

## Edgecombe County

Planning: 252-641-7803  
Inspections: 252-641-7802



### PLANNING & INSPECTIONS

Email address:  
[permit@edgecombeco.com](mailto:permit@edgecombeco.com)

### Information Needed for Mobile Home Permits

- ✓ **Zoning Certificate:** The Edgecombe County Planning Department (Room 205) will provide a zoning for all property not located in any Town Limits or ETJ, with the exception of Leggett and Speed. If you are moving to a town or will be in a town's ETJ, please obtain the zoning from that jurisdiction prior to applying for permits.
- ✓ **Septic Report or Improvements Permit:** The Environmental Health Department (Room 443) must give approval of all septic systems prior to any permits being issued. A copy of the septic system report is required before a mobile home permit is issued. If public sewer is used, this document will not be needed.
- ✓ **Bill of Sale or Title:** This document verified ownership of the mobile home.
- ✓ **Tax Assessor's Certification:** This document must be signed off on by the Edgecombe County Tax Assessor's (Room 312) and Tax Collector's (Room 154) offices. Tax Departments may request title of home.
- ✓ **Moving Permit:** If the home is being moved, a moving permit must be obtained before a mobile home permit is issued.
- ✓ **Set up Contractor Form:** This document must be filled out and signed by the setup contractor or the dealership.

Please present all of the applicable documents with your permit application to the Edgecombe County Planning & Inspections Department. Permits are issued between 8:00 a.m. and 4:00 p.m., Monday – Friday in Room 205. Payment is accepted by cash, check, credit card or debit card. No over the phone credit card or debit card payments will be accepted.

**EDGECOMBE COUNTY PLANNING & INSPECTIONS**

P.O. BOX 10, 201 St. Andrew Street  
Tarboro, NC 27886

Phone: 252-641-7802 Email: [permit@edgecombeco.com](mailto:permit@edgecombeco.com)

**Manufactured Home Building Permit Application**

Application Date: _____	Tax Parcel ID#: _____		
Applicant: _____	Phone #: _____		
Homeowner (as shown on title/bill of sale): _____	Phone #: _____		
Address: _____	City: _____	State: _____	Zip: _____
Person to live in Home: _____	Phone #: _____		
Land Owner's Name: _____	Phone #: _____		
Value of Home: _____	Size of Home: _____	Year of Home: _____	
Power Company: _____	Premise or Account #: _____		
Dealer/Sales Co. & License #: _____	Phone #: _____		
Address: _____			
Set-up Contractor & License #: _____	Phone #: _____		
Address: _____			
Electrician & License #: _____	Phone #: _____		
Address: _____			
A/C Installer & License #: _____	Phone #: _____		
Address: _____			
Plumber & License #: _____	Phone #: _____		
Address: _____			

Underpinning? Brick <input type="checkbox"/> Vinyl <input type="checkbox"/>	Permit Fees: Singlewide \$125.00 Doublewide \$165.00 Triplewide \$190.00
Well <input type="checkbox"/> County Water <input type="checkbox"/>	
Has driveway been installed on property? Yes <input type="checkbox"/> No <input type="checkbox"/>	

*I hereby certify that all information in this application is correct and will comply with the State Building Code and all other applicable State and local laws, ordinances and regulations. **Work may only begin after approval and issuance of the permit.** Failure to obtain a manufactured home permit will result in a Stop work Order and a \$150 contractor fine/ \$50 homeowner fine OR twice the permit fee; whichever is greater. Zoning Certificate may need to be purchased from the Town if the home is Inside of a Town's Jurisdiction. Re-inspection fees are charged at \$75(first time) and \$150(2<sup>nd</sup> time plus additional visits) per trip.*

\_\_\_\_\_  
**Printed Name of Applicant/Agent**

\_\_\_\_\_  
**Signature of Applicant/Agent**

\_\_\_\_\_  
**Date**

**Information for Set-up Contractor or Dealership**

**Requirement for Edgecombe County  
Manufactured Home Building Permit Application**

Contractor's Name & License #: \_\_\_\_\_ Phone #: \_\_\_\_\_

Contractor's Address: \_\_\_\_\_ City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

I propose to set-up a properly labeled manufactured home at the following address:

Address: \_\_\_\_\_ City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

I am a North Carolina licensed manufactured home set-up contractor.

