



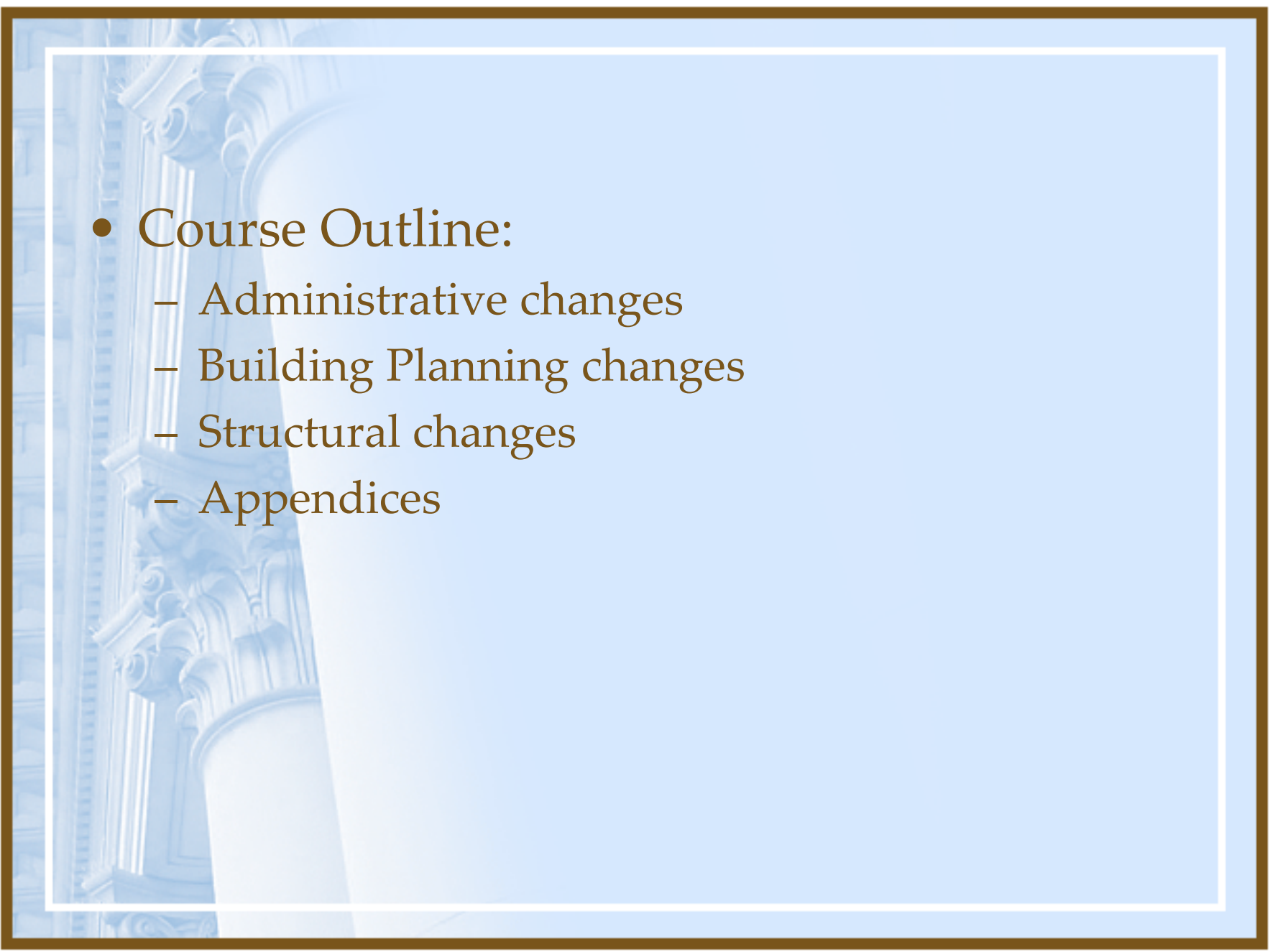
# County of Tuolumne Building and Safety Division

2016 California Code Updates  
California Residential Code



Instructor: Doug Oliver, Chief Building Official  
County of Tuolumne

- Course Intent:
  - To provide an overview of the significant changes to the California Residential Code that apply to this region

