CITY OF WINNEMUCCA
AND
HUMBOLDT COUNTY
BUILDING DEPARTMENTS

SETTING UP YOUR MANUFACTURED HOME

THE INFORMATION CONTAINED IN THIS HANDOUT IS FOR SETTING UP MOBILE HOMES/MANUFACTURED HOUSES FOR ALL AGES

Please utilize the checklist on the back of this handout. Review checklist and complete all items before calling for an inspection

REVISED MARCH 2014

TABLE OF CONTENTS

INTRODUCTION AND PURPOSE

This handout is for the set-up of all mobile homes/manufactured houses.

Note: MH abbreviation refers to manufactured home/mobile home thru out this manual.

The purpose of this handout is to provide the owner's of mobile homes/manufactured houses with a simple guide to what is required to set up your mobile home/manufactured house in Humboldt County.

The regulations covering mobile homes/manufactured homes (sales, service, and installation) are instituted by the State of Nevada and adopted pursuant to Chapter 489 of the Nevada Revised Statues. The current regulations went into effect March 2009.

Under an agreement between Humboldt County and the State of Nevada NRS 461.24 the County has assumed administrative authority for mobile home/manufactured house regulations, enforcement, and inspection.

On the following pages we have excerpted sections from the State regulations. Other information has been added by the Humboldt County Building Department.

Full sets of State regulations are available at our office or from Manufactured Housing Division, Nevada Department of Commerce, Carson City, Nevada. The entire set of State Regulations should be read for a "full" understanding of the requirements.

MH proposed to be placed in flood zones are required to have a Nevada engineered designed foundation and tie down system per Humboldt County Code Chapter 15.16

Every figure used in this standard pertains specifically to the Section(s) or Subsection(s); which it references. Figures will not show every method described by the narrative in the referencing Section or Subsection. They are intended to aid the user of this handout by visually describing requirements of the referencing Section or Subsection. The requirements that are prescribed in the test of referencing Section or Subsection must be complied with regardless of specific details, which may be shown in the figures.

Real property conversion requirements must be completed at the final inspection of the house.

GENERAL INFORMATION

Once submitted, your permit application may require review and approval from the following County and State Agencies:

Zoning Approval
Humboldt County Planning & Zoning Department
(Site Plan/Zoning Codes)
There may be age restrictions for the home and foundation requirements
623-6393

Street Excavation/Encroachment
Humboldt County Road Department
623-6416
Excavation/Encroachment permits are required from the Road Department for any encroachment in a county road easement or right of way. This includes driveways.

Highway Encroachment
Nevada Department of Transportation
(775) 623-8000

Flood Zone Area Review
Humboldt County Building Department

Water/Domestic Well Installation
Shall be approved by Nevada State Water Resources
(775) 687-2800

Nevada State Manufactured Housing Division
(775) 486 – 4138 - Las Vegas

Prior to final inspection, the applicant will need to contact the Bureau of Health Protection Services for septic approval. Written approval shall be submitted to this office. Approval from water district or sewer districts is also required.

We recommend you contact the following utility companies for their regulations and plan approval (if required) before you begin your project.

Power:
NV Energy– (775) 623-3667
Harney Electric – (775) 272-3336 (Orovada area)

Gas:
Natural Gas: Southwest Gas Company – (800) 832-2555
Propane: Amerigas – (775) 623-3055
Western States Propane – (775) 623-9555

Telephone: AT&T—(800)-288-2020
Humboldt Telephone – (775) 272-6008

PERMITS

Permits are required to set-up all MH's and are obtained from the Humboldt County Building and Safety Department, 25 W. 4th Street, Winnemucca, NV (County Annex) in accordance with the following schedule. Permits are required before any construction activity begins on site.

Set Up in a park or where utility services are already installed and only connections are made.	$250.00
Set Up on a private lot requiring service runs and/or new services:	
Set Up & Installation Seal	$250.00
Electrical (up to 200 amp service)	$ 18.50
Electrical – Miscellaneous Elect/Conduit	$ 11.00
Water Line	$ 7.00
Sewer Line	$ 15.00
Temporary Gas (L.P. or Natural)	$ 25.00
Temporary Power	$ 25.00
*Poured Concrete Runners (Optional)	$ 35.00
*Conversion of mobile home/manufactured house for real property	$ 35.00
Re-inspection	$ 80.00

Foundations may be obtained separate or with the manufactured home permit. Fees are assessed base on square footage size of the home. This office recommends that the owner consider a permanent foundation where the home is located on a private lot. Future financing and sales of the property may be an issue if a foundation is not installed.

INSPECTIONS

- ◊ Runner and stemwall footing (If manufactured home is being placed on runners or a full foundation) before pouring of concrete.
- ◊ Stemwall
- ◊ Underground utilities (water, sewer, and electrical lines). All three utilities shall be installed at the same time. This inspection also includes the electrical wiring for the well.
- ◊ Set-Up Inspection. Includes blocking, tiedowns, crossovers, marriage line lagging, continuity test, gas test, temporary electric and temporary gas. Temporary electric and gas will be a required inspection as power and gas need to be to the home at the final inspection.
- ◊ Final inspection of manufactured home. Includes appliance test, smoke detector test, GFCI outlet test, running water test, drywall complete, home weathertight, steps and grade.

IMPORTANT: **Only (1)** final **inspection is made on a mobile home/manufactured home**
All set-up requirements and all utilities must be connected to the mobile home/manufactured home before inspection can be made. **No occupancy permitted before final inspection.**

INSTALLATION OF MOBILE HOME/MANUFACTURED HOME AND COMMERICAL COACHES

1. General Requirements
   A. The manufactured home must be adequately leveled prior to completion of the Installation, so that the home's performance will not be adversely affected. The home will be considered adequately leveled if there is no more than 1/8" difference in floor level within 10 feet radius of any point and the exterior doors and windows of the home do not bind and can be properly opened.
   B. Installations shall not be approved until all applicable provisions of this handout have been met, including but not limited to, site preparation, support system, structural connections, tie-down requirements, access and egress requirements, under floor enclosures (when used) with ventilation and access, all utility connections and crossovers and completion of operational checks and adjustments.
2. Installation Requirements

All MH and commercial coaches must be installed in accordance with the provisions of Nevada Manufactured Home/Mobile Home & Commercial Coach Installation Standard effective March 2009. All the equipment utilized in the set-up shall be installed per their listing by the manufacturer and approved by State of Nevada Manufactured Housing Division. The data plate located in the home should be reviewed for any specific set-up requirements. If the manufacturer's installation instructions are used for a special purpose the installation instructions shall be on site during the inspection. A MH shall not be installed in a manner that takes the home out of compliance with State and Federal standards. The inspector can request manufacturer instructions for equipment used in the installation. All materials used in the installation must be listed and approved by recognized agencies. The house shall be leveled within an acceptable range.

Any MH set in a park is required to be set by a Nevada licensed installer.

3. Site Preparation/Grading:
   A. Before setting house review tie down regulations. Anchors may need to be set before house is placed.
   B. Grading shall not begin at any site until permits have been obtained.
   C. Each site shall be suitable for the intended use and must comply will all zoning or other restrictions. It is the responsibility of the applicant/owner to verify restrictions before beginning the installation.
   D. All footings shall be installed on undisturbed soil.
   E. Provide a minimum grade of 5% from the house for homes on runners or foundations. Houses soft set may have 2% grade. In order to provide adequate grade on a block set a raised pad shall be installed using gravel & road base. The gravel and road base shall be compacted 90%. Typically grade is required to slope a minimum of 10 feet from the house.
   F. If slabs or sidewalks are installed near the house they shall be sloped away a minimum of 2% to drain away from house.
   G. The home blocking system may not be set below finished grade unless an approved perimeter foundation & runners are installed per County standards. The only exception is the perimeter blocking required to be to frost line.
   H. All organic material (grass, brush, etc) must be removed from the MH set-up area
4. Vapor Retarder

The ground within the enclosed crawl space shall be covered with black .006" thick continuous membrane for all MH. Install to the following requirements.

   A. Membrane sheeting seams shall be overlapped by at least 12".
   B. Edges of the membrane sheeting shall not extend beyond the perimeter of the MH.
   C. All holes, tears, and penetrations in the membrane sheeting shall be adequately sealed or patched with durable tape.
   D. Under floor membrane sheeting shall not be in contact with wood unless the wood is pressure treated.
   E. Black polyethylene membrane sheeting shall be installed over the ground. Clear sheeting may be installed under gravel or concrete.

F. When the manufactured home has a recessed entry, porch, or deck, and the floor in the recessed area is constructed of opening decking, the membrane sheeting shall not be installed below the open decking floor. (Section 7-K for separation requirements)

5. Footing (See Figure 303)

A. A minimum of 18" must be maintained between the lowest member of the main frame and grade or runner under all areas of the home.

B. Pier support footing shall be a minimum of 256 square inches and not less than the width of the pier being support.

C. Precast and poured concrete pads must be able to withstand a minimum pressure of 3,000 psi after 28-day cure time as prescribed by ASTM C-39

1. Precast Pads (Figure 303.1) – 16"x16"x4" required. May use (2) 8"x16"x4" only with concrete block piers. The piers shall be perpendicular to the joint of the pad. Note: Section 5 – only concrete block piers may be set on precast pads.
2. Poured concrete pads (Figure 303.2) – 4" thick either square or round (256 sq in). Note: cannot be used to convert to real property.
3. Lumber or polymer stacked pads (Figure 303.3) - Pads fastened together in (2) to (4) layers, of 2" nominal size thick foundation grade lumber, pressure and insect treated on all six sides, or pads of (2) to (4) layers of 2" nominal size thick polymer composite. Each layer shall be laid perpendicular to the layer below it.
4. Lumber pads (303.4) –Pads of two layers 2" thick pressure treated. If used with concrete piers, the grain shall be parallel with the long sides of the block with no more than 1" of wood exposed beyond the long sides of the block. A single 2x12x18 will not meet the minimum 256 sq. in. requirement. Cut ends of pressure treated lumber must be field treated, in accordance with AWPA Standard M4-06.
5. Runners (Figure 303.6) – Runners & perimeter foundations requirements are on separate handouts.

D. Perimeter Blocking Footing - Required on all MHs that measure over 11' in width from sidewall to sidewall. (See Figure 303)

1. Perimeter blocking footing shall be installed to the following guidelines:
   a. If runners are installed a continuous footing to frost line is required to support the perimeter blocking (see separate handout)
2. The footings for block set under the perimeter shall be any of the following:
   a. Pier support footing shall be a minimum of 256 square inches and not less than the width of the pier being support.
   b. Precast and poured concrete pads must be able to withstand a minimum pressure of 3,000 psi after 28-day cure time.
      1. Precast Pads – 16"x16"x4" required. May use (2) 8"x16"x4" only with concrete block piers. The piers shall be perpendicular to the joist of the pad
      2. Poured concrete pads – 4" thick either square or round (256 sq in). Note these cannot be used to convert to real property.
   c. Lumber or polymer stacked pads. Pads fastened together in (2) to (4) layers, of 2" nominal size thick foundation grade lumber, pressure and insect treated on all six sides, or pads of (2) to (4) layers of 2" nominal size thick polymer composite. Each layer shall be laid perpendicular to the layer below it.
   d. Lumber pads – 2" thick pressure treated. If used with concrete piers, the grain shall be parallel with the long sides of the block with no more than 1" of wood exposed beyond the long sides of the block. A single 2x12x18 will not meet the minimum 256 sq. in. requirement.
   e. Full perimeter foundation (see separate handout)

5. Piers: (Figure 304)

All materials or products for support of a MH must be approved by State of Nevada Manufactured Housing Division or listed specifically as a support or pier system. The maximum height shall be 36". Real property requires minimum 16" pier height.

