



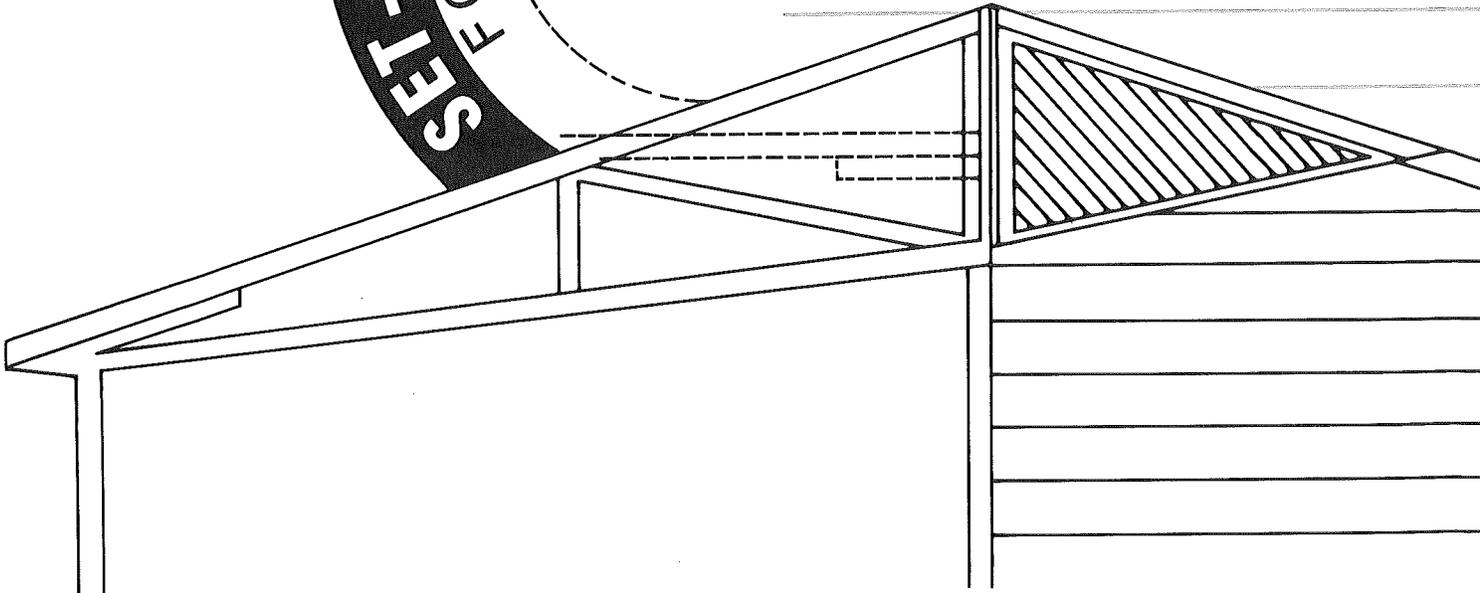
**CHAMPION**  
HOME BUILDERS CO.

'94 FEB 16 A9:16

DEPT. OF ADMIN.  
BLDG. CODES & STDS. DIV

2/16/94

**SET-UP & INSTALLATION GUIDE**  
FOR MANUFACTURED HOMES



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**RADCO** FEDERAL MANUFACTURED HOUSING CONSTRUCTION & SAFETY STANDARDS  
 MAY 06 1992  
**23**  
**APPROVED**

# INTRODUCTION

This home has been designed, constructed and inspected in accordance with the Federal Manufactured Housing Construction and Safety Standards in effect on the date of manufacture.

The design criteria for this home may be found on the data plate, which also contains other essential information such as where this home was manufactured, factory-installed equipment, and heating and cooling information. This data plate may be found attached to the home in one of the following locations:

1. Rear Bedroom Closet Wall
2. Laundry Area
3. Water Heater Door
4. Near Main Electric Panel

Please crosscheck the data plate supplied with your home with the roof load and wind zone maps shown on page 4 to assure that your home is located properly. These maps indicate the acceptable areas of the United States where your home may be safely located.

In preparing this home for occupancy, IT IS EXTREMELY IMPORTANT THAT IT BE PROPERLY SET, BLOCKED AND LEVELED WITHIN REASONABLE TOLERANCES by a knowledgeable and experienced manufactured home retailer or installer.

Proper set up will, under normal circumstances, prevent the home from sagging and prevent expensive repair bills.

The following information is presented to instruct and assist qualified personnel in setting up this home. Also refer to the Manufactured Home Owner's Maintenance Guide for additional information.

Equipment/appliances not installed by the manufacturer must be installed by qualified personnel following the installation instructions supplied with the equipment/appliances. Champion cannot accept responsibility for damage caused by equipment/ appliances improperly installed, or unsuitable for use in manufactured housing (i.e. equipment/appliances not listed for use in manufactured housing) installed by others.

## GENERAL INFORMATION

### SITE PREPARATION

The home site must be properly graded and sloped to provide storm drainage runoff and to prevent water accumulation either underneath or outside of the home. A vapor barrier, such as a 6 mil. min. layer of polyethylene plastic sheeting or similar material must be placed on the ground under the home (min. 6" overlap at seams).

### FIRM FOUNDATION

A firm foundation is absolutely necessary before the home is blocked and leveled.

This should prevent the home from sagging and will be considered before Champion Home Builders Co. honors any sag-related warranty claims.

If the site is on filled-in soil, it must be compacted to at least 90% of its maximum relative density. If you are unsure of soil bearing capacity, confer with local building authority for the recommended soil bearing capacity in your location. Footings should then be supplied to comply with these recommendations.

Before the home is blocked and leveled, it should be set on a solid poured concrete slab or "pad", wide ribbons of poured concrete, or concrete pier footings, whichever foundation is suggested and judged best by the home installer as required by local regulation.

### PROPER BLOCKING SUPPORTS

The blocking supports for the home should be sturdy. Adjustable steel jacks especially designed for home blocking and leveling are highly popular and recommended. However, cement blocks may be adequate blocking devices. Unreinforced hollow block shall not be higher than 4 times its least dimension.

### POSSIBLE CONSEQUENCES OF INCORRECT BLOCKING AND LEVELING

Incorrect setting, blocking and leveling of the home can produce a sagging home and these possible related conditions:

1. Buckling and/or loosening of walls, partitions, siding, ceilings, doors, floors, linoleum, carpeting, insulation, wiring, sinks, tubs, toilets, weather stripping and miscellaneous fixed original fixtures of the home.
2. Leaking windows, doors, roof, ceiling, walls, floor, seams and joints in general caused from rain, snow or moisture.
3. Improper closing, binding and sagging of windows, cabinets and inside and outside doors.
4. Malfunctioning of plumbing, water outlets, lighting fixtures, electrical heating and air conditioning system.

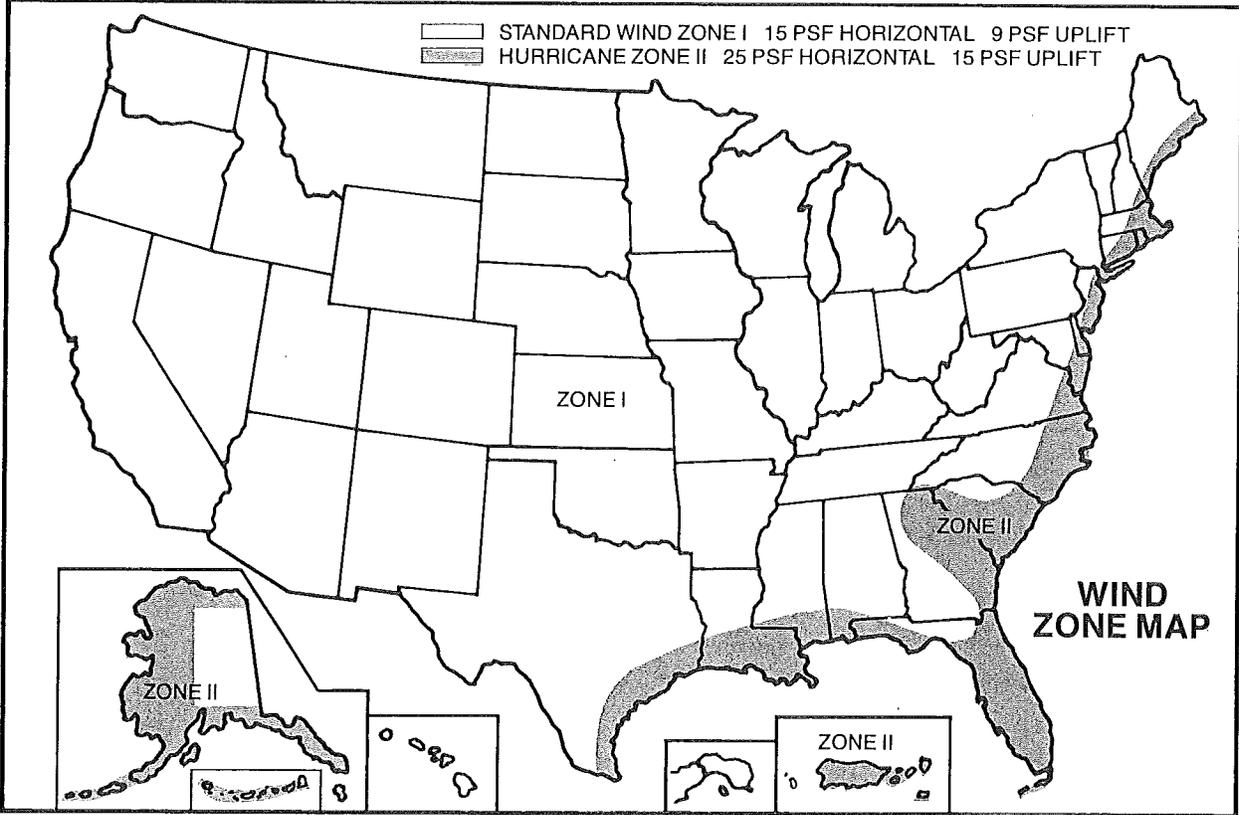
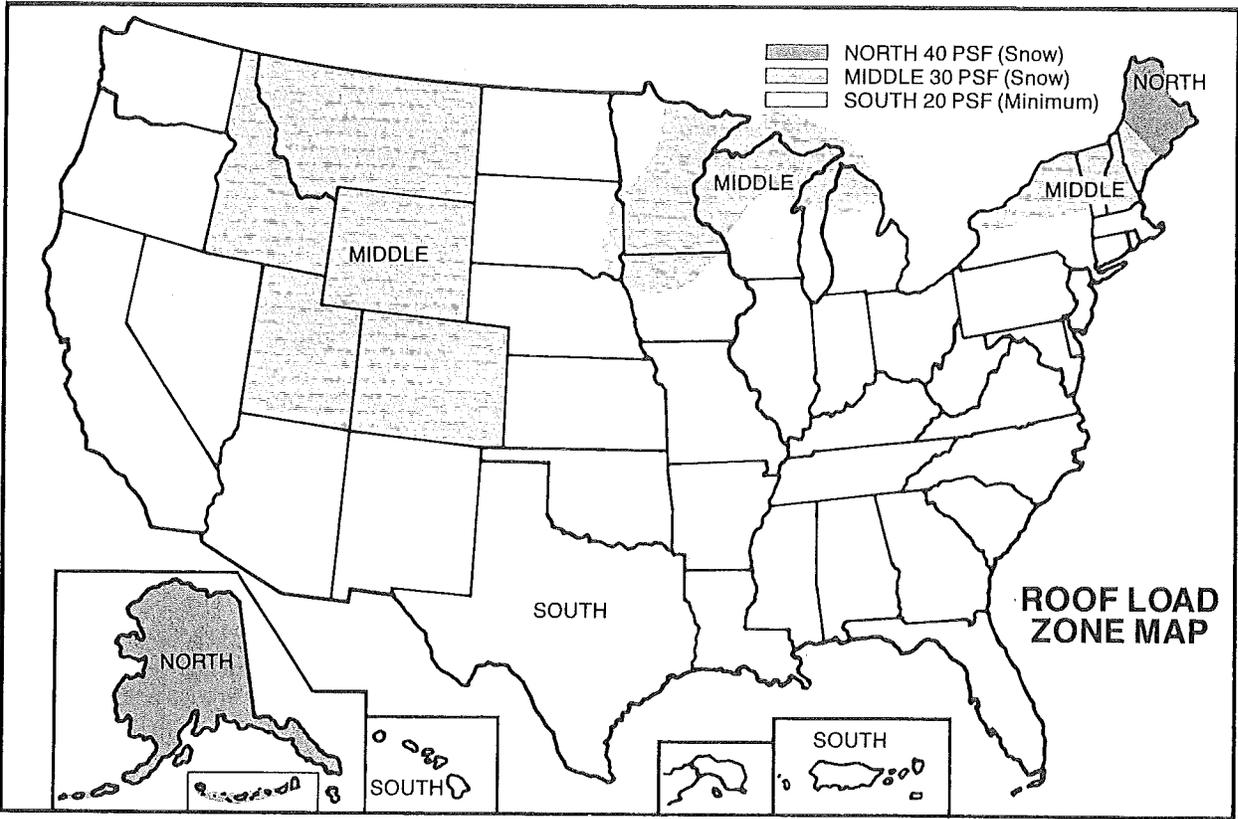
### PERIODIC RELEVELING OF HOME MAY BE NECESSARY

If any of the aforementioned sag-related conditions occur, as listed in conditions numbered 1., 2., 3. and 4. after the home has been properly blocked and leveled, you should recheck the home's leveling. In some parts, or regions of the country, initial proper blocking and leveling of the home can be gradually impaired due to generally abnormal or even relatively normal settling of the land or site on which it sits. Future transportability of the home may be impossible if structural damage has been introduced through improper blocking or neglect of periodic inspection of the home's blocked and leveled condition.

To check whether the home needs possible releveling from time to time, simply place a carpenter's level upon the floor of the home at several and various lengthwise and crosswise spots in each room to see if it is reasonably level throughout.

Should releveling be necessary, corrective measures can be taken by having a competent and knowledgeable home mover or installer follow the suggested procedures outlined on Page 6. Although these procedures may appear easy for an amateur to attempt, they require repeated experience to master.

Before releveling, loosen frame tie downs and optional ground straps prior to jacking up home.



# SINGLE- AND DOUBLE-SECTION JACKING AND BLOCKING PROCEDURES

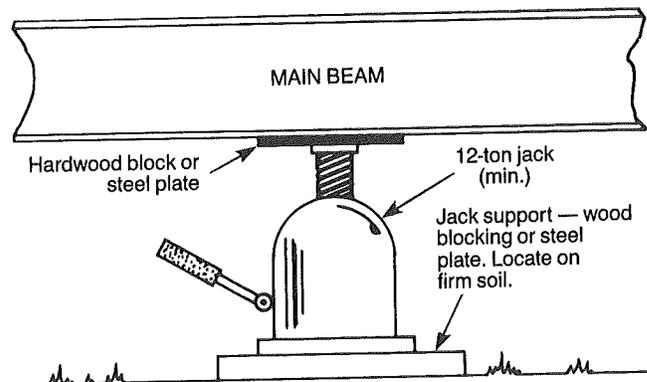
## WARNING:

Getting under a manufactured home when it is being raised, lowered, moved sideways, etc. by jacks or other lifting devices is dangerous. If the home slips off the jacks, or other devices, you or others in the area could be seriously or even fatally injured. If it is ever necessary to be underneath the home, make sure there are sufficient safety supports (blocking, timbers, etc.) in place under the home so that if the home were to fall there would be rigid supports in place to catch it and limit the distance it could fall. Raising, lowering, or moving a home during set-up should never be attempted by an unqualified person. Always follow these 7 minimum safety precautions:

1. Use only jacks in good condition with a 12 ton minimum rating.
2. Provide a firm support, such as wood blocking or a steel plate, underneath the jack bases to prevent the jack from tipping.
3. Leave the tires and axles on the unit until all blocking is completed in order to reduce the hazards from collapse.
4. Operate the jacks from outside the perimeter of the home. Use long handles to avoid working under the home.
5. Distribute the concentrated loads created by the jacks by using 3/8" x 4" x 12" steel plates or "C" channels or 4" x 4" x 12" hardwood blocks between the jacks and the main beam. Never apply the jacking load directly to the I-beam or other structural member.
6. Position safety supports beneath solid members such as I-beams or floor joists and never under an axle or other spring-mounted members.
7. Place the jacks at or near the area of the home that is to be raised at or near crossmembers and outriggers and minimize the amount of lift required. Excessive lift which reduces or eliminates support at remote locations may result in the home sliding off the jack.

### Additional jacking and blocking procedures:

1. You must follow the sequence of jacking outlined on the following pages to avoid overstressing structural members. Excessive or nonuniform jacking during the leveling process could cause the home to be racked or twisted, thus voiding your warranty.
2. It is recommended that the home be set as low to the ground as possible. However, exterior finishes should be no closer than 8" from the ground.
3. For jacking procedures for homes with PACO I-Beam, see Page 32.



## SINGLE-SECTION SET-UP PROCEDURE

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### GENERAL:

1. Position the home in its final location.
2. Position support piers (i.e. concrete blocks with hardwood shims, adjustable metal supports, etc.) under the main I-beams and at exterior door openings as shown on pages 9, 10, and 11.
3. Rough level the home. If the hitch jack is used in this process, place adequate blocking under the home to prevent it from falling and hurting someone, should the screw jack fail. If it is necessary to move the home more than a few degrees to attain a "rough level" condition, then use heavy-duty jacks with proper support under them.
4. Finish leveling the home. Where possible, operate the 12-ton jacks used in this step from outside the perimeter of the home. Use long handles and avoid working under the home. Use a water level in conjunction with a carpenter's level or similar equipment for this step. The last height adjustment is made by jacking up the main beam and inserting hard wood shims between the main beams and piers or adjusting the adjustable steel jacks.
5. The tie-down system must be connected as shown on Page 15-16.

### CAUTION: UNDER NO CIRCUMSTANCES ARE THE OPTIONAL GROUND STRAPS TO BE USED WITHOUT THE FRAME TIE DOWNS.

6. Connect and test the utility systems (electrical, water, drain lines and gas lines as applicable) as detailed in the utility section.
7. Check the home for the following:
  - (A) Exterior Doors (should open and close easily, lock and unlock easily).
  - (B) Passage Doors (should open and close easily and be in proper alignment).
  - (C) Windows (should open and close easily).

### CAUTION: READ EGRESS INSTRUCTIONS ON ALL BEDROOM WINDOWS.

- (D) Cabinet doors and drawers (should open and close easily and be in proper alignment).
  - (E) Check lag bolt connections, steel beam to floor joists and outriggers to floor joist. If loose they must be retightened.
8. If it becomes necessary to relevel the home, loosen the frame tie downs and optional ground straps and follow the procedures in step #4.
  9. If the home was shipped with an air foil fastened to the roof through the shingles remove the air foil and seal the roof penetrations.

## DOUBLE-SECTION SET-UP PROCEDURE

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### GENERAL:

1. Position the first section of the home in its final location.
2. Rough and finish level this section, using steps 2 through 4 of the single-section set-up procedures. Use pier spacing shown on pages 12, 13 and 14 under main beams, exterior doors, and marriage wall openings larger than 4 feet.
3. Remove shipping material from both units and check for obstructions that would prevent proper mating of the two units. All marriage wall shipping polyethylene film must be removed on entire wall. Leave shipping wall framing in place until both units are together and the roof, floor and wall connections have been made.
4. In order to provide a seal between the sections of the home (which will reduce air currents and related problems), attach a strip of insulation (4" or larger in width) along the floor rim rail mating surfaces, horizontal roof rail at the ceiling line mating surfaces, up the vertical end walls mating surfaces and on each side of marriage wall opening mating surfaces. This insulation will be compressed to form a seal as the sections of the home move together. After the sections are together check for voids in the seal and pack any remaining voids with insulation. Note: Other resilient materials may be used to form the seal.
5. Position the second section along side of the first and as near to it as possible. Check for alignment of walls between the sections. If any adjustments are necessary, make them now.
6. Move the second section into contact with the first section and level as described in step 2.

