Highlighting Guide for

NASCLA approved

Unlimited General Contractor Books

Paul Calvo School

info@paulcalvoschool.net

v.2024-01

Please bring this attachment with you to the seminar as we will use it along with this highlighting guide. Bring a simple calculator, a few extra highlighters, a red ink pen, Tabs, and a notepad. You should place Tabs at the TABLE of CONTENTS and the INDEX in each book before class. I plan to assist with placement of additional Tabs during the one-day prep class. We usually get started by 9:00 AM and break for lunch @ noon, return to class @ 1:00 till 5:30 pm.

Highlighting Guide for NASCLA General Contractor Books

Unlimited General Contractor

SC Commercial Business Law & Financial Management
International Building Codes
Code of Federal Regulations
Modern Masonry
Handling & Erection of Steel Joist & Girders
Carpentry & Building Construction
Roofing Construction & Estimating
Contractor's Guide to Quality Concrete
Pipe & Excavation Contracting
Guide to Handling Wood Trusses
Construction Jobsite Management
Erectors Guide-Precast Conc. Products
Training Field Personnel Un-Bonded Post Tension
Construction Project Management
Manual of Construction with Steel Decks
Gypsum Construction Handbook
Placing Reinforcing Rebar
Principals & Practices of Commercial Const.
Accessible & Usable Buildings
Green Building Fundamentals
American National Standard ANSI/EIMA 99-A-2017
Developing your Stormwater Pollution Prevention Plan, May 2007
NASCLA Contractor's Guide to Business, Law and Project Management 13th edition
Call 811

International Building Code

2018 Ed.		2021 Ed.		
Section	Page	Section	Page	Topic or keyword(s) **Bold** in your Index
110.3.4	8	110.3.4	1-8	frame **i*nspection*** done after roof deck, fireblocking, & rough mech.
602.5	120	602.5	6-5	**Construction Types I-V** Chapter 6 covers all types.
705.11.1	130	705.11.1	7-9	**Parapet, Exterior Wall**, Fire wall extend 30" above roof.
718.2.2	155	718.2.2	7-38	**Concealed Spaces** *fireblocking*, horizontal spacing should be < 10'.
1010.1.7	271	1010.1.6	10-14	**Doors,** Thresholds @ doorways (sliding doors) ¾" all others ½".
1011.3	277	1011.3	10-22	**Stairways**, Headroom 80" or 6'-8" exception spiral stairway 78".
1015.2	283	1015.2	10-29	**Guards**, Stairs (42" high) required platforms higher than 30".
1030.3	302	1031.3.3	10-51	**Emergency Escape & Rescue Openings**, Window Wells height < 44".
Table 1106.1	308	Table 1106.2	11-4	**Accessibility**, Parking & passenger loading facilities.
1204.2	323	1204.2	12-4	**Light, Required**, Natural - window glazing 8% of floor area.
1404.14.1	335	1404.14.1.3	14-8	**Vinyl**, Rigid - fasteners for vinyl siding 16" horizontal 12" vertical.
1505.1	343	1505	15-3	**Fire Resistance**, **Roof Assemblies,** Class A is the most fire-resistant roof
1507.2.2	345	1507.2.2	15-7	**Roof Coverings**, Asphalt shingles, used on 2:12 or greater/ for those 4:12 require double underlayment.

