

Residential Modular Installation Manual



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APPROVED

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Introduction

Thank you for purchasing your modular home from Manufactured Housing Enterprises, Inc.

All modular homes constructed by Manufactured Housing Enterprises, Inc. are designed, constructed and inspected for conformance to the Model Building Codes listed on the data plate. An independent state approved third party agency inspects and certifies each home we manufacture to ensure compliance to all state specific building codes.

These instructions and drawings are intended to instruct and assist qualified builders in the proper installation of modular homes. They are not intended to enable someone unfamiliar with modular home installation to perform the installation. Site erection should be performed only by qualified people. The recommended procedures in this manual are intended to assist in the proper installation of this home. Field experience or local conditions may justify alternate procedures. Alternate procedures are acceptable when the completed construction will result in code compliance and performance equal to procedures set forth in this manual.

The builder must consult with local building officials to determine necessary permits, licenses and site inspections required for the installation of the home. The builder is responsible to ensure the home is installed to meet all applicable state and local codes and laws in order to obtain the right of occupancy for the home. It is the builder's responsibility to notify Manufactured Housing Enterprises, Inc. when an order is placed if there are any specific local building codes or restrictions that differ from the state code. On private property, zoning rules and regulations and or development covenants may apply and should be taken into consideration. Consider setback distances and fire separation distances. Also consider the garage location and possible future additions.

Correct installation is essential to home owner satisfaction. The importance of correct installation cannot be overemphasized.

These modular installation instructions are for qualified personnel only. These instructions are not intended to be a training guide for inexperienced or unqualified personnel. Great care must be taken during the setting of modular homes to safeguard all workers. Manufactured Housing Enterprises, Inc. does not assume any responsibility for accidents or damages while setting this modular home or for any site or foundation requirements or conditions. This modular home weighs several tons. Use temporary blocking to support the home during set up or when the home is located at a display lot. Damage caused by or resulting from the installation process and or settling are not covered by the home's limited warranty.

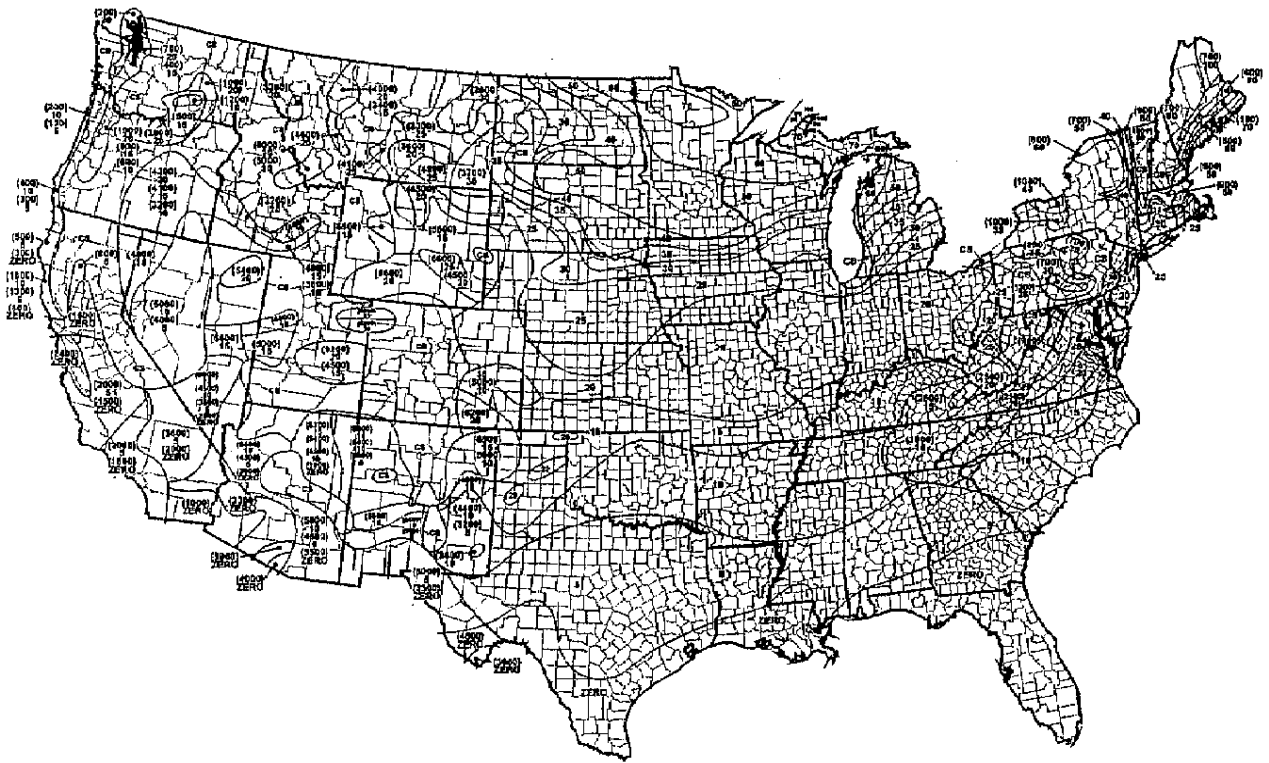
It is recommended that you read this entire manual before setting a modular home. Contact local authorities to make sure all required permits are purchased and all fees are paid.

