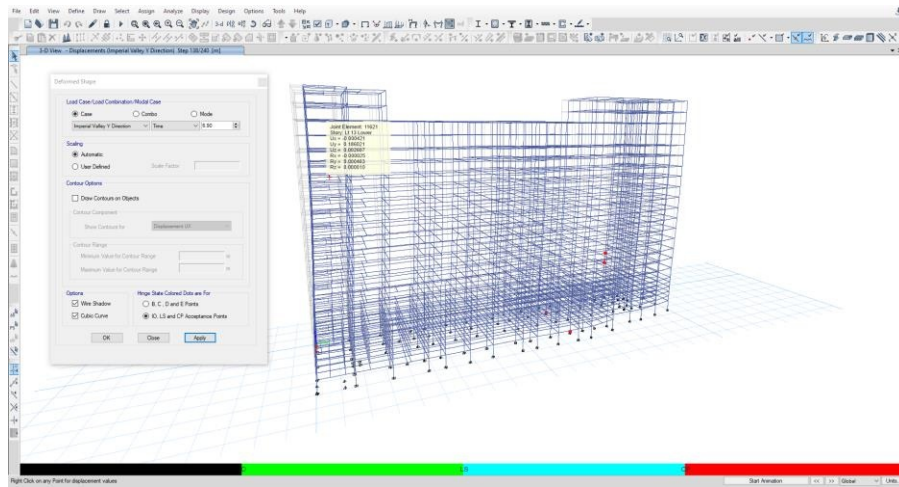
**Gambar Sendi Plastis Terakhir *TH Durze Y Direction***  
( Sumber: Kajian Penulis )



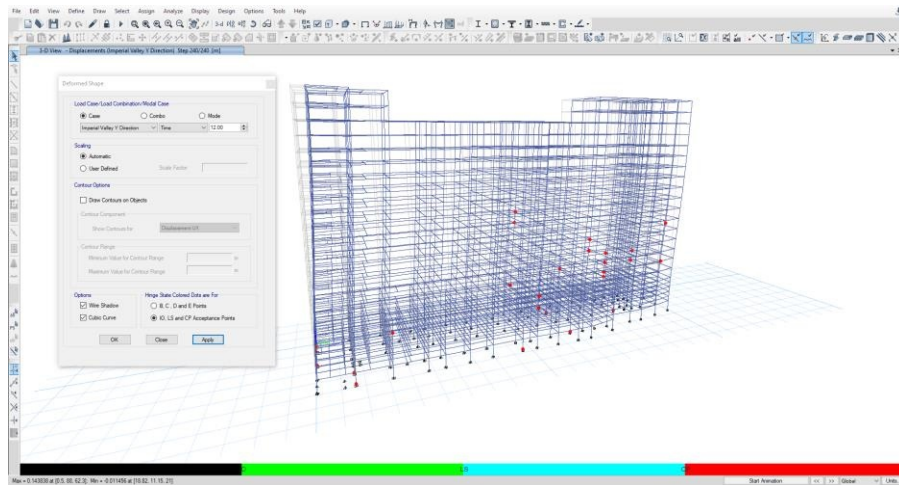
**Gambar** Sendi Plastis Pertama *TH Imperial Valley X Direction*  
( Sumber: Kajian Penulis )