2018 Ed.		2021 Ed.		
Section	Page	Section	Page	Topic or keyword(s) **Bold** in your Index
1507.18.4.2	355	1507.1.2	15-5	Ice dam - a self-adhering bitumen sheet (edge to 24" inside wall line).
1507.2.8.3	347	1507.2.8.3	15-8	**Flashing,** Roof Drip edge/@ eaves & gables, overlap 2" min., fastened every 12".
T1507.2.8.2	348	T1507.2.8.2	15-8	**Flashing,** Roof, Valley lining Galvanized steel, 0.0179", 26 gage - G90.
1507.3.6	348	1507.3.6	15-8	attachment - Galvanized fasteners are not attached to copper roofs.
1507.8.7	351	1507.8.7	15-12	**Wood Shingles & Shakes** - side lap 1-1/2" side lap, spaced ¼" to 3/8".
T1507.8.7	343	T1507.8.7	15-13	**Wood Shingles & Shakes** exposure & slope/16", No.2, 4:12 pitch, exposure 4".
1511.5	359	1512.4	15-20	**Roof Coverings,** Roof replacement, reinstall of slate, clay, or concrete tile not damaged.
T1607.1	368	T1607.1	16-9	min. uniform & concentrated **Loads**, live - residential, sleeping, 30 psf.
1804.4	431	1804.4	18-3	**Excavation, Grading and Fill** away from footing, 1:20 in 10'.
1805.2.2.1	421	1805.2.2.1	18-5	**Dampproofing & Waterproofing**- parged min. 3/8" of mortar on exterior surface below ground level.
T1807.1.6.3(1)	437	T1807.1.6.3(1)	18-9	Foundation **Retaining walls**/max. wall height 7',w/6' unbal. Fill, 10" minimum wall thickness
T1808.8.1	442	T1808.8.1	18-14	**Foundation, Shallow, Concrete**, concrete strength of footing 2,500 psi @ 28 days.
1809.4	441	1809.4	18-15	**Foundations Shallow** depth of footings/**12"** below undisturbed ground.

2018 Ed.		2021 Ed.		
Section	Page	Section	Page	Topic or keyword(s) **Bold** in your Index
1908.10.1	463	1908.8.1	19-5	**Shotcrete** frequency of testing, no field test if < 50 cubic yards**.**
1907.1	450	1907.1	19-5	**Concrete,** Slab minimum provisions, 3.5" thick w/ 6 mil poly lapped 6".
1908.3 &4.2	463	1908	19-5	**Shotcrete**, ¾" rock & #5 rebar. ACI - 318
2113.2	474	2113.2	21-9	**Masonry**, Chimneys 12" thick, & 6" beyond face of support wall.
2303.1.9.2.2	484	2303.1.9.2	23-2	**Pressure-Treated Wood,** Quality - maximum moisture content of 19%.
2304.12.1.1	499	2304.12.1.1	23-22	**Girders**, Wood Construction floor joist 18" from soil**,** & 12" from ground.
2308.3.1	508	2308.3.1	23-32	**Foundation** Exposed, Plates or sills - bolts ½" dia., embedded 7" into masonry.
T2308.4.2.1(1)	513	T2308.4.2.1(1)	23-36	**Floor Construction, Wood**, joist/spans/16" o.c., southern pine #2, 2X8, 30# live, dead 10psf, 13'-3" span L/Δ =360.
T2308.7.1(1)	535	T2308.7.1(1)	23-59	**Roof Construction, Wood**, ceiling joist spans/16" o.c., southern pine #2 2" X 8" 10 # live, dead 5 #, 21'-7" span L/Δ =240.
2512.1.2	567	2512.1.2	25-5	**Gypsum**, Plaster, exterior weep screeds, min. 0.019" thick or 26 gage.
3306.2	608	3306.2	33-2	**Pedestrian**, protection at construction site min. 48" wide & support 150 psi

Here are a few questions from the International Building Code 2018 & 2021 editions with the answers using a **keyword**. Go to the index 1st for a keyword this will give you the section & chapter, then go to the table of contents with that chapter & section and get the page.

1. The building code allows you to cut or notch the ends of a 2" X 10" joist how many inches?

Hint: keyword may be **wall, wood construction** in the index with a subtitle **cutting, notching, boring**, that tells you it can be found in section 2308.5.9 to find what page section 2308 go to the table of contents in chapter 23 section 2308.5.9 page 520/23-44 gives (25% of 9.5" = 2-3/8") the answer desired 2-3/8". The trick is you must know nominal from actual dimensions! See carpentry book - page 1030 Standard sizes for framing lumber, nominal & dressed.