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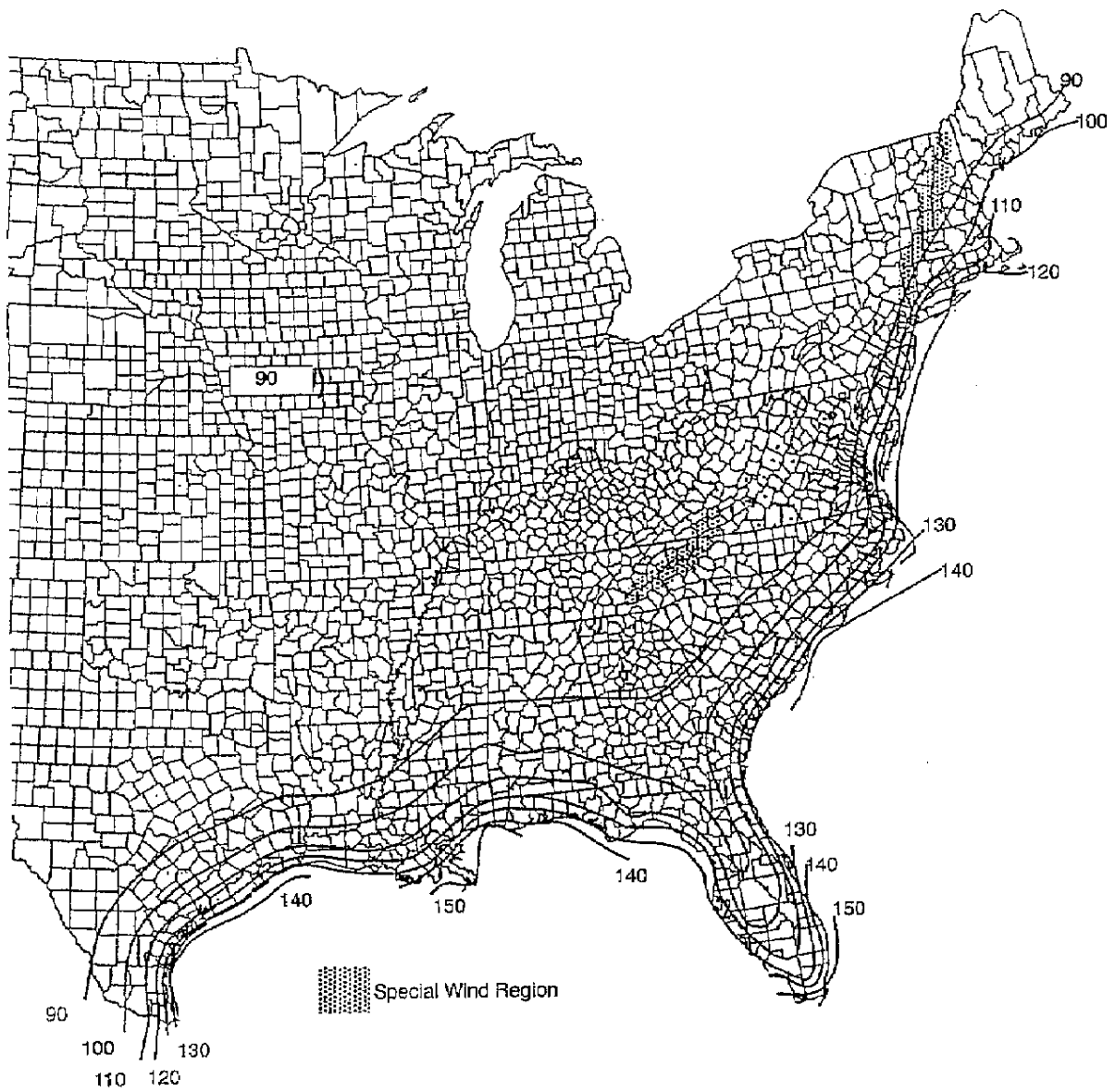
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Zone Maps

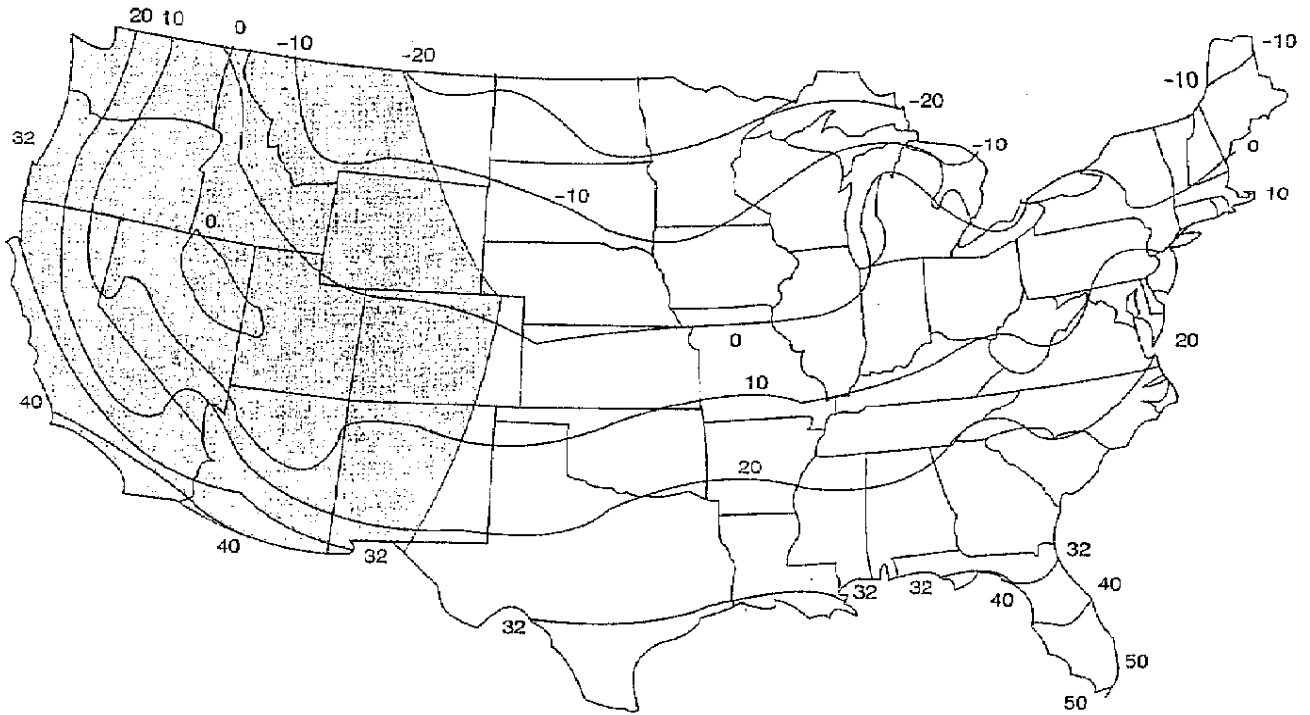
This modular home is designed for a specific ground snow load, wind load, seismic load and thermal zone. The data plate located in the electrical panel box or below the kitchen sink will indicate the zone and loading for which your home is constructed. Do not locate this home in a zone or area that requires greater design loads than which it is constructed. The following charts should be used as a guideline. Local guidelines must be followed, consult with local building officials.



