

## LIST OF SYMBOLS & ABBREVIATIONS

BMD = Bending Moment Diagram

C = Damping matrix

$C_0$  = Damping coefficient for bearing

$C_e$  = Linear effective damping

CG = Centre of gravity

CR = Centre of rigidity

DBE = Design Basis Earthquake

e = Eccentricity

EDF = Electricite De France

F = Force

$F^+$  = Maximum force in positive direction

$F^-$  = Maximum force in negative direction

$F_{\max}$  = Absolute maximum force

FPS = Friction Pendulum System

g = Gravitational acceleration

I = Moment of inertia

K = Stiffness matrix

$K_0$  = Stiffness of bearing

$K_b$  = Stiffness of base isolator

$K_{bx}$  = Base isolator stiffness in X – direction

$K_{by}$  = Base isolator stiffness in Y- direction

$K_e$  = Linear effective stiffness

$K_x$  = Effective stiffness in X-direction

$K_y$  = Effective stiffness in Y-direction

$K_o$  = Effective torsional stiffness

LRB = Laminated Rubber Bearing

M = Diagonal mass matrix

MCE = Maximum Capable Earthquake

NL Link = Non Linear link

NS Component = North South Component

NZS = New Zealand System

P-F System = Pure Friction System

R = Response reduction factor

r = Radius of gyration

R-FBI = Resilient Friction Base Isolator

RCC = Reinforced Cement Concrete

$S_a$  = Spectral Acceleration

SR-FBI = Sliding Resistance Friction Base Isolator

T = Fundamental Time period

$T_n$  = Fundamental Time period of structure

$T_{nb}$  = Fundamental Time period of base isolator

UBC = Uniform building Code

X = Displacement matrix

$X'$  = Velocity matrix

$X''$  = Acceleration matrix

$X_i$  = Distance of  $i^{\text{th}}$  isolator from CR along X-axis

$Y_i$  = Distance of  $i^{\text{th}}$  isolator from CR along Y-axis

Z = Zone factor

z = Internal hysteretic variable

$\Delta$  = Deflection

$\Delta^+$  = Maximum deflection in positive direction

$\Delta^-$  = Maximum deflection in negative direction

$\Delta_{\max}$  = Absolute maximum deflection

$\mu$  = Coefficient of friction

$\xi_b$  = Damping of base isolator

$\omega$  = Frequency ratio

$\omega_n$  = Fundamental frequency of structure

$\omega_{nb}$  = Fundamental frequency of base isolator

$\omega_x$  = Lateral frequency in X-direction

$\omega_y$  = Lateral frequency in Y direction

$\omega_\theta$  = Torsional frequency