A. Block Piers (Figure 304.1- 304.3)

1. Concrete blocks

a. Blocks shall be either open or closed cell pre-cast of nominal size 8"x8"x16". Open cell blocks shall be positioned vertically. Blocks used on a poured footing must have a minimum ½" pressure treated wood pad between the block and the top of the footing. Single stack block piers shall be used for loads not to exceed 5,000 lbs. Double stack block piers shall be used for loads not to exceed 16,000 lbs. Double and single piers may be combined for higher loads.

b. Frame piers less than 36" high

1. Constructed of single, open, or closed-cell concrete blocks, 8"x8"x16", when the design capacity is not exceeded.
2. The frame piers must be installed so that the long sides are at right angles to the support I-beam as shown in Figure 303.7.
3. The concrete blocks must be stacked with their hollow cells aligned vertically and must be positioned at right angles to the footings.
4. Horizontal offsets from the top to the bottom of the pier must not exceed 1/2"

c. Frame piers 36" to 67" high

1. All piers and all corner piers over three blocks high must be constructed out of double, interlocked concrete blocks, as show in Figure 303.8, when the design capacity of the block is not exceeded. Mortar is not required for concrete block piers, unless other specified in a) installation instructions or required by a professional engineer or registered architect; b) horizontal offsets from the top to the bottom of the pier must not exceed one inch.

d. Frame piers over 67" high

1. Must be designed by a registered professional engineer or registered architect, in accordance with acceptable engineering practice.

B. Perimeter Support Piers

1. Piers required at mate-line supports, perimeter piers, and piers at exterior wall openings are permitted to be constructed of single open-cell or closed-cell concrete blocks, with nominal dimensions of 8"x8"x16" to a maximum height of 54", when the design capacity of the block is not exceeded.

C. Block Pier Caps (Figures 304.1, 304.2, 304.3) Each block pier shall be capped with a pier cap equal in area to the pier blocking. Pier caps shall be one or more of the following. When split caps are used on double-stacked blocks, the caps must be installed with the long dimensions across the joint in the blocks below.

1. Pre-cast block – a solid concrete block with a nominal thickness of 4".
2. Lumber – (1) 2" nominally thick #2 or better grade lumber
3. Polymer – (1) 2" nominally thick wood polymer composite
4. Other – Listed or equivalent materials approved by Manufactured Housing.

D. Block Pier Shims (Figures 304.1, 304.2, 304.3)

1. Precast concrete – 2" thick solid concrete blocks equal in area to the pier cap
2. Plywood – ¾" or thicker plywood equal in area to the pier cap
3. Lumber – 2" nominally thick #2 or better grade lumber not less than 5 ½" in width and 16" long
4. Polymer – 1 ¼" min. thickness wood polymer not less than 5 ½" in width and 16" long. Maximum 2 layers permitted.
5. Other – listed or equivalent materials approved by Manufactured Housing

E. Block Pier Wedges

1. No more than two sets of wedges nominal 4”x6”x1” shims to level the home and fill any gaps between the base of the main chassis beam and the top of the pier cap may be used. They must be fitted perpendicular with, and driven tight to, the bottom of the main frame or floor to transfer loads uniformly to the pier. See Figure 303.9. Wedges must be driven in tightly so they do no occupy more than 1” of vertical height.

F. Prefabricated Piers (Figure 304.4)

1. Shall be placed on approved footings. They shall not exceed the size of the footing and shall be used in a manner consistent with its listing.
2. All prefabricated piers shall be tested and listed to be used as 4,000 lbs.
3. The installation of piers shall be in compliance with pier manufacturer’s instructions, which shall be present at the time of inspection.
4. No shims shall be used with prefabricated piers
5. All piers shall be of the type fitting with an adjustable head and nut. The extension of the head adjustment shall not exceed 2” when finally positioned.
6. The heads of prefabricated piers shall alternate at the frame support.
7. Shall not be installed on precast concrete footing pads.

G. Block/Pier Spacing (Figure 305)

1. Spacing of Main Frame Support Pier & Footing (Figure 306)
   a. 12” from the ends of the frames on standard homes
   b. 30” on perimeter foundation set homes
   c. The footings and pier stands shall continue to be set a maximum of 6’ o.c. the full length of the frame.
   d. For home less than 11’ in width and perimeter supports are not being used, the maximum pier spacing of 5’ on center for the full length of the frame is to be used.
   e. A 6” variance is allowable to clear obstructions.
2. Spacing of Perimeter Supports for Piers and Footings for homes over 11’ in width (Figure 305)
   a. 6” or less from each corner
   b. 8’ o.c. for roof loads up to 30 psf.
   c. 6’ o.c. for roof loads of 40 psf.

FIGURE 303 - FOOTINGS

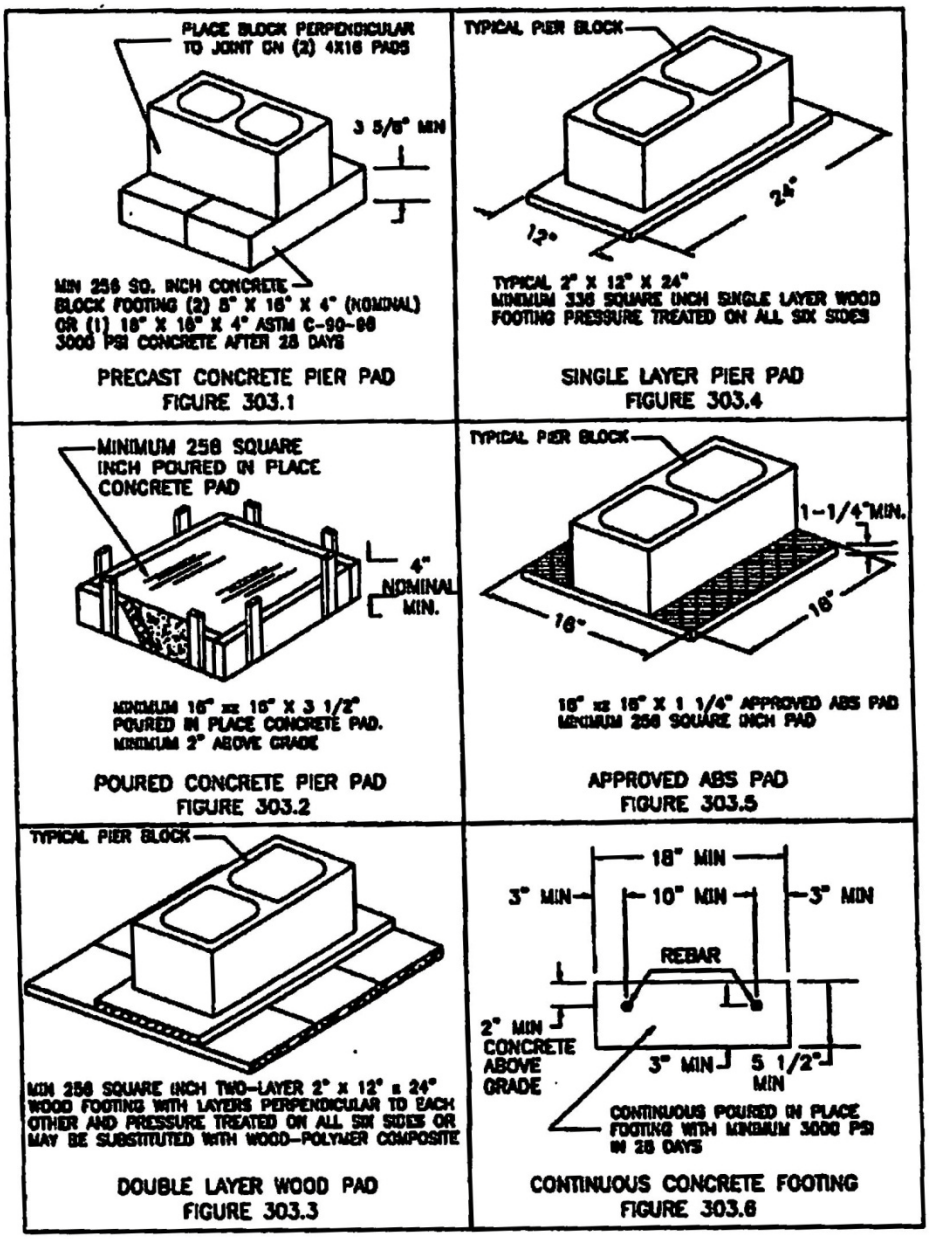


FIGURE 304 - PIERS

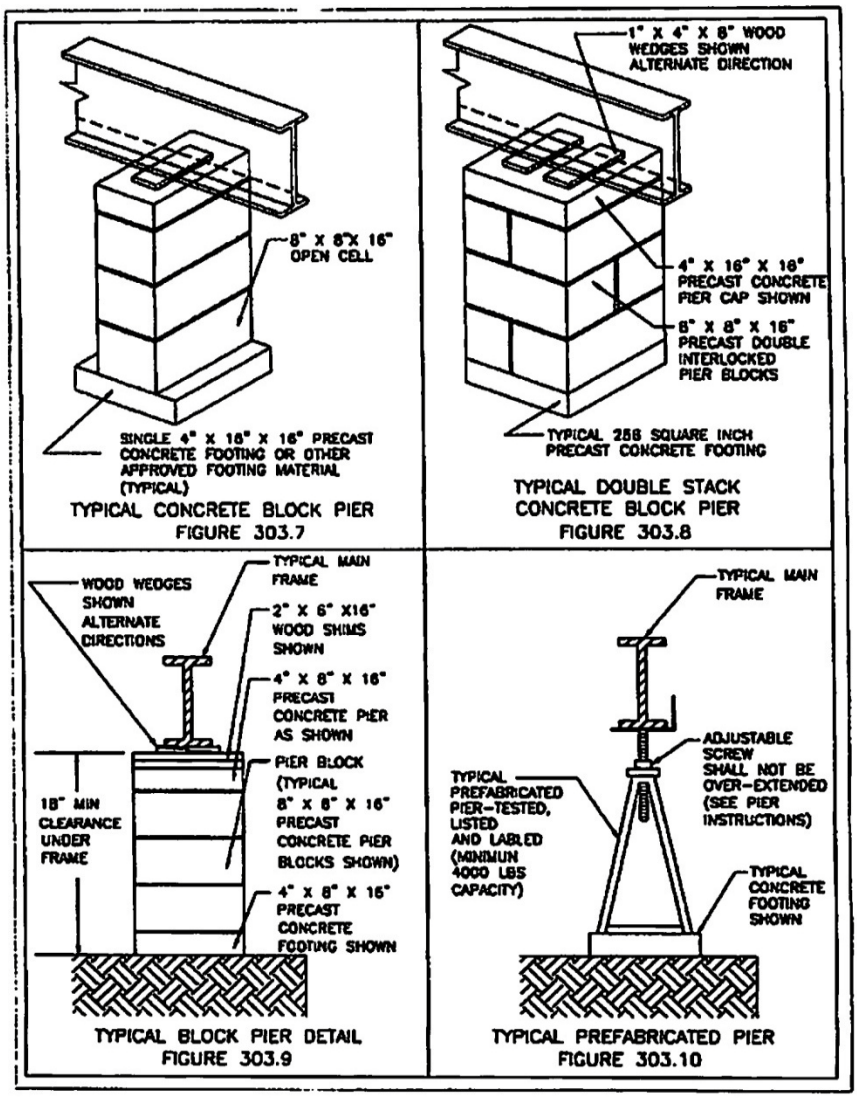
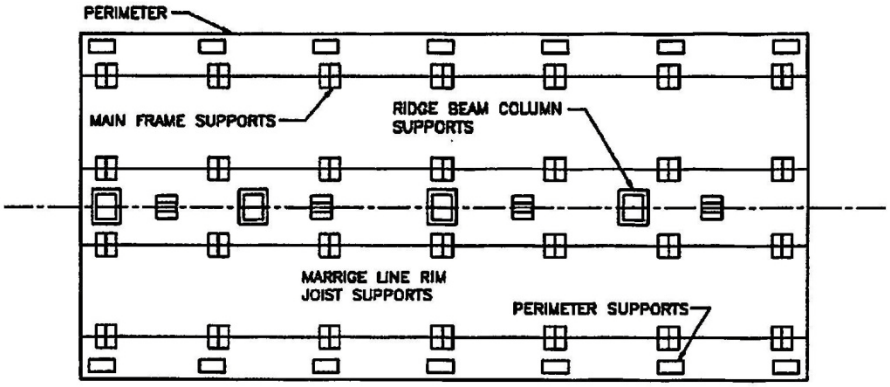