### CAUTION: IF YOU ARE MOVING THE UNIT WITH COME-ALONGS, MAKE SURE THAT THEY ARE HOOKED UP AT THE CROSSMEMBER OUTRIGGER LOCATIONS SO AS NOT TO DAMAGE THE I-BEAM.

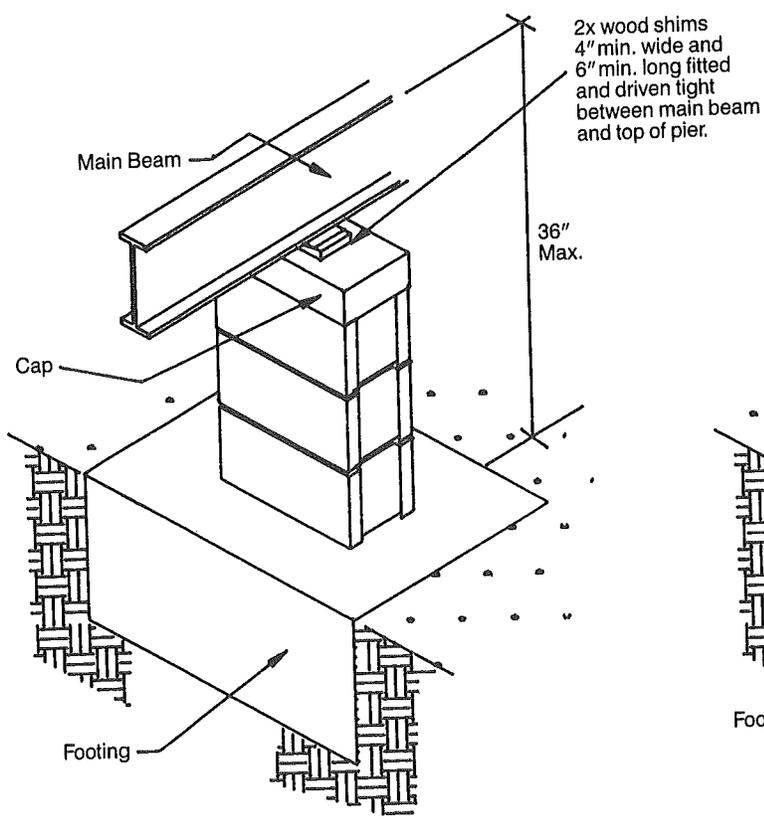
7. Fasten roof ridge beam together and seal as shown on Page 17. If the home has a shingle roof, remove the shipping strips and seal the holes.
8. Fasten the floor joists together as shown on Page 17 — seal any penetrations of the floor cavity.
9. Remove shipping walls after fastening marriage wall openings together as shown on Page 18.
10. Check lag bolt connections, steel beam to floor joists and outriggers to floor joist. If loose, they must be retightened.
11. Connect and test utility systems (electrical, water, drain lines, if applicable) as detailed in Utility Section.
12. See Page 30 for heat duct crossover connection.
13. The tie-down systems must be connected as shown on Pages 15-16.

### CAUTION: UNDER NO CIRCUMSTANCES ARE THE OPTIONAL GROUND STRAPS TO BE USED WITHOUT THE FRAME TIE DOWNS.

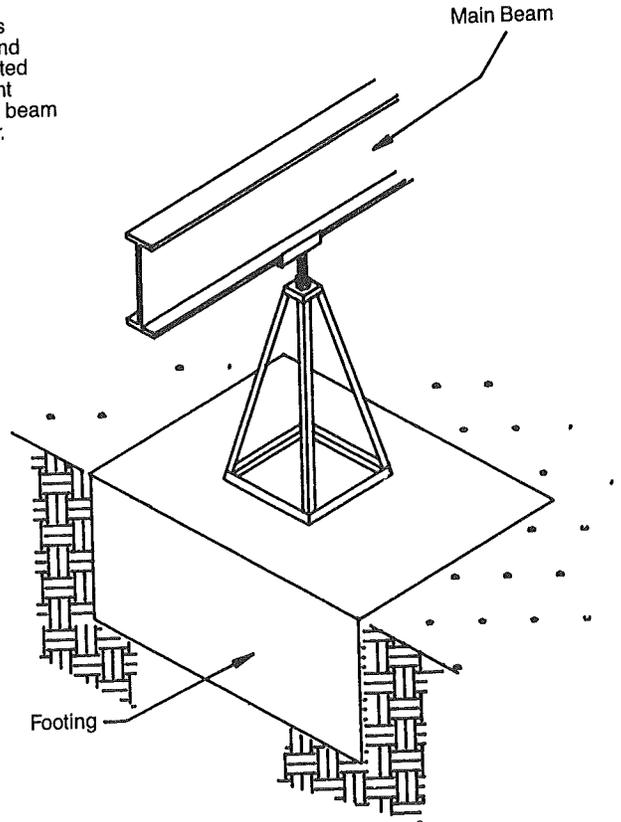
14. Trim out archways, install ceiling beams, passage doors, etc. See Page 18.
15. If the home was shipped with an air foil fastened to the roof through the shingles remove the air foil and seal the roof penetrations.

# TYPICAL PIERS

## FRAME



**8" X 8" X 16" CONCRETE BLOCK**  
(MAX. LOAD 8,000#)



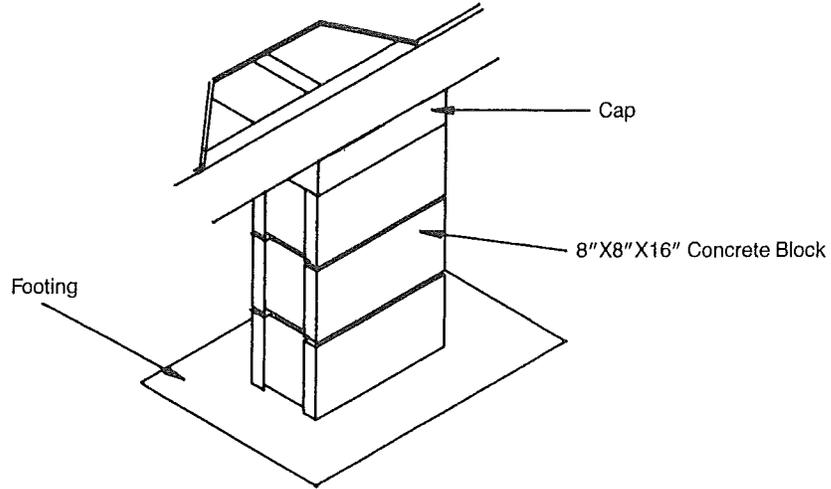
**STEEL JACK**  
(FOR MAX. LOAD CAPACITY  
SEE MANUFACTURERS  
SPECIFICATIONS)

# TYPICAL PIERS

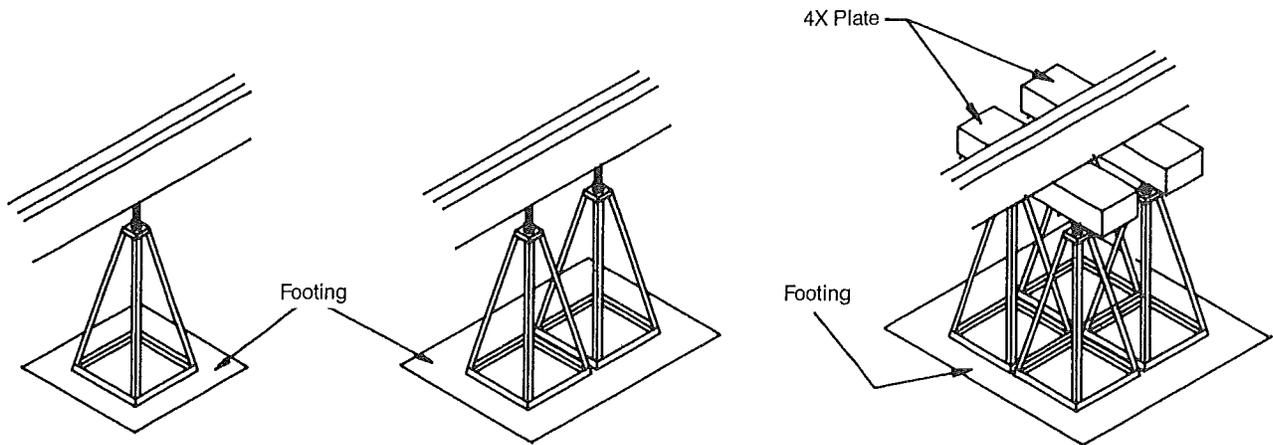
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## PERIMETER RAIL (SIDE & MARRIAGE)

### SIDE RAIL



### MARRIAGE LINE



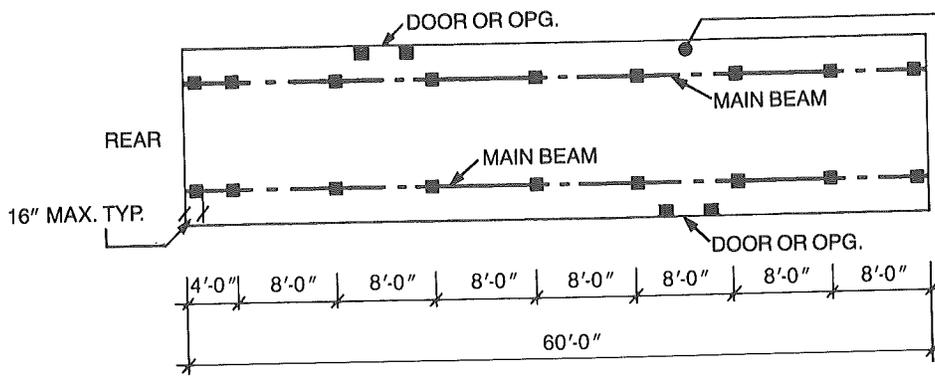
**STEEL JACK**

**(2) STEEL JACKS**  
(2X JACK CAPACITY)

**(4) STEEL JACKS**  
(4X JACK CAPACITY)

**NOTE:** For max. load capacity of steel jack see manufacturers specifications.

# TYPICAL BLOCKING DIAGRAM FOR 12' & 14' SINGLE-SECTION HOMES, 12" EAVE OVERHANG MAX.



Support piers are required under porch posts and under fireplaces and wood-burning stoves located on floor overhangs.

FRONT (HITCH)

**NOTE:** Blocking of perimeter rail is required at each side of the large bow windows, recessed entries, exterior doors located in the sidewall, and any other opening in excess of 4'. For pier capacity, use 1/2 the value shown in marriage wall opening table, Pg. 12.

**MINIMUM PIER CAPACITIES (lbs.)**

| SPACING FOR BLOCKING    | ROOF LOAD ZONE |      |      |
|-------------------------|----------------|------|------|
|                         | 20#            | 30#  | 40#  |
| 12' wide 8'0" o.c. max. | 4200           | 4750 | 5300 |
| 14' wide 8'0" o.c. max. | 4775           | 5400 | 6000 |

The diagram above shows the minimum required placement of blocks under the frame of a typical length and width home. It is extremely important to check with local building officials prior to blocking your home as to the latest local codes in your area.

## FRAME BLOCKING

Begin by placing piers at front and rear of home. Starting at front, place piers at a maximum of 8' o.c. along both main beams the entire length of home. Follow this procedure for any length of Champion-built home.

## FRAME BLOCKING PIER FOOTINGS

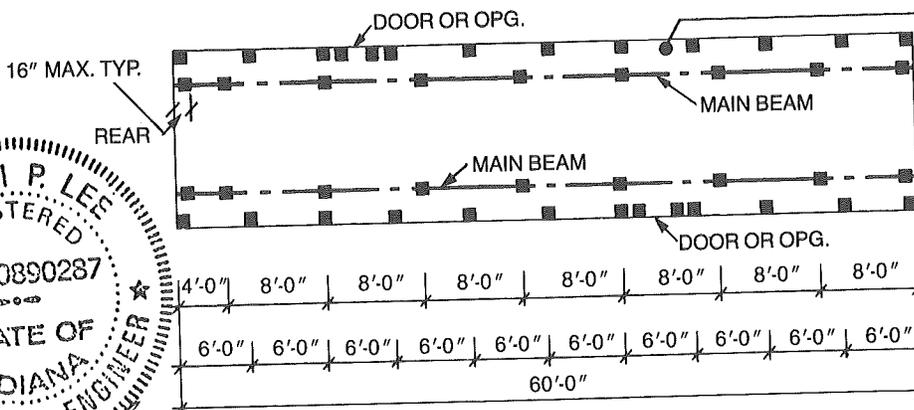
Based on a soil capacity of 1000 lb. per square foot, a suggested footing size for all piers is 2'6" square.

Alternate methods are acceptable if they meet with local soil bearing capacities.

It is extremely important to check with local building officials as to the latest local codes in your area.

**FOR 60# ROOF LOAD ZONE SEE BELOW.**

# TYPICAL BLOCKING DIAGRAM FOR 12' & 14' SINGLE-SECTION HOMES — 60 LB. ROOF LOAD, 12" EAVE OVERHANG MAX.



Support piers are required under porch posts and under fireplaces and wood-burning stoves located on floor overhangs.

FRONT (HITCH)

**NOTE:** Blocking of perimeter rail is required at each side of the large bow windows, recessed entries, exterior doors located in the sidewall, and any other opening in excess of 4'. For pier capacity, refer to marriage wall opening table, Pg. 13.

**MINIMUM PIER CAPACITIES (lbs.)**

| SPACING FOR BLOCKING    | ROOF LOAD ZONE 60# | SPACING FOR PERIMETER BLOCKING |                         |
|-------------------------|--------------------|--------------------------------|-------------------------|
|                         |                    | 12' wide 6'0" o.c. max.        | 14' wide 6'0" o.c. max. |
| 12' wide 8'0" o.c. max. | 2350               | 3050                           | 3425                    |
| 14' wide 8'0" o.c. max. | 2675               |                                |                         |

**NOTE:** 60-lb. roof load areas require BOTH frame and perimeter blocking

The diagram above shows the minimum required placement of blocks under the frame of a typical length and width home. It is extremely important to check with local building officials prior to blocking your home as to the latest local codes in your area.

## FRAME BLOCKING

Begin by placing piers at front and rear of home. Starting at front, place piers at a maximum of 8' o.c. along both main beams the entire length of home. Follow this procedure for any length of Champion-built home.

## PERIMETER BLOCKING

Begin by placing piers at front and rear of home. Starting at front, place piers at a maximum of 6' o.c. along both rim mem-

bers the entire length of home. Follow this procedure for any length of Champion-built home.

## FRAME BLOCKING PIER FOOTINGS

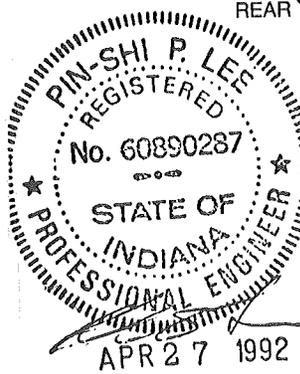
Based on a soil capacity of 1000 lb. per square foot, a suggested footing size for all piers is 2'6" square.

## PERIMETER BLOCKING PIER FOOTINGS

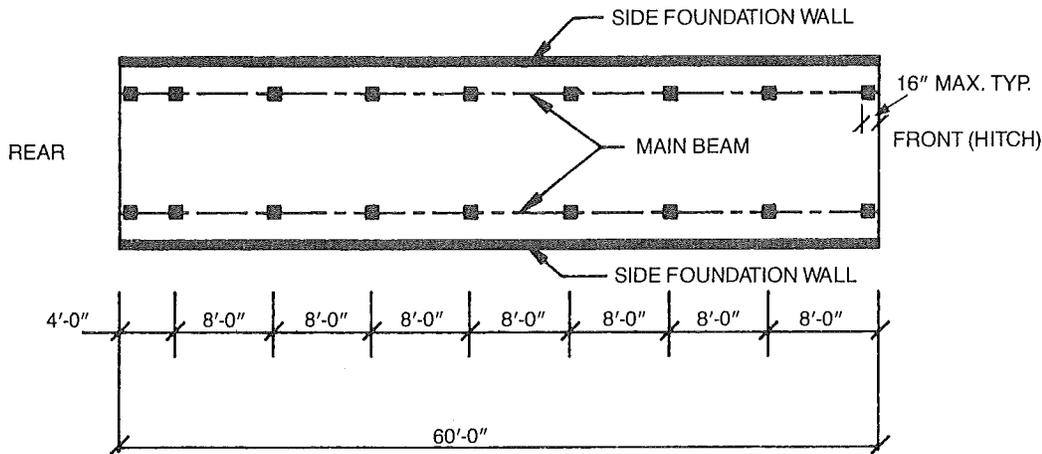
Based on a soil capacity of 1000 lb. per square foot, a suggested footing size for all piers is 2'0" square.

Alternate methods are acceptable if they meet with local soil bearing capacities.

It is extremely important to check with local building officials as to the latest local codes in your area.

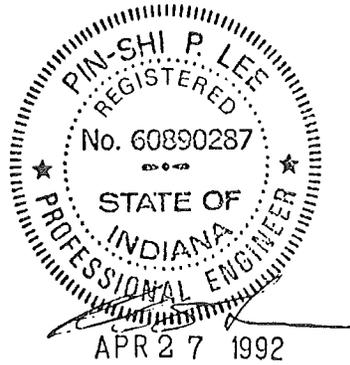


**TYPICAL BLOCKING DIAGRAM FOR 12' & 14' SINGLE-SECTION HOMES —  
80 LB. ROOF LOAD, 12" EAVE OVERHANG MAX.**



**MINIMUM PIER CAPACITIES (lbs.)**

| SPACING FOR FRAME BLOCKING | ROOF LOAD ZONE 80# |
|----------------------------|--------------------|
| 12' wide 8'0" o.c. max.    | 2350               |
| 14' wide 8'0" o.c. max.    | 2675               |



The diagram above shows the minimum required placement of blocks under the frame of a typical length and width home. It is extremely important to check with local building officials prior to blocking your home as to the latest local codes in your area.

**FRAME BLOCKING**

Begin by placing piers at front and rear of home. Starting at front, place piers at a maximum of 8' o.c. along both main beams the entire length of home. Follow this procedure for any length of Champion-built home.

**FRAME BLOCKING PIER FOOTINGS**

Based on a soil capacity of 1000 lb. per square foot, a suggested footing size for all piers is 2'-6" square.

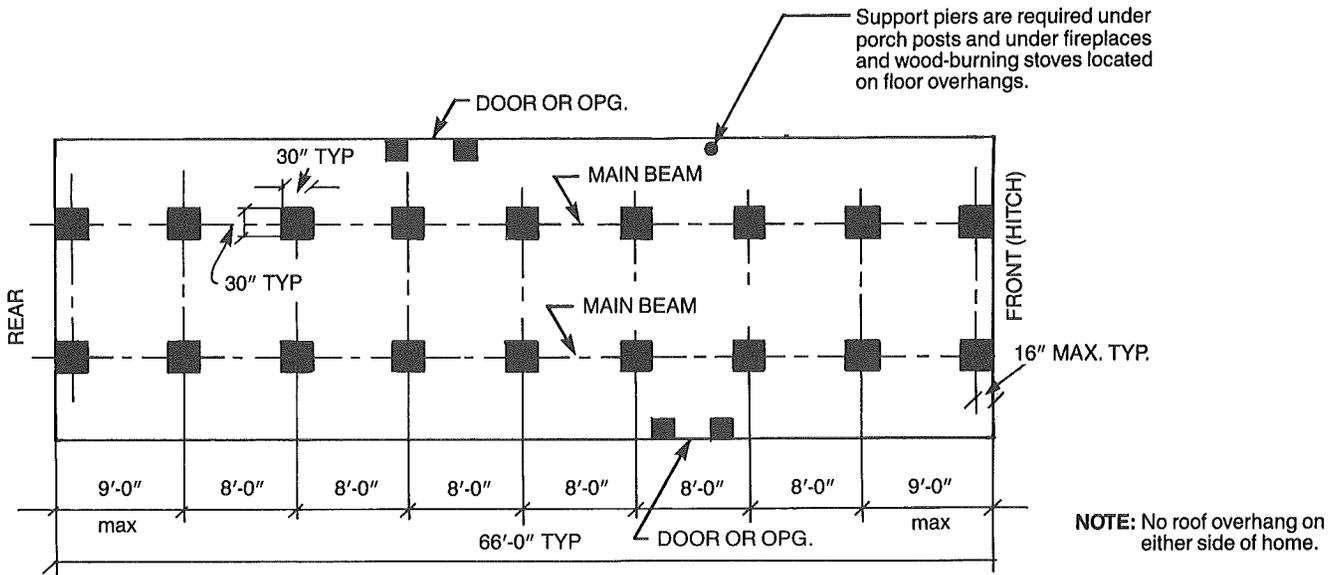
**FOUNDATION WALLS**

Side foundation wall and footing to be designed by others, for 720 plf.

