

HUMBOLDT COUNTY BUILDING DEPARTMENT
MANUFACTURED HOUSE/MOBILE HOME FOOTING & STEMWALL DETAIL(PERIMETER
WALL DETAILS)

(Refer to runner handout for additional information)

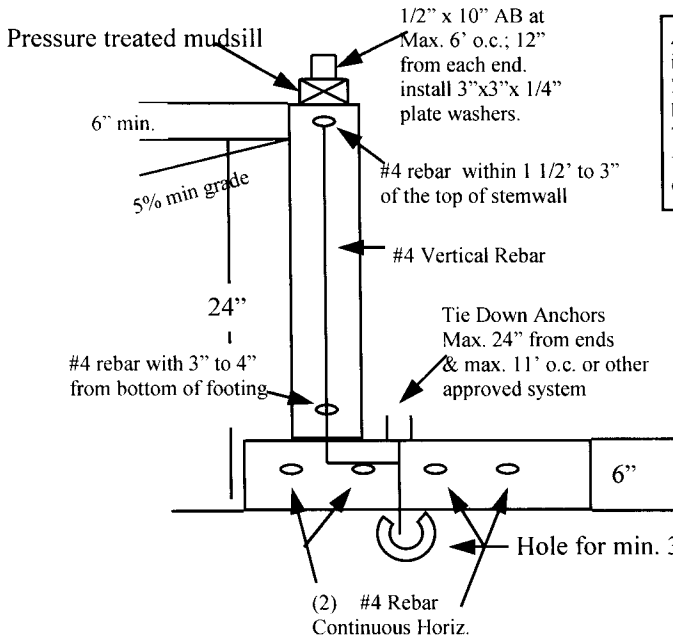
(2006 International Residential Code, International Building Code, Manufactured Home Mobile
Home & Commercial Coach Installation Standards 20069 Based on 1500 psf soil capacity.

1. Plates, sills or sleepers shall be a min. of 2"x4" or 2"x6" pressure treated. (IRC R318 & R319.1 (3).
2. Foundation plates or sills shall be bolted to the foundation or foundation wall with not less than 1/2" bolts, embedded at least 7" into concrete and spaced not more than 6' o.c. There shall be a minimum of two bolts per piece with one bolt located within 12" of each end of each piece. Plate washers a min. of 1/4" x3"x3" thick shall be used on each bolt. A properly sized nut shall be tightened on each bolt to the plate. (IRC Section 403.1.6 & R602.11.1) ***Anchor bolts can be countersunk in the sill plate only on manufactured homes. If the anchor bolts are countersunk a min. 2x6 pressure treated sill plate or (1) pressure treated 2x4 & (1) 2x4 doug fir is required.***
Alternate foundation mudsill anchors can be used in place of typical anchor bolts and washers. Anchors such as Simpson MASB or any equivalent product will be approved. The proper anchor shall be used for size of mudsill (2x4 or 2x6). The anchor must be installed to the manufacture's instructions such as spacing, embedments, and attachment to sill plate.
3. Footing shall be minimum of 6"x12". Stemwall shall be a minimum of 6"x28". Runner shall be a minimum of 6"x18". Marriage line runners shall be min. 6"x 20" with (2) #4 rebar.
4. Foundations supporting wood shall extend at least 6" above the adjacent finished grade (IRC Section R319.1(5) & R401.1.6)
5. (2) 1/2" diameter steel bars continuous in footing with a minimum of 3" clearance from bottom of footing. No rebar shall come in contact with the earth. (IRC Section R403.1.3) All rebar shall be supported. Rebar shall be located in the runner where frame support is required.
6. Vertical rebar in the stemwall—1/2" diameter steel on 32" on center. The vertical rebar shall extend 3" clear of bottom of footing have a standard hook & extend a min. of 14" into the stemwall. (IRC Section R403.1.3). Rebar shall not be bend with heat. (IBC Section 1907.3.1) When lapping rebar the rebar shall be lapped a min. of 20" for #4 (1/2") rebar.
7. One #4 horizontal rebar installed within 1 1/2" to 3" from the top of the wall and one #4 rebar located 3" to 4" from bottom of footing. (IRC Section 403.1.3.1)
8. A 28" min. stemwall is required. This is measured from the top of the stemwall to the top of the footing. (Max. 48" stemwall height)
9. Masonry walls shall be solidly grouted.
10. Footings and foundation shall extend below the frost line and be continuous (24" below grade). (IRC Section R403.1.1.1 & 403.1.2)
11. Conduits and piping shall not penetrate the bottom 12" of the footing unless approved by the Building Official.
12. Trenches under footing shall be kept to a minimum to provide adequate support of the footing.
13. Tie down anchors shall be spaced not more than 11' o.c. and 2' from the ends. Tie down anchors shall be located to allow for a 45° angle on the strap. Other tie down systems approved by the State of Nevada Manufactured Housing Division are permitted to be used.
14. Provide a hole under the tie downs for min. 3" concrete under the tie down.
15. Each home shall be installed with an anchoring device designed 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 min. of one device for each direction (one in each corner) per chassis main beam must be used (8 total).