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- The background of the slide features a light blue gradient with a faint, semi-transparent image of classical architectural columns on the left side. The columns are white with detailed capitals and are set against a darker blue background. The entire slide is framed by a thin brown border.
- Course Outline:
    - Administrative changes
    - Building Planning changes
    - Structural changes
    - Appendices

## The age of fine tuning.....

- Way to much to cover in two hours
- Full summary on the County website
- We will focus on significant changes that directly effect our community

## Must Have Links!

- New Codes Online:  
<http://www.bsc.ca.gov/Codes.aspx>
- Building and Safety Website:  
<http://www.tuolumnecounty.ca.gov/index.aspx?NID=982>
- California Energy Commission:  
<http://www.energy.ca.gov/title24/2016standards/>

# Administration

- CRC now references the new California Existing Building Code.
- This code can now be used on one and two family dwellings up to 3 stories above grade plane
- The limitation of 3,000 square feet on accessory buildings has been removed.

# Administration continued

- Lodging houses clarified:
  - The owner of the structure must reside in the structure.
  - Any similar use where the owner resides in a separate structure or parcel is classified as transient lodging.

# Building Planning

- Several modifications for climate and geographic design criteria:
  - Ultimate wind speed is consistent with CBC!
  - Wind speed conversion chart is now for *Vult*
  - *Design criteria must be provided on the plans similar to table R301.2(1)*
    - *Ground snow load*
    - *Wind Speed*
    - *Seismic Design Category*
    - *Topographic Effects not required....yet*



## Sunrooms identified in the code by category (simplified):

- I = open or screened, non-habitable, unconditioned
- II = Enclosed with glazing or translucent plastic, non-habitable, unconditioned
- III = as above, but fenestration meets requirements for air infiltration and water penetration resistance. Non-habitable and unconditioned
- IV = Conditioned with separate equipment, non-habitable
- V = conditioned with main structure, habitable

# Fire resistance of roof overhangs

TABLE R302.1(1) Exterior Walls

Exterior Wall Element		Minimum Fire-Resistance Rating	Minimum Fire Separation Distance
Walls	Fire-resistance rated	1 hour—tested in accordance with ASTM E119 or UL 263 with exposure from both sides	< 5 feet
	Not fire-resistance rated	0 hours	≥ 5 feet
Projections	Not allowed	N/A	≤ 2 feet
	Fire-resistance rated	1 hour on the underside <sup>a, b</sup>	≥ 2 feet to < 5 feet
	Not fire-resistance rated	0 hours	≥ 5 feet
Openings in walls	Not allowed	N/A	< 3 feet
	25% maximum of wall area	0 hours	3 feet
	Unlimited	0 hours	5 feet
Penetrations	All	Comply with Section R302.4	< 5 1/2 feet
		None required	6 3/4 feet

For SI: 1 foot = 304.8 mm.

N/A = Not Applicable

a. Roof eave fire-resistance rating shall be permitted to be reduced to 0 hours on the underside of the eave if fireblocking is provided from the wall top plate to the underside of the roof sheathing.

b. Roof eave fire-resistance rating shall be permitted to be reduced to 0 hours on the underside of the eave provided gable vent openings are not installed.

## Town house common walls

- No longer required to be a “double wall”
- Common wall protection based on presence of sprinklers:
  - 1 hour – sprinkled
  - 2 hour – not sprinkled

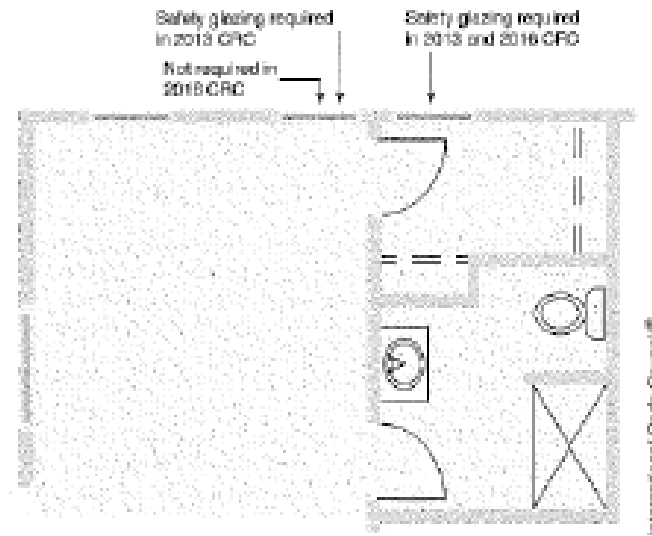
## Fun changes

- R303.7/303.8 - Rewrite for clarity for proper illumination of stairways.
- R304.1 - Minimum room area reduced from 120 square feet to 70 square feet.
- R305 - Ceiling height in Bath/laundry reduced to 6'8". Obstructions in basements 6'4"