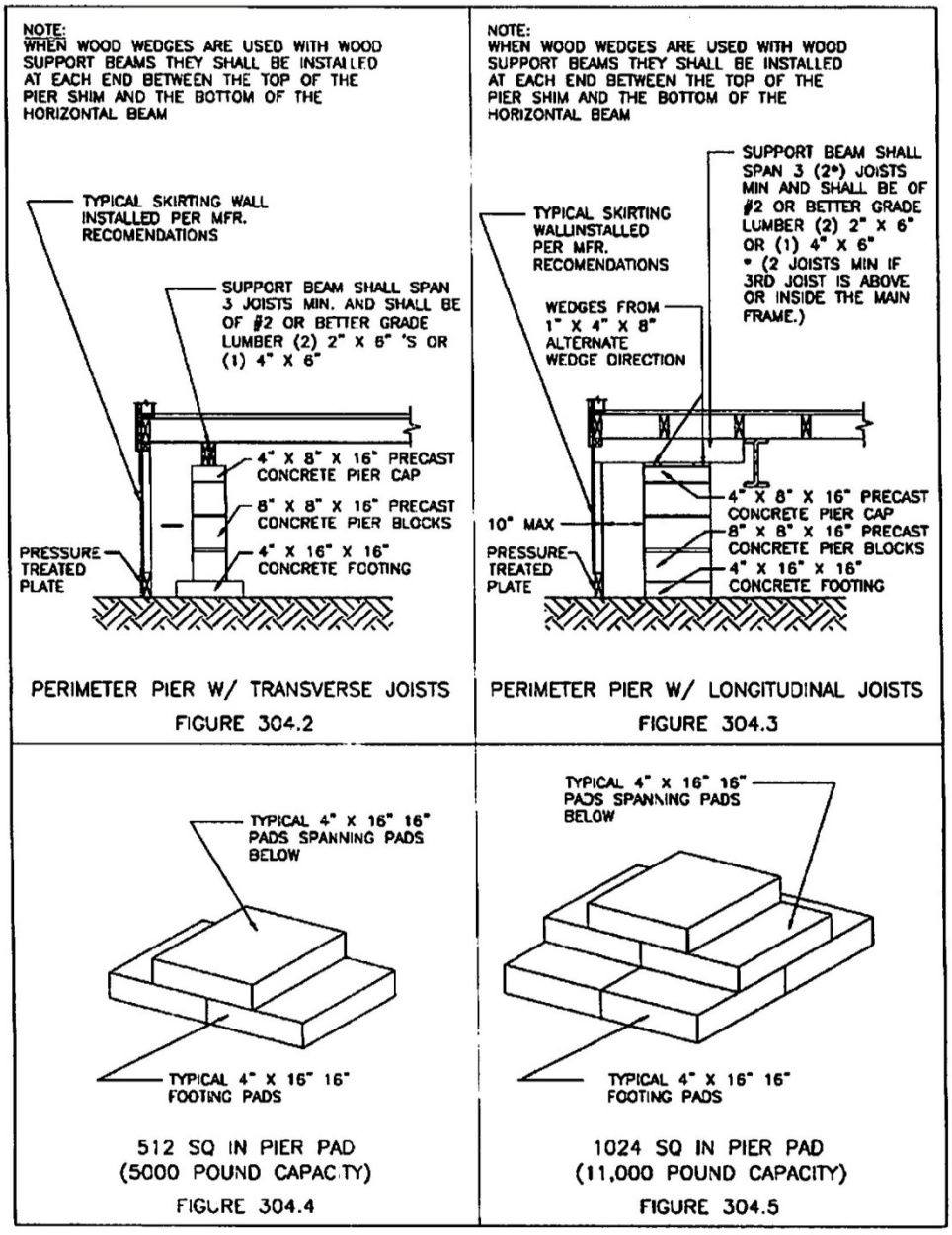
FIGURE 305
BLOCK/PIER SPACING



PERIMETER SUPPORTS	LOCATED WITHIN 6 INCHES OF CORNER (PERIMETER SUPPORTS NOT REQUIRED ON FOUNDATIONS) AND 8 FEET O.C. FOR ROOF LOAD UP TO 30 PSF; 6 FT O.C. FOR 40 PSF; 4 FT O.C. FOR 80 PSF; FOUNDATIONS FOR 100 PSF AND OVER
MAIN BEAM SUPPORTS	LOCATED WITHIN 12 INCHES OF EACH END (30" FOR FOUNDATIONS) AND 6 FT O.C. FOR ALL ROOF LOADS
RIDGE BEAM SUPPORTS	LOCATED WITHIN 6 INCHES OF EACH END AND AS REQUIRED AND MARKED BY THE MANUFACTURER (END SUPPORTS NOT REQUIRED ON FOUNDATIONS)
MARRIAGE LINE RIM JOIST SUPPORTS	LOCATED 7 FT O.C. FOR ROOF LOADS FROM 20 TO 40 PSF; 5 FT FOR 40 PSF; 4 FT O.C. FOR 60 TO 80 PSF; 3 FT O.C. FOR 80 TO 100 PSF; 2FT OVER 100

SUPPORT SYSTEM

FIGURE 306 - PERIMETER BLOCKING



7. Marriage Line/Ridge Beam (Figure 306, Table 307, & Figure 308)

A. During set-up of the MH multi-section homes shall be sealed at marriage lines to resist the elements.

B. Wall & roof close up shall be made with similar materials and installed according to the material specified by the manufacturer.

C. Support on the marriage line shall be provided at each location as identified by the manufacturer. The areas shall be clearly marked by the manufacturer and are visible at the floor area of the house.

C. The diagram for location and load of the supports shall be on site at the inspection.

E. Marriage/ridge supports shall also be located within 6" of each end and 7' o.c. for roof loads up to 40 psf. (This is in conjunction with the manufacturer's requirements.) Care shall be taken on open spans to prevent any raised floor problems.

F. Marriage line footing size shall be determined by the column load and per attached Table 307.

G. Ridge beam support column footings shall be constructed according to any one of the following four methods. (See Figures 306.3 & 306.4)

1. Multi-layered 16"x16"x4" pre-cast concrete pads placed in a pyramid shape to distribute load from the pier to the base. Each layer of blocks shall span at least 50% of each block in the layer beneath.
2. Poured in place concrete pads min. of 6" thick with (2) #3 reinforcing bars in each direction (can not be used for real property conversion)
3. A poured concrete footing runner with a minimum of 6" nominal thickness by 20" wide with two properly positioned #3 reinforcing bars. (See separate runner handout)
4. Pads of two to four layers of min. 2"x10" pressure treated lumber. The length shall not exceed double the width. The boards in each layer shall be laid crosswise to the boards in the layer beneath.

H. Marriage line/ridge beam supports may be combined with perimeter blocking requirements if necessary. The loads will determine footing and pier requirements.

I. Piers: (Figure 304)

All materials or products for support of a MH must be approved by State of Nevada Manufactured Housing Division or listed specifically as a support or pier system. The maximum height shall be 36". Real property requires minimum 16" pier height.

1. Block Piers (Figure 304.1- 304.3)
   a. Concrete blocks
      1. Blocks shall be either open or closed cell pre-cast of nominal size 8"x8"x16". Open cell blocks shall be positioned vertically. Blocks used on a poured footing must have a minimum ½" pressure treated wood pad between the block and the top of the footing. Cinder or pumice blocks shall not be used.
      2. Single Stack – block piers up to 36" high under the main frame or marriage line and 48" high under perimeter walls may be single stacked. Shall be placed perpendicular to the main and marriage line and parallel at the perimeter wall. Shall be placed perpendicular to the joint of (2) 8"x16" nominal size concrete pad. Shall be used for loads not to exceed 5,000 lbs. Single and double piers may be combined for higher loads.
      3. Double Stack – block piers over 36" high under the main frame and marriage line, and over 48" high under the perimeter walls, shall be double stacked with blocks interlocking. Block piers more than 60" in height must be constructed of concrete, cinder or pumice block laid in mortar with ½" reinforcing steel bars inserted vertically and the cell of the blocks poured solid with concrete.
      Shall be used for loads not to exceed 16,000 lbs. Double & single piers may be combined for higher loads.
      4. Max. height 80" unless designed by a Nevada Registered Professional Engineer.

b. Block Pier Caps (Figures 304.1, 304.2, 304.3)
    1. Pre-cast block – a solid concrete block with a nominal thickness 4".
    2. Lumber – (1) 2" nominally thick #2 or better grade lumber
    3. Polymer – (1) 2" nominally thick wood polymer composite
    4. Other – Listed or equivalent materials approved by Manufactured Housing.

c. Block Pier Shims (Figures 304.1, 304.2, 304.3)
    1. Precast concrete – 2" thick solid concrete blocks equal in area to the pier cap
    2. Plywood – ¾" or thicker plywood equal in area to the pier cap
    3. Lumber – 2" nominally thick #2 or better grade lumber not less than 5 ½" in width and 16" long
    4. Polymer – 1 ¼" min. thickness wood polymer not less than 5 ½" in width and 16" long
    5. Other – listed or equivalent materials approved by Manufactured Housing.

2. Prefabricated Piers (Figure 304.4)
    a. Shall be placed on approved footings. They shall not exceed the size of the footing and shall be used in a manner consistent with its listing.
    b. All prefabricated piers shall be tested and listed to be used as 4,000 lbs.
    c. The installation of piers shall be in compliance with pier manufacturer's instructions, which shall be present at the time of inspection.
    d. No shims shall be used with prefabricated piers
    e. All piers shall be of the type fitting with an adjustable head and nut. The adjustment shall not exceed that permitted by the manufacturer's instructions.
    f. The heads of prefabricated piers shall alternate at the frame support.

J. Marriage line rim joist supports shall be located along the entire length of the marriage line 8' o.c.

K. A house with a deck/porch area shall have a separation barrier between the house crawl space and the deck area (if open decking). This barrier shall be skirting, a foundation, or a durable flexible material such as sheet vinyl, Plexiglas, Fiberglass, ABS, or EPDM. The area below an open floor may be enclosed with lattice work, skirting, or a foundation wall if made accessible. A vapor barrier shall not be placed in these areas.

L. Each section shall be secured at site to immobilize each section. Interior spaces must be protected from damage. All loads transferred adequately to the ground.

M. Gaps greater than ½" – the fastener length must be increased. Do not attempt to reduce gap by tensioning the lag screws.

N. Gaps greater than 1 ½" must be corrected by the manufacturer.

O. Ridge Beam Connection (Figure 308)
    1. With 3/8" diameter lag screws with full penetration through the ridge beams, with washers, and spaced equally along the length of the ridge beam at a maximum of 24" on center and no more than 45 degrees from perpendicular. Lag screws will be installed on both sides of the beam offset approximately ½ the spacing from each other. All ridge beam lag screws shall be installed in an area where there is solid ridge beam material between the manufactured home sections. Ridge beams shall be predrilled for lag screws.
    2. With a connection system other than lag bolts which may be engineered by the manufacturer who shall supply the dealer and installer with complete installation instructions. The instructions shall be in the manufactured home at the time of inspection and the ridge beam shall be tagged to indicate an alternate system is required.