Manufactured Home Footing & Stemwall Detail

16. Under floor areas shall be ventilated by openings of 1 s.f./150 s.f of floor area. One opening shall be within 3' of each corner. Close with 1/4" mesh. (IRC Section R408.2). Vents shall not be closable. Minimum of 8 vents is required.
17. Provide 24"x24" foundation crawl space access. The access well shall have a minimum inside dimension of 24" high x 36" wide, and extend at least 24" from the perimeter of the house. The access well shall have a lightweight removable watertight/weathertight 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. The crawl space access can be located on the marriage line if support is provided by a header at the entrance. There must be a 30" clear path in front of the entrance. The crawl space access is recommended to be installed on the marriage line in order to provide the required clear entrance in front of the access.
18. The ground within the enclosed crawl space shall be covered with 6 mil continuous membrane sheeting. Seams shall be overlapped 8". A barrier shall not be installed in an open deck area.
19. Finished grade of 5% horizontally away from home foundations, or skirting shall be provided. Uncovered slabs, patios, or walks shall slope away from home and structures in order to drain water away from the home and structures.
20. The bottom main frames shall be a min. of 18" from the top of the pier support pad.
21. Provide opening for dryer duct.
22. Separate a porch or open deck area with a footing and a barrier wall a min. of 12" in height. Footing & barrier wall shall be concrete with a 6" min. width.
23. If the runners/foundation is for a replacement manufactured home the following utility changes may be required:
 1. The water line shall transition from PVC to an approved pipe (CPVC, PEX, or Copper) outside the foundation or exterior wall of the manufactured home. A water shut-off valve shall be provided to frost line at the exterior of the house at the pipe transition point.
 2. MH service equipment shall be located within site and not more than 30' from the exterior wall of the manufactured home. This means if the service is located more than 30' away from the manufactured home a disconnect will be required within 30' of the manufactured home.

Note: Inspections shall be requested before concrete is poured. See inspection guideline handout.