2. Is a stairway's **handrails** to code, if installed 42" above the leading edge of the treads? If not what is the maximum height? Page 283/10-28 **NOTE**: 38" Read all of paragraph because 34" is max.
3. The maximum slope of an **accessible ramp**? Page 280/10-26 **NOTE**: The maximum slope is 8.3% or 1:12.
4. What type of building that has wood columns & wood beams? Building classification
5. An ice dam membrane under asphalt shingled roof must extend at least how many inches inside the wall line? **NOTE**: 24" Section 1507.1.2
6. What compressive strength concrete used to pour a basement foundation wall that is totally backfilled exposed to moderate weathering potential? 2500 PSI see table 1808.8.1
7. Rebar in concrete footings exposed to earth must have how much cover (inches)? 3"
8. Using a single ply of 15# felt with asphalt shingles, what minimal slope is allowed by the building code? 2:12, Section 1507.2.2
9. What ASTM reference # is for structural steel? Chapter 35, **Reference Standards Steel**, Structural Steel section 2205. ASTM A6 or A36

OSHA Code of Federal Regulations

Sect. 1903, 1904, 1910, & 1926.	Topic or Keyword(s) in your Index
1903.16	OSHA citations must be posted @ the jobsite within 3 days
1904.39	Reporting fatalities & multiple hospitalizations
1904.40	Providing records to gov't. representatives
1910.147	Lockout/Tagout – to prevent energizing of equipment
1926.102(a)3 & 102(a)5	corrective lenses Table E-1 eye & face protection
1926.104(d)	belt, not allow a fall greater than 6 feet; ½" min. dia.; 5,400 psi
1926.105(c)(1)	Safety net, extends out 8 feet working over water 25' below
1926.150 – Table F-1	Fire protection, types of fire extinguishers
1926.152 (b)(1)	Indoor storage flammable liquids 25 gallons
1926.200	Signs, signage colors
1926.300(d)(3)	Tools, circular saws shall have a constant pressure switch
1926.350(a)(10)	Oxygen and fuel manifolds separated – 20 feet 451(a) Scaffold, Safety Factor of 4 times its' intended load
1926.451(c)(ii)	Scaffold Restraints, (20' vertical & 30' for end of scaffold horizontal)
1926.550(a)(15)	minimum distance between the power line & the crane is 10 feet
1926.651(c)(2)	Means of access &egress from an excavation, in excavations over 4'deep & travel distance less than 25'
1926.652(b)	Appendix A to Subpart P, soils classification for excavations (Type A, B, & C) Appendix B to Subpart P, Tables used determine max. allowable slopes
1926.760c(3)	Roofing leading edge 90' X 90'

Modern Masonry

7th ed	8th ed	9th ed	**Keyword(s)** Topic
19	17	38	**Tools & equipment**, saw blades, 1/8" silicon carbide or industrial diamond blade
64	71	104	**Weight and measures**, 27 cf = 1 cy; 1 cf of water = 62.5 lbs.
77	91	123	**Solid masonry units** – 75% bearing surface is considered solid
79-84	92-97	125	**Efflorescence** white stain on masonry, **stack bond** – weakest
85-87	99	130	**Mortar joints** - concave or V joint most water resistant
107	125	157	**Concrete masonry units,** Two core block stronger than three core, use two core with rebar
117	133	170	Joint size for **glass block layout table** – ¼" joints
126	143	181	Sills are made from **stone application** because – no joints for water entrance
131	147-148	187	**Mortar** is made from Portland cement and what – **hydrate lime**; What is slacking? – Use of lime - type S
133	151	188	**Mixing mortar,** use mortar within 2 ½ hours, mortar can also be retempered
134	153	190	Cement increases the strength of mortar, m**ortar properties**
142	166	205	Types of **ties** – rectangular, Z and corrugated
155	181	265	**Mortar consistency.** What is furrowing?
169	166	335	**Tie placement reinforcement,** how far from edge – 5/8" mortar cover from each edge
181	214	260	Most common wall **cavity wall**, space 2", cavity can be 1" up to 4"
185	220	266	**Concrete masonry wall,** Wide portion of CMU bed position up- allows more mortar bedding
190-191	226	274	Rake **control joints** depth – ¾"
193	267	316	**Parging** for **damproofing**; ½" thick two coats; extended above grade 6"
218	231	279	**Parging;** extended above grade 6"
271	348	394	**Reinforced concrete,** WWM (welded wire reinforcement) should be lapped one stay plus 2"
377	485	518	Glossary, **tuck pointing terms**

