



Butte County Department of Development Services
7 County Center Drive, Oroville, CA 95965
Main Phone: (530) 552-3700 Fax: (530)538-7785
www.buttecounty.net/dds

FORM NO

DPC-5

BUILDING DESIGN CRITERIA

CURRENT CODES:

2019 California Building Code (CBC)
2019 California Residential Code (CRC)
2019 California Electrical Code (CEC)
2019 California Mechanical Code (CMC)
2019 California Plumbing Code (CPC)
2019 California Energy Standards
2019 California Fire Code
2019 California Green Building Standards Code

Loading: ASCE 7-16

Wood: NDS-2018 and SDPWS-2015

Concrete: ACI 318-14

Masonry: TMS 402-2016 and TMS 602-2016

Structural Steel: AISC 360-16 and AISC 341-16

The 2019 California Codes are available for purchase from the International Code Council at www.iccsafe.org and may viewed online at <https://www.dgs.ca.gov/BSC/Codes>.

LIVE LOADS: per 2019 CBC Table 1607.1

WIND DESIGN:

Per ASCE 7-16 Chapters 26 - 31

Risk Category: (see 2019 CBC Table 1604.5)

- I Miscellaneous Occupancy
- II Standard Occupancy (not I, III, or IV)
- III High Occupancy
- IV Essential Facility, Hazardous Facility

Wind Speed: depends on risk category

87 mph (RC I), 95 mph (RC II), 102 mph (RC III), 105 mph (RC IV)

Wind Exposure Category: B or C depending on building height, terrain, and surface roughness:

Exposure B: Terrain with buildings, forest, etc. 20' or more in height covering at least 20% within 1 mile of the site.

Exposure C: Flat and generally open terrain within ½ mile or more from the site.

SEISMIC DESIGN:

Per Chapters 11 - 23 of ASCE 7-16

Seismic Design Category (SDC) can be determined from <https://seismicmaps.org/> and is dependent on earthquake ground motion, soil characteristics, and risk category.

SOILS INVESTIGATION REPORT:

Soils investigation reports prepared by a California registered design professional (Civil Engineer or Geotechnical Engineer) in accordance with CBC Section 1803 are required upon permit submittal to construct the following:

- Non-residential structures other than U occupancies or S occupancies used solely for agricultural purposes or minor storage.
- Structures located in areas known to contain highly expansive soils. (CBC 1803.5.3)
- Structures located on slopes greater than 1H:3V or near such slopes without setback from the slope as required by CBC 1808.7.1.
- Shallow foundations or slabs on fills exceeding 12” in depth. (CBC 1803.5.8)
- Structures in areas where the Building Official has reason to doubt the classification, strength, or compressibility of the soil or where soil load-bearing values higher than specified in the CBC are used. (CBC 1803.5.2)

MINIMUM FOUNDATION DESIGN VALUES WHERE A SOILS INVESTIGATION REPORT IS NOT PROVIDED:

Foundations shall be designed using the following soil values unless data to substantiate higher design values is provided by a registered design professional:

- Soil Bearing Pressure: 1500 psf (2019 CBC Table 1806.2)
- Active Pressure: 60 psf/ft for cantilevered retaining walls (2019 CBC Table 1610.1)
- At-Rest Pressure: 100 psf/ft for restrained retaining walls (2019 CBC Table 1610.1)
- Coefficient of Friction: 0.25 (2019 CBC Table 1806.2)
- Lateral Bearing Pressure (Passive): 150 psf/ft below natural grade (2019 CBC Table 1806.2)

Retaining walls and foundation walls supporting more than 6’ of backfill shall include the effects of seismic. (2019 CBC Section 1803.5.12)

SNOW LOADS:

Minimum Ground Snow Loads for Structures not Manufactured Homes:

| <u>Elevation (Feet)</u> | <u>Minimum Ground Snow Load</u> |
|-------------------------|---------------------------------|
| 0 - 1499 | No Requirements |
| 1500 - 1999 | 20 psf |
| 2000 - 2499 | 37 psf |
| 2500 - 2999 | 55 psf |
| 3000 - 3499 | 75 psf |
| 3500 - 3999 | 97 psf |
| 4000 - 4499 | 122 psf |
| 4500 - 4999 | 149 psf |
| 5000 - 5499 | 180 psf |
| 5500 - 6000 | 215 psf |

Snow load values on this chart may be interpolated. Ground elevations can be determined from Google Earth or USGS topo maps.