**Gambar** Sendi Plastis Terakhir *TH Imperial Valley X Direction*  
( Sumber: Kajian Penulis )

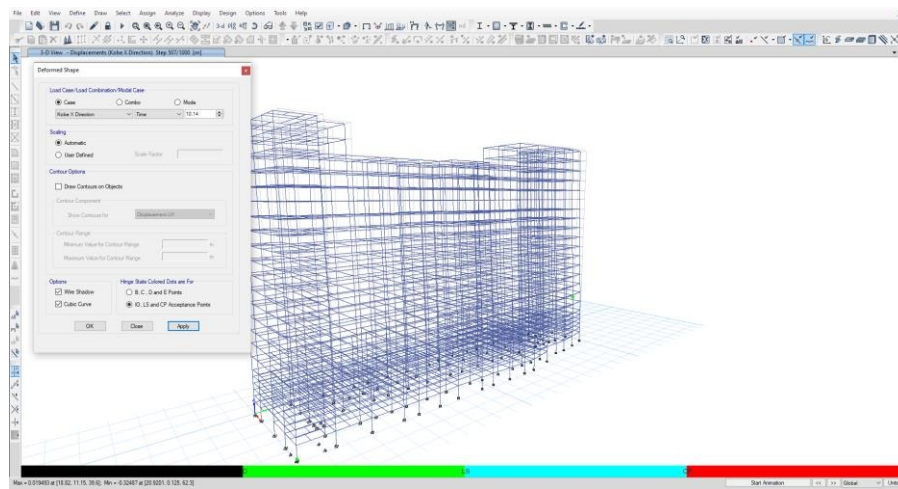


**Gambar** Sendi Plastis Pertama *TH Imperial Valley Y Direction*  
( Sumber: Kajian Penulis )

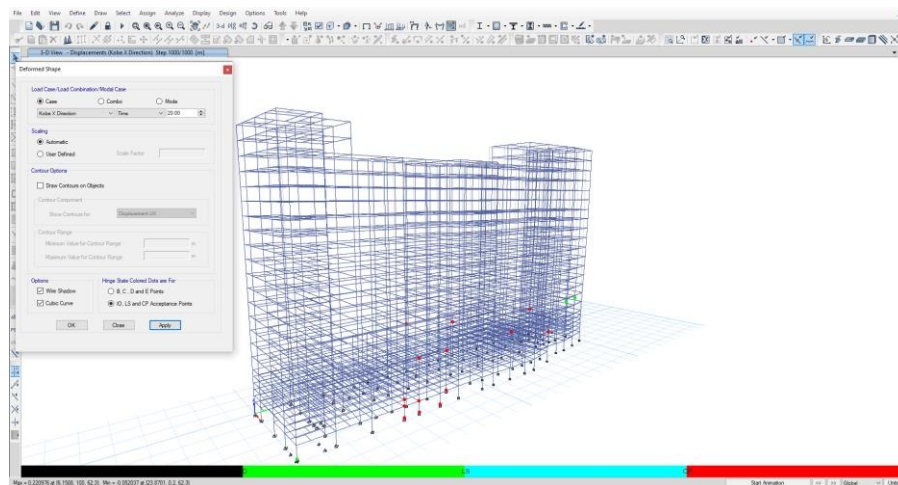


**Gambar** Sendi Plastis Terakhir *TH Imperial Valley Y Direction*  
( Sumber: Kajian Penulis )

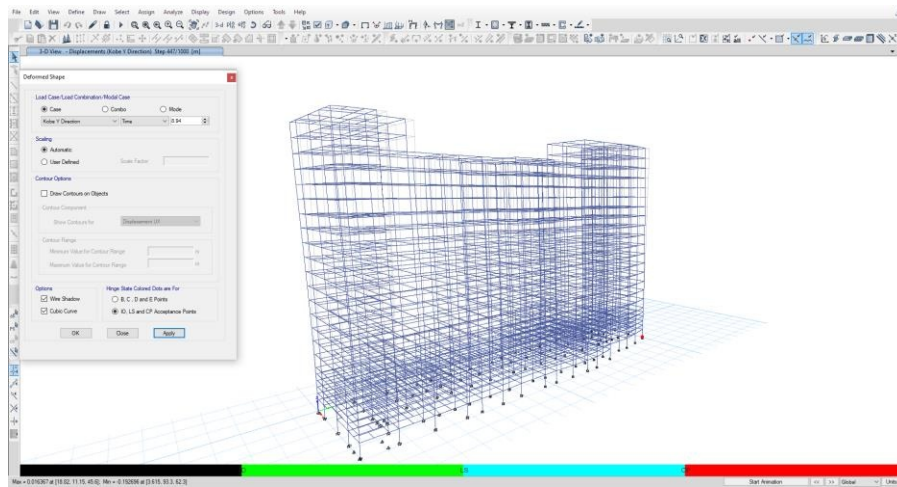




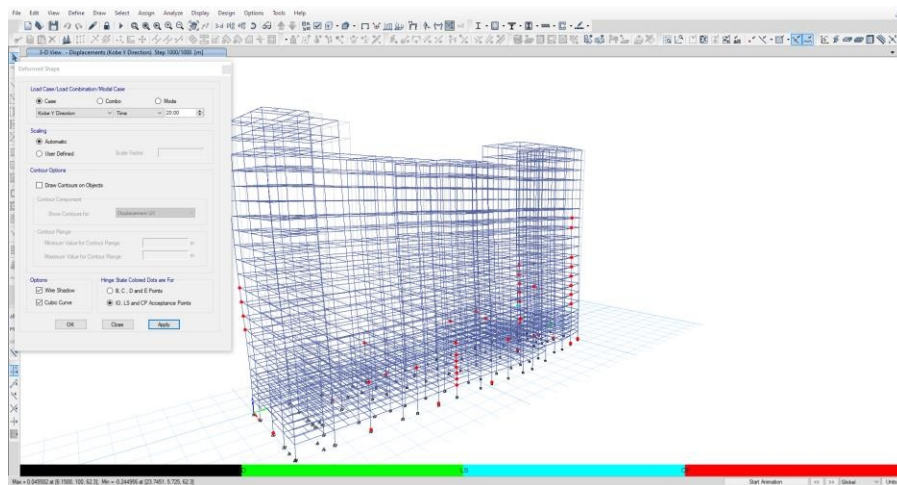
**Gambar Sendi Plastis Pertama *TH Kobe X Direction***  
( Sumber: Kajian Penulis )



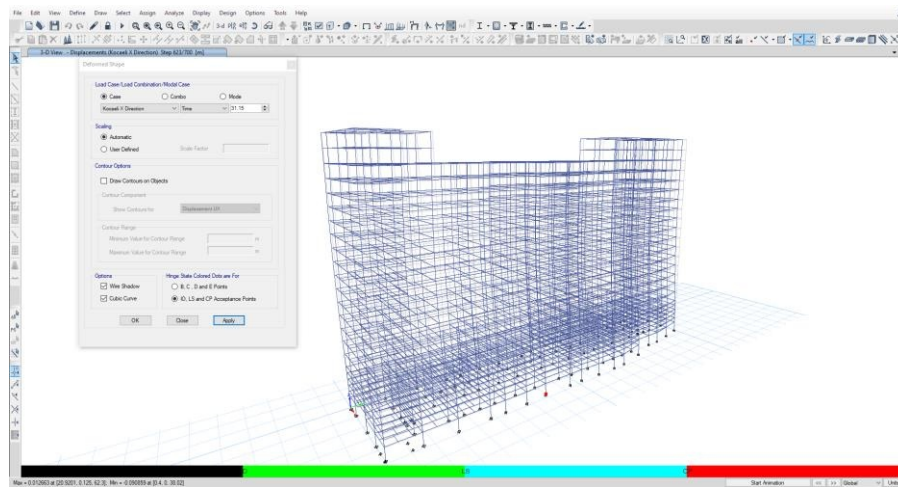
**Gambar Sendi Plastis Terakhir *TH Kobe X Direction***  
( Sumber: Kajian Penulis )



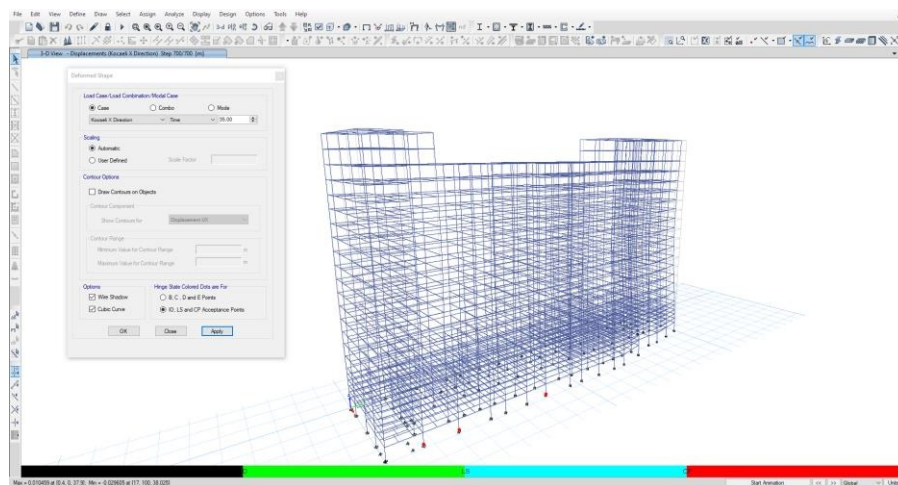
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( Sumber: Kajian Penulis )



