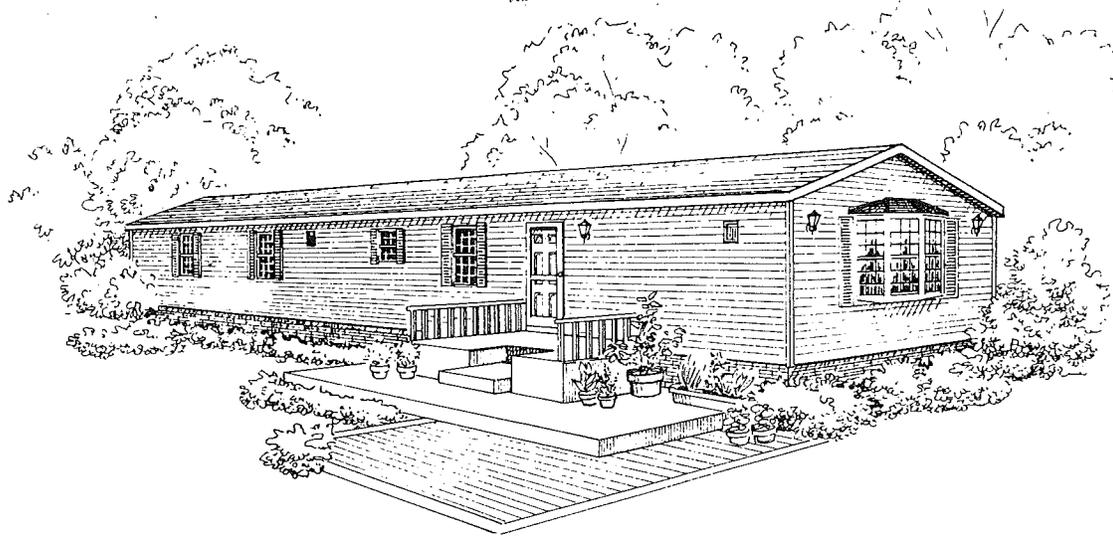
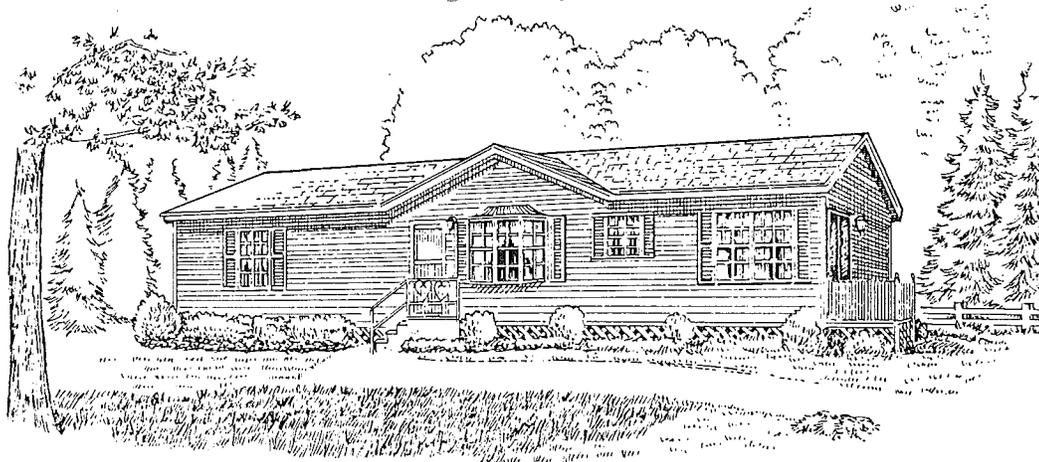


MANSION HOMES SET UP MANUAL



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90-616-71-0000



MANUFACTURED HOUSING ENTERPRISES

Revision 2/2000

INTRODUCTION

All homes manufactured by Manufactured Housing Enterprises are designed, constructed, and inspected for conformance to the Manufactured Home Construction and Safety Standards in effect at the time of manufacture. The H.U.D. approved Federal Standard sets requirements in regards to design, construction, fire safety, heating systems, and electrical systems.

Our homes are designed to be supported by individual piers, crawl space or basement, depending on home type, design, and available options. Our homes are designed to be anchored properly for local conditions. The Compliance Certificate in your home indicates the roof and wind loads which your home has been designed to resist. CAUTION: Do not install your home in a zone that requires greater loads than those posted on the Compliance Certificate.

The foundation system design must also comply with the state and local building codes and regulations applicable to your area which may vary from the indications on the roof load and wind load maps. The roof load zone determines the configurations of the appropriate foundation system. The wind load zone determines certain structural requirements of the home itself and may influence the requirements for tie down and anchoring. Consult local building officials in your area to determine necessary permits, licenses, and inspections required for installation of this home.

The importance of correct set up cannot be over emphasized. Proper set up is essential to homeowner satisfaction. The procedures listed in this manual are intended to assist in proper installation of this home. Previous experience may justify alternate acceptable procedures which will result in performance at least equal to procedures set forth in this manual.

This manual has been reviewed by P.F.S. Corporation and found to be in compliance with the Federal Manufactured Home Construction and Safety Standard.

APPROVED
PFS Corporation
Madison, WI - 1

FEB 1 8 2000

HUD Manufactured Home
Construction &
Safety Standard

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CHAPTER 1 – SITE PREPARATION

1.1 ZONE MAPS

Your home is designed for certain weather conditions and roof loads. See the zone maps in Figure 1 and included on the home compliance certificate. Do not site or relocate your home in a zone requiring greater wind, roof load, or heating/cooling capabilities than those for which it was designed. However, it is safe to locate your home in an area with lower load or less weather requirements. For example, a home designed for a northern roof load of 40 PSF may be sited in the southern roof load zone.

1.2 SOIL CONDITIONS

Requirements to help prevent settling or sagging of your home, site on firm, undisturbed soil or fill compacted to at least 90% of its maximum relative density. Installation on loose non-compacted fill will void the home's limited warranty.

1.3 BEARING CAPACITY

Test the bearing capacity of the soil at the depth of the footings after completing any grading and filling. A pocket penetrometer or other methods acceptable to local jurisdictions may be used. If you can't test the soil, use the lowest value, 1000 PSF. Under unusual conditions or if the soil appears to be peat or non-compacted fill, consult a local professional engineer.

1.4 ORGANIC MATERIAL

To minimize the settling of footings and insect damage, remove all materials that decay such as grass, roots, twigs, and wood scraps from beneath the home in areas where footings are to be placed. Remove shrubs and overhanging branches from the immediate vicinity of the home site to prevent windstorm damage.

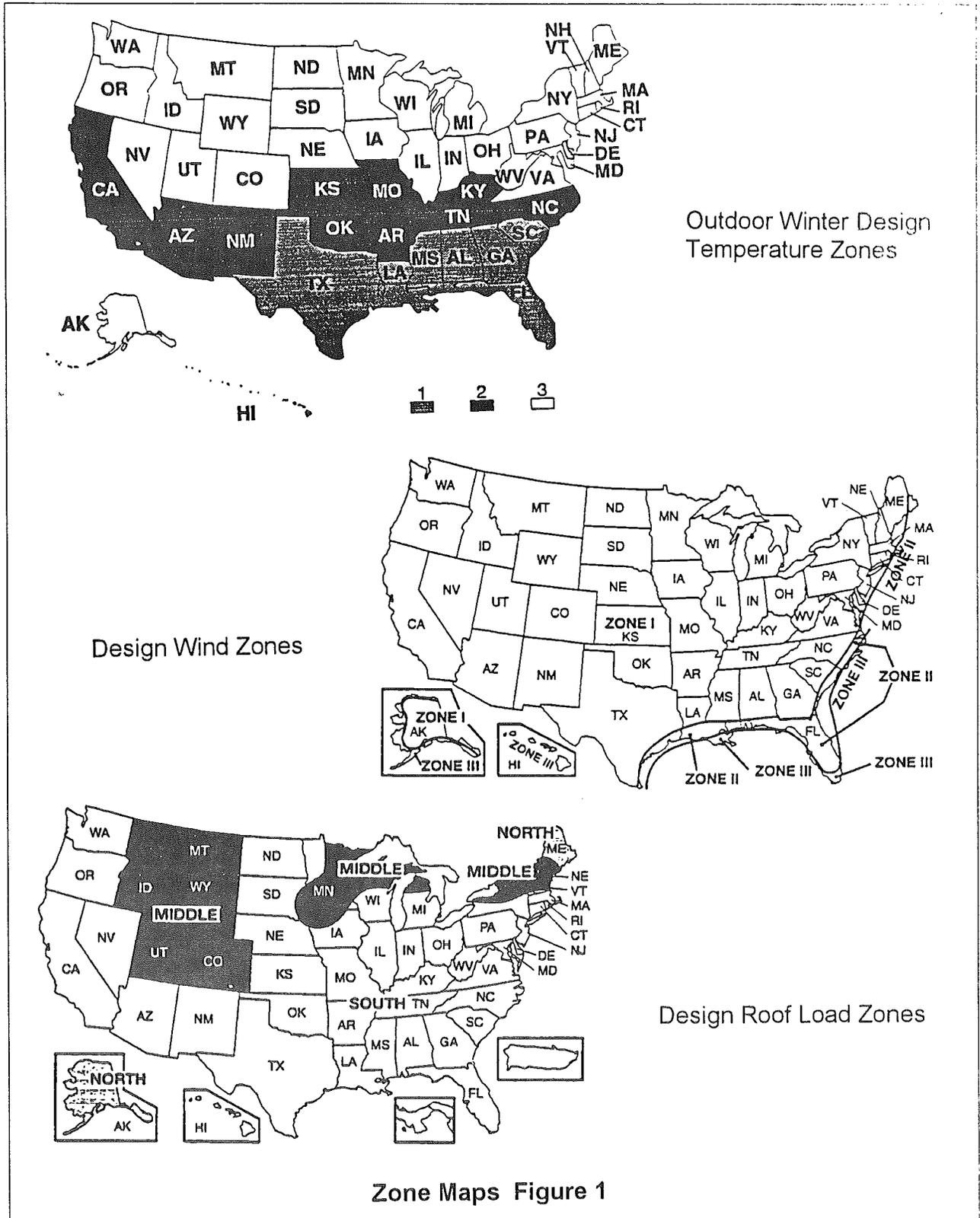
1.5 DRAINAGE

Proper drainage helps prevent water build up under the home which may cause shifting or settling of the foundation, dampness in the home, damage to the siding and bottom board, buckling of the walls, and floors, problems with the operation of doors and windows, and will void the house warranty. Grade the home site to permit water to drain from under the home.

1.6 GROUND MOISTURE

Where ground moisture is likely to be present, a vapor barrier shall be placed on the ground under the home to minimize the entry of ground moisture into the home. Use polyethylene or it's equivalent, at least six mils thick for an acceptable ground cover.

Cover the entire area under the home with the sheeting and overlap it at least 8" at all joints. Where soil and frost conditions permit placement of footings at grade level, place the sheeting directly beneath them.



CHAPTER 2 – FOUNDATIONS

2.1 PIERS

The piers used must have a capacity great enough to transmit the vertical load, which includes the weight of the home; its furnishings, and temporary roof loading, to the foundation surface below it. The most important part of the home set up is proper pier and footing installation. Incorrect size, location, or spacing of piers may cause serious structural damage to your home. Piers shall be concrete blocks capped and shimmed with wedges or adjustable manufactured metal or concrete piers (see Figure 2 and Figure 3). Manufactured piers shall be listed and labeled for the required load capacity. If the load imposed is greater than the capacity of the pier, then two or more piers may be used. The total capacity of the piers must be equal to or greater than the loads to be transmitted.

2.2 REQUIREMENTS

The load that each pier must carry depends on factors such as the dimensions of the home, the roof live load, the spacing of the piers, and the way they are used to support the home. Marriage wall blocking is required for multi-section homes. See Tables, 1, 2, and 3 for required pier capacities.

2.3 CONFIGURATION

Figure 4 and Figure 5 show the recommended arrangement of piers. Concrete blocks shall have nominal dimensions of at least 8" X 8" X 16". They must be stacked with their hollow cells aligned vertically. When piers are constructed of blocks stacked side by side, every layer shall be at right angles to the previous one. Cap hollow block piers to distribute the structural load evenly across them. Caps shall be of solid masonry or hard wood at least 2" thick or of steel and the same length and width of piers they rest upon. Avoid soft woods and plywood as they may lead to unwanted settling or movement. See Figure 3.

2.4 SHIMS

Use shims 4" wide X 6" long made of hard wood to level the home and fill any gaps between the base of the I-beam and the top of the pier cap. Always use shims in pairs. Drive them in tightly so they occupy no more than one inch of vertical space. Use hard wood plates no thicker than 2" to fill in any remaining vertical gaps. See Figure 3.

2.5 FROST LINE

All piers must rest on footings that either extend below the frost line or are otherwise protected from the frost effects.

2.6 GROUND CLEARANCE

Minimum ground clearance of 12" shall be maintained beneath the lowest part of the main frame in the area of the utility connections.

2.7 FOOTINGS

Footings in freezing climates shall conform to one of the following:

- A. Conventional Footings. Because of the harmful effects of frost heave, footings shall be placed below the frost line. Consult local authorities to determine the frost depth in your area.
- B. Floating Systems. When designed by a registered professional engineer and accepted by the local authority, a floating slab system may be used. Tie down requirements of Chapter 4 must be taken into consideration.

Footing materials shall be precast or poured concrete with a 28 day compressive strength of at least 3,000 psi. Other materials approved for use by local authorities may be used such as ABS plastic footer pads. Proper sizing of footings depends on the load carrying capacity of both the piers and the soil. The installation of footings may require inspection by the local authorities.

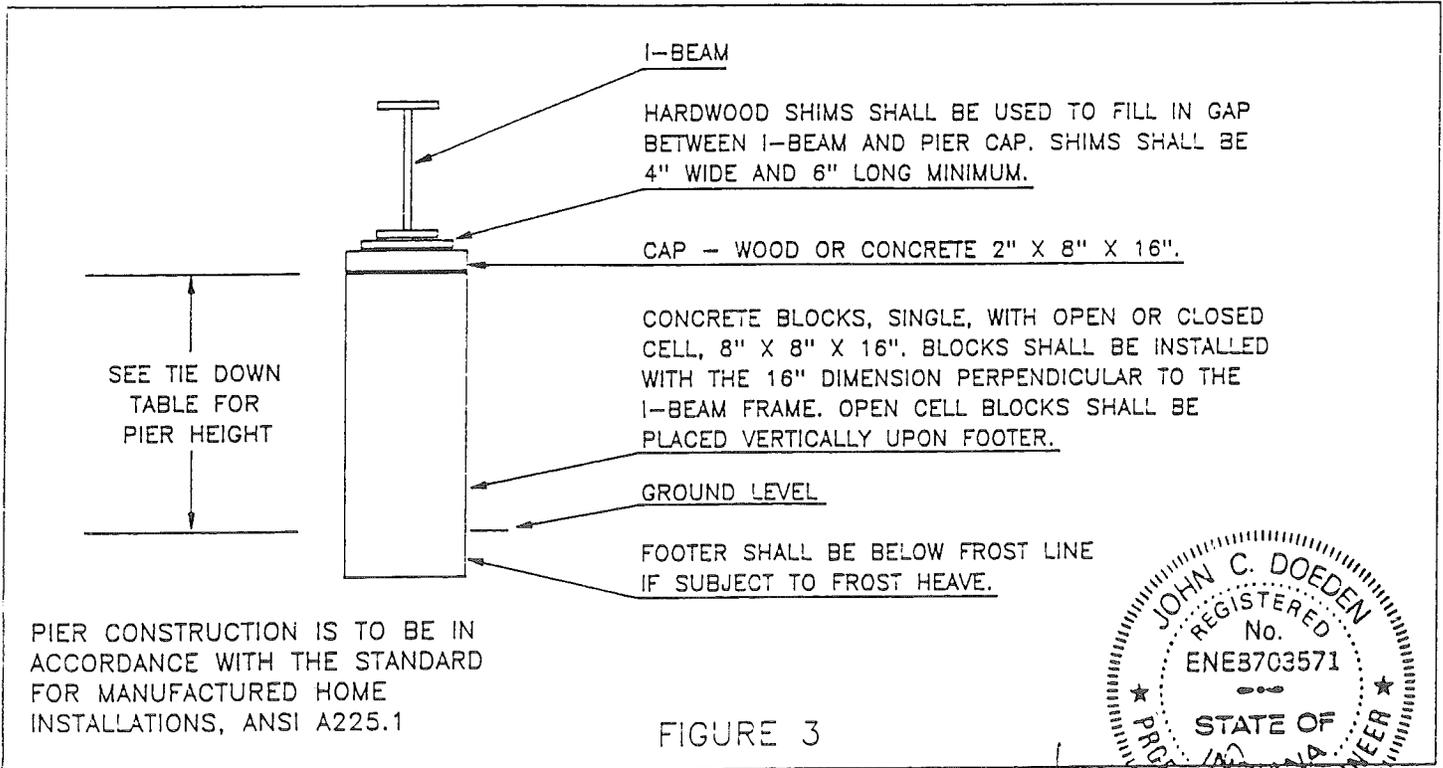
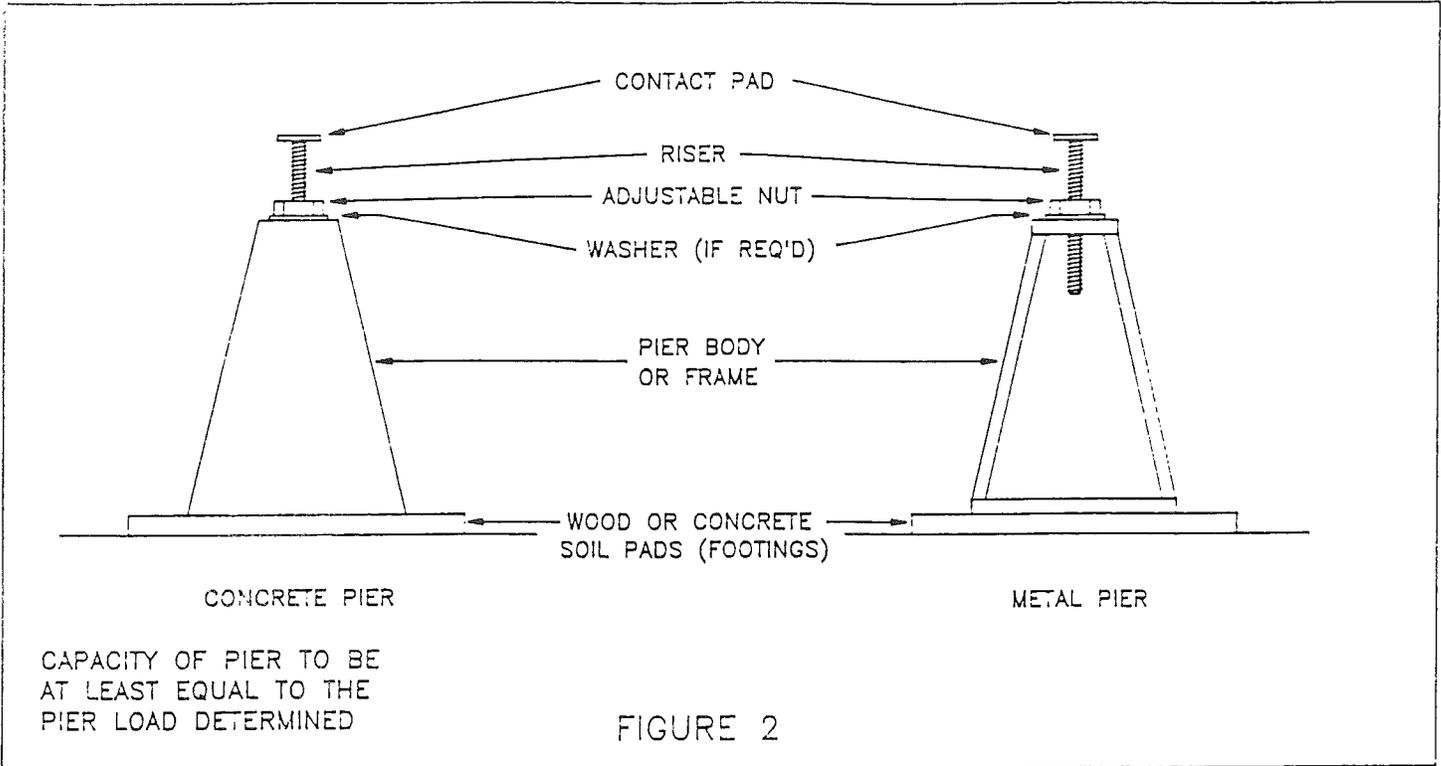
Proper sizing of footings depends upon the load capacity of both the pier and the soil. See Table 4 for recommended footing sizes for your home.