Larger footing in side foundation wall may be required at each side of large bow windows, recessed entries, porch posts, and other openings in excess of 4'. For footing capacity, use 1/2 the value shown in marriage wall opening table. (page 14)

Alternate methods are acceptable if they meet with local soil bearing capacities.

# TYPICAL BLOCKING DIAGRAM FOR 16' SINGLE-SECTION HOMES



The diagram above shows the minimum required placement of blocks under the frame of a typical length and width home. It is extremely important to check with local building officials prior to blocking your home as to the latest local codes in your area.

## FRAME BLOCKING

Begin by placing piers at front and rear of home. Starting at front, place piers at a maximum of 8' o.c. along both main beams the entire length of home. Follow this procedure for any length of Champion-built home.

## FRAME BLOCKING PIER FOOTINGS

Based on a soil capacity of 1000 lb. per square foot, a suggested footing size for all piers is 2'6" square.

Alternate methods are acceptable if they meet with local soil bearing capacities.

It is extremely important to check with local building officials as to the latest local codes in your area.

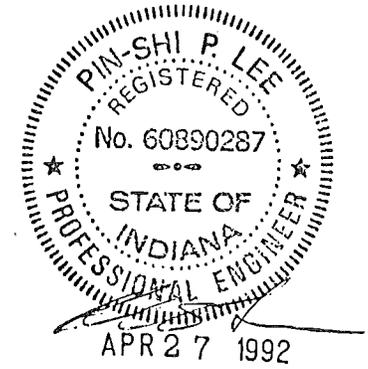
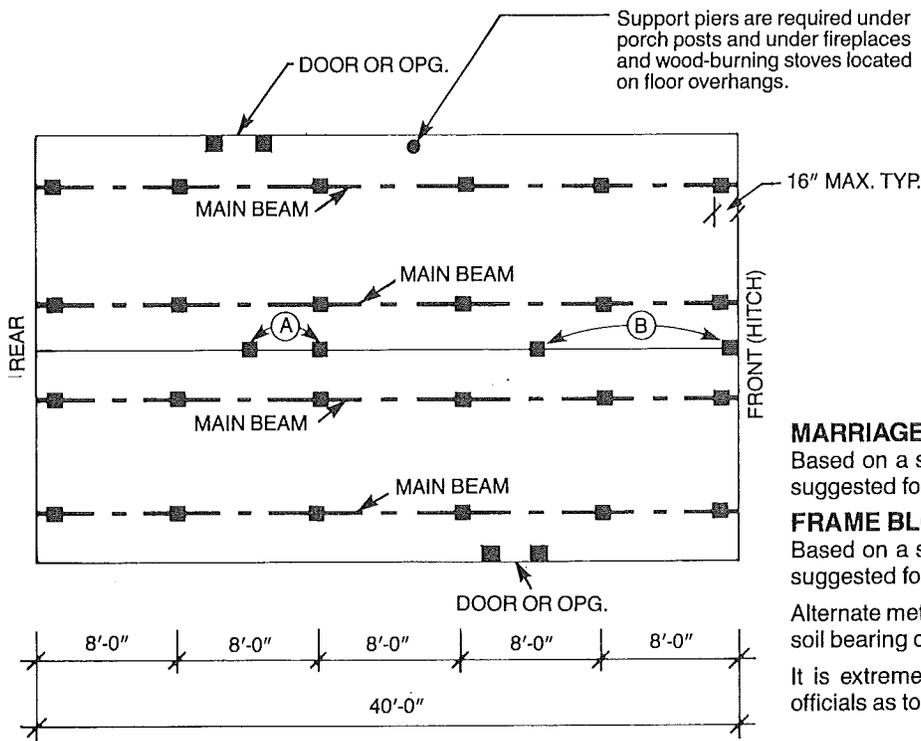
**NOTE:** Blocking of perimeter rail is required at each side of the large bow windows, recessed entries, exterior doors located in the sidewall, and any other opening in excess of 4'. For pier capacity, use 1/2 the value shown in marriage wall opening table, Pg. 12, in 32' columns.

MINIMUM PIER CAPACITY (lbs.)

| SPACING FOR BLOCKING   | ROOF LOAD ZONE |      |
|------------------------|----------------|------|
|                        | 20#            | 30#  |
| 16'wide 8'0" o.c. max. | 5200           | 5825 |



# TYPICAL BLOCKING DIAGRAM FOR DOUBLE-SECTION HOMES, 12" EAVE OVERHANG MAX.



**MARRIAGE WALL BLOCKING PIER FOOTINGS**  
Based on a soil capacity of 1000 lb. per square foot, a suggested footing size for all piers is 2'8" square.

**FRAME BLOCKING PIER FOOTINGS**  
Based on a soil capacity of 1000 lb. per square foot, a suggested footing size for all piers is 2'6" square.

Alternate methods are acceptable if they meet with local soil bearing capacities.

It is extremely important to check with local building officials as to the latest local codes in your area.

**MINIMUM PIER CAPACITIES (lbs.)**

| SPACING FOR BLOCKING    | ROOF LOAD ZONE |      |      |
|-------------------------|----------------|------|------|
|                         | 20#            | 30#  | 40#  |
| 24' wide 8'0" o.c. max. | 4200           | 4750 | 5300 |
| 28' wide 8'0" o.c. max. | 4775           | 5400 | 6000 |
| 32' wide 8'0" o.c. max. | 5200           | 5825 | NA   |

**NOTE:** Blocking of perimeter rail is required at each side of the large bow windows, recessed entries, exterior doors located in the sidewall, and any other opening in excess of 4'. For pier capacity, use 1/2 the value shown in marriage wall opening table, below.

The diagram above shows the minimum required placement of blocks under the frame of a typical length and width home. It is extremely important to check with local building officials prior to blocking your home as to the latest local codes in your area.

**FRAME BLOCKING**

Begin by placing piers at front and rear of home. Starting at front, place piers at a maximum of 8' o.c. along both main beams the entire length of home. Follow this procedure for any length of Champion-built home.

Other blocking positions are also required under the center marriage walls, depending on the model. These positions are determined by the locations of the openings in the marriage wall. Clear spans may occur on each section of the home or at the same location of both sections. There must be blocking at each end of the openings shown as A and B on diagram above and vary depending on the model. For clear span openings and pier capacities see the chart shown above. For piers supporting two adjacent marriage wall openings, the capacity shall be the sum of the capacities from each span.

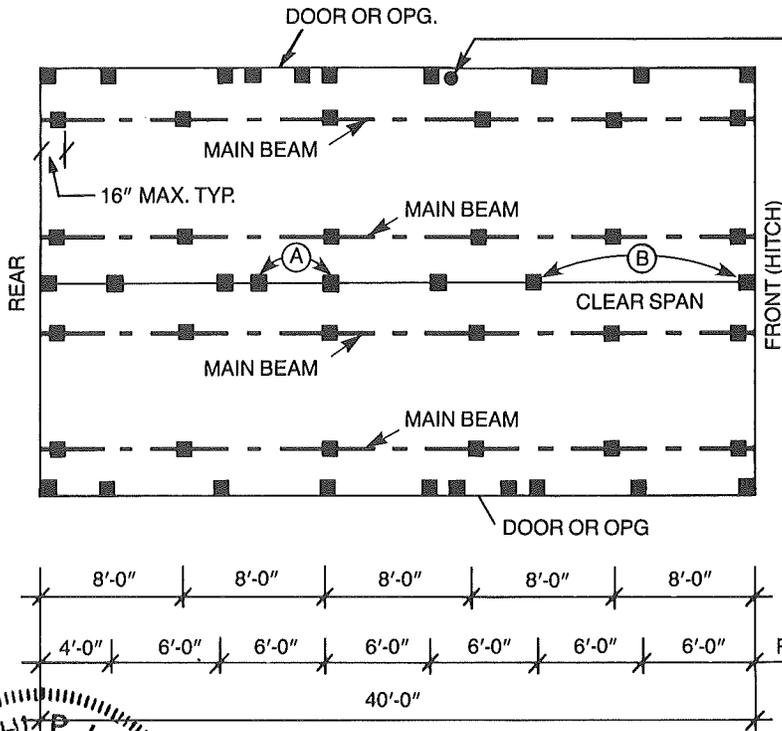
**MINIMUM PIER CAPACITIES FOR MARRIAGE WALL OPENINGS (lbs.)**

| CLEAR SPAN DISTANCE IN MARRIAGE WALL | 20#  |      |      | 30#  |      |      | 40#  |      |
|--------------------------------------|------|------|------|------|------|------|------|------|
|                                      | 24'  | 28'  | 32'  | 24'  | 28'  | 32'  | 24'  | 28'  |
| 4'-1" -- 8'-0"                       | 1400 | 1600 | 1850 | 1875 | 2125 | 2450 | 2325 | 2675 |
| 8'-1" -- 12'-0"                      | 2100 | 2400 | 2750 | 2800 | 3200 | 3675 | 3500 | 4000 |
| 12'-1" -- 16'-0"                     | 2800 | 3200 | 3675 | 3725 | 4275 | 4900 | 4675 | 5325 |
| 16'-1" -- 20'-0"                     | 3500 | 4000 | 4600 | 4675 | 5325 | 6125 | 5825 | 6675 |

**NOTE:** For 26' wide homes, use marriage wall pier capacities for 28' wide homes.

**FOR 60# ROOF LOAD ZONE SEE PAGE 13**

# TYPICAL BLOCKING DIAGRAM FOR DOUBLE-SECTION HOMES — 60 LB. ROOF LOAD, 12" EAVE OVERHANG MAX.



Support piers are required under porch posts and under fireplaces and wood-burning stoves located on floor overhangs.

**MARRIAGE WALL BLOCKING PIER FOOTINGS**  
Based on a soil capacity of 1000 lb. per square foot, a suggested footing size for all piers is 3'-6" square.

**FRAME BLOCKING PIER FOOTINGS**  
Based on a soil capacity of 1000 lb. per square foot, a suggested footing size for all piers is 2'6" square.

**PERIMETER BLOCKING PIER FOOTINGS**  
Based on a soil capacity of 1000 lb. per square foot, a suggested footing size for all piers is 2'0" square.

Alternate methods are acceptable if they meet with local soil bearing capacities.

It is extremely important to check with local building officials as to the latest local codes in your area.

**NOTE:** 60-lb. roof load areas require BOTH frame and perimeter blocking. Pier capacities for perimeter blocking under marriage walls are twice the values shown in table.

**NOTE:** Blocking of perimeter rail is required at each side of the large bow windows, recessed entries, exterior doors located in the sidewall, and any other opening in excess of 4'. For pier capacity, refer to marriage wall opening table, below.



**MINIMUM PIER CAPACITIES (lbs.)**

| SPACING FOR BLOCKING    | ROOF LOAD ZONE 60# | SPACING FOR PERIMETER BLOCKING | ROOF LOAD ZONE 60# |
|-------------------------|--------------------|--------------------------------|--------------------|
| 24" wide 8'0" o.c. max. | 2350               | 12' wide 6'0" o.c. max.        | 3050               |
| 28" wide 8'0" o.c. max. | 2675               | 14' wide 6'0" o.c. max.        | 3425               |

**MINIMUM PIER CAPACITIES FOR MARRIAGE WALL OPENINGS (lbs.)**

| CLEAR SPAN DISTANCE IN MARRIAGE WALL | 60#   |       |
|--------------------------------------|-------|-------|
|                                      | 24'   | 28'   |
| 0'-4'-0"                             | 4075  | 4675  |
| 4'-1"-8'-0"                          | 5725  | 6525  |
| 8'-1"-12'-0"                         | 7350  | 8400  |
| 12'-1"-16'-0"                        | 8975  | 10275 |
| 16'-1"-20'-0"                        | 10625 | 12125 |

**NOTE:** For 26' wide homes, use marriage wall pier capacities for 28' wide homes.

The diagram above shows the minimum required placement of blocks under the frame of a typical length and width home. It is extremely important to check with local building officials prior to blocking your home as to the latest local codes in your area.

## OFFSET DESIGN SET-UP

Double-section homes having the floors offset from each other shall be tied down as a single-section home for that portion of the floor which extends past the other. Blocking shall be placed at the inside corners where the floor joins, having a capacity of piers called for on marriage wall openings, with the span being the amount of projection.

## FRAME BLOCKING

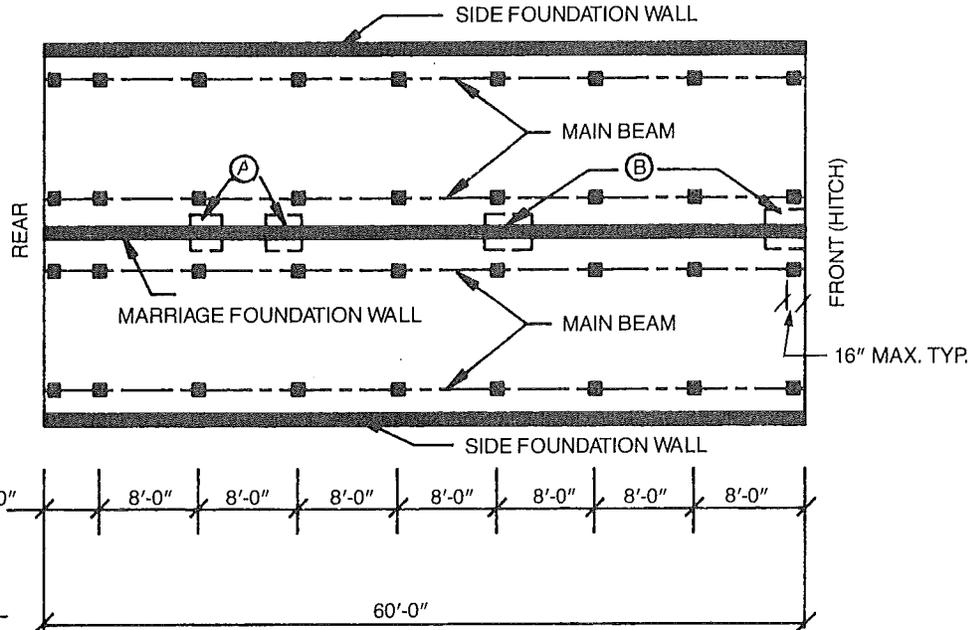
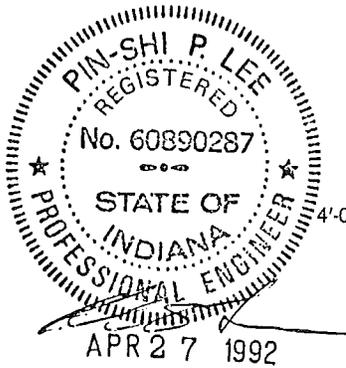
Begin by placing piers at front and rear of home. Starting at front, place piers at a maximum of 8' o.c. along both main beams the entire length of home. Follow this procedure for any length of Champion-built home.

Other blocking positions are also required under the center marriage walls, depending on the model. These positions are determined by the locations of the openings in the marriage wall. Clear spans may occur on each section of the home or at the same location of both sections. There must be blocking at each end of the openings shown as A and B on diagram above and vary depending on the model. For clear span openings and pier capacities see the chart shown above. For piers supporting two adjacent marriage wall openings, the capacity shall be the sum of the capacities from each span.

## PERIMETER BLOCKING

Begin by placing piers at front and rear of home. Starting at front, place piers at a maximum of 6' o.c. along both rim members the entire length of home. Follow this procedure for any length of Champion-built home. Also add piers under the marriage walls. Clear span areas do not require marriage wall perimeter blocking.

# TYPICAL BLOCKING DIAGRAM FOR DOUBLE-SECTION HOMES — 80 LB. ROOF LOAD; 12" EAVE OVERHANG MAX.



**NOTE:** 80-lb. roof load areas require BOTH frame blocking side foundation wall, and marriage foundation wall.

**MINIMUM PIER CAPACITIES (lbs.)**

| SPACING FOR FRAME BLOCKING | ROOF LOAD ZONE 80# |
|----------------------------|--------------------|
| 12' wide 8'0" o.c. max.    | 2350               |
| 14' wide 8'0" o.c. max.    | 2675               |

**MINIMUM FOOTING CAPACITIES FOR MARRIAGE WALL OPENINGS (lbs.)**

| CLEAR SPAN DISTANCE IN MARRIAGE WALL | 80#  |      |
|--------------------------------------|------|------|
|                                      | 24'  | 28'  |
| 0' - 4'-0"                           | 2100 | 2400 |
| 4'-1" - 8'-0"                        | 4200 | 4800 |
| 8'-1" - 12'-0"                       | 6300 | 7200 |
| 12'-1" - 16'-0"                      | 8400 | 9600 |

**NOTE:** For 26' wide homes, use marriage wall pier capacities for 28' wide homes.

The diagram above shows the minimum required placement of blocks under the frame of a typical length and width home. It is extremely important to check with local building officials prior to blocking your home as to the latest local codes in your area.

### OFFSET DESIGN SET-UP

Double-section homes having the floors offset from each other shall be tied down as a single-section home for that portion of the floor which extends past the other.

### FRAME BLOCKING

Begin by placing piers at front and rear of home. Starting at front, place piers at a maximum of 8' o.c. along both main beams the entire length of home. Follow this procedure for any length of Champion-built home.

### FRAME BLOCKING PIER FOOTINGS

Based on a soil capacity of 1000 lb. per square foot, a suggested footing size for all piers is 2'-6" square.

### FOUNDATION WALLS

Marriage foundation wall and footing to be designed by others, for 1260 plf.

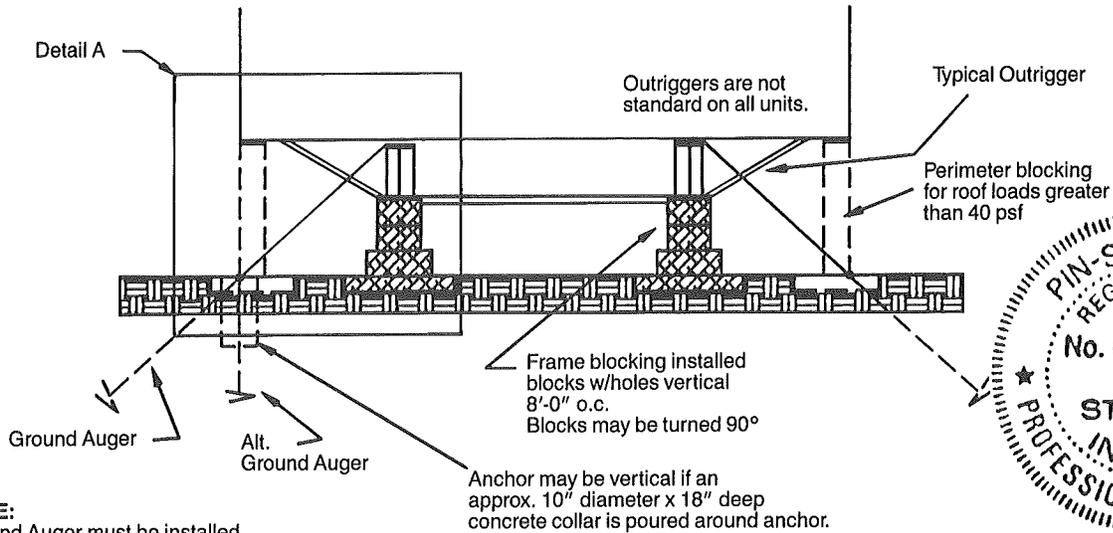
Larger footings are also required under the marriage foundation wall, depending on the model. These positions are determined by the locations of the openings in the marriage wall. Clear spans may occur on each section of the home or at the same location of both sections. There must be larger footings at each end of the openings shown as A and B on diagram above and vary depending on the model. For clear span openings and footing capacities see the marriage wall opening table. For footings supporting two adjacent marriage wall openings, the capacity shall be the sum of the capacities from each side.