Handling and Erection of Steel Joists and Girders

Pg. 2008 ed.	Topic or Keyword(s)
4	Maximum & min. depths for webs for **K series** 8" to 30" in 2" increments. Bearing depth 2-1/2" (on 6" steel plate), & 4" on concrete or masonry. Length 8' to 60': example of a K-series 18K7 the 18 is depth & 7 is cord.
5	For **LH series** truss maximum & min. depths for webs for LH series 18" to 48" in 2" increments Bearing depth 5" (on 9" steel plate), & 6" on concrete or masonry. Length 21' to 96': example of a LH-series 40LH13 the 40 is depth & 13 is cord number.
5	For **DLH series** truss maximum & min. depths for webs for D LH series 52" to 72" in 2" increments. Bearing depth 4" (on 9" long steel plate), & 6" on concrete or masonry. Length 61' to 96': example of a LH-series 56DLH15 the 56 is depth @ mid-span & 15 is cord number.
5	For **Joist Girder series** truss maximum & min. depths for webs for JG series 20" to 120" in 2" increments. Bearing depth 7-1/2" on 9" long steel plate, & 6" on concrete masonry. Length 20' to 120': example of a LH-series 36G9N6K the 36 is depth & G indicates a girder & the 6K is 6 kips (kip= 1,000Lbs.) 9N = 9 joist spaces.
14	Lifting joists never by band, report any defects before transporter exits
21	Setting plans match tag end; joist girders must be erected singularly
23	Square-ended joist orientation 1st web slopes down & away from end
29	Tack weld the ends of the joist before bridging goes in
35	Table, rows of bridging required before release
40	Typical bridging length – 20'; minimum lap for horizontal bridging 2"
64	Maximum weight of a bundle of bridging – 1,000 #
67	Function of camber – strength allows deflection. Normal camber for 60' long joist – 1 ½"
Appendix B	
79	Joist welds must withstand a horizontal force of 700 pounds
80	use table 5.4-1 to determine the number of rows of bridging required for a *38'* long joist with a # 8 cord member – 3 rows

Carpentry & Building Construction

Page	**Topic** in your Index
45	**Dimension line**
45-55	**Sections, plan and elevations**
63 & T418	**Board feet calculations** CS=(HXW)/12 X Length where H & W are inches
111	**Measuring & layout Tools** carpenter's level produces vertical & horizontal lines
245	**Land elevation,** If back-site to a benchmark of 125.5 is 4.5' and the foresite to a cut stake is 6'; How much cut should be marked on the stake if the bottom of the trench is 94'?
323	**Wood**, **seasoning lumber,** flooring shrink most in which direction? across the width.
353-359	**Laminated-veneer lumber** beams should never be notched
271	**Beam pockets,** moisture can swell wood beams clearance **–** 1/2"
461	**Fireblocking** required walls over – 10' high
550 &714	**Fireplace chimney flashing,** crickets or saddle needed if chimney width over – 30"
577	**Window types,** casement, awning, hopper, & double-hung
605	**Door & frames** sizes for **garages** thickness – **2"**
626	**Roofing & Gutters, terms and concepts** Head &Top Lap, exposure
639 & 901	**Ridge vents** Hip roof ventilation
796	**Cabinets and countertops, installing cabinets** the screw must penetrate into stud – 1"
908	**Acoustical Insulation** interior wall for sound
975	**Acclimation** wood flooring – 4 to 5 days