2.8 VENTILATION

The skirting or crawl space wall must be ventilated to minimize the accumulation of moisture beneath the home. There must be one vent at each corner to aid cross ventilation.

2.9 PORCHES

All wood porches require perimeter blocking. Locate piers directly under all posts on the sidewall. Contact manufacturer for pier locations.



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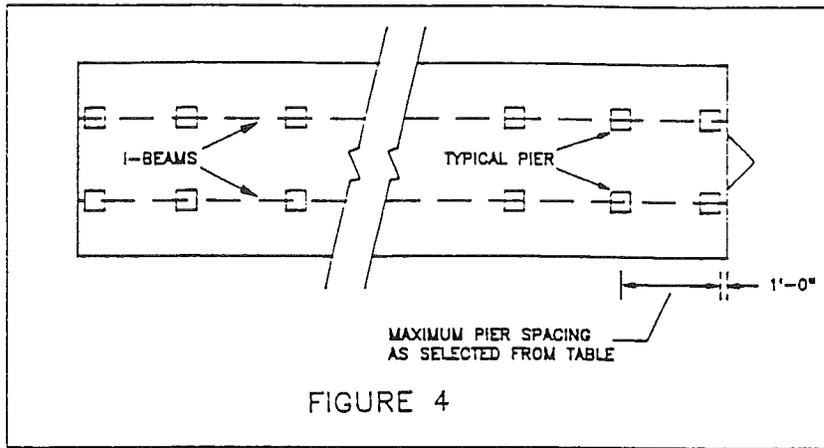


FIGURE 4

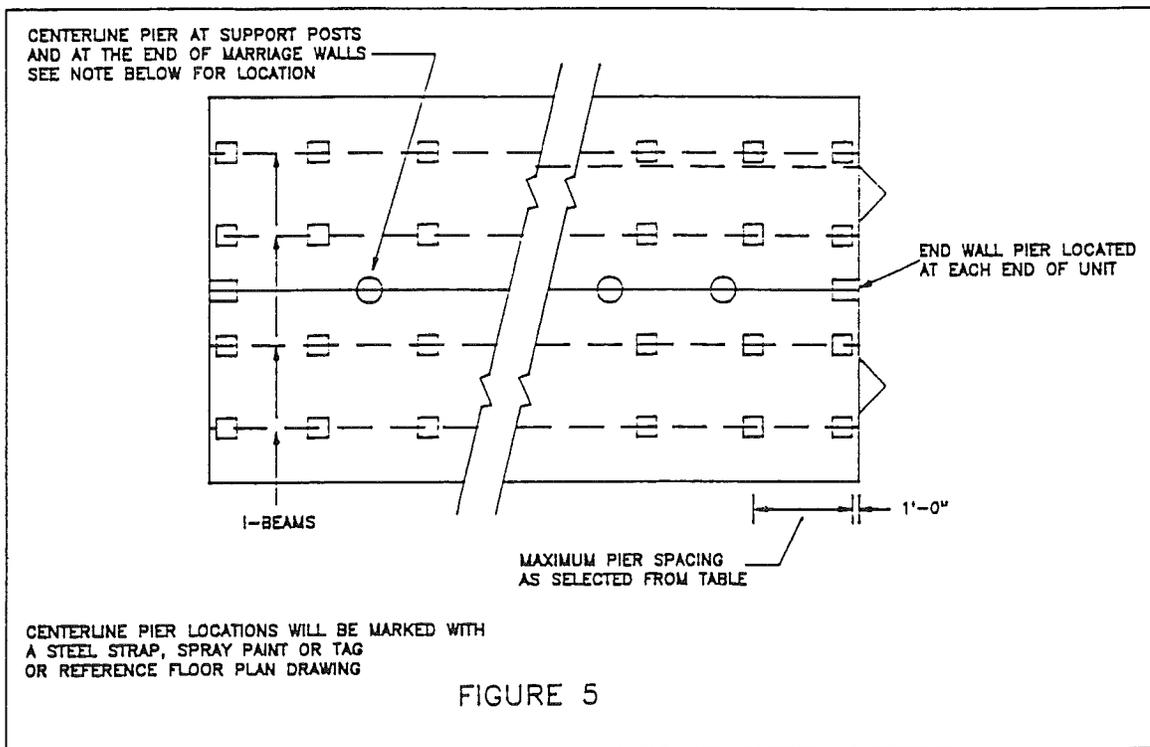
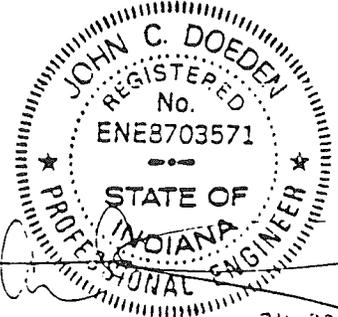


FIGURE 5

NOTE: DOORS, PATIO DOORS, BAY WINDOWS, OR ANY WINDOW GROUP WIDER THAN 4'-0" REQUIRE PERIMETER BLOCKING FOR PROPER OPERATION. I-BEAM PIERS SHALL BE SPACED NO FURTHER APART THAN 10' o.c. FOR 10" I-BEAM AND 12' o.c. FOR 12" I-BEAM.



John C. Doeden

1-24-93

TABLE 1 14' AND 28' WIDE PIER LOADS AT I-BEAM (POUNDS)

PIER SPACING	ROOF LOAD ZONE (PSF)		
	20	30	40
8'	4427	5013	3000
12'	6640	7520	4400
PERIMETER PIERS @8 FT. O. C. MAX.	N/A	N/A	3250 *

* SHALL BE DOUBLED FOR PERIMETER PIERS AT CENTERLINE OF DOUBLEWIDE OR 6500 LBS. EACH PIER

TABLE 2 16' WIDE PIER LOADS AT I-BEAM (POUNDS)

PIER SPACING	ROOF LOAD ZONE (PSF)		
	20	30	40
8'	4907	5520	3000
12'	7360	8280	4400
PERIMETER PIERS @8 FT. O. C. MAX.	N/A	N/A	3800

TABLE 3 MARRIAGE WALL COLUMN PIER LOADS (POUNDS)

MARRIAGE WALL OPENING	ROOF LOAD ZONE (PSF)		
	20	30	40
6'	1200	1600	2000
12'	2400	3200	4000
18'	3600	4800	6000
24'	4800	6400	8000
30'	6000	8000	10000
36'	7200	9600	12000
42'	8400	11200	14000

NOTE: 1. MARRIAGE WALL OPENING IS THE DISTANCE FROM A COLUMN SUPPORT TO THE NEXT COLUMN. IN THE CASE OF A SINGLE COLUMN BETWEEN TWO SPANS (i.e. POST CONDITION), THE MARRIAGE WALL OPENING IS THE TOTAL OF BOTH SPANS.
 2. REFER TO THE FOOTER TABLE FOR FOOTER SIZE REQUIRED.

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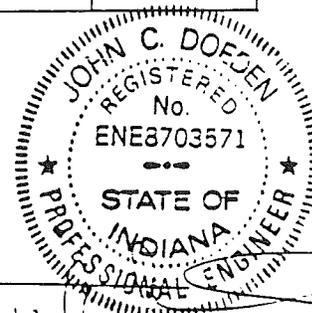
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 Construction And Safety Standard
 Date SEP 02 1997

FOOTING SIZE
MINIMUM FOOTING SIZE

PIER CAPACITY (lbs)	MINIMUM FOOTING SIZE BASED ON SOIL CAPACITY			
	1000 PSF	2000 PSF	3000 PSF	4000 PSF
1000	13" X 13"	9" X 9"	7" X 7"	6" X 6"
1500	16" X 16"	11" X 11"	9" X 9"	7" X 7"
2000	18" X 18"	12" X 12"	10" X 10"	9" X 9"
2500	20" X 20"	14" X 14"	11" X 11"	10" X 10"
3000	22" X 22"	15" X 15"	12" X 12"	11" X 11"
3500	24" X 24"	16" X 16"	13" X 13"	11" X 11"
4000	26" X 26"	18" X 18"	14" X 14"	12" X 12"
4500	27" X 27"	19" X 19"	15" X 15"	13" X 13"
5000	29" X 29"	20" X 20"	16" X 16"	14" X 14"
5500	30" X 30"	21" X 21"	17" X 17"	14" X 14"
6000	32" X 32"	22" X 22"	17" X 17"	15" X 15"
6500	33" X 33"	22" X 22"	18" X 18"	16" X 16"
7000	34" X 34"	23" X 23"	19" X 19"	16" X 16"
7500	35" X 35"	24" X 24"	19" X 19"	17" X 17"
8000	36" X 36"	25" X 25"	20" X 20"	17" X 17"
8500	38" X 38"	26" X 26"	21" X 21"	18" X 18"
9000	39" X 39"	26" X 26"	21" X 21"	18" X 18"
9500	40" X 40"	27" X 27"	22" X 22"	19" X 19"
10000	41" X 41"	28" X 28"	22" X 22"	19" X 19"
11000	43" X 43"	29" X 29"	24" X 24"	20" X 20"
12000	45" X 45"	30" X 30"	25" X 25"	21" X 21"
13000	46" X 46"	32" X 32"	26" X 26"	22" X 22"
14000	48" X 48"	33" X 33"	27" X 27"	23" X 23"
15000	50" X 50"	34" X 34"	27" X 27"	24" X 24"

MIN. FOOTER DEPTH	4"	UP TO	16" X 16"	16" X 16"	16" X 16"	16" X 16"
	6"	→	24" X 24"	19" X 19"	20" X 20"	20" X 20"
	8"	→	34" X 34"	25" X 25"	21" X 21"	20" X 20"
	10"	→	41" X 41"	32" X 32"	27" X 27"	24" X 24"
	12"	→	50" X 50"	38" X 38"	31" X 31"	28" X 28"
	15"	→	—	47" X 47"	40" X 40"	35" X 35"
	18"	→	—	50" X 50"	—	—

TABLE 4



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CHAPTER 3 – BLOCKING INSTRUCTIONS

3.1 GENERAL INFORMATION

- A. Before doing any jacking, place support piers for the home in their approximate location as selected from Table 1 for 14' and 28' wide homes, and Table 2 for 16' wide homes. See Figure 4 and Figure 5 for typical layouts.
- B. Use only jacks in good condition with a minimum rating of 5 tons.
- C. Use a steel plate (3/8" x 2 1/2" x 5") or hard wood block (4" x 4" x 12") between jack and steel I-beam to distribute the loads.
- D. Use a firm support under the jack to prevent the jack from tipping or settling.
- E. Do not operate jacks while under the home.
- F. Use jacks for raising the home only. Don't rely on the jacks to support the home.
- G. Raise the home slowly and provide additional blocking between the I-beam and piers as the home is raised.
- H. Do not go under the home while the home is supported by jacks.

3.2 INSTALLATION

- A. When the home is located in it's final position, bring the home approximately to level using the hitch jack.
- B. To jack up one side of the home, place one jack just in front of the front spring hanger and the other jack just behind the rear spring hanger. Operate these two jacks at the same time to raise the home. Install footers and piers just ahead of the front jack, and just behind the rear jack. Do not exceed the spacing you have selected from the blocking table.
- C. Jack the I-beam at the front and install footers and piers within 1'0" of the end of the home.
- D. Repeat steps 2 and 3 for the other side of the home. The home should be approximately level.
- E. Level the home using a water level or similar equipment to reasonable tolerances. The final adjustment shall be made by jacking the I-beam and placing hard wood shims between the beam and piers.

- F. The leveling process is essential for the doors and windows to work properly. Within 90 days, the home should be releveled again if pier settling has occurred. Make sure you loosen all frame and over the roof ties before you jack the home.

CHAPTER 4 – TIE DOWN INSTRUCTIONS

4.1 GENERAL

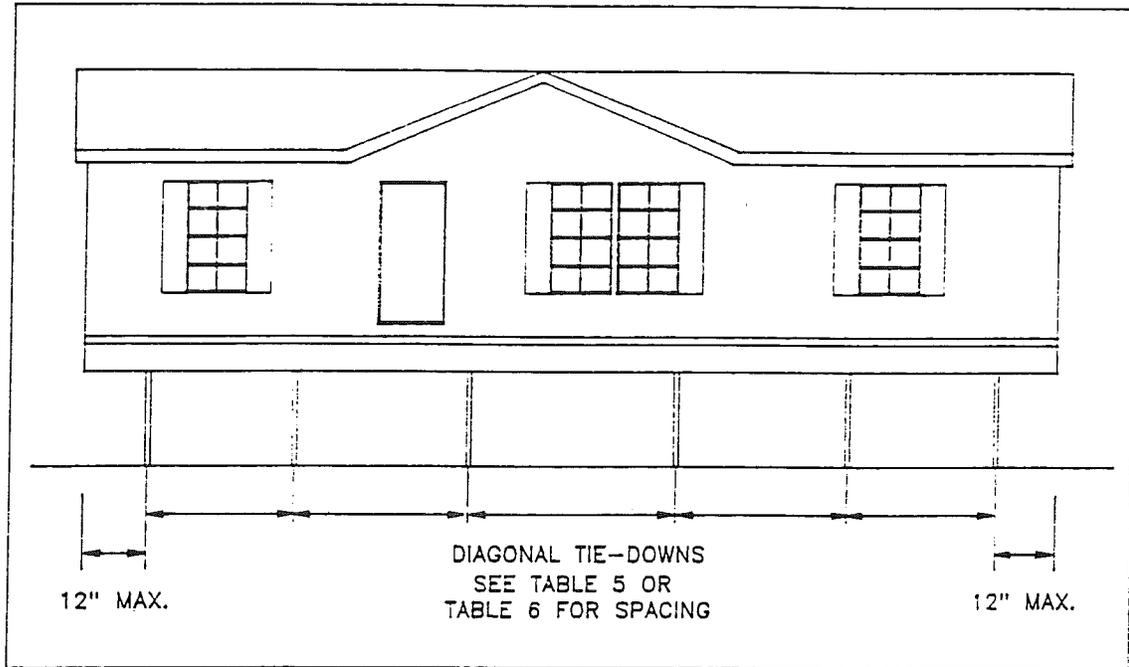
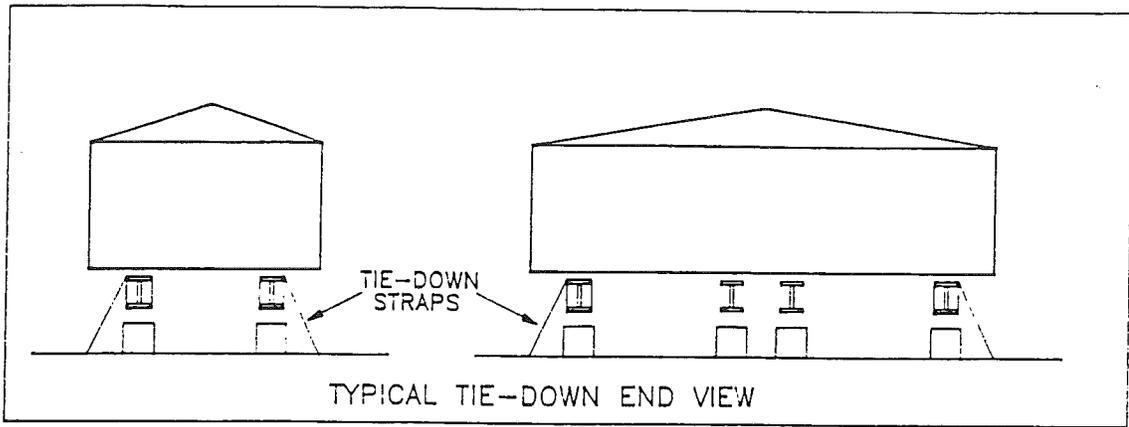
- A. The Federal Standards require that each home have provisions to resist the sliding and overturning effects of high winds. The zone for which your home has been designed is indicated on the compliance certificate.
- B. As the manufacturer of your home, we are required to make provisions for the support and anchoring systems, but not required to provide the anchoring equipment or stabilizing devices.
- C. All homes are designed for frame tie down connections. Over the roof straps are optional for Zone I designed homes.