Side foundation wall and footing to be designed by others, for 720 plf.

Larger footing in side foundation wall may be required at each side of large bow windows, recessed entries, porch posts, and other opening in excess of 4'. For footing capacity, use 1/2 the value shown in marriage wall opening table.

Alternate methods are acceptable if they meet with local soil bearing capacities.

# MINUTE MAN TIE-DOWN INSTRUCTIONS FOR SINGLEWIDES



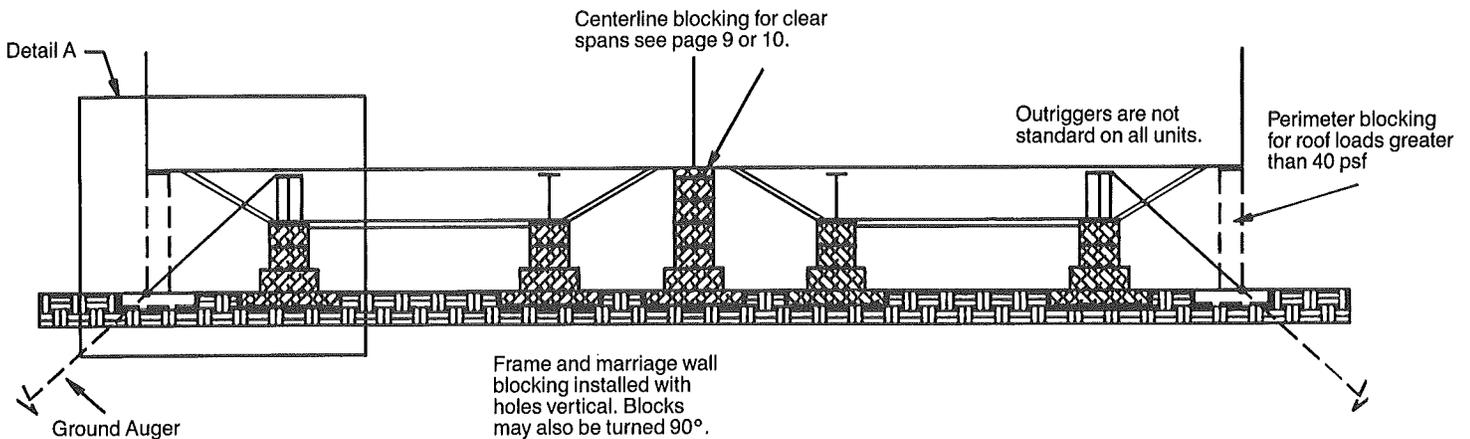
**NOTE:**  
Ground Auger must be installed in such a way to resist lateral load.



*[Signature]*  
FEB 20 1990

| FRAME TIE-DOWN SPACING |          |          |          |          |          |          |
|------------------------|----------|----------|----------|----------|----------|----------|
| PIER HEIGHT            | ZONE I   |          |          | ZONE II  |          |          |
|                        | 12' WIDE | 14' WIDE | 16' WIDE | 12' WIDE | 14' WIDE | 16' WIDE |
| 18"                    | 11'-0"   | 12'-6"   | 10'-6"   | 6'-0"    | 6'-0"    | 5'-0"    |
| 24"                    | 9'-6"    | 12'-0"   | 12'-0"   | 5'-6"    | 6'-6"    | 5'-6"    |
| 30"                    | 8'-0"    | 11'-0"   | 13'-0"   | 4'-6"    | 6'-0"    | 6'-0"    |
| 36"                    | 7'-0"    | 9'-6"    | 12'-0"   | 4'-0"    | 5'-6"    | 6'-6"    |

# MINUTE MAN TIE-DOWN INSTRUCTIONS FOR DOUBLEWIDES



**NOTE:**  
Ground Auger must be installed in such a way to resist lateral load.

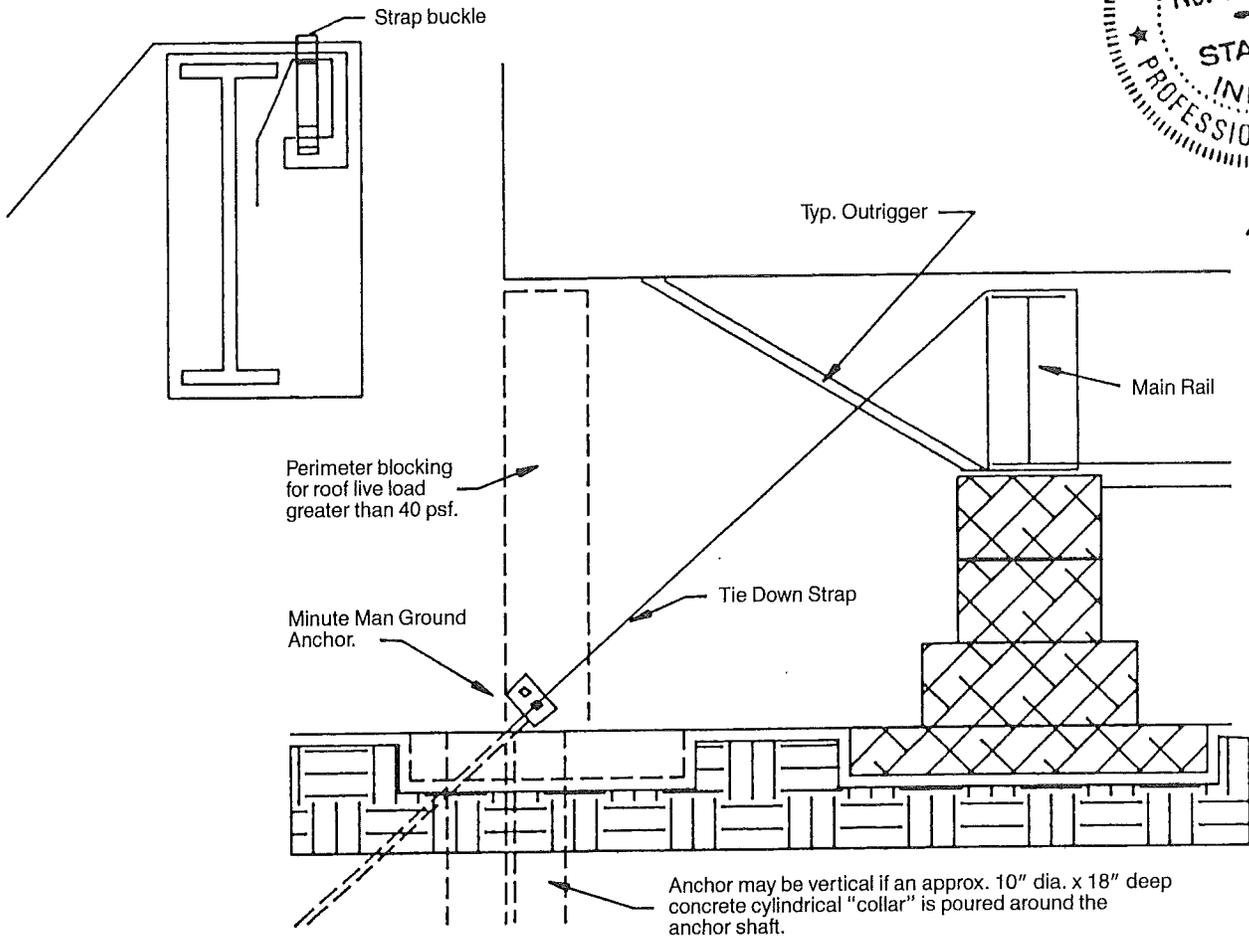
| FRAME TIE-DOWN SPACING |          |          |          |          |          |          |
|------------------------|----------|----------|----------|----------|----------|----------|
| PIER HEIGHT            | ZONE I   |          |          | ZONE II  |          |          |
|                        | 24' WIDE | 28' WIDE | 32' WIDE | 24' WIDE | 28' WIDE | 32' WIDE |
| 18"                    | 12'-6"   | 12'-6"   | 10'-6"   | 7'-0"    | 6'-0"    | 5'-0"    |
| 24"                    | 10'-6"   | 13'-6"   | 12'-0"   | 6'-0"    | 6'-6"    | 5'-6"    |
| 30"                    | 9'-0"    | 12'-0"   | 14'-6"   | 5'-0"    | 6'-6"    | 6'-0"    |
| 36"                    | 8'-0"    | 10'-6"   | 13'-0"   | 4'-6"    | 6'-0"    | 6'-6"    |

**FOR DETAIL A & STD. NOTES SEE PG. 16**

# DETAIL A



*Pin-shi P. Lee*  
FEB 20 1990



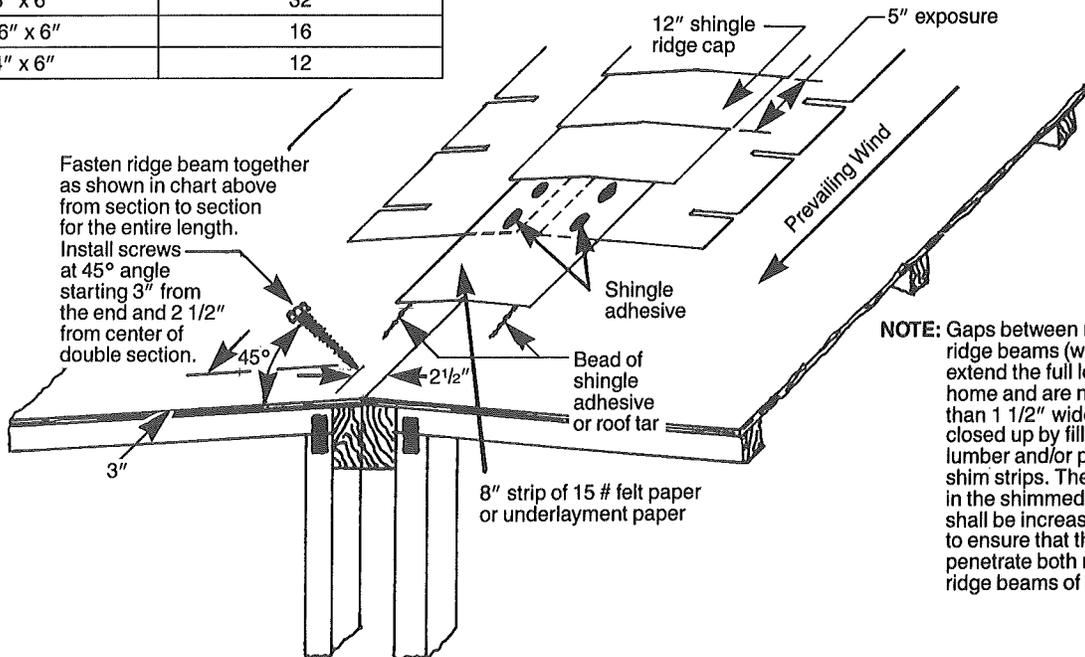
## STD. NOTES

1. All anchoring parts must be certified to 4725 lb. capacity.
2. Tie down straps shall be minute man 1 1/4" wide galvanized strap or equivalent.
3. Ground anchor hardware illustrated, is minute man or equivalent. Installed in accordance with manufacturer's instructions.
4. Pier supports and footings may be constructed of materials other than as shown. As long as they provide the equivalent load bearing capacity and are acceptable for use by local jurisdiction.
5. Champion Home Builders has designed their homes to only require the use of frame ties. When optional ground straps are sold, their use is over and above that required by Champion and the federal standard for tie down of our homes. Ground straps do not alter the requirements for frame ties. Under no circumstances are the optional ground straps to be used without frame ties. Unless the anchor is certified to accept the combined loads, optional ground straps must be fastened to separate ground anchors.
6. There must be a tie within 16" of each end on both sides.

# DOUBLE-SECTION ROOF CONNECTION

| LAG SCREW SIZE | SPACING (INCHES O.C. STAGGERED) |
|----------------|---------------------------------|
| 3/8" x 6"      | 32                              |
| 5/16" x 6"     | 16                              |
| 1/4" x 6"      | 12                              |

Pre-drill lead hole for lag screws



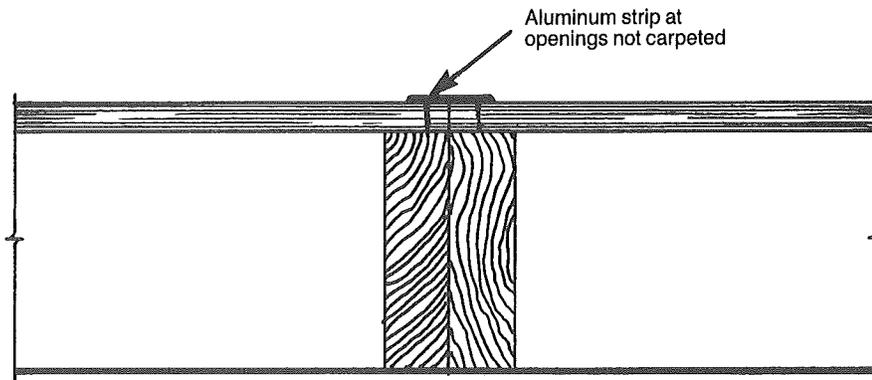
Fasten ridge beam together as shown in chart above from section to section for the entire length. Install screws at 45° angle starting 3" from the end and 2 1/2" from center of double section.

**NOTE:** Gaps between ridge rails or ridge beams (which do not extend the full length of the home and are no more than 1 1/2" wide) may be closed up by filling with lumber and/or plywood shim strips. The lag screws in the shimmed portion shall be increased in length to ensure that they fully penetrate both ridge rails or ridge beams of the home.

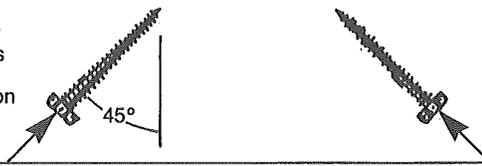
**NOTE:** The 8" felt strip may be applied on top of the last row of shingles with beads of shingle adhesive as shown.

**NOTE:** Install ridge cap shingles with 2 galv. shingle nails 5 1/2" from lap edge and 1" from side edge. Nails shall not be exposed.

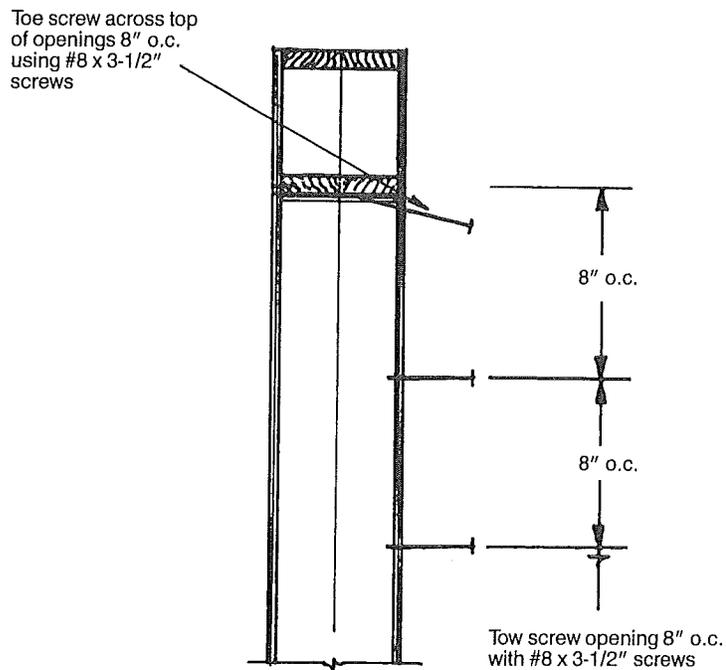
# DOUBLE-SECTION FLOOR CONNECTION



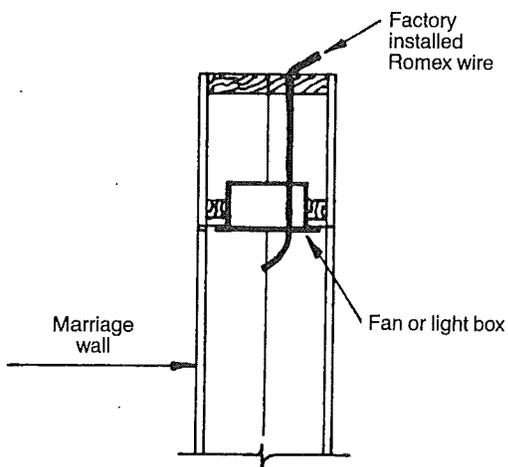
Fasten floor together with 3/8" x 6" screws 32" o.c. staggered from section to section for the entire length. Install screws at a 45° angle.



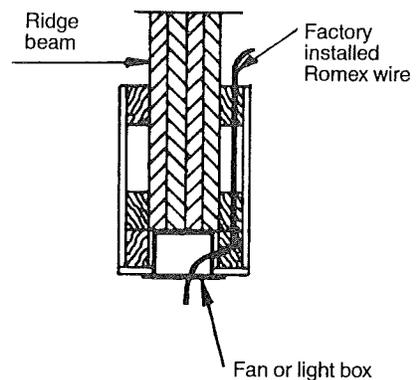
# MARRIAGE WALL AND DOOR OPENING CONNECTIONS



## OPTIONAL FAN OR LIGHT BOX INSTALLATION

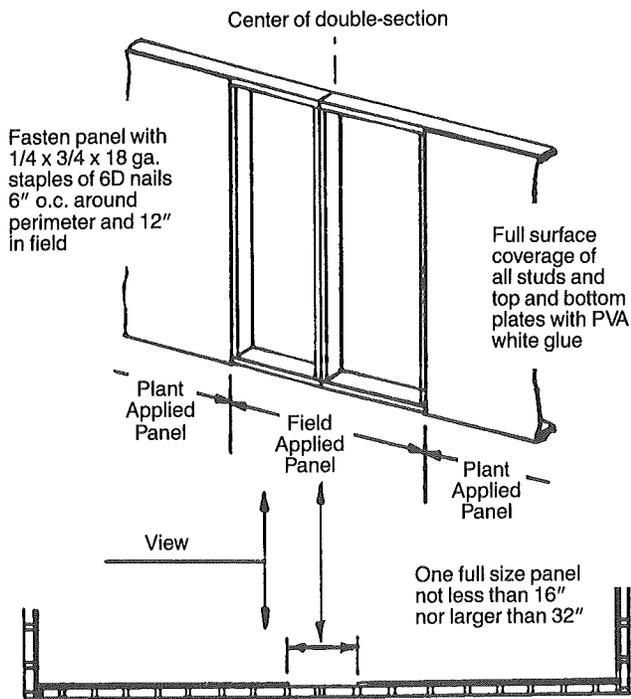


## OPTIONAL FAN OR LIGHT BOX INSTALLATION

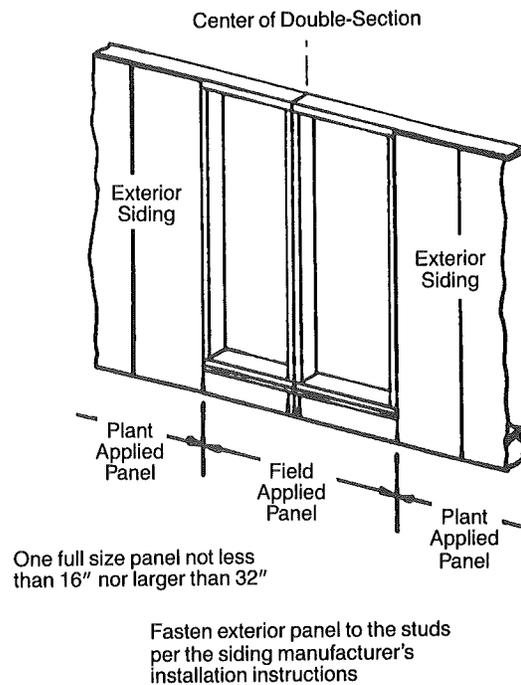


1. Pull wires through junction box as shown.
2. Secure box to framing using 4 #6 x 1" screws.
3. Install fixture per manufacturer's installation instructions.
4. Make wire connections using approved wire connectors.
5. Complete installation and check fixture for proper operation.

