

Manufactured Housing Foundations

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Manufactured Housing Foundations 101

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Manufactured Home

Single family residential dwelling built **in compliance** with the Federal Manufactured Housing and Construction Standards, as amended, also known as the HUD Code, **after June 15, 1976**. Built in multi-sectional or single section units.

Modular Home

Homes **built to the state Code where the home will be located**.

Sectional units are built in a production facility, transported to the site and assembled.

Mobile Home

A residential structure manufactured **prior** to the enactment of the Federal Manufactured Housing and Construction Standards, also known as the HUD Code, on June 15, **1976**. **Mobile homes are no longer being constructed**.



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Foundations are central to two aspects of sustainability.

1. A high quality permanent foundation improves the **lifetime performance** of the home, its energy efficiency and aesthetic appeal.
2. A foundation that **meets all lender requirements** allows for a better initial mortgage and increases the potential for successful resale of the home.



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The manufacturer provides home plans and foundation specifications specific to the home model and site.

1. **MH:** Home built to thermal, wind and snow load zones ; plus piers capacity and placement.
2. **MOD:** Home built to meet the local building code; plus what loads the foundation must carry.
3. The dimensioned home plans and the pier or foundation specifications from the manufacturer should be **provided to your engineer for design** of your FHA Title II foundation system.
4. Systems Building Research Alliance sells a GUIDE TO FOUNDATION AND SUPPORT SYSTEMS FOR MANUFACTURED HOMES.



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Manufactured Housing Foundations 101

What is a Permanent Foundation?

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.

Foundations need to be designed by a professional engineer for the site they will be constructed and the home needs to be installed according the Manufacturers Installation Manual.



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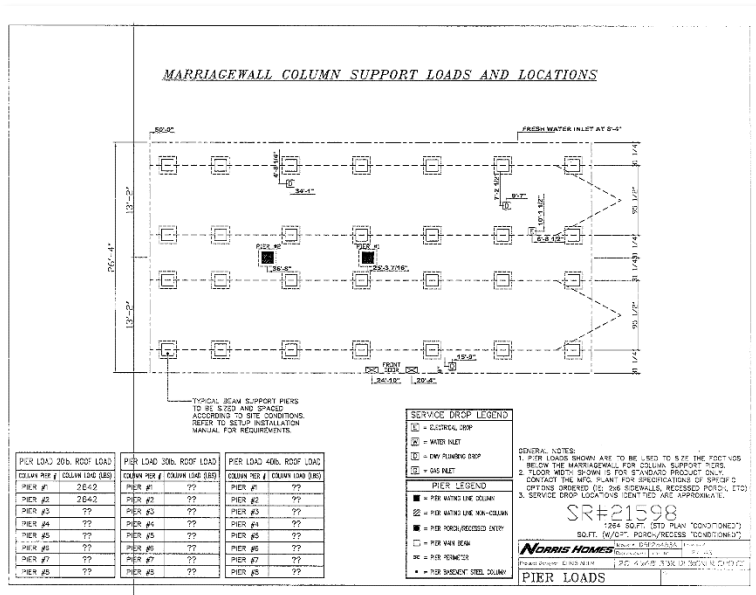




Manufactured Housing Foundations in general

One Rule to MH foundations - Home must be supported in all the right places

- Typically support is to be under the I-beams, doorways, and any opening in the marriage line larger than 4'



- Pier placement is 2' off the end of the home and runs the length of the I-beams
- Exterior doors are to be supported
- Openings in marriage line need to be supported
- Pier locations vary by home and are determined by manufacturer



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MH Foundation Requirements

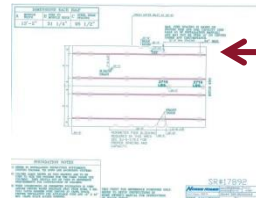
- Footings are required under each pier and at all perimeter walls.

Concrete footing under pier

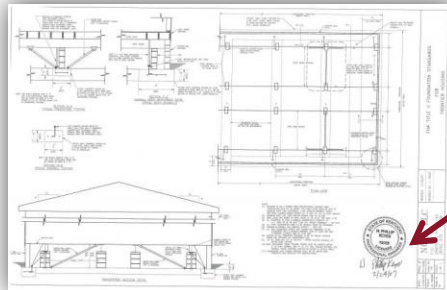


MH & MOD Foundation Requirements

- Size of footing depends on the load it is required to carry and the soil bearing capacity.



Foundation plan will display column loads & unit weight



Seal & signature of a registered engineer



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Example of an MH Excavated Footing



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FHA Title II Foundation for MH

- Required for a HUD FHA insured real estate mortgage loan for manufactured housing. This permanent foundation is designed by a professional engineer to FHA standards . (Title I is for Chattel finance and with no permanent foundation)
- Meets highest quality standard for permanent foundation—meets all lender requirements.
- Also must meet HUD specifications in the “Permanent Foundation Guide for Manufactured Housing”.

<http://www.huduser.org/publications/destech/permfound.html>

- A licensed professional engineer's seal and signature are required to certify design compliance with the Foundation Guide.
- The lender should **furnish the appraiser with a design engineer's inspection** of the foundation prior to the appraisal.



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Frost Free Foundation for MH

- An engineer needs to approve this type of foundation for the appropriate site
- Test the site for suitability
 - Frost susceptibility of the soil
 - Water retention
- Must comply with the HUD code requirements and manufacturers requirements and installation instructions
- Footers are typically more shallow
- Support in all the right places
- HUD and USDA approval of this system for pilot (CA, OR, VT, NH)
- Cost –effective system in freezing climates



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Slab Design Foundation for MH

- Home set to manufacturers installation manual
- Foundation approved by engineer
- Knowledge of utility connections and locations
 - How many?
 - Where are they?
- Need to keep slab dry
 - Water to drain away from the home
 - Perimeter enclosure; skirting or block wall?
- Costly and more time
- FHA and USDA approved



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Example of a Slab Foundation



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Example of a Slab Foundation



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Next Step Modular Foundation Specification

1. **Meet requirements of the local jurisdiction.**
2. **Give the foundation specifications supplied by the modular home manufacturer to your engineer.**

Depending on the **potential lending program**, there may be additional requirements that are the same as those for site built homes for FHA or other lending programs.

Foundations for a modular home require greater precision than those for a site built home. Measurements from the home manufacturer must be followed exactly. There is less tolerance for error since these discrepancies may not be corrected in the framing process.



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