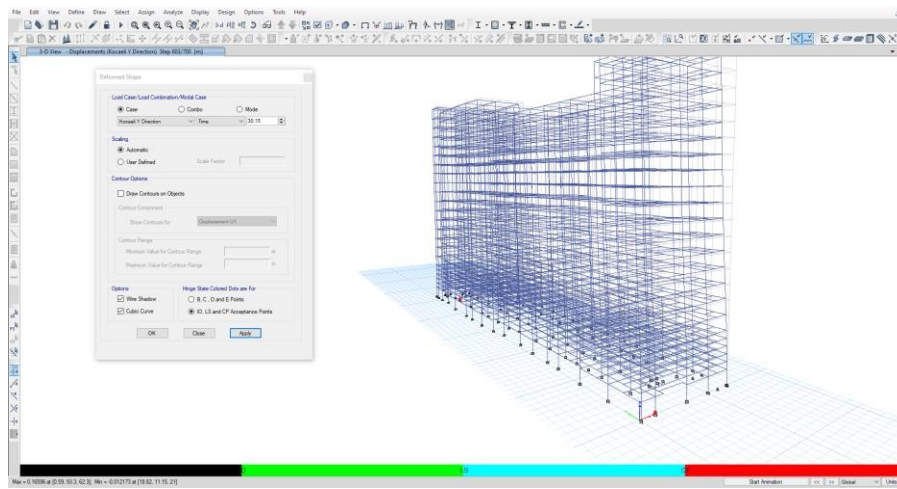
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( Sumber: Kajian Penulis )



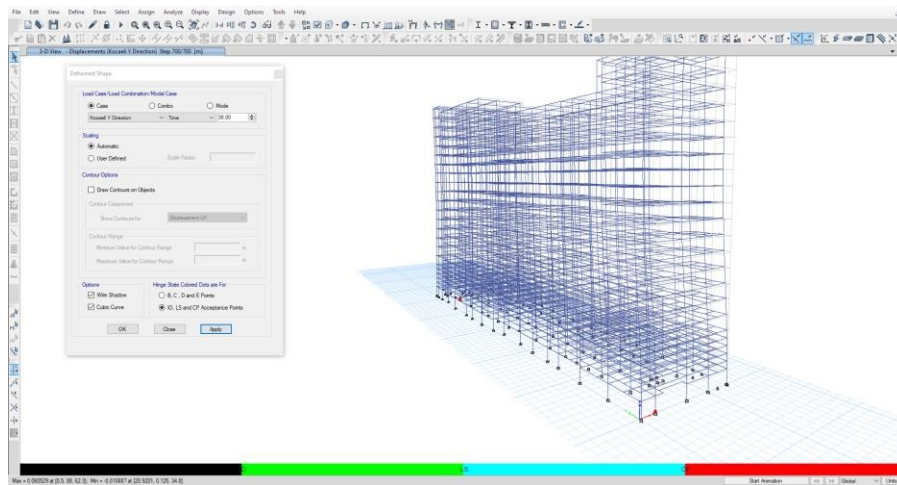
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( Sumber: Kajian Penulis )



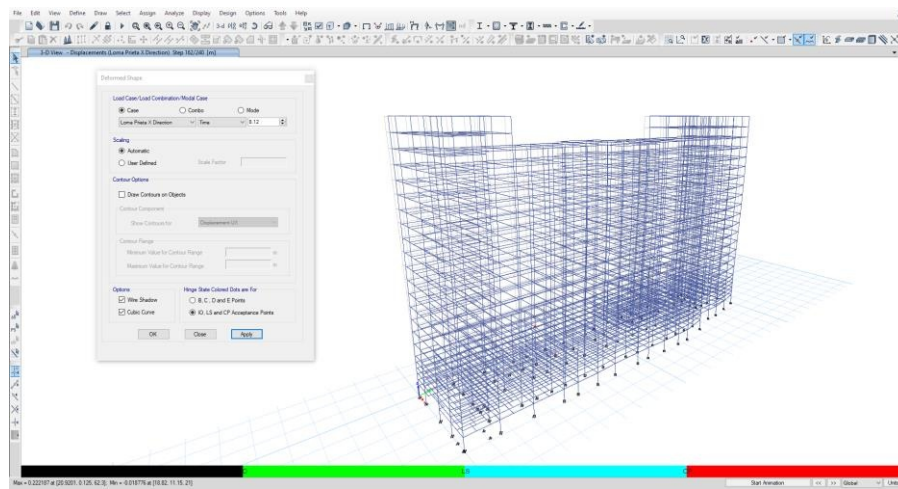
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( Sumber: Kajian Penulis )



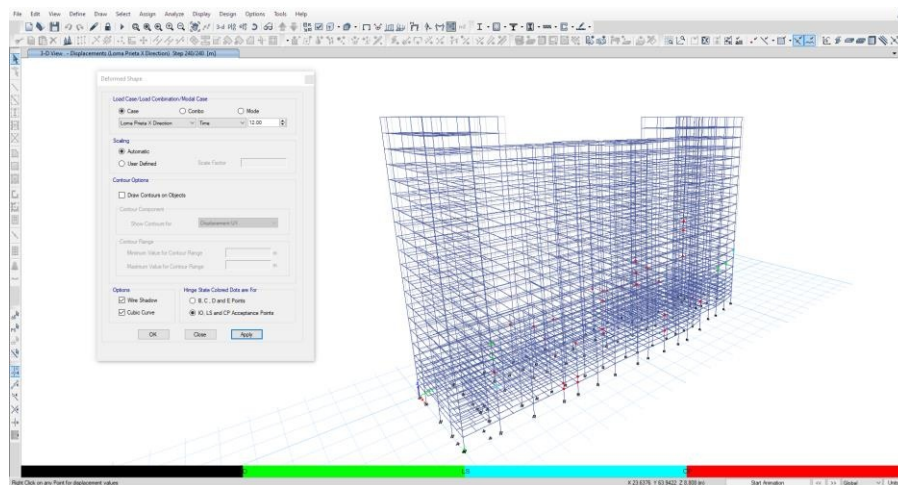
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( Sumber: Kajian Penulis )



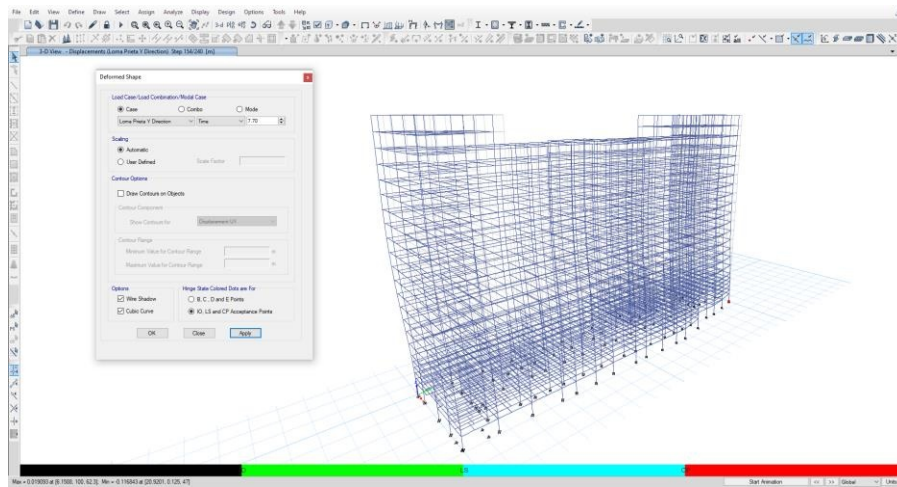
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( Sumber: Kajian Penulis )