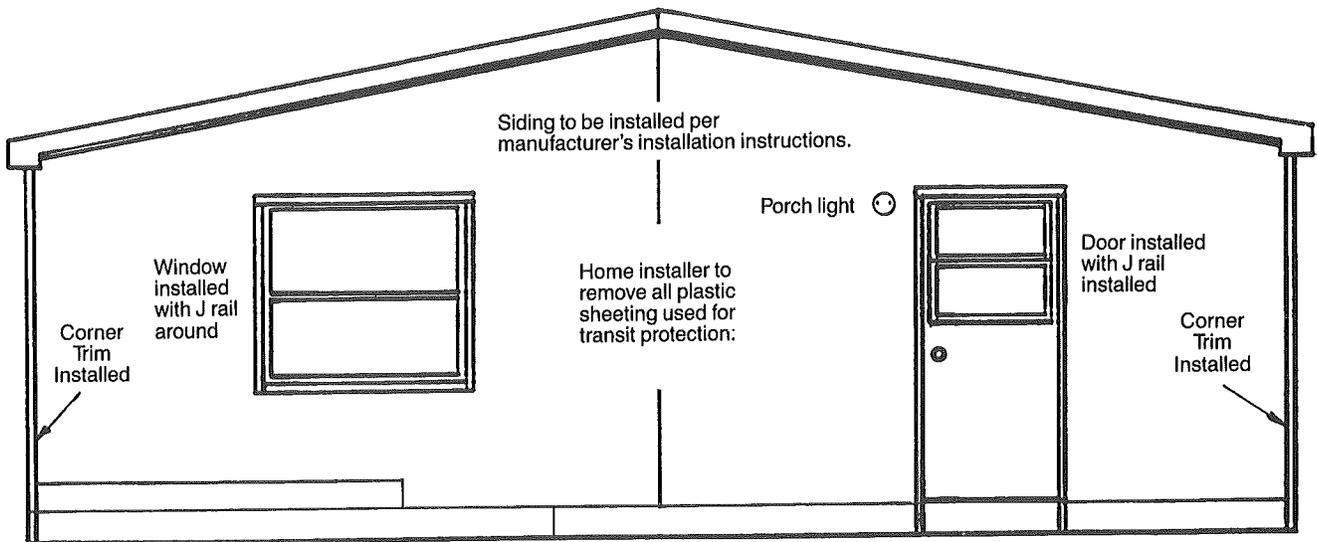
## ALTERNATE FIELD APPLIED INTERIOR END WALL PANEL



## ALTERNATE FIELD APPLIED WOOD SIDING AT END WALL



## ALTERNATE FIELD APPLIED HORIZONTAL LAP SIDING



Double-section homes with horizontal lap siding may be shipped with no siding on the front and rear end walls.

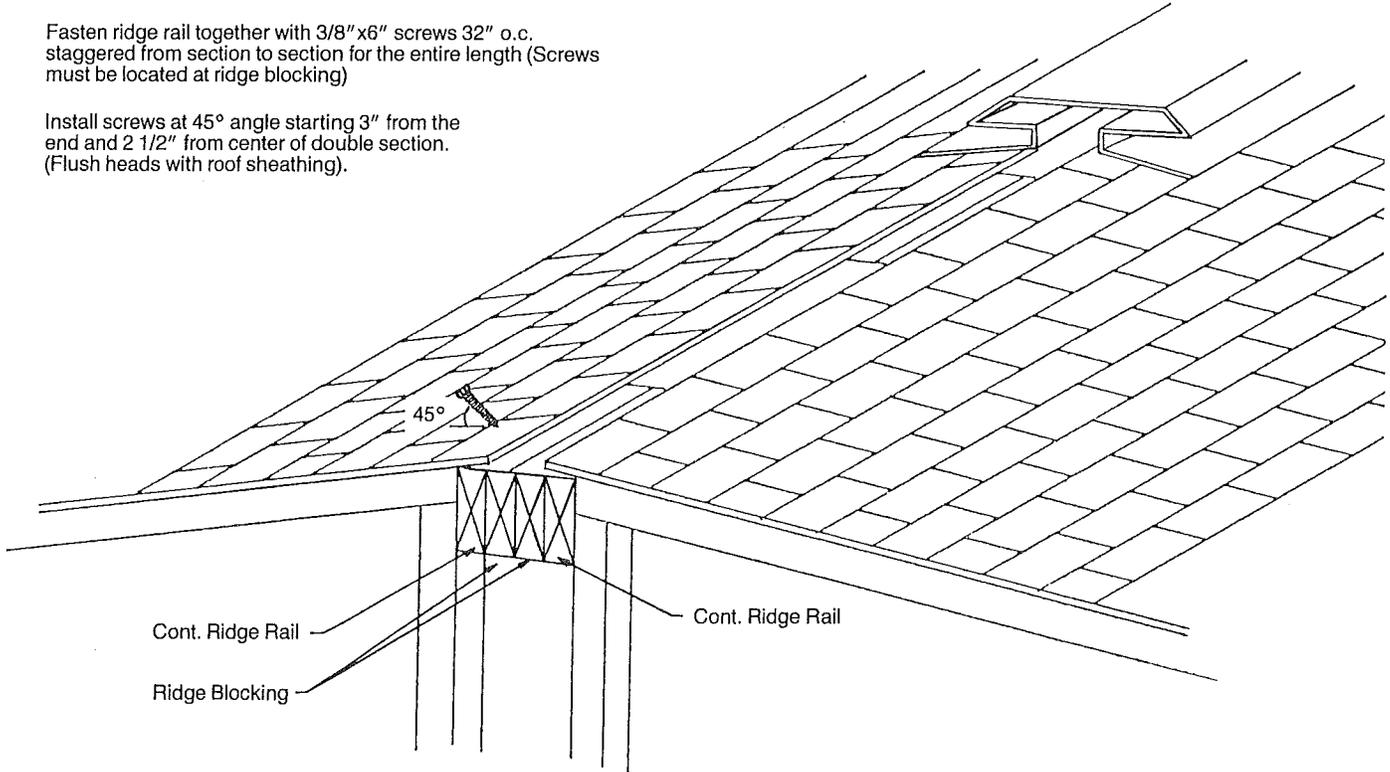
Champion will install: Doors/windows trimmed with J-rail, corner trim and cover with plastic sheeting for transit. All siding, starter trim, fasteners and vents will be shipped loose in the home for installation on set up.

Home installer to complete installation after home is set up. This would include the installation of roof vents if required.

# DOUBLE-SECTION ROOF CONNECTION, WITH CONT. RIDGE VENT.

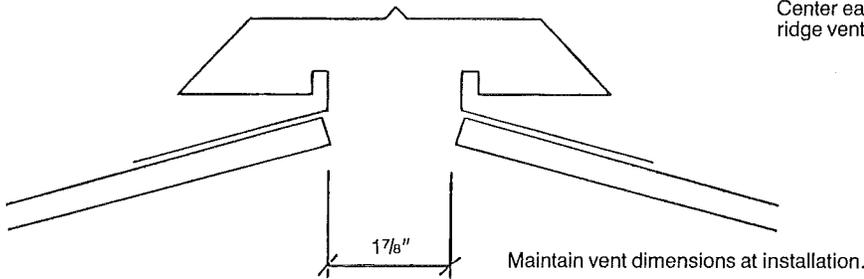
Fasten ridge rail together with 3/8" x 6" screws 32" o.c. staggered from section to section for the entire length (Screws must be located at ridge blocking)

Install screws at 45° angle starting 3" from the end and 2 1/2" from center of double section. (Flush heads with roof sheathing).



## RIDGE VENT INSTALLATION INSTRUCTIONS

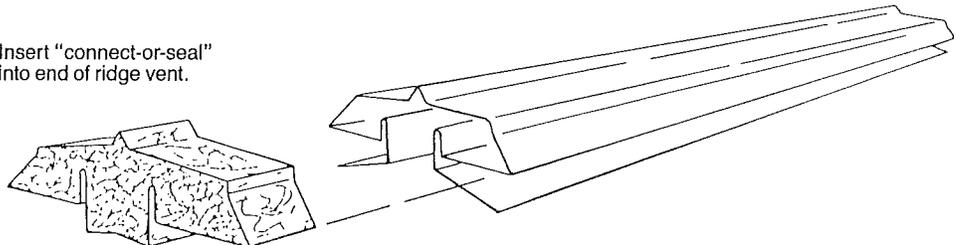
Fig. 1



**NOTE:** Ridge vent may be cut to any length desired. Center each ridge vent section over slot in roof. Mark edge of ridge vent on roof on both sides and at each end.

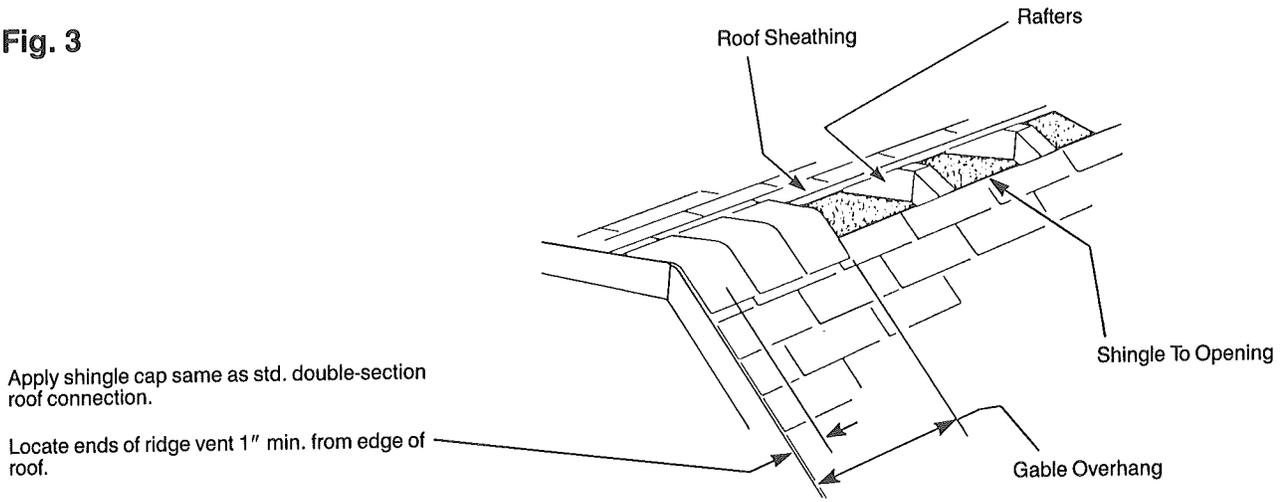
Fig. 2

Insert "connect-or-seal" into end of ridge vent.



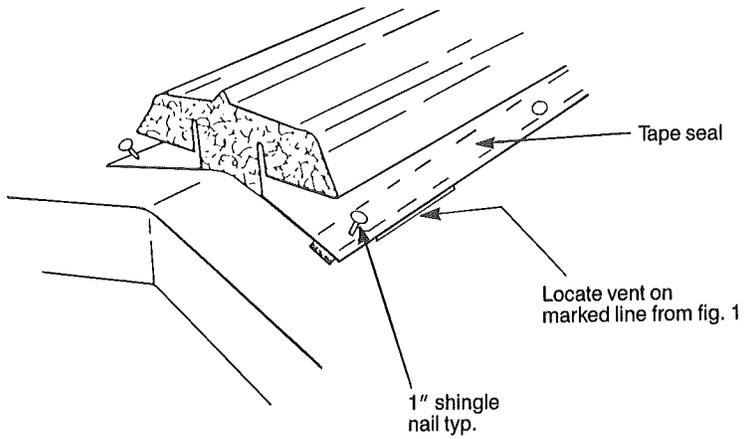
Model No. 656 "connect-or-seal" to be used at each end and as many connections as required.

**Fig. 3**



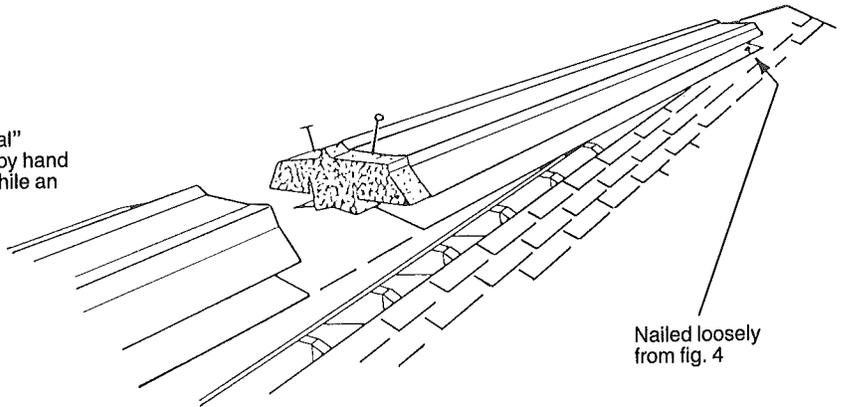
**Fig. 4**

Nail 2 places on sealed end of ridge vent. Nail loosely until opposite end is sealed or adjoining vent is connected. Do not allow vent to "spread open" when nailing in place.



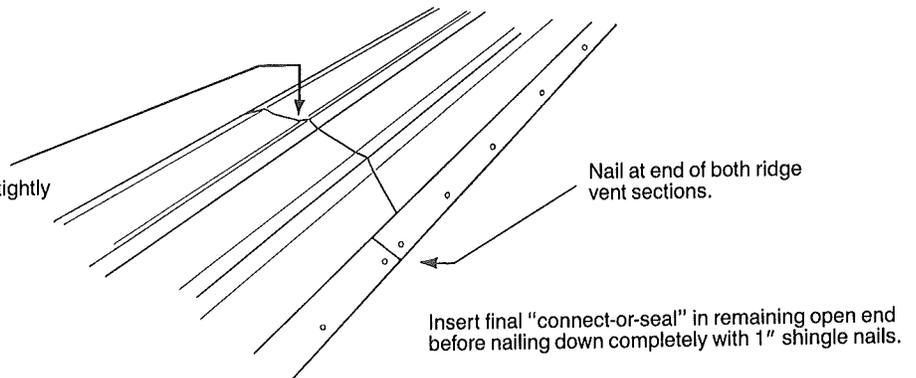
**Fig. 5**

To make ridge vent connection, insert "connect-or-seal" approximately halfway into existing ridge vent. Insert by hand 2 nails into top of "connect-or-seal" to hold in place while an additional section is being added. For all subsequent connections repeat instructions.

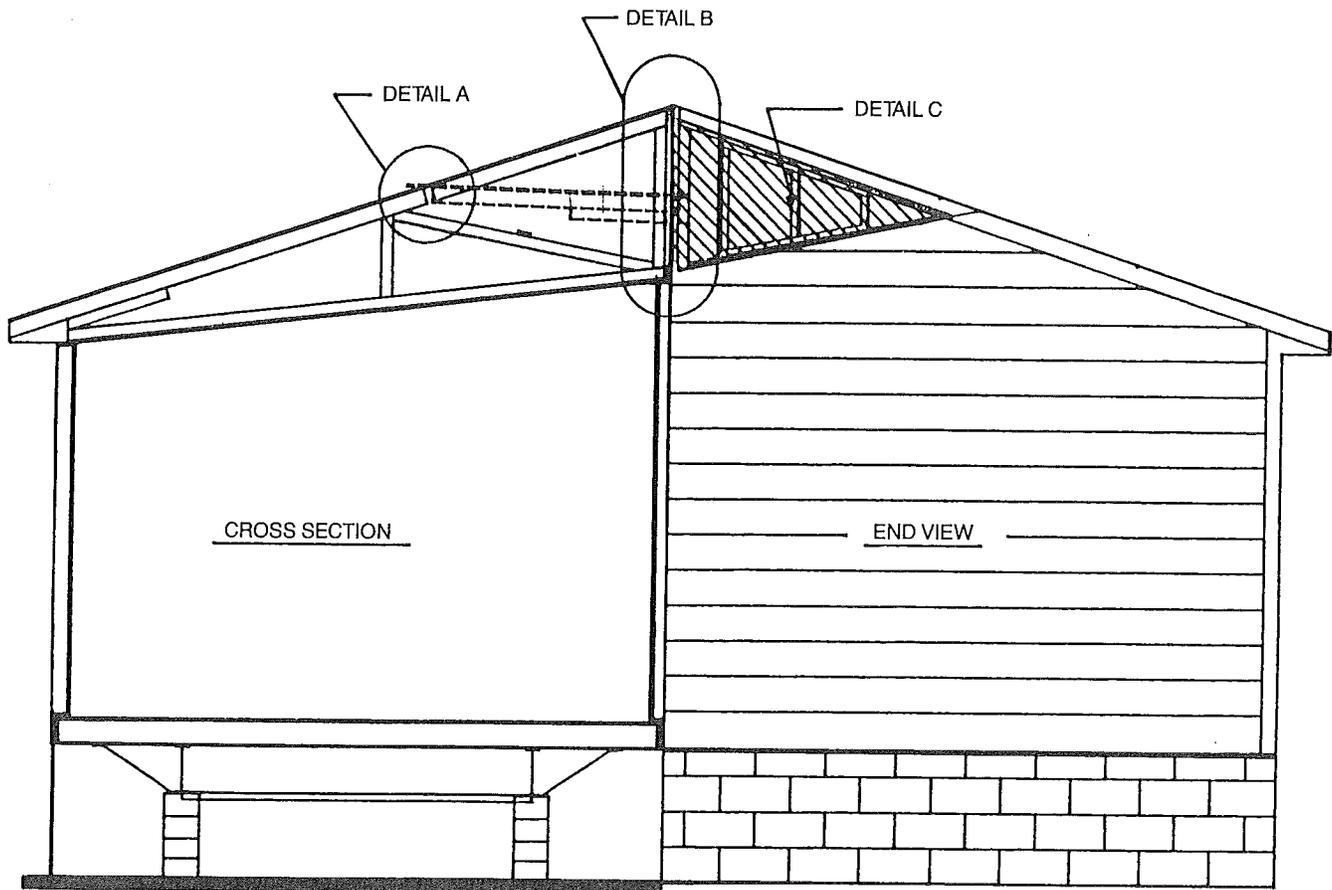


**Fig. 6**

Remove nails from fig. 5 and butt ridge vents tightly together and seal joint with caulking.



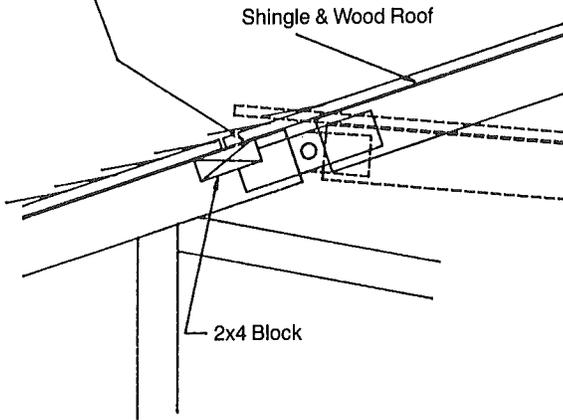
## HINGED ROOF, SET-UP PROCEDURE



1. Carefully lift (jack) complete hinged roof up to full up-right position, then swing down end vertical and scab as shown in detail B. When all verticals are scabbed remove jacks.
2. Attach roof sheathing to 2x4 blocks as shown in detail A and add the missing 1 or 2 rows of shingles per manuf. spec.
3. Install corner braces as shown in detail D.
4. Install end fill wedges as shown in detail C and sheath to match end of house.
5. From this point on the connections are the same as a typical double - section.
6. Furnace/fireplace/wood burning stove vent stacks must be sized (for length) and installed per manufacturer installation instructions included with home.
7. Plumbing vent pipes must extend through the roof.

