

Installation Manual

DMH HOMES

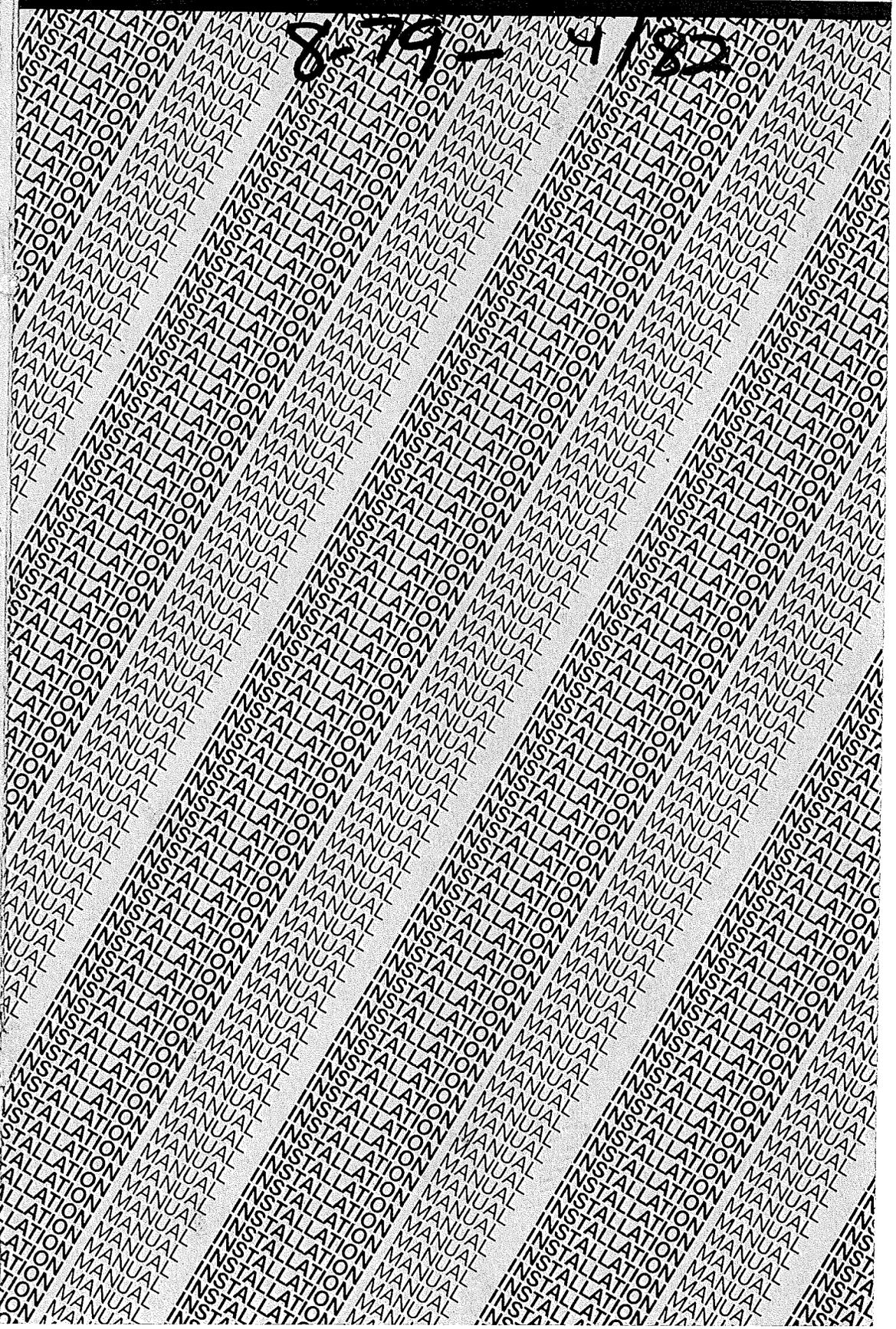


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1

Introduction

This DMH home has been engineered, constructed and inspected in accordance with "The Department of Housing and Urban Development" Mobile Home Construction and Safety Standards as published in the Federal Register pursuant to the requirements of the National Mobile Home Construction and Safety Standards Act of 1974 (Title VI of Pub. L. 93-383, U.S.C. 5401 et seq.). With proper installation and reasonable care, it will provide the homeowner with long lasting shelter.