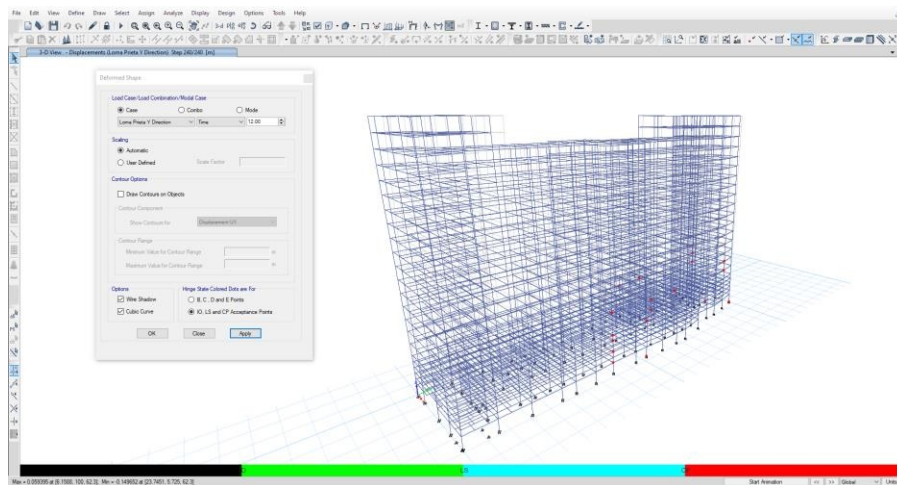
**Gambar** Sendi Plastis Pertama *TH Loma Prieta X Direction*  
( Sumber: Kajian Penulis )



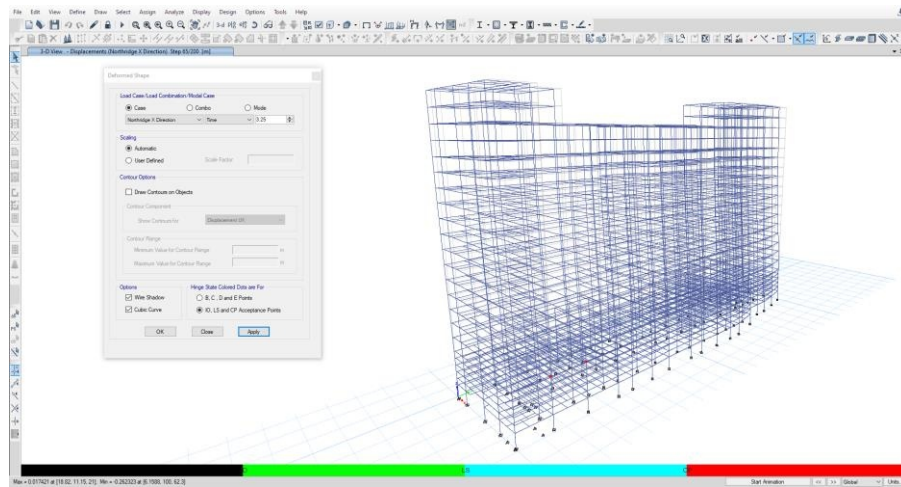
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( Sumber: Kajian Penulis )



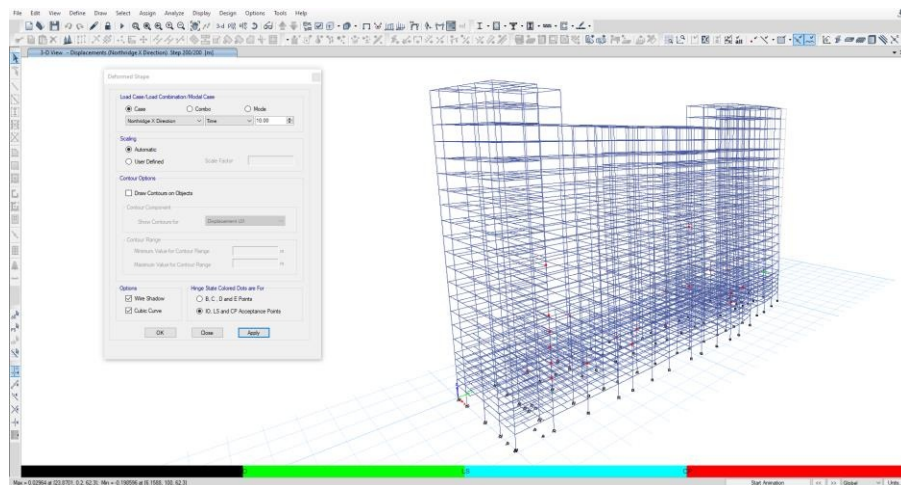
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( Sumber: Kajian Penulis )



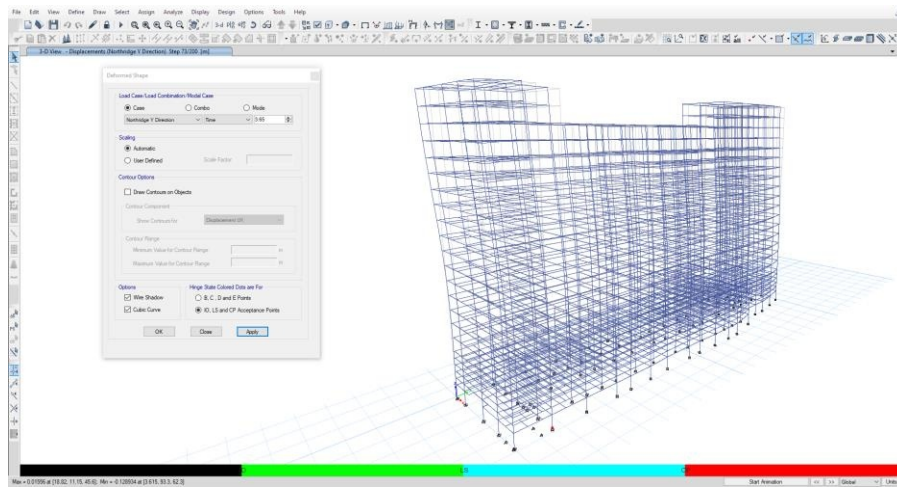
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( Sumber: Kajian Penulis )



