



Laramie County Planning and Development Office

Building Division
3861 Archer Pkwy Cheyenne, WY 82009
Phone: 307-633-4512 Fax: 307-633-4519
planning@laramiecounty.com
www.laramiecountyplanning.com

MANUFACTURED HOME SUBMITTAL REQUIREMENTS

INCOMPLETE APPLICATIONS CAN NOT BE ACCEPTED

Please visit our new and improved Laramie County Parcel Viewer for information on the property and aerials: <http://arcims.laramiecounty.com/>

All Building Permit Applications must include the following:

1. Completed Application Form
2. Copy of Title (or one of the following substitutions)
 - a. If the unit is new and does not have a title yet, you may submit the Certificate of Origin from the Manufacturer.
 - b. If you are buying the home Contract for Deed, please submit a copy of the current title alone with a letter from the owner stating that they give you permission to apply for permits.
3. One plot plan (2 sets if they are larger than 11" x 17") A handout is available.
4. One set of Engineered foundation plans (2 sets if they are larger than 11" X 17")
(Foundation plans must have registered Wyoming Engineer stamp) if the unit is being placed on a permanent foundation.
5. A copy of plans for any decks including details of the construction and the attachment to the ground. (If other than the standard steps included with most units.)

NOTE: AN OPEN HOLE INSPECTION REPORT OR SOILS REPORT (from a register Wyoming Engineer is required prior to requesting footer/foundation inspection) if unit is being placed on a permanent foundation.

WE ARE GOING GREENER! Please note that our preferred submittal size is 11" x 17" or smaller. We appreciate electronic submittals whenever possible; please contact us if you have questions.

Please refer to attached for complete instructions and information.

NOTICE:

The Applicant, his Agents and Employees shall comply with all the rules, restrictions and requirements of Laramie County Zoning Regulations and Laramie County Building Codes governing location, construction and erection of the above proposed work for which the permit is granted. The Building Official or his agents are authorized to order the immediate cessation of construction at any time a violation of the codes or regulations appears to have occurred. Violation of any of the codes or regulations applicable may result in the revocation of this permit.

Buildings must conform with plans as submitted to the Laramie County Planning & Development Office. Any change of plans or layout must be approved prior to the changes being made. Any change in the use or occupancy of a building or structure must be approved prior to proceeding with construction.



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The Applicant is required to call for inspections at various stages of the construction, and in accordance with the aforesaid rule, the applicant shall give the Building Inspector not less than one day's notice to perform such activities.

The Applicant must comply with current Planning & Development office expiration policy. Laramie County is not liable for workmanship. Permits are not transferable.

The following items expand on the submittal requirements. Not all projects require all items listed below, please contact us if you have any questions.

- 1. Application Form:** can be obtained at the Laramie County Planning & Development Office or on-line at the Laramie County website at www.laramiecountyplanning.com
- 2. Copy of the title:** A copy of the title to verify ownership of the unit.
 - a. If the unit is new and does not have a title yet, you may submit the Certificate of Origin from the Manufacturer.
 - b. If you are buying the home Contract for Deed, please submit a copy of the current title along with a letter from the owner stating that they give you permission to apply for permits.
- 3. Plot Plans:** (sample available upon request) They are to be drawn on 8 ½" x 11" size paper, and must show:
 - a. North arrow
 - b. Location of proposed building
 - c. Distances between each property line to proposed building (the minimum is from 2 property lines)
 - d. Distances between proposed building and any existing structures
 - e. Identify the street or county/state road being accessed from
 - f. Driveway location with driveway width and surface type (and distance to the closest property line)
 - g. Location of well and septic system (if applicable)
- 4. Foundation Plans:** (if applicable to your project) Permanent foundation designs must be stamped by a Wyoming Engineer.
- 5. Building Plans:** Two identical sets (only one set is required if submitted on paper that is 11"x17" or smaller) of Building Plans are required for all residential buildings. Plans should include all of the items listed below which apply to your particular project. Plans and specifications must be drawn to scale on substantial paper, unless the plans are being submitted electronically, and must indicate locations, nature and extent of the work proposed, and should show in detail that it will conform to the adopted Laramie County Building Code, and shall state the design standards meet or exceed wind and snow loads for the area. The recommended scale for plans is 1/4" = 1'. Plan Review fees are calculated at 65% of the building permit fee based on provided valuation. Fee adjustments may be made if needed.

If the project is an addition or remodel, be sure to clearly label all existing and all proposed construction.