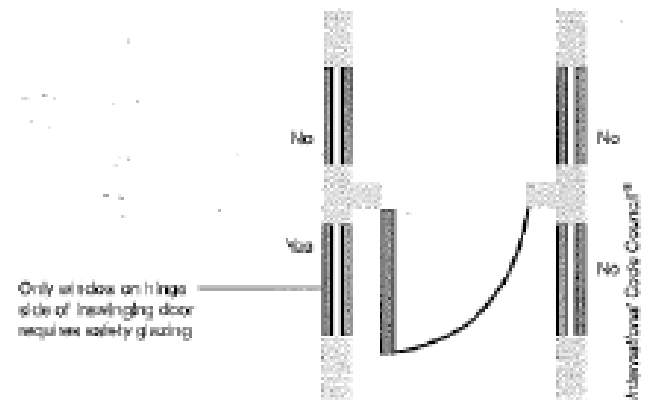
# Safety Glazing Changes

- Safety glazing only required in the direction of door swing on hinge side
- Safety glazing in bathrooms expanded to include showers/saunas
- Safety glazing required if less than 180 degrees from nosing of treads and height reduced from 36" high rather than 60"

# Glazing at Doors

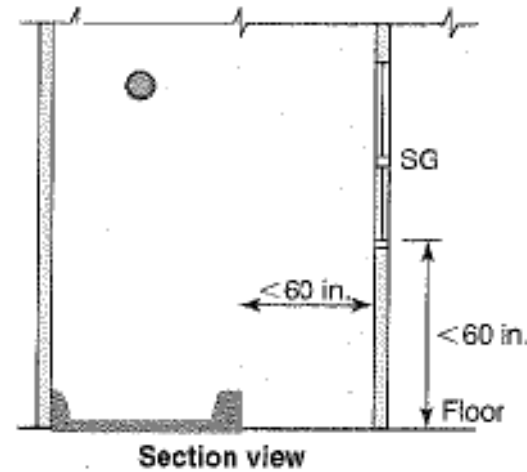
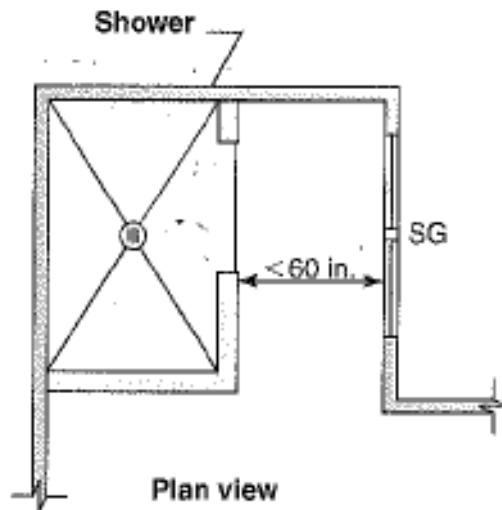