4.2 DESIGN CRITERIA

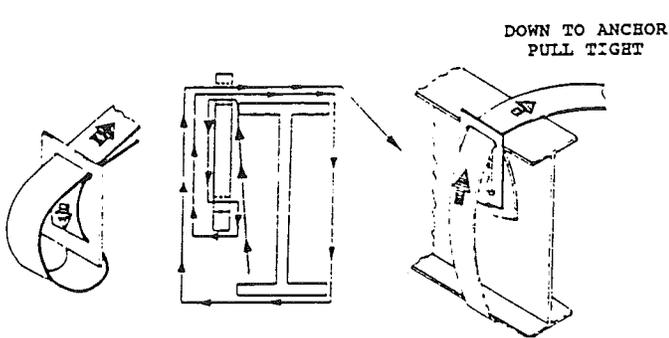
- A. The anchoring equipment shall be capable of resisting an allowable working load equal to or exceeding 3,150 pounds and shall be capable of withstanding a 50% overload (4, 725 pounds total).
- B. Ground anchors shall be capable of resisting an allowable load of 3,150 pounds where such load is applied at an angle of 50 degrees maximum.
- C. The main frame shall be used as the points for connection of the tie downs.
- D. Steel straps shall be equivalent of Type 1, Finish 3 grade steel strapping, 1 ¼” wide and .035 inches thick, conforming with ASTM Standard Specification D3953-91. Steel straps shall be zinc coated, a minimum of 0.30 ounces per square foot of surface.
- E. Install all anchoring equipment in accordance with the manufacturer’s installation instructions.
- F. Other approved connectors may be used provided they meet the strength requirements set forth within.

4.3 INSTALLATION

- A. The home must be in its final position prior to tying it down.
- B. Use Table 5 or Table 6 to determine the tie down anchor locations, based on width of home and wind zone.
- C. Position and install anchors so that the final strap angle will be within the limits shown on the tie down anchor table, see Figure 6. Do not exceed the spacing of the anchor shown in the table under the width of the unit according to wind zone.
- D. Connect the straps to the ground anchors and frames.
- E. Tighten the strap according to the anchor installation instructions. Use caution to avoid over tightening the straps. The straps could pull the home off the foundation. It is recommended that a small bit of slack is allowed in each strap until all straps are installed. Then carefully take up the slack by tightening the straps.
- F. Recheck strap tension frequently until all pier settlement is complete. CAUTION: While releveling, do not jack against tight straps.
- G. Use the same procedure to anchor optional over the roof straps. Make sure the anchor is positioned vertically under the strap.
- H. Ground anchors must extend below the frost line, and 12” minimum above the water table.
- I. The steel tie down strap must be protected against damage at sharp bends. Use a tie down bracket with a radiused edge or insert a short piece of tie down strap through the bracket to protect the full tie down strap.

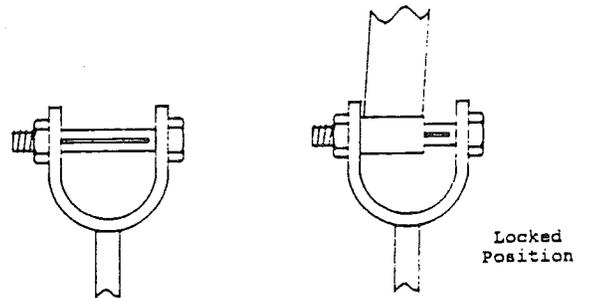


FRAME TIE INSTALLATION INSTRUCTIONS



FRAME ATTACHMENT

1. Thread 7' length of frame tie strap through buckle as shown.
2. Next, thread long end of strap between frame and floor of home. Bring strap through buckle as shown in diagram and fasten to anchor head.
3. Note diagram showing strap in position around frame and through buckle. It is important to remove all slack from system.



ANCHOR HEAD ATTACHMENT

1. Assemble anchor head.
2. Insert strap in slot of bolt.
3. Turn bolt 4 turns minimum taut.
4. Align square shoulders of bolt with square hole in anchor head.
5. Tighten nut to draw square shoulder into square hole.
6. Continue to tighten nut.

TIE-DOWN ANCHOR LOCATIONS
14' & 28' WIDE

PIER HEIGHT	WIND ZONES	
	ZONE I	ZONE II
16"	15'	N/A
24"	13'	N/A
32"	12'	N/A
40"	10'	N/A
48"	9'	N/A

TABLE 5

TIE-DOWN ANCHOR LOCATIONS
16' WIDE

PIER HEIGHT	WIND ZONES	
	ZONE I	ZONE II
16"	16'	N/A
24"	15'	N/A
32"	14'	N/A
40"	13'	N/A
48"	11'	N/A

TABLE 6

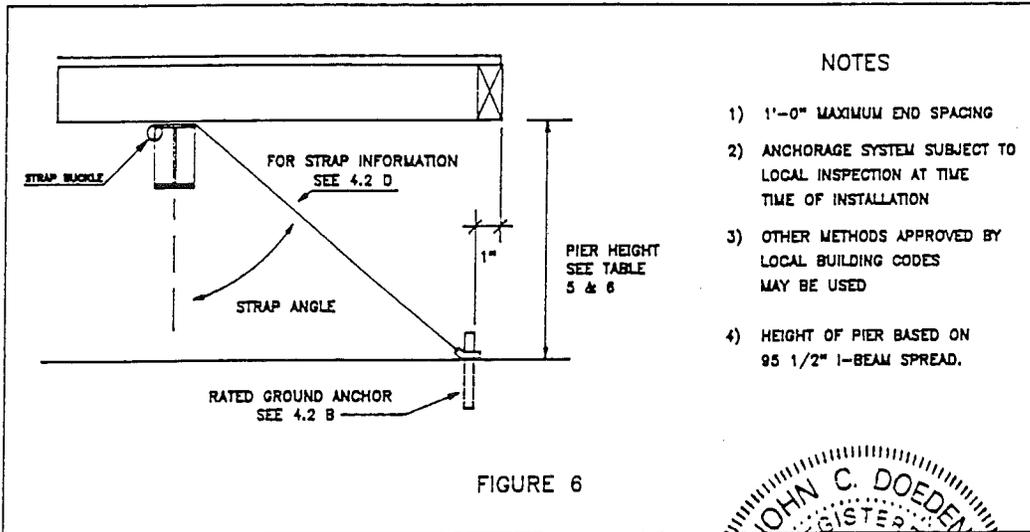
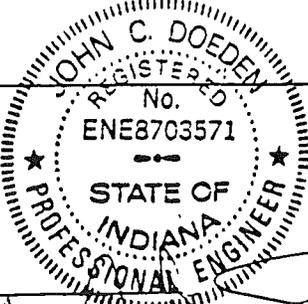


FIGURE 6

NOTES

- 1) 1'-0" MAXIMUM END SPACING
- 2) ANCHORAGE SYSTEM SUBJECT TO LOCAL INSPECTION AT TIME OF INSTALLATION
- 3) OTHER METHODS APPROVED BY LOCAL BUILDING CODES MAY BE USED
- 4) HEIGHT OF PIER BASED ON 95 1/2" I-BEAM SPREAD.


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WARNING: THIS HOME WEIGHS SEVERAL TONS. SUPPORT BLOCKING SHOULD BE USED TO SAFEGUARD WORKERS AND THE STRUCTURE DURING ALL INSTALLATION PROCEDURES. NO ONE SHOULD BE ALLOWED UNDER THE HOME, WHERE THEY COULD BE INJURED SHOULD THE HOME SLIP DURING THE INSTALLATION PROCESS.

CHAPTER 5 – SECTIONAL SET UP

5.1 BLOCKING PROCEDURE

- A. Start out by positioning the B half, or wet half, in its desired position. This will be the stationary unit, and the first half to be blocked. Follow the procedures under Blocking Instruction to block and level the B half. See Figure 5 for a typical blocking layout. Table 3 shows the pier capacity for the centerline blocking.
- B. With the B half set, blocked, and leveled, install a 4” to 6” strip of insulation on the mating end walls, floor, and ridge beam. This will act as a weather gasket.

5.2 POSITIONING THE SECOND HALF (A HALF)

- A. Check the mating surface of both halves for obstructions and remove any that are found.
- B. Position the A half as near as possible to the B half, being sure the floor ends line up.
- C. Move the A half tight to the B half.

5.3 FASTENING THE HALVES TOGETHER

- A. With the floors together and the front and rear ends lined up, repeat the blocking and leveling procedure on the A half. Make sure that the interior walls and doorways along the marriage wall also line up. For your convenience, alignment stickers are placed at doorways and support posts. Both halves should be flush and level with each other.
- B. When the floors are flush and level, the halves shall be secured to each other by using the following procedure.
- C. With the floors together and the front and rear ends lined up, lag or bolt floors together at the hitch end, using a 3/8” x 3” lag screw or equal.

- D. Once the floors are secured at the hitch end, the far ends of the ridge beam must be secured to one another. In the event they don't align, follow the steps below.
- E. Locate jacks properly and raise opposite corners evenly until roof line matches and both sections meet. NOTE: It is sometimes necessary to jack the halves slightly beyond even to allow for settling and to assure an even fit when jack pressure is released.
- F. Fasten the roof ends together using 2 – 3/8" x 6" lags or equal at each end. Toe-screw these lags at a 45 degree angle maximum. After the roof ends are fastened together, release the jack pressure slowly and evenly until the interior ceiling line is flush. This may occur at different times at different points along the ceiling seam. Once the ceiling is flush, install the lag bolts in the remainder of the roof 24" o.c. (See Figure 7).
- G. Finish securing the floors together.
- H. Secure the endwalls together by toe-nailing #8 x 3" screws 16" o.c.
- I. Gaps between the ridge or floor (1 1/2" maximum) shall be closed up with lumber and/or plywood shims. All fasteners in the shimmed portion shall be increased in length to ensure they fully penetrate the structural members.

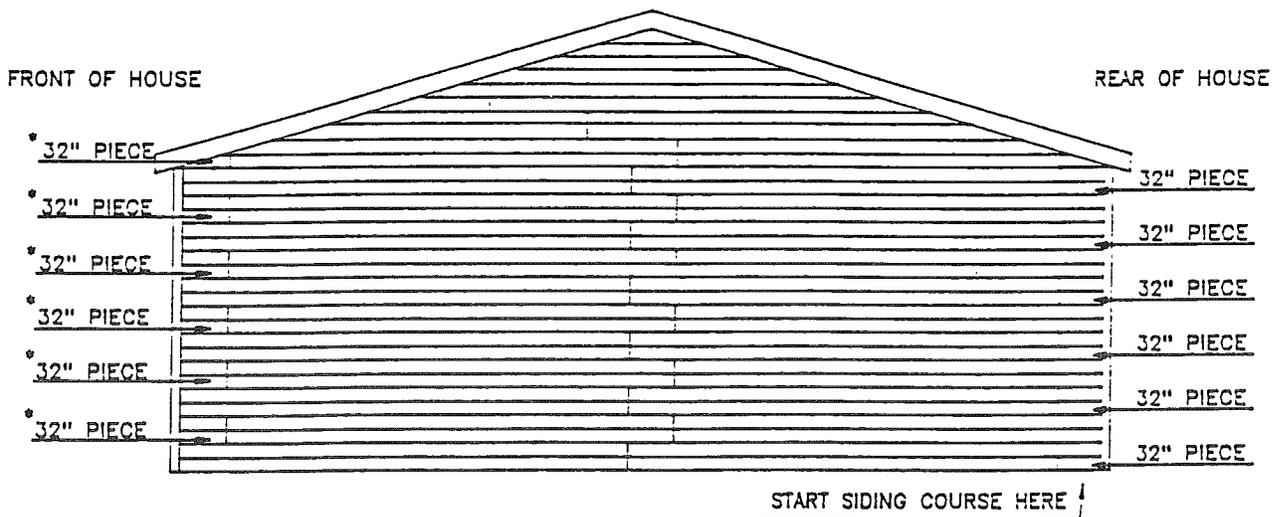
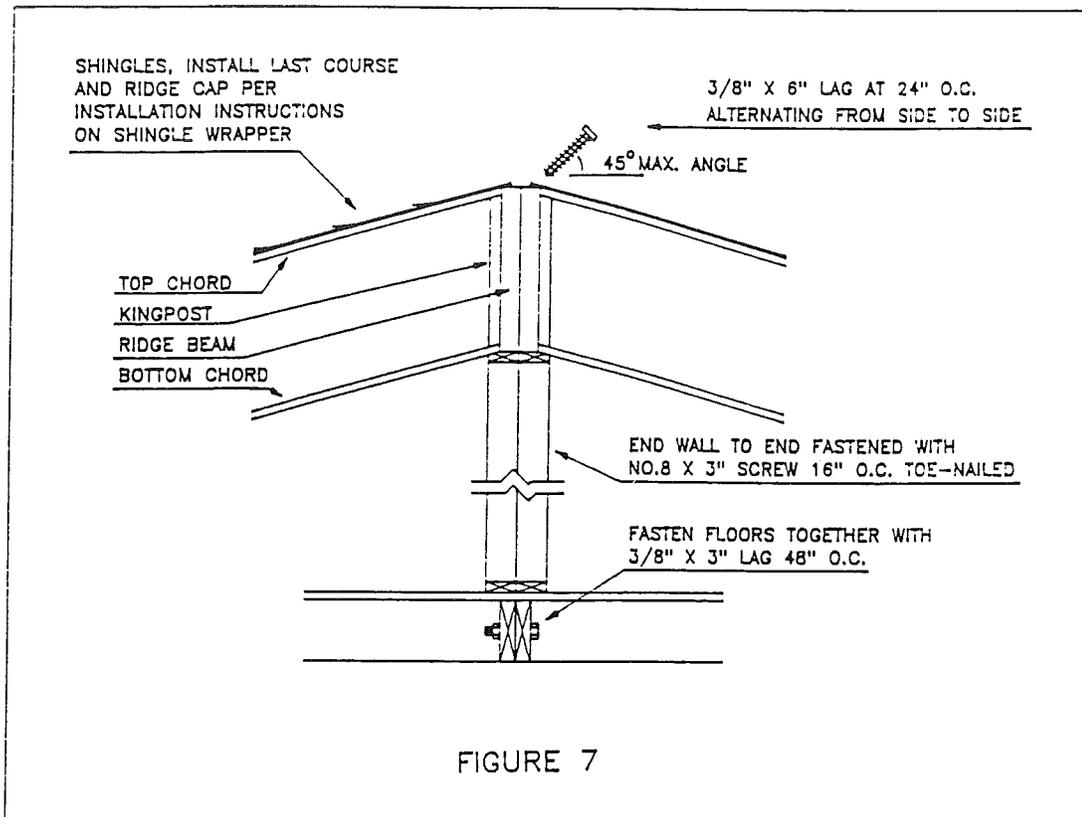
5.4 INTERIOR CLOSE UP

All the material required to trim out the interior of the home is shipped with each home. The trim can be identified by matching it with the trim installed by the manufacturer. All gaps in exterior walls shall be filled with caulk or insulation before applying trim. Some wall panels may have been shipped loose to achieve a more desirable appearance when installed on site.

5.5 EXTERIOR CLOSE UP

Remove the shipping plastic from all walls completely and also the hitch end soffit overhang. The siding and all accessories have been shipped loose. Install siding according to the instructions shipped with the home. Figure 8 shows a typical installation.

NOTE: See Chapter 8 for alternate sectional foundations.



* - THESE PIECES REQUIRE CUTTING TO SIZE

MATERIAL REQUIRED	MATERIAL SHIPPED
60 FULL LENGTH PIECES	60 FULL LENGTH PIECES
24 32" PIECES	30 32" PIECES

FIGURE 8

CHAPTER 6 – UTILITY CONNECTIONS

6.1 DRAINAGE SYSTEM

Properly joined, ABS pipe and fitting produce pressure tight joints, either in shop or in the field. However, skill and knowledge are required in order to obtain good quality joints. The following is an installation procedure that when followed closely will help insure a pressure tight joint when using ABS DWV fittings.

ABS piping shall be supported just as any other piping system. Ordinary hanger straps may be used for suspending below floor systems. The light weight of ABS pipe may lead one to believe that wider spacing could be permitted. Four foot spacing is required with proper support at the base of each stack. Since ABS pipe is non-metallic, it is not as “stiff” as it’s metal counterpart, therefore, the installer must exercise care to assure proper alignment of required grades. Hanger straps shall not be so tight as to compress, distort, cut, or abrade the piping.