**FOR DETAILS SEE PG. 23**

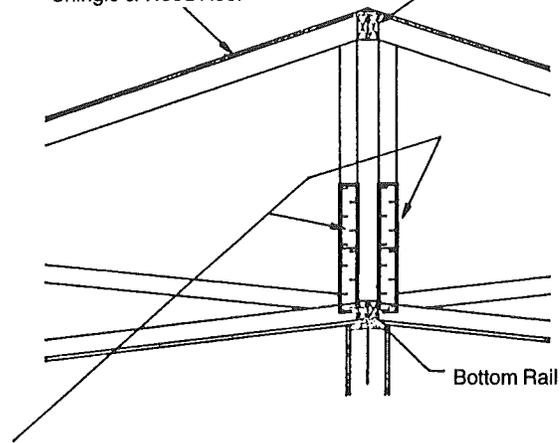
Roof sheathing stapled to 2x4 block with 7/16" x 1 1/2" x 15ga staples at 6" o.c.



**Detail A**

Shingle & Wood Roof

Top Rail

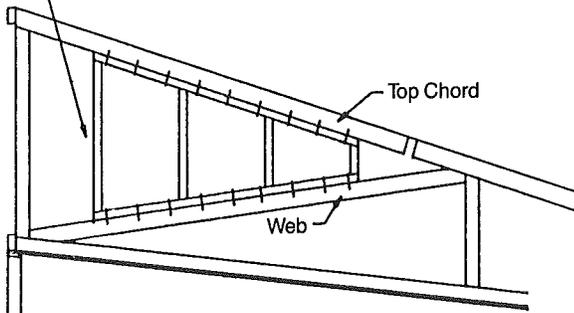


Bottom Rail

Field Splice  
1'-6" 2x3 spf scab attached to one side of truss with 7/16" x 2 1/2" x 15ga staples at 2" o.c. and full surface pva glue.

**Detail B**

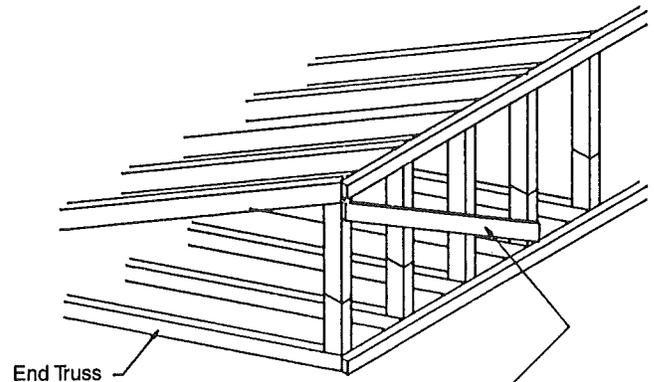
Wedge attached to truss top chord and web with 7/16" x 2 1/2" x 15ga staples 6" o.c.



Top Chord

Web

**Detail C**



End Truss

Attach at both ends of each half a 1x3 min. diagonal brace from top of end truss at approx. 45° to keep trusses upright. Fasten 1x3 to each truss vertical with (2) 7/16" x 1 3/4" x 16ga staples.

**Detail D**

# UTILITY SYSTEM CONNECTIONS AND TESTING

## GENERAL

Before leaving the factory, the gas, water, and drain line systems of this home have been tested for leaks. In addition, the electrical system has been thoroughly tested. However, prior to connecting these systems to their supply, another test is recommended to ensure that these systems are functioning properly after this home has been set up. On a multiwidth unit all connections between units should be made and visually inspected.

All utility connections must be made by authorized service personnel who are familiar with the requirements in the local area.

## WATER DISTRIBUTION CONNECTION AND TEST

**CAUTION: THE WATER SYSTEM IN THIS HOME IS DESIGNED FOR WATER PRESSURE NOT TO EXCEED 80 PSI. IF THE WATER PRESSURE FROM THE SUPPLY SOURCE EXCEEDS, OR MAY EXCEED, 80 PSI, A PRESSURE-REDUCING VALVE MUST BE INSTALLED.**

Connect the water supply to the home water inlet. Check the water distribution system and the supply connections for evidence of leakage. If this home is not equipped with a master water shutoff valve, one must be installed between the home and the supply source. This valve must be either a full port gate or full port ball valve with threaded or solder joints.

**CAUTION: IN AREAS SUBJECT TO FREEZING, THE EXPOSED WATER PIPE MUST BE PROTECTED. AN ELECTRICAL RECEPTACLE IS PROVIDED CONVENIENT TO THE POINT OF CONNECTION. TO PREVENT FREEZING, WRAP THE EXPOSED PIPE WITH HEAT TAPE LISTED FOR USE WITH A MANUFACTURED HOME. HEAT TAPE MUST BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.**

IF THIS HOME IS EQUIPPED WITH AN UNINSULATED WATER HEATER DOOR, THE PIPES IN THE WATER HEATER COMPARTMENT SHOULD BE INSULATED.

**DO NOT TURN ON WATER HEATER, WATER HEATER PILOT LIGHT OR WATER HEATER BREAKER UNTIL THE TANK HAS BEEN FILLED WITH WATER.**

## DRAINAGE SYSTEM TEST

1. Using drain line components shipped with the home, assemble materials under the home in their correct relationship to assure that all pipe and fittings are available to complete the installation.
2. Starting from the most remote end of the home assemble the pipe using proper solvent welding techniques. Support the line 4'-0" on center assuring that at least 1/4" per foot of slope is achieved.

Connect the drainage piping system to the lot or site inlet and test by allowing water to flow into all fixtures. Check for any evidence of leakage in the drainage piping system as you empty each fixture.

## DRAINING WATER LINES

If it becomes necessary to drain the water line to prevent freezing, first shut off the incoming water. Open all the taps in the home, then disconnect the main shut-off valve under the home and allow water to drain out. After all the water has drained out, apply air until all water has been blown out.

The water heater may have a separate drain cock and must be drained with a short garden hose. Make sure power supply has been shut off prior to draining.

## GAS PIPING SYSTEM TEST

**CAUTION: THE GAS PIPING SYSTEM IN THIS MANUFACTURED HOME IS DESIGNED FOR A PRESSURE NOT TO EXCEED A 14-INCH WATER COLUMN (1/2 PSI). IF GAS FROM SUPPLY SOURCE EXCEEDS, OR MAY EXCEED, THIS PRESSURE, A PRESSURE REDUCING VALVE MUST BE INSTALLED. CHECK ALL APPLIANCE CONNECTIONS AND THE GAS INLET CONNECTION FOR LEAKS WITH SOAPY WATER OR BUBBLE SOLUTION.**

**CAUTION: DO NOT OVER PRESSURE GAS PIPING SYSTEM AS DAMAGE MAY RESULT.**

For safe and efficient operation of gas appliances, the design pressure limitations should not be exceeded. For natural gas systems, the gas pressure should not exceed 10-1/2" water column and should not be less than a 7-inch water column. For LPG systems, the pressure should not exceed 14-inch water column or be less than an 11-inch water column. Be sure to check all gas appliances to assure the orifice will operate with the gas supplied.

Connect a properly sized gas supply connector from the gas supply line to the home gas piping inlet. Check that all appliance shutoff valves are open and all appliance burner valves closed. Pressurize the gas piping system to 8 ounces maximum by opening the main gas shutoff valve and reading an ounce gauge.

Visually check gas appliance vents (i.e. roof jacks) to ensure that they have not been dislodged in transit and are securely connected to the appliance.

## ELECTRICAL SYSTEM TEST

**CAUTION: ELECTRICAL SYSTEM CONNECTION AND TESTING MUST BE PERFORMED ONLY BY QUALIFIED ELECTRICAL SERVICEMEN USING APPROVED ELECTRICAL TEST EQUIPMENT.**

The following should be done before connecting to the power source:

A continuity test with all branch circuit breakers and switches controlling individual outlets in the "on" position should be conducted. There should be no evidence of connection between any of the supply conductors (including neutral) and the grounding circuit. In addition, all noncurrent carrying metal parts of the electrical system as well as fixtures, appliances, and the chassis of the home should be tested for continuity with the grounding circuit. After the home is connected to the electrical service check each receptacle for reverse polarity, open grounds, and shorts.

## CLOTHES DRYER INSTALLATION

If this home is equipped with a clothes dryer, it must be exhausted to the exterior of the home, or to the exterior of any perimeter skirting that is installed around the home by a moisture-lint exhaust system.

**CAUTION: THIS EXHAUST SYSTEM MUST NOT TERMINATE UNDER THE HOME. IT MUST TERMINATE OUTSIDE OF THE PERIMETER OF THE HOME OR SKIRTING INSTALLED AROUND THE PERIMETER OF THE HOME.**

All required components and fittings are provided with the home. Vent openings in either the wall or floor are provided. After the duct is installed, the openings must be sealed, or caulked both inside and outside.

If this home is not equipped with a dryer, but an electrical outlet is provided for one, then an opening in the wall or floor is provided. Installation of the exhaust system must be in accordance with the dryer manufacturer's installation instructions.

### **EXTERIOR WASHER AND DRYER HOOK-UP**

After set-up, the washer and dryer hook-up area must be totally enclosed and protected from the weather (by others).

### **FLASHING AND SEALING**

Joints between dissimilar materials and joints between exterior coverings and frames of openings shall be protected with a compatible sealant suitable to resist infiltration of air or water, except for any designed ventilation of wall or roof cavity.

When adjoining material or assemblies of materials are of such nature that separation can occur due to expansion, contraction, wind loads or other loads induced by transportation, the sealant must be of a type that is flexible and non hardening to resist these conditions.

### **BOTTOM BOARD PATCH**

Use a bottom board patch to seal openings and to repair tears in the bottom board.

Patching of bottom board:

1. Using 3M double-faced tape #927, patches may be constructed of any shape and size utilizing scrap pieces of bottom board or other suitable material.
2. A 2" reinforced pressure-sensitive, one-sided tape, 3M #393 or equivalent, is available for patching small tears and cuts which occur during set up.
3. Outward flare tacker may be used on site. The patch should first be affixed to the bottom using 3M #393 or equivalent to secure the perimeter and then fastened on the perimeter at 3" intervals with tacker.
4. Per manufacturer's recommendations.

### **FRAME FINISH TOUCH-UP**

The frame of your home has been protected against corrosion at the factory. If for some reason this protection is scraped off, you should touch up the area affected with Mortel #931 — Thin Film Undercoating — water based, or equivalent.

### **GAS STACKS**

In some cases, the roof jack extension for water heater and furnace stacks have been shipped loose, and must be installed before operation of these appliances.

### **FIREPLACE AND WOOD BURNING STOVES**

1. Fireplaces and wood burning stoves must be installed to manufacturer's installation instructions.
2. All "ship loose" components must be installed prior to initial start up of the unit. For example, if the flue stack or chimney and termination pieces are shipped loose in the unit, they must be installed per instruction prior to firing the unit.
3. Use only components supplied by the fireplace or wood burning stoves manufacturer. Use of other components may void your warranty and create a fire hazard.
4. Only use fireplaces or stoves listed for use in manufactured housing.

### **ROOF GABLE/SOFFIT VENTS**

In some cases, roof vents have plastic over them which must be removed. Check for this and remove if found.

### **PERIMETER VENTING**

When installing skirting or perimeter foundation, provide air vents at the rate of one square inch of vent for every square foot of home.

This is effective open area. Please note that insect screens, slats, louvers, etc., used over the open vent area will reduce the effective open area and, therefore, the size of the vent must be increased proportionately. For example, insect screening alone will reduce the effective open vent area 30-50% and the vent size must be increased proportionately to compensate. Required venting should be distributed to all walls to promote cross ventilation.

### **INSTALLATION OF EXTERNAL COOLING UNITS DUCTED INTO MAIN AIR DISTRIBUTION SYSTEM**

#### **SINGLE-SECTION UNITS:**

Air from external cooling units shall be introduced into the main air distribution system such that an equal number of floor registers will result on either side of the entrance point where possible. Where there is an odd number of registers, one side of the entrance point will have an additional register. A damper must be installed at the entrance point of the outside appliance duct to the main distribution duct to prevent back flow of air into the cooling unit when the house internal furnace is functioning. A damper must also be installed at the point where the internal furnace joins the main distribution system to prevent air from flowing into the furnace when the external cooling unit is functioning.

#### **DOUBLE-SECTION UNITS:**

Air from external cooling units shall be introduced into each half of a double-section air distribution system such that an equal number of floor registers will result on either side of the entrance point in each half of the home. Where there is an odd number of registers in one or both sides of the home, that side or both sides will have an additional register on one side of the entrance point. A damper must be installed at the entrance point of the outside duct to the main distribution in each half to prevent back flow of air into the cooling unit when the house internal furnace is functioning. Separate ducts from the entrance point under each half of the home will run to a "Y" connection and a single duct will run from this point to the external cooling unit. A damper must be installed at the point where the internal furnace joins the main distribution system to prevent air from flowing into the furnace when the external cooling unit is functioning.

#### **SINGLE-SECTION AND DOUBLE-SECTION UNITS:**

1. Provisions must be made to prevent simultaneous operation of the internal furnace and the external cooling unit.
2. Structural members (floor joists, etc.) shall not be cut, altered, or removed.
3. Return air openings will be located centrally in the home to draw air evenly from all rooms.

### **OIL-FIRED FURNACES**

When an oil-fired furnace is installed, the oil drain hose must be routed through the floor into a container placed under the home to collect any oil drippings from the furnace. This container should be periodically checked and emptied as necessary. Failure to do this could result in a fire hazard due to collection of oil on the ground below the home.

### **HEAT PUMP DRAIN LINE**

Slope 3" per foot, protect from freezing by wrapping with insulation — drain beyond perimeter of home (use of a drywell is OK).

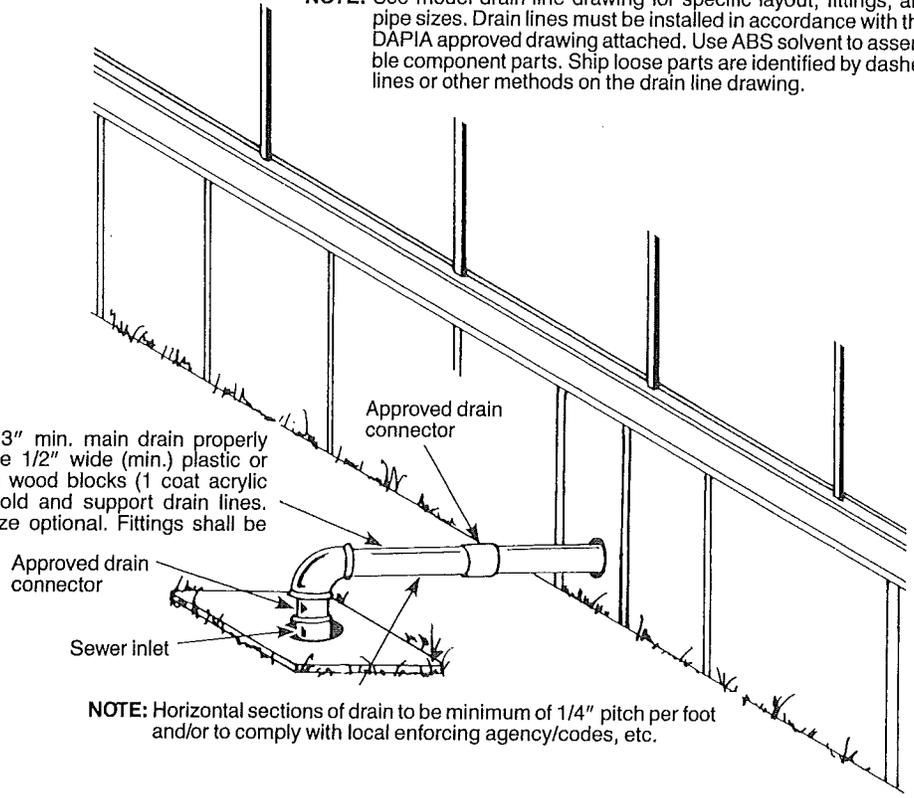
# TYPICAL DRAIN CONNECTION

**NOTE:** See model drain line drawing for specific layout, fittings, and pipe sizes. Drain lines must be installed in accordance with this DAPIA approved drawing attached. Use ABS solvent to assemble component parts. Ship loose parts are identified by dashed lines or other methods on the drain line drawing.

For field installation of drain line, use 3" min. main drain properly sloped and supported at 4'-0" o.c. Use 1/2" wide (min.) plastic or galvanized metal banding with painted wood blocks (1 coat acrylic paint) graduated for proper slope to hold and support drain lines. One fastener each end of banding. Size optional. Fittings shall be long sweeps.

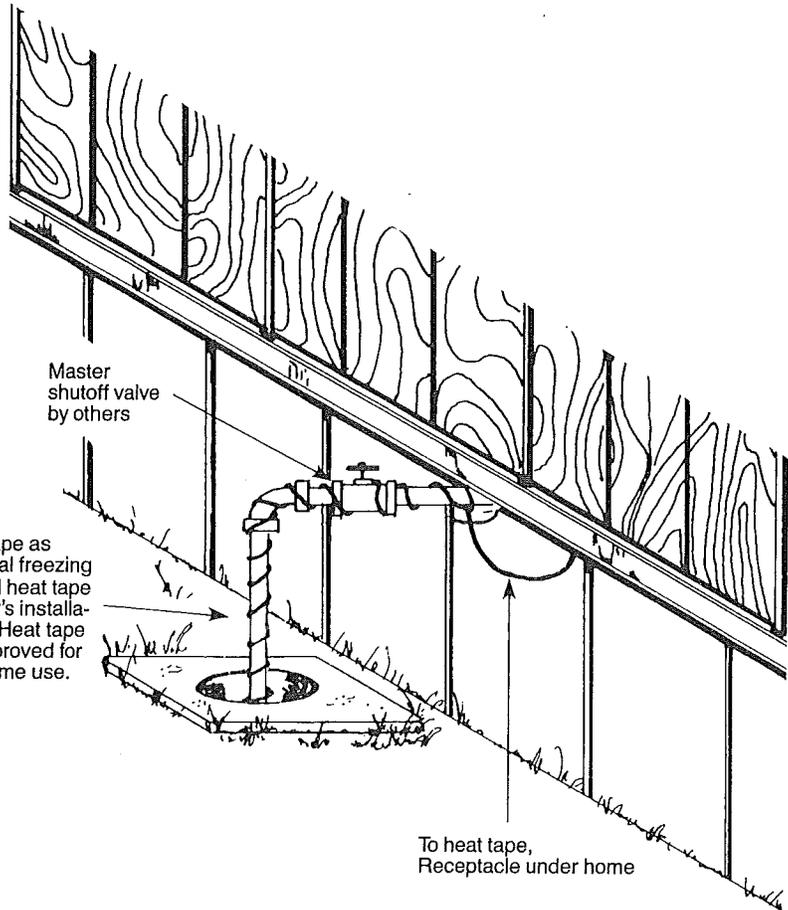
Joints and connections shall be gas tight and water tight. Plastic pipe shall be inserted to full depth.

Drain outlet shall have a minimum clearance of 3" in any direction and 18" unrestricted clearance directly in front.

