

**GRAHAM COUNTY FLOOD CONTROL DISTRICT
FLOODPLAIN MANAGEMENT DEVELOPMENT PERMIT**

GRAHAM CO. ENGINEER • 921 Thatcher Blvd., Safford, AZ 85546 • Fax (928) 428-8825

Floodplain Permit No. _____

Name _____ Phone No. _____

Mailing Address _____

Location of structure _____

Structure: (Please circle)

Manufactured Home Site Built Home Garage Shed Other _____

Flood Zone _____ Map No. _____ Parcel No. _____

If venting is required for the structure, you must submit a drawing of the proposed venting including location, height, size, type of screening, etc. to the Graham County Engineering Dept. (See venting handout) The drawing must be approved by the Graham County Engineer before the building permit is issued.

A Grading and Drainage Plan prepared by a registered professional engineer OR a Drainage Clearance Form filled out by a registered professional engineer may be required in addition to this Floodplain Permit. See attached forms.

Requirements:

This Permit is granted under the following condition (s)

1. **The Applicant MUST follow the construction documents approved by the Graham County Engineering Department in all areas of Construction within the Floodplain.**

2. Construction activity shall not divert or otherwise alter surface water flows, floodplains and floodways which will increase dangers to health, safety or property. The construction must comply with all City, County, State, or Federal requirements for construction within a floodplain. See attachments.

3. Applicant **MUST** advise the Graham County Engineering Department 24 hours before construction activities begin within the floodplain (each occurrence). Phone: (928) 428-0410.
4. Applicant **MUST** notify the Engineering Department at (928) 428-0410 for final inspection after construction is in place in order to obtain floodplain clearance.

Waiver and Disclaimer of Liability

The review you have undergone is solely for the purpose of determining if your Application conforms with the written requirements of the Floodplain Regulation for Graham County. It is not to be taken as a warranty. Compliance with this Regulation does not insure complete protection from flooding. The Floodplain Regulation meets established standards for floodplain management, but neither this review nor the Regulation take into account such flood related problems as natural erosion, streambed meander or man-made obstructions and diversions all of which may have an adverse affect in the event of a flood. You are advised to consult your own engineer or other expert regarding these considerations.

I hereby acknowledge the above project involves construction in a Floodplain and will comply with applicable regulations and employ construction practices that will protect the health, safety and property affected by the project.

I have read and understand the above **WAIVER AND DISCLAIMER OF LIABILITY.**

Signed by: _____ Date _____
 Project Owner

Signed by: _____ Date _____
 Construction Company Officer

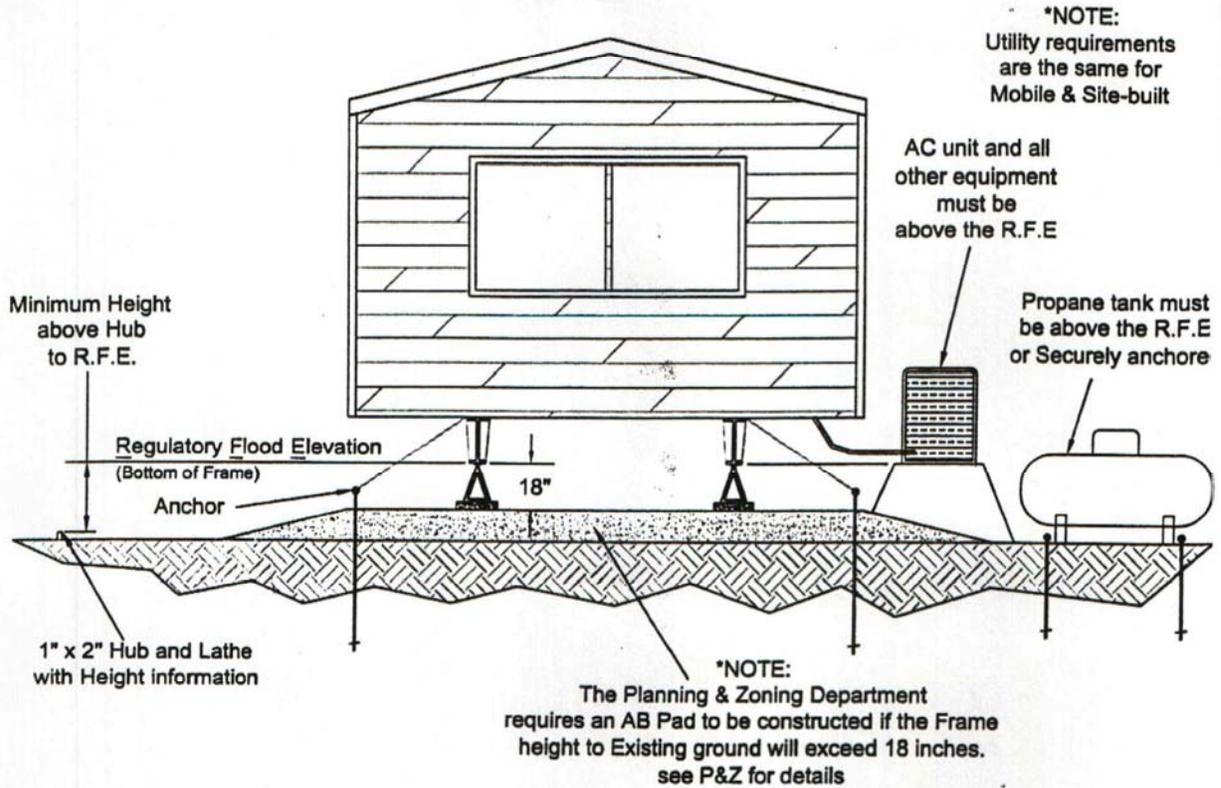
Permit Fee: \$ 100.00 as based upon Section 6.3 of the Graham County Flood Damage Prevention Ordinance.

