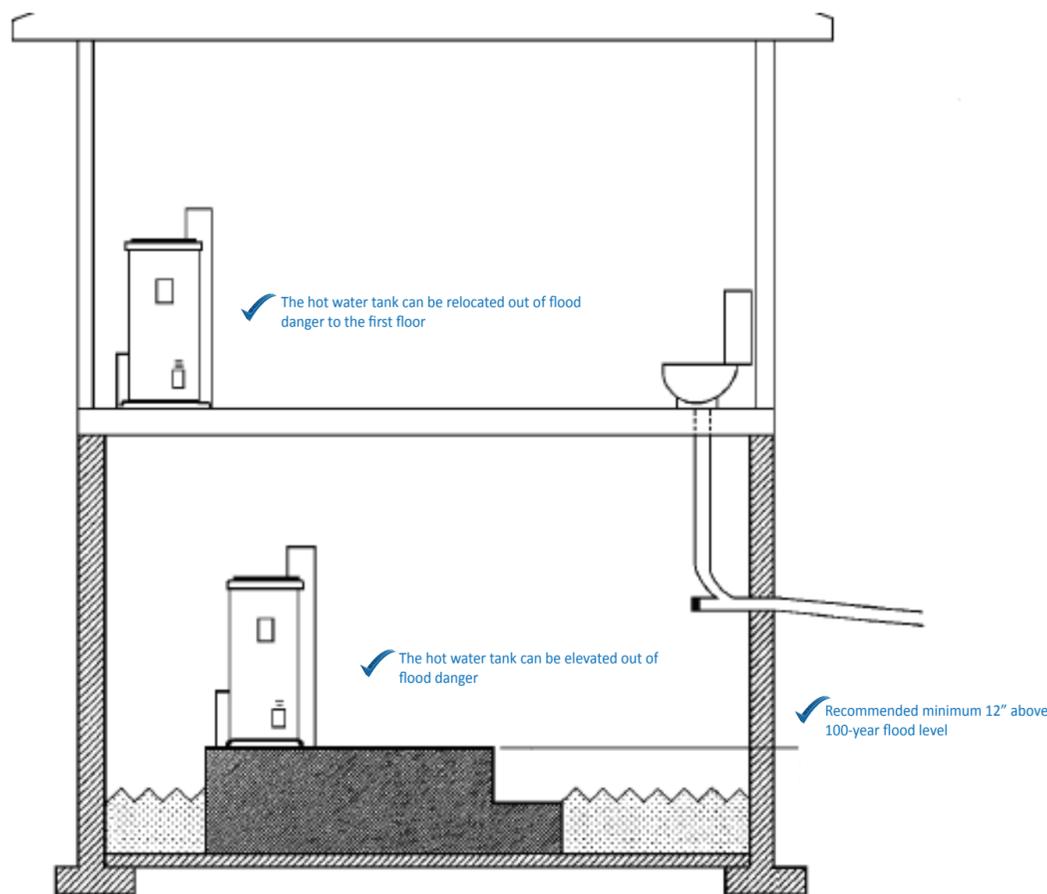
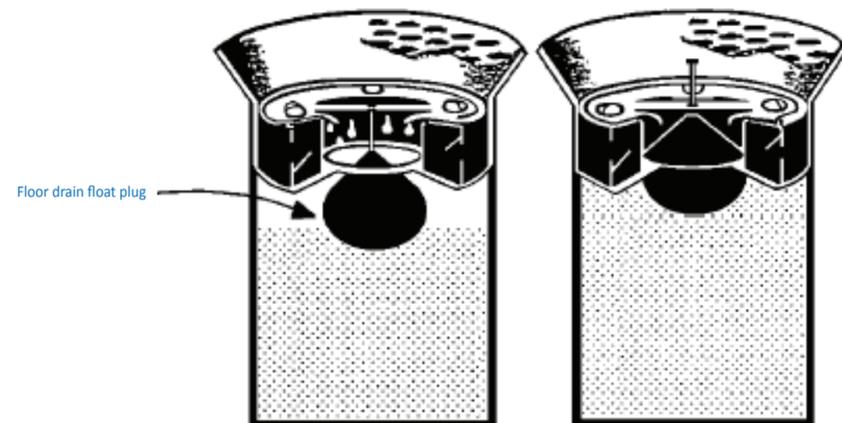




Elevating or Relocating a Water Heater



Installing a Floor Drain Plug



- Float plugs may be blocked open by even small amounts of debris.
- Floor drain plugs do not stop backup from coming out of the next lowest opening, for example a laundry tub or basement toilet.
- In older houses the sewer lines under the basement floor may be clay tile. A build up of water pressure can damage the sewer lines.