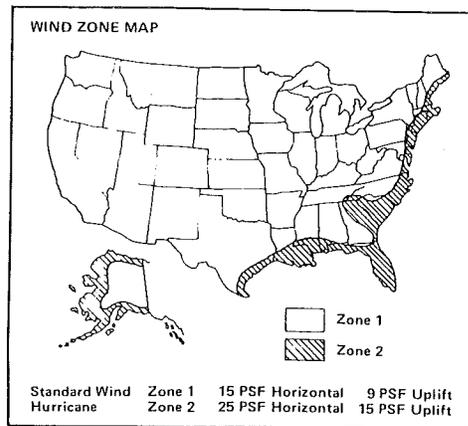
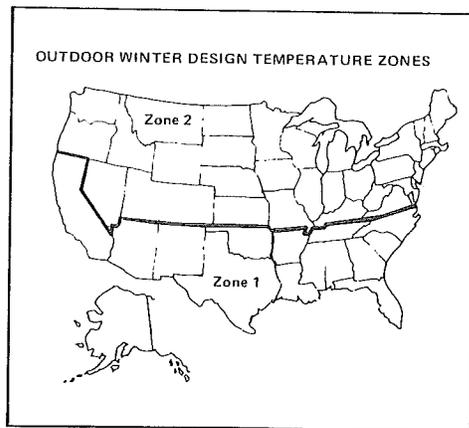
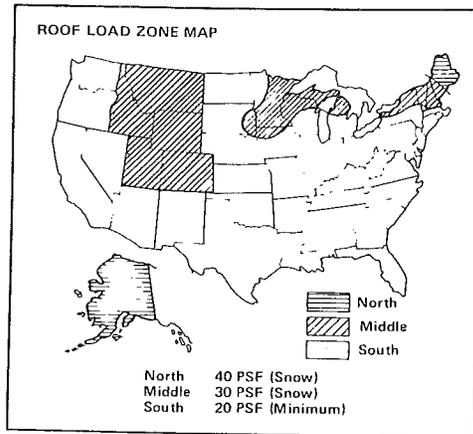
The manual outlines the steps required for proper home installation and should be used by a qualified installation company. Local and state regulations may affect the installation of the home and the homeowner should insist the installation company conform to these regulations.

The drawings in this manual are intended to be representative of the homes; however, designs and specifications could change in the interest of product improvement.

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Zone Maps

The following Zone Maps will help make other installation determinations with regard to prevailing weather in the Zone where the site is located:



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Site preparation

The selected home site must be properly graded and sloped to provide for storm drainage run-off; in particular, the area beneath the home must be graded to prevent water accumulation.

Proper support for the home must allow for soil conditions in the immediate area. Pier footings must be placed on firm undisturbed soil (not loose fill) or soil which has been compacted to at least 90 percent of its maximum relative density. Pier supports may also be placed directly on concrete slabs designed for the home's placement.

Climate conditions must also be taken into account. If footings are placed on a frost-susceptible soil, such as clay or silt, heaving and/or settlement may occur. In areas where temperatures go below freezing, it is important that the pier footings be located below the frost line.

Equipment Requirements

The listing below contains only the major items, and adjustments to this listing may be required by individual set-up crews.

Tools:

- 5 ton hydraulic jacks
- 6' carpenters level
- Ratchet and socket wrenches
- Portable electric drill
- Hand winch (come-along)
- Pipe wrenches
- Tin Snips
- Adjustable jackpost
- Ordinary small hand tools
(Carpentry and electricians)

Other Material:

- 2" x 12" x 12' planks for skids
- Dunnage and wedge-shaped shims
- Lubricant for skids
- 10 pcs. of 2" x 24" steel pipe for rollers

SUPPORT REQUIREMENTS

TABLE I

Minimum Support Capacities in Pounds

Zone	12' Wide	14' Wide	16' Wide
SOUTH			
Roof Load 20 PSF	3800	4360	4920
MIDDLE			
Roof Load 30 PSF	4260	4950	5640
NORTH			
Roof Load 40 PSF	4800	5500	6200

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OUTRIGGER FRAME-WITH OUTRIGGERS 4' ON CENTER [O.C.]

Chassis supports must be installed under both ends of the frame not more than one foot from the ends and immediately ahead and behind the spring hangers under each beam. Additional supports must be installed under each beam so that spacing between adjacent supports will not exceed 8 feet. (See Figure 1,A)

OUTRIGGER FRAME-WITH OUTRIGGERS 8' ON CENTER [O.C.]