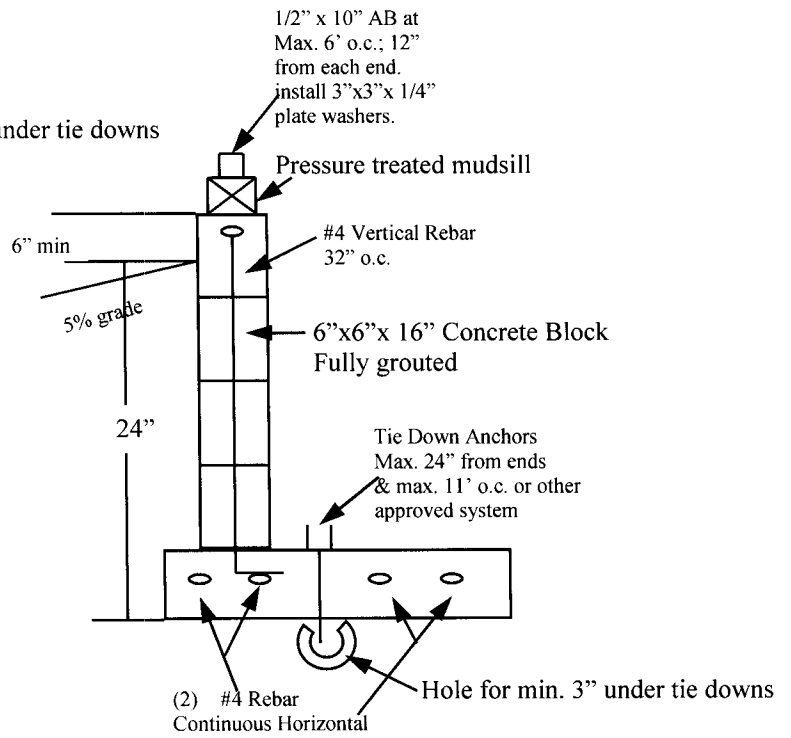


Alternative mudsill anchors can be used in place of AB. Anchors such as Simpson MASB or equivalent. Proper anchor shall be used for size of mudsill (2x4 or 2x6). The anchor must be installed to the manufacturer's instructions such as spacing, embedment and attachment to sill plate.

All stemwall height—
6" x 28" min.
6" x 48" max.

