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**SET UP
INSTRUCTION
MANUAL**

TRA DESIGN REVIEW
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For Single Section Homes

**KEEP THIS MANUAL
WITH YOUR HOME**

Rev. B

IM-1.1

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SET UP INSTRUCTIONS FOR SINGLE SECTION HOMES

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The technical content of this manual has been reviewed by T.R.A. Inc. and found to be in accordance with the Federal Manufactured Home Construction and Safety Standards and Regulations.

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**RECOMMENDED MINIMUM
SET UP TOOLS FOR SINGLE SECTION HOMES**

Two - 10 Ton Hydraulic Jacks
16oz. Claw Hammer
24" Nail Bar or Carpenter Bar
8" Pliers
26" Hand Saw
10" Crescent Wrench Standard Metal
Cutters
Foundation Supports 100' Heavy Duty Extension Cord with
Ground
6' Carpenter Level
8" Standard Blade Screw Driver
8" Phillips Screw Driver
16" Steel measuring Tape
Wood Wedges

Any attached building or appurtenance, that penetrates any part of the home and is not designed and provided by Indiana Building Systems is fully the responsibility of the Homeowner. Any resultant and/or related damage caused to the home by such attached building(s) or appurtenance(s) will not be serviced by Indiana Building Systems.

**IT IS EXTREMELY IMPORTANT
TO PROPERLY SET, BLOCK AND
LEVEL YOUR HOME**

It is best to have your home prepared for occupancy by a knowledgeable and experienced home set up firm. Such people should have the expertise to properly set up and block your home so that it is level and remains so. If your home is not properly set up and blocked on appropriate foundations, it may undergo unnatural structural strains, which could result in:

1. buckling and/or loosening of walls, partitions, siding, ceiling, doors, floors, weather stripping and miscellaneous fixed original fixtures of the home.
2. leaking windows, doors, roof, ceiling, walls, floor, seams and junctures in general
3. improper closing, binding and sagging of windows, cabinets and inside and outside doors.
4. malfunctioning of plumbing, water outlets, lighting fixtures, electrical, heating and air conditioning systems.
5. the home shall be considered adequately leveled if there is no more than $\frac{1}{4}$ " difference between adjacent pier supports (frame or perimeter)

Unless you are very qualified and capable, it may well be worth the extra expense of not doing it yourself.

FIRE SEPARATION

Fire separation considerations must comply to the rules in accordance with the requirements of Chapter 6 of the NFPA 501A, 2003 Edition, or the requirements of the Local Authority Having Jurisdiction. Please consult your Local Building Official for current adopted Codes.

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Before installing this manufactured home, make certain support and anchorage methods utilized are in compliance with this manual. If conditions occur where the home is to be located in an area subject to flood damage, seismic activity (Earthquakes) etc., which prevent the use of these instructions you must obtain DAPIA approved designs and instructions from the manufacture. In the event that such designs are not available, an alternate design must be obtained through a registered professional or architect.

FOUNDATION REQUIREMENTS

It is important that your home have adequate support to give it proper and lasting stability. Therefore, the foundation footings, piers, supports or runners shall be installed in accordance with the size and weight of the home. Consideration shall be given to the type of soil and frost line conditions where the home is to be located when designing and installing the foundation footings or supports. Please be aware of local flood areas within your area. The foundation designer should take into consideration of such when designing a foundation for your home, as Indiana Building Systems has no liability when it comes to the design and function of your foundation. We recommend that you contact a local engineer and inquire as to the type of footings required in your area. You may wish to hire a contractor to install the required footings.

The following Root Load Zone map will help you to determine what weather zone your home will be located in. After this has been determined, refer to the following section for specified foundation footings and pier blocking.

SITE PREPARATION

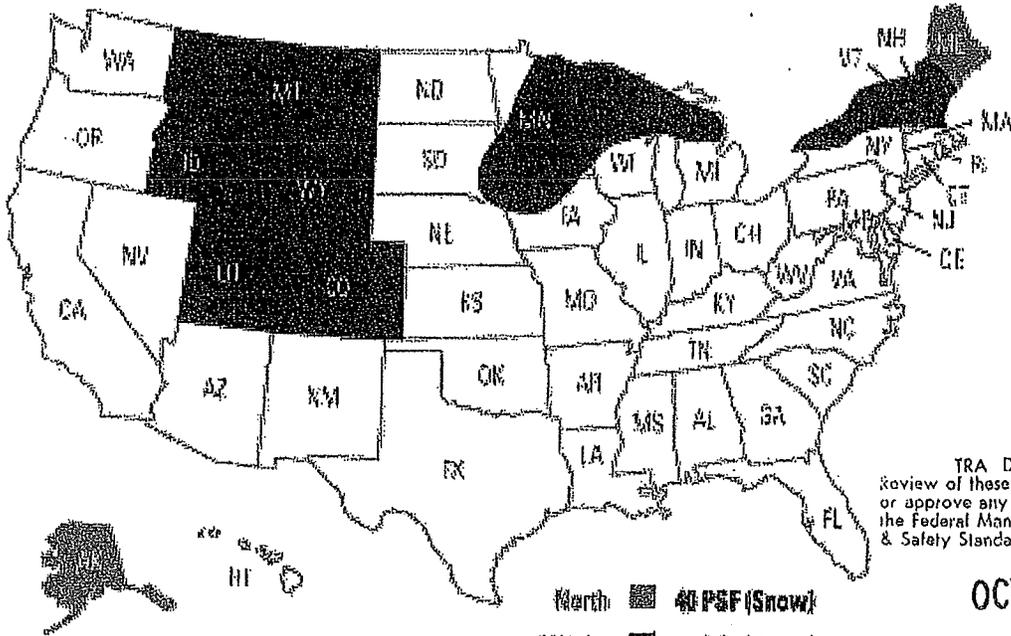
Proper site preparation is essential to the set up and performance of the manufactured home. The site shall be free of all grasses and organic matter and shall be graded to the minimum slope required for storm drainage away from the home. A vapor barrier shall be installed on the ground directly beneath the home. The vapor barrier must be of min. 6 mil, with 12" overlap at splices. It is important that any holes, tears, etc. in the vapor barrier underneath your home be promptly repaired. Following are two alternative methods for doing this:

- Cut the patch to size out any suitable material. Use a double-faced tape (such as 3M No. 950) and affix the sticky side to the patch. Remove the paper from the other side of the tape, and apply the patch to the area under repair.
- Use pressure sensitive tape, such as Tuck N. 81B, to mend occasional small holes, tears or cuts.

Note: The area under the home must be graded to prevent water accumulation.

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DESIGN ROOF-LOAD ZONE MAP



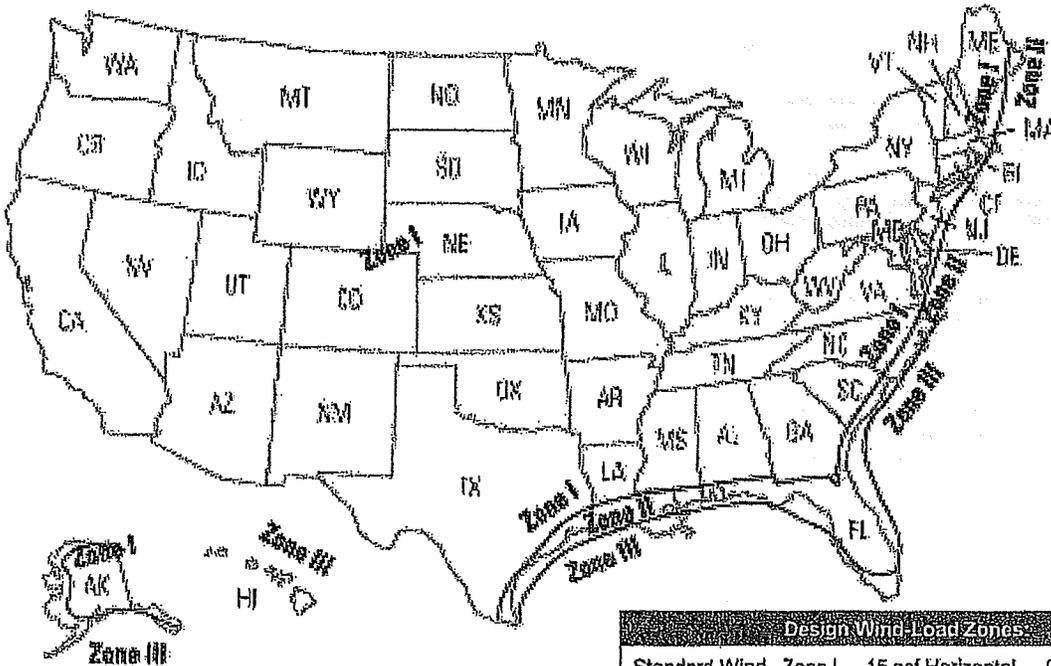
North: 40 PSF (Snow)
 Middle: 30 PSF (Snow)
 South: 20 PSF (Minimum)

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DESIGN WIND-LOAD ZONES:



Design Wind-Load Zones:			
Standard Wind	Zone I	15 psf Horizontal	9 psf uplift*
Hurricane	Zone II	±39 psf Horizontal	27 psf uplift
Hurricane	Zone III	±47 psf Horizontal	32 psf uplift
			*net uplift

Note: psf: pounds per square foot

NOTE: ALL MAINLAND STATES NOT SHOWN ARE WIND ZONE 1

REV. B

IM-1.4

TYPICAL REQUIRED FOUNDATION FOOTINGS AND PIER BLOCKING
(FOR HOMES LOCATED IN THE MIDDLE OR SOUTH ROOF LOAD ZONES)