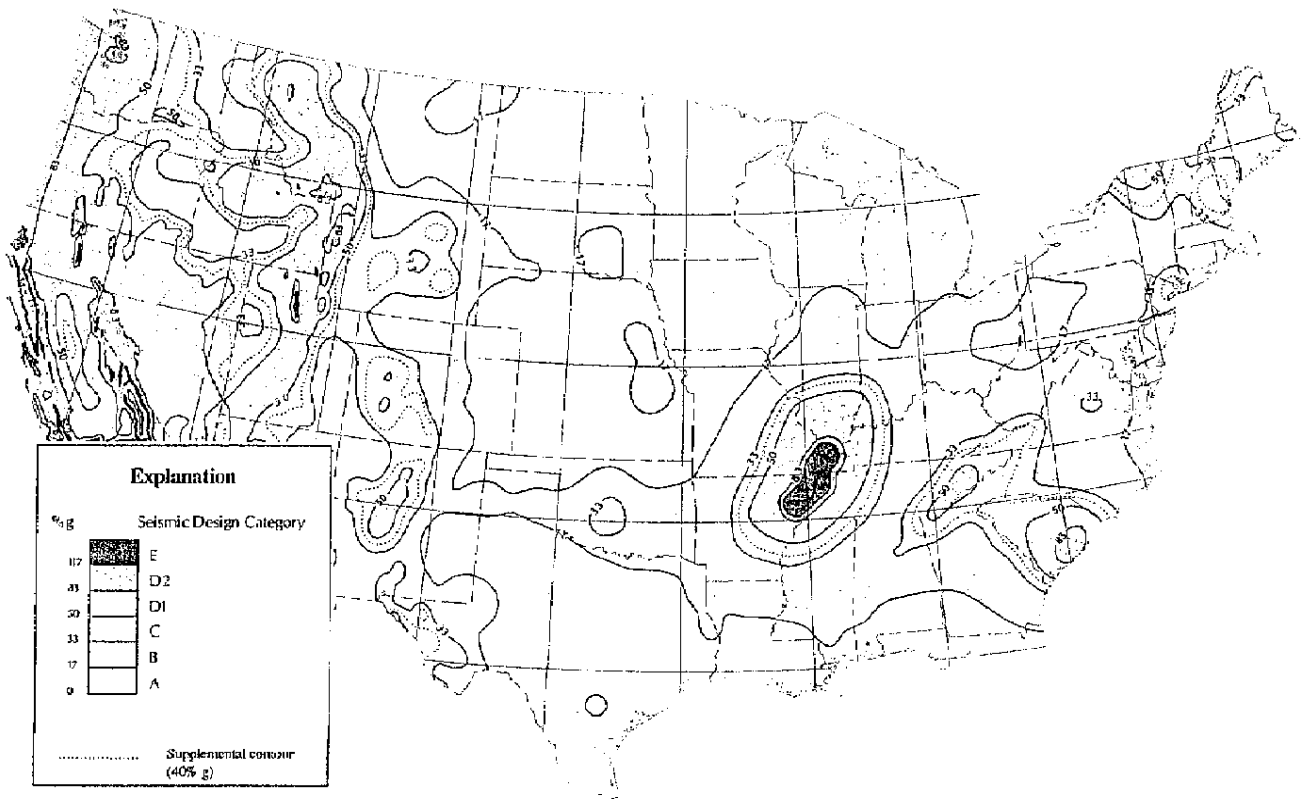
Ground Snow Loads - PSF



Wind Speed - MPH



Design Temperature - Fahrenheit



Seismic Design Categories

Site Preparation

The building lot shall be properly graded and sloped to allow drainage of water away from the building and off the site. Draining water away from your home prevents water buildup under the home, which is essential to prevent settling of the foundation, damage to floors and walls. Door and window operation will also be effected if water is not drained away for the home. A site with poor grading and poor drainage could void the limited warranty. Locate a vapor barrier or retarder directly under the home to prevent moisture from entering the home. Use polyethylene or equal material a minimum of 6 mils thick.

All installation procedures within are based on well-drained stabilized soils with a minimum bearing value of 2000 PSF. Local building officials should be able to assist you in determining your soil type and bearing capacity. A pocket penetrometer may be used to test the soil capacity at the depth of the footings after grading if acceptable to the local building officials. All organic material must be removed from beneath the home. Remove shrubs and overhanging branches from near the home to prevent windstorm damage.

Manufactured Housing Enterprises, Inc. is not responsible for any damage caused by moving the home on to the home site. Damage to curbs, drives, walks or utilities must be prevented by the builder. Delivery vehicles that transport the homes are not designed to operate off road. The builder is responsible to have tracked equipment to move the home from the paved roadway onto the construction site. The building site should be prepared for the home's arrival to avoid costly delays. All access roads to the site must be compacted, smoothly graded and have a minimum clearance width of 18'-0" and a clearance height of 16'-0".

Foundation Construction

The most critical step in the preparation of the modular home is to properly build the foundation. It is the builder's responsibility to make sure the foundation is built the proper size and is square. This home may be installed on a crawlspace foundation or basement foundation. This home is shipped on a carrier frame and the frame shall be removed for crawlspace or basement set. For pier type sets the carrier frame may be left in place and used as the blocking points for the piers. A pier type foundation must be constructed per local and state codes.

The construction drawings provided by Manufactured Housing Enterprises, Inc. must be followed. The builder is responsible to install a foundation that will properly support all loads. A professional engineer or registered architect should be consulted for designing the foundation based on specific site condition.

Foundation walls shall be properly braced and the foundation backfill shall be completed before installing the home.

Footings

Footings shall be concrete, either pre-cast or poured concrete with a 28-day compressive strength of at least 3,000 psi. Other materials may be used for footings if they are approved for use by the local building officials and provide equal load bearing and decay resistance.

For installation in a freezing climate the footers should be located below the frost line. The local building officials will be able to assist you in determining the depth of frost penetration in your location. Footings may be located above the frost line if the foundation and all load bearing elements of the foundation are insulated to prevent frost from effecting the foundation. Before installing an insulated foundation, it must be approved by the local building officials.

foundation consult with the local building official to find out acceptability and specific requirements. See the Minimum Footing Size Table for minimum size footers based on soil capacity.

Foundation Walls and Piers

The foundation walls may be poured concrete (with a 28-day compressive strength of 3,000 min.) or concrete masonry blocks mortared in place per local code requirements. Mortar is to be type M or S per ASTM C-90. Piers are to be located per the construction drawings. Piers must be capped and shimmed with hardwood wedges. Consider the local wind loads and anchoring requirements.

Set Procedure

Once the home has been set into position, remove all shipping plastic from the mating surfaces of the home sections. Our modulars are constructed with a double 2 x 10 rim joist. The centerline girder is a total of (4) 2 x 10's.

Prepare the home for lifting as follows:

Sidewall: Do not use areas under doors or windows as lifting points.

Marriage Line: Lifting points cannot be located within 3'-6" of any opening in the marriage wall.

If it is unavoidable to place a lifting point under or within 3'-6" of a marriage wall opening, brace the opening with a temporary wall as follows:

Using 2 x 4 dimensional lumber, frame in the opening. Place 2 x 4 studs 24" o.c. Use 2 x 4 top and bottom plates. Fasten the studs to the plates with (2) #8 x 3" screws each end. Fasten the top plate to the ridge and the bottom plate to the rim joist with #8 x 3" screws 8" o.c. sheath the temporary wall with 3/8" OSB. Fasten the sheathing to the studs and top plate with a 1 1/2" fastener 6" o.c. at the edge and 12" o.c. in the field. If the lifting point is going to be at a large marriage wall opening, build a temporary wall 7'-0" long centered over the lifting point.