8. Floor Connections (Multi-Section Homes)(Figure 308)
   A. For homes with a single rim joist use 3/8" diameter by 6" long lag screws with washers installed diagonally at 45 degrees or less through each section's rim joists installed in pairs or staggered, but not exceeding a max. spacing of 24" o.c.
   B. For homes with a double rim joist use 3/8" diameter by 8" long lag screws with washers installed diagonally at 45 degrees or less through each section's rim joists installed in pairs or staggered, but not exceeding a max. spacing of 24" o.c.
   C. With a connection system installed with the manufacturer's installed mating devices bolted together with appropriately sized bolts and washers.
9. End Wall and Interior Wall Connections (Figure 308)
   A. All end wall studs and interior wall column supports shall be screwed together with 4" long #8 screws long enough to have a minimum of 1 ½" penetration into the receiving member spaced 16" o.c.
10. Lag Screws
   A. Whenever lag screws are used ¼" pilot holes shall first be drilled. The screws shall be installed so as to provide full penetration of the lag screw into both beams or joists
11. Sealing
   A. During installation, joints between all sections shall be cleaned.
   B. Where gaps exceed ½" top or bottom it shall be filled with a shim. (Maximum gap – 1 ½")
   C. The joints shall be sealed with a weather stripping gasket material to limit heat loss and prevent air, moisture and other damaging infiltration. The gasket material shall be durable, non-porous caulking, closed cell foam, urethane, or sill seal. If the manufacturer supplies a sealer, the installer shall use it. Caulking when used, shall fill the gap and be capable of compressing and stretching. Sill seal, if used, shall be a minimum of 5 ½" wide and attached with fasteners staggered at 6" o.c. and compressed to form a tight seal. Any remaining gaps shall be caulked or foamed to complete the seal.
12. Patching
   A. All cuts, holes, or tears in the bottom board (rolled plastic material) or floor insulation including, but not limited to, area around structural connections and electrical, plumbing, mechanical, and heating equipment penetrations shall be adequately repaired to prevent the entrance of rodents and to limit heat loss. Repairs shall be made with materials and adhesives designed for this use.

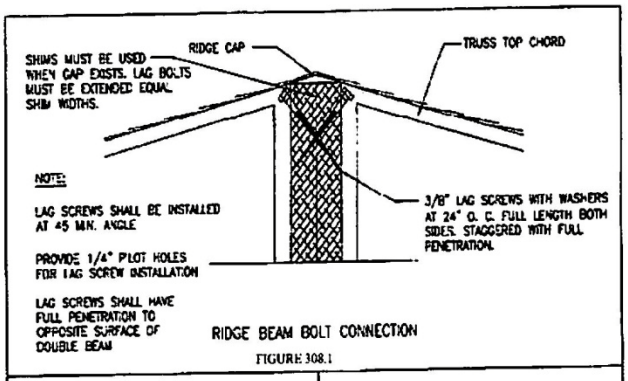
MARRIAGE LINE FOOTING SIZES

TABLE 307

Footing Size(inches)	Capacity (pounds)	Footing Size (inches)	Capacity (pounds)
15x15	2,500	29x29	8,500
17x17	3,000	30x30	9,000
18x18	3,500	31x31	10,000
20x20	4,000	32x32	11,000
21x21	4,500	34x34	12,000
22x22	5,000	35x35	13,000
23x23	5,500	37x37	14,000
24x24	6,000	38x38	15,000
25x25	6,500	39x39	16,000
26x26	7,000	40x40	17,000
27x27	7,500	42x42	18,000
28x28	8,000	43x43	19,000

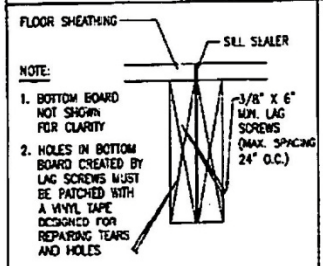
The footing sizes shown are for square pads and are based on the area (square inches) required for the load. Other footing configurations, such as a rectangular configuration, may be used provided the area (square inches) is equal to or greater than the area of the square footing shown in the table. For example a 12”x12” (264 square inch) footing may be used in place of a 16”x16” (256 square inch) footing. Also two 12”x24” pads may be used in place of one 24”x24” pad

FIGURE 308



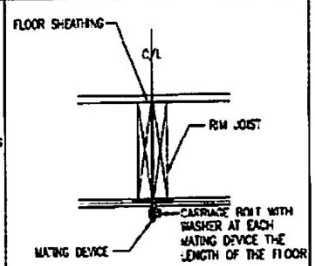
RIDGE BEAM BOLT CONNECTION

FIGURE 308.1



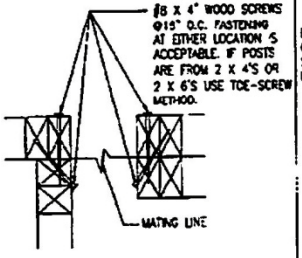
FLOOR CONNECTION W/ LAG SCREW

FIGURE 308.2



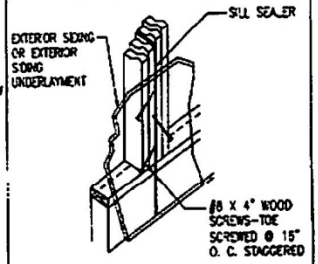
FLOOR CONNECTION W/ CLIPS

FIGURE 308.3



INTERIOR WALL CONNECTIONS

FIGURE 308.4



END WALL CONNECTIONS

FIGURE 308.5

13. Ground Anchor Systems (Figures 309 & 310)
    A. Before placing MH set any anhors necessary to the set-up.
    B. Anchoring must be installed on all MH's to resist lateral movement from wind and earthquakes.
    C. Anchor shall be capable of resisting 4725 lbs without failure. All anchors shall be a listed approved product and insalled to this manual and manufacturer's instructions.
    D. The anchors shall be approved for the soil where anchors are to be installed. Generally figure tie downs for soil class 4A which will require an auger with a stabilzer plate and use a soil test probe to determine the soil classification.
    E. Anchors must be installed to full depth with stablizer plates. The anchor must extend below the frost line.
    F. Tie down strapping shall be fastened to anchors and drawn down tight with adjustable tension devices. Straps must be capable of resisting 3150 lbs working load. Cable is not permitted as a tie down strap.
    G. Ties shall connect the ancor to the main frame I-beams that run lengthwise under the manufactured home. Ties shall not connect to steel outrigger or cross member beams that fasten to, and intersect with, the main frame I-beams. If the ties are attached to the bottom flange of the main chassis beam the frame must be designed to prevent rotation of the beam.
    H. Ties must be designed to prevent self disconnect when ties are slack. Use frame tie with buckle. Open hooks shall not be used. The buckle shall be placed on the inside of the frame. A method must be used for protecting vertical and diagonal strapping at sharp corners by use of radius clips or other means.
    I. A tie down anchor with strapping must be installed on both sides of the MH with max. spacing of 11' o.c. for homes installed on piers with a maximum of 60" in height and not more than 2' from each end. For homes installed with piers greater than 60" the tie down system must be designed by a Nevada Registered Engineer.
    J. Cross drive anchors are not permitted unless installed in solid bedrock or approved by the manufacturer for our soil
    K. Longitudinal Anchor (Figure 310)
        1. Each home being installed must be installed with an anchoring device designed to resist longitudinal (lengthwise) movement. Any device used must be tested and listed for the specific use and installed to the device's manufacturer's instructions. If the number of devices to be used is not mentioned or is unclear, a minimum of one device for each direction per chassis main beam must be used. This could require 8 anchor devices. Follow the manufacturer's instructions.
    L If sidewall, over-the-roof, mate line or shear wall straps are installed on the home, they must be connected to an anchoring assembly.
    M. Each anchor shall be provided with protections against weather deterioration and corrison at least equivalent to that provided by a coating of zinc on steel on not less than 3.302 oz/sf ft of surface coat.
    N. Check for underground utilities before installing anchors.
    O. Alternate anchoring systems may be used when approved by Manufactured Housing.
        1. Oliver Technology Systems
        2. Tie Down Engineering Xi2 System

FIGURE 309
Ground Anchor System

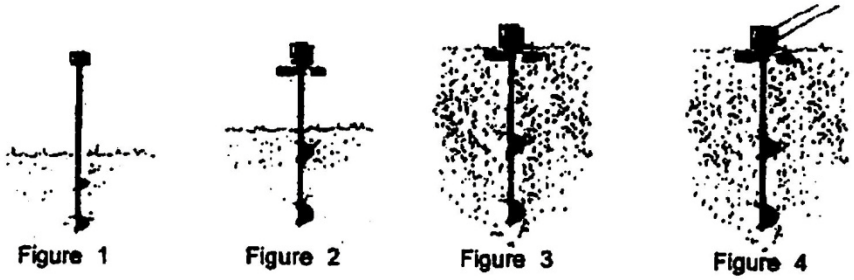
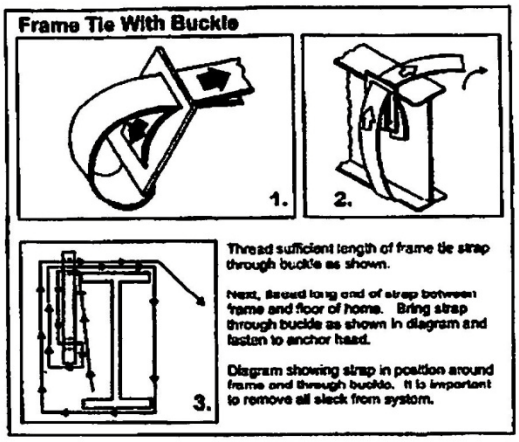


Figure 1 Figure 2 Figure 3 Figure 4

1. Auger tie downs with stabilizer plates are required.
2. Anchor shall be capable of resisting 4725 lbs without failure.
3. Tie down strapping must be capable of resisting 3150 lbs working load.
4. Ties shall attach to frames that run lengthwise under the home.
5. Ties must be designed to prevent self disconnection when ties are slack. Open hooks shall not be used.
6. A tie down anchor shall be installed on each side of the MH with max. spacing of 11' o.c. and no more than 2' from each end.
7. Cross drive anchors are not permitted unless installed in solid bedrock or approved by the manufacturer for our soil type.
8. Buckle on the strap shall be located on the inside of the frame.



2.

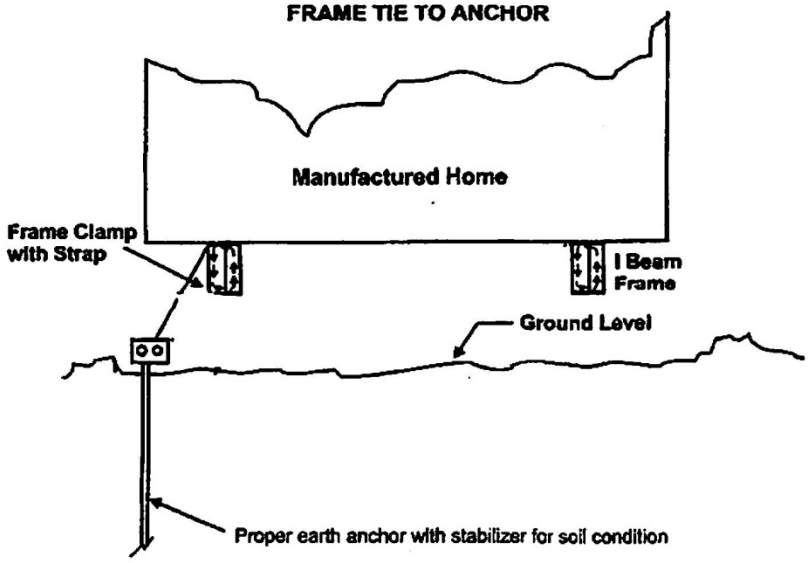
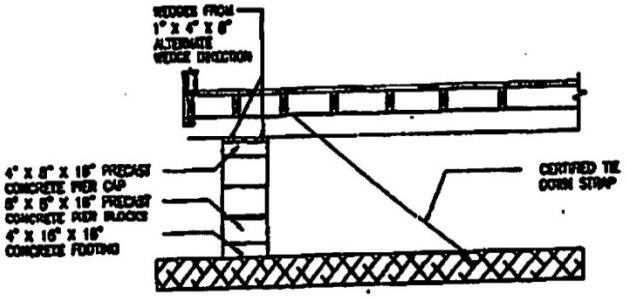
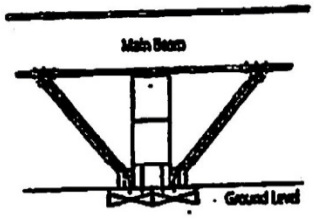


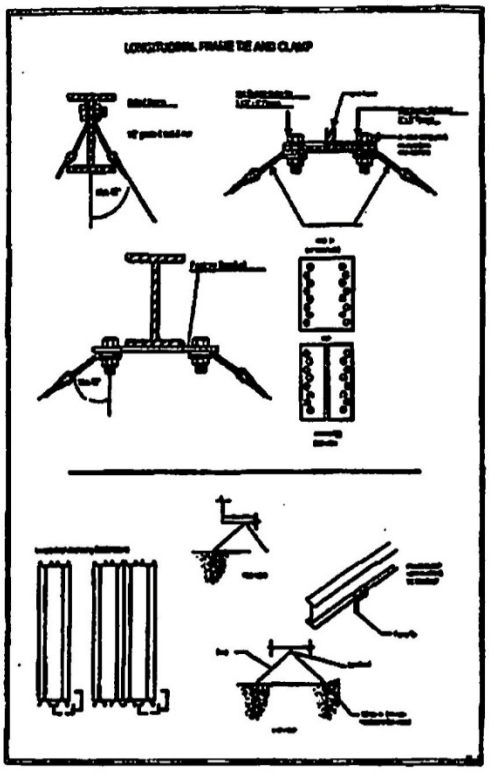
FIGURE 310
EXAMPLES OF LONGITUDINAL ANCHORS



LONGITUDINAL TIE DOWN STRAP (at each corner)

l. Each home being installed must be installed and an anchoring device to resist longitudinal (lengthwise) movement. Any device used must be tested and listed for this specific use and installed to the devices manufacturer's instructions. If the number of devices to be used is not mentioned or is unclear, a minimum of one device for each direction per chassis main beam must be used.