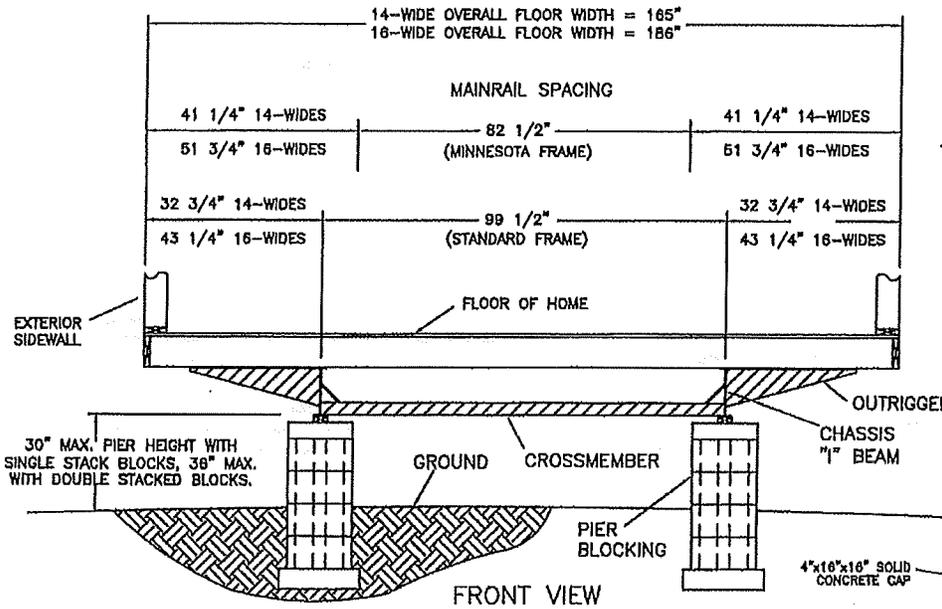
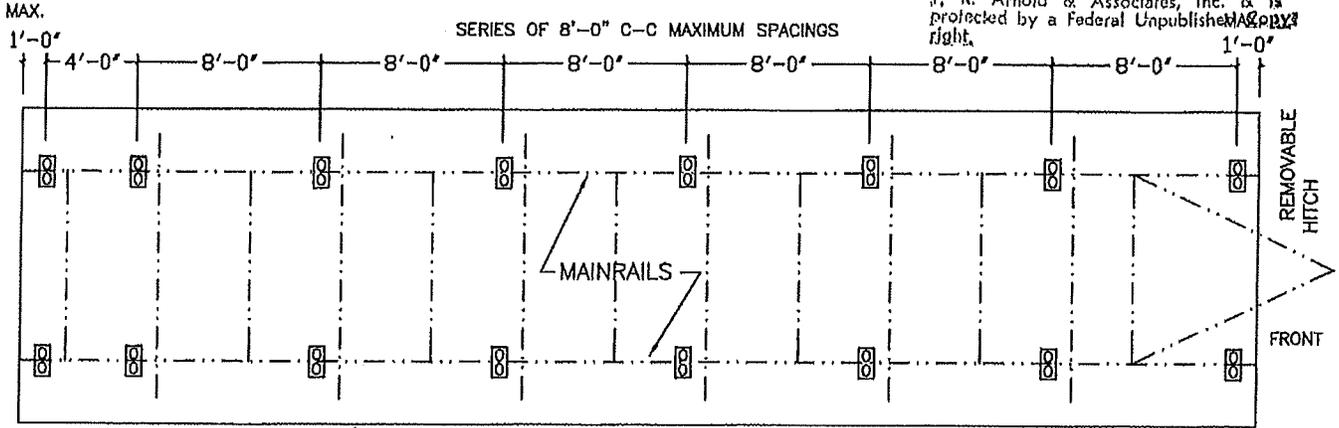
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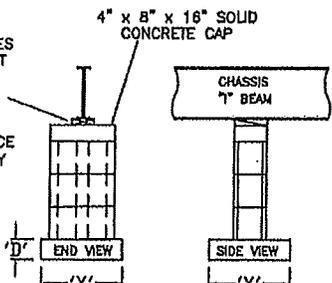
PIER LOCATIONS FRONT TO REAR

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APPLICABLE FOR:
MAINRAIL PIER SET
20# & 30#
ROOF LOADS

LEVELING WEDGES IF NEEDED MUST BE CUT FROM TREATED WOOD MATERIAL AND MUST HAVE BEARING SURFACE 3 1/2" WIDE BY 8" LONG MIN.



A DOUBLE STACK PIER IS REQUIRED IF THE DISTANCE FROM THE MAINRAIL TO GROUND EXCEEDS 30". REFER TO ANSI A225.1 MFG. HOME INSTALLATION MANUAL FOR CONSTRUCTION REQUIREMENTS.