Un-lag the home from the carrier frame. Utility connections under the home should be checked for clearance. Locate the electrical and water supply crossovers before placing the home on the foundation

Roll-On System

The spreader bars under the home must be in contact with a minimum of 5 joists. Re-enforce the joists at the spreader bars with a 2 x 10. The home may have heat duct and plumbing under the home that will be damaged if proper distance is not maintained between the roll-on cross beams and the underside of the home.

Crane Set System

Modular units vary in weight based on size and length. As an estimate, our modular homes weight approximately 36 pounds per square foot.

Length of the home x the width of the home x 36 = the weight of the module.

This type of set must only be performed by an experienced installer. Additional reinforcement and protection are required at the floor and roof edges where the strap or cable comes in contact with the home. It is the responsibility of the builder to protect the home from damage during the craning of the home. Use of spreader bars is required to reduce pressure at the lifting points.

Stairwell Construction

Steps, stairways, railings and landings must be built per applicable state and local codes. Optional basement ready modulars will have a stairway opening framed at the factory. The opening is sized per each state's stairway geometry. Basement stairways requiring a winder may also require the installer to frame in the floor turn. Manufactured Housing Enterprises, Inc. is not responsible for stair construction or headroom issues.

A roughed in electrical box will contain a circuit for the connection of a smoke alarm. The circuit is inter-connected with the home's smoke alarms and when one alarm signals, all alarms will signal. A circuit for a site installed basement GFCI receptacle is also provided.

Hinged Roofs

Hinged roofs must be lifted into place before moving the modules together. Make sure all close up material is removed from the home. Use an established method or in case of a crane set, the crane could be used to raise the hinged roof. Raising the roof to high will damage the truss, hinge or roof sheathing. Pull the hinged knee wall out into position above the kingpost. There is an uplift strap installed on the kingpost in the factory. After properly positioning of the knee wall, fasten the uplift strap to the knee wall with (8) 1 1/2" roofing nails. Then at each kingpost, toe screw down through the knee wall into the kingpost with (2) #8 x 4" screws. Make sure all blown-in insulation is re-positioned in the attic. After the home is set on the foundation, the roof framing can be completed by installing the ship loose peak sections.

Gable End Framing and Sheathing

8'-0" 2 x 4's are shipped loose to frame the gable ends. The end truss is set back 1 1/2" to allow lay flat studs to be set on the end wall top plate. Cut the 2 x 4's to the proper length and fasten the studding into the truss bottom chord and the truss top chord with (2) #8 x 3" screws at each end. Install the supplied 3/8" OSB sheathing with 1 1/2" fasteners 6" o.c. at the edge and 12" o.c. in the field. Install the siding on the ends on the home per the installation instructions contained within the ship loose siding.

Completing the Shingled Roof

Shingles are shipped loose to complete the roofing of the home. Install roofing paper, 15# minimum over the roof decking and install the shingles using the instructions printed on the shingle wrapper. Install the ridge vent the length of the home.

Heating System

Typically our modular homes are factory equipped with a furnace and supply duct. Depending on the furnace and furnace location, the furnace stack may need to be completed on site. Complete the furnace per the furnace installation instructions. There are under floor crossover ducts that need to be installed on site. Depending on the state code requirements there may be return air ducts in the attic that need completed or installed. Connect the return air flex ducts to the plenum located above the furnace.

Some homes do not come with the furnace or supply ducts and they must be installed on site according to state and local codes. The furnace, supply and return duct installation in this case is the responsibility of the builder.

Water Heater

Gas water heaters may also have the stack shipped loose to install on site. Install the roof stack per the water heater's installation instructions.

Attached Garages and Porches

Attached garages must be constructed per all applicable state and local codes. There must be a foundation installed under the garage below the frost line that will support the weight of the structure. Build the dormer that ties the garage to the home on top of the roof decking. Complete the valley area per ARMA or the instructions printed on the shingle wrapper. Install 15# roof paper and install shingles per the installation instructions printed on the shingle wrapper. Install a fire wall consisting of ½" gypsum separating the garage from the home on the garage side of the wall. Check local codes before installing the fire wall. Depending on the garage construction and the homes location, site inspections for electrical and plumbing may have to be performed by building officials. As always, contact the building officials before beginning any construction.

For porches, tie the porch roof into the home the same as the garage. The porch will need to be supported by a foundation below the frost line.

Exterior Lights

Remove the junction box cover and make the proper wire connections. Use wire nuts to connect the wires. Push the wires into the box and install the exterior light. Caulk around the perimeter of the porch light base to waterproof the installation.

Telephone and Television Installation

Your home may be equipped with an optional multi-media device that can be used to interconnect computers and televisions. The wire connection is dropped through the floor below these devices to be connected on site. If telephone or television lines are to be ran in the home, only qualified personnel should attempt. There are electrical runs, water lines, drain lines and heat ducts in the walls that can be damaged when drilling. Failure to follow these instructions may result in personal injury or death.

Combustion Inlets

Some appliances such as gas water heaters and wood burning fireplaces have combustion inlets installed below the floor system. When setting the home on a crawlspace or basement the combustion inlet must be ran to the exterior. Follow the manufactures instructions for extending the combustion inlets to the exterior of the home.

Utility Connections

All utility connections are the responsibility of the builder. All field connections must be performed by qualified and experienced personnel. Improper installation of utility connections is extremely dangerous and may result in personal injury or death.

Electrical Crossover

For 15 and 20 amp circuits, locate the electrical crossovers which are marked with a zippered access panel. The electrical plug-in crossovers are identified so circuits won't get mixed up. Plug in the connectors and zip up the access panels.

For 30 amp and larger circuits, locate the electrical crossover as above. On the unit that has the panel box installed will be a metal electrical junction box under the zippered access panel. Perform the

connections inside the metal electrical junction box using wire nuts. Connect white to white, black to black, ground to ground and red to red for 240v circuits.

For the smoke alarm circuits, there will be a circuit using 14-3 wire. This is the smoke alarm circuit used to interconnect all smoke alarms so that if one alarm signals, all alarms will signal.

All electrical connections must be performed by a qualified electrician per the National Electric Code.

Electrical Supply Connection

This home is designed to be connected to an electrical system rated at 120/240v AC. The power supply must be large enough. Depending on how your home was ordered, it may have a 100 amp panel box or a 200 amp panel box.

Only qualified personnel shall perform electrical supply work. The home is designed to have a meter base installed on the home on site. Run conduit from the meter base to the panel box. Conduit is stubbed through the floor below the panel box.