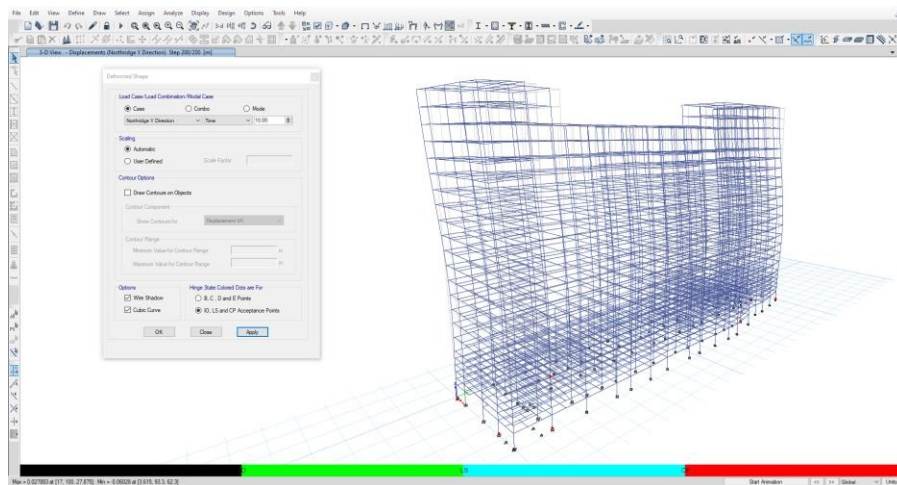
**Gambar** Sendi Plastis Pertama *TH Northridge X Direction*  
( Sumber: Kajian Penulis )



**Gambar** Sendi Plastis Pertama *TH Northridge X Direction*  
( Sumber: Kajian Penulis )

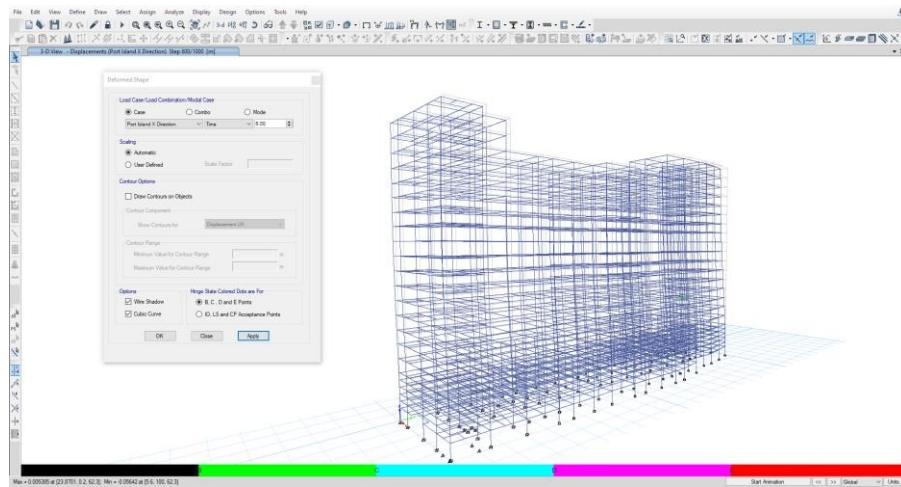


**Gambar Sendi Plastis Pertama TH Northridge Y Direction**  
( Sumber: Kajian Penulis )

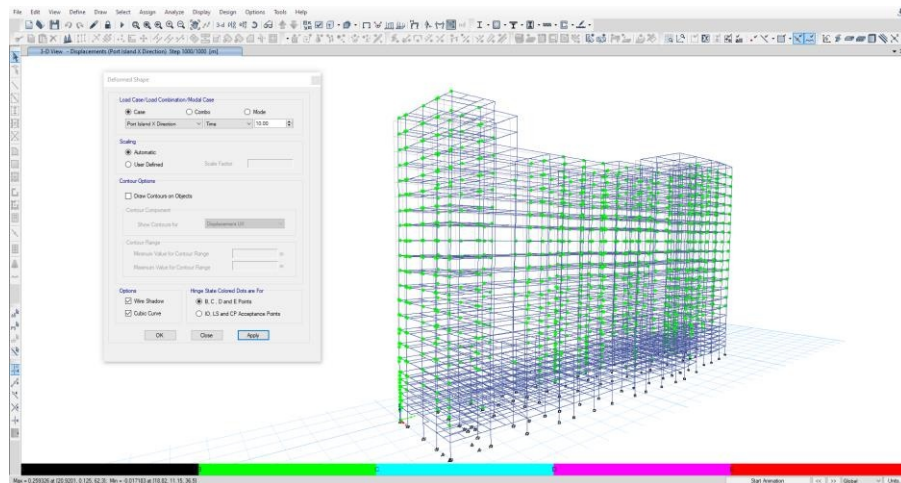


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( Sumber: Kajian Penulis )