SOIL BEARING CAPACITY/SQ FT	FOOTING SIZE 'X' x 'X' x 'D'	
	20# ROOF LOAD	30# ROOF LOAD
1,000	28 x 28 x 5"	30 x 30 x 5"
1,500	23 x 23 x 5"	24 x 24 x 5"
2,000	20 x 20 x 4"	21 x 21 x 5"
3,000	16 x 16 x 4"	17 x 17 x 4"
4,000	16 x 16 x 4"	16 x 16 x 4"

ANY OPENING IN SIDEWALL WIDER THAN 4' MUST BE BLOCKED AND LEVELED TO MAINTAIN SQUARENESS OF THE OPENING

REV. C

POURED CONCRETE FOOTING MUST HAVE COMPRESSIVE STRENGTH OF 3,000 P.S.I. AT 28 DAYS. FOOTINGS OTHER THAN POURED CONCRETE MAY BE USED PROVIDED ALL APPLICABLE BUILDING CODES AND LOAD BEARING CAPABILITIES ARE MET. WE RECOMMEND A QUALIFIED CONTRACTOR, ARCHITECT OR CIVIL ENGINEER FAMILIAR WITH APPLICABLE BUILDING CODES REVIEW AND APPROVE THE TYPE, SIZE AND INSTALLATION OF THE FOOTING SYSTEM USED.

J.M.-1.5

SINGLE SECTION SET UP PROCEDURE FOR TEMPORARY APPLICATIONS

BLOCKING AND LEVELING

It is important that the home be level and properly supported as prescribed in this manual:

1. Place a 6' level lengthwise on the floor of the home over the area where the axles are located. Turn the jack at the coupler on the front of the home until the floor is level in the axle area.
2. Turn the level crosswise and see if the home is level from side to side. If not, put a hydraulic jack under the low side I-beam at the axle area and raise the side that is low.
3. Place blocks under the I-beams on each side immediately ahead and behind the spring hangers. Insert wedges as shown on the drawing so the blocks bear the weight.
4. Work towards each end, placing blocks and wedges under the I-beams at no more than 8' intervals. Make continued checks with the level. If jacking is required, jack only under the I-beams and only enough to keep it level. If the home is over-jacked serious damage may result.
5. A minimum 12" clearance under the lowest part of home from grade to I-beam is required.
6. Application of perimeter skirting or finish materials is solely up to the Owner. It is not required on temporary set models that have no permanent occupancy.

SINGLE SECTION SET UP PROCEDURE FOR PERMANENT APPLICATIONS

BLOCKING AND LEVELING

It is important that the home be level and properly supported as prescribed in this manual. After the footings are properly dry for the pier design selected, follow the procedure below:

1. Place a 6' level lengthwise on the floor of the home over the area where the axles are located. Turn the jack at the coupler on the front of the home until the floor is level in the axle area.
2. Turn the level crosswise and see if the home is level from side to side. If not, put a hydraulic jack under the low side I-beam at the axle area and raise the side that is low.
3. Place blocks under the I-beams on each side immediately ahead and behind the spring hangers. Insert wedges as shown on the drawing so the blocks bear the weight.
4. Work towards each end, placing blocks and wedges under the I-beams at no more than 8' intervals. Make continued checks with the level. If jacking is required, jack only under the I-beams and only enough to keep it level. If the home is over-jacked serious damage may result.
5. A minimum 12" clearance under the lowest part of home from grade to I-beam is required.
- 6.

Note: Due to natural soil properties, some settling may occur. Within 90 days of initial set up, the home should be checked and re-leveled if necessary.

TIE DOWN REQUIREMENTS

ONLY after the home is properly blocked and leveled should tie down procedures begin.

Ground ties are installed to resist lateral and longitudinal movement caused by high winds. Anchors, strapping, installation procedures, etc. are available from Minute Man Anchor, Inc. 305 West Walker Street, East Flat Rock, North Carolina, 28726, telephone (704)692-0256, however, any anchors that meet the anchorage requirements specified herein are acceptable.

Vertical tie connectors are available as an optional item. They are NOT to be used in place of the frame anchoring system. If used, the vertical tie connectors must be attached to their own anchors, capable of withstanding a 3,150 pound pull when installed in the soil at the site.

Your home is designed to the Wind Zone 1 Standard. Wind Zone 1 is identified on the Wind Zone Map in this manual. Refer also to the Strap/Anchor Spacing details for proper frame tie and anchor spacing. The placement of anchors out from the I-beam shall be such that the strap angle is in the specified range.

If possible, the anchors should be installed at the same angle as the anchor strap, follow approved methods described by the anchor manufacturer (i.e. stabilizer plates).

When tightening the straps with tensioning device provided with the anchors, avoid over-tensioning the straps as this could pull the home off the piers. It is recommended that all straps be tightened enough to remove the slack. After all straps are installed and the slack removed, tension the straps.

Note: Strap tension should be checked periodically until all pier settlement has stopped. AT TIME OF RELEVELING DO NOT JACK THE HOME AGAINST THE STRAPS. **DESIGN REVIEW** Review of these plans does not authorize or approve any omission or deviation from the Federal Manufactured Home Construction & Safety Standards.

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In accordance with the FMHCSS effective July 1994, the following anchorage requirements shall also be observed.

