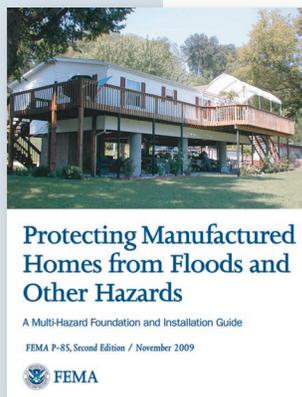
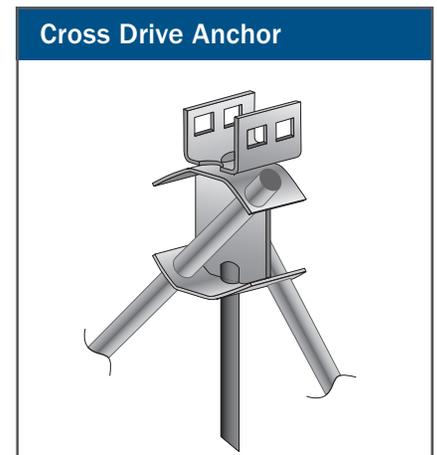
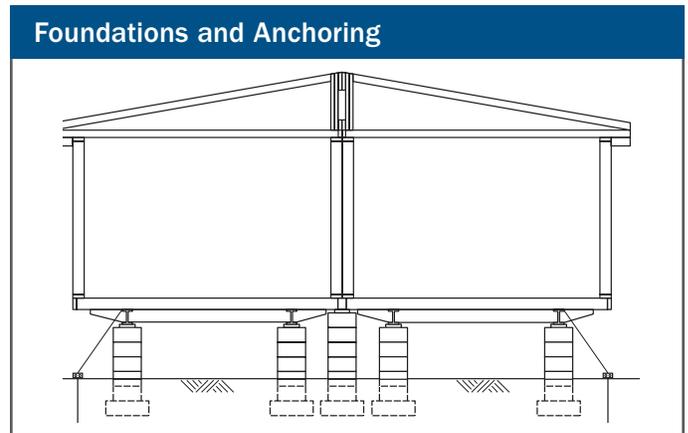
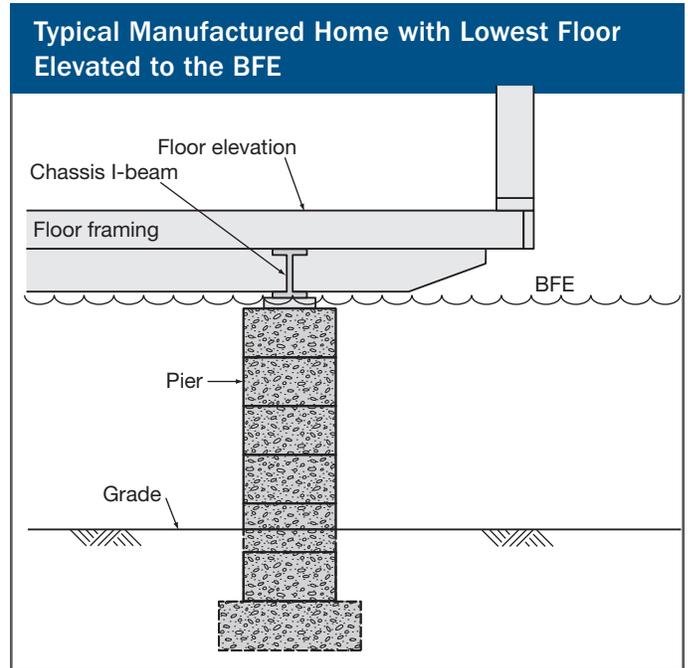




### Key Topics:

- National Flood Insurance Program (NFIP) and regulatory requirements (*Chapter 3*)
- Performance of manufactured homes during hurricanes (*Ch. 1*)
- Manufactured homes characteristics, foundations, utilities, attachments (e.g., decks, carports, porches) (*Ch. 2*)
- Site and development options (*Ch. 4*)
  - Hazard analysis and risk assessment
  - Protecting properties in/near hazard-prone areas
  - Flooding, landslides, seismic events, etc.
- Natural hazards design considerations (*Ch. 5*)
  - Flood
  - Wind
  - Earthquakes
  - Buoyancy
  - Multi-hazard evaluation
- Soils (*Ch. 6*)
  - Bearing capacity
  - Effects of floods
  - Liquefaction
  - Testing
- Ground anchors (*Ch. 7*)
- Foundation systems (*Ch. 10*)
  - Enclosed/ open
  - Piers
  - Piles
  - Bracing
  - Footings
  - Materials selection
  - Recommended foundations
- Design process/design criteria (*Ch. 9 and 10*)
  - Floodwater velocity design considerations
  - Recommended foundation in seismic areas
  - Design drawings



## Description

FEMA P-85 provides recommendations for manufactured home foundation design and installation, provides guidance for the design and construction of alternative foundation systems as described in the HUD *Model Manufactured Home Installation Standards* (24 CFR 3285), provides guidance on siting and installing manufactured homes in areas exposed to natural hazards, for example in Special Flood Hazard Areas (SFHAs) for which certain 24 CFR 3285 foundation designs are not applicable. P-85 reflects the requirements of the most current codes and standards and provides a *best practices* approach in reducing damages from natural hazards. P-85 addresses floods, wind events, and seismic hazards and recommends several multi-hazard resistant foundation designs. Designs are included for wood-framed foundations, conventional concrete and masonry pier foundations, and ground anchors.

## Target Audience

Builders, installers, architects, engineers, prospective manufactured homeowners, current homeowners, contractors and local officials.

### Design Process for Manufactured Home Foundations

**STEP 1**

Determine design criteria

**STEP 2**

Select a design methodology and assess load combinations and failure modes

**STEP 3**

Select foundation type and material

**STEP 4**

Determine forces at connections and on foundation components

**STEP 5**

Specify connections and framing methods along with component dimensions to satisfy load conditions

**STEP 6**

Note all design assumptions and details on drawings

Elevated Manufactured Home



Elevated Manufactured Home Surrounded by Flooding



Wind Damage and Displacement of Manufactured Home



For more information, see the FEMA Building Science Frequently Asked Questions website at <http://www.fema.gov/frequently-asked-questions-building-science>.

If you have additional questions on FEMA Building Science Publications, contact the helpline at [FEMA-Buildingsciencehelp@fema.dhs.gov](mailto:FEMA-Buildingsciencehelp@fema.dhs.gov) or 866-927-2104.

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