Conductor size and service entrance conductor raceway sized for copper, 75C rated conductors, types RH, RHH, RHW without outer covering, THW or XHHW.

The electrical service can be an overhead or below ground service entrance conductor. Consult with local building officials and the electrical company. Use only qualified electricians and make all connections per the National Electric Code.

The home must be properly grounded to safeguard occupants. Ground the home per local and state requirements and the National Electric Code. The ground rod should be an 8'-0" length of ½" diameter copper or ¾" galvanized steel pipe. The rod should be driven into the ground 12" below the surface and at least 2'-0" away from the foundation. Or bury the rod in a horizontal ditch 2'-6" deep.

Perform the following required test before supplying power to the home:

GROUNDING CONTINUITY TEST

1. With an OHMS meter or continuity tester, test all metallic parts in the home.
2. Include the following items:
 - a. Appliances enclosures including fans.
 - b. Fixture enclosures and canopies.
 - c. Gas lines.
 - d. Metal water supply
3. Metal registers connected to plastic flex duct do not require bonding to ground.
4. Metal fixtures connected to plastic water lines do not require bonding.
5. Any failure requires repair and re-testing.

Perform the following required tests after supplying power to the home. Note: Allow the water heater to fill with water before turning on power to the water heater. Damage will occur that is not covered under warranty.

OPERATION TEST

1. Check all light fixtures with a light bulb and using the switch.
2. Check all 120 volt receptacles with receptacle testing device.
3. Check switched receptacles by using the switch.

4. Listed appliances do not require testing but the power supply does.
5. Check both legs of 240 volt receptacles.
6. Any failure requires repair and re-testing.

POLARITY TEST

1. Test equipment must be a polarity tester capable of determining correct wiring configurations.
2. Use a conversion device for various bulb sizes.
3. Using the tester, check all 120 volt receptacles.
4. Using the conversion device, check all light fixtures.
5. Any failure requires repair and re-test.

GROUND FAULT CIRCUIT INTERRUPTION (GFCI)

1. Use a tester with a test button that will provide an unbalanced load.
2. Check kitchen, bath and exterior receptacles to confirm GFCI protection
3. Any failure requires repair and re-testing.

ARC FAULT CIRCUIT INTERRUPTER (AFCI)

1. Confirm that each bedroom is AFCI protected.
2. AFCI breakers are located in the panel box.

Water Supply

The water system has been designed for an inlet pressure of 80 PSI. If the inlet pressure exceeds 80 PSI install a pressure-reducing valve. A master shut off valve must be installed in the water supply line adjacent to the home. This valve must be a full port gate or ball valve with threaded joints.

The water inlet is a ¾" MPT located approximately under the water heater.

If there are fixtures on both units, there will be a water supply crossover. Locate the crossover and make the connection. Make sure the crossovers are insulated.

Properly flush the supply line to remove any RV anti-freeze that may have been put into the water supply system in the factory. The local health authority may require the water supply to be disinfected. Contact the health authority in your area for requirements and procedures.

To protect against freezing water lines in areas subject to subfreezing temperatures, use a heat tape on all exposed water lines. Use only heat tapes listed by a nationally recognized testing laboratory for use with modular homes. Install heat tapes only in accordance with the manufacturers instructions.

If the home is going to be left unattended in areas subject to subfreezing temperatures, drain the water lines and blow them clear with compressed air. Burst water pipes cause costly water damage.

Test the water supply per the following:

WATER SUPPLY TEST

1. Fill the system with water before pressurizing the system.
2. Connect the test gauge to the water heater inlet. Make sure the testing gauge is in proper working order.
3. Connect air line and begin to pressurize the system.
4. Close the hot water shut off valve at the water heater.
5. Check all cold fixtures for air pressure and all hot fixtures for no air pressure to ensure there are not any reversed water lines.

6. Open the hot water shut off valve and check hot and cold water lines for equal pressure to ensure no lines are blocked.
7. Shut off all faucets, prop toilet tank float to the shut off level and open all shut off valves.
8. Continue to pressurize system until 100 PSI is reached. Remove air line after 100 PSI is reached. Protective eye wear must be worn and precautions should be taken to prevent impact damage to the system while the test is in progress.
9. Wait at least 15 minutes before reading the test gauge.
10. If the test gauge shows a drop in pressure locate the leak, repair and retest.

Drainage, Waste and Vent System.

All homes must have all of the drain lines connected to a single drop. Modular homes are shipped with the drains lines and vents stubbed down through the floor for connection on site. All material required to complete the connection of the drain lines are to be supplied by the builder.

Start at the remote end and work towards the sewer outlet. Maintain proper slope and secure drain lines per local and state codes. Slope should be $\frac{1}{4}$ " per foot.

Test the completed drain system before connecting to the sewer as follows:

FLOOD TEST

1. With all fixtures connected, temporarily plug the main sewer outlet.
2. Begin to fill the drain system with water.
3. When air has been forced out of the traps, plug the shower and tub drains.
4. Release all trapped air.
5. Continue to fill the system to the rim of the water closet.
6. Allow the drain system to hold the water for 15 minutes.
7. Check the system for any leaks
8. Repair and re-test as required.

FIXTURE TEST

1. Plug all fixtures and fill all sinks, tubs and showers.
2. Release the water in each fixture simultaneously to obtain maximum flow.
3. Check P-traps and complete system for any leaks.
4. Repair and re-test as required.

Gas Supply

Gas appliances are connected to a flex connector then stubbed down through the floor. All material to be used on site to complete the gas system is to be provided by the builder.

Start at the appliance most remote from the gas supply. Size the gas pipe based on the input rating of the appliance. Follow all state and local codes and contact the gas company before beginning.

Test the gas supply per the following before connecting to the supply:

HIGH PRESSURE TEST

Perform the high pressure test only when all appliance shut off valves are in the off position. Damage may occur that is not covered under warranty.

1. Pressurize the system to 3 PSI.
2. Isolate the pressure source.
3. There shall not be any drop in pressure for 10 minutes.
4. Repair and re-test as needed.

LOW PRESSURE TEST

1. Connect all appliances and open all shut off valves.
2. Close all appliance pilot valves.
3. Pressurize the system to 6 oz.
4. Use soapy water to check all connections between the appliance shut off and the appliance.
5. Repair and re-test as required.
6. Wipe soapy water off all fitting and piping and close all shut off valves.

Miscellaneous Connections

Radon Vent

Contact local building officials to see if a radon gas control method is required in your area. A roughed in radon vent can be installed optionally in the factory. Contact the sales representative prior to ordering your home.

Water Heater Relief Valve

The relief valve is stubbed through the floor near the water heater. The valve should be piped full size separately to the outside of the building.