14. Flood Resistance
    A. You may request information on flood resistance if applicable.
15. Egress
    A. Each required egress door shall be accessible by stairs, ramp or deck equipped with stairs or ramp. See attached stair detail (Figures 313A-313D). Steps shall be rot resistant and structurally sound.
    B. Windows and doors shall be adjusted, secured in place, and made operational to provide security, egress, and to minimize air leakage and water penetration.
    C. Damage to windows and doors, which affect their safety features, thermal performance, or operation shall be repaired or replaced.
    D. there shall be a minimum of (2) exit doors from each house. Each bedroom shall have one emergency egress window providing access to the outside.
16. Electrical Systems (See Figures)

All electrical installations shall comply with the most current adopted National Electrical Code, Humboldt County and City of Winnemucca Ordinances and Nevada Revised Statue requirements from Manufactured Housing Division.

    A. Burial Depth—18" of installed in approved electrical conduit; 24" if not installed in conduit;24" if installed under a driveway. Electrical wire shall be approved for below grade installations.
    B. Grounding:
        1. All metal parts of a MH must be grounded by connection to the grounding bus of the distribution panel board in the MH.
            a. The ground bus must be grounded through the green-insulated conductor in the supply cord or feeder wiring to the service ground in the service entrance equipment or, if the bus cannot be properly grounded to the service entrance, it must be connected to a properly installed grounding rod which is at least 8 feet long.
            b. The frame of the MH and the frames of appliances may not be connected to the neutral conductor of the power supply of the MH.
        2. Ground conductor must be #6 copper wire or equivalent.
        3. The chassis shall be bonded by installing a #8 conductor between multi-sections.
    C. Service (Figures 312A-312C)
        1. The service entrance cable ma be run underground or overhead depending on the MH manufacturer's design.
        2. The meter electrical service must be consistent with the MH requirements. The applicant should install a service adequate for the load of the MH and any other buildings (existing and future).
            a. Whenever the load of the electrical system of the MH is more than 50 amps, a flexible metal conduit may be used for above ground raceway; not portion of the flexible conduit may be buried.
            b. Whenever the load of the electrical system of the MH is less than 50 amps a flexible supply cord of molded butyl rubber approved by a testing laboratory may be used.
            c. A (4) wire system conductor system is required for the feeder to the MH.
            d. MH service equipment shall be located with site and **note more than 30 feet from the exterior wall of the MH it serves** and is not less than that required for service equipment. The service or subpanel may not be installed/attached to the MH.
            e. Outdoor MH disconnecting means shall be installed so the bottom of the enclosure containing the disconnecting means is not less than 2 feet above finished grade. This disconnecting means shall be so installed that the center of the grip of the operating handle, when in its highest position, will not be more than 6 1/2' above finished grade. NEC Article 550-23(3).
            f. Electrical conduit shall be strapped or supported under the house 6' o.c.

g. If flexible metal conduit is installed it shall be placed 6” above grade and grounded per Manufactured Housing’s requirements.

h. All electrical boxes are required to have clearance of 24” from bottom of box to finished grade. NV Energy’s requirement for meter height is a minimum of 48”, maximum of 75” from the middle of the meter socket.

D. Electrical Continuity Test

1. A multi-test is required for this test. The multi-tester shall be set to ohms. The set-up person shall run the test as the inspector witnesses test results. Run the test before calling for inspection to verify test will pass at final inspection.
2. Before conducting the continuity test and mega ohm meter test, the outside main circuit breaker which controls electrical power to the MH must be in the off position and the neutral or white wire must be disconnected in the MH.
3. The continuity test must be made with all interior branch circuit switches, circuit breakers and switches controlling individual outlets, fixtures and appliances in the “on” position. The test must be made by connecting one lead of the test meter to the grounding conductor of the MH at the point of supply to the feeder assembly and applying the other lead to each of the supply conductors, including the neutral conductor. There must be no evidence of a connection between any supply conductor and the grounding conductor (neutral). In addition, each non-current-carrying metal part of coach, including fixtures and appliances, must be tested to determine continuity between the part and the equipment grounding conductor.
4. If the home has been rewired additional electrical tests may be required.

E. Smoke Detectors

1. Smoke detectors must be functionally tested in accordance with applicable requirements of the smoke alarm manufacturer.

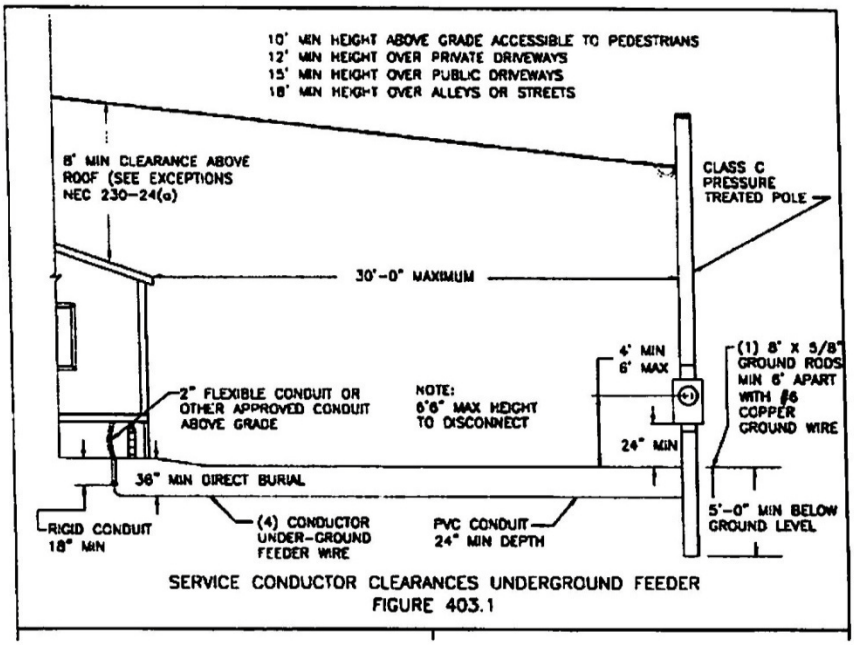
F. Generator or Other Alternative Sources

1. Wiring is required to be installed to the National Electric Code and set-up manual requirements. Sizing of alternative power sources shall provide adequate amperage to the house as required by the rating of the house.
2. All wiring shall be permanent.
3. Generator & batteries are required to be placed in an approved outbuilding.

G. Temporary Electric

1. A temporary electric permit shall be obtained for connection of power prior to MH final. There are restrictions to this requirement.(See temporary electric agreement)

FIGURE 311 - ELECTRICAL



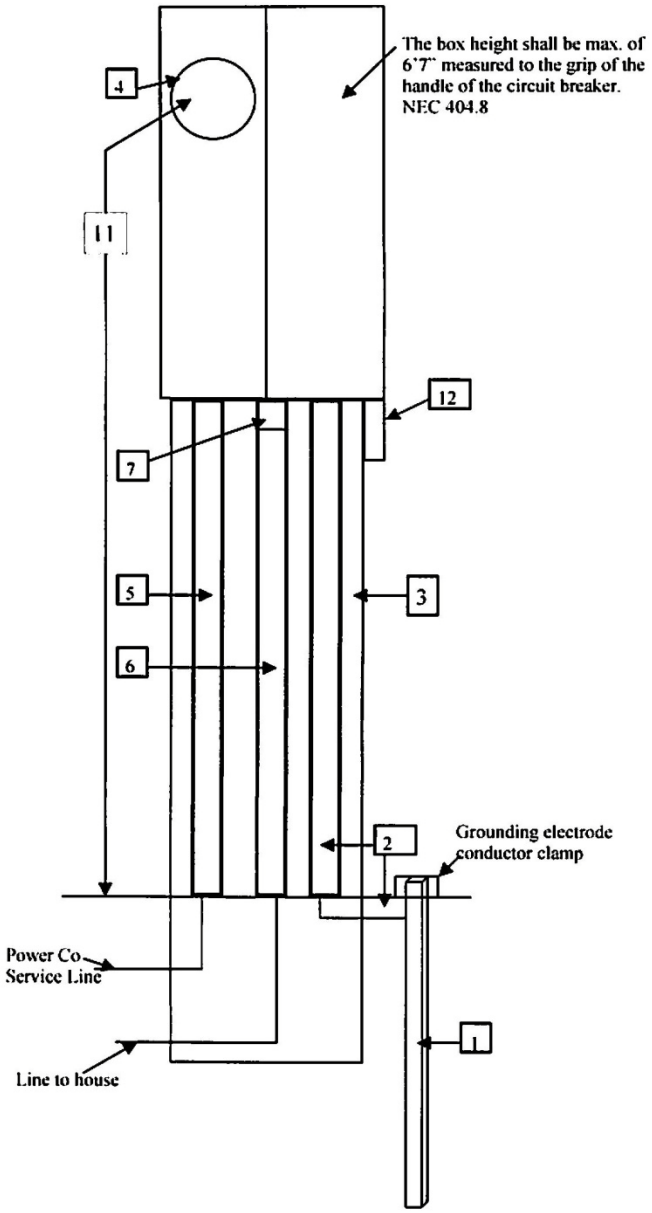
SERVICE CONDUCTOR CLEARANCES UNDERGROUND FEEDER
FIGURE 403.1

Table 401
Service Conductor & Grounding Electrode Conductor Size

CONDUCTOR TYPES AND SIZES -- THHN, THHW, THW, THWN, USE, XHHW, THW-2, THWN-2, XHHW-2, SE, USE-2		ALLOWABLE AMPACITY	MINIMUM GROUNDING ELECTRODE CONDUCTOR SIZE	
Copper (AWG)	Aluminum and copper clad aluminum (AWG)	Maximum load (amps)	Copper (AWG)	Aluminum (AWG)
4	2	100	8	6
3	1	110	8	6
2	1/0	125	8	6
1	2/0	150	6	4
1/0	3/0	175	6	4
2/0	4/0	200	4	2