Ground snow loads can be converted to roof snow load in accordance with ASCE 7-16 Chapter 7.

Residential structures proposed in areas where the ground snow loads exceed 70 psf require design by a Registered Design Professional (California Licensed Engineer or Architect) per CRC R301.2.3.

Minimum Roof Snow Loads for Manufactured Homes:

| <u>Elevation (Feet)</u> | <u>Minimum Roof Snow Load</u> |
|-------------------------|-------------------------------|
| 0 - 2000 | 20 psf |
| 2001 - 3000 | 30 psf |
| 3001 - 4000 | 60 psf |
| 4001 - 5000 | 80 psf |
| Over 5000 | see snow load chart above |

Approximate elevations for some Butte County locations:

| | | | |
|---------------|-------|---------------|-------|
| Berry Creek | 2200' | Feather Falls | 3000' |
| Butte Meadows | 4500' | Forbestown | 2800' |
| Clipper Mills | 3600' | Forest Ranch | 2400' |
| Cohasset | 3200' | Magalia | 2400' |
| Concow | 2200' | Stirling City | 3600' |
| De Sabla | 2720' | Yankee Hill | 2200' |

FLOOD ZONE:

To determine if a property is in a FEMA flood hazard zone click the following link:

<https://msc.fema.gov/portal/search#searchresultsanchor>

See Butte County Code Chapter 26 for construction requirements in FEMA designated flood hazard zones.

https://library.municode.com/ca/butte_county/codes/code_of_ordinances?nodeId=CH26BU_ARTIVF_LHAPR

A flood Elevation Certificate is required for new construction or substantial improvements to existing structures in the flood zone. Substantial Improvement is defined as 50% or more of the market value of the existing structure with depreciation of the existing structure taken into account. See <http://www.fema.gov/national-flood-insurance-program/definitions> for definitions.

Information about the National Flood Insurance Program can also be obtained from FEMA's website: <http://www.fema.gov/national-flood-insurance-program>

SPECIAL INSPECTIONS:

Special Inspection is required in accordance with 2019 CRC R109.1.5.2 and CBC Chapter 17.

Special inspectors must be employed by the owner and approved by the Butte County Building Division. Special inspectors not already approved by the Butte County Building Division must submit a Statement of Qualifications and verification of current ICC (or equivalent) certification for the particular item they will be inspecting. A list of Butte County approved special inspectors can be found at the following link: https://www.buttecounty.net/Portals/10/Docs/DPC/DPC-20_Approved_Special_Inspectors_Contact_List.pdf

WILDLAND URBAN INTERFACE (WUI):

Building construction in the Wildland Urban Interface (WUI) area must be in accordance with 2019 CRC R337 or CBC Chapter 7A, *Materials and Construction Methods for Exterior Wildfire Exposure*. A list of approved building materials can be found at the following link: <https://osfm.fire.ca.gov/divisions/fire-engineering-and-investigations/building-materials-listing/bml-search-building-materials-listing/>

ADDITIONAL INFORMATION:

Go to the Butte County Department of Development Service's website www.buttecounty.net/dds for additional information.

Click on Parcel Look-Up <http://www.buttecounty.net/dds/Planning/Documents/Parcel-Lookup-Tool> and enter an address, assessor's parcel number, or place to see available GIS layers and obtain specific parcel information.