For other related permit information, please contact:

(307) 635-5608 South Cheyenne Water & Sewer District
(307) 633-4090 City/County Environmental Health Department (Septic permits)
(307) 777-6163 State Engineer's Office (Well permits)



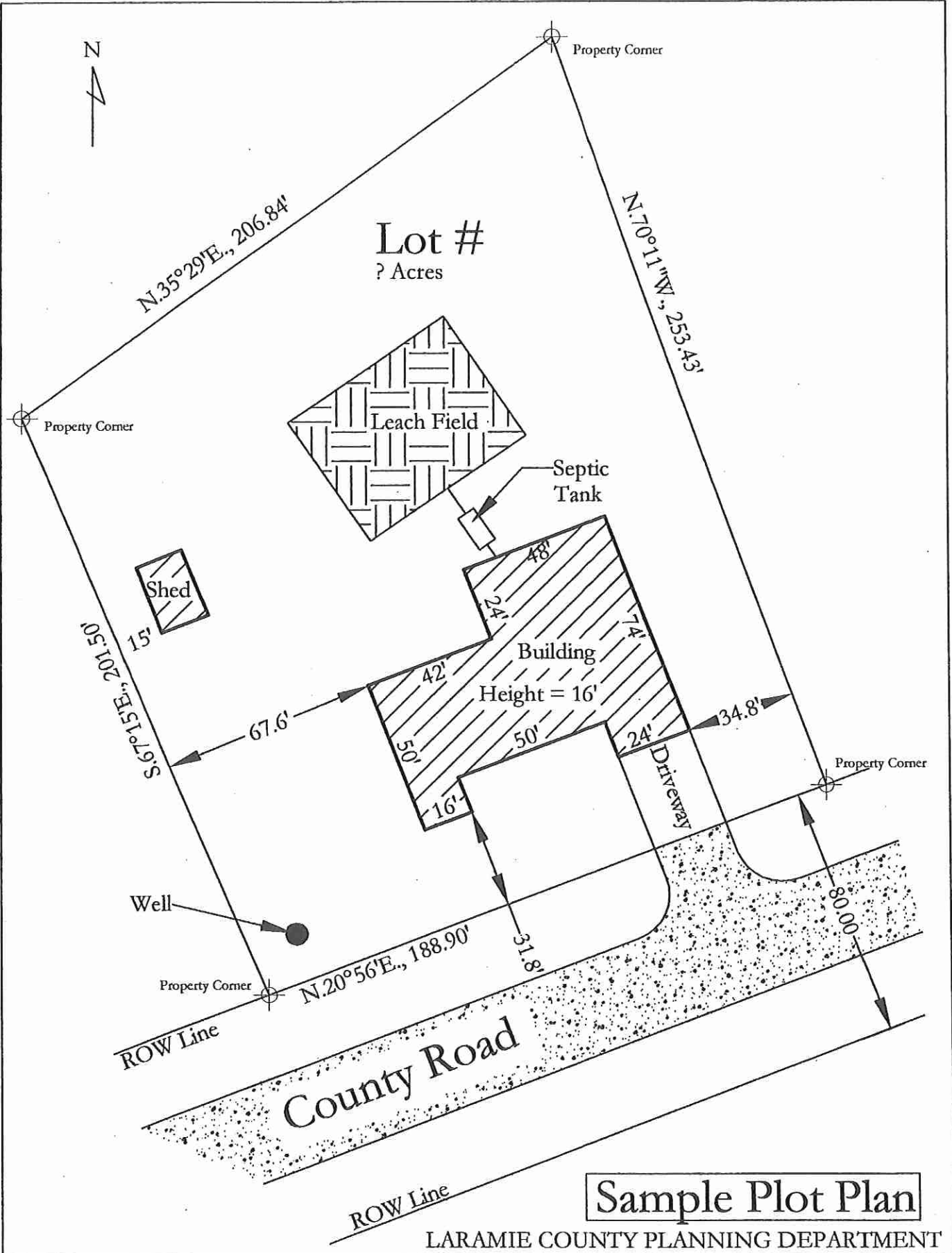
Manufactured Home Set Permit Application

Laramie County Planning and Development Office
 Building Division
 3861 Archer Pkwy Cheyenne, WY 82009

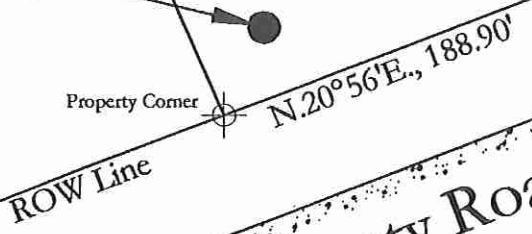
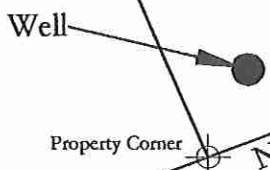
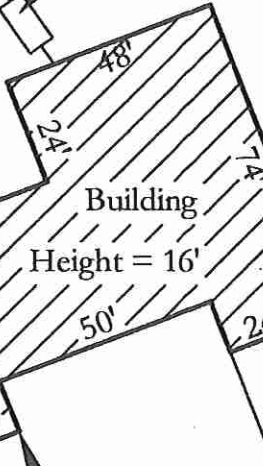
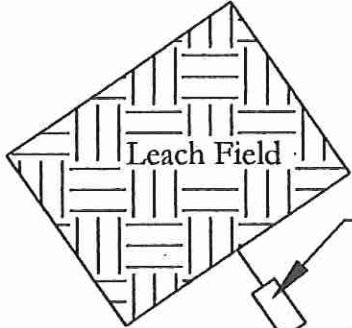
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INCOMPLETE APPLICATIONS CAN NOT BE ACCEPTED