Installation instructions are as follows:

- A. Cut pipe square. Use saw and miter box or plastic tube cutter. Remove all burrs from both the inside and outside of the pipe with a knife, file, or reamer. Remove dirt, grease, and moisture. A thorough wipe with a clean rag is usually sufficient. Check dry fit. For proper fit, pipe should go easily into fitting $\frac{1}{4}$ to $\frac{3}{4}$ of the way in.
- B. Using a suitable applicator, apply a moderate even coat of cement to the fitting socket. (Care should be taken not to allow solvent cement to puddle in fitting socket.) Apply a liberal coat of cement to the pipe equal to the depth of the fitting socket. Cement must be applied in sufficient quantities to fill the joint.
- C. Without delay, assemble while cement is still wet. Use sufficient force to ensure that pipe bottoms in socket. If possible, twist the pipe or fitting $\frac{1}{8}$ to $\frac{1}{4}$ turn as assembled. Hold together about 30 seconds to make sure the joint does not separate. With a rag, wipe off excess cement. Avoid disturbing the joint.
- D. Make sure all connections maintain a $\frac{1}{4}$ ” per 1’0” slope. Make sure all fittings are properly connected. The drain system is designed for only one outlet. After assembling the drain system, test for leaks as follows.

CAUTION: THE WATER HEATER MUST BE FILLED FULL OF WATER BEFORE POWER TO THE WATER HEATER IS TURNED ON. DAMAGE MAY OTHERWISE OCCUR THAT IS NOT COVERED BY WARRANTY.

- E. The manufactured home shall be in a level position, all fixtures shall be connected, and the entire system shall be filled with water to the rim of the toilet bowl. Tub and shower drains shall be plugged. After all trapped air has been released, the test shall be sustained for not less than 15 minutes without evidence of leaks. Then the system shall be unplugged and emptied. The waste piping above the level of the toilet bowl shall then be tested and show no indication of leakage when the high fixtures are filled with water and emptied simultaneously to obtain the maximum possible flow in to the drain piping.

6.2 WATER SUPPLY

The water system is designed for an inlet pressure of 80 psi. When installed in areas that exceed 80 psi, a pressure reducing valve must be used. The inlet connection is a ¾" MPT. A master shut off valve not supplied with the home shall be installed. The valve must be a full flow gate or ball valve. Sectional homes with plumbing in both halves have waterline crossovers that must be connected. Locate the crossovers and connect using the fittings supplied. After connecting, reinsulate and repair the bottom board. After making all connections, turn on all faucets and allow the water to run to remove any foreign particles that might cause an unpleasant taste. The exposed water lines should be protected from freezing in cold climates. Use a heat tape that is listed for use with manufactured homes and installed to the instructions from the manufacturer. To test the water system, make sure the water heater is full of water. Pressurize the system with 100 psi, then isolate the home from the pressure. The home must hold 100psi for 15 minutes without loss of pressure. If pressure drops, find source of leak, repair and repeat test.

6.3 ELECTRICAL SUPPLY

This home is designed to be connected to a service nominally rated 120/240 volts, 3-wire AC, with a grounded neutral. All electrical work shall be performed by qualified personnel only. This home has an under-chassis feeder. A raceway is provided from the distribution panel to the underside of the home. A junction box must be installed on the exposed end of the raceway. The minimum junction box size and conduction sizes are shown in Table 7. The home must be grounded according to the National Electric Code. Test the home according to the following instructions. Complete the ground continuity tests before connecting the home to electrical power.

A. GROUNDING CONTINUITY

Using a continuity tester, check non-current carrying metal parts to assure continuity to ground. The parts to be checked include:

1. Appliance enclosures
2. Fixture enclosures
3. Metal siding and roofs
4. Gas lines

5. Metal ducts
6. Home's frame

B. POLARITY OF FIXTURES

With the receptacles and light fixtures energized, check the polarity and grounding of each 120 volt receptacle and light socket. Use a polarity tester capable of determining a correct wiring configuration. A conversion device may be used to check different bulb sizes and outlet configurations. Investigate any reversed polarity, open grounds, or shorts and correct them.

C. OPERATIONAL TEST

Check all light fixtures by placing a light bulb in each socket and turn the switch on and off. Make sure all 120 volt receptacles work. Using a pigtail light, check all 240 volt receptacles to determine if both legs of the circuit are powered. Investigate any failure of the wiring and correct.

Sectional homes have a bonding wire at the rear that must be connected to each half of the home before starting the above tests. There will be electrical crossovers. Locate the crossovers and connect accordingly to Figure 9. The connectors are color coded. Reinsulate and repair the bottom board.

6.4 GAS SUPPLY

The gas piping supply system has been designed for a maximum pressure of 14 inches water column (1/2 psi). For safe and effective operation, the gas supply pressure shall be between 14 and 7 inches water column. Sectionals may have a gas line crossover. It is equipped with a flexible metal connector and a quick disconnect device. Remove the plastic covers from the quick disconnect device and snap the two halves together to complete the connection. Test the system as follows:

- A. Using an ounce gauge, check the system for leaks. Close all appliance controls and all appliance pilot light valves (see appliance instructions shipped with the home).
- B. Open the gas shut off valve on the supply line to each appliance.
- C. Attach the ounce gauge on the main gas inlet to the home.
- D. Carefully pressurize the system to between 5 and 8 ounces of pressure. Pressure in excess of 8 ounces may damage the appliance.

- E. Apply an ammonia free soapy water solution to the joints at both ends of the appliance connector. If bubbles are found, tighten connector until bubbles disappear. Rinse the soapy water off all joints.

6.5 BOTTOM BOARD REPAIR

Use CP-1 pressure sensitive type or equivalent. Make sure the insulation is in place before repairing.

WARNING: IMPROPER CONNECTION, TESTING, OR UNAUTHORIZED MODIFICATION OF GAS OR ELECTRICAL SYSTEMS MAY RESULT IN SERIOUS INJURY OR DEATH. ONLY QUALIFIED PERSONS SHOULD PERFORM WORK ON THESE SYSTEMS.

Electrical Supply Requirements

Main Breaker (Service) Size (Amps)	Conductor Size (AWG)*		Grounding Conductor Size (AWG)		Factory Installed Feeder Raceway Trade Size (in.)*	Minimum Junction Box Size
	CU	AL	CU	AL		
100	#4	#2	#8	#6	1 1/2"	12" X 12" X 4"
200	#2/0	#4/0	#6	#4	2"	16" X 16" X 4"

*Conductor size and feeder raceway sized for 75 C. rated conductors, types RH, RHH RHW, without outer covering, THW or XHHW, two line and one neutral.

TABLE 7

20A. AND 15A. CIRCUIT CROSSOVER

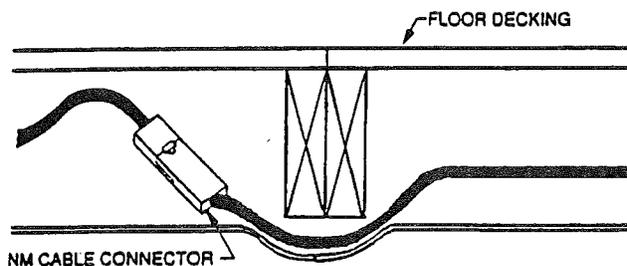
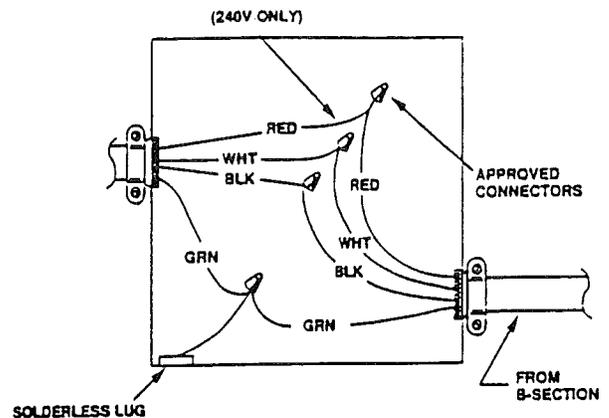


FIGURE 9

SINGLE CIRCUIT CROSSOVER, 240v.



CHAPTER 7 – MISCELLANEOUS CONNECTIONS

7.1 DRYER VENTING

Your home is supplied with a sidewall dryer vent or a roughed in floor vent. Homes supplied with a sidewall dryer vent require that the dryer is connected to the sidewall vent according to the dryer manufacturer's installation instructions. If your home is equipped with a roughed in floor vent the following must be performed to install a dryer:

- A. Remove the floor vent cover.
- B. Push the metal flexible duct (not provided) through the floor.
- C. Connect the duct to the dryer according to the dryer installation instructions.
- D. The dryer vent must not terminate under the home. The duct must be connected to a termination fitting attached to the skirting or crawl space wall. Do not let snow block this vent. See Page 24.

7.2 IN FLOOR FURNACE CROSSOVER

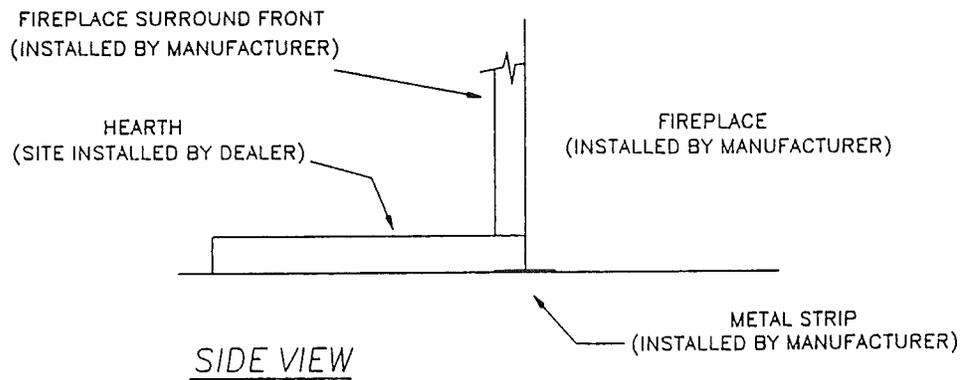
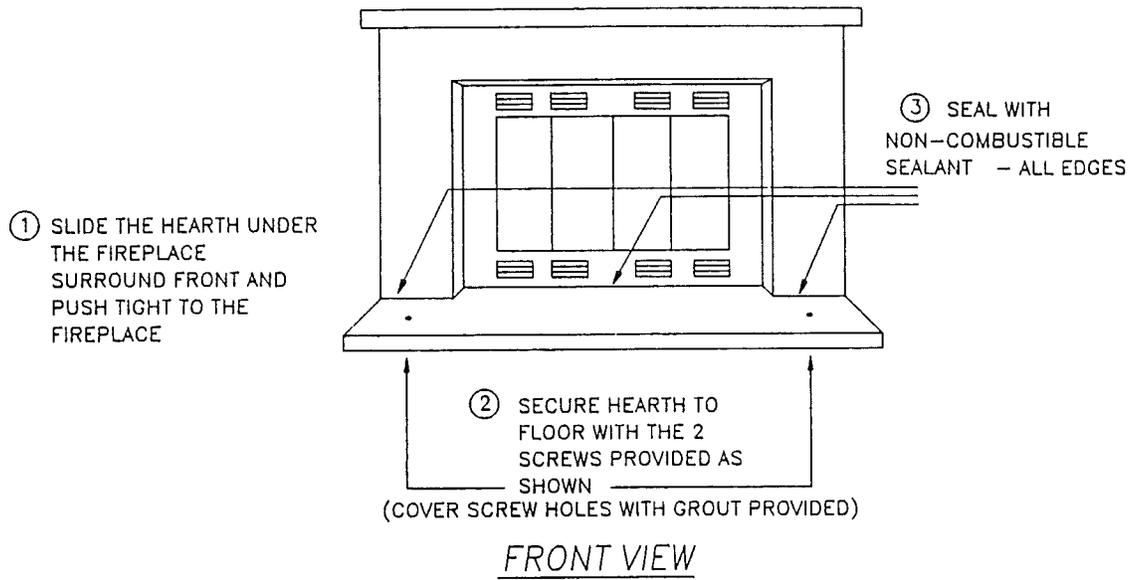
This hookup procedure is basically the same for all sectional homes. The method of installation is as follows:

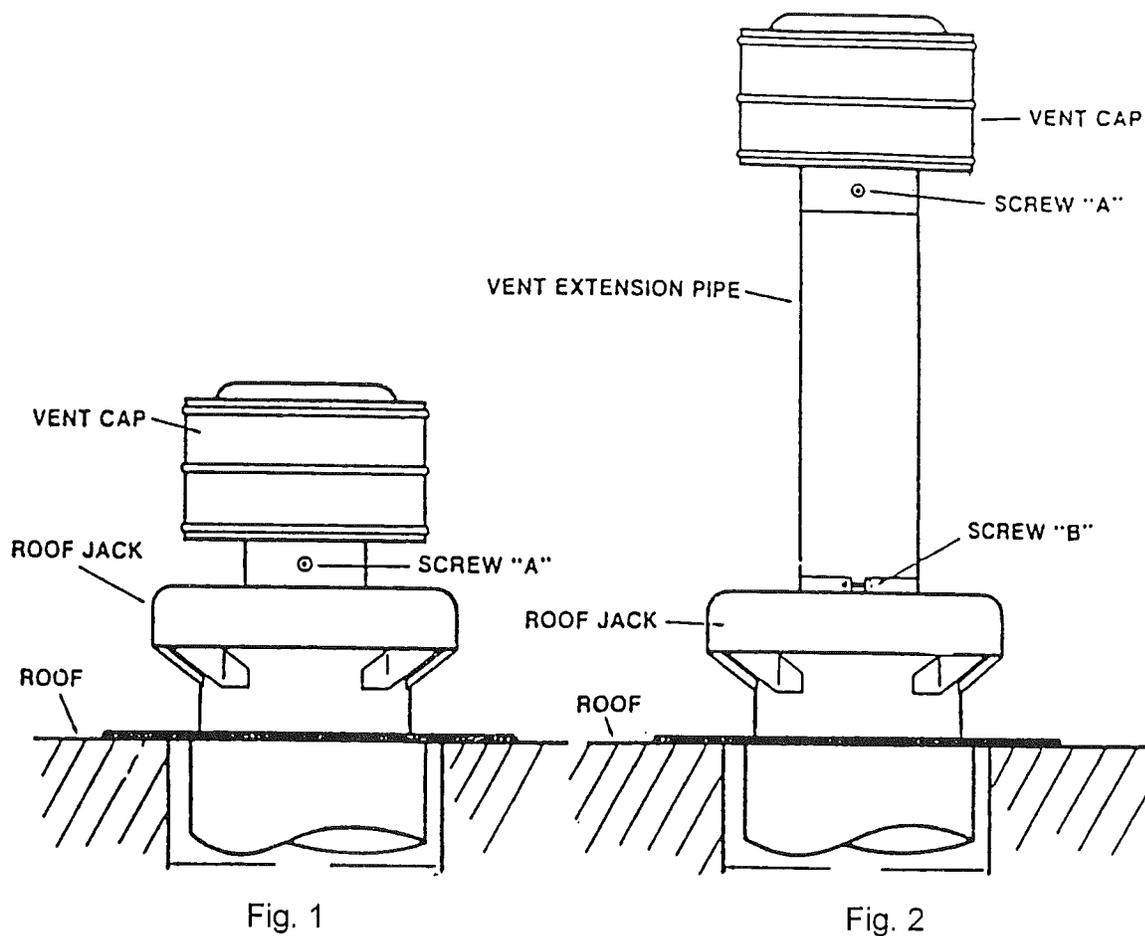
- A. Use the gaskets shipped loose to seal around the duct openings in the rim joist. When the home is set together the ducts will line up and the crossover will be complete.

7.3 FIREPLACES

Fireplaces require on-site installation of supplied fireplace chimney pipe and round top termination. These must be installed per the fireplace installation instructions. The fireplace air inlet is installed below the fireplace by the manufacturer. Make sure this vent isn't blocked and that the space under the home is vented properly.