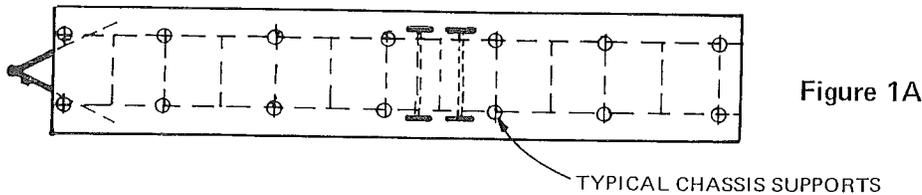
The perimeter blocking of home with outriggers on eight (8) foot centers is required in addition to the blocking shown on Figure 1,A. Each perimeter location is marked on the underside of the unit with a factory painted mark. The proper pier locations can be verified by the homeowner by observing the factory installed outriggers (8' O.C.) and checking for perimeter piers centered between them. The perimeter piers shall each be capable of supporting 900 pounds for the South and Middle Zones and 1,200 pounds for the North zone. See supplemental Perimeter Placement Drawing provided for your use below. (See Figure 1, B)

PERIMETER FRAME

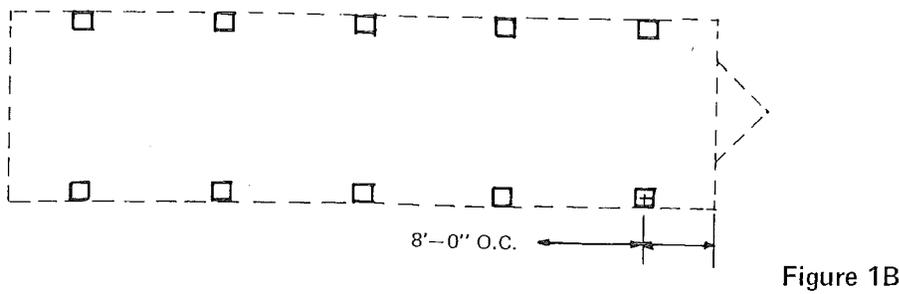
Chassis supports must be installed under both ends of the frame not more than one foot from the ends. Spacing between supports under the outside frame members must not exceed 8 feet. See Figure 1,B)

All supports (piers and/or blocks) must be placed on supporting structures of proper size and capacity.

Outrigger Frame Blocking



Perimeter Blocking



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BLOCKING AND LEVELING

1. Setting

- a. Position home on previously prepared site, spotting for ease of utility hookup. The connecting points for electric, water, gas, and drain lines are located in the rear one-half.
- b. With the use of the hitch jack and 5-ton hydraulic jacks positioned under the I-beams behind axles, raise the home until the wheels are off the ground.
- c. Disconnect the brake wires and remove wheels. (Optional)
- d. Remove axle assemblies by extracting main spring hanger bolts. (Optional)
- e. Position piers or blocks of desired height and required capacity at the support points. Supports must be installed under **both** ends of frame not more than **one-foot** from the ends of the I-beams and immediately ahead and behind the spring hangers under each I-beam. Remove jacks and lower section to supports.

2. Leveling

- a. With the use of the carpenter's level, adjust the hitch jack to obtain the lengthwise level. Adjust or shim supports to hold level.
- b. Place the level across the I-beam behind the hitch and raise the low side with the jack placed under the I-beam just forward of the spring hangers. Adjust or shim supports to hold level. Repeat with level at rear of home placing jack just behind the spring hangers.
- c. Recheck both longitudinal and transverse levels and adjust as necessary.
- d. Remove detachable hitch.

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SECURING THE HOME ON A PERIMETER FRAME FOUNDATION

For proper installation, the foundation must be level and laid to the proper specifications in regard to size and load bearing capacity. An approved method should be provided in the foundation for anchoring the home. (See Figures 2 and 3 for suggested foundation configuration.)