Rcvd By	Rcvd Date	PR #	BP #				
Address of Project		New Address?		yes		no	
Land Owner Information							
If there are additional owners, please list on separate sheet and attach							
Name				Phone			
Address				City			
Email				State		Zip	
Contractor Information							
Name				Phone			
Address				City			
Email				State		Zip	
Electrical work (if applicable) to be done by						Phone	
Property Information							
Legal Description (Subdivision, Block and Lot or Tract)							
Zone District		Township		Range		Section	
Project Information							
Structure Use				Bldg	Plmbg	Mech	Electr
Check all that apply and fill in square footage areas specific to this project							
Purpose of Permit	New		Addition		Renovation		
			Demolish		Move		
	Manufactured Bldg			20 yrs old	Structurally Altered		
	Fire Sprinklers						
Foundation Type	slab on grade		crawl space		block / pier / caisson		basement
Bldg area square footage	1st floor		2nd floor		attached garage		
	bsmnt-finished		bsmnt-unfinished		bonus room		
Description of Work: Complete description of the work done including any plumbing, mechanical (Heating, ventilaiton or air conditioning), electrical, fire sprinkler or alarm. (Work is not included in the permit unless description in this scope of work.)							
<p>By my signature and under penalty of perjury, I hereby certify that I am the owner of the referenced property, or the owner's authorized agent. I have read and examined this application and know the same to be true and correct. All provisions or laws and ordinances governing this type of work will be complied with, whether specified herein or not. The issuance of a permit does not presume to give authority to violate or cancel the provisions of any state or local law regulating construction, or guarantee issuance of a well or septic permit, this permit becomes null and void if work or construction authorized is not commenced within 180 days, unless prior authorization has been issued by this office. This permit expires 1 year from the date of issuance providing the 1st inspection has occurred within the initial 180 day period. I understand that occupying this structure prior to obtaining a Certificate of Occupancy is against the law. Failure to comply may result in a \$750 fine with each day of occupancy being a separate offense.</p>							
Signature of Owner / Agent						Date	
Printed Name							
Valuation (cost of project) \$				Approved			
Fees	BP Fee			PR Fee			Access
Check #		Cash		Receipt #		Total Fees	