Fireplace Hearth Installation

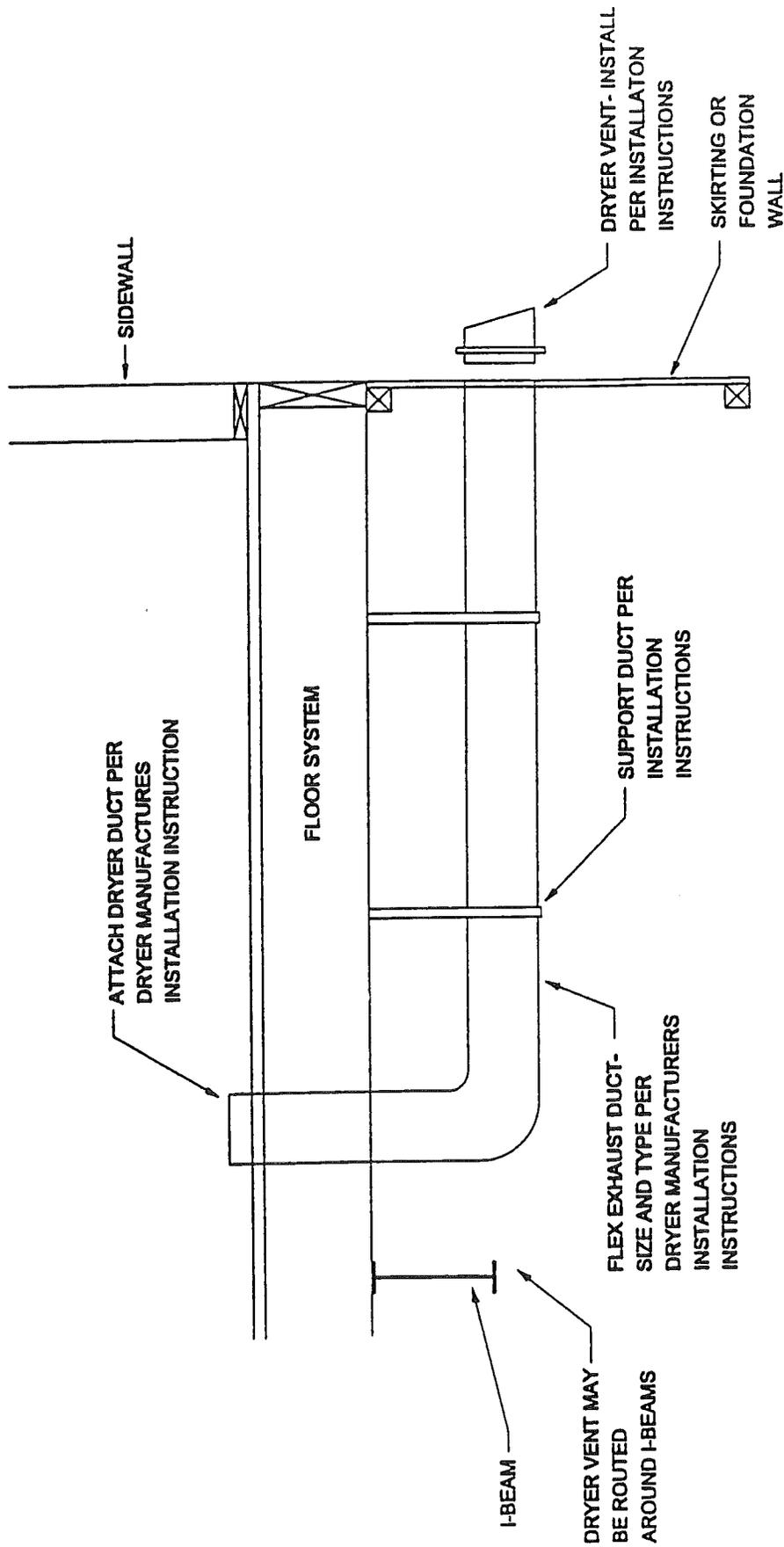




Vent Extension Pipe Installation Instructions

The vent extension pipe should be installed upon set-up of the home on the customer's lot. In the event the extension can not be installed at the factory, it is shipped loose to be installed on site. To remove the vent cap for installation of the extension, remove screw "A" (Fig. 1) and lift the vent cap off. Install extension pipe over the roof flange and tighten screw "B" (See Fig. 2). Install cap in place and install screw "A".

All fireplace extensions are shipped loose for installation on site. The fireplace extensions must be installed in accordance with the terms of their listings and the manufacturer's instructions, which are shipped loose with the home.



WARNING

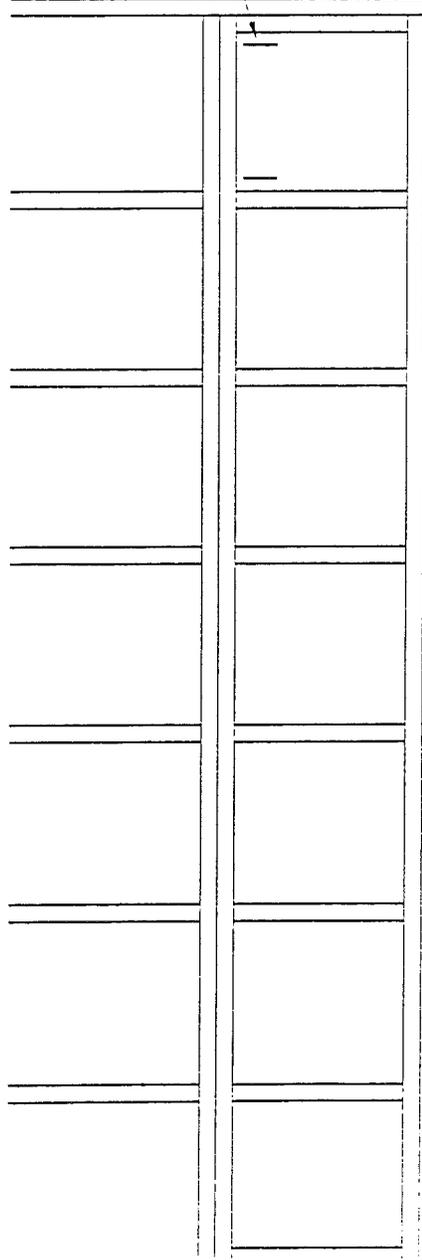
DO NOT TERMINATE DRYER EXHAUST VENT BENEATH THE HOME. VENT MUST BE TERMINATED TO THE OUT SIDE OF THE HOME. SEVERE MOISTURE DAMAGE MAY RESULT TO YOUR HOME AND YOUR WARRANTY MAY BE VOIDED IF THESE INSTRUCTIONS ARE NOT FOLLOWED.

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MANUFACTURED HOUSING ENTERPRISES
 DRYER EXHAUST DUCT INSTALLATION
 SETUP MANUAL ADDENDUM
 DATE 1-28-97 REV. BY: JB



FLOOR PLUG IS ATTACHED TO THE MAIN UNIT WITH #8 X 3" SCREWS 12" O.C.

CUT THE PERIMETER RAIL AT EACH END OF THE STAIRWELL

FLOOR PLUG AND RIM JOIST REMOVED FOR VIEWING ON THIS HALF

DECKING IS INSTALLED CONTINOUS OVER THE FLOOR PLUGS AND FRAMING

MAKE SURE ALL REQUIRED BLOCKING AND BRACING IS IN PLACE BEFORE REMOVING FLOOR PLUGS

PLUG REMOVAL INSTRUCTIONS

1. AFTER THE UNIT IS COMPLETELY SET ON THE FOUNDATION, BRACE UNDER THE FLOOR PLUGS. FROM INSIDE THE HOME, USE A SAW AND CUT THRU THE DECKING OVER EACH 12" X 20" FLOOR PLUG.
2. UNDER THE HOME REMOVE THE BLACK PAPER AND INSULATION UNDER THE FLOOR PLUGS. WHILE THE FLOOR PLUGS ARE SECURELY BRACED, BEGIN TO REMOVE THE #8 X 3" SCREWS THAT ARE INSTALLED 12" O.C. AROUND THE PERIMETER OF EACH FLOOR PLUG.
3. CAREFULLY REMOVE THE BRACES AND REMOVE THE FLOOR PLUGS. BE CAREFUL AS EACH PLUG WEIGHS OVER 100 POUNDS. SAVE THE PLUGS.
4. TO REINSTALL THE FLOOR PLUGS, IN CASE THE HOME IS TO TRANSPORTED AGAIN, SEE THE TEMPORARY STAIR CLOSURE DRAWING.

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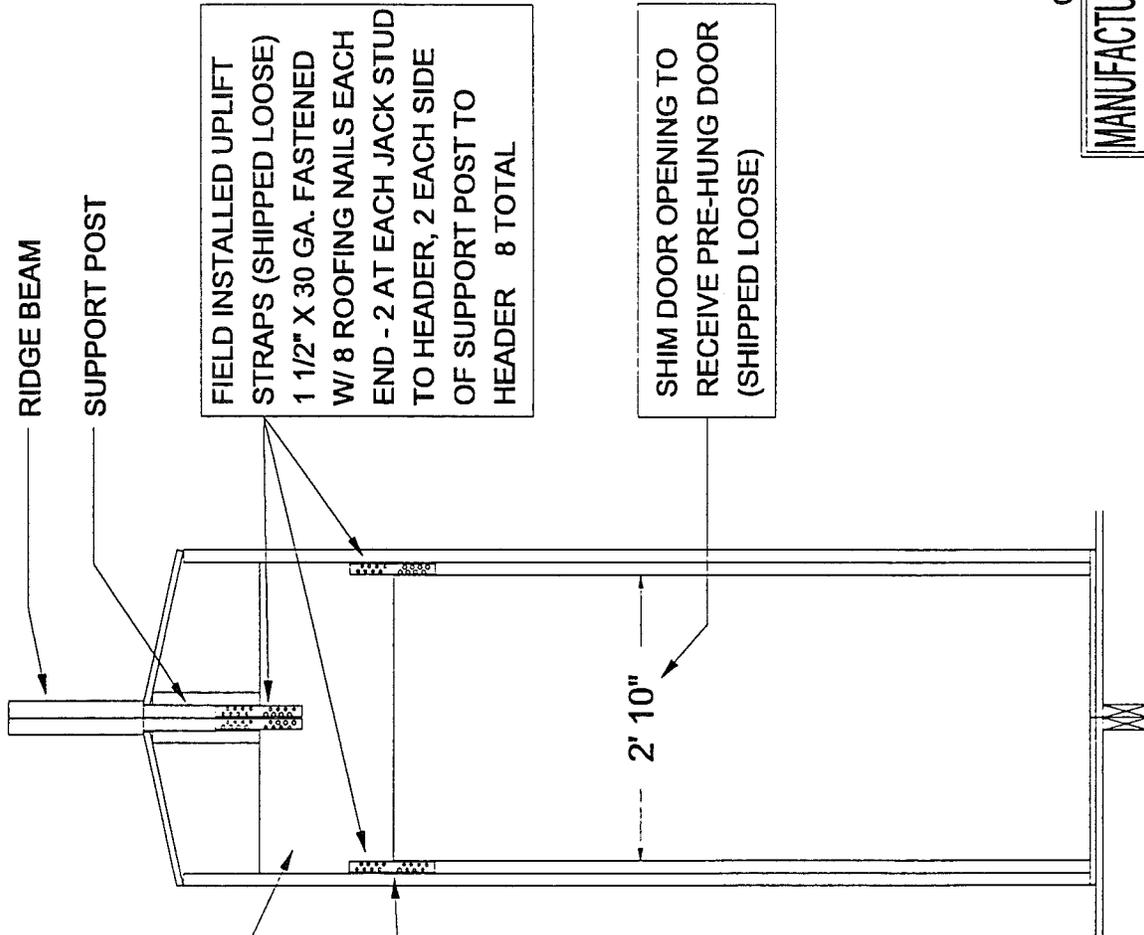
TOP VIEW

MANUFACTURED HOUSING ENTERPRISES

STAIRWELL FLOOR PLUG REMOVAL

SETUP MANUAL ADDENDUM

DATE 8-5-97 REV. 1-28-97 BY: JB



FIELD INSTALLED HEADER-
 7 LAYERS OF 15/32" PLYWOOD
 GLUED AND STAPLED PER
 K-5.0.1 CONSTRUCTED BY
 M.H.E. AND SHIPPED LOOSE
 FOR FIELD INSTALLATION
 37" WIDE 16" HIGH 3 9/32" THICK

ADD SHIMS (3/8" MIN. RATED
 SHEATHING OR 3.6mm LAUAN)
 AS REQUIRED FOR FULL BEARING
 ON JACK STUDS - SHIMS ARE
 1 1/2" X 3 1/2"

RIDGE BEAM
 SUPPORT POST

FIELD INSTALLED UPLIFT
 STRAPS (SHIPPED LOOSE)
 1 1/2" X 30 GA. FASTENED
 W/ 8 ROOFING NAILS EACH
 END - 2 AT EACH JACK STUD
 TO HEADER, 2 EACH SIDE
 OF SUPPORT POST TO
 HEADER 8 TOTAL

SHIM DOOR OPENING TO
 RECEIVE PRE-HUNG DOOR
 (SHIPPED LOOSE)

2' 10"

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Manufactured Home
 Installation &
 Safety Standard

CALC. PER X-3.31

MANUFACTURED HOUSING ENTERPRISES

FIELD INSTALLATION OF

STAIRWELL HEADER

DATE 12-19-96 REV.

BY: JB

ROOF

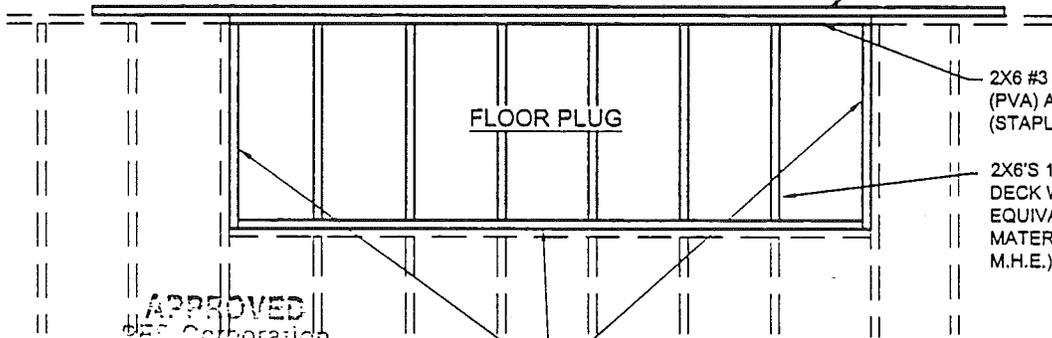
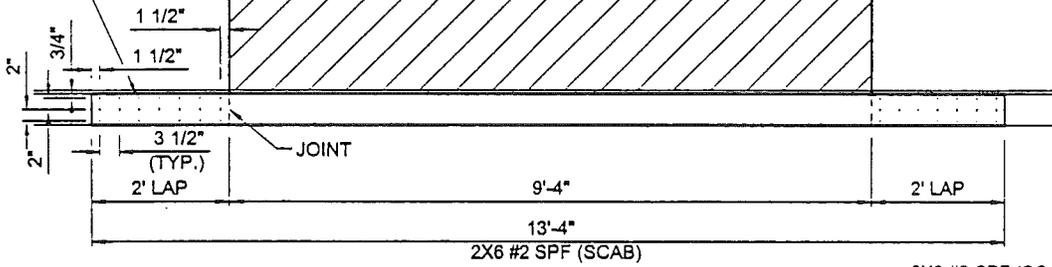
MARRIAGE WALL

MARRIAGE WALL

TEMPORARY WALL

2X3 STUDS, 16" O.C. WITH 1X3 TOP AND BOTTOM PLATES. USE 1/4" PANELING OR O.S.B. GLUED (PVA) TO STUDS. FASTEN AROUND PERIMETER WITH #8 X 3" SCREWS, 6" O.C.

(21) #8 X 3" SCREWS



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ICC Manufactured Home
Construction &
Safety Standard

Approval

MANUFACTURED HOUSING ENTERPRISES

09302 STATE ROAD 6 BRYAN, OH 43506

K2 ENGINEERING, INC.

Structural Designers • Consulting Engineers

Revision: 0

Date: 1/15/98

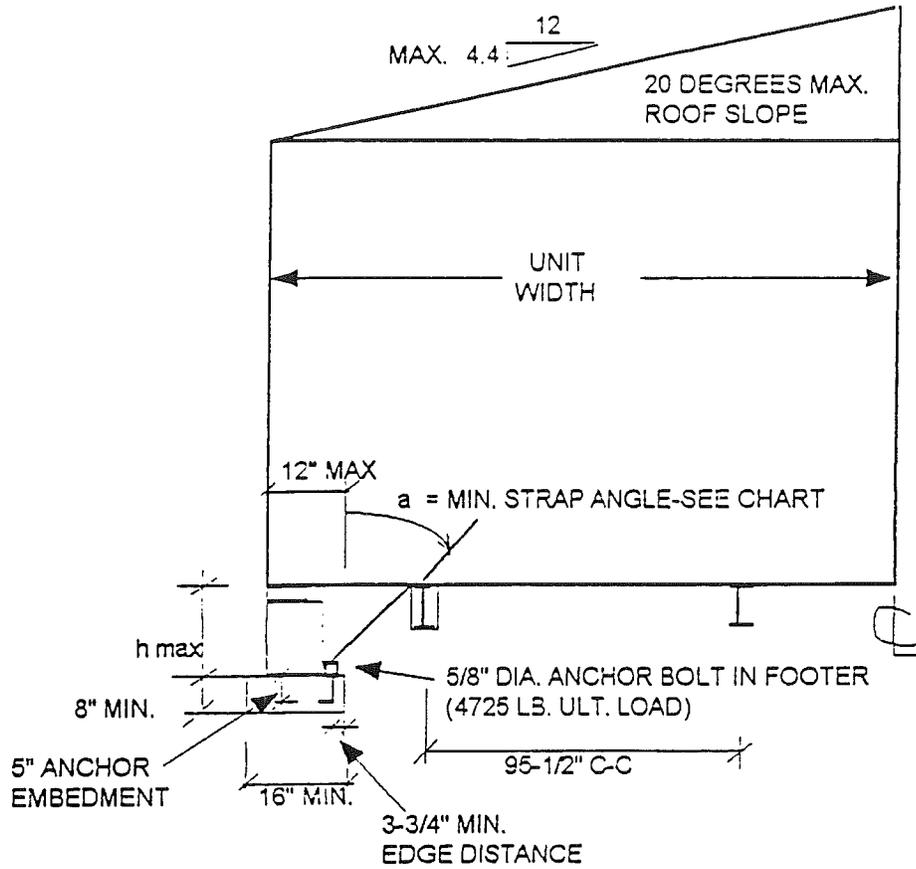
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Title

Temporary
Stair Closure

SETUP MANUAL
ADDENDUM

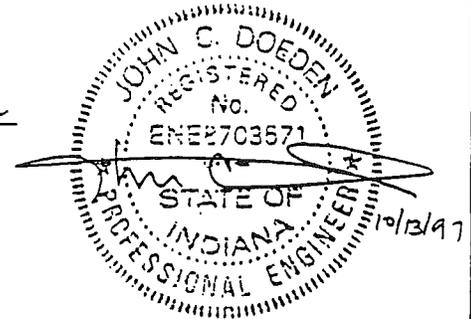
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APPROVED
 OFFICE OF THE
 GEORGE J. BROWN