Issued by: _____ Date _____
 Graham County

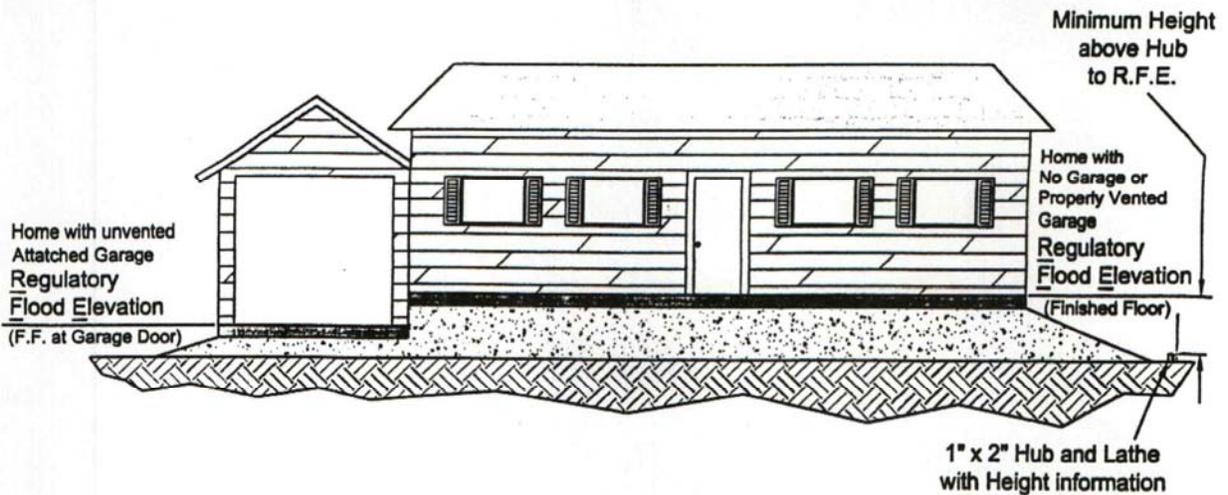
Permit fee is non-refundable and in effect for six (6) months from date of issue.

FLOODPLAIN COMPLIANCE DIAGRAM

MANUFACTURED HOME INSTALLATION



SITE BUILT HOME



This letter is to notify you that you have chosen a home building location that is in a special flood hazard area. These areas are subject to periodic flood inundation which may result in loss of life and/or property, health and safety hazards or other disruptions. In order to protect human life and health and minimize the expenditure of public monies on costly flood control projects and other rescue or relief efforts associated with flooding, a floodplain ordinance has been instituted in Graham County. Since you are building within a floodplain in Graham County, as a property owner you have certain responsibilities.