Glazing in windows adjacent and perpendicular to door



Windows adjacent and perpendicular to door

# Glazing and wet surfaces



SG = Safety glazing required  
Measurements are to exposed glazing

Glazing facing shower

International Code Council®

# EV charging station

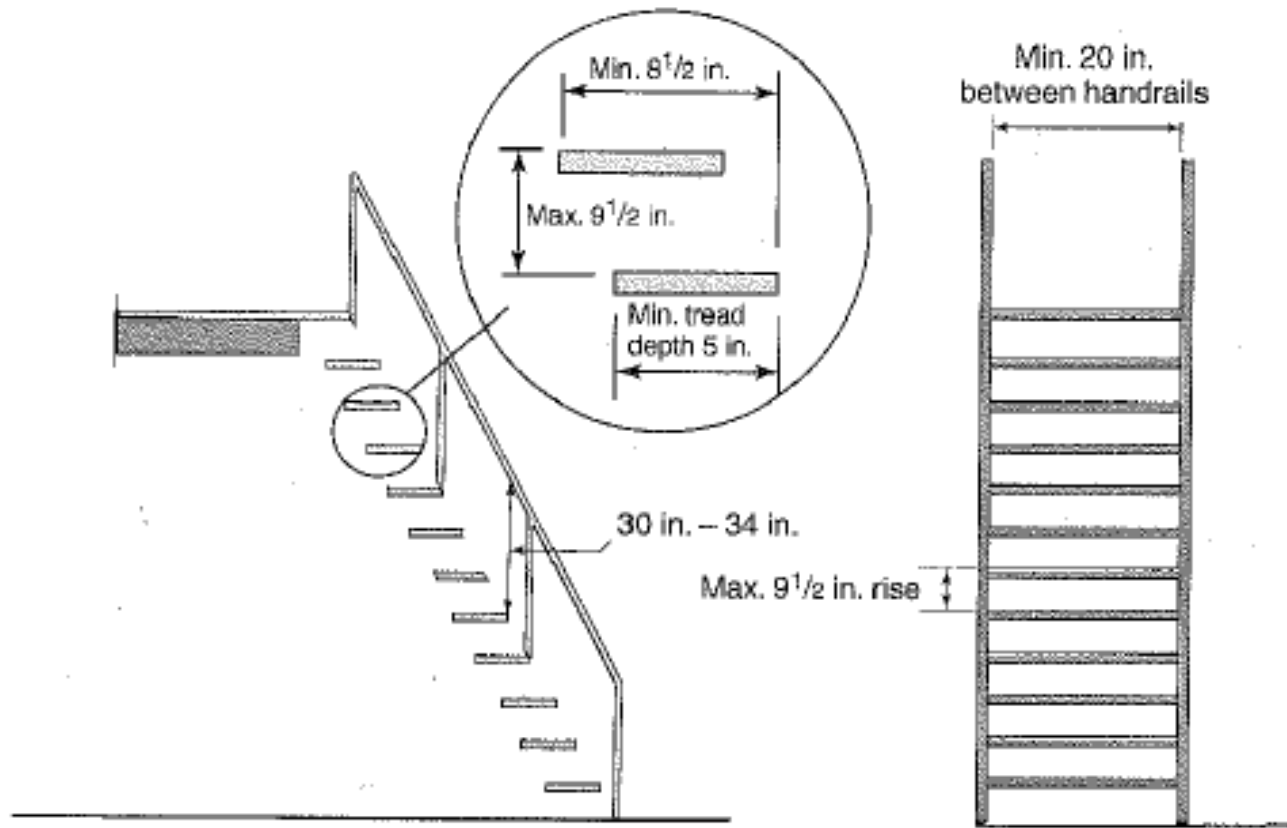
- New dwellings must comply with the EV charging requirements of the 2016 GBC
  - Must provide labeled space in panel for min. 40 amp breaker
  - Must provide raceway from service panel to future charger location. (1-inch conduit min.)
  - Raceway must terminate in junction box or other listed enclosure



# Stairway changes

- Height of stairway increased to 147 inches
- Open risers allowed
- Opening restricted to 4" of over 30" above grade.
- Alternating tread devices and ship ladders allowed. *NOT FOR MEANS OF EGRESS*