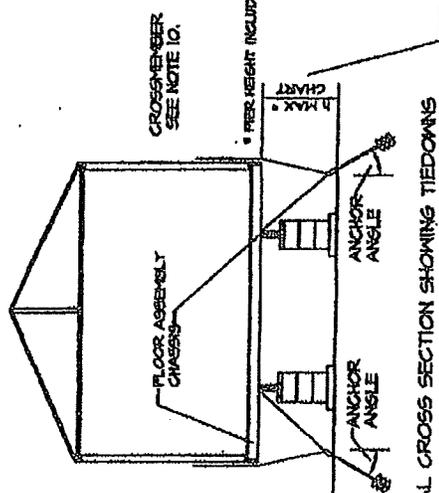
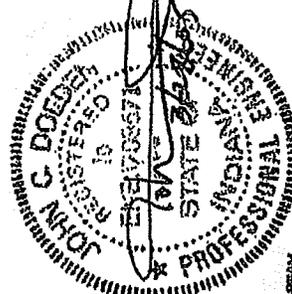
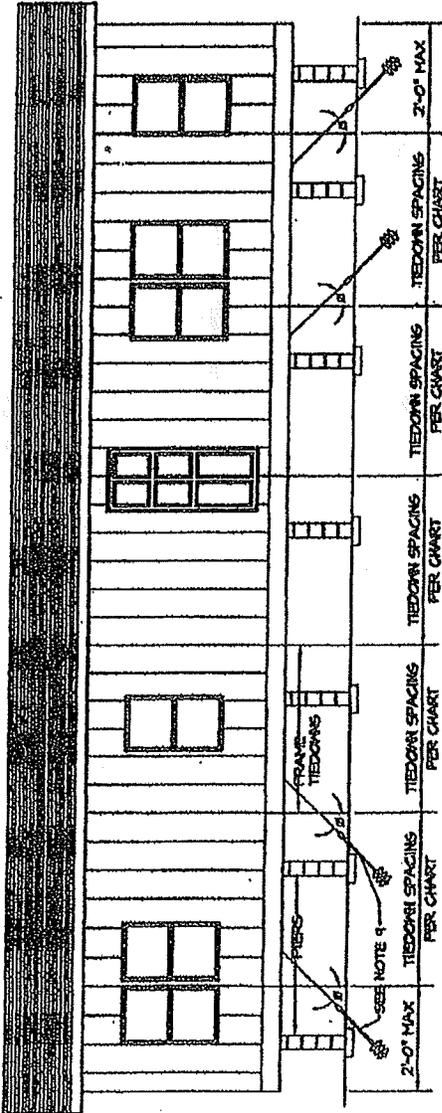
1. The design of anchors should be certified for their installation by a professional engineer or a nationally recognized testing laboratory as to their resistance based on the installed angle of diagonal tie and/or vertical tie loading and type of soil in which the anchor is to be installed.
2. Ground anchors should be embedded below frost line and be at least 12" above the water table and should be installed to their full depth with stabilizer plates installed to provide added resistance to overturning or sliding forces.
3. Anchoring equipment should be certified by a registered engineer or architect to resist these specified forces in accordance with testing procedures in ASTM specification D3953-91, "Standard specification for strapping, flat steel, and seals."
4. Tie downs must start no more than 2'-0" from each end of unit (i.e. open end anchorage).
5. Protection shall be provided at sharp corners where the anchoring system requires external straps or cables.

REV. D

IM-1.6

TIEDOWN SYSTEM
WIND ZONE I (15 PSF LATERAL)

TYPICAL SIDE ELEVATION SHOWING TIEDOWN SPACINGS



TYPICAL CROSS SECTION SHOWING TIEDOWNS

3\"/>

LONGITUDINAL TIEDOWN QUANTITY CHART		
FLOOR WIDTH	ROOF SLOPE MAXIMUM	ANCHOR ANGLE MIN Ø
15'-6\"/>	43/2	59

FRAME TIEDOWN SPACING CHART				
FLOOR WIDTH	EAVE OVERHANG	TIEDOWN SPACING	MAX. PIER HEIGHT	ANCHOR ANGLE °
13'-9\"/>	3\"/>	10'-0\"/>	41\"/>	30-40
15'-6\"/>	3\"/>	10'-0\"/>	57\"/>	30-40