Roofing Construction and Estimating

Page	**Keyword(s)** Topic
24	**Solid sheathing** less than zero degrees; solid roof sheathing use 1” X 6”
35-36	Purpose for **underlayment,** waterproofing material, 6 items
43	**underlayment, installation** Figure 3-10; underlayment lap – 2” along edge & 4” @ ends
61	**Ice damage precautions, Ice shield** prevents ice dams; outside wall measure horiz. 2’ inside
96	**Flashing, chimney** shingles turned into a vertical wall
106	F**asterners, asphalt shingles,** Drive nails straight; prevents damage to shingle or felt
291	**Built-Up Roofing,** last for 20 years; use 3 gallons asphalt/square per layer
295	**Roof relief vent**; figure 10-2 keeps moisture out of insulation
304	**Bitumen, types** Dead level – ¼ in 12; Flash point – 437 to 500 degrees Keep below 25
358	**Ceilings,** Figure 12-20 for adequate **attic ventilation** 1” air space between insulation and roof deck
362	**Vapor barrier** – condensation, will destroy the insulation
384	**Leak repairs** with roofing cement with sand granules
402	**Attic Ventilation** unconditioned space – controls moisture

Contractor's Guide to Quality Concrete Construction

Note: this reference does not have an index; therefore, highlight keywords in the T.O.C.

3rd ed.	4th edition	**Topics (bold type)** mark pages in the Table of Contents
13	11	**Slump** test – consistency
14	20	**Air-content** for freezing weather
16	13	Concrete breaks in lab (7 days old) – 70% ultimate strength
20	19	**High-range water reducers** Superplastersizer used in increase the slump without water addition
18	16	**Mixing *water*** excess water decreases concrete strength
21	20	**Admixtures - *Air-Entraining Agents*** *know mechanics* & uses
36	47	**Basic Foundation Types, Mat, Raft, or Floating Foundations**
47-48	66	***Form Material & Hardware*** - Double head nails, pulling nails
51-52	70	**Design of Forms** - *Concrete weight* – 150 pounds per cubic foot
68	91	**Type of Reinforcement, *WWM*** extends control joint spacing in flatwork
72	100	**Concrete Cover** for steel, see figure 6.11 & 6.16
75-76	104	**Splicing Reinforcing Steel** – minimum length of splice 12"
87-88	110	**Contraction (Control) Joints** – cut 1/4 slab depth or 1" minimum
88	121	Saw concrete – ¼ thickness or min. 1" to create a weakened plane
123	176	**Pumping concrete** mixes, use river gravel as it is rounded
124	178	**Vibration** – *when concrete has become fluid &* air bubbles not seen
125-26	182	**Finishing a Slab-on Ground** - finishing sequence -screed, float, troweled
133	194	***Segregation and Poor Consolidation,*** maximum 6" slump
139	199	***Surface Scaling* – add air entrainment 5 to 8%**

Pipe and Excavation Contracting

2011 edition	Topic or Keyword(s) **bold in index**
77	**Bulldozer** used for landscaping**,** use light weight dozer
79	**Bulldozer**, cut techniques - align toward the dump area
81	**Bulldozer**, Slot dozing - prevents materials from being sidecast
82	**Bulldozer**, angle blade, - can sidecast materials
84	Bulldozer, cycle time - average dozer speed under load is 2 mph
92	**Scrapers***,* load time - used over long distances
113	Hub & **reference stakes**, station 1+00 equals 100 feet
116	**Survey** Back-site always subtract & Fore-site always add to the height of the instrument
146	A **set**, backhoe - volume of soil removed in 1 machine position
165	**Track Backhoe**, when to use - Best equipment digging > 8', use tracked backhoe
185	**Nuclear density gauge**, gamma radiation
228	**Shoring systems**, shoring jacks - used in firm soil
257	**Contour interval**, - closely spaced, indicates a steep slope
262	**Irregular shape, area of** - trenches, average end area
279	**Rock**, ripping - sedimentary rock easier to rip than other rock

Guide to Handling Wood Trusses

Page	Topic
7	Unloading truss, do not lift with bands
20	Max. Top Chord Temporary Lateral Restraint Spacing figure B2-6
38	Dig. Brace – 2 Each #16D Nails
53	No loads shall be applied to unbraced truss; Figure B4-1