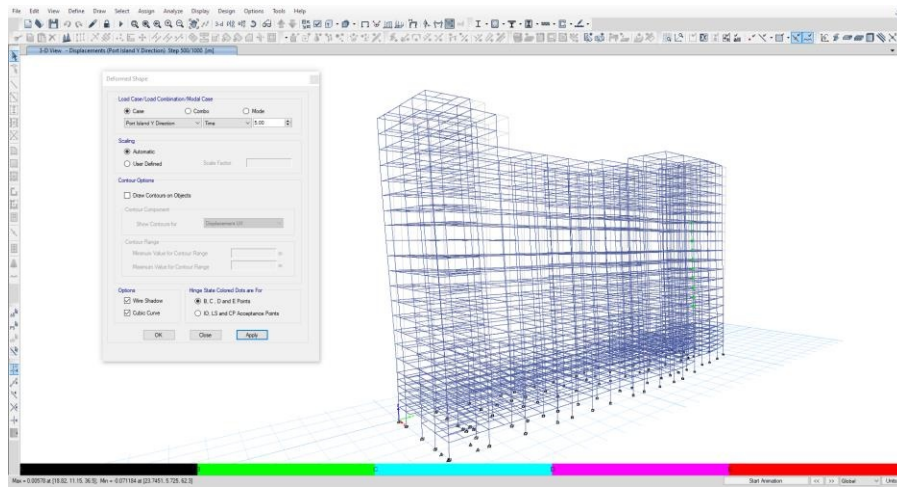




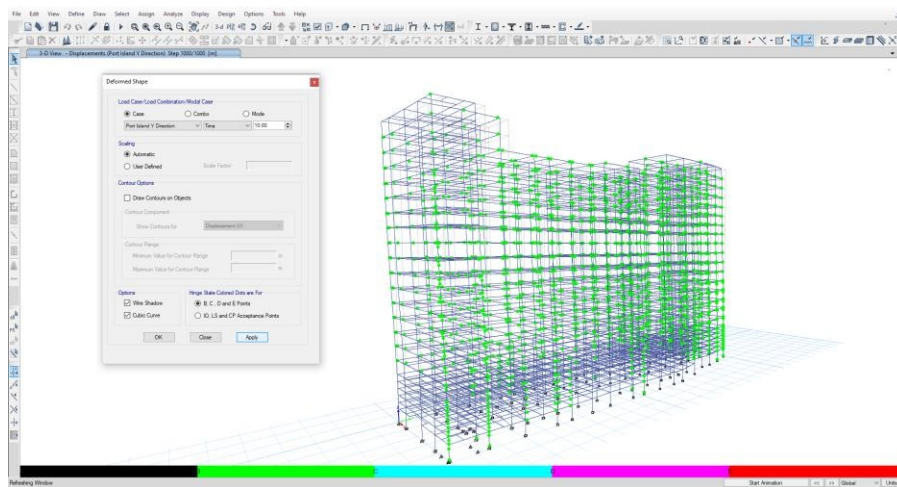
**Gambar** Sendi Plastis Pertama *TH Port Island X Direction*  
( Sumber: Kajian Penulis )



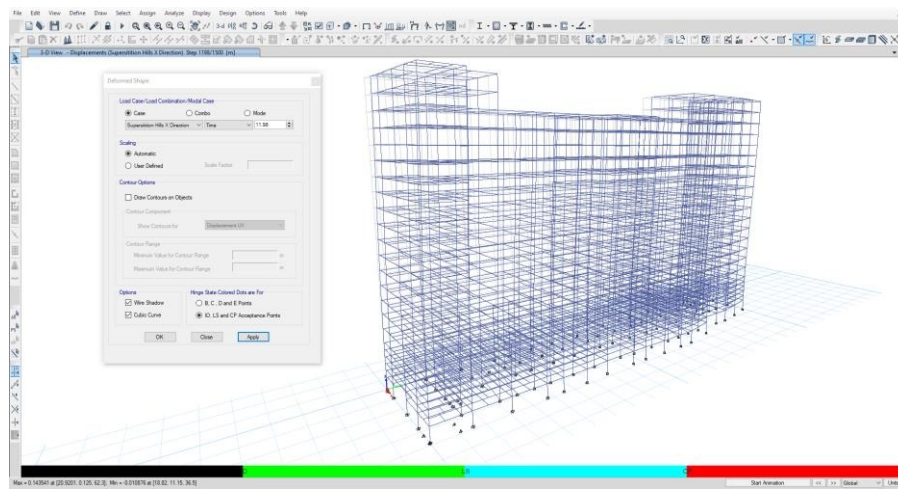
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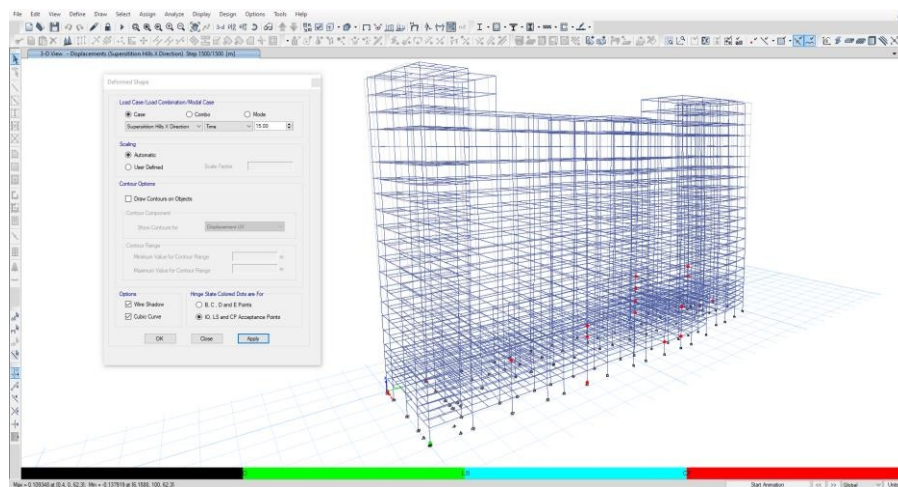
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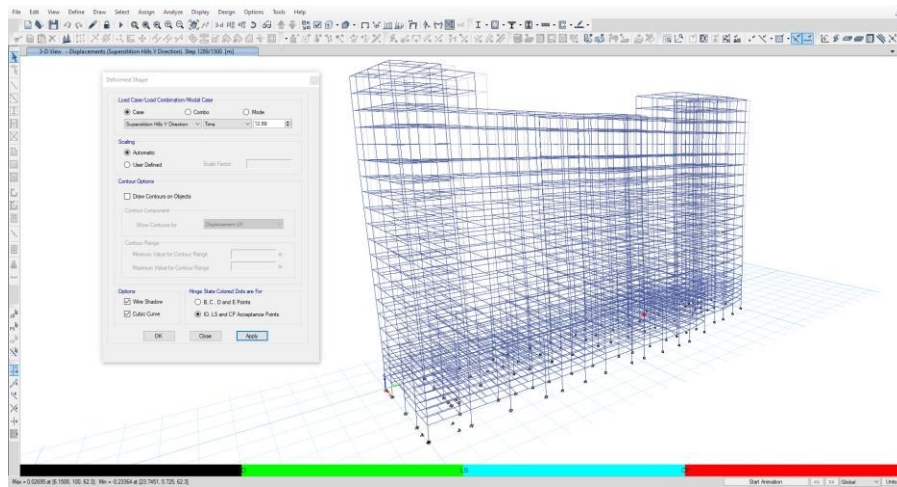
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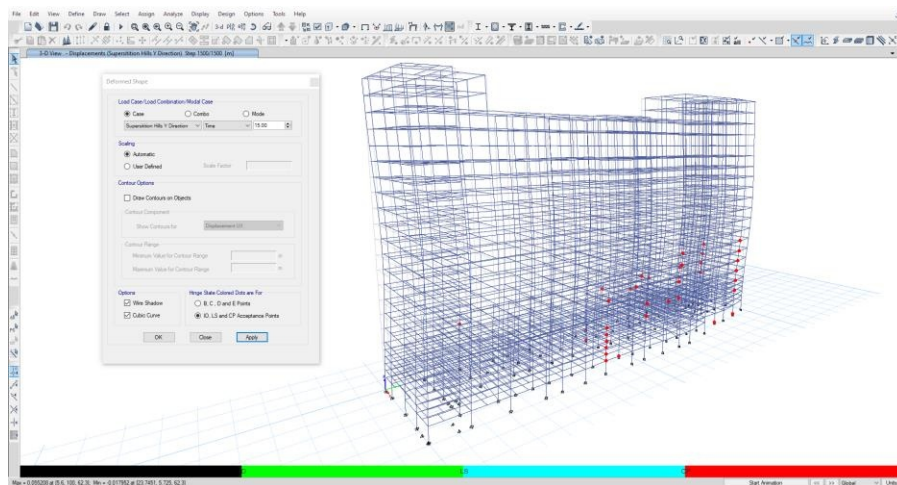
**Gambar** Sendi Plastis Pertama *TH Supersition Hills X Direction*  
( Sumber: Kajian Penulis )