# Alternating Treads/Ship ladders



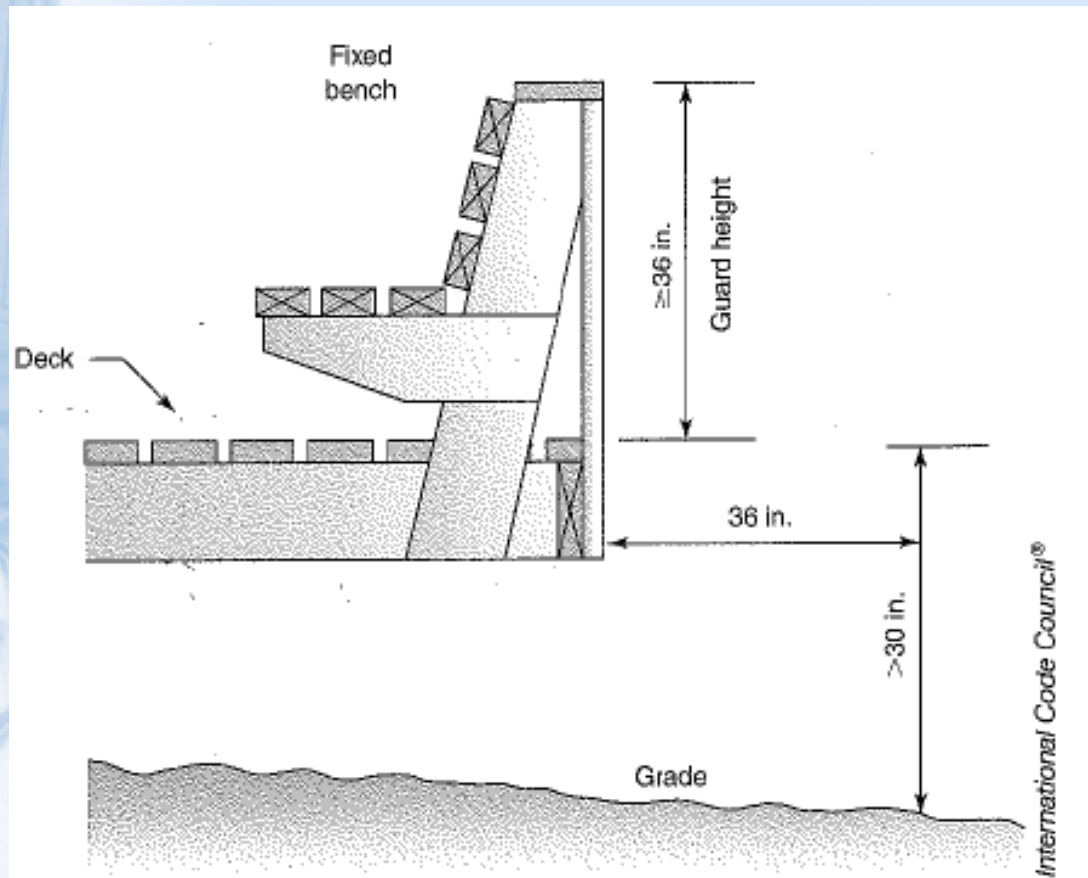
Ships ladder

International Code Council®

# Residential ramp requirements

- Required egress = 1/12 slope
- All other = 1/8

# Guard Rails at fixed seating Fixed!



Measuring guard height at fixed seating

## CO detector install clarification

- Language changed for existing dwellings to be specific to additions and installations of new fuel burning appliances.

# Mezzanines

- Once called lofts. new requirements:
  - Clear height below = 7 feet
  - Cannot be more than 1/3 of the floor space of room it contains
  - Shall be open and unobstructed
  - Shall be clearly identified on plans

# Construction waste management

- General: 65% diversion
- Not Complicated: what can be diverted around here?
  - Currently, everything
  - If it cant be recycled, explain in management plan and report to Solid Waste Division.
- How far do we need to drive before hauling is unreasonable?
  - East Stockton, who takes mixed recyclables.

# Current Dump and Recycler Restrictions

- All dumping must be local by county ordinance.
  - Unless rejected by transfer station.
  - If rejected, report it on WMP and notify Solid Waste Division.
- East Stockton contact number:
  - (209)948-0535



# Construction Waste Management

- How will this be enforced?
  - Waste management plan provided at plan review and on site at all inspections.
    - Waste diversion specifically identified and tracked by weight or volume. *Not Both*
    - Waste reduction methods must be specified and followed.
    - Waste cannot be burned for heat!
  - Waste diversion on site will be provided with labeled receptacles.
  - Waste management documentation shall be collected at Final Inspection
  - Inspections can be cancelled for not providing documents and not following management plan.

## Link to all required documents

- Calgreen:
  - <http://www.hcd.ca.gov/calgreen.html>
- Building and Safety Division Website
  - Information page

# Minimum Footing Sizes

- Tables now provided for three different types of construction:
  - Light frame only
  - Light frame + veneer
  - Masonry/Concrete

**\*\*Warning! Sizes are different!**

Show all footing sizes relative to building height/wall material on the plans!