OCT 28 1997

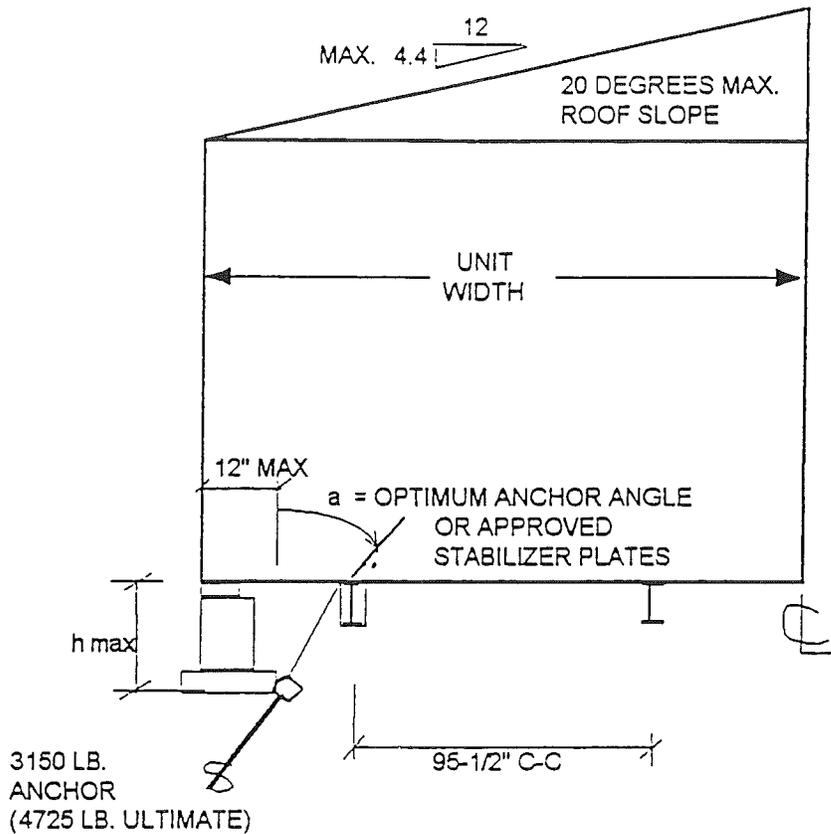
HUD Manufactured Home
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 Safety Standard



UNIT WIDTH	WIND ZONE	MAX. EAVE	ANCHOR SPACING	h max in.	a DEG.
160	80 mph	12"	8' - 0"	36"	28 MIN

- NOTES:
- 1) THIS CHART NOT APPLICABLE TO 'SLIP-SIDE' UNITS (i.e. OFFSET HALVES).
 - 2) LONGITUDINAL TIE AND COLUMN TIE INSTALLATION TO BE PER SET-UP MANUAL REQUIREMENTS.
 - 3) SEE NOTES TO OTHER ZONE 1 TIEDOWNS FOR ADDITIONAL REQUIREMENTS.
 - 4) MAX. DISTANCE TO FIRST TIEDOWN EACH END IS 2'-0"
 - 5) ANCHOR IS 5/8" MIN. DIAMETER AND MUST BE RATED AND INSTALLED TO MEET A MINIMUM WORKING LOAD OF 3150 # OR ADJUST THE TIEDOWN SPACING PROPORTIONATELY (EX: SIMPSON 5/8" EPOXY TIE GOOD FOR 2940# - THEREFORE, INSTALL ANCHORS AT 7'-5" o.c. MAX)
 - 6) MIN. CONCRETE COMPRESSIVE STRESS (F_c) IS 2500 psi AT 28 DAYS
 - 7) MIN. FOOTER SIZE IS 16" WIDE x 8" DEEP OR AS REQUIRED FOR ANCHOR SELECTED - WHICHEVER IS WORSE - REFER TO ANCHOR MANUFACTURER'S INSTRUCTIONS.
 - 8) FOOTER AND FOUNDATION WALL TO BE CONSTRUCTED ACCORDING TO CRAWL SPACE DETAILS IN THE M.H.E. SET-UP MANUAL.

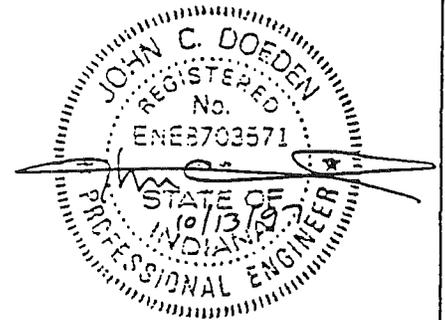
M.H.E. , Inc. BRYAN , OHIO	
TITLE: TIEDOWNS FOR CRAWL SPACE WITH ANCHOR IN PERIMETER FOOTER	DATE: 10 / 13 / 97
ADDENDUM TO SET-UP MANUAL WIND ZONES 1 95-1/2" I-BEAM SPACING	PAGE No. :



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UNIT WIDTH	WIND ZONE	MAX. EAVE	ANCHOR SPACING	h max in.	a DEG.
160	80 mph	12"	9'-0"	34"	31 MIN
		12"	8'-3"	38"	28 MIN
		12"	7'-0"	46"	24 MIN

- NOTES: 1) THIS CHART NOT APPLICABLE TO 'SLIP-SIDE' UNITS (i.e. OFFSET HALVES).
 2) LONGITUDINAL TIE AND COLUMN TIE INSTALLATION TO BE PER SET-UP MANUAL REQUIREMENTS.
 3) SEE NOTES TO OTHER ZONE 1 TIEDOWNS FOR ADDITIONAL REQUIREMENTS.
 4) MAX. DISTANCE TO FIRST TIEDOWN EACH END IS 2'-0"
 5) WHEN ANCHOR ANGLE SPECIFIED CANNOT BE ACHIEVED, INSTALL APPROVED STABILIZER PLATES.

M.H.E. , Inc. BRYAN, OHIO	
TITLE: TIEDOWNS FOR CRAWL SPACE WITH ANCHOR INSIDE PERIMETER	DATE: 10 / 13 / 97
ADDENDUM TO SET-UP MANUAL WIND ZONES 1 95-1/2" I-BEAM SPACING	PAGE No.

16" MAX. ROOF PROJECTION

10'-0" MAX. CENTERLINE WALL HEIGHT INCLUDING FLOOR

UNIT WIDTH

90" WALL PROJECTION INCLUDING FLOOR DEPTH

6" MAX

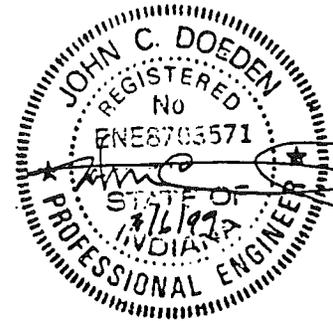
a = OPTIMUM ANCHOR ANGLE OR APPROVED STABILIZER PLATES

h max

PIER NOT SHOWN FOR CLARITY

95 1/2" C-C

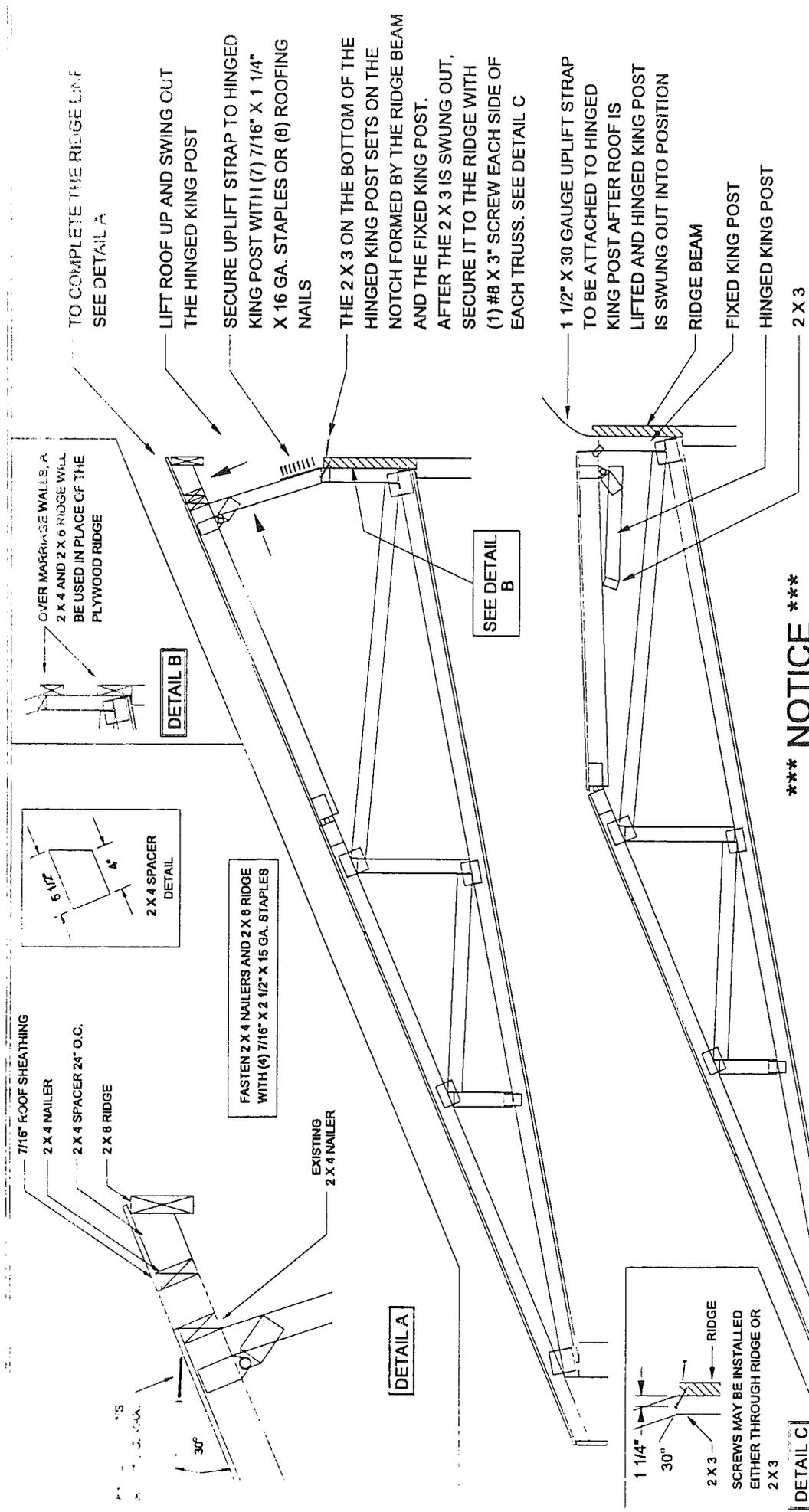
3150 LB. ANCHOR (4725 LB. ULTIMATE)



UNIT WIDTH	WIND ZONE	MAX EAVI	ANCHOR SPACING	h max in.	a DEG.
160" C.L. WALL	I 80 mph	12" 12"	9'-0" 8'-0"	30" 38"	40-50 40-50
160" SIDEWALL	I 80 mph	REFER TO STANDARD CHARTS SEE NOTE # 3			

- NOTES: 1) THIS CHART - APPLICABLE TO 'SLIP-SIDE' UNITS (i.e. OFFSET HALVES).
- 2) LONGITUDINAL TIE AND COLUMN TIE INSTALLATION TO BE PER SET-UP MANUAL REQUIREMENTS.
- 3) SEE NOTES TO OTHER ZONE 1 TIEDOWNS FOR ADDITIONAL REQUIREMENTS. REFER TO SET-UP MANUAL FOR STANDARD TIEDOWN CHARTS TO BE USED FOR SIDEWALL SIDE.
- 4) MAX. DISTANCE TO FIRST TIEDOWN EACH END IS 2'-0". MAXIMUM OFFSET DISTANCE WITH ONLY ONE TIEDOWN AT 2'-0" IS 8'-0" OR ANCHOR SPACING TABULATED ABOVE.
- 5) WHEN ANCHOR SPECIFIED CANNOT BE ACHIEVED, INSTALL APPROVED STABILIZER PLATES. x-7.12(1→2)

<p style="text-align: center;">APPROVED PFS Corporation Madison, WI - 1</p> <p style="text-align: center;">APR 05 1999</p> <p style="text-align: center;">HUD Manufactured Home Construction & Safety Standard</p>	<p>MANUFACTURED HOUSING ENTERPRISES BRYAN, OHIO</p>	
	<p>TITLE: TIEDOWNS FOR 3150 # ANCHORS - PER BEAM ADDENDUM TO SET-UP MANUAL WIND ZONES 1 95-1/2" I-BEAM SPACING SLIPSIDES</p>	<p>DATE: 3/6/99</p> <hr/> <p>PAGE No.</p>



TO COMPLETE THE RIDGE LAF
SEE DETAIL A

LIFT ROOF UP AND SWING OUT
THE HINGED KING POST

SECURE UPLIFT STRAP TO HINGED
KING POST WITH (7) 7/16" X 1 1/4"
X 16 GA. STAPLES OR (8) ROOFING
NAILS

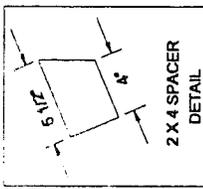
THE 2 X 3 ON THE BOTTOM OF THE
HINGED KING POST SETS ON THE
NOTCH FORMED BY THE RIDGE BEAM
AND THE FIXED KING POST.
AFTER THE 2 X 3 IS SWUNG OUT,
SECURE IT TO THE RIDGE WITH
(1) #8 X 3" SCREW EACH SIDE OF
EACH TRUSS. SEE DETAIL C

1 1/2" X 30 GAUGE UPLIFT STRAP
TO BE ATTACHED TO HINGED
KING POST AFTER ROOF IS
LIFTED AND HINGED KING POST
IS SWUNG OUT INTO POSITION

RIDGE BEAM
FIXED KING POST
HINGED KING POST
2 X 3

OVER MARRIAGE WALLS, A
2 X 4 AND 2 X 6 RIDGE WILL
BE USED IN PLACE OF THE
PLYWOOD RIDGE

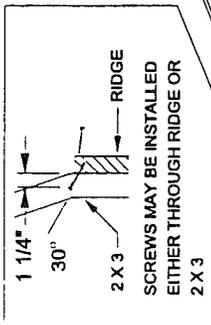
DETAIL B



FASTEN 2 X 4 NAILERS AND 2 X 8 RIDGE
WITH (4) 7/16" X 2 1/2" X 15 GA. STAPLES

DETAIL A

SEE DETAIL B



DETAIL C

***** NOTICE *****

THE SETTING OF A HINGED ROOF SHOULD BE PERFORMED BY A QUALIFIED AND
EXPERIENCED SET UP CREW. INJURY OR DEATH MAY OCCUR IF THE ROOF IS NOT
PROPERLY SUPPORTED DURING THE SETTING OF A HINGED ROOF SYSTEM.
THE METHOD OR EQUIPMENT USED TO LIFT THE ROOF IS NOT THE RESPONSIBILITY
OF MANUFACTURED HOUSING ENTERPRISES, INC.
MANUFACTURED HOUSING ENTERPRISES, INC. IS NOT LIABLE FOR ANY ACCIDENT OR
DAMAGE DURING THE SET UP OF ANY HOME.

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CORPORATION
MANUFACTURING

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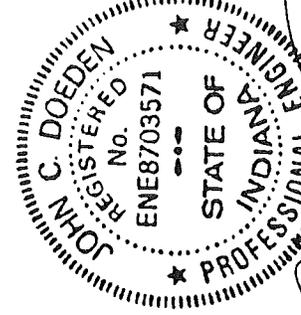
CHAPTER 8

M.H.E., INC.