License #: \_\_\_\_\_ Name of Business: \_\_\_\_\_

\_\_\_\_\_  
**Printed Name of Set-up Contractor**

\_\_\_\_\_  
**Signature of Set-up Contractor**

\_\_\_\_\_  
**Date**

I am the owner of the proposed manufactured home. It is my intention to personally set-up the proposed manufactured home, and I understand that problems which may arise due to set-up of the home will be solely my responsibility, and I will be left with no recourse through the State or local jurisdiction and must assume total liability for correction of any problems the occur as a result of the set-up of the manufactured home. I personally have a thorough knowledge of the requirements of the **CURRENT** State of North Carolina Regulations for Manufactured Homes that require me to set-up the home in accordance with the home manufacture's installation manual for **NEW** manufactured homes and either the home manufacture's installation instructions or the **CURRENT** State of North Carolina Regulations for Manufactured Homes for **USED** manufactured homes with regard to the set-up of my home.

\_\_\_\_\_  
**Printed Name of Owner**

\_\_\_\_\_  
**Signature of Owner**

\_\_\_\_\_  
**Date**

**NOTE: ONLY the CURRENT manufactured home manufacturer's installation instructions may be used for the installation of a NEW manufactured home. If the homeowner is acting as his or hers own set-up contractor as prescribed in Section 1.2.4 of the CURRENT State of North Carolina Regulations for Manufactured Homes and in all cases the license name and number of the set-up contractor shall appear on the permit.**

**EDGECOMBE COUNTY ASSESSOR'S OFFICE**  
 201 SAINT ANDREW ST., SUITE 312, TARBORO, NC 27886  
**MANUFACTURED HOME TAX CERTIFICATION APPLICATION**

PLANNING RM 205

New owner name: \_\_\_\_\_  
 New owner mailing address: \_\_\_\_\_  
 New location address: \_\_\_\_\_ Lot Number \_\_\_\_\_  
 Is the home located in a Mobile Home Park? \_\_\_\_Yes \_\_\_\_No If YES, list the name of the mobile home park:  
 \_\_\_\_\_  
 Parcel ID: \_\_\_\_\_  
 Land owner's name if different than homeowner: \_\_\_\_\_

TAX ASSESSOR'S OFFICE RM 312

Listing for Tax year(s): \_\_\_\_\_ Purchase date: \_\_\_\_\_ Cost: \_\_\_\_\_ Year: \_\_\_\_\_  
 Make: \_\_\_\_\_ Model: \_\_\_\_\_ Width: \_\_\_\_\_ Length: \_\_\_\_\_ VIN# \_\_\_\_\_  
 Home purchased from a dealer? Yes \_\_\_\_ No \_\_\_\_  
 Home purchased from a Financial Institution as: Repossessed \_\_\_\_ Used home \_\_\_\_  
 Home purchased from individual? Yes \_\_\_\_ No \_\_\_\_ If YES, give name and address of prior owner:  
 \_\_\_\_\_ address: \_\_\_\_\_  
 Home will be: Rental \_\_\_\_ Occupied by Owner \_\_\_\_ Held for Inventory \_\_\_\_  
**If home purchased from individual or financial institution (excluding homes from dealer lot), please answer the following:**  
 Address of the home at time of purchase if different from address above. Street \_\_\_\_\_  
 City: \_\_\_\_\_ State: \_\_\_\_\_ County: \_\_\_\_\_  
 Was the home moved to the current location before or after purchase? \_\_\_\_\_ Before \_\_\_\_ After \_\_\_\_  
 Was a MOBILE HOME MOVING PERMIT obtained by you to move the home? \_\_\_\_\_ Yes \_\_\_\_ No \_\_\_\_  
 If NO, please list the name of person to whom the MOVING PERMIT was issued: \_\_\_\_\_  
 MOBILE HOME MOVERS Name and Address: \_\_\_\_\_  
 Have ALL taxes for the current year and prior years been paid? Yes \_\_\_\_ No \_\_\_\_  
 If NO, all prior years taxes must be paid before certification will be issued.  
 Years owed \_\_\_\_\_ Amount owed \_\_\_\_\_ Acct # \_\_\_\_\_  
**Has the title been updated with DMV? Yes \_\_\_\_ No \_\_\_\_**  
**Name shown on title: \_\_\_\_\_**