- NOTES:
1. FRAME TIEDOWN SHALL BE INSTALLED TO PROPERLY SECURE THE ROOF.
 2. VERTICAL TIES ARE REQUIRED IN ADDITION TO FRAME TIEDOWNS.
 3. VERTICAL TIES MAY BE SECURED TO THE SAME GROUND ANCHOR AS THE FRAME TIEDOWNS WHEN DOUBLE HEADED ANCHOR IS CAPABLE OF RESISTING COMBINED LOADING.
 4. FRAME TIEDOWNS AND ANCHORS ARE NOT SUPPLIED BY INDIANA BUILDING SYSTEMS.
 5. VERTICAL TIE STRAPS ARE SUPPLIED BY INDIANA BUILDING SYSTEMS. ANCHORS AND END TREATMENTS ARE TO BE SUPPLIED BY OTHERS.
 6. GROUND ANCHORS AND FRAME TIES SHALL BE CAPABLE OF RESISTING AN ULTIMATE TENSION LOAD OF 4125 LBS. ARE TO BE INSTALLED PER THE MANUFACTURER'S INSTALLATION INSTRUCTIONS, BUT ARE NOT TO EXTEND BEYOND THE SIDEWALL OF THE HOME.
 7. STEEL ANCHORING EQUIPMENT EXPOSED TO THE WEATHER SHALL BE PROTECTED WITH AT LEAST 0.50 OZ. OF ZINC PER SQUARE FOOT OF STEEL.
 8. PEGSIN BASED ON 8\"/>
 9. LONGITUDINAL TIES ARE INSTALLED JUST INSIDE I-BEAMS AT CROSS-MEMBERS IN ACCORDANCE WITH THE TABLE AND NOTES 4, 6, AND 7.
 10. FRAME TIEDOWNS ARE POSITIONED AT CROSS-MEMBER LOCATIONS (WITHIN 3\"/>
 11. ANCHORS SHALL BE CERTIFIED FOR THESE CONDITIONS BY A PROFESSIONAL ENGINEER, ARCHITECT OR A NATIONALLY RECOGNIZED TESTING LABORATORY AS TO THEIR RESISTANCE BASED ON THE INSTALLED ANGLE OF DIAGONAL TIE AND/OR VERTICAL TIE LOADING AND ANGLE OF ANCHOR INSTALLATION, AND TYPE OF SOIL IN WHICH THE ANCHOR IS TO BE INSTALLED.
 12. GROUND ANCHORS SHALL BE EMBEDDED BELOW THE FROST LINE AND BE AT LEAST 12\"/>
 13. GROUND ANCHORS SHALL BE INSTALLED TO THEIR FULL DEPTH AND STABILIZER PLATES SHALL BE INSTALLED TO PROVIDE ADDED RESISTANCE TO OVERTURNING OR SLIDING FORCES.
 14. ANCHORING EQUIPMENT SHALL BE CERTIFIED BY A REGISTERED PROFESSIONAL ENGINEER OR ARCHITECT TO RESIST THESE REQUIRED FORCES IN ACCORDANCE WITH TESTING PROCEDURES IN ASTM STANDARD SPECIFICATION D999-01.
 15. STANDARD SPECIFICATION FOR STRAPPING, FLAT STEEL AND SEALS.
 16. STRAPPING TO BE TYPE 1, FINISH B, GRADE 1 STEEL.
 17. STRAPPING 1/4\"/>
 18. CERTIFIED BY A REGISTERED PROFESSIONAL ENGINEER OR ARCHITECT AS CONFORMING WITH ASTM STANDARD SPECIFICATION D999-01. STANDARD SPECIFICATION FOR STRAPPING, FLAT STEEL AND SEALS.

- NOTE:
- TRA DESIGN WHEN ANCHORS ARE NOT INSTALLED AT THE ANGLE SPECIFIED IN THE TABLE A STABILIZER PLATE MUST BE INSTALLED IN ACCORDANCE WITH ANCHOR MANUFACTURER'S INSTRUCTIONS.
- Review of these plans disclosed herein is not to be construed as an approval or endorsement by the Federal Manufactured Home Construction & Safety Standards.

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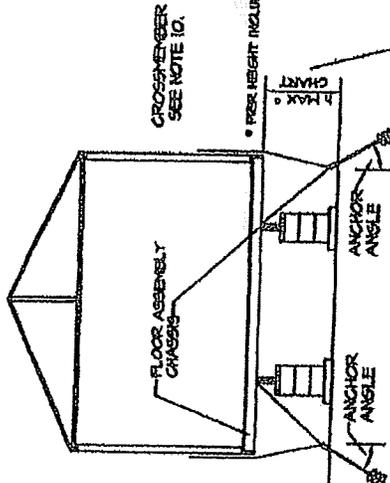
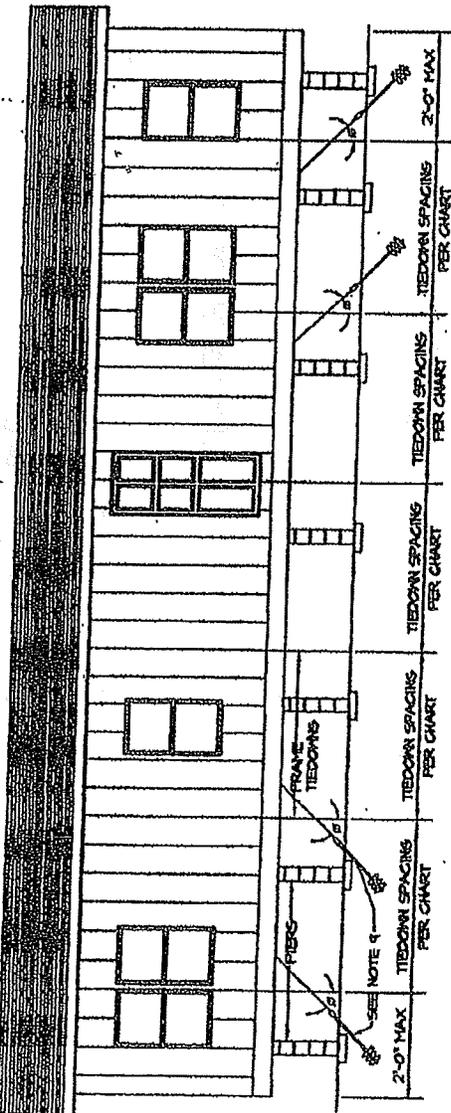
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20 DEGREE MAXIMUM ROOF SLOPE
* MAX PIER HEIGHT INCLUDES DEPTH OF I-BEAM

