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# LIST OF SYMBOLS

| | | |
|---|---|---|
| $A$ | = | cross-section area of footing |
| $A_{Geosynthetics}$ | = | area of geosynthetics that reinforced pavement |
| $A_{All}$ | = | area of pavement |
| AC | = | asphaltic cements |
| C | = | percentage of covering ratio |
| $DTN_R$ | = | design traffic number for the reinforced case |
| $DTN_N$ | = | design traffic number under standard (nonreinforced) conditions |
| EVA | = | ethylene vinyl acetate |
| FEF | = | fabric effectiveness factor |
| PM-AC | = | polymer modified asphaltic cements |
| SBS | = | styrene butadiene styrene |
| PMBs | = | polymer modified bitumens |
| PMA | = | polymer modified asphalt |
| HMA | = | hot-mixed asphaltic |
| $L$ | = | axial loading |
| $N_c$ | = | number of cyclic loading |
| $p$ | = | footing pressure |
| s | = | footing settlement |
| x | = | lengthwise location |
| $\delta_n$ | = | permanent deformation of footing at $N_c$ = 200 for unreinforced case |
| $\delta_r$ | = | permanent deformation of footing at $N_c$ = 200 for reinforced case |
| $\delta$ | = | permanent settlement |
| $(x_i, y_i)$ | = | the Cartesian coordinates of each of four nodes |
| $N_i(\xi, \eta)$ | = | the shape function |
| $(\xi_i, \eta_i)$ | = | the coordinates of the respective four nodes in the natural coordinate system |
| $[J]$ | = | the Jacobian matrix |
| $\lvert J \rvert$ | = | the determinant of the Jacobian matrix |
| $(x_i, y_i)$ | = | the coordinates of node $i$ at an instant $t$ |
| $(x_i, y_i)_{initial}$ | = | the coordinates of node $i$ at the start of testing |
| $\varepsilon_x$ | = | horizontal strain |
| $\varepsilon_y$ | = | vertical strain |
| $\varepsilon_1$ | = | major principal strain |
| $\varepsilon_3$ | = | minor principal strain |
| $\varepsilon_{vol}$ | = | volumetric strain |
| $\gamma_{xy}$ | = | shear strain |
| $\gamma_{\max}$ | = | maximum shear strain |