Lot #
? Acres




Sample Plot Plan

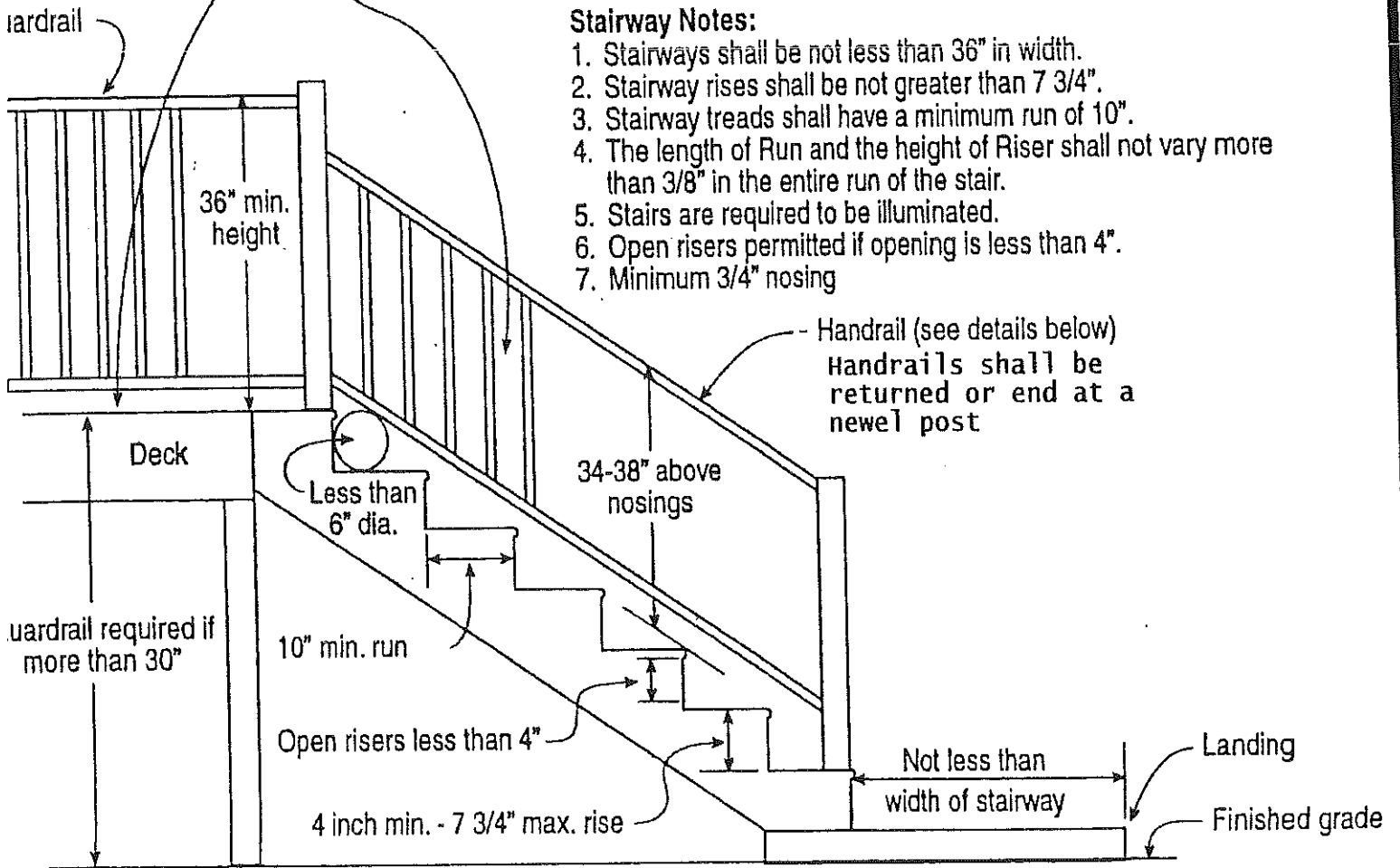
LARAMIE COUNTY PLANNING DEPARTMENT

Single Family Residential Uncovered Decks and Porches

Stair & Handrail Specifications

New or existing light required 

Open guardrails and open handrails on decks and stairways more than 30 inches above grade or a floor below shall have members spaced so that a 4 inch diameter sphere cannot pass through.



Handrail Notes:

- Handrails shall be continuous on at least one side of stairs with 4 or more risers.
- Handrails shall be placed not less than 34 inches nor more than 38 inches above stair nosings.
- The handgrip portion of handrails shall be not less than 1-1/4 inches nor more than 2 1/4 inches in circular cross section.
- Handrails shall be placed not less than 1-1/2 inches from any wall or other surface.

SECTION AE502 FOUNDATION SYSTEMS

AE502.1 General. Foundation systems designed and constructed in accordance with this section may be considered as a permanent installation.

AE502.2 Soil classification. The classification of the soil at each manufactured home site shall be determined when required by the building official. The building official may require that the determination be made by an engineer or architect licensed by the state to conduct soil investigations.

The classification shall be based on observation and any necessary tests of the materials disclosed by borings or excavations made in appropriate locations. Additional studies may be necessary to evaluate soil strength, the effect of moisture variation on soil-bearing capacity, compressibility and expansiveness.

When required by the building official, the soil classification design bearing capacity and lateral pressure shall be shown on the plans.

AE502.3 Footings and foundations. Footings and foundations, unless otherwise specifically provided, shall be constructed of materials specified by this code for the intended use and in all cases shall extend below the frost line. Footings of concrete and masonry shall be of solid material. Foundations supporting untreated wood shall extend at least 8 inches (203 mm) above the adjacent finish grade. Footings shall have a minimum depth below finished grade of 12 inches (305 mm) unless a greater depth is recommended by a foundation investigation.

Piers and bearing walls shall be supported on masonry or concrete foundations or piles, or other approved foundation systems which shall be of sufficient capacity to support all loads.

AE502.4 Foundation design. When a design is provided, the foundation system shall be designed in accordance with the applicable structural provisions of this code and shall be designed to minimize differential settlement. Where a design is not provided, the minimum foundation requirements shall be as set forth in this code.

AE502.5 Drainage. Provisions shall be made for the control and drainage of surface water away from the manufactured home.

AE502.6 Under-floor clearances—ventilation and access. A minimum clearance of 12 inches (305 mm) shall be maintained beneath the lowest member of the floor support framing system. Clearances from the bottom of wood floor joists or perimeter joists shall be as specified in this code.

Under-floor spaces shall be ventilated with openings as specified in this code. If combustion air for one or more heat-producing appliances is taken from within the under-floor spaces, ventilation shall be adequate for proper appliance operation.

Under-floor access openings shall be provided. Such openings shall be not less than 18 inches (457 mm) in any dimension and not less than 3 square feet (0.279 m²) in area and shall be

located so that any water supply and sewer drain connections located under the manufactured home are accessible.