REV. B

IM-1.6.1

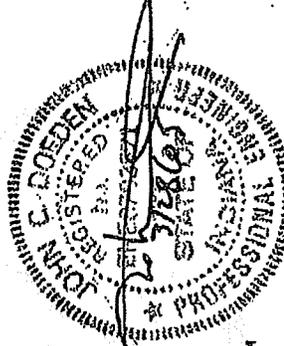
TIEDOWN SYSTEM
WIND ZONE I (15 PSF LATERAL)

TYPICAL SIDE ELEVATION SHOWING TIEDOWN SPACINGS



TYPICAL CROSS SECTION SHOWING TIEDOWNS

- NOTES:
1. FRAME TIEDOWN SHALL BE INSTALLED TO PROPERLY SECURE THE HOME.
 2. VERTICAL TIES ARE REQUIRED IN ADDITION TO FRAME TIEDOWNS.
 3. VERTICAL TIES MAYBE REQUIRED TO THE SAME GROUND ANCHOR AS THE FRAME TIEDOWNS WHEN DOUBLE HEADED ANCHOR IS CAPABLE OF RESISTING COMBINED LOADING.
 4. FRAME TIEDOWNS AND ANCHORS ARE NOT SUPPLIED BY INDIANA BUILDING SYSTEMS.
 5. VERTICAL TIE STRAPS ARE SUPPLIED BY INDIANA BUILDING SYSTEMS. ANCHORS AND END TREATMENTS ARE TO BE SUPPLIED BY OTHERS.
 6. GROUND ANCHORS AND FRAME TIES SHALL BE CAPABLE OF RESISTING AN ULTIMATE TENSION LOAD OF 4725# & ARE TO BE INSTALLED PER THE MANUFACTURER'S INSTALLATION INSTRUCTIONS, BUT ARE NOT TO EXCEED BEYOND THE SIDEWALL OF THE HOME.
 7. STEEL ANCHORING EQUIPMENT EXPOSED TO THE WEATHER SHALL BE PROTECTED WITH AT LEAST 0.30 OZ. OF ZINC PER SQUARE FOOT OF STEEL.
 8. DESIGN BASED ON 82 1/2" I-BEAM SPACING AND A MAXIMUM SIDEWALL HEIGHT OF 7'-4".
 9. LONGITUDINAL TIES ARE INSTALLED JUST INSIDE I-BEAMS AT CROSS-MEMBERS IN ACCORDANCE WITH THE TABLE AND NOTES 4, 6, AND 7.
 10. FRAME TIEDOWNS ARE POSITIONED AT CROSS-MEMBER LOCATIONS WITHIN 37" WHEN STRAP COMES OFF BOTTOM FLANGE OF BEAM WITH APPROVED BUCKLE OR LOOP.
 11. ANCHORS SHALL BE CERTIFIED FOR THESE CONDITIONS BY A PROFESSIONAL ENGINEER, ARCHITECT OR A NATIONALLY RECOGNIZED TESTING LABORATORY AS TO THEIR RESISTANCE BASED ON THE INSTALLED ANGLE OF DIAGONAL TIE AND/OR VERTICAL TIE LOADING AND ANGLE OF ANCHOR INSTALLATION, AND TYPE OF SOIL IN WHICH THE ANCHOR IS TO BE INSTALLED.
 12. GROUND ANCHORS SHALL BE EMBEDDED BELOW THE FROST LINE AND BE AT LEAST 12" ABOVE THE WATER TABLE AND 18" BELOW FINISH GRADE.
 13. GROUND ANCHORS SHALL BE INSTALLED TO THEIR FULL DEPTH, AND STABILIZER PLATES SHALL BE INSTALLED TO PROVIDE ADDED RESISTANCE TO OVERTURNING OR SLIDING FORCES.
 14. ANCHORING EQUIPMENT SHALL BE CERTIFIED BY A REGISTERED PROFESSIONAL ENGINEER OR ARCHITECT TO RESIST THESE SPECIFIED FORCES IN ACCORDANCE WITH TESTING PROCEDURES IN ASTM STANDARD SPECIFICATION D898-91.
 15. STANDARD SPECIFICATION FOR STRAPPING, FLAT STEEL AND SEALS, STRAPPING TO BE TYPE I, PUNCH B, GRADE I STEEL STRAPPING, 1/4" THICK AND .025 INCHES IN THICKNESS, CERTIFIED BY A REGISTERED PROFESSIONAL ENGINEER OR ARCHITECT AS CONFORMING WITH ASTM STANDARD SPECIFICATION D898-91, STANDARD SPECIFICATION FOR STRAPPING, FLAT STEEL AND SEALS.



