



LYON COUNTY
COMMUNITY DEVELOPMENT DEPARTMENT

BUILDING • DEVELOPMENT ENGINEERING • PLANNING

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Manufactured Home Foundation Policy

The Lyon County Building Division is responsible for reviewing, permitting, and inspecting manufactured home foundations. This policy addresses the requirements for permanent foundation systems for manufactured homes.

Lyon County Code 15.351.04 (A)(6) requires a manufactured home that is placed as a single family residence "Have a full, poured in place, perimeter foundation similar to that used for any other single-family home, with a crawl space below, or an equivalent foundation approved by the building official."

Full, poured in place, perimeter foundations that meet the prescriptive standards in the 2018 International Residential Code (IRC) do not need to be engineered, although it is recommended. The Building Division may approve a foundation other than a full perimeter foundation, however, the foundation must be designed by a registered Professional Engineer in the state of Nevada. The foundation must be designed to meet or exceed the snow, wind, and seismic load bearing capacity of a full, poured in place foundation and must take into consideration the specific soil conditions of the site.

Manufactured Foundation Approval Required: All structural foundation systems must be designed and stamped by a Nevada Design Professional. The drawings must address the following:

1. The soil bearing capacity and any soil preparations needed for the construction site to create or maintain a minimum bearing capacity of 1500 pounds per square foot.
2. Construction design for the footings and stem walls including rebar size and placement. Stem wall material below grade must be sealed concrete, concrete masonry unit (CMU) or a material or system designed to prevent water infiltration to the crawl space. Footings must be designed to extend below the frost line (18 inches).
3. Type, size and attachment of the mud sill and crawl space venting.
4. Description, specifications, and location of any device used to secure the home to the foundation and resist wind, or seismic loads of adopted Building Codes. Any devices used for this purpose must meet or exceed established Manufactured Home Construction and Safety Standards.
5. Dimensions and location of the poured-in-place concrete used to support the floor loads of the home.
6. Any additional requirements imposed by Manufactured Housing Division, the manufacturer's installation standards, or financial institution must meet or exceed the installation standards.
7. For any foundation that is not a full, poured in place foundation that meets the prescriptive standards in the 2018 IRC, a licensed and registered Professional Engineer in the state of Nevada must prepare the plans and documents in order to demonstrate how the foundation is equal to or greater

than a typical perimeter stem wall. The engineer must include Lyon County's Standard Engineering letter (attached) stating the soils, connections, loads have all been considered and meet or exceed the load bearing capacity of a full, poured in place, perimeter foundation similar to that used for any other single-family home.

What does "PERMANENT FOUNDATION" MEAN - The U.S. Department of Housing and Urban Development (HUD), Federal Housing Administration (FHA), defines permanent foundation systems as follows: "Permanent foundations must be constructed of durable materials, i.e., concrete, mortared masonry, or treated wood-and be site-built. It shall have attachment points to anchor and stabilize the manufactured home to transfer all loads, herein defined, to the underlying soil or rock. The permanent foundations shall be structurally developed in accordance with this document or be structurally designed by a licensed professional engineer for the following:

1. Vertical stability - Rated anchorage capacity to prevent uplift and overturning due to wind or seismic forces, whichever controls. Screw-in soil anchors are not considered a permanent anchorage. Footing size to prevent overloading the soil-bearing capacity and avoid soil settlement. Footing shall be reinforced concrete to be considered permanent. Base of footing below maximum frost-penetration depth. Encloses a basement or crawl space with a continuous wall (whether bearing or non-bearing) that separates the basement or crawl space from the backfill and keeps out vermin or water.
2. Lateral stability. Rated anchorage capacity to prevent sliding due to wind or seismic forces, whichever controls, in the transverse and longitudinal directions."
3. The material used for skirting above finish grade must be resistant to weather, pests and insects. All wood and wood type products must be pressure treated if used within 6 inches of the ground
4. Materials used below grade as a retainer must be of a type that will seal out any water infiltration. This material cannot be wood or any cellulose type of material.
5. Below grade or retainer type skirting must use a concrete footing for support. Structural retaining walls must extend more than 18 inches below grade. Minimum size for the footing is 6 inches thick and 12 inches wide.

Inspection of Structural Perimeter Foundations

There MUST be two inspections of structural foundations. The first inspection takes place before any concrete is poured and after all forms and rebar are in place. The second inspection takes place after the concrete has been poured and the forms have been removed.

Floodplain Development

Special consideration must be taken when a manufactured home is to be placed on a property that is located in a floodplain. When planned and designed properly, it is possible to minimize or eliminate the risk of damage to homes located in the floodplain. If the property is located in a floodway, where there is an increased risk of damage from moving water and debris, residential construction may be prohibited.

When dealing with a building site that is located within a floodplain, the first step is to verify the flood zone type and to make sure that the site is outside of the floodway. The Federal Emergency Management Agency (FEMA) and its local Flood Plain Administrator are the best sources of information regarding the history of local floods and potential for flood damage. FEMA's flood maps are used to identify areas that are subject to varying degrees of flooding and to determine zones for National Flood Insurance Program (NFIP) premium rates. Flood Zone designations can be found on the FEMA Map Services website: <https://msc.fema.gov/portal/home>

When building in a floodplain, the lowest floor of a new home must be located at or above the Base Flood Elevation (BFE). The BFE, also referred to as "100-year flood" level, is indicated on the Flood Insurance Rate Map (FIRM) available from the local FEMA administrator. FEMA's flood maps indicate the areas where the land is below the BFE. New homes installed with the first floor (including a basement floor) below the BFE are ineligible for the NFIP rates (certain exceptions apply; consult 44 CFR 60.3, local flood plain ordinance). In most cases, homes below the BFE are ineligible for any form of federally supported financing and other types of disaster assistance.

If properly designed, crawl space foundation systems can be used in floodplains. Other suitable foundation systems include reinforced piers and pile foundation systems. Slabs may be acceptable, assuming the home itself is sufficiently elevated above the ground. Basement foundations, by definition, involve substantial excavation and the creation of below-grade living areas and are automatically disqualified from participating in the NFIP.

Prior to submitting a Building Permit Application, a Flood Plain Development Permit Application and the associated fee must be submitted to the Lyon County Planning Division for review by the Floodplain Administrator. The Floodplain Administrator may place conditions related to the elevation and construction practices on the project.

Floodplain Application and Instructions

The floodplain application and instructions may be found on the Lyon County website at the below address:

<https://www.lyon-county.org/DocumentCenter/View/10193/1-Floodplain-Management-for-a-Building-Permit-within-the-SFHA-and-X-shaded-fldzn-Sept-2019>

Engineering Firm Letterhead

Date:

Assessor's Parcel Number:

Address:

Subject: Foundation and Footing Design Certification

To: Lyon County Community Development, Building Division:

I, _____ (Name) _____, a licensed and registered Professional Engineer in the state of Nevada, certify the foundation system that I have designed for the _____ (Manufactured Home Year, Make and Model) _____ to be placed at the above address has been designed to support the weight of the manufactured home given the soil conditions present at the site the home will be placed on.

Further, I certify that the foundation has been designed to meet or exceed the snow, wind, and seismic load bearing capacity of a full, poured in place, perimeter foundation similar to that used for any other single-family home.

Sincerely,

(Signature)

Printed Name