FIGURE 312A

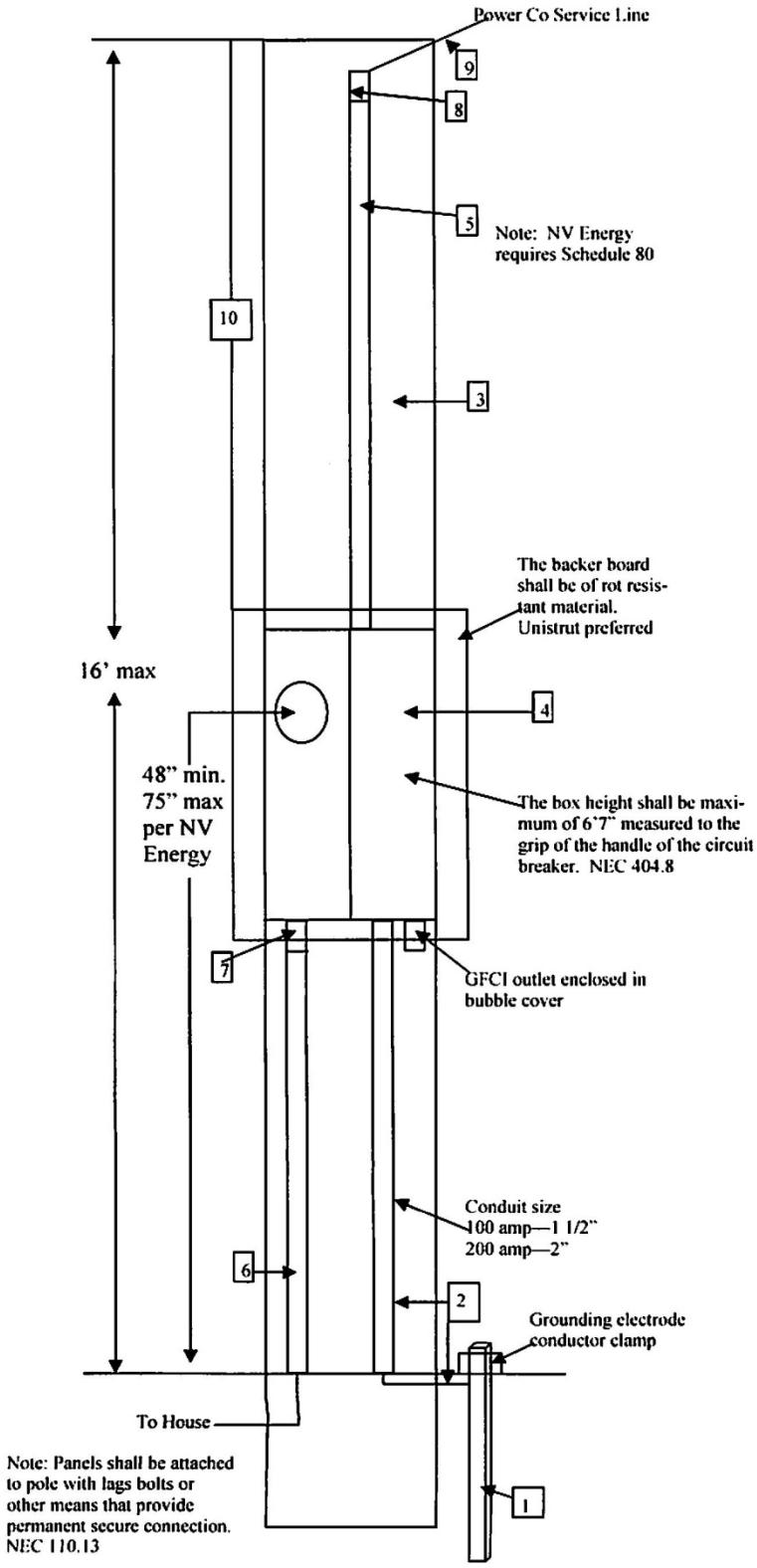
UNDERGROUND ELECTRICAL SERVICE HANDOUT



1. Ground Electrode Conductor may be:
   a. Rods of iron or steel or stainless steel at least 5/8" in diameter
   b. Rods of listed nonferrous metal (copper or copper clad) not less than 1/2" diameter
   c. Pipe or conduit not less than 3/4" trade size & where of iron or steel shall have the outer surface galvanized or otherwise metal coated for corrosion protection
   d. The electrode shall be installed such that at least 8' of length is in contact with the soil. NEC, Section 250-52 A(5)
   e. The grounding electrode conductor clamp shall be installed above ground
2. Grounding Electrode Conductor—Bare #6 copper for 100 amp service. Bare #4 copper for 200 amp service. NEC Table 250.66.
   Shall be secured in an approved manner & connected to ground rod. If using metal conduit enclosure see attached for bonding of conduit.
3. Wood pole—6x6 square pressure treated
4. Meter base—(socket) with main disconnect breaker NEC 230.70. General means shall be provided to disconnect all conductors in a building or structure from the service entrance conductors. The disconnect shall be an external disconnect in stalled immediately adjacent to the meter locations. Switch boards and panels shall comply with NEC. Article 408.
5. Service conduit Schedule 80 sunlight resistant PVC (8' long min) Size conduit per wire size installed. Secure conduit to pole.
6. Load side conduit. Schedule 80 sunlight resistant PVC . Size conduit per wire size.
7. Conduit access fitting (optional). Install approved fittings and bushings.
8. Electrical lines burial depth
   a. Direct burial cables—24"
   b. Rigid metal conduit—6"
   c. Intermediate metal conduit-6"
   d. Rigid nonmetallic conduit (Sunlight resistant PVC) approved for direct burial—18"
   e. All wiring installed in conduit shall be ap proved for underground or wet location.
9. If a backer board is used it shall be of rot resistant material. Unistrut preferred
10. Panels shall be attached to the pole with lag bolts or other means that provide a permanently secured connection. NEC 110.13
11. NV Energy requires 48" from the ground to the center of the meter socket.
12. For temporary electric for construction purposes a GFCI outlet or circuit breaker shall be installed & wired appropriately. Receptacles used in wet locations outdoors will be required to have an enclosure that is weatherproof and remains so even when plug is inserted. (Bubble covers required). NEC 406.8(B)
13. Contact the local power company for specific utility company requirements. Commercial equipment is required to be preapproved by the power company.
    NV Energy—(800)962-0399
    Harney Electric—(775)272-3336

1/14

FIGURE 312B



1. Ground Electrode Conductor may be:
   a. Rods of iron or steel or stainless steel at least 5/8" in diameter
   b. Rods of listed nonferrous metal(copper or copper clad) not less than 1/2" diameter.
   c. Pipe or conduit not less than 3/4" trade size & where of iron or steel shall have the outer surface galvanized or otherwise metal coated for corrosion protection.
   d. The electrode shall be installed such that at least 8' of length is in contact with soil. NEC 205.52.A(5)
   e. Grounding electrode conductor clamp shall be installed above grade.
2. Grounding Electrode Conductor—Bare #6 copper for 100 amp service. Bar #4 copper for 200 amp service. NEC Table 250.66
   Shall be secured in an approved manner & connected to ground rod.
3. Wood pole-must be 6"x6" square or 6" diameter round at the top & 10" diameter round at the bottom. Rot treated by pressure method

Pole Length(Ft)	Depth(ft)
25	4 1/2
30	5
35	5 1/2
40	6

4. Meter base-(socket) with main disconnect breaker (NEC 230.70). General means shall be provided to disconnect all conductors in a building or structure from the service entrance conductors. The disconnect shall be an external disconnect installed immediately adjacent to the meter locations.
   Switch boards and panels shall comply with NEC Article 408
5. Service conduit Schedule 80 sunlight resistant PVC (8' long min). Size conduit per wire size installed. Secure conduit to pole @ 30' o.c.
6. Load side conduit. Schedule 80 sunlight resistant PVC. NEC 300.50. Size conduit per wire size.
7. Conduit access fitting (optional). Install approved fittings and bushings.
8. Service cables shall be equipped with rain tight service head. NEC 230.54
9. Insulated wire of appropriate size (leave 16" out of weatherhead for drop loop by Power Co)
10. Clearances
    a. 10' at the electric service entrance to buildings, also at the lowest point of the drip loop of the building electric entrance and above areas or side walks where voltage does not exceed 150 volts to ground.
    b. 12' over residential property and driveways where the voltage does not exceed 300 volts to ground.
    c. 15' over residential properties and driveways where the voltage exceeds 300 volts.
    d. 18' over public streets, alleys, roads, parking areas subject to truck traffic, driveways on other than residential properties.
    e. Conductors shall have a vertical clearance of not less than 8' above roof surfaces. NEC 203.24(a) (b)
11. Contact the local power company for specific utility company requirements. Commercial equipment is required to be preapproved by power company.

17. Gas System Installation

The following component items are required for a gas system

A. A flexible MH connector between supply and MH.

B. When the distance between the supply and the MH exceeds 6" approved gas pipe must be used and buried. All buried pipe must have an approved factory coating and joints wrapped with approved material and is required to be inspected prior to burial.

1. Burial Depth

a. Horizontal metallic piping – 12"

b. Plastic gas piping – 18"

C. An approved shut-off valve within 6' or the MH. May not be under the MH.

D. The supply inlet to the MH must project 3" to 6" beyond the exterior wall of the MH. It is recommended that the gas line stub out at the house be 3' from any openings (windows, doors, crawl space, vents etc.) and electrical panels or fixtures. Gas pipe shall not be buried under the house.

E. Gas flexible connectors or an approved listed disconnect device shall be installed where a gas line crosses the marriage line as required by the manufacturer or the State Manufactured Housing Division.

F. Gas line shall be strapped or supported 4' o.c.

G. All gas piping shall be sized appropriately for the appliances they serve and the pipe length. The size of the main supply line installed by the factory shall be maintained and not reduced. The Building Department can assist with sizing of the pipe.

H. Testing the gas line – the person responsible for the set-up shall:
Provide a manometer test or PSI gauge for a period of not less than 10 minutes.

a. Manometer test – pressurized to at least 10" but not more than 14"

b. Pressure gauge shall be calibrated so as to be read in increments of not greater than 1/10 lb and be pressurized to at least 3 lbs but not more than 10 lbs.

c. The shut off valves for each appliance shall be in the open position.

d. The test must be on and pressurized and the inspector shall witness the test.

I. Contact your gas provider for their requirements.

18. Water System

A. Water line burial depth—36"

B. All MH's must be connected to a domestic well or approved water system by flexible tubing (copper or plastic) properly protected against freezing.

C. The water inlet shall be connected to the site water supply by an approved connector not less than ¾" nominal diameter.

D. The water line shall transition to an approved pipe outside of the foundation or exterior wall of the MH.

E. A water shut-off valve shall be provided to frost line and on the exterior of the house at the water line transition area.

F. Water line shall be strapped or supported 3' o.c.(approved strapping)

G. Testing Procedures

1. The water system shall be inspected and tested for leaks after completion at the site. A running water test is required. Water is required to run 3 minutes

19. Sewage Collection System

A. All MH's must be connected to an approved sewage disposal system.

B. Septic system installation shall be completed and inspected before a final inspection, is requested or performed on the MH.

C. Locate your septic system before placing your MH. A minimum of 8 feet is required to the nearest portion of the septic tank.

D. Transition sewer to ABS or approved pipe outside the foundation or exterior wall.

E. Pipe must have nominal 3" inside diameter, of a material that is semi-rigid (not less than schedule 40 ABS plastic)

F. The system must slope at the rate of not less than ¼" per foot.

G. The connection to the disposal system must be sealed in an adequate approved manner. A 3" coupler is required at the connection.
H. Adequate accessible clean-outs shall be provided outside the wall of MH and underneath as needed.
I. Sewer line shall be strapped or supported 4' o.c. (approved strapping)
J. Burial depth
    1. 12" minimum cover
    2. If sewer line crosses the water line the sewer line shall be sleeved 5' on each side or cross over (total 10')
K. Testing procedures
    1. The drainage system must be inspected and tested for leaks after completion at the site. A running water test is required. Water is required to run 3 minutes.
L. No sewer pipe shall be permitted outside of the building above ground except for the clean-out.

