

2009 IBC  
Southern Nevada Code  
Amendments

Structural and Grading

# Structural Amendments

# 1603.1

## Construction Documents

- Added item 7 to the exception.
- Requires structures built as conventional construction per 2308 call out the average dead loads of the floor and roof materials.

# Table 1607.1

## Minimum Live Loads

- Add footnote “m” to item 27 (Residential).
- Uninhabitable attics are not required to be designed for the additional loads indicated for item 31 (accessible ceiling - 200 lb concentrated load).

## 1609.1.1

### Determination of Wind Loads

- Freestanding fences that are 10 feet or less in height and designed per ASCE 7-05 need only consider a  $C_f$  factor of 1.4 in the design.

# 1613.1

## Earthquake Loads Scope

- Revises exception 1 which relates to residential construction.
- Detached one and two family dwellings in SDC A and B are exempted from seismic design.

# 1613.5.1

## Mapped Acceleration Parameters

- Allows the use of the latest USGS maps and data to determine  $S_s$  and  $S_1$ .

# 1704.1

## Special Inspections General

- Revises exception 3.
- Expands the exception by adding the terms detached one and two family dwellings.

## 1704.1.2

### Report Requirements

- Requires the special inspection final report to be submitted to the jurisdiction prior to the building final inspection.

# 1704.4

## Concrete Construction

- Revises the exceptions.
  - Isolated and/or continuous footings supporting walls of buildings 3 stories or less above grade plane that are fully supported on earth or rock where:
    - Footings designed in accordance with Table 1809.7; or
    - Design based on  $f'_c$  of 2,500 psi.
  - Nonstructural slabs on grade, including prestressed where the effective prestress is less than 150psi.
  - Flatwork

# 1704.5

## Masonry Construction

- Revises the exceptions from special inspection. Deletes exception for masonry foundation walls and adds a new exception for fences.
  - Masonry fences  $\leq 8'-0''$
  - Retaining walls  $\leq 6'-0''$
  - Combination  $\leq 14'-0''$  and not exceeding above
  - Must be designed using half-stress design with  $f'm$  not exceeding 1,500 psi.

1704.17

## Amusement and Transportation Systems Special Cases

- Adds a new section to require special inspection during the initial installation, operational testing, and the annual renewal of the certificate of operation for ATS.

# 1710.2

## Structural Observation for Structural Resistance

- Revised to allow the Building Official to require structural observation regardless of the SDC.
- See Clark County Technical Guideline 10 for more information.

## 1807.2.3 Safety Factor

- Revises the exception to include wind.
  - Factor of safety for retaining wall sliding and overturning is 1.1 when load combinations include earthquake loads .
  - Factor of safety for retaining wall sliding and overturning is 1.3 when load combinations include wind loads.

# 1904.3

## Concrete Properties

- Deletes the exception.
- All structures must comply with the requirements of ACI 318-05 section 4.3 (sulfate exposure).

## 2304.9.5.2

# Fastenings in Wood Foundations

- Allows the engineer to design sill plate anchorage less than the minimum prescribed requirements.

# 2308.9.8

## Pipes in Walls

- Changes 16d nails to 1-1/2" x 0.148" nails.

# Appendix L

## Fences, Walls, and Retaining Walls

- Adds Appendix L to the code.
- Similar to previous versions of Appendix L.
- Refers users to the Southern Nevada Building Officials Rockery Wall Construction Standards.

# Grading Amendments

# 1610.1

## Soil Lateral Loads

- Specifies the minimum design active pressure at 45 psf/ft and the minimum design at-rest pressure at 60 psf/ft.
- Requires the engineer to design for the seismic load due to the lateral earth pressure in SDC D, E, and F.

# 1613.5.2

## Site Class Definitions

- Allows the use of the Clark County Shear Wave Velocity Profile Map for site class determination.

# 1613.5.5

## Site Classification for Seismic Design

- Adds a sentence to the end of the code section that defines rock by a shear wave velocity (2,500 fps).
- In order to be classified as Site Class A or B the average soil shear wave velocity within ten feet of the bottom of the foundations must be at least 2,500 fps.

# 1613.5.5.1

## Steps for Classifying a Site

- Provides requirements for the minimum number of explorations required to determine the site class.
  - One 100-foot exploration per 40 acres.

## 1704.7

# Special Inspection of Soils

- Sets the minimum in-place dry density of compacted fill to a minimum of 90% of the maximum dry density at optimum moisture content when a geotechnical investigation is not required per section 1803.