SECTION AE503 SKIRTING AND PERIMETER ENCLOSURES

AE503.1 Skirting and permanent perimeter enclosures. Skirting and permanent perimeter enclosures shall be installed only where specifically required by other laws or ordinances. Skirting, when installed, shall be of material suitable for exterior exposure and contact with the ground. Permanent perimeter enclosures shall be constructed of materials as required by this code for regular foundation construction.

Skirting shall be installed in accordance with the skirting manufacturer's installation instructions. Skirting shall be adequately secured to assure stability, to minimize vibration and susceptibility to wind damage, and to compensate for possible frost heave.

AE503.2 Retaining walls. Where retaining walls are used as a permanent perimeter enclosure, they shall resist the lateral displacements of soil or other materials and shall conform to this code as specified for foundation walls. Retaining walls and foundation walls shall be constructed of approved treated wood, concrete, masonry or other approved materials or combination of materials as for foundations as specified in this code. Siding materials shall extend below the top of the exterior of the retaining or foundation wall or the joint between siding and enclosure wall shall be flashed in accordance with this code.

SECTION AE504 STRUCTURAL ADDITIONS

AE504.1 General. Accessory buildings shall not be structurally supported by or attached to a manufactured home unless engineering calculations are submitted to substantiate any proposed structural connection.

Exception: The building official may waive the submission of engineering calculations if it is found that the nature of the work applied for is such that engineering calculations are not necessary to show conformance to these provisions.

SECTION AE505 BUILDING SERVICE EQUIPMENT

AE505.1 General. The installation, alteration, repair, replacement, addition to or maintenance of the building service equipment within the manufactured home shall conform to regulations set forth in the Manufactured Home Standards. Such work which is located outside the manufactured home shall comply with the applicable codes adopted by this jurisdiction.

SECTION AE506 EXITS

AE506.1 Site development. Exterior stairways and ramps which provide egress to the public way shall comply with applicable provisions of this code.

AE506.2 Accessory buildings. Every accessory building or portion thereof shall be provided with exits as required by this code.

SECTION AE507 OCCUPANCY, FIRE SAFETY AND ENERGY CONSERVATION STANDARDS

AE507.1 General. Alterations made to a manufactured home subsequent to its initial installation shall conform to the occupancy, fire-safety and energy conservation requirements set forth in the Manufactured Home Standards.

SECTION AE600 SPECIAL REQUIREMENTS FOR FOUNDATION SYSTEMS

AE600.1 General. Section AE600 is applicable only when specifically authorized by the building official.

SECTION AE601 FOOTINGS AND FOUNDATIONS

AE601.1 General. The capacity of individual load-bearing piers and their footings shall be sufficient to sustain all loads specified in this code within the stress limitations specified in this code. Footings, unless otherwise approved by the building official, shall be placed level on firm, undisturbed soil or an engineered fill which is free of organic material, such as weeds and grasses. Where used, an engineered fill shall provide a minimum load-bearing capacity of not less than 1,000 psf (48 kN/m²). Continuous footings shall conform to the requirements of this code. Section AE502 of these provisions shall apply to footings and foundations constructed under the provisions of this section.

SECTION AE602 PIER CONSTRUCTION

AE602.1 General. Piers shall be designed and constructed to distribute loads evenly. Multiple section homes may have concentrated roof loads which will require special consideration. Load-bearing piers may be constructed utilizing one of the methods listed below. Such piers shall be considered to resist only vertical forces acting in a downward direction. They shall not be considered as providing any resistance to horizontal loads induced by wind or earthquake forces.

1. A prefabricated load-bearing device that is listed and labeled for the intended use.
2. Mortar shall comply with ASTM C 270 Type M, S or N; this may consist of one part portland cement, one-half part hydrated lime and four parts sand by volume. Lime shall not be used with plastic or waterproof cement.

3. A cast-in-place concrete pier with concrete having specified compressive strength at 28 days of 2,500 psi (17 225 kPa).

Alternate materials and methods of construction may be used for piers which have been designed by an engineer or architect licensed by the state to practice as such.

Caps and leveling spacers may be used for leveling of the manufactured home. Spacing of piers shall be as specified in the manufacturer's installation instructions, if available, or by an approved designer.

SECTION AE603 HEIGHT OF PIERS

AE603.1 General. Piers constructed as indicated in Section AE602 may have heights as follows:

1. Except for corner piers, piers 36 inches (914 mm) or less in height may be constructed of masonry units, placed with cores or cells vertically. Piers shall be installed with their long dimension at right angles to the main frame member they support and shall have a minimum cross-sectional area of 128 square inches (82 560 mm²). Piers shall be capped with minimum 4-inch (102 mm) solid masonry units or equivalent.
2. Piers between 36 and 80 inches (914 mm and 2032 mm) in height and all corner piers over 24 inches (610 mm) in height shall be at least 16 inches by 16 inches (406 mm by 406 mm) consisting of interlocking masonry units and shall be fully capped with minimum 4-inch (102 mm) solid masonry units or equivalent.
3. Piers over 80 inches (2032 mm) in height may be constructed in accordance with the provisions of Item 2 above, provided the piers shall be filled solid with grout and reinforced with four continuous No. 5 bars. One bar shall be placed in each corner cell of hollow masonry unit piers or in each corner of the grouted space of piers constructed of solid masonry units.
4. Cast-in-place concrete piers meeting the same size and height limitations of Items 1, 2 and 3 above may be substituted for piers constructed of masonry units.