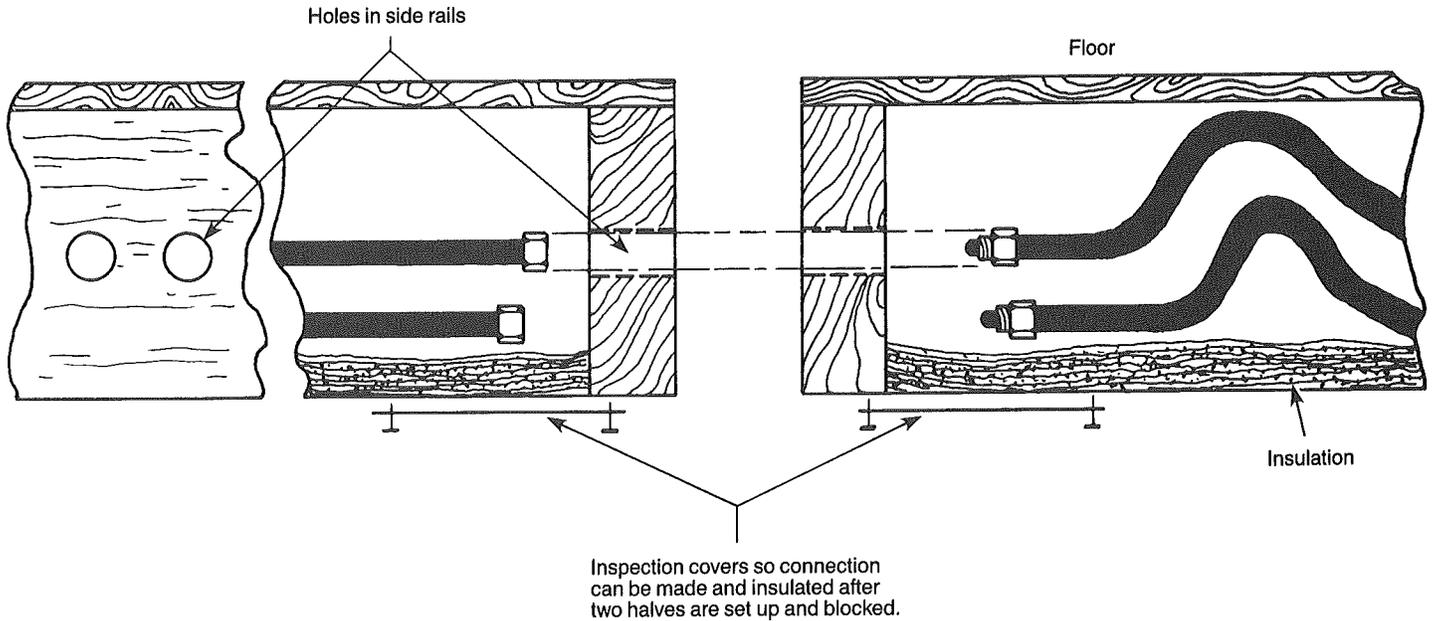


# TYPICAL WATER CONNECTION

Wrap with heat tape as necessary for local freezing conditions. Install heat tape per manufacturer's installation instructions. Heat tape to be listed or approved for manufactured home use.

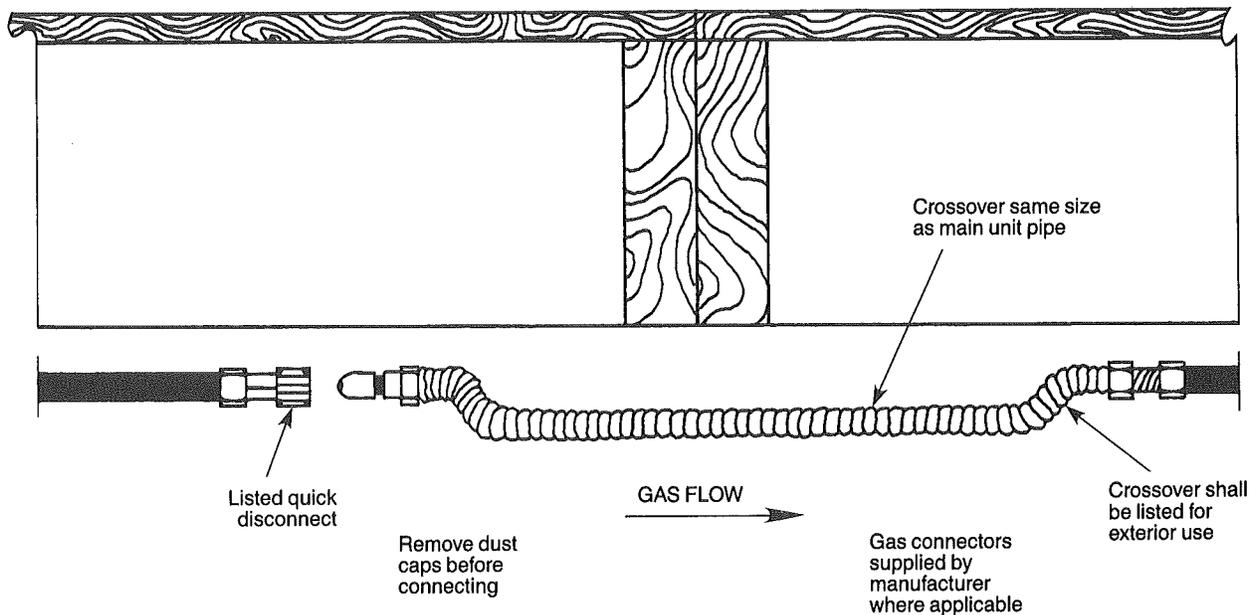


## TYPICAL WATER LINE CROSSOVER



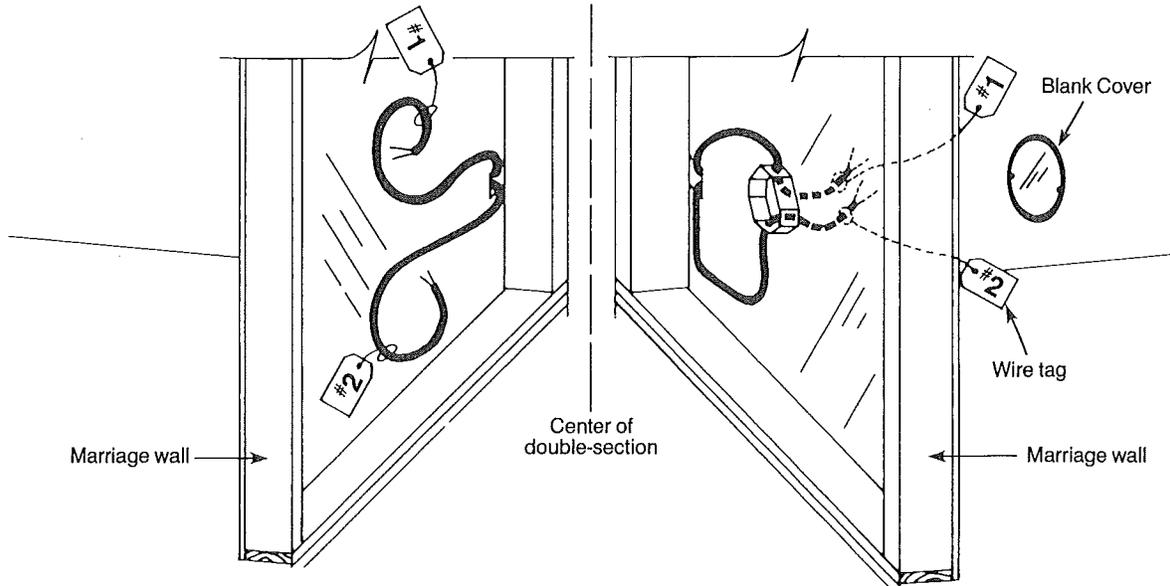
**CAUTION: IF FREEZING CONDITIONS EXIST, WRAP WATER CONNECTOR WITH INSULATION. USE WATER CONNECTORS SUPPLIED BY MANUFACTURER WHERE APPLICABLE.**

## TYPICAL GAS LINE CROSSOVER

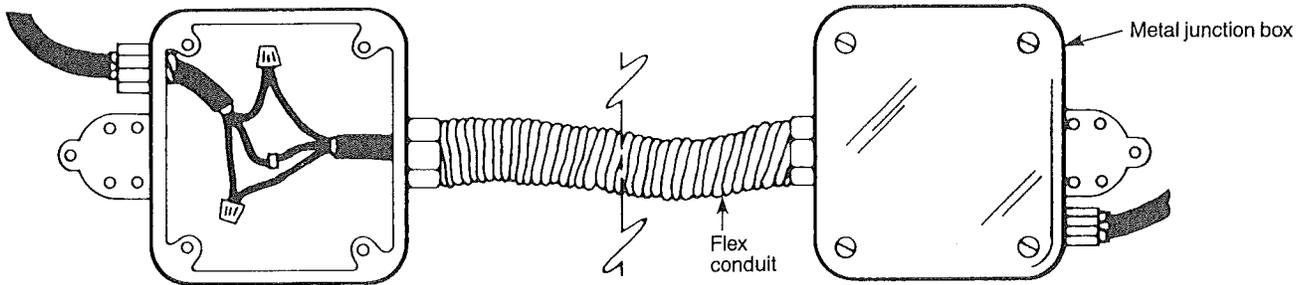


# TYPICAL ELECTRIC CROSSOVER

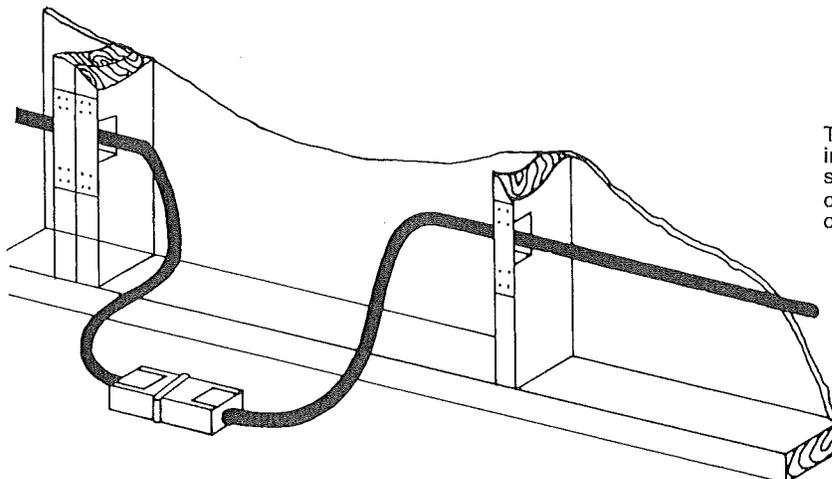
The wires are coiled up under the shipping seal. Before the units are pulled together, place the wires from "B" half into junction box on "A" half. Wires will be color coded and/or tagged to prevent mixing of circuits. Make final connections after units are pulled together.



# ALTERNATE ELECTRIC CROSSOVER

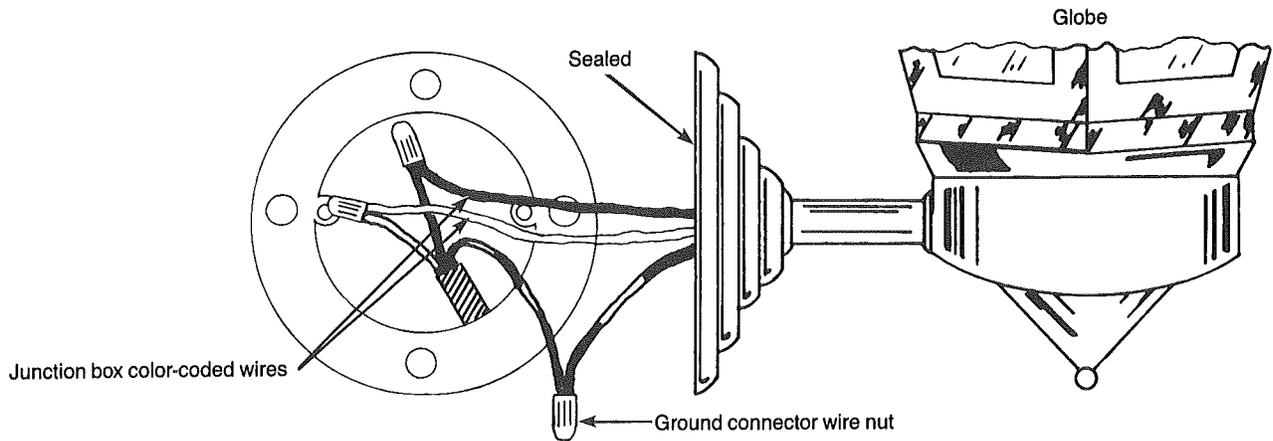


Connect the flex conduit to the junction box on the "A" half. Then make the wire connections using approved wire connectors. Wires will be color coded and/or tagged to prevent mixing of circuits.



This home may be shipped with one or more plug-in connectors. These connectors are to be snapped together on set up. Connectors will be color-coded and/or tagged to prevent mixing of circuits.

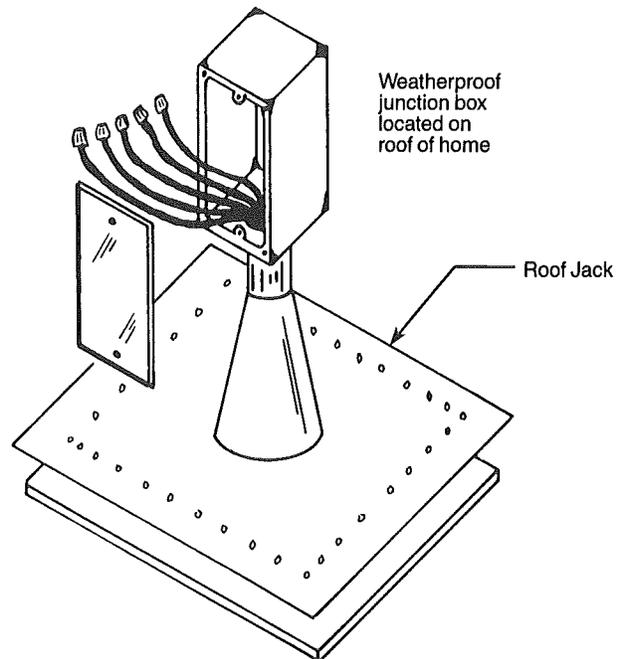
## EXTERIOR LIGHT CONNECTION



## ELECTRICAL CONNECTION EVAPORATIVE COOLER

**CAUTION: COOLERS RATED AT 16 AMPS TO BE INSTALLED ON A 20-AMP CIRCUIT.**  
**COOLERS RATED AT 12 AMPS TO BE INSTALLED ON A 15-AMP CIRCUIT.**

**CAUTION: ONE REQUIRED FOR EACH COOLER.**



## TYPICAL OVERHEAD FEEDER ASSEMBLY

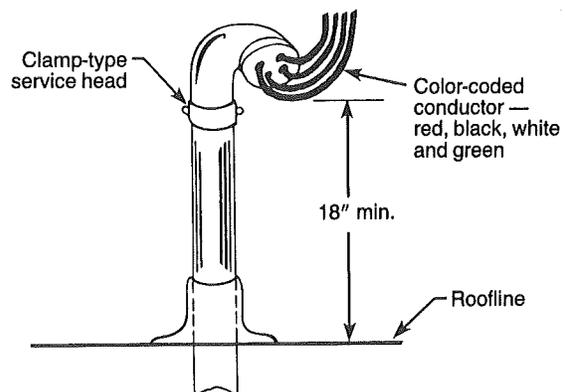
COPPER CONDUCTOR SIZE (75° WIRE)

| SERVICE AMPS | WIRE SIZE |        |         | CONDUIT SIZE |
|--------------|-----------|--------|---------|--------------|
|              | FEEDER    | GROUND | NEUTRAL |              |
| 40           | #8        | #8     | #8      | 3/4"         |
| 50           | #6        | #8     | #6      | 3/4"         |
| 60           | #6        | #8     | #6      | 3/4"         |
| 80           | #4        | #8     | #4      | 1"           |

COPPER CONDUCTOR SIZE (75° WIRE)

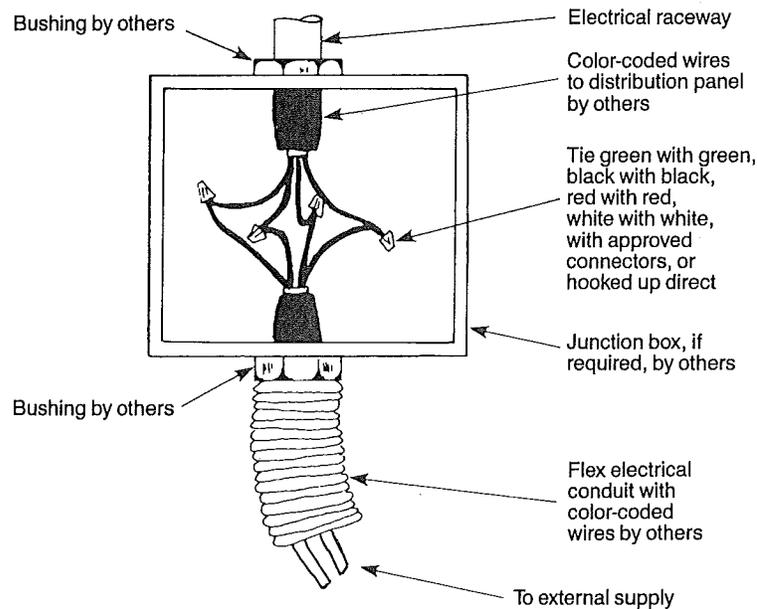
| SERVICE AMPS | WIRE SIZE |        |         | CONDUIT SIZE |
|--------------|-----------|--------|---------|--------------|
|              | FEEDER    | GROUND | NEUTRAL |              |
| 100          | #3        | #8     | #3      | 1-1/4"       |
| 125          | #1        | #6     | #3      | 1-1/2"       |
| 150          | #0        | #6     | #3      | 1-1/2"       |
| 200          | #000      | #6     | #3      | 2"           |

**CAUTION: BE SURE TO CONNECT DOUBLE-SECTION CHASSIS TOGETHER WITH BONDING WIRE AND LUG. CONNECT BONDING WIRE WITH SCREW TERMINALS ON EACH END TO ONE I-BEAM ON EACH HALF OF THE DOUBLE-SECTION HOME.**



# TYPICAL UNDERSIDE FEEDER ASSEMBLY

**CAUTION: BE SURE TO CONNECT DOUBLE-SECTION CHASSIS TOGETHER WITH BONDING WIRE AND LUG. CONNECT BONDING WIRE WITH SCREW TERMINALS ON EACH END TO ONE I-BEAM ON EACH HALF OF THE DOUBLE-SECTION HOME.**



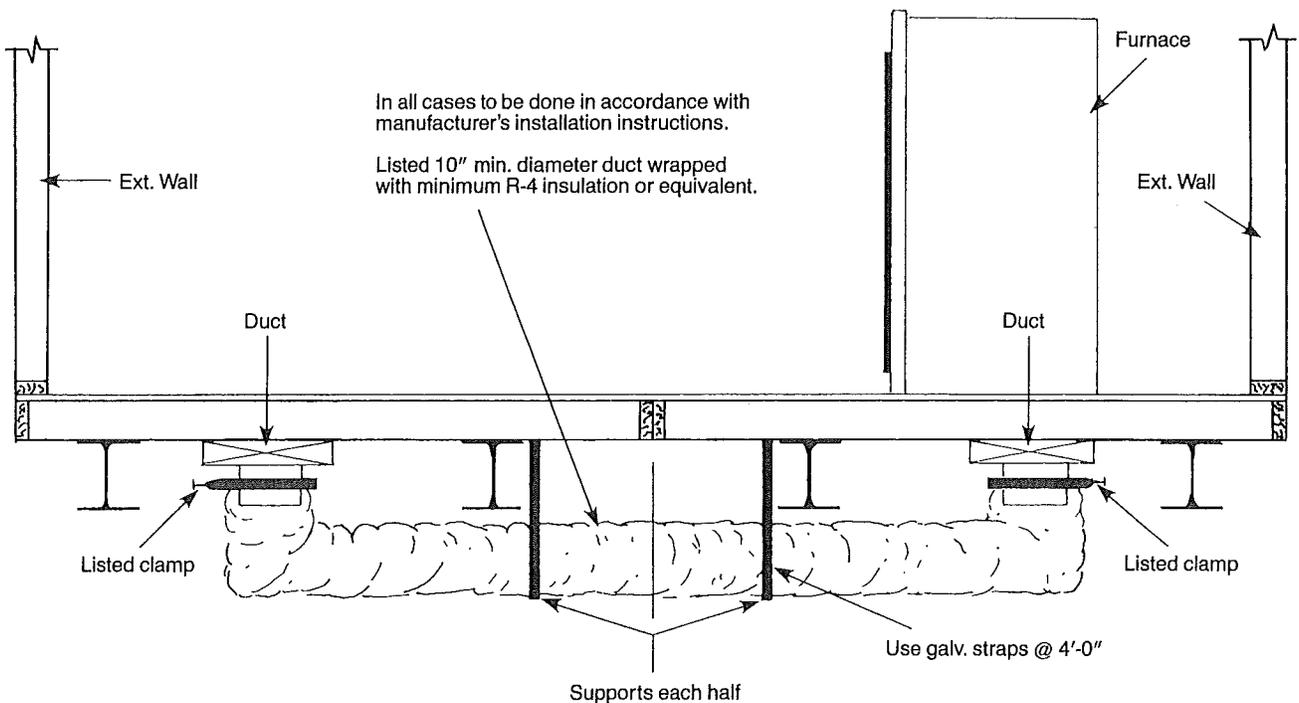
**COPPER CONDUCTOR SIZE (75° WIRE)**

| SERVICE AMPS | WIRE SIZE |        |         | CONDUIT SIZE | BOX SIZE |
|--------------|-----------|--------|---------|--------------|----------|
|              | FEEDER    | GROUND | NEUTRAL |              |          |
| 40           | #8        | #8     | #8      | 3/4"         | 4x4x4    |
| 50           | #6        | #8     | #6      | 3/4"         | 4x4x4    |
| 60           | #6        | #8     | #6      | 3/4"         | 4x4x4    |
| 80           | #4        | #8     | #4      | 1"           | 4x4x4    |