Furnace Condensation Drain

The condensation drain is stubbed through the floor near the furnace. (Only factory installed 90% or greater furnaces will have the condensation drain.) Follow local codes, the condensation drain may have to be piped full size to the outside of the building.

Set Procedure for Two Story Structure

First Floor Set

The first floor is set according to the installation manual.

Once the first floor is set and fastened together and to the foundation, inspect the ceiling that will be below the second story structure. Check for anything sticking up that will prevent the second floor from setting properly on the first floor. Check for plumbing, nails, shipping, shipping bracing, wiring, etc.

The perimeter of the ceiling that will be below the second story structure needs to be checked insulation. The outside rim of the first story ceiling needs to be insulated at this time because it will not be accessible once the second floor is set in place.

Locate all electrical crossovers and connections, DWV and water supply lines, supply and return flex ducts if applicable and make sure they are in proper position to be connected after the second floor is set.

The ceiling rim of the first floor must be fastened together before the second story can be set. Use a 1/2" x 6" lag at 48" O.C. A 1/2" x 8" bolt at 48" O.C. can be used, and requires pre-drilling. Shim any gap at fastener locations. Any extra framing or fastening between the floors must be completed before setting the second story.

Second Floor Set

Check under the second floor modules for plumbing and ducts or anything else that may get damaged during the set. Sill seal insulation should be installed around the mating surface of one of the second story modules, it should run up both end walls, across the ceiling line and around each door and archway opening. Depending on the type of straps the crane uses, it may be necessary to remove sections of the 2 x 6 rim plate to allow the straps to be removed. The second story should be lifted and set on the first floor per the crane set procedure in the installation manual.

When installing the half that has the stairway in it, make sure the stairway is aligned properly or there will be difficulties during the interior finish.

Structural Connections

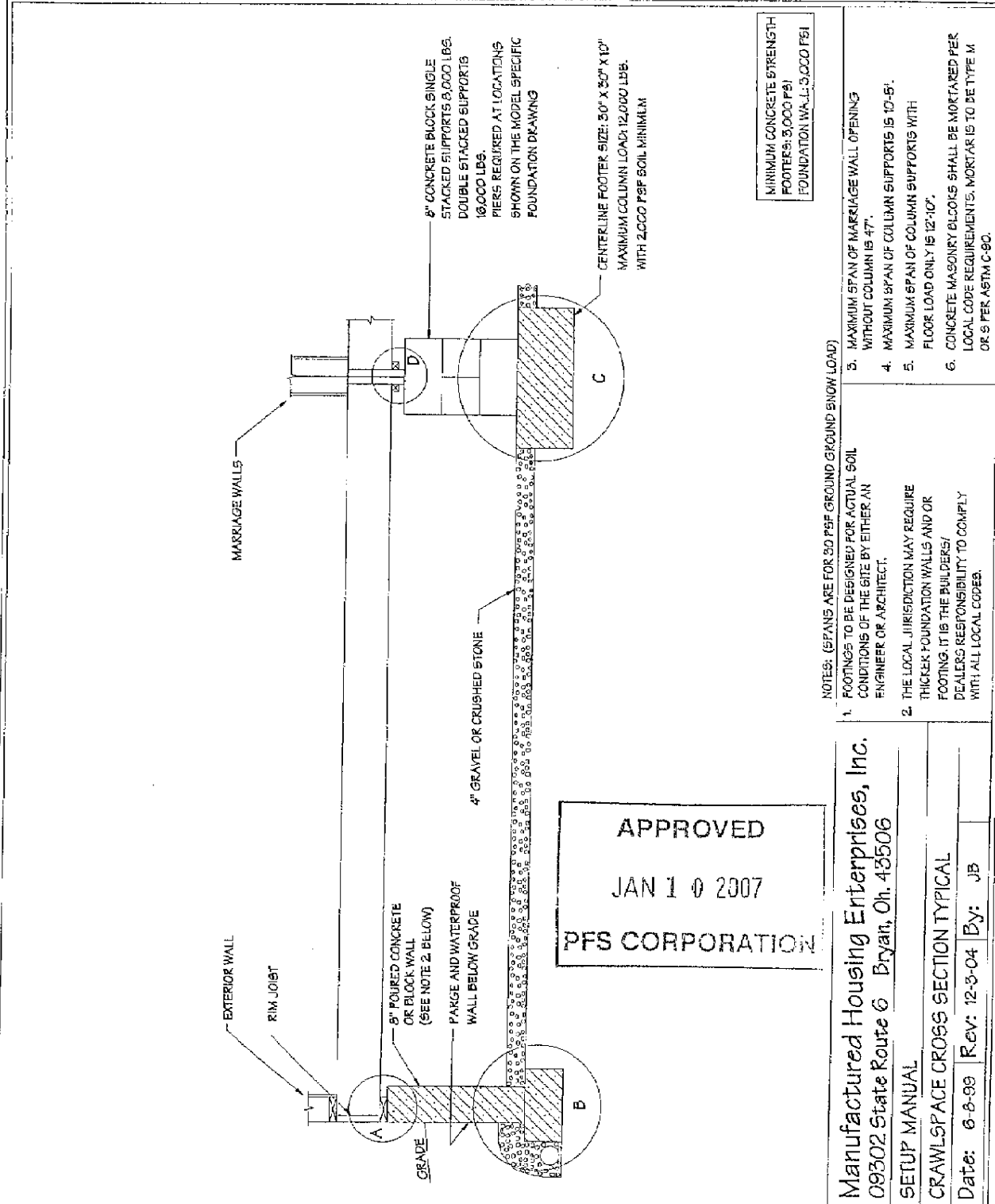
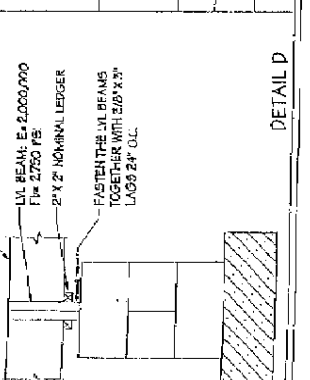
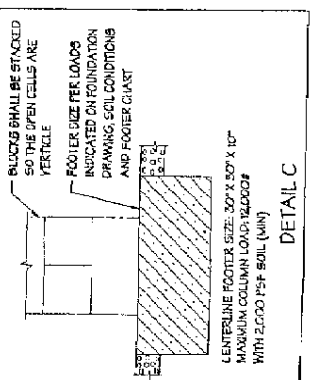
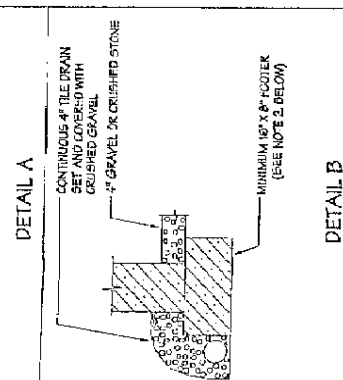
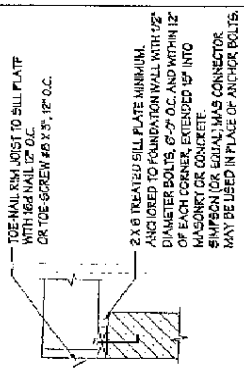
The second and first floor sections must be toe nailed together with 16d common nail at 12" O.C. A #10 x 3" toe screw can be substituted for the nail. Install the APA rated sheathing around the perimeter using 10d nails or 16 ga. 1 1/2" long staples 4" O.C. into the first floor module ceiling rim joist and into the second floor module floor rim joist. All field fastening should be 8" O.C. Fasten the second floor modules together at the ceiling line with 1/2" x 6" lag at 48" O.C. Gaps shall be shimmed at fastener locations. The roof ridge sections should now be installed, ridge vents installed and roofing completed.