Typical Perimeter Foundation

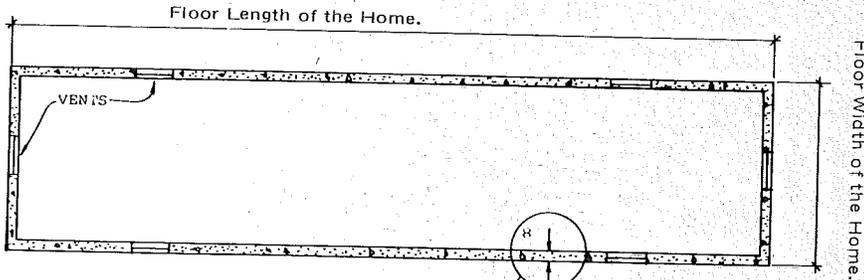
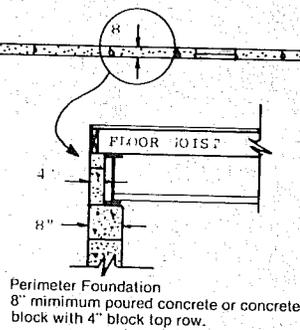


Figure 2



Perimeter Frame Foundation

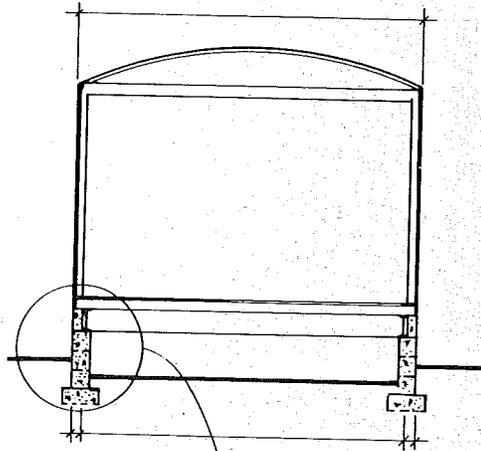
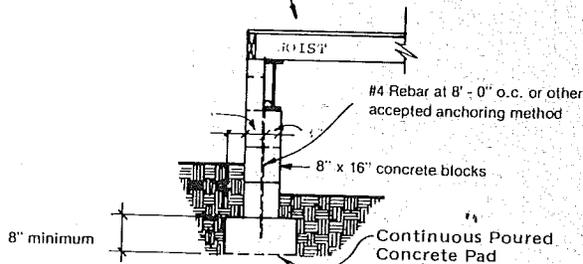


Figure 3



See Table I for required support capacities and locations (Page 3).
See Table II for tie-down instructions (Page 8).

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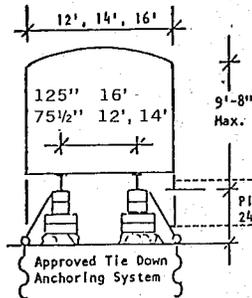
1. Setting

- a. Position the home at side of foundation.
- b. Place blocking and jacks at each end and at even spacing to allow 4 supports under each side. Raise home to relieve weight on axle springs. Remove axles and A-Frame. (Optional) Raise section until the bottom of perimeter frame is above level of foundation.
- c. Place 2''x8''s on top of foundation width.
- d. Position blocking under the home up to the foundation level so that (2) 2''x12''s laid on top will be flush with 2''x8''s laying on foundation, thus forming a bridge. This bridging must support the full weight of the home. Use sufficient blocking under the 2''x12''s to hold the weight.
- e. Place 24'' pieces of 2'' diameter pipes on bridging and lower onto pipes; 10 pcs. of pipe should suffice.
- f. To move the home across foundation, use two come-alongs attached to a deadman anchor. The come-alongs must move in unison. To maintain alignment with the foundation as it moves across bridging and the foundation, the pipes can be angled on the sides of the home and changing direction of travel. This can be done by striking them with a sledge hammer. When the home is back in alignment, the pipes can be adjusted so that travel will continue in the desired direction.
- g. Remove pipes as the home passes over them and place them ahead of the home so that section is continually on the pipe. Start pipes at 36'' intervals for rolling the home.
- h. When the home is properly positioned, block, remove pipe and boards and lower to foundation.

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Tie Down Instructions

The home is to be anchored using the following information.



Tie Down Devices (including their connections) shall be rated at 3150# minimum.

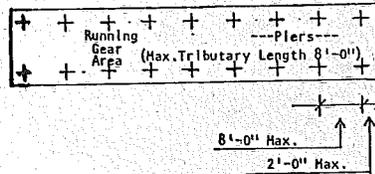
Minimum Footing Size: 16" x 24"

Soil Bearing Capacity: 3000 PSF Minimum

Over-the-Roof ties required at the end piers only.