1. You should consider the purchase of flood insurance which may be a requirement of the loan you choose to secure.
2. All new construction or substantial improvement shall be anchored to prevent floatation or collapse or lateral movement of the structure.
3. All new construction or substantial improvement shall be constructed with materials and utility equipment resistant to flood damage.
4. All new construction or substantial improvement shall be constructed using methods and practices that minimize flood damage.
5. All new construction or substantial improvement shall be constructed with electrical, heating, venting, plumbing and air conditioning equipment and other services that are designed or located so as to prevent water from entering or accumulating in components during conditions of flooding.
6. Adequate drainage paths should be provided around structures on slopes to guide floodwaters around and away from proposed or existing structures.
7. The lowest floor including basement should be elevated to or above the regulatory flood elevation.
8. Manufactured homes and recreational vehicles must be elevated with the bottom of the structure frame or the lowest point of any attached appliances, whichever is lower, at or above the regulatory flood elevation.
9. Construction in floodways is prohibited to encroach the floodway including fill, new construction, substantial improvements or other improvements unless certified by a registered professional engineer demonstrating that the encroachment should not result in any increase in flood levels during the occurrence of the base flood discharge.
10. Manufactured homes must be placed one (1) foot above the regulatory flood elevation at the bottom of the frame.
11. Buoyant items which would cause damage should be anchored.



Avoiding Flood Damage: A Checklist for Homeowners FEDERAL EMERGENCY MANAGEMENT AGENCY

Are you looking for ways to protect your home from flooding? There are many things you can do, depending on the flood hazard in your area, the characteristics of your property, and the zoning and building codes in your community. Some methods are fairly simple and inexpensive; others will require a professional contractor.

This homeowner's checklist will help you become familiar with what you can do. For more information about the costs and benefits of each method, talk to a professional builder, architect or contractor. You should also ask your building department about building permit requirements.

➤ **Do you know your flood risk?**

Call your local emergency management office, building department or floodplain management office for information about flooding. Ask to see a flood map of your community. There may be a projected flood elevation for your neighborhood. This information will help you determine how much water is likely to come in.

➤ **Do you have enough flood insurance?**

Even if you have taken steps to protect your home from flooding, you still need flood insurance if you live in a floodplain. Homeowner's policies do not cover flood damage, so you will need to purchase a separate policy under the National Flood Insurance Program (NFIP).

It takes 30 days for a flood policy to take effect. This is why you need to purchase flood insurance before flooding occurs. If your insurance agent is unable to write a flood policy, call 1-800-638-6620 for information.

➤ **Is the main electric switchbox located above potential flood waters?**

The main electric panel board (electric fuses or circuit breakers) should be at least 12" above the projected flood elevation for your home. The panel board height is regulated by code. All electrical work should be done by a licensed electrician.

➤ **Are electric outlets and switches located above potential flood waters?**

Consider elevating all electric outlets, switches, light sockets, baseboard heaters and wiring at least 12" above the projected flood elevation for your home.

You may also want to elevate electric service lines (at the point they enter your home) at least 12" above the projected flood elevation.

In areas that could get wet, connect all receptacles to a ground fault interrupter (GFI) circuit to avoid the risk of shock or electrocution.

Have electrical wiring done by a licensed electrician.

➤ **Are the washer and dryer above potential flood waters?**

For protection against shallow flood waters, the washer and dryer can sometimes be elevated on masonry or pressure-treated lumber at least 12" above the projected flood elevation. Other options are moving the washer and dryer to a higher floor, or building a floodwall around the appliances.

➤ **Are the furnace and water heater above potential flood waters?**

The furnace and water heater can be placed on masonry blocks or concrete at least 12" above the projected flood elevation, moved to inside a floodwall or moved to a higher floor. (You have more options for protecting a new furnace. Ask your utility about rebates for new energy efficient furnaces. The rebate plus the savings in fuel costs could make the purchase feasible.)

Furnaces that operate horizontally can be suspended from ceiling joists if the joists are strong enough to hold the weight. Installing a draft-down furnace in the attic may be an option if allowed by local codes. Some heating vents can be located above the projected flood elevation.

Outside air conditioning compressors, heat pumps or package units (single units that include a furnace and air conditioner) can be placed on a base of masonry, concrete or pressure treated lumber.

All work must conform to state and local building codes.

➤ **Is the fuel tank anchored securely?**

A fuel tank can tip over or float in a flood, causing fuel to spill or catch fire. Cleaning up a house that has been inundated with flood waters containing fuel oil can be extremely difficult and costly.

Fuel tanks should be securely anchored to the floor. Make sure vents and fill line openings are above projected flood levels.

Propane tanks are the property of the propane company. You'll need written permission to anchor them. Ask whether the company can do it first.

Be sure all work conforms to state and local building codes.

➤ **Does the floor drain have a float plug?**

Install a floating floor drain plug at the current drain location. If the floor drain pipe backs up, the float will rise and plug the drain.