This form must be completed, signed, dated, and returned to the Edgecombe County Tax Assessor's Office. Information not completed or any discrepancies in the information provided will delay the processing time for completing the Manufactured Home Certification form. **If you are relocating the home you must provide the Edgecombe County Planning Office with a Mobile Home Moving permit.**

**Affirmation of homeowner:** GS 105-310.-311. Under penalties prescribed by law, I hereby affirm that to the best of my knowledge and belief this listing, including any accompanying statements, is true and complete. Social Security Number: The disclosure of this number is voluntary. This is needed to establish the identification of individuals. The authority to require this number for the Administration of a tax is given by United States Code Title 42, Section 405©(2)©(i).

Taxpayer Signature \_\_\_\_\_ Date \_\_\_\_\_  
 Employer: \_\_\_\_\_ Phone: Work: \_\_\_\_\_ Home: \_\_\_\_\_  
 Social Security No. \_\_\_\_\_

**FAILURE TO SUBMIT THIS FORM WILL DELAY PERMITS**

**EDGECOMBE COUNTY ASSESSOR'S OFFICE**  
201 SAINT ANDREW ST., SUITE 312, TARBORO, NC 27886  
**MANUFACTURED HOME TAX CERTIFICATION**

TAX ACCESSOR'S OFFICE RM 312

**EDGECOMBE COUNTY ASSESSOR'S OFFICE CERTIFIES THAT THE  
MANUFACTURED HOME LISTED ABOVE IS PROPERLY LISTED/REGISTERED  
WITH OUR OFFICE.**

Certified by: \_\_\_\_\_ Date: \_\_\_\_\_

TAX COLLECTOR'S OFFICE RM 154

**EDGECOMBE COUNTY TAX COLLECTIONS OFFICE CERTIFIES ON THE  
MANUFACTURED HOME LISTED ABOVE:**

**THERE ARE NO TAXES DUE TO EDGECOMBE COUNTY.**

**ALL EDGECOMBE COUNTY PROPERTY TAXES HAVE BEEN PAID.**

Certified by: \_\_\_\_\_ Date: \_\_\_\_\_



## REQUIREMENTS FOR MOBILE HOMES

**E911 Address:** *(Must be posted before you can occupy home!)*

MOBILE HOMES OR MODULAR HOMES SHALL HAVE **PHYSICAL ADDRESS DISPLAYED ON THE HOME AND MAILBOX**. YOU MAY USE 4" STICK-ON NUMBERS OR EQUIVALENT.

### **MOBILE HOME OR MODULAR HOME SET UP:**

MOBILE HOMES MAY BE SET-UP BY THE **LICENSED DEALER, OR SET-UP CONTRACTOR**. THE HOMEOWNER MAY SET-UP HIS HOME, BY FIRST SIGNING A WAIVER FORM STATING THAT HE/SHE WILL ACT AS HIS/HER OWN CONTRACTOR.

MODULAR HOMES MAY BE SET-UP BY A LICENSED GENERAL CONTRACTOR, OR BY THE DEALER, **ONLY** IF THE DEALER HAS OBTAINED A \$5,000 SURETY BOND.