20. Furnaces, Water Heaters, Dryers
    A. All MH's must be provided with a permanent heat source at the time of inspection. Gas furnaces and water heaters must be listed for installation in a MH.
    B. All appliance compartments must be sheetrocked with 3/8" type "X" gypsum board. All joints or seams in the gypsum board must be filled or sealed. May used 18 gauge steel if sheetrock cannot be installed.
    C. Condensate drain must be terminated outside the MH.
    D. All heating ducts shall be installed at the time of inspection. The ducts shall be supported and not rest on the ground or concrete. Ducts must be insulated to R-8. All ducts shall be attached to collar with screws and wide foil tape or equivalent.
    E. Hot water heaters shall be checked for the following:
        1. Adequate combustion air inlet (See manufacturer's instructions or notes on tank)(Gas only)
        2. Properly installed flue vent pipe flashed through roof. (Gas only)
        3. Shut-of valve on end of gas supply line.
        4. The overflow pipe from the pressure relief valve shall be piped to the outside through the skirting or foundation wall and a turndown elbow installed. Minimum ¾" required. Install CPVC, copper or galvanized for overflow pipe.
        5. Water heater shall be MH approved.
        6. Sealed combustion/direct vent water heaters are required in interior locations.
        7. Protect from freezing.
        8. Strapped in 2 places to prevent movement.
        9. The water heater enclosure shall be firestopped with sheetrock and floor structurally sound. All joints must be taped.
    F. All dryer vents shall be exhausted to the outside of the MH. The dryer duct shall be rigid metal listed for the use. A maximum of 25 feet with 2 elbows is permitted. Support max. 4' o.c.
    G. A separate permit may be required if AC units are not installed at the time of the final.
    H. Gas logs are not permitted to be installed in a MH.

21. Skirting (Shall be completed at MH final)
    A. Minimum of an R-8 insulated skirting is required.
    B. Skirting shall be constructed of a durable rigid material such as vinyl, wood, aluminum, or steel and shall be suitable for exterior exposure. Untreated wood shall not be utilized within 6" of the ground.
    C. Skirting shall be installed according to the skirting manufacturer's installation instructions and this subsection.
    D. Skirting shall be adequately secured to assure stability, to minimize vibration, and to minimize susceptibility to wind damage.
    E. Skirting shall be installed to compensate for possible frost heave.
    F. Holes or gaps between the skirting and the ground, or any other gap anywhere around the skirting that could permit rodents to get under the home, shall be sealed or backfilled.

G. Skirting shall not be attached to a manufactured home in a manner that will permit water to be trapped between the skirting and the siding or between the skirting and trim of the manufactured home.

H. All framing used to secure skirting material and located within 6" of earth shall be pressure treated lumber.

I. Provide a crawl space access. Recommend a minimum of 24"x24" in opening.

J. A minimum grade of 5% shall be provided away from the MH and shall be maintained.

K. Skirting shall not be backfilled against.

L. Provide underfloor venting in skirting.

23. Under Floor Ventilation – Skirting only. See foundation handout for requirements when house is placed on perimeter foundation.

A. Provide ventilation to the crawl space (1 sq. ft. for each 150 sq. ft. of under floor area)

B. A ventilation opening shall be placed 3' from each corner. Vents shall not be spaced more than 10' apart. Vents shall be placed as high as practical.

C. Ventilation openings shall be provided with ¼" corrosion resistant wire mesh or with louvered openings with not less than 1/8" screen to retard the entry of vegetation, waste materials, and rodents.

D. A minimum of 8 ventilation openings is required on any house.

E. In areas subject to freezing, the coverings for the ventilation openings must also be of the adjustable type, permitting them to be in the open or closed position, depending on the climatic conditions.

24. Under Floor Access

A. Skirting Access:
   1. Minimum clear opening of 24"x24".
   2. Require no tools, nor more than 5 lbs of force; nor the operation of more than four devices to open.
   3. Be easily identifiable
   4. Have a minimum of 30" clear space directly in front, outside the perimeter of the home, of each access panel or door.

B. Foundation Access:
   1. Minimum inside dimension of 24"hx36" w and extend at least 24" from the perimeter of the home.
   2. The access well shall have a minimum clear opening of 24" x24" to the underside of the home.
   3. The access well shall have a lightweight removable watertight/rot resistant cover made to resist the entrance of animals or water. The cover shall be designed and installed so that it cannot be locked. The cover shall be designed and installed so that it can be easily opened without using any tools.
   4. Access opening may be placed on the marriage line if adequate headers support end wall within 6" of end. Headers must be on edge min. 4x6; supported at both ends by piers or blocks. The header shall not encroach into the 24"x24" min. clear opening.

25. Porch/Deck areas – separation is required whether on a foundation or regular block set must be provided with a separation/barrier between the house crawl space and the porch. The barrier must be minimum 12" in height and of the following material skirting, a foundation, or a durable flexible material such as sheet vinyl, Plexiglas, Fiberglass, ABS, or EPDM.

26. Domestic Wells for Residential Use Only

A. A contactor licensed by the State Contractors Board and Water Resources will file intent to drill and submit well logs to Water Resources to comply with Nevada Revised Statue regulations. One dwelling is allowed for each domestic well.

27. Steps & Landings (Figure 314A-314D)
    A. Steps with adequate landings and handrails shall be provided at all man doors (including french doors and sliding glass doors)
    B. If the factory installs a deck or porch and this area is over 30” above finished grade a guardrail conforming to code requirements shall be installed.

FIGURE 314A
RESIDENTIAL EXTERIOR STAIR
IRC SECTIONS R311 & R312

1. Stairways and landings shall be not less than 36" wide and 36" in depth (36"x36")
2. Landing width equal to the width of the door. Shall not be more than 1 1/2" lower than the top of the threshold.
3. Stairway risers shall be a maximum of 7 3/4" high. The greater rise shall not exceed the smallest by more than 3/8".
4. Stairway treads shall be a minimum of 10" wide measured horizontally between the vertical planes of the foremost projection of adjacent treads and at a right angle to the treads leading edge. When tread depth is less than 11", a nosing not less than 3/4" but not more than 1 1/4" shall be provided on the stairways with solid risers with no more than 3/8" deviation of projections including the nosing at the level of floors and landings. Bevel of nosing shall not exceed 1/2". Recommend you have a tread depth of 11" to avoid nosing requirement.
5. Stairway Handrails
   a. Handrails shall be provided on at least one side of each continuous run of tread or flight with 4 or more risers.
   b. Handrail height, measured vertically from the sloped plan adjoining the tread nosing shall not be less than 34" and not more than 38".
   c. Handrails shall be continuous for the full length of the flight to a point directly above the lowest riser of the flight. Handrail ends shall be returned or shall terminate in newel posts or safety terminals.
   d. Handrails shall not project more than 4 1/2" on either side of the stairway. Stairways with one hand rail shall not be less than 31 1/2" in width.
6. The walking surface of treads and landings of stairways shall be sloped no steeper than one unit vertical in 48" horizontal.
7. Stair construction shall have a rot resistant base and structurally sound.

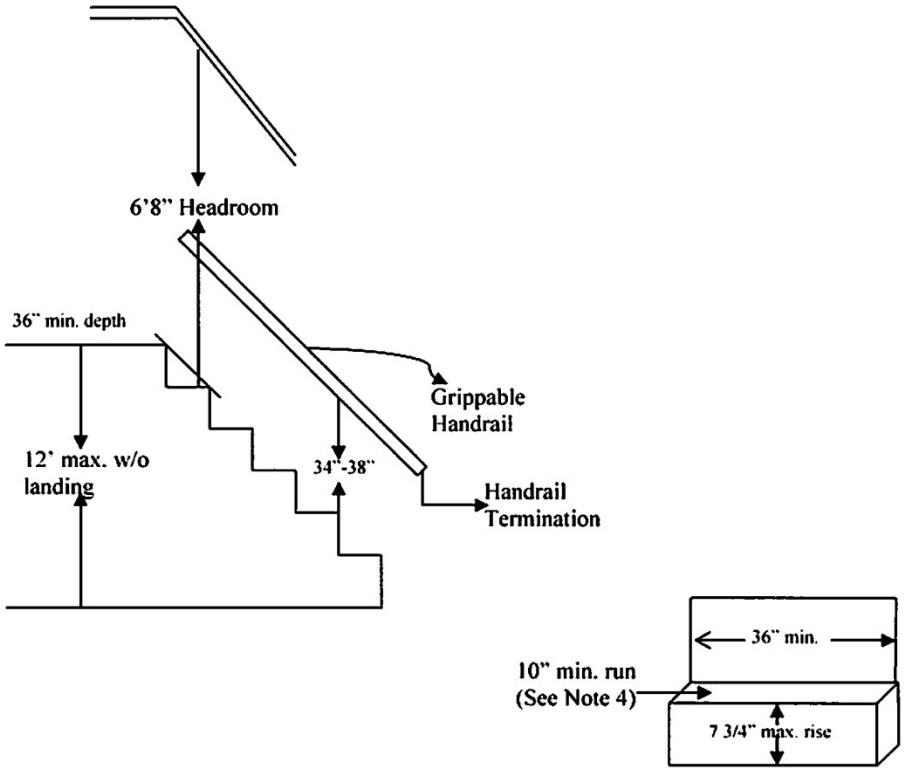
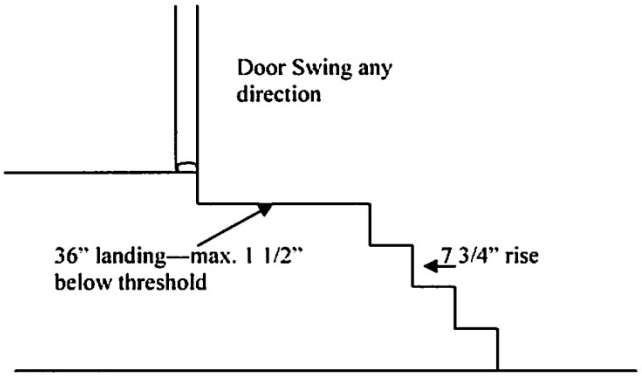


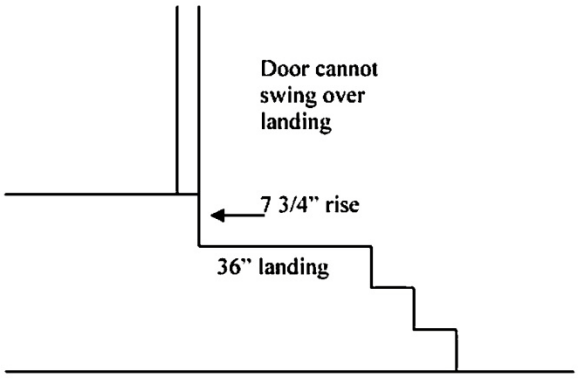
FIGURE 314B
LANDINGS AT DOORS

There shall be a floor or landing on each side of each exterior door. Landings are to be the width of the door and 36" in the direction of travel (typically a 36"x36" landing). Landings shall be located as follows:

1. Note more than 1.5" lower than the top of the threshold of the door.



2. **Exception:** If the door does **not** swing over the landing, the landing may be located not more than 7 3/4" lower than the top of the threshold of the door



3. **Exception:** On doors other than the required exit, where there are **no more** than to risers and one intermediate tread, a landing is not required. Usually the front door is the required exit, therefore, you could not use this exception on the front door.