**COPPER CONDUCTOR SIZE (75° WIRE)**

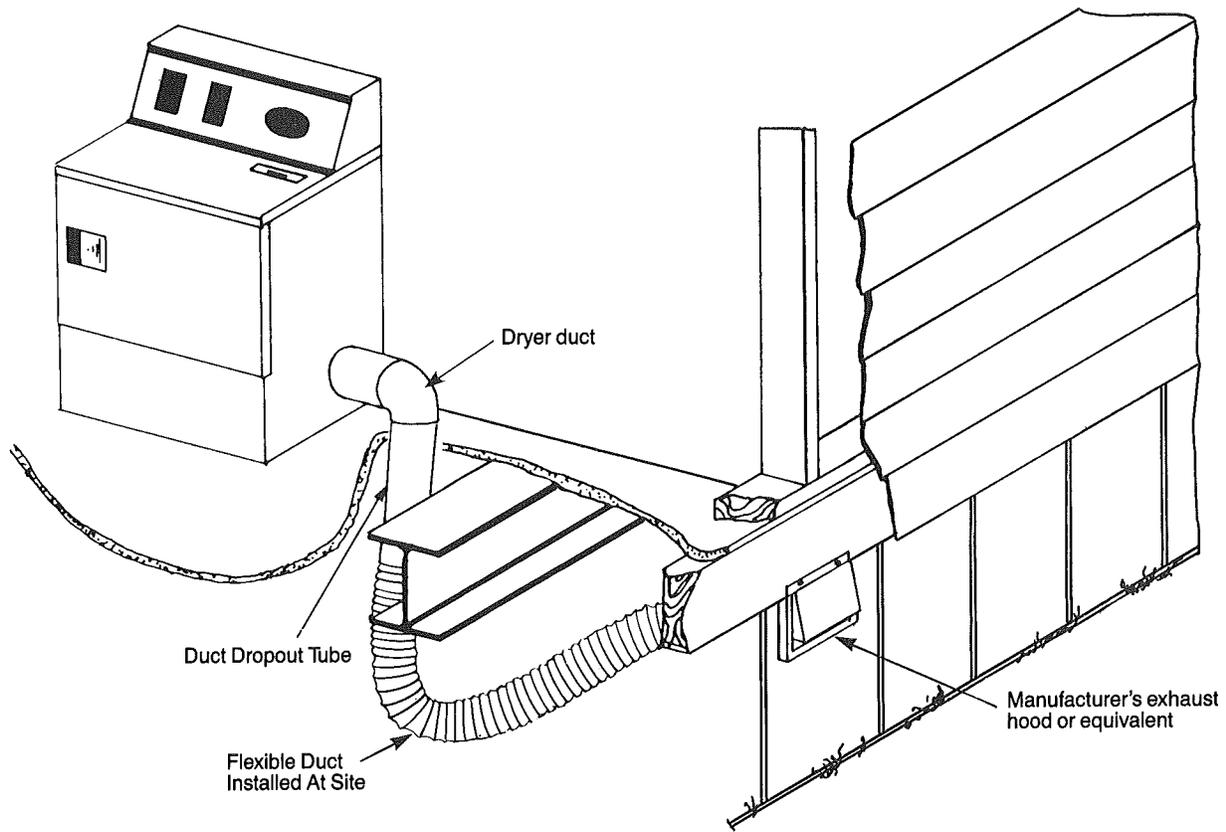
| SERVICE AMPS | WIRE SIZE |        |         | CONDUIT SIZE | BOX SIZE |
|--------------|-----------|--------|---------|--------------|----------|
|              | FEEDER    | GROUND | NEUTRAL |              |          |
| 100          | #3        | #8     | #3      | 1-1/4"       | 10x10x4  |
| 125          | #1        | #6     | #3      | 1-1/2"       | 10x12x4  |
| 150          | #0        | #6     | #3      | 1-1/2"       | 10x12x4  |
| 200          | #000      | #6     | #3      | 2"           | 12x12x4  |

# TYPICAL HEAT DUCT CROSSOVER



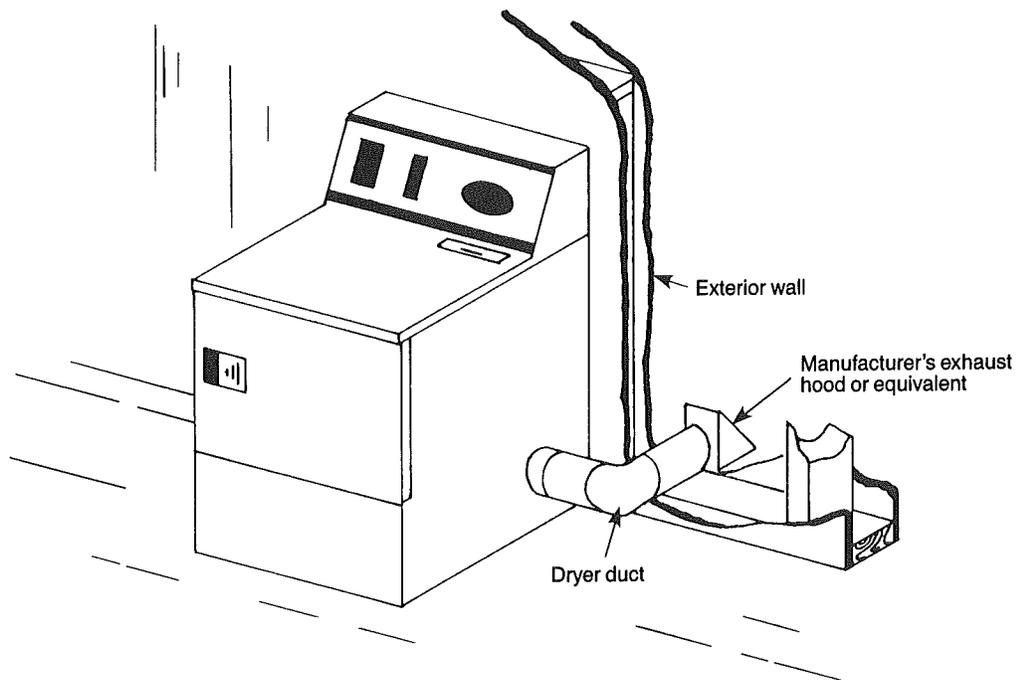
**CAUTION: DUCT SHALL NOT COME IN CONTACT WITH GROUND**

# DRYER EXHAUST SYSTEM

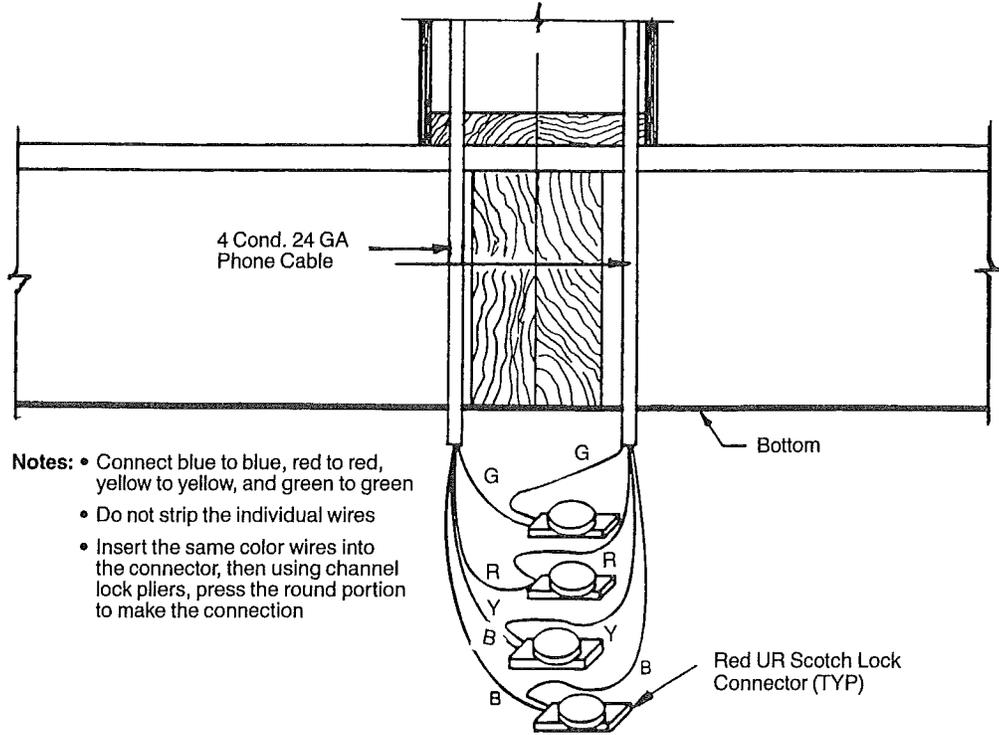


**CAUTION: INSTALLATION OF THE EXHAUST SYSTEM MUST BE IN ACCORDANCE W/THE DRYER MANUFACTURER'S INSTRUCTIONS.**

**CAUTION: THIS EXHAUST SYSTEM MUST NOT TERMINATE UNDER THE HOME.**



# TELEPHONE WIRING FOR DOUBLE-SECTION HOMES



## PACO RECOMMENDED JACKING PROCEDURE

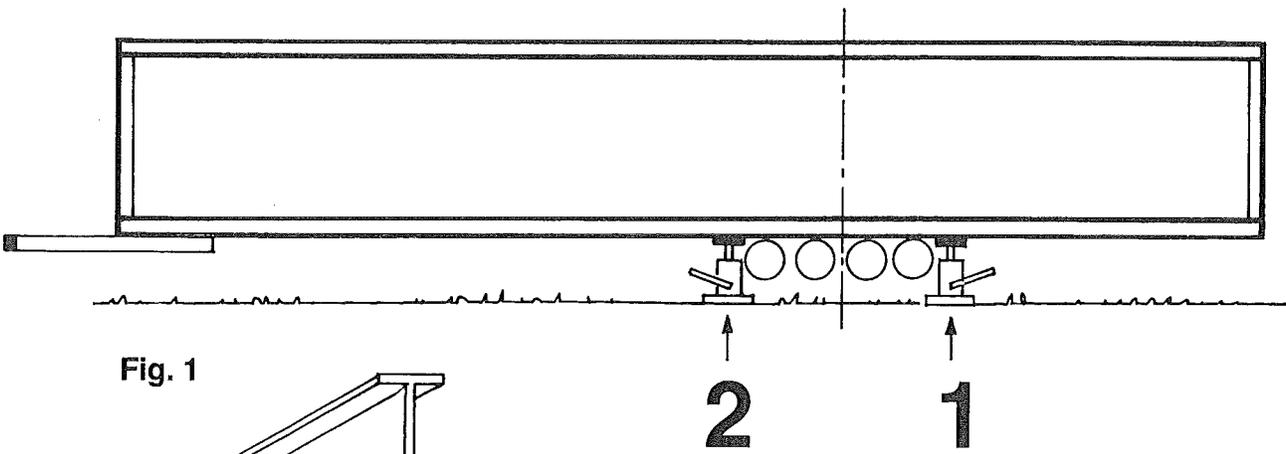
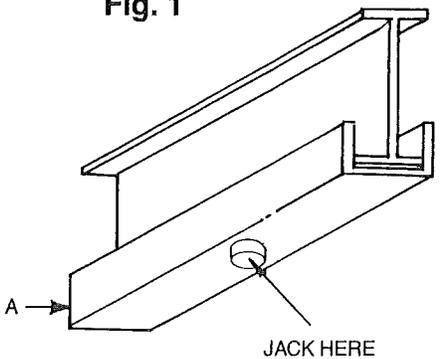


Fig. 1



A: 3/8" x 4" x 12" Long C-Channel (or equivalent)

**WARNING: NEVER JACK A HOME WITHOUT FIRST READING THE SAFETY WARNING AND BECOMING FAMILIAR WITH ALL SAFETY CONSIDERATIONS AS DESCRIBED ON PAGE 5.**

Use two jacks — one in front of axles and one behind axles. Lifting should be as even as possible, starting with the rear jack first, up a little, then up a little on the front — alternating back and forth until desired height is reached. Do the same on the opposite side of the home. Alternate between sides of the home, lifting each side a reasonable amount so as not to create overstress in the home structure.

Jacking reinforcing plates, or other equivalent means should be used to adequately distribute the concentrated load of the jack head to the frame member to avoid damage to the beam. See Fig. 1.

## OPTIONAL GARDEN WINDOW

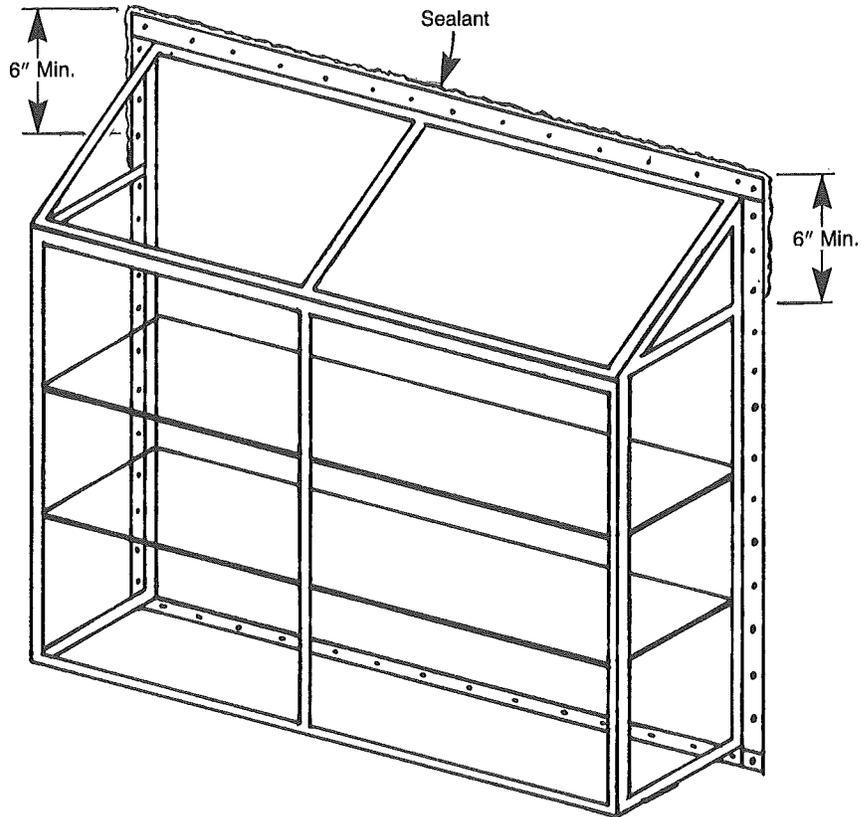
### Garden window installation instructions

Remove weather sealing from factory framed opening. Check around opening to ensure that all staples and screws are removed or set in flush.

Prepare the garden window for installation by applying the sealant tape provided around the inside of the window frame. All sealant tape should be applied directly over the screw mounting holes in the window frame. Use two strips of tape across the top of the window, one strip of tape across the bottom and one strip of tape along each side. Make sure that the strips of tape overlap at all four corners.

The window is now ready for installation using the sheetmetal screws provided. One person should be located on the inside of the home to assist in aligning the window with the opening. Place the window in the opening and insert one screw approximately centered on each side to hold in place. Next insert one screw approximately centered on the top and bottom and one at each corner to stabilize the window. Add all remaining screws and trim off excess sealant tape. Seal the top of the window and down each side a minimum of 6" with clear seal.

Trim the interior of the window opening with the prefinished materials provided.





**THE FOLLOWING MANUFACTURED HOUSING  
PLANTS BUILD VARIOUS HOME BRANDS BY  
CHAMPION HOME BUILDERS CO.**

**CALIFORNIA PLANT**

Champion Home Builders Co.  
P.O. Box 429  
Lindsay, California 93247  
(209) 562-4951  
Fax: 209-562-1463

**COLORADO PLANT**

Champion Home Builders Co.  
P.O. Box 10  
Berthoud, Colorado 80513  
(303) 532-2632  
Fax: 303-532-4352

**IDAHO PLANT**

Champion Home Builders Co.  
P.O. Box 190  
Weiser, Idaho 83672  
(208) 549-1410  
Fax: 208-549-0060

**ALABAMA PLANT**

Gateway Homes, Inc.  
P.O. Box 728  
Guin, AL 35563  
Phone: (205) 468-3191  
Fax: 205 468-3336

**INDIANA PLANT**

Champion Home Builders Co.  
P.O. Box 57  
Ridgeville, Indiana 47380  
(317) 857-2561  
Fax: 317-857-2996

**NEBRASKA PLANTS**

Champion Home Builders Co.  
P.O. Box 148  
Central City, Nebraska 68826  
(308) 946-3021  
Fax: 308-946-3021

Champion Home Builders Co.

Route 4, Box 85A  
York, Nebraska 68467  
(402) 362-4455  
Fax: 402-362-7724

**NEW YORK PLANT**

Champion Home Builders Co.  
P.O. Box 56  
Sangerfield, New York 13455  
(315) 841-4122  
Fax: 315-841-4122

**NORTH CAROLINA PLANTS**

Champion Home Builders Co.  
P.O. Box 1148  
Lillington, North Carolina 27546  
(919) 893-5713  
Fax: 919-893-2065

Champion Home Builders Co.  
P.O. Box 1389  
Lillington, North Carolina 27546  
(919) 893-2121  
Fax: 919-893-6649

**PENNSYLVANIA PLANT**

Champion Home Builders Co.  
P.O. Box 343  
Claysburg, Pennsylvania 16625  
(814) 239-5121  
Fax: 814-239-2870

**TENNESSEE PLANT**

Champion Home Builders Co.  
P.O. Box 100  
Henry, Tennessee 38231  
(901) 243-2041  
Fax: 901-243-2841

**NOTE:** The home set-up information in this Instruction Guide pertains only to products manufactured by the plants listed above of Champion Home Builders Co., a subsidiary of Champion Enterprises, Inc.

The information in this Guide does not apply to homes manufactured by other subsidiaries of Champion Enterprises, Inc., at the following three U.S.A. and Canadian plant locations:

**Moduline Industries, Inc.**

P.O. Box 1106  
Chehalis, WA 98532  
Phone: (206) 784-8881  
Fax: (206) 748-0632

**Moduline Industries (Canada) Ltd.**

P.O. Box 190  
Penticton, B.C., Canada V2A 6K3  
Phone: (604) 493-0122  
Fax: (604) 493-0500

For questions pertaining to homes manufactured by the three plants of Gateway and Moduline listed above, please contact them directly.



**CHAMPION**  
HOME BUILDERS CO.

Corporate Headquarters  
2701 University Dr., Suite 300  
Auburn Hills, Michigan 48326