Longitudinal tie downs required per Page 1 Item 15 & Page 5 Item C

Poured Concrete Perimeter Foundation

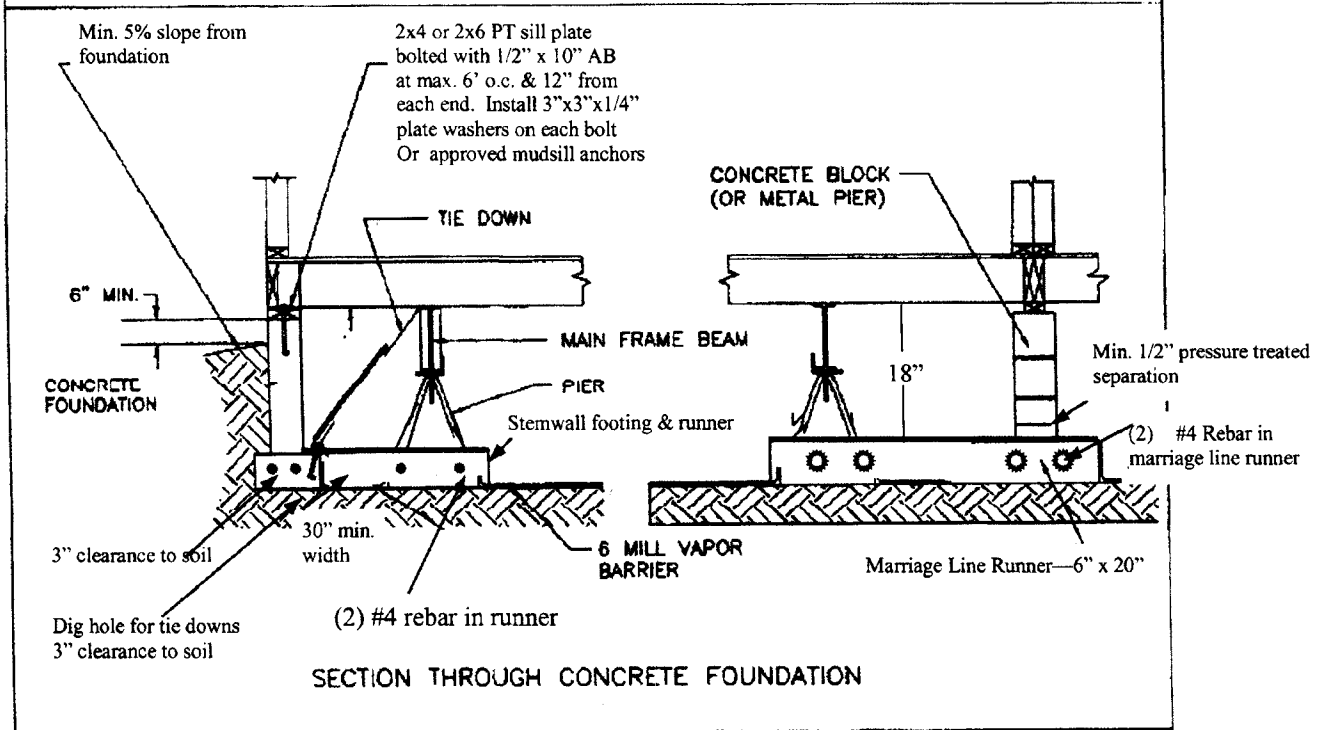
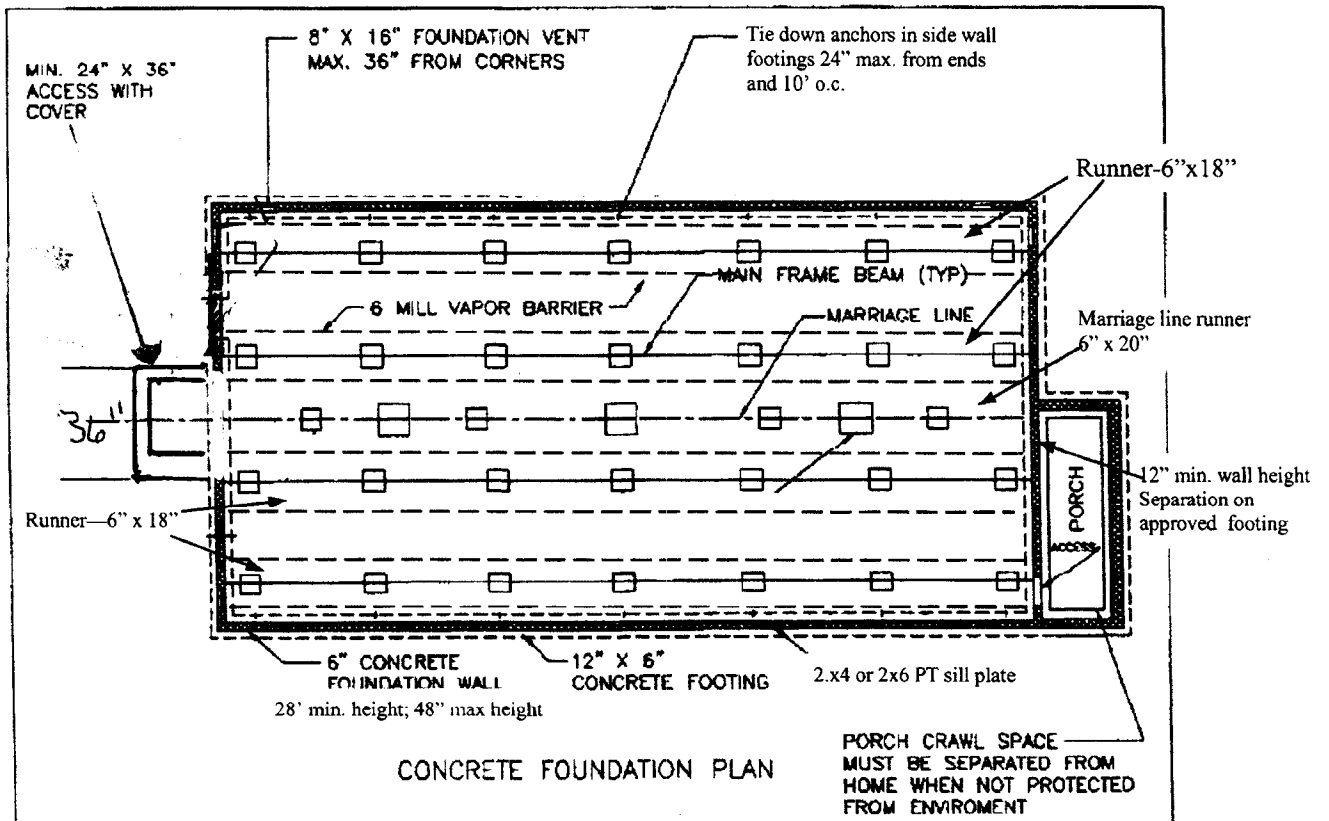


Concrete Block Perimeter Foundation

18" shall be provided from the top of the runner to the bottom of the frame member.