THE "**HOMEOWNER MANUAL**" SHOULD BE PRESENT AT THE TIME OF INSPECTION.

### **PLUMBING REQUIREMENTS:**

CHECK VALVE AND VACUUM BREAKER ON WATER LINE. WATER LINE FROM WELL, WITH WELL AND PUMP IN PLACE. WELL ELECTRICAL SUPPLY UNDERGROUND (**WATER PROOF**) WIRE AND BOTH WATER LINE AND WIRE TO BE MINIMUM OF 12" DEEP.

IF CONNECTING TO THE COUNTY WATER SYSTEM, CALL 252-823-5571.

SEPTIC TANK CONNECTION LEFT UNCOVERED (**DITCH FROM HOME TO TANK**) CONNECTION TO SEPTIC TANK SHALL BE CEMENTED. SEWER LINE (**IF APPLICABLE IN YOUR AREA**) LEFT OPEN AND CLEAN-OUT PLUG EVERY 50 FEET.

### **ELECTRICAL REQUIREMENTS:**

1. ELECTRICAL WORK MUST MEET THE NATIONAL ELECTRICAL CODE.
2. CALL YOUR POWER COMPANY TO MAKE APPLICATION AND ABOUT PLACEMENT OF POLE/ UNDERGROUND SERVICES **AS SOON AS POSSIBLE!**
3. LICENSED ELECTRICIANS ONLY, UNLESS YOU ARE THE HOMEOWNER.

4. YOU ARE RESPONSIBLE FOR WIRING FROM THE METER TO THE HOME.
5. METERBASES CAN BE MOUNTED DIRECTLY TO THE DOUBLEWIDE MOBILE HOME PROVIDED YOU OWN THE LAND. CENTER OF METER TO BE 5 FT. HIGH. OVERHEAD SERVICE MUST BE A MINIMUM OF 12 FEET HIGH. CANNOT MOUNT THE METER BASE TO A SINGLEWIDE MOBILE HOME.
6. METERBASE POLES MUST BE 30 FEET OR LESS FROM THE MOBILE HOME.
7. CONDUIT **SHALL** EXTEND IN THE GROUND AT LEAST 18 INCHES AT METERBASE AND UNDER HOME OR IT CAN BE TOTALLY ENCLOSED IN CONDUIT AND ATTACHED UNDER HOME.
8. UNDERGROUND WIRE OR METAL MASTS ARE **OK** IF THEY MEET THE NECESSARY REQUIREMENTS.
9. **ALL WIRE** BURIED TO THE HOME FROM THE METER MUST BE 24 INCHES DEEP.
10. BONDING STRAPS MUST BE IN PLACE ON ALL DOUBLEWIDE MOBILE HOMES.
11. **ALL WIRE** BURIED TO WATER PUMPS MUST BE 12 INCHES DEEP.

#### **DECKS, STOOPS AND PORCHES & STEPS:**

1. SHALL BE CONSTRUCTED ACCORDING TO THE NORTH CAROLINA REGULATIONS FOR MANUFACTURED HOMES 2004 EDITION. **SEE ATTACHED PICTURE.**

##### **3.11.4 Landings**

A minimum 3' X 3' landing shall be required at the top of all exterior stairs where any egress door (not screen or storm door) swings outward over the stairs. Landings that are thirty-six (36) square feet or less in area may be constructed according to the provisions of this Code. All such landings, whether at the top or bottom of the stairs, which are greater than thirty-six (36) square feet in area are considered to be "decks" and shall be constructed in accordance with the North Carolina Residential Code (current Edition).

#### **INSPECTIONS REQUIRED:**

1. FOOTING INSPECTION, IF REQUIRED BY MFG. BEFORE CONCRETE CAN BE POURED.
2. INSULATION INSPECTION IN MARRIAGE WALLS IF HOME IS A DOUBLEWIDE.
3. BLOCKING, TIE DOWNS, PLUMBING TEST, SEWER AND ELECTRICAL INSPECTION BEFORE SKIRTING IS INSTALLED.
4. SKIRTING, AND STEPS AT EVERY OUTSIDE DOOR FOR CERTIFICATE OF OCCUPANCY.