Diagonal Frame Ties Typical each pier.

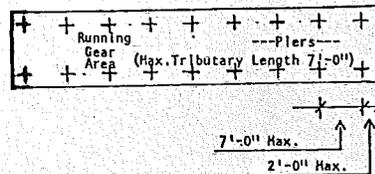
Wind Zone: I (Non Hurricane)
Roof Zone: Middle
Home Size: 12', 14', 16' Wide



NOTE: Diagonal ties shall be installed at each pier location. Over-the-Roof Straps are not required.

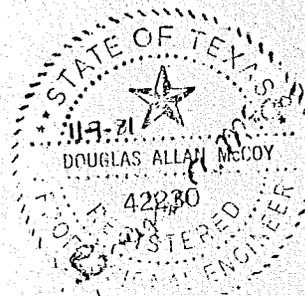
Piers and diagonal frame ties shall be installed within 2'-0" from each end of the home and typically spaced no farther apart than 8'-0" O.C. If the running gear or other obstacles require excessive spacings in excess of 8'-0", double piers and tie downs shall be installed at the ends of the excessive spans.

Wind Zone: II (Hurricane)
Roof Zone: Middle
Home Size: 12', 14', 16' Wide



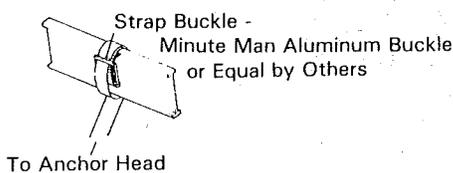
NOTE: Diagonal Ties shall be installed at each pier location. Over-the-Roof Straps shall be installed at the end pier locations.

Piers and diagonal ties shall be installed within 2'-0" from each end of the home and typically spaced no farther apart than 7'-0" O.C. If the running gear or other obstacles require pier and tie spacing in excess of 7'-0", double piers and diagonal ties shall be installed at the ends of the excessive span.

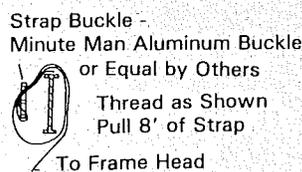


Frame Tie Detail

Frame Strap and Buckle



Frame Tie Side View



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Utility Hook Up and Testing

All utility connections must be made by qualified service personnel who are knowledgeable of local and state regulations. Testing of all utilities must be satisfactorily performed before occupancy.

Water

This home has been designed for an inlet water pressure of 80 PSI. If this home is installed in an area when the water pressure exceeds 80 PSI, a pressure reducing valve should be installed.

A tag affixed to the exterior of the home will indicate the location of the fresh water connection. If the home is not equipped with a master water-shut valve, a flow valve must be installed on the water supply line in an accessible location adjacent to the home. Remove the plug on the inlet and connect the fresh water supply line.

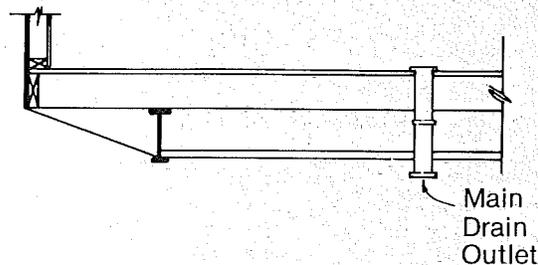
After completing connections, turn on all faucets until water flows full at all hot and cold outlets. Shut off all faucets and check for leaks. Any leaks should be easily repaired with minor tightening at joints.

Exposed water lines must be wrapped with insulation or protected with heat tape to prevent freezing. If heat tape is used, it must be listed for use with mobile homes and installed in accordance with the manufacturer's instructions.

Drainage

Remove the cap and connect the home drain outlet to the drain inlet at the site with the flexible coupling provided or with the required length of drain pipe, fittings and cement. (See Figure 5)

Drain Line Hookup



When connecting drain lines always maintain a uniform slope of not less than 1/4 inch per foot toward the drain outlet.

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Gas

The factory installed gas piping has been designed for a pressure not exceeding 14 inch water column (1/2 PSI) and not less than 7 inch water column (1/4 PSI). Check with the gas supplier to assure your pressure is within these limits. IF PRESSURE EXCEEDS THIS LIMIT, A LISTED REGULATOR MUST BE INSTALLED.