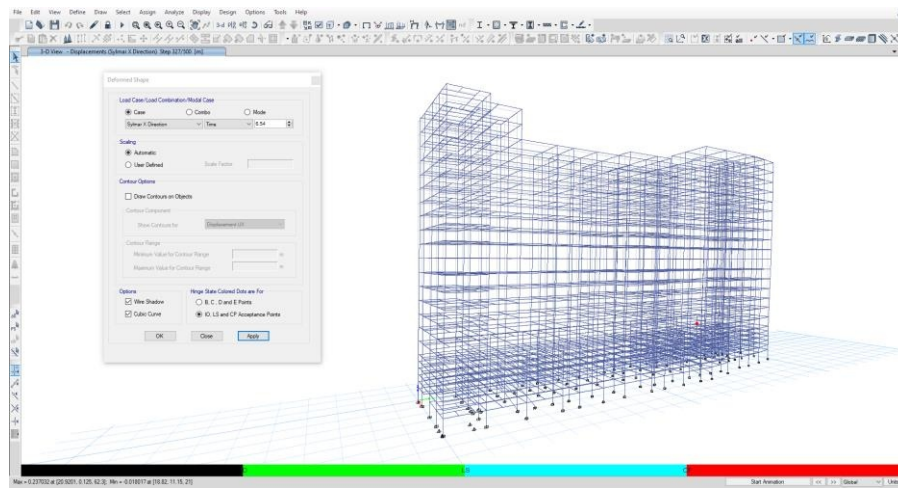
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( Sumber: Kajian Penulis )



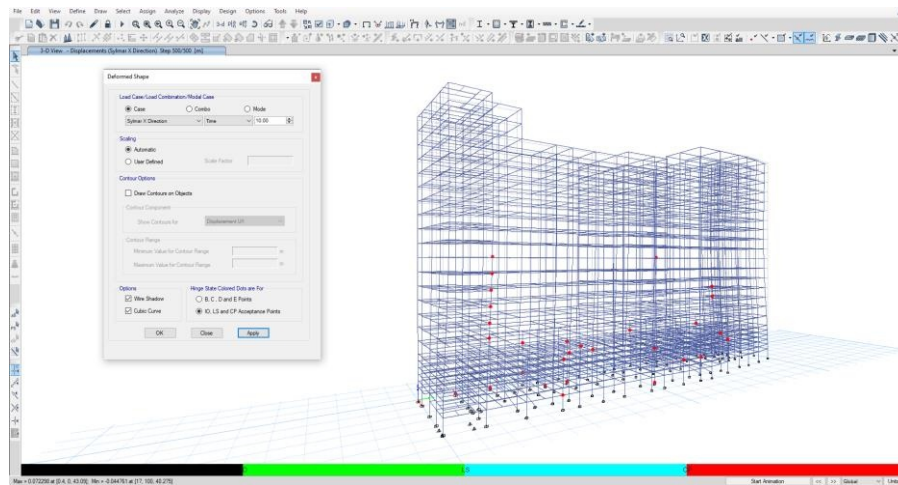
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( Sumber: Kajian Penulis )



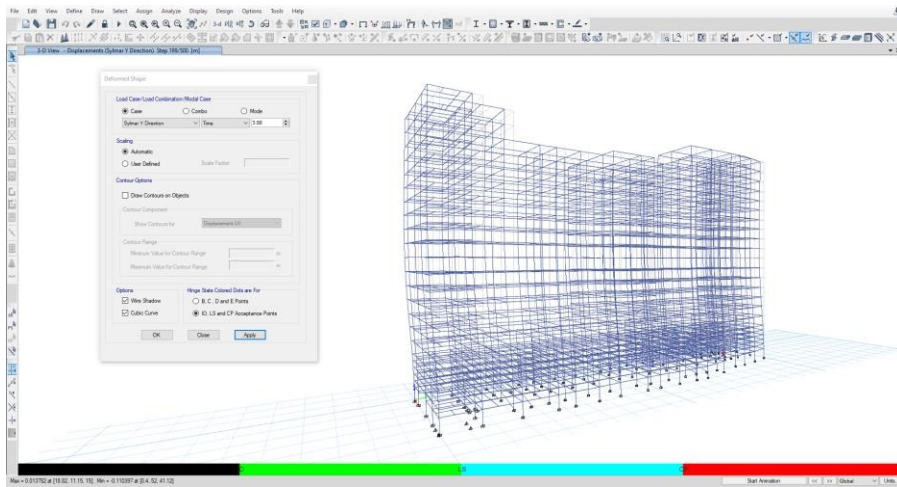
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( Sumber: Kajian Penulis )



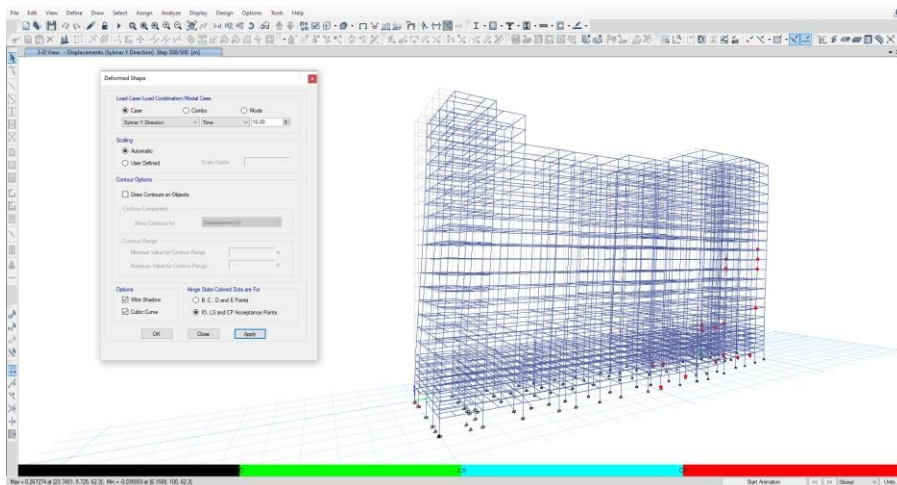
**Gambar Sendi Plastis Pertama TH Sylmar X Direction**  
( Sumber: Kajian Penulis )