Crawlspace and Basement Addendum



MANUFACTURED HOUSING ENTERPRISES
 09302 ST. RT. 6
 BRYAN, OHIO 43506



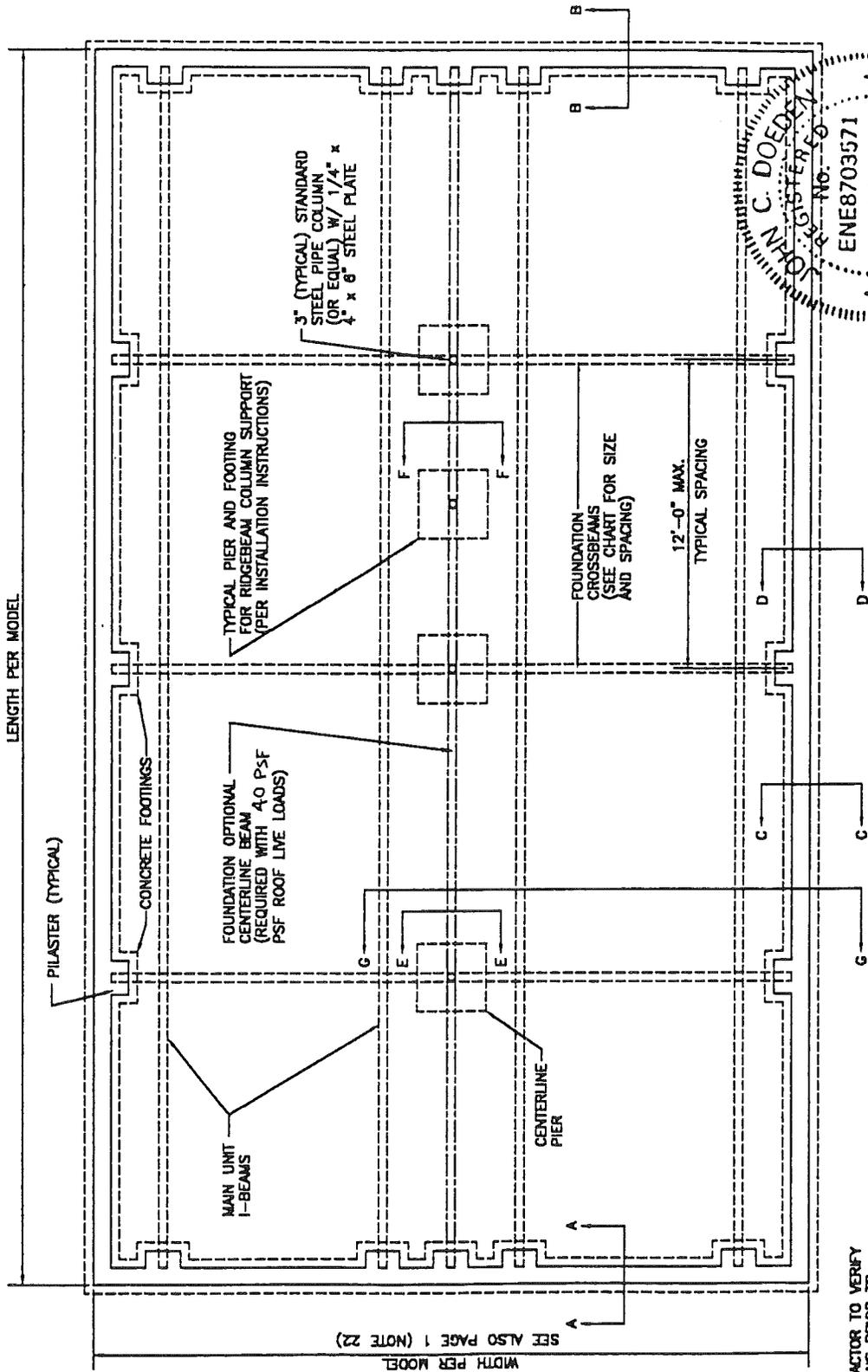
4/24/96 REV. 714196 *JD*

GENERAL NOTES:

1. THIS FOUNDATION HAS BEEN DESIGNED FOR SITES WITH AN ALLOWABLE SOIL BEARING CAPACITY OF 2000 PSF MINIMUM.
2. FOUNDATIONS TO BE CONSTRUCTED ON SOIL WITH A LOWER BEARING CAPACITY SHALL BE DESIGNED IN ACCORDANCE WITH ACCEPTED ENGINEERING PRACTICE BY A LICENSED ENGINEER TO LOCAL CONDITIONS AND CODES.
3. CONCRETE COMPRESSIVE STRENGTH AT 28 DAYS TO BE 3000 PSI MINIMUM.
4. REINFORCING STEEL SPECIFIED TO BE GRADE 60 BARS MEETING ASTM A615, A616 AND A617.
5. FOUNDATION WALL MAY BE Poured CONCRETE 6" THICK, REINFORCED WITH #4 REBAR AT 12" OC VERTICAL AND #5 REBAR AT 18" OC HORIZONTAL.
6. UNIT COLUMN SUPPORTS (SEE MODEL PLAN) MUST BE SUPPORTED BY A PIER AND FOOTING AS REQUIRED IN THE INSTALLATION INSTRUCTIONS MANUAL.
7. CROSSBEAMS ARE CONTINUOUS FULL WIDTH OF UNIT AND FIELD WELDED TO EACH MAIN BEAM AND SECURED AT PLASTER PER DETAILS. SEE CHART FOR REQUIRED SIZES.
8. MAIN BEAMS ARE SECURED AT EACH END IN PLASTER PER DETAILS. WHEN CENTER LINE BEAM IS INSTALLED PLASTER MUST ALSO BE INSTALLED FOR END SUPPORT. SEE CHART FOR REQUIREMENTS.
9. THESE SPECIFICATIONS ARE TYPICAL. LOCAL CODES MAY CONTAIN ADDITIONAL REQUIREMENTS.
10. FOUNDATION WALL STEMS MAY BE CONCRETE OR CONCRETE BLOCK.
11. CONCRETE BLOCK SHALL CONFORM TO ASTM C-90.
12. IN CONCRETE BLOCK STEM WALLS A MINIMUM OF (2) #4 REBARS ARE TO BE INSTALLED IN BLOCK WITH MUD SILL ANCHORS, FULLY GRAUT EACH CELL CONTAINING REBAR.
13. ALL LUMBER IN CONTACT WITH CONCRETE SHALL BE OF PRESSURE TREATED TYPE OR OF SPECIES APPROVED FOR USE IN DIRECT CONTACT WITH CONCRETE.
14. THE INSTALLATION SITE MUST BE GRADED SO THAT WATER DRAINAGE IS AWAY FROM STRUCTURE AND DOES NOT ACCUMULATE UNDER THE HOME.
15. BACK FILL ADJACENT TO THE WALL SHALL NOT BE PLACED UNTIL THE WALL HAS SUFFICIENT STRENGTH OR HAS BEEN BRACED TO PREVENT DAMAGE.
16. MINIMUM FOUNDATION VENTILATION REQUIREMENTS:
 A. 16" x 24" ACCESS CRAWL SPACE TO UNDER FLOOR AREA OF FOUNDATION WALL.
 C. COVER VENT OPENINGS WITH CORROSION-RESISTANT WIRE MESH NOT LESS THAN 1/8" NOR MORE THAN 1/2" IN ANY DIRECTION.
17. J-BEAM SPACES TO OCCUR OVER SUPPORTS. USE 1/4" x 4" x 4" SPICE PLATE WELDED OR (2) 1/2" DIAMETER BOLTS EACH SIDE OF SPACE.
18. WHEN CENTERLINE BEAM IS INSTALLED IT MUST BE CONTINUOUS FOR THE FULL LENGTH OF THE UNIT AND FIELD WELDED TO EACH CROSSBEAM AND SECURED AT EACH FOOT POCKET OR PLASTER PER DETAILS. REQ'D FOR 40 PSF ROOF LIVE LOADS ONLY. CROSSBEAMS WITH CENTERLINE BEAM INSTALLED MAY BE WELDED OR WELDED.

19. DAMP PROOFING OF CONCRETE OR MASONRY WALLS TO BE IN ACCORDANCE WITH LOCAL CODES. IN THE ABSENCE OF CODE REQUIREMENTS THE FOLLOWING SHALL APPLY:
 A. EXTERIOR FOUNDATION WALLS OF MASONRY CONSTRUCTION ENCLOSING BASEMENTS SHALL BE DAMP PROOFED BY APPLYING NOT LESS THAN 3/8" OF PORTLAND CEMENT PARGING TO THE WALL FROM THE FOOTING TO THE FINISH GRADE. THE PARGING SHALL BE COVERED WITH A COAT OF APPROVED BITUMINOUS MATERIAL APPLIED AT THE RECOMMENDED RATE. EXTERIOR FOUNDATION WALLS OF CONCRETE CONSTRUCTION ENCLOSING BASEMENTS SHALL BE DAMP PROOFED BY APPLYING A COAT OF APPROVED BITUMINOUS MATERIAL TO THE WALL FROM THE FOOTING TO THE FINISH GRADE AT THE RECOMMENDED RATE.
 B. FOUNDATION WALLS OF HABITABLE ROOMS LOCATED BELOW GRADE SHALL BE WATER PROOFED WITH MEMBRANES EXTENDING FROM THE EDGE OF THE FOOTING TO THE FINISH GRADE LINE. THE MEMBRANE SHALL CONSIST OF EITHER 2-PLY HOT MOPPED FELT, 6-MIL POLYETHYLENE CHLORIDE, 55-POUND ROLL ROOFING OR EQUIVALENT MATERIAL. THE LAP IN THE MEMBRANE SHALL BE SEALED AND FIRMLY AFFIXED TO THE WALL.
 C. FOUNDATION WALLS MAY BE DAMP PROOFED OR WATER PROOFED USING MATERIALS AND METHODS OF CONSTRUCTION OTHER THAN COVERED IN THIS SECTION WHEN APPROVED BY THE LOCAL BUILDING OFFICIAL.
20. DRAINS SHALL BE PROVIDED AROUND FOUNDATIONS ENCLOSING HABITABLE OR USEABLE SPACES LOCATED BELOW GRADE AND WHICH ARE SUBJECT TO GROUND WATER CONDITIONS. DRAINS SHALL BE INSTALLED AT OR BELOW THE AREA TO BE PROTECTED, AND SHALL DISCHARGE BY GRAVITY OR MECHANICAL MEANS INTO AN APPROVED DRAINAGE SYSTEM.
21. THE TOP OF OPEN JOINTS OF BUILDING PAPER AND THE DRAINAGE TILES SHALL BE PLACED ON 2 INCHES OF WASHED GRAVEL OR CRUSHED ROCK ONE SIEVE SIZE LARGER THAN THE TILE JOINT OPENING OR PERFORATION AND COVERED WITH NOT LESS THAN 6 INCHES OF THE SAME MATERIAL.
22. THE DESIGNS ON THIS AND FOLLOWING SHEETS ARE APPLICABLE TO HORIZONTAL WIND LOADS OF 15 PSF MAXIMUM AND UNITS WHICH HAVE A MAXIMUM WIDTH OF 26'-8". MINIMUM I-BEAM SPACING IS 95 1/2".
23. THE DESIGNS ON THIS AND FOLLOWING SHEETS ARE APPLICABLE TO SEISMIC ZONES 0, 1 AND 2.
24. THIS FOUNDATION DESIGN IS NOT FOR INSTALLATION ON A FLOOD PLAIN. WHEN INSTALLING CRAWLSPACE OR BASEMENT IN AN AREA WITH SOILS HAVING POOR DRAINAGE, CONSIDERATION SHOULD BE GIVEN TO METHODS OF ELIMINATING ACCUMULATION OF WATER IN THE CRAWLSPACE OR BASEMENT, SUCH AS THE USE OF SUMP PUMP(S). INSTALLATION OF SUMP PUMPS TO BE IN ACCORDANCE WITH LOCAL CODE REQUIREMENTS.

FIGURE 1.0
 FOUNDATION, NOTES AND CHARTS



NOTE: CONTRACTOR TO VERIFY ALL DIMENSIONS PRIOR TO FOUNDATION CONSTRUCTION.

STATE OF INDIANA
 REGISTERED PROFESSIONAL ENGINEER
 ENE8703571
 JOHN C. DOEDRY
 No. 50
 4/22/96
 REV. 7/4/96

FIGURE 1.1
 TYPICAL FOUNDATION (CRAWLSPACE OR BASEMENT) PLAN
 Page 2 of 6

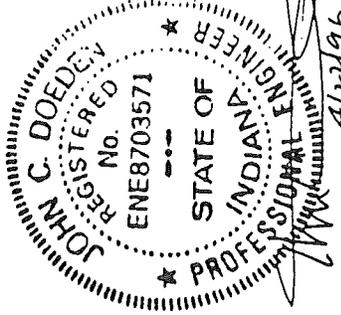
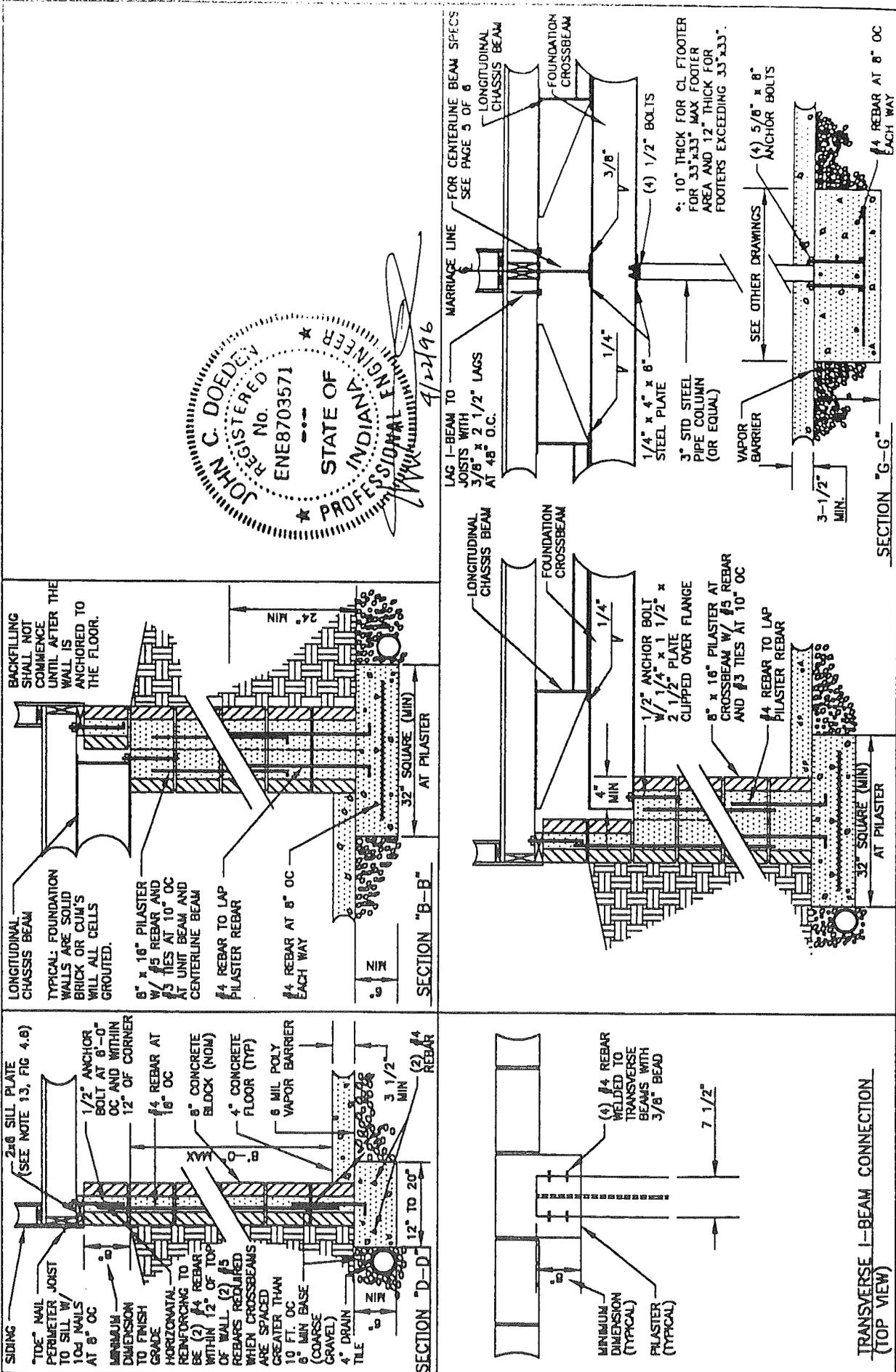
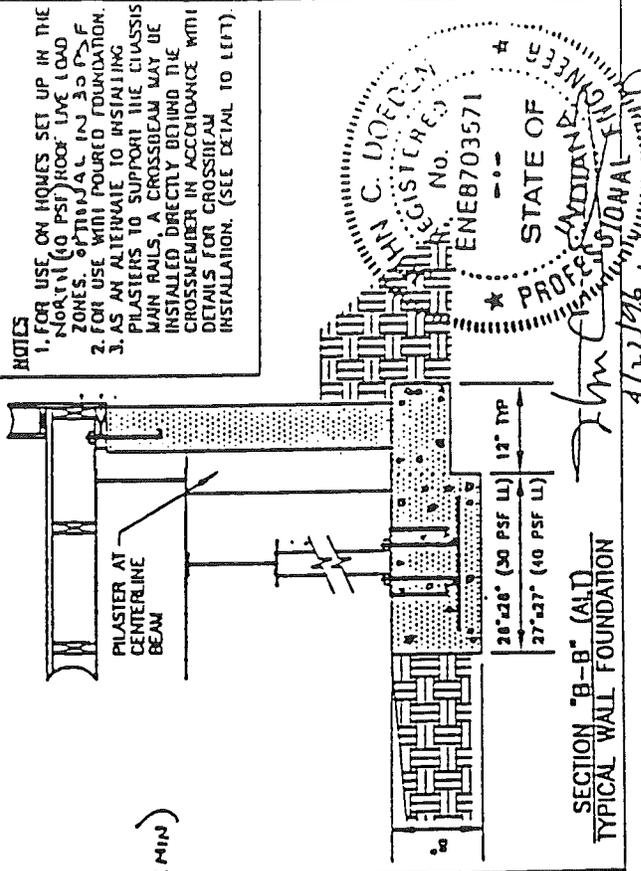
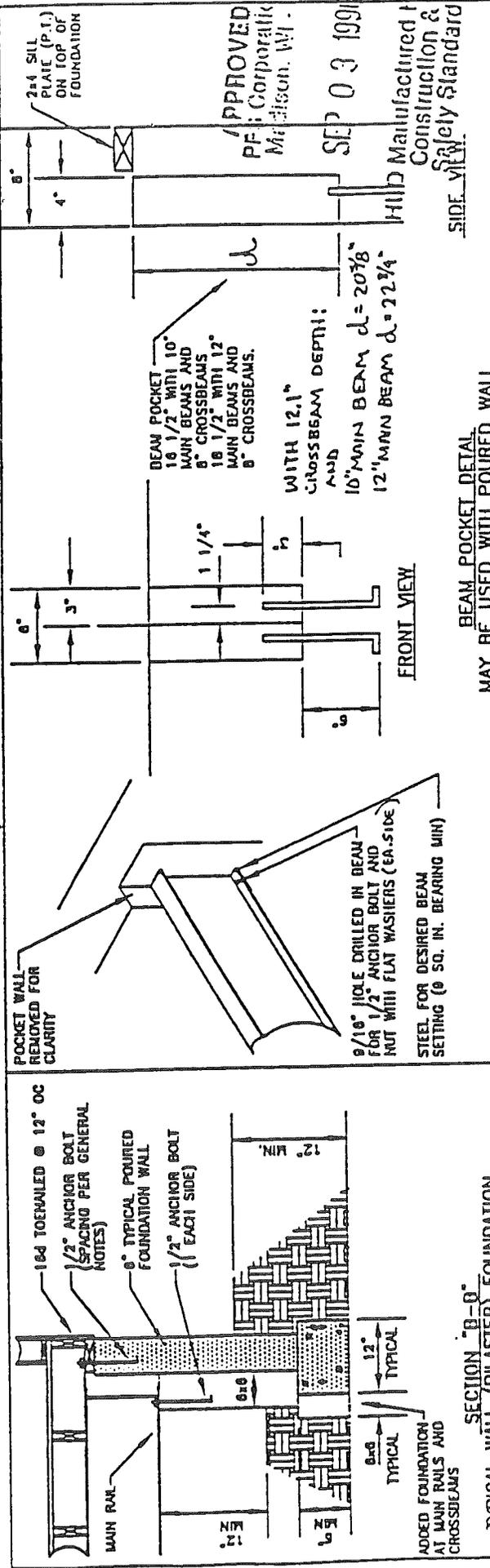


FIGURE 1.3
 BASEMENT DETAILS
 Page 4 of 6

M.H.E., INC.