**NOTE: SINGLEWIDE MOBILE HOMES REQUIRE ONLY ONE INSPECTION. COMPLETE ALL WORK INCLUDING SKIRTING THE FRONT AND THE BACK OF THE HOME. LEAVE THE SKIRTING OFF THE ENDS OF THE HOME.**

**PLEASE NOTE: THESE REQUIREMENTS ARE MANDATORY BY THE N.C. DEPT. OF INSURANCE, BEFORE ANY ELECTRICITY CAN BE CONNECTED. THERE WILL BE A \$40.00 CHARGE FOR ADDITIONAL TRIPS MADE FOR INSPECTIONS. (To be determined by the building inspector)**

PLEASE CALL **252-641-7802** 24 HOURS IN ADVANCE TO SCHEDULE INSPECTIONS, WHEN **ALL THE ABOVE WORK HAS BEEN COMPLETED.** IF NO ONE CAN BE PRESENT DURING INSPECTION, PLEASE LEAVE THE REAR DOOR UNLOCKED AND WE WILL LOCK IT AFTER THE INSPECTION. **NO APPOINTMENTS** WILL BE GIVEN BY THE INSPECTIONS DEPARTMENT, DUE TO THE SIZE OF THE COUNTY AND THE NUMBER OF INSPECTORS IN OUR STAFF.

- REMEMBER:**
1. PLANNING DEPT. ISSUES ZONING APPROVAL FOR LOT (252-641-7802)
  2. TAX COLLECTIONS DEPT. ISSUES MOVING PERMIT (252-641-7810)
  3. INSPECTIONS DEPT. ISSUES PERMIT TO SET-UP THE MOBILE HOME ON A LOT (641-7802).  
PERMITS ARE ISSUED 8 AM-4 PM MONDAY-FRIDAY.
  4. HEALTH DEPT. ISSUES WELL & SEPTIC TANK PERMITS (252-641-7573)
  5. TAX ASSESSOR'S DEPT ISSUES TAX VERIFICATION FORM (641-7856)

INSPECTORS ARE USUALLY IN THE OFFICE EACH MORNING FROM 8 A.M. – 9 A.M. IF YOU HAVE QUESTIONS. (252-641-7802)

**UNDERPINNING/SKIRTING:**

ELECTRICAL SERVICE **WILL NOT** BE ASSIGNED TO ANY MANUFACTURED HOME UNTIL THE SKIRTING/UNDERPINNING HAS BEEN INSTALLED AND ADDRESS POSTED.



## 3.11 EGRESS REQUIREMENTS

### 3.11.1 Egress

#### -General Requirements

Federal regulations require that each manufactured home have a minimum of two exterior egress doors that are located remotely from each other. Where any means of egress from a manufactured home, including sliding glass doors, is not substantially level with grade, such differences in elevation shall be negotiated by stairs or ramps which are constructed in accordance with Sections 3.11.2 and 3.11.3. Landings shall comply with section 3.11.4. Egress stairs, ramps and landings shall be provided and installed by the selling party unless specifically contracted otherwise by the homeowner.

### 3.11.2 Exterior Steps and Stairways

#### 3.11.2.1 –General

All stairs and landings constructed in accordance with this Code shall be entirely self-supporting unless designed and approved by a registered Engineer or Architect. **Adequate bracing of stairway and landing structures shall be provided as required for lateral stability.**

#### 3.11.2.2

#### Footings for Stairway and Landing Structures

All support posts for exterior stairway and landing structures shall rest on a minimum 8" X 16" x 4" thick concrete masonry or 8" x 16" x 6" thick poured in place concrete footing. The bottom of such footings shall be below the frost line or a minimum of 4" below grade, whichever is greater.