➤ **Does the sewer system have a backflow valve?**

If flood waters enter the sewer system, sewage can back up and enter your home. To prevent this, have a licensed plumber install an interior or exterior backflow valve. Check with your building department for permit requirements.

You may have other options for avoiding flood damage depending on your needs and financial resources. These include building drainage systems around the property, sealing openings such as low windows, building levees, constructing exterior floodwalls around basement doors and window wells, improving exterior walls, elevating buildings above projected flood levels and relocating buildings away from floodplains.

For more information, talk to a professional builder, architect or contractor. Ask your building department about building permit requirements.

THIS SECTION IS PART OF THE GRAHAM COUNTY FLOOD DAMAGE PREVENTION ORDINANCE. A COPY OF THE COMPLETE ORDINANCE CAN BE OBTAINED FROM THE ENGINEERING DEPARTMENT.

SECTION 5.0
PROVISIONS FOR FLOOD HAZARD REDUCTION

5.1 STANDARDS OF CONSTRUCTION

In all areas of special flood hazards the following standards are required:

A. Anchoring

1. All new construction and substantial improvements shall be anchored to prevent flotation, collapse or lateral movement of the structure resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy; and
2. All manufactured homes shall meet the anchoring standards of Section 5.5.B.

B. Construction Materials and Methods

1. All new construction and substantial improvements shall be constructed with materials and utility equipment resistant to flood damage;
2. All new construction and substantial improvements shall be constructed using methods and practices that minimize flood damage;
3. All new construction, substantial improvement and other proposed new development shall be constructed with electrical, heating, ventilation, plumbing and air conditioning equipment and other service facilities that are designed and/or located so as to prevent water from entering or accumulating within the components during conditions of flooding; and
4. Within Zones AH or AO, adequate drainage paths shall be constructed around structures on slopes guide floodwaters around and away from proposed structures.

C. Elevation and Floodproofing

1. Residential construction

Residential construction, new or substantial improvement, shall have the lowest floor, including basement.

- a. In an AO Zone, elevated to or above the regulatory flood elevation, or elevated at least two feet above the highest adjacent grade if no depth number is specified.
- b. In an A Zone where a BFE has not been determined, elevated to or above the regulatory flood elevation or be elevated in accordance with the criteria developed by the Director of the Arizona Department of Water Resources.
- c. In Zones AE, AH and A1-30, elevated to or above the regulatory flood elevation.

Upon completion of the structure, the elevation of the lowest floor including basement shall be certified by a registered professional engineer or surveyor, and verified by the community's building inspector to be properly elevated. Such certification and verification shall be provided to the Floodplain Administrator.

2. Nonresidential construction

Nonresidential construction, new or substantial improvement, shall either be elevated to conform with Section 5.1.C.1 or together with attendant utility and sanitary facilities.

- a. Be floodproofed below the elevation recommended under Section 5.1.C.1 so that the structure is watertight with walls substantially impermeable to the passage of water.
- b. Have structural components capable of resisting hydrostatic and hydrodynamic loads and effects of buoyancy; and
- c. Be certified by a registered professional engineer or architect that the standards of this section are satisfied. Such certification shall be provided to the Floodplain Administrator.

3. Flood openings

All new construction and substantial improvement with fully enclosed areas below the lowest flood (excluding basements) that are usable solely for parking of vehicles, building access or storage, and which are subject to flooding, shall be designed to automatically equalize hydrostatic flood forces on exterior walls by allowing for the entry and exit of floodwater. Designs for meeting this requirement must meet or exceed the following criteria:

- a. Have a minimum of two openings, on different sides of each enclosed area, having a total net area of not less than one square inch for every square foot of enclosed area subject to flooding. The bottom of all openings shall be no higher than one foot above grade. Openings may be equipped with screens, louvers, valves. Or other coverings or devices provided that they permit the automatic entry and exit of floodwater; or
- b. If it is not feasible or desirable to meet the openings criteria stated above, a registered engineer or architect may design and certify the openings.

4. Manufactured homes

- a. Manufactured homes shall also meet the standards in Section 5.5.

5. Garages and low cost accessory structures

- a. Attached garages.
 1. A garage attached to a residential structure, constructed with the garage floor slab below the regulatory flood elevation, must be designed to allow for the automatic entry of flood waters. See Section 5.1.C.3. Areas of the garage below the regulatory flood elevation must be constructed with flood resistant materials. See Section 5.1.B.
 2. A garage attached to a nonresidential structure must meet the above requirements or be dry floodproofed.

b. Detached garages and accessory structures.