SECTION AE604 ANCHORAGE INSTALLATIONS

AE604.1 Ground anchors. Ground anchors shall be designed and installed to transfer the anchoring loads to the ground. The load-carrying portion of the ground anchors shall be installed to the full depth called for by the manufacturer's installation directions and shall extend below the established frost line into undisturbed soil.

Manufactured ground anchors shall be listed and installed in accordance with the terms of their listing and the anchor manufacturer's instructions and shall include means of attachment of ties meeting the requirements of Section AE605. Ground anchor manufacturer's installation instructions shall include the amount of preload required and load capacity in various types of soil. These instructions shall include tensioning

adjustments which may be needed to prevent damage to the manufactured home, particularly damage that can be caused by frost heave. Each ground anchor shall be marked with the manufacturer's identification and listed model identification number which shall be visible after installation. Instructions shall accompany each listed ground anchor specifying the types of soil for which the anchor is suitable under the requirements of this section.

Each approved ground anchor, when installed, shall be capable of resisting an allowable working load at least equal to 3,150 pounds (14 kN) in the direction of the tie plus a 50 percent overload [4,725 pounds (21 kN) total] without failure. Failure shall be considered to have occurred when the anchor moves more than 2 inches (51 mm) at a load of 4,725 pounds (21 kN) in the direction of the tie installation. Those ground anchors which are designed to be installed so that loads on the anchor are other than direct withdrawal shall be designed and installed to resist an applied design load of 3,150 pounds (14 kN) at 40 to 50 degrees from vertical or within the angle limitations specified by the home manufacturer without displacing the tie end of the anchor more than 4 inches (102 mm) horizontally. Anchors designed for connection of multiple ties shall be capable of resisting the combined working load and overload consistent with the intent expressed herein.

When it is proposed to use ground anchors and the building official has reason to believe that the soil characteristics at a given site are such as to render the use of ground anchors advisable, or when there is doubt regarding the ability of the ground anchors to obtain their listed capacity, the building official may require that a representative field installation be made at the site in question and tested to demonstrate ground anchor capacity. The building official shall approve the test procedures.

AE604.2 Anchoring equipment. Anchoring equipment, when installed as a permanent installation, shall be capable of resisting all loads as specified within these provisions. When the stabilizing system is designed by an engineer or architect licensed by the state to practice as such, alternative designs may be used, providing the anchoring equipment to be used is capable of withstanding a load equal to 1.5 times the calculated load. All anchoring equipment shall be listed and labeled as being capable of meeting the requirements of these provisions. Anchors as specified in this code may be attached to the main frame of the manufactured home by an approved ³/₁₆-inch-thick (4.76 mm) slotted steel plate anchoring device. Other anchoring devices or methods meeting the requirements of these provisions may be permitted when approved by the building official.

Anchoring systems shall be so installed as to be permanent. Anchoring equipment shall be so designed to prevent self-disconnection with no hook ends used.

AE604.3 Resistance to weather deterioration. All anchoring equipment, tension devices and ties shall have a resistance to deterioration as required by this code.

AE604.4 Tensioning devices. Tensioning devices, such as turnbuckles or yoke-type fasteners, shall be ended with clevis or welded eyes.

**SECTION AE605
TIES, MATERIALS AND INSTALLATION**

AE605.1 General. Steel strapping, cable, chain or other approved materials shall be used for ties. All ties shall be fastened to ground anchors and drawn tight with turnbuckles or other adjustable tensioning devices or devices supplied with the ground anchor. Tie materials shall be capable of resisting an allowable working load of 3,150 pounds (14 kN) with no more than 2 percent elongation and shall withstand a 50 percent overload [4,750 pounds (21 kN)]. Ties shall comply with the weathering requirements of Section AE604.3. Ties shall connect the ground anchor and the main structural frame. Ties shall not connect to steel outrigger beams which fasten to and intersect the main structural frame unless specifically stated in the manufacturer's installation instructions. Connection of cable ties to main frame members shall be ⁵/₈-inch (15.9 mm) closed-eye bolts affixed to the frame member in an approved manner. Cable ends shall be secured with at least two U-bolt cable clamps with the "U" portion of the clamp installed on the short (dead) end of the cable to assure strength equal to that required by this section.