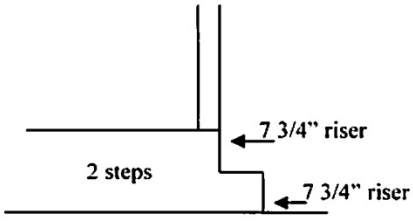
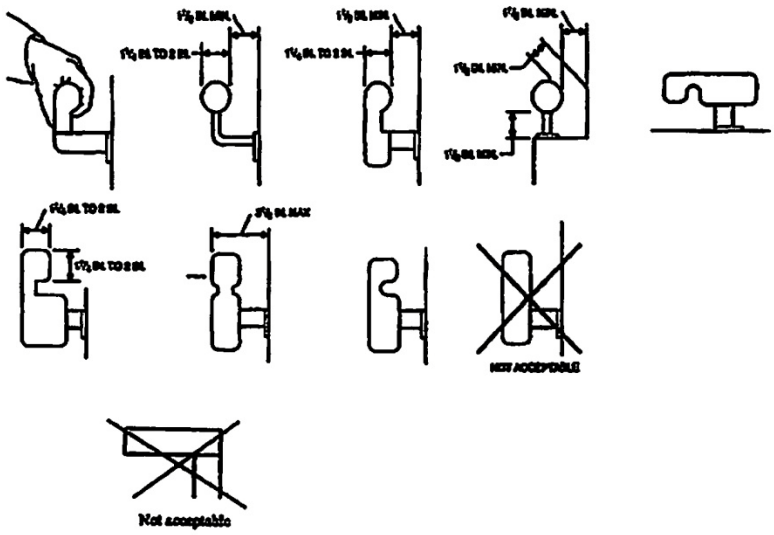


FIGURE 314C
HANDRAIL GRIP SIZE
IRC SECTION R311.5.6.3

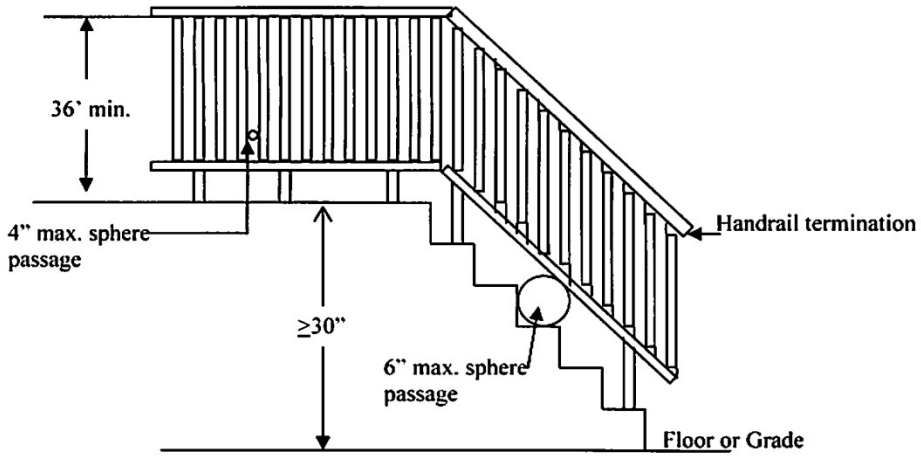


Handgrip Size

a. Type 1. Handrails with a circular cross section shall have an outside diameter of at least 1 1/4" and not greater than 2". If the handrail is not circular it shall have a perimeter dimension of at least 4" and not greater than 6 1/4" with a maximum cross section dimension of 2 1/4".
b. Type II. Handrails with a perimeter greater than 6 1/4" shall provide a graspable finger recess area on both sides of the profile. The finger recess shall begin with a distance of 3/4" measured vertically from the tallest portion of the profile and achieve a depth of at least 5/16" within 7/8" below the widest portion of the profile. This required depth shall continue for a least 3/8" to a level that is not less than 1 3/4" below the tallest portion of the profile. The minimum width of the handrail above the recess shall be 1 1/4" to a maximum of 2 3/4". Edges shall have a minimum radius of 0.01 inches.

FIGURE 314 D
GUARDS
IRC SECTION R312

1. Guards are required along open-sided walking surfaces, including stairs, ramps and landings that are located more than 30" measured vertically to the floor or grade below.
2. Open sides of stairs with a total rise of more than 30" above the floor or grade below shall have guards of not less than 34" in height.
3. Guards shall not be less than 36" in height.
4. Guards shall have intermediate rails or ornamental closures which do not allow passage of a sphere 4" or more in diameter.
5. The triangular openings at the side of stair, formed by the riser, tread and bottom rail of a guard shall not allow passage of a sphere 6" in diameter.
6. Stairway Handrails
   a. Handrails shall be provided on at least one side of each continuous run of tread or flight with 4 or more risers.
   b. Handrail height, measured vertically from the sloped plan adjoining the tread nosing shall not be less than 34" and not more than 38".
   c. Handrails shall be continuous for the full length of the flight to a point directly above the lowest riser of the flight. Handrail ends shall be returned or shall terminate in newel posts or safety terminals.
   d. Handrails shall not project more than 4 1/2" on either side of the stairway. Stairways with one hand rail shall not be less than 31 1/2" in width.



28. Miscellaneous

A. Address Numbers
   1. Temporary Address
      a. Prior to your first inspection being scheduled you are required to post a temporary address.
      b. The temporary address shall be easily readable and placed on the property line facing the principle street
   2. Permanent Address
      a. Before a final inspection is called for a permanent address shall be posted.
      b. Permanent addresses shall be a minimum of 4" high and posted in a prominent and conspicuous location facing the principle street on which the address is based. Typically the house number shall be installed on the house.
      c. For buildings that sit further than 80 feet from the property line the address numbers shall be of sufficient size to be easily viewed or the address shall be placed at the front entrance to the property.

B. A pumphouse shall be provided to protect the pressure tank, water and electrical installations. IRC Section R105.1 & Humboldt County Ordinance 01-03-05 exempts detached pumphouses less than 130 square feet from requiring a permit, however this sections also states "Exemption from the permit requirements of this code shall not be deemed to grant authorization for any work to be done in any manner in violation of provisions of this code or any other laws or ordinances of this jurisdiction." This requires the materials to be rot resistant and weatherproof. The structure itself must be structurally sound. All plumbing lines and fixtures shall be protected from freezing by approved materials. Electric shall be mounted on a permanent wall or pole (pressure treated). All outlets installed in pumphouses and shall be GFCI protected. The pumphouse may require permits. Check with the Building Department.

C. All additions such as garages, additions, porches, carports, awnings, ramadas, require permits from the Building Department **before** beginning construction. Decks, platforms, and walks do not require permits except when more than 30" above grade. Decks, awnings, and additions shall not support on the MH (see exceptions). If in the future the furnace or water heater needs to be replaced a permit will be required for the installation.

D. Wood Stoves, Pellet Stoves or Fireplaces
   a. All such stoves must be of an approved (listed) type for mobile home/manufactured home use. They shall be installed to the manufacturer's instructions.
   b. All such stoves must be vented with an approved (listed) factory built chimney as recommended by the manufacturer. Termination of chimney vent shall be per listed or 3' above roof and 2' above highest elevation within 10'.
   c. Combustion air duct to the outside is required. Cannot be ducted under the house unless crawl space vents are installed which are not closable.
   d. Hearth construction shall meet manufacturer's instructions.
   e. Wood stove and pellet stove installations are prohibited in sleeping areas.
   f. Separate permits and inspections are required for wood stove and pellet stove installations.

E. Smoke detectors are required and must be mounted and operable for final inspection. A smoke detector is required to be installed in the hallway or room leading to sleeping room.

F. Conversion to Real Property (See separate County handout for requirements)
The owner is required to meet all real property requirements at the time of the MH set-up if runners or permanent foundations are installed and inspected; all real property conversion requirements shall be completed at the time of the MH final inspection. Do not place tongues or axles from the home under the house if installed on runners or full foundations. For a second inspection there will be an additional charge. Perimeter blocking requires a continuous runner to frost line.

G. This office recommends runner installation but they are not required unless you wish to convert to real property or required by zoning.

HUMBOLDT COUNTY BUILDING DEPARTMENT
MANUFACTURED HOME/MOBILE HOME OWNERS INSPECTION CHECKLIST

FAILURE TO COMPLETE ANY OF THE ITEMS LISTED BELOW WILL RESULT IN A FAILED INSPECTION. AN $80.00 REINSPECTION FEE WILL BE ASSESSED IF THE MANUFACTURED HOME/MOBILE HOME FAILS THE FINAL INSPECTION.

Refer to the manufactured home set-up handout for specific requirements

__1. Installation instructions required for any special installations including tie downs.
__2. Pad installed for support of blocking & drainage grade
__3. Foundation previously inspected.
__4. All organic material removed.
__5. Underground utilities inspected.
__6. Temporary electric inspection – **Must be requested before the MH final (power has to be on at the final)**
__7. Temporary gas inspection – **Must be requested before the MH final (gas has to be on at the final)**
   a. Pressure test on gas line holding . Inspector to witness test.
   b. Gas line extends 3" to 6" beyond the exterior wall of the mobile home
   c. Provide flex and shut off at gas meter
__8**.** Underfloor Inspection for Homes
   A. Blocking
      a. Footing
         1. Sized correctly
         2. To frost line at perimeter blocking(if runners only installed)
         3. Correct material
         4. Correct configuration
   B. Piers
      _____1. Correct type
      _____2. Blocks run perpendicular to the frame
      _____3. Steel stands
         _____a. Pier load min. 5,000 lbs
         _____b. Heads alternated
      _____4. Spacing – 6’ o.c. & 12” o.c.
      _____5. If blocked – must have pressure treated wood between block and runners.
   C. Perimeter blocking (required if MH is over 11’ from sidewall to sidewall)
      _____1. To frost line (if runners only installed)
      _____2. Spacing – 8’ o.c. & 6” from end
      _____3. Correct configuration
      _____4. Correct material
   D. Block at doors and windows if necessary
   E. Provide 18” from bottom of frame to top of runner or grade if soft set
   F. Block pier caps correct
   G. Block pier shims correct
   H. Wedges correctly installed
   I. Max. 36” in height
   J. Marriage Piers (Only for multi-section homes)
      a. Manufacturers specifications on marriage/ridge pier location and load of each column (may require more than one pier) on site.
      b. Footing size for load correct
      c. Typically blocking – 8’ o.c. & 6” from ends
      d. Max. 36” in height
      e. No damage to house from elements

K. Tie Downs (Wind Zone 1 Requirements)
   a. Installed to manufacturer's instructions/auger with stabilizer plate/strapping correct.
   b. Installed to meet real property conversion requirements (if runners installed)
   c. Angle of tie down shall be to manufacturer's instructions
   d. Spacing – 11' o.c. & 2' from each end
   f. Anchors shall be 36"
   g. Straps correct
   h. Longitudinal anchors and straps installed.
   i. Alternative system installed per manufacturer (ie: OTI)

L. Marriage Line(Only for multi-section homes)
   a. Wall & roof closed up correctly & completely
   b. Gaps at multi-section areas acceptable
   c. Lagging at marriage
      _____1. Roof
      _____2. Floor
   d. Sealing Section
   e. Patching

M. Electrical
   a. Provide hangers/supports on conduit 6'o.c.
   b. Connect cross over per manufacturer's instructions.(multi-section homes)
   c. Proper wire size and breaker size
   b. 4 wire system to the MH properly sized
   c. Ground rod at service
   d. Well wiring connected
   e. Mobile home feeder wire connected to main service and mobile home
   f. Service disconnect within 30 feet .
   g. Multi-tester on site for continuity test & continuity test cleared
   h. Connect frame grounding per manufacturer's instructions.
   l. Recommend set up crew perform any other electrical test specified in the manufacturer's instructions.
   j. Backboard for service shall be pressure treated or unistrut
      n. Service installed to NEC and correctly rated.
      o. Frames/chassis grounded
      p. Service height – OK
      q. All outlets will be check by the inspector

N. Gas System
   a. Gas flexible connectors shall be installed where a gas line crosses the marriage line as required by the manufacturer or the State Manufactured Housing Division. (multi-section homes)
   b. Provide gas hangers/supports 6' o.c.
   c. Provide approved gas flex & gas shut off valves on each gas appliance.
   d. Properly sized gas line.
   e. Provide gas test for inspector to witness.

O. Plumbing System
   a. Provide hangers/supports
   b. Connect any crossovers required by the manufacturer. (multi-section homes)

P. Water System
   a. Connections
   b. Protect water line from freezing. If heat tape is utilized install to manufacturer's instructions.
   c. Provide hangers/supports on water lines per Humboldt County handout
   d. Provide a shut off valve at water connection at exterior of house – max. 30' from house.
   e. Provide correct sized water line
   f. Transition pipe under footing/skirting complete.

g. Recommend set up crew perform any other test specified in the manufacturer's instructions

Q. Sewage Collection System
   a. MH connected to an approved sewage disposal system
   b. Clean outs
   c. Provide hangers/supports every 4' O.C.
   d. Sewer shall be protected from freezing.
   e. Minimum 3" ABS pipe under the house
   f. Slope ¼" per foot; sealed pipe
   g. Transition pipe thru foundation/exterior wall complete.
   h. Recommend set up crew perform any other test specified in the manufacturer's instructions

___9. <u>Final Inspection</u>
   A. Power and Gas supplied to home
   B. GFCI outlets working
   C. Running water test
   D. Smoke Detectors
   E. Stove & furnace turned on
   F. Windows Operable
   G. Stairs, landings, handrails, guardrails,
   H. Grading