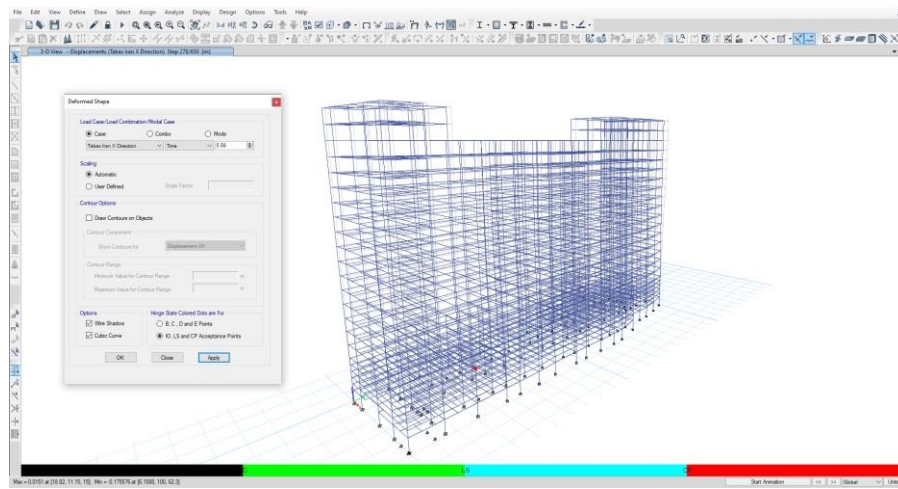
**Gambar Sendi Plastis Terakhir TH Sylmar X Direction**  
( Sumber: Kajian Penulis )



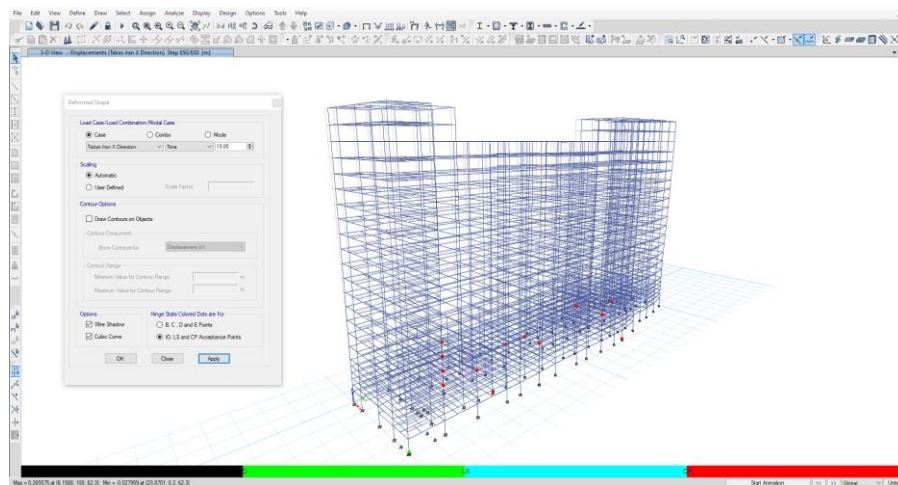
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( Sumber: Kajian Penulis )



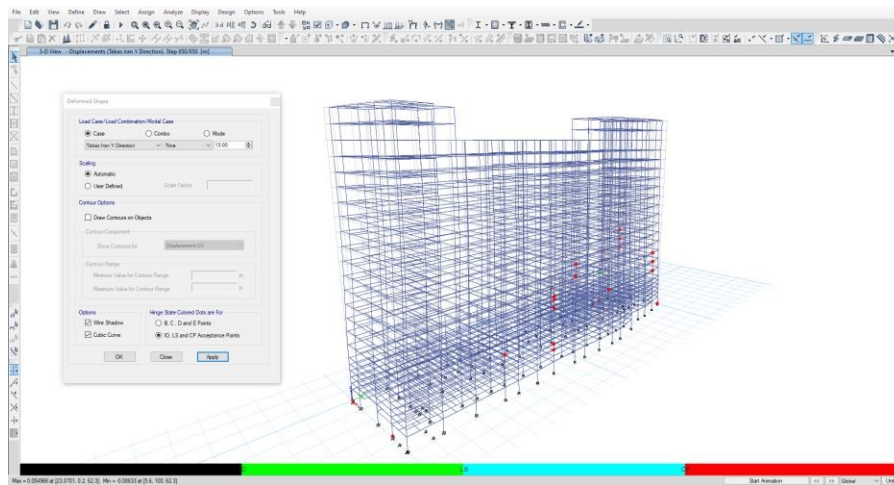
**Gambar Sendi Plastis Terakhir *TH Sylmar Y Direction***  
( Sumber: Kajian Penulis )



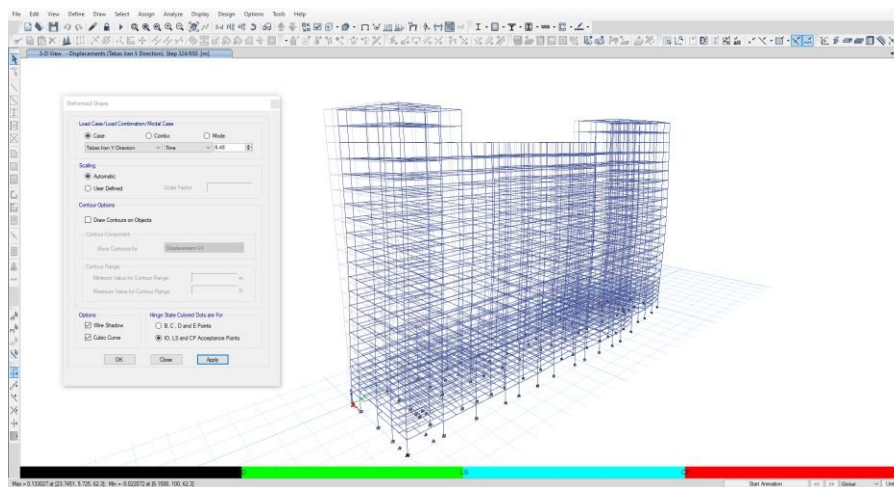
**Gambar** Sendi Plastis Pertama *TH Tabas Iran X Direction*  
( Sumber: Kajian Penulis )



**Gambar** Sendi Plastis Terakhir *TH Tabas Iran X Direction*  
( Sumber: Kajian Penulis )



**Gambar** Sendi Plastis Pertama *TH Tabas Iran Y Direction*  
( Sumber: Kajian Penulis )



**Gambar** Sendi Plastis Terakhir *TH Tabas Iran Y Direction*  
( Sumber: Kajian Penulis )