MANUFACTURED HOME PERIMETER FOUNDATION DETAILS

SEE WRITTEN SPECIFICATIONS FOR DETAILS



SEE WRITTEN SPECIFICATIONS FOR DETAILS

HUMBOLDT COUNTY BUILDING DEPARTMENT

MINIMUM REQUIREMENTS FOR ALL MANUFACTURED/ MOBILE HOME PERMANENT FOUNDATIONS FOR REAL PROPERTY CONVERSION

These requirements apply to the construction of permanent foundations necessary to convert mobile homes to real property. (See separate handout for perimeter wall requirements)

Humboldt County Ordinance 01-03-05 requires that any mobile home/manufactured home installed on runners or permanent foundations comply with the following requirements even if they are not converting to real property at the time of the final inspection.

NOTE: Locate your septic system before foundation construction begins. A minimum of 8 feet is required to the nearest portion of the septic tank. Call USA Dig (800-227-2600) for existing utilities locations.

NOTE: Any home, which has runners below the exterior finished grade, shall not be approved for real property conversion unless an approved perimeter footing and stemwall is installed. This includes a house, which is pit set & backfill has been installed against unapproved skirting walls.

- (a) The footing must be at least 18 inches by 6 inches of continuous poured concrete running the length of the mobile home, with two continuous ½ inch rebar.
 1. Provide a clearance of at least 3" around all rebar from forms and soil.
 2. Rebar shall not be in contact with ground.
 3. Rebar shall not be pounded in ground to support horizontal rebar
 4. Rebar shall be lapped a minimum of 20"
 5. Runner shall be centered under the frame or exterior wall.
- (b) Supporting pier shall be installed per Humboldt County Set-Up Manual. Supporting metal piers shall be placed directly on the runner. If using concrete blocks a minimum ½" pressure treated wood or plywood of a size equal to the block shall be laced between the concrete blocks and the runner.
- (c) Tie downs shall be installed in the footings per the tie down manufacturer's instructions. Spacing on the tie downs shall be 11' o.c. on the outside footings or install other approved tie down system for foundations. The first and last tie down shall be placed within 2 feet of the end of the footing. Tie downs shall be installed at the time of the runner inspection. Longitudinal tie downs shall be installed to the devices manufacturer's instructions. If the number of devices to be used is not mentioned or is unclear, a min. of one device for each direction (one in each corner) per chassis main beam must be used (8 total). Strapping must comply with Humboldt County Set-Up Manual. Other system shall be approved by the Nevada State Manufactured Housing Division.
- (d) The foundation must support all load points recommended by the manufacturer of the mobile home. (Marriage Piers). Pads supporting marriage load points shall be poured in place and must be continuously poured the length of the manufactured home.
- (e) Perimeter blocking is required on every home. A footing to the frost line continuously poured the length of the home is required to support the perimeter blocking. (2) #4 rebar are required in the footing. If a perimeter foundation is installed runners will be required based on the requirement for real property conversion.
- (f) Blocking:
 - Main Beam Blocking-Located within 12" of each end and 6' o.c.
 - Marriage Line Blocking-Spacing 8' o.c.
 - Perimeter blocking-6" or less from each corner & 8' o.c.
- (g) All wood and similar material used in the blocking and the perimeter enclosure must be pressure treated. Backfill against skirting shall not be permitted. See Humboldt County Set-Up Manual for skirting requirements.