Construction Jobsite Management

3rd edition	4th edition	Topic or keyword(s) **bold** in the index
53	53	**Construction Specification Institute**, Master Format published by CSI
74	74	**Shop drawings**, see figure 4-2A
99	99	**Daily reports**, snapshot of day's activities
165	164	**Toilets**, see figure 6-8
295	297	**Quality management**, planning, Act = Quality Plan
409	427	**Schedule of values computations**, punch list based on job estimate
446	464	**Beneficial occupancy**, **substantial completion**
454	473	**Lien release**, **warranty** items

Erector's Manual – Erection of Precast Concrete Products

Page	Topic Keyword(s) **bold type** in the Table of Contents
4	**Site Access** 1.2.2.1
16	**Unloading** 2.1.5 Precast members should be handled upright position
19	**Sling & Spreader Selection** 2.2.4
36	**Bolted Connections** 2,4.2.1 minimum diameter bolt for connection – ½"
37	**Welded Connections,** 2.4.2.5 Missing connectors, use expansion bolts
42	**Grout, mortar & drypack** 2.4.2.5 one must consider, cleaning for bond
75	**Swinging (Suspended) Scaffolds** 3.8.3.2 min. working load – 750#
77	**Supported Scaffolds** 3.8.3.3 max. horz. space scaffold restraints – 20'
83	**Equipment Safety Programs**, 4.3 - unsafe, leaves jobsite

Training Field Personnel Un-Bonded Post-tension

Page	Topic 2.0 THEORY OF POST-TENSIONING
8	5.Concrete @ 75% of design strength before cables are stressed
13	11.Post tensioning, sequence of operations varies from pre-tensioning
16	15.Advantages of post tensioning
17	2.4 Partial pre-stressing is, when rebar is added
21	3.1 Wire rope is encased in PVC sleeve (see Fig. 3-1)
27	5.2 #1 Nylon straps protects cables, never choked when handling coils
30	6.3 #2Tendons are installed before plumbing and electrical
32	Sleeves, trimmed back 1” study details (FIG. 6-2)
48	8.4 Stressing: Two stroke pull, the final pull – 60%
62	11.1 #4 Cap within 24 hours, never over 96 hours
73	2 Replace broken cables per Engineer and/or the supplier

Construction Project Management

Page	Topic or Keyword(s) **bold type** in the index
26	**Organization of Contract Document**, see figure 2-1, public projects
56	**Quality**, quality management - avoid reworks/Quality mgt.
117	**As–builts**, O & M, Warranties, Test reports, Permits/ As –Built
140	**Value engineering**, life-cycle costing and, creative way to lower cost
160	**Bonds and Insurance**, surety see fig. 2-2/Box 7.1
162	**Insurance**, Workers compensation insurance
185	**Closeout phase**, reasons project manager has close-out log
201	**Cost information**, **estimates**, budget, cost-plus, **lump-sum contracts**
222	**Scheduling**, bar chart, critical path method
256	**Cost plus**, as related to actual cost/ cost direct cost
276	Letter of transmittal, most common communication/ **RFI**
278	**Daily** Job diary, project superintendent daily job/job site communication
289	**Submittals**, product data color charts, cut-sheets, samples, mock-ups/Samples
295	**Change orders**, signed by three parties

Manual of Construction with Steel Deck

2nd ed.	3rd ed.	Topic or Keyword(s) **bold type** in the Table of Contents
4	6	1. **General - All Deck Product** - widths of decks 12, 18, 24, 30, or 36 inches
16	18	V**. Storage and Protection** drain & ventilation moisture evaporation
20	22	VI**. Lifting**, bundles rest on a bearing surface not overhanging ends
26	28	VI**. Fastening & Installing**, bear minimum 1 ½"
29	32	VI.Washers – 22 gage or 0.028 inches
32	32	VI.75% weld puddle
36	38	VII. **Example of 6" Hole or Dent (Figure 10)**, suggested information for 6" penetration
37	39	VII**. Details for Opening Example** C 4 x 5.4 channel around openings < 24" wide Perpendicular