Mechanical Connections

Chases are provided and drywall left off at areas that will be used to make the mechanical connections between modules and between floors. The electrical cross over connections between the first floor modules will be under the home. The electrical cross over connections between the second floor modules will be in the attic. Return air ducts and registers may have to be field installed. The supply ducts are run to the second floor registers. Remove the second floor registers and locate the duct and make the connection. The first floor supply ducts and registers may have to be field installed.

Roof Flashing

When the first floor modules extend past the top floor modules, the roof butts up to a vertical wall, the shingles must be stepped flashed with individual metal step flash metal shingles. The step flashing must be fastened to the roof and bent up to the vertical wall. Do not fasten the step flashing to the vertical wall. The roof underlayment should also extend up the walls for 4" minimum.



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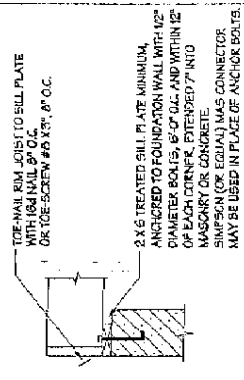
MINIMUM CONCRETE STRENGTH
 FOOTERS: 3,000 PSI
 FOUNDATION WALLS: 3,000 PSI

NOTES: (SPANS ARE FOR 50 PSF GROUND GROUND SNOW LOAD)

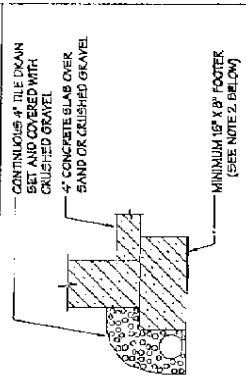
1. FOOTINGS TO BE DESIGNED FOR ACTUAL SOIL CONDITIONS OF THE SITE BY EITHER AN ENGINEER OR ARCHITECT.
2. THE LOCAL JURISDICTION MAY REQUIRE THICKER FOUNDATION WALLS AND OR FOOTING. IT IS THE BUILDERS/ DEALERS RESPONSIBILITY TO COMPLY WITH ALL LOCAL CODES.
3. MAXIMUM SPAN OF MARRIAGE WALL OPENING WITHOUT COLUMN IS 47\".
4. MAXIMUM SPAN OF COLUMN SUPPORTS IS 10'-6\".
5. MAXIMUM SPAN OF COLUMN SUPPORTS WITH FLOOR LOAD ONLY IS 12'-10\".
6. CONCRETE MASONRY BLOCKS SHALL BE NOTARKEE PER LOCAL CODE REQUIREMENTS. MORTAR IS TO BE TYPE M OR S PER ASTM C-90.

Manufactured Housing Enterprises, Inc.
 09302 State Route 6 Bryan, Oh. 43506

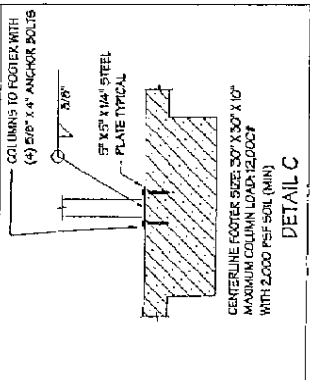
SETUP MANUAL
 CRAWLSPACE CROSS SECTION TYPICAL
 Date: 6-8-99 Rev: 12-3-04 By: JB