Locate the tag affixed to the home at the gas supply connection and follow the instructions carefully for proper hookup, and testing.

Electrical

The metal nameplate adjacent to the feeder assembly entrance indicates the ampere rating of the electrical system. The electrical connection should be made only by qualified personnel using the materials listed below for the Feeder Entrance Assembly installed in the home:

TABLE III

Feeder Entrance Assembly Rating	Conduit Size	Conductor Size (3 Conductors)	Grounding Conductor Size	Junction Box Size
100 amp	1½"	#3	#8	10" x 10" x 4"
125 amp	1½"	1	6	10" x 10" x 4"
150 amp	1½"	1/0	6	10" x 10" x 4"
200 amp	2"	3/0	6	10" x 12" x 4"

The feeder assembly is designed for use with three 75°C rated copper conductors: Types THW or XHHW and a bare copper grounding conductor.

After the electrical connection has been completed, the following tests should be conducted using approved test equipment:

1. Continuity test of circuit conductors.
2. Polarity test.
3. Continuity test of electrical grounding system.

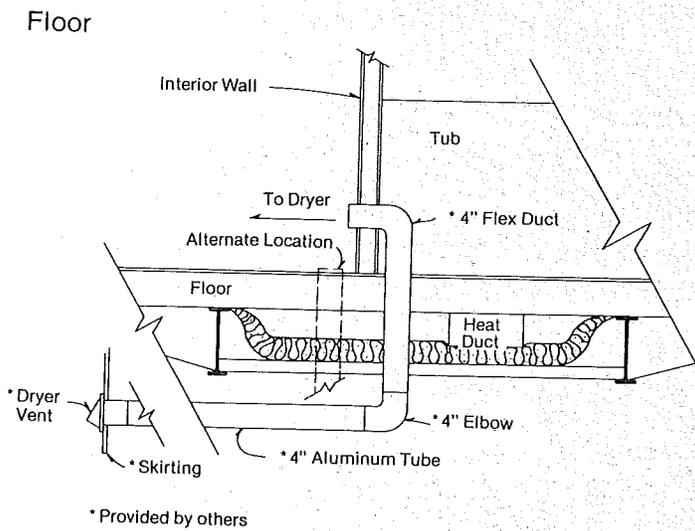
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Dryer Venting

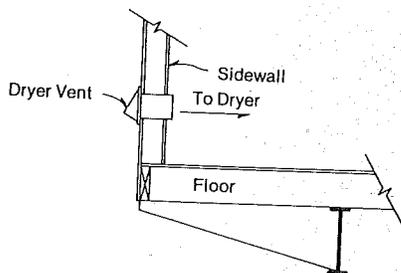
The following drawing is provided for use in venting of clothes dryers:
(See Figure 6).

The aluminum tube and/or elbows may be replaced with a flexible vent duct, intended for this purpose, after consulting the appliance manufacturer's installation instructions and only in accordance with these instructions.

Dryer Venting



Exterior Wall



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Bottom Board Patch Instructions

The following recommended procedures should be followed for repair of bottom board material:

1. Holes or Punctures in Bottom Board

Apply Seal-Tite #360, #520, #740 or equivalent tape over area, insuring a complete seal around the area.

2. Cuts or Rips in Bottom Board Required for Maintenance Work

Draw edges together with 4" strips of tape perpendicular to the direction of opening every 4" - 6". Finish applying lengthwise strips of tape over the joined edges insuring a complete edge seal.

3. Large Holes or Cutouts

A patch may be cut from bottom board material and taped in place per item 2 above. Large patches may require stapling to adjacent joists to ensure the patch will stay in place. In either case, edge taping should be done should there be any question of not having an edge seal.

4. Should bottom board material or tape not be available, .019 inch thick aluminum may be nailed, stapled or screwed over damaged area and putty or caulk used to ensure an edge seal.

DMH MANUFACTURING PLANTS LOCATED AT:

100 Third Street
Red Lake Falls, Minnesota 56750
218 + 253-2111

400 S. Halstead St.
Hutchinson, Kansas 67501
316 + 663-7111

900 S. Meridian Road
Newton, Kansas 67114
316 + 283-1100

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Diversified Manufactured Housing

DMH Company
Executive Offices
1517 Virginia Street
St. Louis, Michigan 48880