Gypsum Construction Handbook

Page (6th ed.)	Page (7th ed.)	Topic or Keyword(s) **bold type** in the Index or Tables
3	3	**gypsum panel**, **-** moisture weakens drywall
5	5	**firecode - core**, Type X
8	8	**ceiling board,** for soffits use exterior sheating
15	15	**sheathing limitations**, Lap felt – 2 “
22	22	**bead**, accessories used 90 degree corners
81	81	**suspended ceilings**, frame splices nest furring channels 8”overlap
94	93	**framing**, door max. door weight in steel wall – 100#
103	101	**estimating, screws -** 1,000 S.F. of gyp. board has 1,000 screws
105	103	**environmental conditions -** minimum temperature 50 degrees F
140	137	**curved surfaces**, **-** maximum arc – 90 degrees
174	172	**joint treatment**, **-** grout open spaces greater than ¼”
210	206	**veneer plaster** tough finishes **–** durable, resist scuffs, gouges
214	210	**control joints** maximum distance – 30 feet
312	314	**acoustical ceiling**, - a runner is not a part of a ceiling system
349	351	**performance requirements**, **-** maximum storage temperature – 125° F

Placing Reinforcing Rebar

9th	10th	Topics in the index or table of contents
3-4	4-5	When **slab-beam and girder** floor systems are formed together, the columns should be formed 1st
5-4	6-4	**Stirrups**, purpose – hold to other rebar in place
8-3	8-2	**bond**, **-** Rust is ok
8-5	8-7	**Spreader beams** used for – lifting other bars
11-5	11-14	**tolerances in placement -** Rebar spaced not more than three ties to any one bar.
11-29	11-36	**ties**, types **-** Most common wall tie – wrap and snap
11-31	11-39	**ties -** Purpose of ties hold bars in place
12-10	12-11	Mat placing foundation, rebar 2” from top, 3” from bottom for concrete cover
12-11	12-13	**bar supports**, in foundation mats – support top bars in the mat
12-13	12-14	**bar supports**, in foundation mats – rebar in mats minimum 3 ties
13-3	13-3	**beam, bolsters** are how long – 5’; joist chairs carry – 2 bars
13-8	13-8	**Temperature reinforcement** are placed on top

Principles and Practices of Commercial Construction

9th ed.	10th ed.	11th ed.	Topic or Keyword(s)
15	14	16	Table **Soil bearing strength**
24	24	25	Penetrometer, **shear test** - instruments used to determine soil bearing
29	34	36	**Level Transit**, on transit for angles
99-107	99-107	99-109	Protection of excavations, **sheet piles, tiebacks, rock tiebacks, needling**
107	107-109	109-110	**Underpinning** is best permanent support
115	39, 115	117	**Deep foundation** – Piles, types bearing pile, & friction
141	137-204	139-143	**Formwork**, Load and pressure **–** 50 psf min. live load for workers
142-143	142	144	**Wall and column forms** Tables 6-2(a) and 6-3 (a)
180	180-188	248-249	**Wall forms**, cleats, sheathing, studs, wales, braces, & tie-spreader units
190	190	181	**Forms for control joints** (concrete slabs)
206	206	197-198	**Aggregate** for concrete
207	207	198	**Silt Test**
211-212	211-12	203	**Portland cement** (five types)
213	213	204	Maximum size **aggregate** (Table 7-3)
236	230-233	220-223	**Concrete transit**, tremie pipe size (8 times largest aggregate)
241	241	231-233	**Cold weather concreting,** - 500 psi past freezing danger
247	206	239	**Structural lightweight concrete** 85 lb/cu ft
257	257, 260	250	**Column forms**, cribbing
329	344-345	229	**Structural rolled shapes**, see Figure 10-3 or Figure 11-3, 11-5
352	353	340	**Columns, structural steel**, - multi-story spliced 2’ above floor
359	358-359	342	**Bolts**, **structural steel** holes must be punched how much larger – 1/16”
475	479	461	**Built-up-roofing -** overheating bitumens avoided