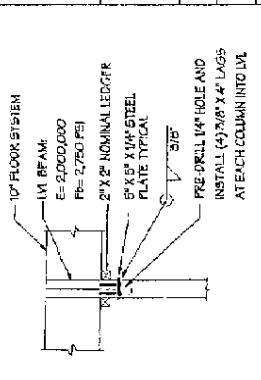
DETAIL A



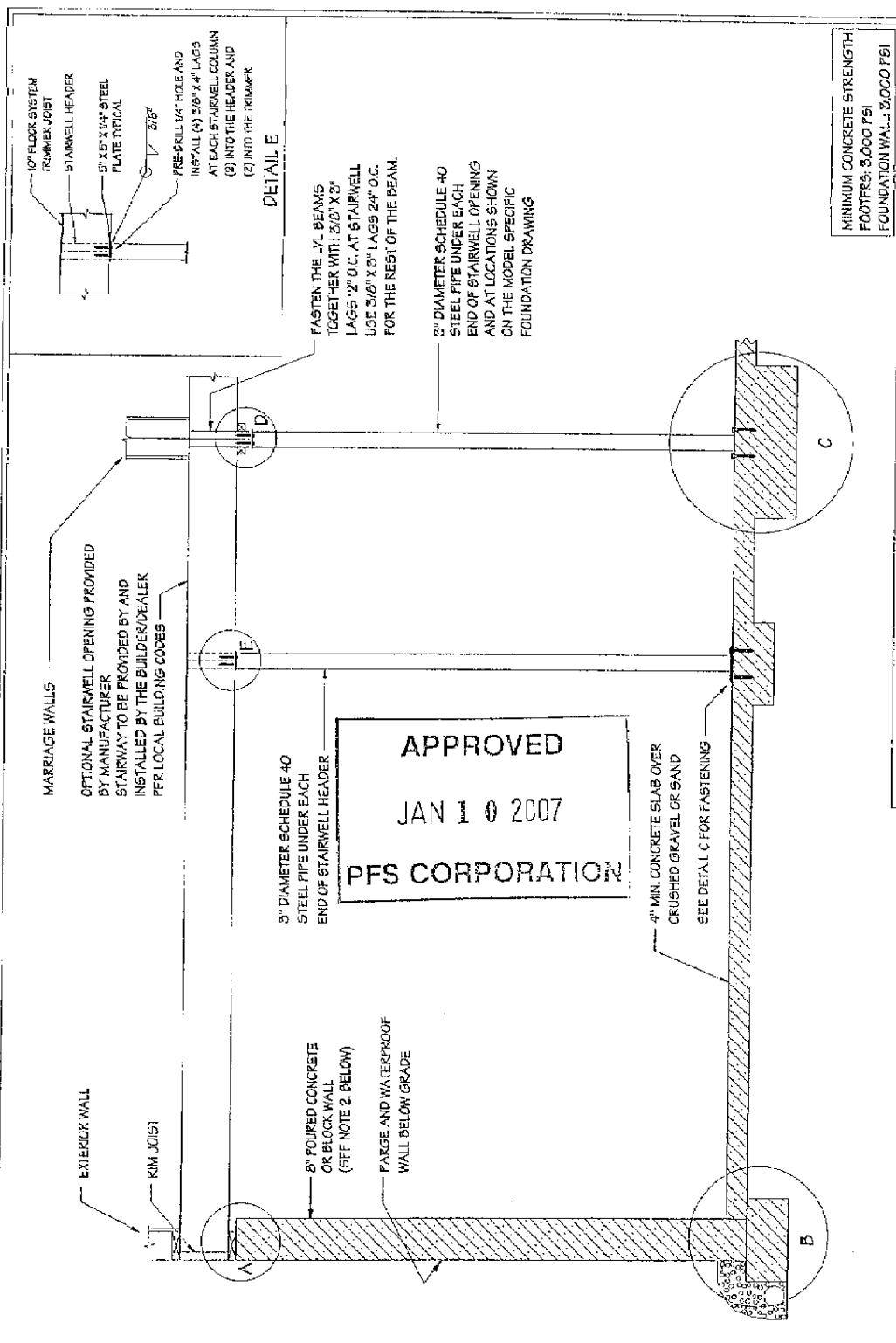
DETAIL B



DETAIL C



DETAIL D



APPROVED
JAN 1 0 2007
PFS CORPORATION

MINIMUM CONCRETE STRENGTH:
FOOTERS: 3,000 PSI
FOUNDATION WALL: 3,000 PSI

- NOTES: (SPANS ARE FOR 80 PSF GROUND, GROUND SNOW LOAD)
- FOOTINGS TO BE DESIGNED FOR ACTUAL SOIL CONDITIONS OF THE SITE BY EITHER AN ENGINEER OR ARCHITECT.
 - THE LOCAL JURISDICTION MAY REQUIRE THICKER FOUNDATION WALLS AND/OR FOOTING. IT IS THE BUILDER'S/DEALER'S RESPONSIBILITY TO COMPLY WITH ALL LOCAL CODES.
 - MAXIMUM SPAN OF MARRIAGE WALL OPENING WITHOUT COLUMN IS 4'
 - MAXIMUM SPAN OF COLUMN SUPPORTS IS 10'-9"
 - MAXIMUM SPAN OF COLUMN SUPPORTS WITH FLOOR LOAD ONLY IS 12'-10"
 - CONCRETE MASONRY BLOCKS SHALL BE MORTARED PER LOCAL CODE REQUIREMENTS. MORTAR IS TO BE TYPE M OR S PER ASTM C-90.

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SETUP MANUAL
BASEMENT CROSS SECTION TYPICAL
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Minimum Footing Size Table

Footing Size	Capacity Of Footings (in pounds) Per Depth Of Footings (in inches)							
	6"	8"	10"	12"	15"	18"	21"	24"
16" x 16"	3400	3400	3300	3300	3200	3200	3100	3000
17" x 17"	3900	3800	3800	3700	3600	3600	3500	3400
18" x 18"	4300	4300	4200	4200	4100	4000	3900	3800
19" x 19"	4800	4800	4700	4600	4500	4400	4400	4300
20" x 20"	5300	5300	5200	5100	5000	4900	4800	4700
21" x 21"	5900	5800	5700	5700	5600	5400	5300	5200
22" x 22"	5900	6400	6300	6200	6100	6000	5800	5700
23" x 23"	5400	7000	6900	6800	6700	6500	6400	6200
24" x 24"	5000	7600	7500	7400	7300	7100	7000	6800
25" x 25"	4700	8200	8100	8000	7900	7700	7500	7400
26" x 26"	4400	8900	8800	8700	8500	8300	8200	8000
27" x 27"	4100	8500	9500	9400	9200	9000	8800	8600
28" x 28"	3900	8000	10200	10100	9900	9700	9500	9300
29" x 29"	3700	7600	11000	10800	10600	10400	10100	9900
30" x 30"	3500	7200	11700	11600	11300	11100	10900	10600
31" x 31"	3300	6800	11700	12300	12100	11800	11600	11300
32" x 32"	3200	6500	11100	13200	12900	12600	12400	12100
33" x 33"	3100	6200	10600	14000	13700	13400	13100	12900
34" x 34"	2900	5900	10100	14900	14600	14200	13900	13600
35" x 35"	2800	5700	9700	14800	15400	15100	14800	14500
36" x 36"	2700	5500	9300	14200	16300	16000	15600	15300
37" x 37"	2600	5200	8900	13600	17200	16900	16500	16200
38" x 38"	2500	5100	8600	13100	18200	17800	17400	17000
39" x 39"	2500	4900	8300	12600	19100	18700	18400	18000
40" x 40"	2400	4700	8000	12200	20100	19700	19300	18900
41" x 41"	2300	4600	7700	11700	19500	20700	20300	19800
42" x 42"	2300	4400	7400	11300	18800	21700	21300	20800
43" x 43"	2200	4300	7200	11000	18200	22800	22300	21800
44" x 44"	2200	4200	7000	10600	17600	23900	23400	22900
45" x 45"	2100	4100	6800	10300	17100	25000	24400	23900
46" x 46"	2100	3900	6600	10000	16500	24800	25500	25000
47" x 47"	2000	3800	6400	9700	16100	24100	26700	26100
48" x 48"	2000	3700	6200	9500	15600	23400	27800	27200
49" x 49"	1900	3700	6100	9200	15200	22700	29000	28300
50" x 50"	1900	3600	5900	9000	14800	22100	30200	29500
51" x 51"	1800	3500	5800	8700	14400	21500	30100	30700
52" x 52"	1800	3400	5600	8500	14000	21000	29400	31900
53" x 53"	1800	3300	5500	8300	13700	20500	28600	33200
54" x 54"	1800	3300	5400	8100	13400	20000	27900	34400

- Assuming 2000 PSI soil capacity.
- Round footings may be substituted for square footings if they equal the same square inches.
- Alternate material such as ABS plastic pads may be used if accepted by local officials.