Index

A
Adhesion, 375-378
Auger cast piles, 381-387
Axial capacity
  Effective stress method, 28, 41, 59
  Friction-end bearing, 188
  Comparison of techniques, 204

B
Bentonite slurries, 250
Building codes, 85-88, 507
  Allowable stress, 88, 273, 301
  Concrete
    Cast-in-place, 92, 510
    Precast, 91, 510
    Prestressed, 510
  Steel, 94, 509
  Timber, 98, 266, 268, 277, 511

C
Cam-clay model, 45
Computer prediction-pile behavior, 343-356
Constant rate of penetration (CRP) tests, 243, 386
Creep strength, 66-69
Critical depth, 336, 359
Critical state, 49

D
Driving criteria, 39, 40, 203, 573-576
Driving stresses, 70, 283, 567-576
Concrete, 67, 321, 325
Steel, 66, 283, 421
Timber, 70
Dutch cone penetration, 15, 204

E
Effective stress method-axial capacity, 41-61
Elastic theory-pile behavior
  Vertical load, 485-495
  Lateral load, 521-524

F
Factor of safety, 514, 558-561
Caissons, 554
Pile-soil, 65, 89
Structural, 65, 89
Timber, 113, 134, 269, 277, 280
Field instrumentation
  Cyclic load, 419, 435-463, 466
  Static horizontal load, 18, 466
  Static vertical load, 156-159, 364, 435-450
Franki piles, 210
G
Green clear wood crushing strength, 120
Group behavior, 74, 475
Grout rehabilitation, 222

I
Inclinometer, 19, 449, 468, 583
Installation damage, 284, 325-327

J
Jacked pile, 236, 465

K
Knot limitations, 114

L
Lateral load, 17, 470-475, 524
Lateral soil displacements, 237, 578-591
Load
  Distribution, 7, 372
  Duration (timber piles), 69, 98, 130, 147-149, 271
  Eccentricity, 256
  Reduction factors, 88
  Transfer, 7, 390, 400-408, 429
Longitudinal cracking, 328
Low cycle fatigue
  Concrete, 67, 321
  Prestressed concrete, 325-327
  Steel, 66
  Timber, 70, 116

M
Mill acceptance tests, 288
Minimum reinforcement, 327-329
Mohr-Coulomb, 49, 60
Moment-thrust interaction, 308

N
Negative skin friction (down drag), 58, 73, 159, 172, 241

O
Overconsolidation ratio, 41

P
Pile
  Cap damage, 581
  Cap influence, 478
  Damage, 217
    Detection, 501
    Installation, 284, 325-327
    Longitudinal cracking, 328
  Rehabilitation, 222
  Driveability, 39, 89, 516
  Failure modes, 70-76, 513
  Foundation settlement, 226
  Hammers, 183-187, 284-286, 342, 362, 393, 398, 418, 452, 599
  Heave (rebound), 212, 237
  Inclination measurements, 366, 426
Load tests
  Cyclic
    Horizontal, 472
    Vertical, 416, 435, 469
  Static
    Horizontal, 16-23
    Steel, 470, 475
    Timber, 524-531
    Vertical, 5-16
      Auger cast grout, 222, 384, 452
      Bent, 599
      Caissons, 537-557
      Concrete
        Cast-in-place, 203-225, 243-245, 253-262
INDEX 609

Prestressed, 200-204, 364
Reinforced, 570
Jacked, 236-242
Raymond (step-taper), 203, 451
Steel
H, 164-175, 304, 398, 451, 570
Pipe, 164-175, 182-188, 200-204, 304, 341-343, 393, 398, 451, 464, 570
Pullout, 165, 176, 342
Timber, 200-204
Settlement, 195, 389
p-y curves, 17

R
Reconsolidation stresses, 53
Reference strength, 119
Relative
Depth, 12, 23
Pile length, 38
Pile stiffness, 38

S
Section strength, 65
Concrete, 308-321
Steel, 66
Timber, 68
Seismic
Deformations, 330
Effects, 473
Load tests, 425
Shear strength reduction factor, 12, 23
Skin friction, 9, 41, 161-169, 410
Slenderness ratio, 603
Soil freeze, 71, 513
Sonic tests, 218
Standard penetration, 204
Strength reduction, 69, 310, 516
Knots, 125, 143, 150
Spiral grain, 130
Treatment, 132, 147-149
Stress history, 41-57
Stress distribution, 256, 583
Subgrade modulus, 196, 520-536, 584

T
Telltales, 9, 158, 182, 359, 367, 375, 453
Tip capacity line, 189
Tip load analysis, 74
Treatment, 69

U
Ultimate capacity, 28, 389, 391, 406, 569-576, 598

V
Vibrating-wire strain gages, 252, 261

W
Water hammer, 328
Wave equation analysis, 20, 205-207, 273, 297, 339, 501, 569-573, 603