# Table 1704.7

## Required Verification and Inspection of Soils

- Modifies table in IBC to split item number 4 into a periodic and a continuous inspection category.
- Inspection is continuous when:
  - Soils are moderately or higher expansive, collapsible, or soluble;
  - Chemical or mechanical stabilization is required;
  - Hillside grading

# Chapter 18

- Chapter 18 has been completely reorganized.

# 1803.1

## General

- Sets the minimum design values for foundations when a geotechnical report is not required.
  - Soil bearing pressure of 1,000 psf
  - Lateral bearing pressure of 100 psf/ft
  - Coefficient of friction for sliding of 0.25
  - Severe sulfate exposure level

# 1803.2

## Investigations Required

- Provides a list of projects exempt from having a geotechnical report.
  - Single story structures, additions, or remodels with a footprint of 600 ft<sup>2</sup> or less
  - Fences
  - Site retaining walls less than 4 feet
  - Mobile homes, trailers, and modular buildings that do not have concrete or masonry foundations
  - Pre-engineered carports
  - Signs, light poles, and communication towers less than 40 feet in height.

## 1803.3.2

# Minimum Exploration Requirements

- Lays out the number of required borings based on acreage.
- 15-foot borings are now required.

# 1803.5.3

## Expansive Soils

- Modifies the IBC to allow the use of the 60 psf swell test and specifies that ASTM D 2435 shall be used to perform the test.

# 1803.5.8

## Compacted Fill Material

- Flooding or jetting shall not be used to place fill.
- Provides minimum procedures for the placement of oversized fill material.

# 1803.6

## Reporting

- Provides a list of the minimum requirements of what must be addressed in a geotechnical report.
  - #5 – anticipated approximate cut and fill depths
  - #7 – caliche and cemented soil considerations
  - #13 – Allows soil classification by USCS (ASTM D 2487) or visual-manual basis (ASTM D 2488) by a properly degreed individual
  - #28 – geotechnical report checklist

# 1804.3

## Site Grading

- 5% for 10 feet from the building
- Swales sloped at 1%
- Where low expansive, low soluble, and low collapsible soils exist or asphalt/concrete abuts the building can reduce to 2% slope from building.

# 1804.3.1

## Low Collapsible and Low Soluble Soils

- Low collapsible < 3% (ASTM D 2435-04)
- Low soluble < 2% (AWWA SM 2540)
- If total settlement exceeds 1 inch than site cannot be classified as low collapsible.

# 1804.5

## Compacted Fill Material

- When a geotechnical report is not required the minimum in-place dry density shall be 90% of the maximum dry density at near optimum moisture content.

# 1805.2.1 Floors

- 10 mil polyethylene for dampproofing.

# 1807.2.4

## Slope Stability Analysis

- Required for:
  - Retaining walls taller than 10 feet
  - Terraced retaining walls taller than 16 feet
- Static factor of safety of 1.5

# 1806.1.1

## Minimum Foundation Depth in Expansive Soils

- Low (0 to < 4%) : 12"
- Moderate (4 to < 8%): 15"
- High (8 to < 12%): 18"
- Critical 12 (12 to < 16%): 24"
- Critical 16 (16 to < 20%): 30"
- Critical 20+ (20% or greater): 36"

## Table 1808.6.2 Post-Tensioned Slab on Grade

- Table gives design values for use with the PTI 3<sup>rd</sup> Edition.
- BRAB II slab can be used when the soil is low expansive and specifically allowed by the geotechnical engineer.

## 1809.4

# Depth and Width of Footings

- Minimum depth is 12"
- Minimum width is 12"
- All excavations and the depth of footings must be made below the lowest adjacent compacted subgrade prior to concrete placement unless otherwise recommended in the approved geotechnical report.

# 1910.1

## Minimum Slab Provisions

- 10 mil polyethylene for dampproofing.

## J103.2

# Grading Permit Exemptions

- Exemptions for when a grading is required are listed.
- Consult you local jurisdiction's Building Administrative Code.

# J103.3 Hazards

- Allows Building Official to issue enforcement action on existing sites that are potentially hazardous.

# J104.1

## Grading Plans Exemptions

- Provides a list of projects exempt from having a grading plan.
- Outside a flood hazard area and
  - Single story structure or addition less than 600 sq. ft
  - Patio covers, decks, and canopies associated with a SFR
  - Mobile homes, trailers, and modular buildings that do not have concrete or masonry foundations
  - Pre-engineered carports
  - Signs, light poles, and communication towers

## J104.2

# Grading Plan Requirements

- Provides a list of the minimum requirements of what must be shown on a grading plan.
  - #23 – stormwater Best Management Practices standard notes

# J105 Inspections

- Pad Certification
- Pad Recertification
- Final Grading Report
- Drainage Compliance Report
- Finished Floor Certification

# Questions