Wood floor support systems shall be fixed to perimeter foundation walls in accordance with provisions of this code. The minimum number of ties required per side shall be sufficient to resist the wind load stated in this code. Ties shall be evenly spaced as practicable along the length of the manufactured home with the distance from each end of the home and the tie nearest that end not exceeding 8 feet (2438 mm). When continuous straps are provided as vertical ties, such ties shall be positioned at rafters and studs. Where a vertical tie and diagonal tie are located at the same place, both ties may be connected to a single anchor, provided the anchor used is capable of carrying both loadings. Multisection manufactured homes require diagonal ties only. Diagonal ties shall be installed on the exterior main frame and slope to the exterior at an angle of 40 to 50 degrees from the vertical or within the angle limitations specified by the home manufacturer. Vertical ties which are not continuous over the top of the manufactured home shall be attached to the main frame.

**SECTION AE606
REFERENCED STANDARDS**

ASTMC 270-04 Specification for Mortar for Unit Masonry	AE602
NFPA 501-03 Standard on Manufactured Housing	AE201

CHAPTER 5 FLOORS

SECTION R501 GENERAL

R501.1 Application. The provisions of this chapter shall control the design and construction of the floors for all buildings including the floors of attic spaces used to house mechanical or plumbing fixtures and equipment.

R501.2 Requirements. Floor construction shall be capable of accommodating all loads according to Section R301 and of transmitting the resulting loads to the supporting structural elements.

SECTION R502 WOOD FLOOR FRAMING

R502.1 Identification. Load-bearing dimension lumber for joists, beams and girders shall be identified by a grade mark of a lumber grading or inspection agency that has been approved by an accreditation body that complies with DOC PS 20. In lieu of a grade mark, a certificate of inspection issued by a lumber grading or inspection agency meeting the requirements of this section shall be accepted.

R502.1.1 Preservative-treated lumber. Preservative treated dimension lumber shall also be identified as required by Section R319.1.

R502.1.2 Blocking and subflooring. Blocking shall be a minimum of utility grade lumber. Subflooring may be a minimum of utility grade lumber or No. 4 common grade boards.

R502.1.3 End-jointed lumber. Approved end-jointed lumber identified by a grade mark conforming to Section R502.1 may be used interchangeably with solid-sawn members of the same species and grade.

R502.1.4 Prefabricated wood I-joists. Structural capacities and design provisions for prefabricated wood I-joists shall be established and monitored in accordance with ASTM D 5055.

R502.1.5 Structural glued laminated timbers. Glued laminated timbers shall be manufactured and identified as required in AITC A190.1 and ASTM D 3737.

R502.1.6 Structural log members. Stress grading of structural log members of nonrectangular shape, as typically used in log buildings, shall be in accordance with ASTM D 3957. Such structural log members shall be identified by the grade mark of an approved lumber grading or inspection agency. In lieu of a grade mark on the material, a certificate of inspection as to species and grade issued by a lumber-grading or inspection agency meeting the requirements of this section shall be permitted to be accepted.

R502.2 Design and construction. Floors shall be designed and constructed in accordance with the provisions of this chapter, Figure R502.2 and Sections R319 and R320 or in accordance with AF&PA/NDS.

R502.2.1 Framing at braced wall lines. A load path for lateral forces shall be provided between floor framing and braced wall panels located above or below a floor, as specified in Section R602.10.8.

R502.2.2 Decks. Where supported by attachment to an exterior wall, decks shall be positively anchored to the primary structure and designed for both vertical and lateral loads as applicable. Such attachment shall not be accomplished by the use of toenails or nails subject to withdrawal. Where positive connection to the primary building structure cannot be verified during inspection, decks shall be self-supporting. For decks with cantilevered framing members, connections to exterior walls or other framing members, shall be designed and constructed to resist uplift resulting from the full live load specified in Table R301.5 acting on the cantilevered portion of the deck.

R502.3 Allowable joist spans. Spans for floor joists shall be in accordance with Tables R502.3.1(1) and R502.3.1(2). For other grades and species and for other loading conditions, refer to the AF&PA Span Tables for Joists and Rafters.

R502.3.1 Sleeping areas and attic joists. Table R502.3.1(1) shall be used to determine the maximum allowable span of floor joists that support sleeping areas and attics that are accessed by means of a fixed stairway in accordance with Section R311.5 provided that the design live load does not exceed 30 psf (1.44 kPa) and the design dead load does not exceed 20 psf (0.96 kPa). The allowable span of ceiling joists that support attics used for limited storage or no storage shall be determined in accordance with Section R802.4.

R502.3.2 Other floor joists. Table R502.3.1(2) shall be used to determine the maximum allowable span of floor joists that support all other areas of the building, other than sleeping rooms and attics, provided that the design live load does not exceed 40 psf (1.92 kPa) and the design dead load does not exceed 20 psf (0.96 kPa).

R502.3.3 Floor cantilevers. Floor cantilever spans shall not exceed the nominal depth of the wood floor joist. Floor cantilevers constructed in accordance with Table R502.3.3(1) shall be permitted when supporting a light-frame bearing wall and roof only. Floor cantilevers supporting an exterior balcony are permitted to be constructed in accordance with Table R502.3.3(2).