# Table R403.1(1)

**TABLE R403.1(1) Minimum Width and Thickness for Concrete Footings for Light-Frame Construction (inches)<sup>a, b</sup>**

Snow Load or Roof Live Load	Story and Type of Structure with Light Frame	Load-Bearing Value of Soil (psf)					
		1500	2000	2500	3000	3500	4000
20 psf	1 story - slab-on-grade	12 × 6	12 × 6	12 × 6	12 × 6	12 × 6	12 × 6
	1 story - with crawl space	12 × 6	12 × 6	12 × 6	12 × 6	12 × 6	12 × 6
	1 story - plus basement	18 × 6	14 × 6	12 × 6	12 × 6	12 × 6	12 × 6
	2 story - slab-on-grade	12 × 6	12 × 6	12 × 6	12 × 6	12 × 6	12 × 6
	2 story - with crawl space	16 × 6	12 × 6	12 × 6	12 × 6	12 × 6	12 × 6
	2 story - plus basement	22 × 6	16 × 6	13 × 6	12 × 6	12 × 6	12 × 6
	3 story - slab-on-grade	14 × 6	12 × 6	12 × 6	12 × 6	12 × 6	12 × 6
	3 story - with crawl space	19 × 6	14 × 6	12 × 6	12 × 6	12 × 6	12 × 6
	3 story - plus basement	25 × 8	19 × 6	15 × 6	13 × 6	12 × 6	12 × 6
30 psf	1 story - slab-on-grade	12 × 6	12 × 6	12 × 6	12 × 6	12 × 6	12 × 6
	1 story - with crawl space	13 × 6	12 × 6	12 × 6	12 × 6	12 × 6	12 × 6
	1 story - plus basement	19 × 6	14 × 6	12 × 6	12 × 6	12 × 6	12 × 6
	2 story - slab-on-grade	12 × 6	12 × 6	12 × 6	12 × 6	12 × 6	12 × 6
	2 story - with crawl space	17 × 6	13 × 6	12 × 6	12 × 6	12 × 6	12 × 6
	2 story - plus basement	23 × 6	17 × 6	14 × 6	12 × 6	12 × 6	12 × 6
	3 story - slab-on-grade	15 × 6	12 × 6	12 × 6	12 × 6	12 × 6	12 × 6
	3 story - with crawl space	20 × 6	15 × 6	12 × 6	12 × 6	12 × 6	12 × 6
	3 story - plus basement	26 × 8	20 × 6	16 × 6	13 × 6	12 × 6	12 × 6

## Seismic requirements

- SDC of D requires all exterior walls to be supported by continuous footings
- SDC of D required footing reinforcement
- Anchor bolts must be in middle 3<sup>rd</sup> of sill plate.
- Approved alternate anchors allowed prescriptively
- Masonry foundation steel increases to #4 in SDC of D.

# Retaining wall changes

- Permit required and engineering required if:
  - Retaining 48" of unbalanced fill or
  - 24" of unbalanced fill + additional lateral loads (vehicle parking, roads, structures, etc.)

# Lets Talk Decks!

- Huge rewrite of Section R507
- New prescriptive allowances
- Clear post to beam connection and Ledger to band-joist connection allowances.
- New footing size table
- New joist spans and spacing tables
- New handout pending

# Check your tables!

- Nailing schedule Table 602.3(1) have been revised for clarity.
- Nailing increased in some connection types



# Prescriptive tall walls!

- Section R602.3.1 revised to simplify use.
- If:
  - Snow load 25lbs or less
  - Wind speed less than 130
  - 2x6 studs supporting roof load of no more than 6 feet of tributary area
- Than:
  - 16" o.c. = 18 foot height
  - 12" o.c. = 20 foot height