**EXCEPTION:** Stair or landing structures designed specifically to be set directly on the ground do not require footings as described above.

#### 3.11.2.3 Width

Stairways shall not be less than 36 inches (914 mm) in clear width. The minimum width at and below the handrail height shall not be less than 32 inches (813 mm) where a handrail is installed on one side and 28 inches (711 mm) where handrails are provided on both sides.

#### 3.11.2.4 Treads and risers

The maximum riser height shall be 8-1/4 inches (210 mm) and the minimum tread depth shall be 9 inches (228 mm), exclusive of nosing. The riser height shall be measured vertically between leading edges of the adjacent treads. The tread depth shall be measured horizontally between the vertical planes of the foremost projection of adjacent treads and at a right angle to the tread's leading edge. The walking surface of treads and landings of a stairway shall be sloped no steeper than one unit vertical in 48 units horizontal (2-percent slope). The greatest riser height within any flight of stairs shall not exceed the smallest by more than 3/8 inch (9.5 mm). The greatest tread depth within any flight of stairs shall not exceed the smallest by more than 3/8 inch (9.5 mm). The height from the top tread or top of a landing (when a landing is present) to the door threshold shall not exceed 8-1/4". Where the bottom riser of an exterior stair adjoins an exterior walk, porch driveway, patio, garage floor, or finish grade, the height of the riser may be less than the height of the adjacent risers. See Figure 3.11.

#### 3.11.2.5 Profile

The radius of curvature at the leading edge of the tread shall be no greater than 9/16 inch (14.3 mm). A nosing not less than 3/4 inch (19 mm) but not more than 1-1/4 inches (32 mm) shall be provided on stairways with solid risers. Beveling of nosing shall not exceed 1/2 inch (12.7 mm). Risers shall be vertical or sloped from the underside of the leading edge of the tread above at an angle not more than 30 degrees from the vertical.

Reference: 2004 Edition of the North Carolina Regulations for Manufactured Homes

EXCEPTION: A nosing is not required where the tread depth is a minimum of 11 inches (279 mm).

**3.11.2.6 Handrails**

Handrails having minimum and maximum heights of 30 inches and 398 inches (762 mm and 965 mm), respectively, measured vertically from the nosing of the treads, shall be provided on all open sides of stairways of four or more risers (when the elevation of the top of the uppermost riser is more than 30" above floor or grade below) that lead to a door, platform, porch, terrace, or entrance landing. All required handrails shall be continuous the full length of the stairs. Ends shall be returned or shall terminate in newel posts or safety terminals. See Figure 3.11

**3.11.2.7 Handrail Grip Size**

The handgrip portion of the handrails shall not be more than 3-1/2 inches in cross-sectional dimension, or the shape shall provide an equivalent gripping surface. The handgrip portion of handrails shall have a smooth surface with no sharp corners.

**3.11.2.8 Guardrails**

Porches, balconies or raised floor surfaces located more than 30 inches (762 mm) above the floor or grade below shall have guardrails not less than 36 inches (914 mm) in height

**3.11.2.9 Guardrail and handrail opening limitations**

Guardrails and handrails are required on open sides of stairways, raised floor areas, balconies and porches shall have intermediate rails or ornamental closures which do not allow passage of an object 6 inches (152 mm) or more in diameter. Horizontal spacing between the vertical members in required guardrails shall be a maximum of 4 inches (102 mm) at the nearest point between the members. See Figure 3.11

**EXCEPTION:** The triangular openings formed by the riser, tread and bottom rail of a guard at the open side of a stairway **may be of such** a size that a sphere 6 inches (153 mm) cannot pass through.