R502.4 Joists under bearing partitions. Joists under parallel bearing partitions shall be of adequate size to support the load. Double joists, sized to adequately support the load, that are separated to permit the installation of piping or vents shall be full depth solid blocked with lumber not less than 2 inches (51 mm) in nominal thickness spaced not more than 4 feet (1219 mm) on center. Bearing partitions perpendicular to joists shall not be offset from supporting girders, walls or partitions more than the joist depth unless such joists are of sufficient size to carry the additional load.

CHAPTER 5
FLOOR
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shall be so installed such that the required fire resistance will not be reduced.

Exceptions:

1. Membrane penetrations of maximum 2-hour fire-resistance-rated walls and partitions by steel electrical boxes that do not exceed 16 square inches (0.0103 m²) in area provided the aggregate area of the openings through the membrane does not exceed 100 square inches (0.0645 m²) in any 100 square feet (9.29 m²) of wall area. The annular space between the wall membrane and the box shall not exceed 1/8 inch (3.1 mm). Such boxes on opposite sides of the wall shall be separated as follows:
 - 1.1. By a horizontal distance of not less than 24 inches (610 mm) except at walls or partitions constructed using parallel rows of studs or staggered studs;
 - 1.2. By a horizontal distance of not less than the depth of the wall cavity when the wall cavity is filled with cellulose loose-fill, rockwool or slag mineral wool insulation;
 - 1.3. By solid fire blocking in accordance with Section R602.8.1;
 - 1.4. By protecting both boxes with listed putty pads; or
 - 1.5. By other listed materials and methods.
2. Membrane penetrations by listed electrical boxes of any materials provided the boxes have been tested for use in fire-resistance-rated assemblies and are installed in accordance with the instructions included in the listing. The annular space between the wall membrane and the box shall not exceed 1/8 inch (3.1 mm) unless listed otherwise. Such boxes on opposite sides of the wall shall be separated as follows:
 - 2.1. By a horizontal distance of not less than 24 inches (610 mm) except at walls or partitions constructed using parallel rows of studs or staggered studs;
 - 2.2. By solid fire blocking in accordance with Section R602.8;
 - 2.3. By protecting both boxes with listed putty pads; or
 - 2.4. By other listed materials and methods.
3. The annular space created by the penetration of a fire sprinkler provided it is covered by a metal escutcheon plate.

**SECTION R318
MOISTURE VAPOR RETARDERS**

R318.1 Moisture control. In all framed walls, floors and roof/ceilings comprising elements of the building thermal envelope, a vapor retarder shall be installed on the warm-in-winter side of the insulation.

Exceptions:

1. In construction where moisture or freezing will not damage the materials.
2. Where the framed cavity or space is ventilated to allow moisture to escape.
3. In counties identified as in climate zones 1 through 4 in Table N1101.2.

**SECTION R319
PROTECTION AGAINST DECAY**

R319.1 Location required. Protection from decay shall be provided in the following locations by the use of naturally durable wood or wood that is preservative treated in accordance with AWPA U1 for the species, product, preservative and end use. Preservatives shall be listed in Section 4 of AWPA U1.

1. Wood joists or the bottom of a wood structural floor when closer than 18 inches (457 mm) or wood girders when closer than 12 inches (305 mm) to the exposed ground in crawl spaces or unexcavated area located within the periphery of the building foundation.
2. All wood framing members that rest on concrete or masonry exterior foundation walls and are less than 8 inches (203 mm) from the exposed ground.
3. Sills and sleepers on a concrete or masonry slab that is in direct contact with the ground unless separated from such slab by an impervious moisture barrier.
4. The ends of wood girders entering exterior masonry or concrete walls having clearances of less than 0.5 inch (12.7 mm) on tops, sides and ends.
5. Wood siding, sheathing and wall framing on the exterior of a building having a clearance of less than 6 inches (152 mm) from the ground.
6. Wood structural members supporting moisture-permeable floors or roofs that are exposed to the weather, such as concrete or masonry slabs, unless separated from such floors or roofs by an impervious moisture barrier.
7. Wood furring strips or other wood framing members attached directly to the interior of exterior masonry walls or concrete walls below grade except where an approved vapor retarder is applied between the wall and the furring strips or framing members.

R319.1.1 Field treatment. Field-cut ends, notches and drilled holes of preservative-treated wood shall be treated in the field in accordance with AWPA M4.

R319.1.2 Ground contact. All wood in contact with the ground, embedded in concrete in direct contact with the ground or embedded in concrete exposed to the weather that supports permanent structures intended for human occupancy shall be approved pressure-preservative-treated wood suitable for ground contact use, except untreated wood may be used where entirely below groundwater level or continuously submerged in fresh water.