1/22/96
REV. 7/4/86
REV. 8/30/96

FIGURE 1.4
FOUNDATION DETAILS
Page 5 of 6

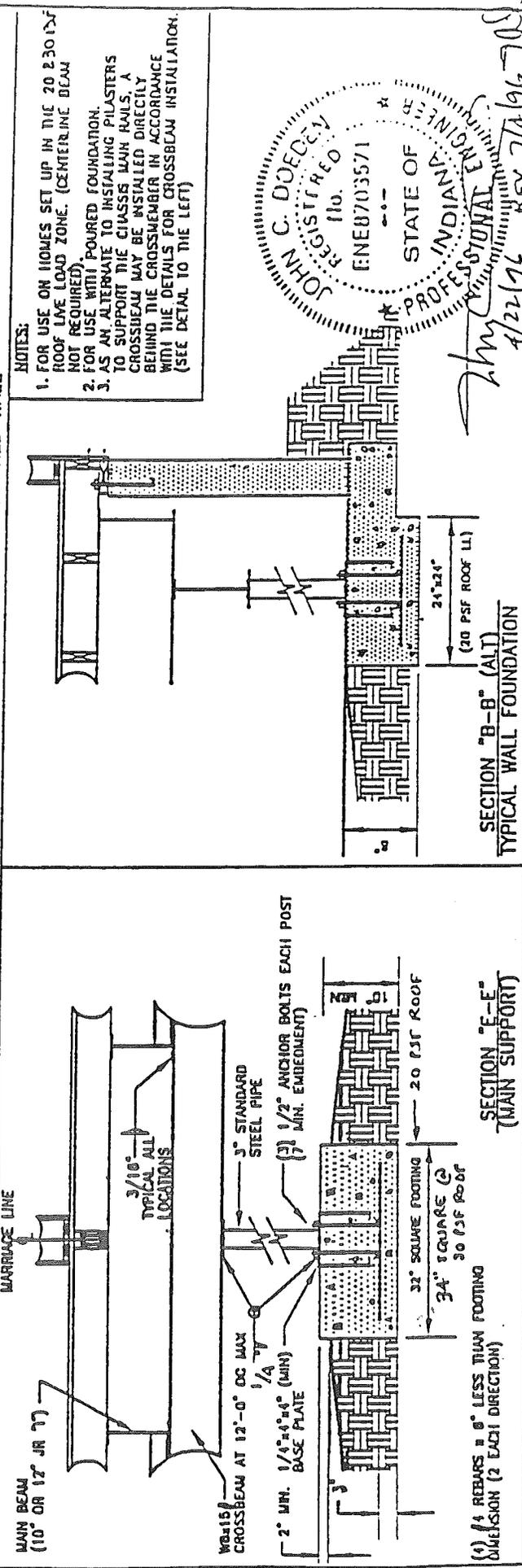
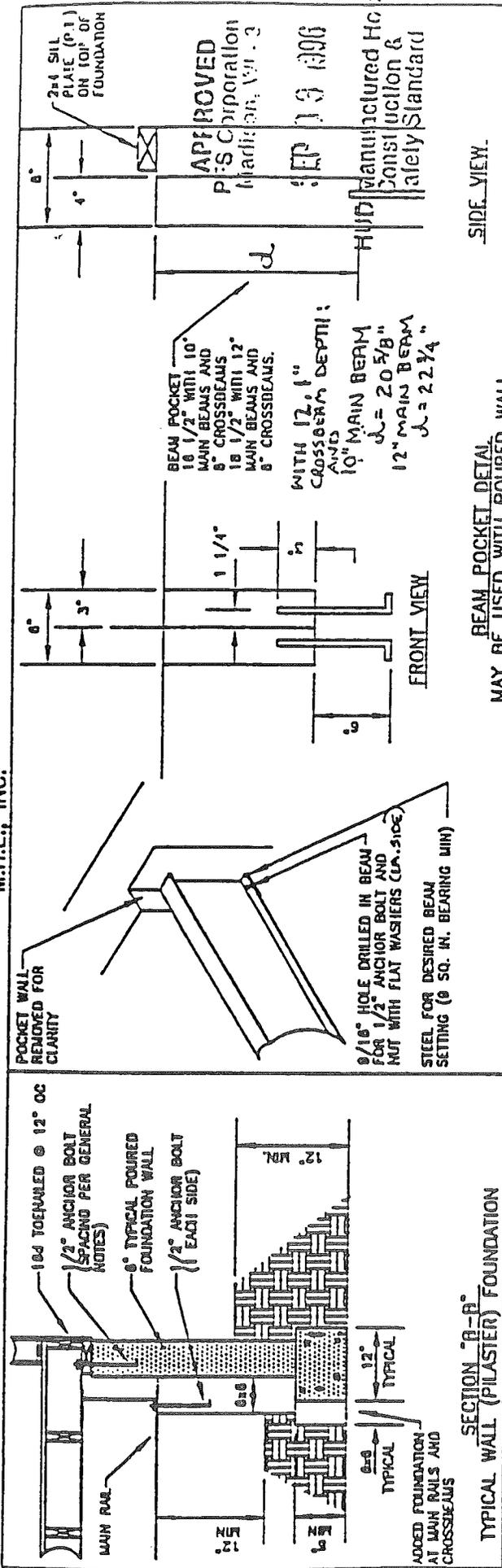
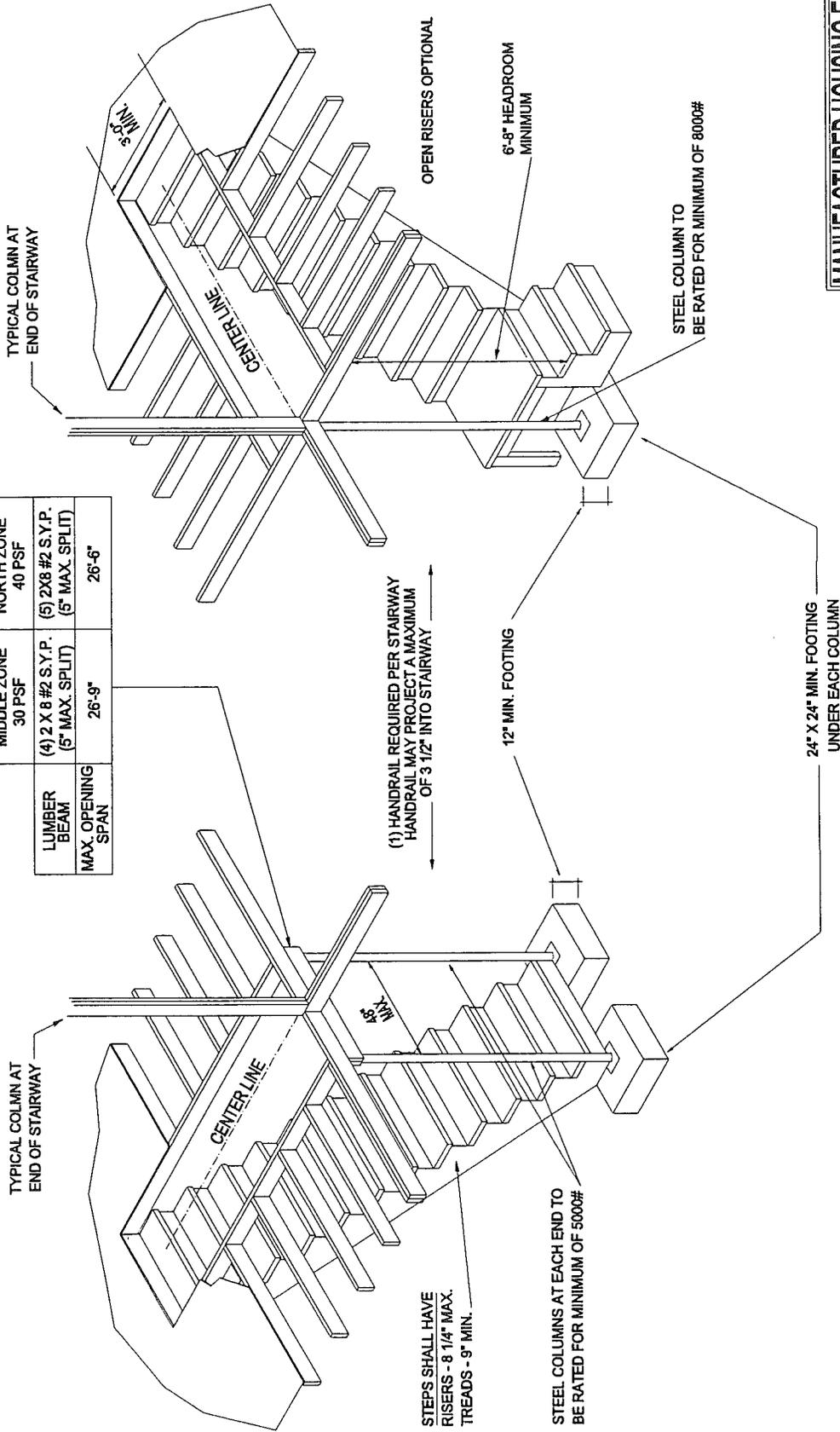


FIGURE 1.5
FOUNDATION DETAILS
Page 6 of 6

REQUIRED STAIRWAY HEADER	
MIDDLE ZONE 30 PSF	NORTH ZONE 40 PSF
(4) 2 X 8 #2 S.Y.P. (5" MAX. SPLIT)	(5) 2X8 #2 S.Y.P. (5" MAX. SPLIT)
LUMBER BEAM MAX. OPENING SPAN	26'-9"
	26'-6"



MANUFACTURED HOUSING ENTERPRISES
TYPICAL STAIRWAY DETAIL
 BASEMENT AND CRAWLSPACE ADDENDUM 6a of 6
 DATE: 5-24-98 REV. 1-24-00 BY: JB

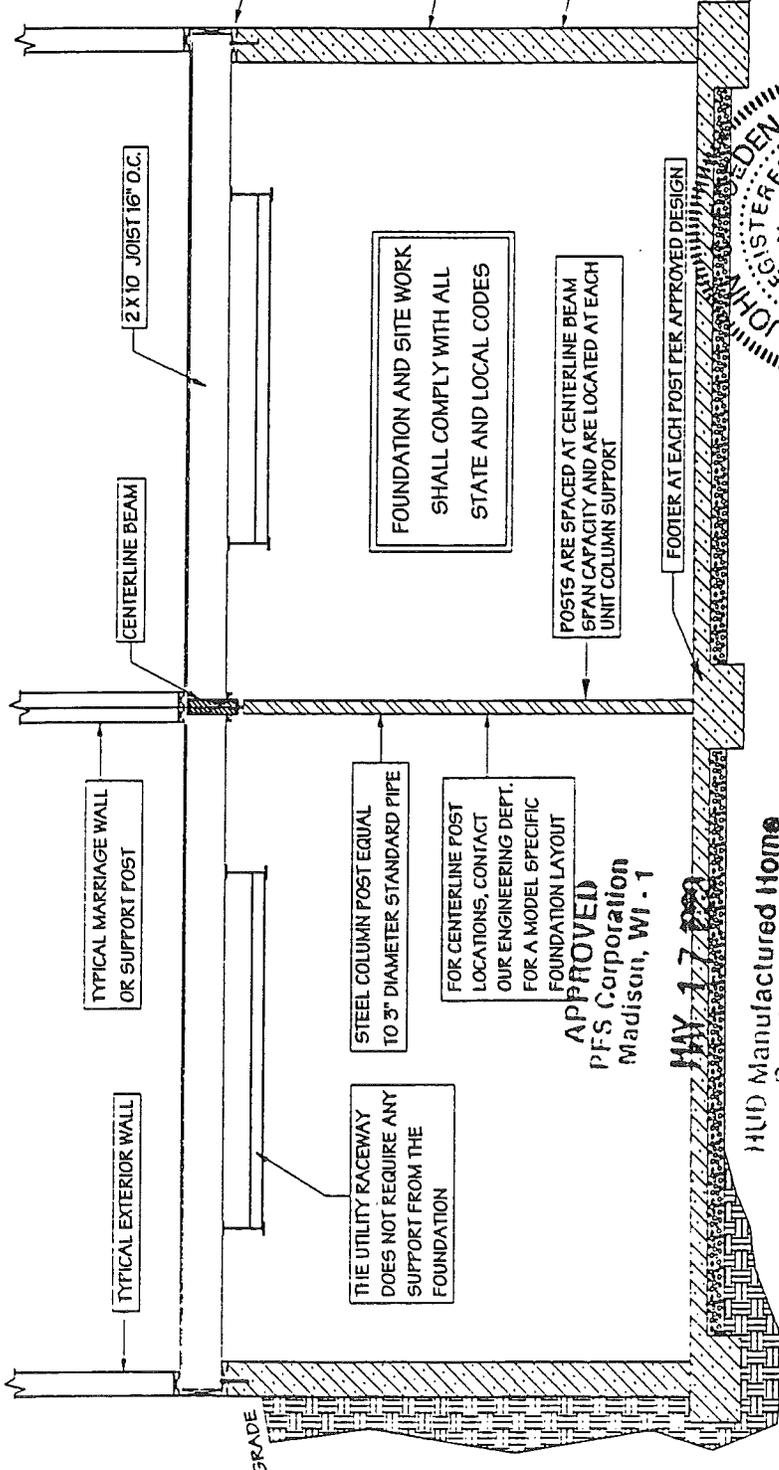
MANUFACTURED HOMES WITH THE FRAME REMOVED ARE NOT IN COMPLIANCE WITH THE HUD CODE.

TREADED SILL PLATE FASTENED TO FOUNDATION WALL WITH 1/2" ANCHOR BOLT 6'-0" O.C. 7" INTO CONCRETE, NOT MORE THAN 12" FROM CORNER SEE DETAIL A

POURED CONCRETE FOUNDATION WALL OR CONCRETE MASONRY BLOCKS.

WATERPROOF OR DAMPPROOF ACCORDING TO LOCAL CONDITIONS AND LOCAL CODES

FOOTERS SIZED ACCORDING TO LOCAL SOIL CONDITIONS AND ENGINEERED DESIGN OR LOCAL CODES



TYPICAL MARRIAGE WALL OR SUPPORT POST

CENTERLINE BEAM

2 X 10 JOIST 16" O.C.

STEEL COLUMN POST EQUAL TO 3" DIAMETER STANDARD PIPE

FOR CENTERLINE POST LOCATIONS, CONTACT OUR ENGINEERING DEPT. FOR A MODEL SPECIFIC FOUNDATION LAYOUT

THE UTILITY RACEWAY DOES NOT REQUIRE ANY SUPPORT FROM THE FOUNDATION

FOUNDATION AND SITE WORK SHALL COMPLY WITH ALL STATE AND LOCAL CODES

POSTS ARE SPACED AT CENTERLINE BEAM SPAN CAPACITY AND ARE LOCATED AT EACH UNIT COLUMN SUPPORT

FOOTER AT EACH POST PER APPROVED DESIGN

APPROVED
PFS Corporation
Madison, WI . 1

MAY 17 1999

HUD Manufactured Home Construction & Safety Standard

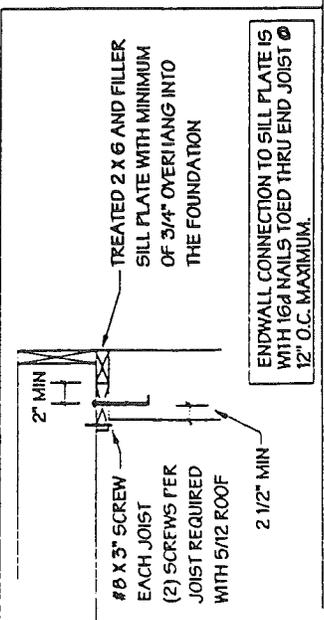


NOTE
TYPICAL BASEMENT SHOWN, HOME MAY BE SET ON A CRAWLSPACE FOUNDATION WITH CONCRETE CENTERLINE PIERS

NOTE
IN THE ABSENCE OF LOCAL CODES, USE THE ONE & TWO FAMILY DWELLING CODE OR THE ANSI A-225.17 MANUFACTURED HOME INSTALLATION'S, 1982.

DETAIL A

ANCHORING INFORMATION



Manufactured Housing Enterprises, Inc.	
09302 State Route 6 Bryan, Oh. 43506	
FOUNDATION CROSS SECTION WITH 2 X 10 FLOOR JOISTS	
TYPICAL ANCHORING INFORMATION	
Scale:	Page Number:
Date: 7-15-98	Rev: 3-12-99
	By: BH



**MANUFACTURED
HOUSING ENTERPRISES**
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