1. "Accessory structure" used solely for parking (2 car detached garages or smaller) or limited storage (small, low-cost sheds), as defined in Section 2.0, may be constructed such that its floor is below the regulatory flood elevation, provided the structure is designed and constructed in accordance with the following requirements:
 - a) Use of the accessory structure must be limited to parking or limited storage;
 - b) The portions of the accessory structure located below the regulatory flood elevation must be built using flood-resistant materials;
 - c) The accessory structure must be adequately anchored to prevent flotation, collapse and lateral movement;
 - d) Any mechanical and utility equipment in the accessory structure must be elevated or floodproofed to or above the regulatory flood elevation;
 - e) The accessory structure must comply with floodplain encroachment provisions in Section 5.7; and
 - f) The accessory structure must be designed to allow for the automatic entry of flood waters in accordance with Section 5.1.C.3.
2. Detached garages and accessory structures not meeting the above standards must be constructed in accordance with all applicable standards in Section 5.1.

5.2 STANDARDS FOR STORAGE OF MATERIALS AND EQUIPMENT

- A. The storage or processing of materials that could be injurious to human, animal or plant life if released due to damage from flooding is prohibited in special flood hazard areas.
- B. Storage of other material or equipment may be allowed if not subject to damage by floods, and if firmly anchored to prevent flotation, or if readily removable from the area within the time available after flood warning.

5.3 STANDARDS FOR UTILITIES

- A. All new or replacement water supply and sanitary sewage systems shall be designed to minimize or eliminate infiltration of flood waters into the system and discharge from systems into flood waters.
- B. On-site waste disposal systems shall be located to avoid impairment to them or contamination from them during flooding.
- C. Waste disposal systems shall not be installed wholly or partially in a regulatory floodway.

5.4 ADDITIONAL DEVELOPMENT STANDARDS, INCLUDING SUBDIVISIONS

- A. All new subdivision proposals and other proposed development (including proposals for manufactured home parks, subdivisions and lot splits), greater than 50 lots or 5 acres, whichever is the lesser, shall:
 1. Identify the area of the special flood hazard area and the elevation of the base flood;
 2. Identify on the final plans the elevation(s) of the proposed structure(s) and pads. If the site is filled above the base flood elevation, the final lowest floor and grade elevations shall be certified by a registered professional engineer or surveyor and provided to the floodplain Administrator.

- B. All subdivision proposals and other proposed development shall be consistent with the need to minimize flood damage.
- C. All subdivision proposals and other proposed development shall have public utilities and facilities such as sewer, gas, electrical and water systems located and constructed to minimize flood damage.
- D. All subdivision proposals and other proposed development shall provide adequate drainage to reduce exposure to flood hazards.

5.5 STANDARDS FOR MANUFACTURED HOMES

All manufactured homes that are placed on site or substantially improved shall:

- A. Be elevated so that the bottom of the structural frame or the lowest point of any attached appliances, whichever is lower, is at or above the regulatory flood elevation; and
- B. Be securely anchored to an adequately anchored foundation system to resist flotation, collapse or lateral movement. Methods of anchoring may include, but are not to be limited to, use of over-the-top or frame ties to ground anchors. This requirement is in addition to applicable state and local anchoring requirements for resisting wind forces.

5.6 STANDARDS FOR RECREATIONAL VEHICLES

All recreational vehicles placed on site shall:

- A. Be on site for fewer than 180 consecutive days, or
- B. Be fully licensed and ready for highway use. A recreational vehicle is ready for highway use if it is on its wheels or jacking system, is attached to the site only by quick disconnect type utilities and security devices, and has no permanently attached additions; or
- C. Meet the permit requirements of Section 4.0 of this ordinance and the elevation and anchoring requirements for manufactured homes in Section 5.5

5.7 FLOODWAYS

Located within areas of special flood hazard established in Section 3.2 are areas designated as floodways. Since the floodway is an extremely hazardous area due to the velocity of floodwaters which carry debris, potential projectiles, and erosion potential, the following provisions apply:

- A. Prohibit encroachments, including fill, new construction, substantial improvements, and other developments unless certification by a registered professional engineer or architect is provided demonstrating that encroachments shall not result in any increase in flood levels during the occurrence of the base flood discharge.
- B. If Section 5.7 is satisfied, all new construction and substantial improvements shall comply with all other applicable flood hazard reduction provisions of Section 5.0.