Accessible and Usable Buildings

2010	2017	Topic or Keywords
7	9	**carpet**, **-** Height of threshold ½”
8	10	**turning space**, Figure 303.3 and 304.3.1.2 - circular 60”; for existing buildings
11	11	**protruding objects**, Paragraph 307.2 protrude 4” Max.
15	19	Paragraph 403.5.1; clear width 36”
16	25	Paragraph 404.2.2 **door clear opening** 32”
17	28	Table & Figure 404.2.3.2 18”; maneuvering clearances @doors
21	32	404.2.6.1; Minimum height of **door** handles - 48”
22	33	Paragraph 405.6, the maximum rise of a **ramp** – 30”
27	40	**elevator**, Paragraph 407 fig. 407.2.1.1 Call Buttons 54” Max. (exception)
39	55	Paragraph 502; parking spaces
40	60	Paragraph 504; stairways; risers 4” min, 7” max
46	68	Paragraph 604 - 18” min from wall
63	91	Paragraph 611.4 Top loading **washing machine**, maximum height – 36”

Green Building Fundamentals

Page #	Topic or Keywords
1	Sustainable practices specifically consider a building project's long-term impact on the environment.
2	Triple bottom line environment, doing business, & industry's bottom line
95	Strategies for incorporating recycled materials
97	Waste items that can be recycled
106	USGBC guiding principles, Areas where LEED applies

American National Standard ANSI/EIMA 99-A-2017

Section	Definitions
3 Definitions	
	3.1 Adhesive
	3.3 Backer Rod
	3.13 EIFS
	3.15 Encapsulated
4 Design Considerations	
	4.2 Expansion joints are required in an EIFS or EIFS with Drainage as follows: a-f
	4.4 Dark finish colors may result in high surface temperatures.
5 Product Delivery, Storage and Handling	
	5.2 Stored on a level platform in a cool, dry place protected from direct sunlight, wether, and potentially damaging exposure.
	5.3 Storage at 40deg f at all times
	5.4 Portland cement shall be stored in a dry protected area until it is ready to use.
9 Environmental and Weather Conditions	
	9.1 Cold weather conditions – wet materials shall not be applied wthen the surface and ambient temp are less than 40 degrees F
12 Materials	
	12.3 Insulation board
	12.3.1 Expanded polystyrene insulation board shall conform to the requirements of ASTM C578 Board width, max 24”, length max 48”, thickness min ¾”
	12.3.3 Polyisocyanurate (Polyiso)
13 Durability	
	Table 1 Air/Water-Resistive Barrier Requirements
	Table 2 Performance Tests
	Table 3 Component Performance Tests

Developing your Stormwater Pollution Prevention Plan

NASCLA Contractor's Guide to Business, Law and Project Management (non-state specific)

Page	Keywords
Chapter 2 Choosing your business structure	
2-1	Sole proprietorships
2-3	S Corporations
Chapter 3 Managing Risk	
3-1	Insurance
3-3	Inland marine
3-4	Commercial General liability
Chapter 6 Bidding and Estimating	
6-1	Bid Documents
6-2	Site Visit
6-3	Labor cost
6-4	Labor burden
6-5	Contingencies
6-6	Overheads
Chapter 7 Contract Management	
7-1	Elements of a Contract
7-4	Breach of a Contract
7-5	Types of Contracts
7-6	Contracting Methods
Chapter 8 Scheduling and project management	
8-4	Bar Chart
8-5	Critical Path
8-7	Project supervisory team
8-8	Daily report
Chapter 10 Employee Management	
10-1	Interviewing and hiring employees
10-3	FLSA
10-5	I-9 form
Chapter 11 Jobsite Safety (OSHA) and EPA	
11-3	Emergency Action Plan
11-12	Lead
Chapter 13 Financial management – Accounting	
13.3	Prepare financial statements
13.7	Cash or Accrual methods of accounting
Chapter 14 Taxes	
14.3	Federal Employment Taxes – circular E
14.6	Tax Calendar