**3.11.2.10 Structural Requirements**

Guardrails and handrails shall be capable of withstanding a single concentrated load of 200 lbs. applied in any direction at any point along the top. Material for stairs and landings constructed of wood shall be No. 2 or better treated Southern Pine or equivalent. The minimum thickness of stair treads and decking for landings shall be as follows:

Support Spacing	Tread or Decking (nominal)
12"	1" S4S
o.c. 16" o.c.	1" T & G
24" o.c. 32 "	1-1/4" S4S
o.c.	2" S4S

As an alternate, an engineered design certified by a Registered Engineer or Architect may be provided. In the design the stair tread or floor deck shall be capable of supporting either a uniformly distributed live load of 40 PSF or 300 lb. concentrated load acting over an area of 4 square inches, whichever produces the greater stresses. Maximum allowable deflection under these loads shall be U240. Notched stair stringers shall have a minimum effective depth at each notch of not less than 3 ½ inches unless an alternate design certified by a Registered Engineer or Architect is provided.

**3.11.3 Ramps**

Ramps shall be at least three feet (3'0) wide. Ramps shall have a maximum slope of one unit vertical in eight units horizontal. Handrails shall be provided on at least one side of all ramps exceeding a slope of one unit vertical in 12 units horizontal. A minimum 3 ft. x 3 ft. landing shall be provided: 1) at the top and bottom of ramps, 2) where doors open onto ramps, and 3) where ramps change directions.

**3.11.4 Landings**

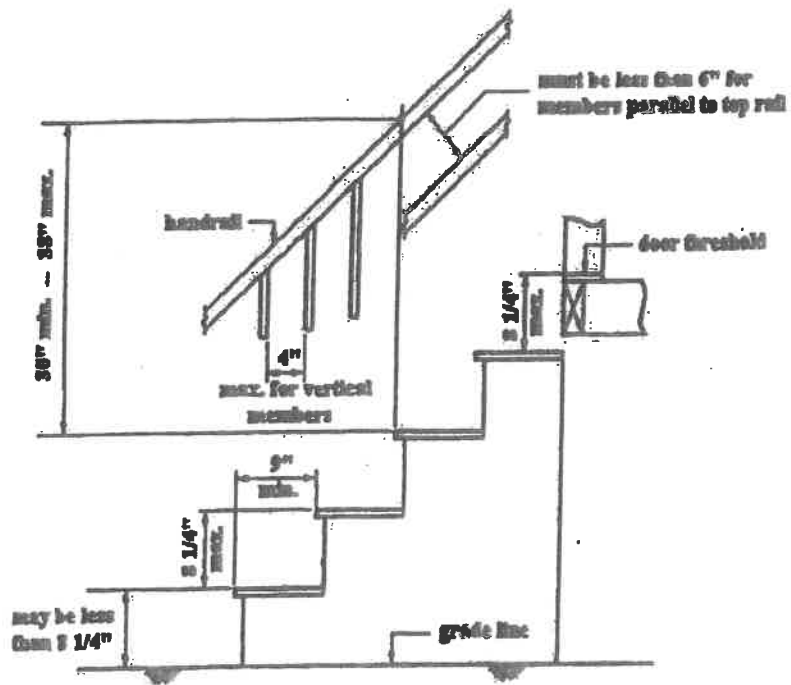
A minimum 3' x 3' landing shall be required at the top of all exterior stairs where any egress door (not screen or storm door) swings outward over the stairs. Landings which are thirty-six(36) square feet or less in area may be constructed according to the provision of this Code. All such landings, whether at the top or bottom of the stairs, which are greater than thirty-six (36) square feet in area are considered to be "decks" and shall be constructed in accordance with the North Carolina Residential Code(Current Edition).

**3.11.5 Fasteners**

Fasteners used in the construction of stairs, handrails, guardrails, ramps, and landings shall be hot-dipped, zinc coated galvanized or stainless steel.

**3.11.6 Auxiliary Structures**

All auxiliary structures (such as porches, decks, awning, cabanas, etc.) not provided or approved by the home manufacturer, shall be entirely self-supporting unless designed and approved by a Registered Engineer or Architect. All such structures shall be constructed in accordance with the North Carolina Residential Code (current Edition)



**FIGURE 3.11**  
**Stair and Rail Geometry**