MANUFACTURED HOME RUNNER

- (h) A crawl space between the bottom floor structure of the mobile home and the footing pad must be at least 28 inches in height. A minimum of 18" shall be required from the bottom of the chassis frame member to the top of the footing runner). Access to the crawl space must be by an opening which is 23 inches by 24 inches or larger. The access well shall be 24"x36". The opening shall have a cover provided and should be closed when not in use. Pipes & piers must not interfere with access to or within the space below the floor. A minimum of 30" clear space shall be provided directly in front, outside the perimeter of the home, of each access panel or door.
If a stemwall is installed the stemwall height is required to be a minimum of 28" in height to provide adequate crawl space area. (See perimeter foundation handout)
- (i) Under-floor areas shall be ventilated by openings of 1 s.f./150 s.f. of floor area. One opening shall be within 3' of each corner. Close with ¼" mesh. Closable vents not permitted. A vapor retarder material is required to be installed except at an open deck or porch area.
- (j) Vapor retarder shall be provide on the ground within the enclosed crawl space. The vapor retarder shall be .006" thick continuous membrane. (See Humboldt County Set-Up Manual for specific requirements).
- (k) Open porches or decks must be separated from the crawl space with a footing & wall barrier.
- (l) Provide stairs and landings at all door openings (exits). Stairs, landings, handrails and guardrails shall comply with all code requirements. Further details for the above can be requested from the Building Department.
- (m) In addition to the requirements of paragraph (a) to (i), inclusive, the foundation plan and perimeter enclosure of a new home must be approved by the manufacturer's warranty. The required perimeter wall blocking shall be maintained at all times.
- (n) Provide grade away from the foundation/skirting which falls 5%.
- (o) The axles and the tongues are required to be removed. They shall not be stored under the manufactured/mobile home.
- (p) If a perimeter foundation is installed the stemwall shall be a minimum of 28 inches in height. The 28 inches is measured from the top of the footing to the top of the stem wall. (This measurement **does not** include the mudsill). All footings are required to meet frost line requirements. Humboldt County's frost line is 24".
A permit is required for a perimeter foundation.
- (q) If the runners/foundation is for a replacement manufactured home the following utility changes may be required:
 1. The water line shall transition from PVC to an approved pipe (CPVC, PEX, or Copper) outside of the foundation or exterior wall of the manufactured home. A water shut-off valve shall be provided to frost line at the exterior of the house at the pipe transition point.
 2. MH service equipment shall be located within site and not more than 30 feet from the exterior wall of the manufactured home. This means if the service is located more than 30 feet away from the manufactured home a disconnect will be required within 30' of the manufactured home.
- (r) Please check with your mortgage or financial institution for their requirements.
- (s) All design specifications and plans produced pursuant to this subsection must incorporate good engineering standards and construction design, and must be approved by local authorities and the manufacturer as required by law or regulation.
- (t) Existing runners installed previously to November 1, 2006 shall comply with this handout except longitudinal tie downs will not be required. If tie downs required on existing compliant runners typical tie down heads with strapping shall be installed by approved bolting into existing concrete.
- (u) Skirting, ventilation and crawl space access must comply with Humboldt County Set-Up Manual
- (v) **All requirements for real property conversion shall be completed at the time of the final mobile home inspection.**

MANUFACTURED HOME RUNNER

1. Footing must be a minimum of 18" wide by 6" deep of continuous poured concrete runner the length of the manufactured home, with two continuous 1/2" rebar. Maintain a minimum of 3" clearance around rebar. Rebar shall not be in contact with the ground. Rebar shall not be pouned in ground to suport horizontal rebar. Marriage line footing shall be minimum of 20" wide by 6" deep continuous runner.
2. Tie downs shall be spaced on outside runners no more than 11' o.c. or other approved system. Concrete tiedown anchors shall be place per drawing. Provide a hole under tiedown anchor so the anchor is fully embedded and provide with a minimum of 2" of concrete under anchor.
3. End walls require footing to frost line if extended past the end of the frame and exposed to frost heave. If future stemwall to be intalled all four sides of home require a continuous footing on all sides to frost line.