*Bracing restrictions still apply!*

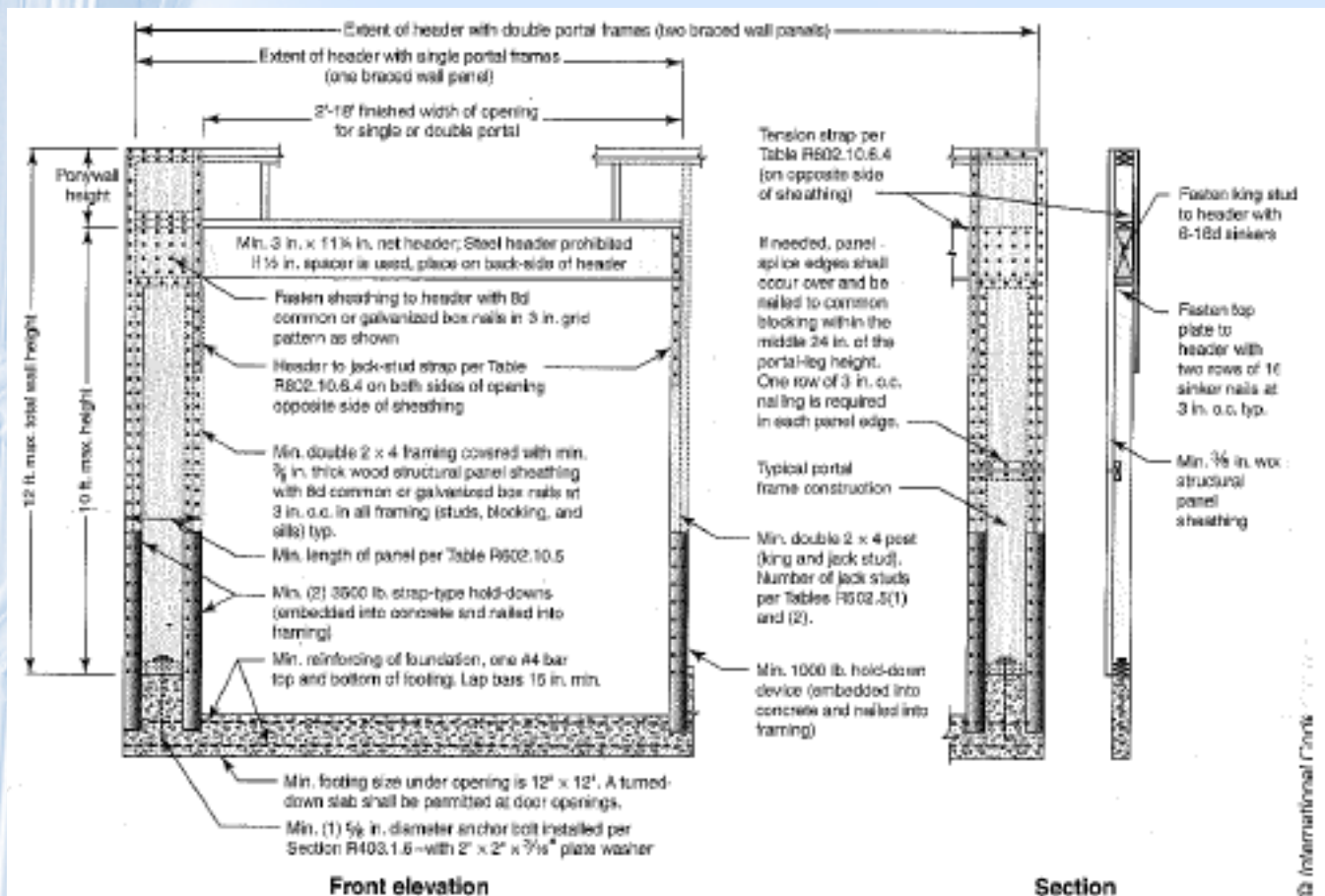
## Look Out!

- Don't mix up story height and stud height! They are two different things.
- This allowance is extremely limited and is not intended for significant architectural features or bearing locations, such as:
  - Garage fronts
  - Large window openings in great rooms

## Girder span tables R602.7(1,2,3)

- (1) Single ply/rim board headers added to standard span table and number of jack studs specified.
- (2) table for determining the number of full height studs at each end of a header based on span
- (3) separate girder/header span table for open porches. Snow load max 70 lbs

# Portal frame clarity



Method RFH: Portal frame with hold-downs

## For ease of reference

- Simplified wall bracing now allowed on 3 story dwellings and townhouses.
- All masonry design codes consolidated into section R606.
- Wall cladding, including vinyl, now provided with fastening table
- Roof underlayment consolidated into Tables R905.1.1(1,2 and 3)

# Appendix R and S

- R – light straw – clay construction
- S – Strawbale Construction
- NOT ADOPTED!
- Why?
- Can we still use it?

Lets see those links again!

- New Codes Online:  
<http://www.bsc.ca.gov/Codes.aspx>
- Building and Safety Website:  
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- California Energy Commission:  
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# Inspection Clarification! Blame OSHA

- Roof Inspections.
  - *We are allowed* to get on roofs!
  - When we don't need fall protection.
  - When we need fall protection.
    - Contractor responsible for providing fall protection.





Questions?