Information provided by



FEMA

Mitigation Ideas for Reducing Flood Loss

MIREADY
 WWW.MICHIGAN.GOV/MIREADY



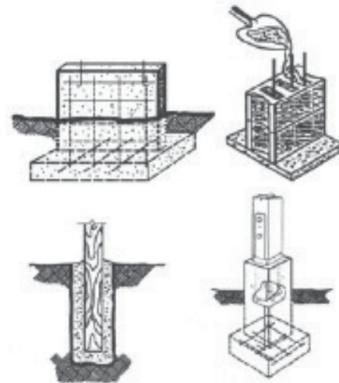


Elevating a Mobile Home

1

Foundations

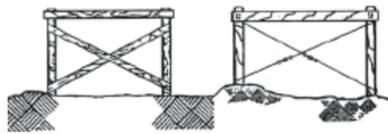
A poured concrete footing, reinforced with rebar, gives maximum stability. Extend rebar from the footing and up into the steel reinforced concrete or concrete block pier. Solidly fill each concrete block with concrete. Cast threaded anchor bolts into the top of each pier to anchor the mobile home frame to the foundation. Posts attached to piers with special connectors cast into the concrete are also effective. In areas with soft ground, post foundations may be able to achieve the required foundation strength. Drive posts into the ground down to a rock foundation, or to a depth specified by an engineer. Backfill posts with concrete for maximum strength.



2

Cross-Bracing

Diagonal bracing reduces foundation twisting and the potential of collapse in flooding or high winds. Brace foundation posts with 2-inch nominal lumber bolted to the piers, or with steel rods fitted through drilled holes, fastened with nuts and tightened with turnbuckles.



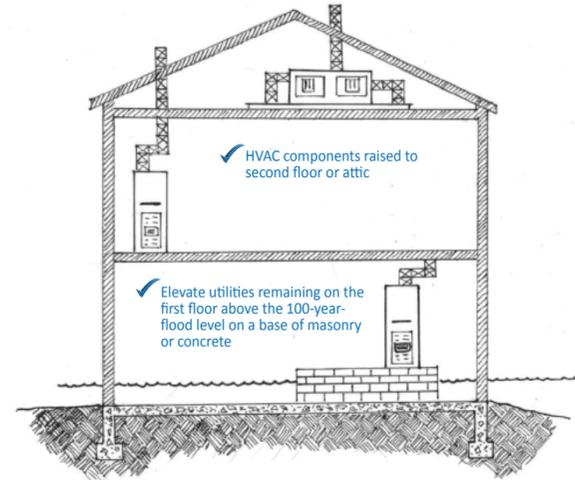
3

Tie-Down Straps

Tie-down straps are used at the base of the manufactured home and can be tied over the top. The most common failure is pullout of the ground anchor. For maximum pullout resistance, cast the anchor into a concrete deadman.



Elevating or Relocating the Furnace

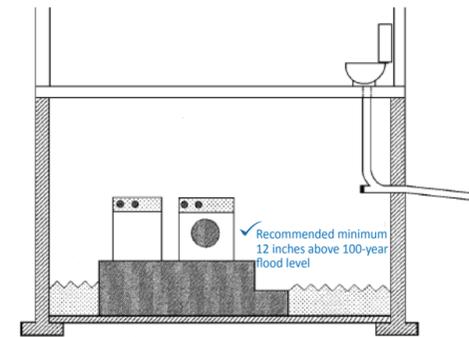


✓ HVAC components raised to second floor or attic

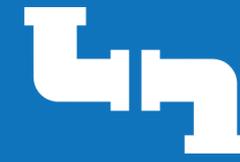
✓ Elevate utilities remaining on the first floor above the 100-year flood level on a base of masonry or concrete



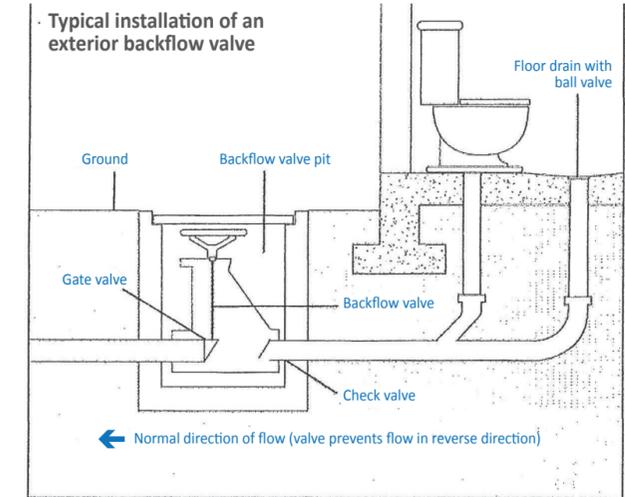
Elevating a Washer and Dryer



✓ Recommended minimum 12 inches above 100-year flood level



Install Sewer Backflow Valves



Typical installation of an exterior backflow valve

Ground

Backflow valve pit

Gate valve

Backflow valve

Check valve

Floor drain with ball valve

← Normal direction of flow (valve prevents flow in reverse direction)



Backup Systems for Sump Pumps

Basement flooding occurs more often by sump pumps failing due to power outtages, rather than sewer water backing up. There are 3 types of redundant systems to prevent this:

1

A generator to the house

2

A 12-volt battery backup for the sump pump

3

A water powered backup (for people on municipal water systems)