NOTE:
WHEN ANCHORS ARE NOT INSTALLED AT THE ANGLE SPECIFIED IN THE TABLE A STABILIZER PLATE MUST BE INSTALLED IN ACCORDANCE WITH THE ANCHOR MANUFACTURER'S INSTRUCTIONS.

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FRAME TIEDOWN SPACING CHART

FLOOR WIDTH	EAVE OVERHANG	TIEDOWN SPACING	MAX. PIER HEIGHT	ANCHOR ANGLE **
13'-8" SINGLE	3" MAX	10'-0"	54"	30-40
15'-6" SINGLE	3" MAX	12'-0"	52"	40-50

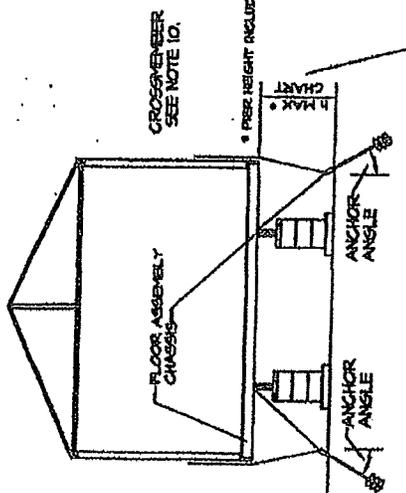
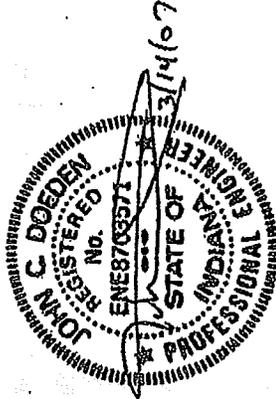
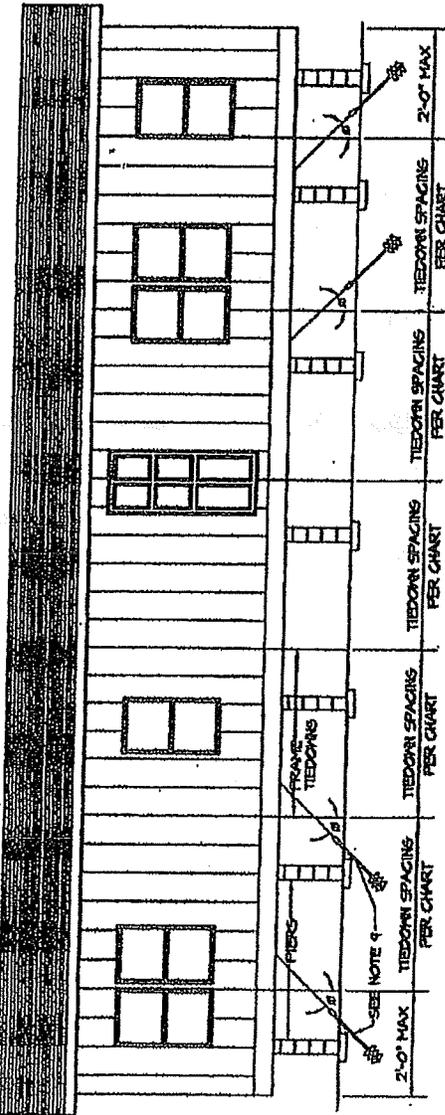
LONGITUDINAL TIEDOWN QUANTITY CHART

FLOOR WIDTH	ROOF SLOPE MAXIMUM	QUANTITY (MIN EACH END OF EACH SECTION)	ANCHOR ANGLE (MIN)
16'5" SINGLE	4/12	2	50

H.M. 1.6.2

TIEDOWN SYSTEM
WIND ZONE I (15 PSF LATERAL)

TYPICAL SIDE ELEVATION SHOWING TIEDOWN SPACINGS



TYPICAL CROSS SECTION SHOWING TIEDOWNS

LONGITUDINAL TIEDOWN QUANTITY CHART

WIND ZONE I		
FLOOR WIDTH	ROOF SLOPE MAXIMUM	ANCHOR MINIMUM EACH END OF EACH SECTION
165' SINGLE	4:3/2	2
		59

FRAME TIEDOWN SPACING CHART

FLOOR WIDTH	I-BEAM SPACING	EAVE OVERHANG	TIEDOWN SPACING	MAX. PIER HEIGHT	ANCHOR ANGLE **
11'-9" SINGLE	99 1/2" C-C	3" MAX	8'-0" O.C.	.26'	30-35
			6'-0" O.C.		20-25
		3" MAX	10'-0" O.C.	30"	35-40
			8'-0" O.C.	42"	25-30

- NOTES:
1. FRAME TIE-DOWN SHALL BE INSTALLED TO PROPERLY SECURE THE HOPE.
 2. VERTICAL TIES ARE REQUIRED IN ADDITION TO FRAME TIEDOWNS. AS THE FRAME TIEDOWNS WHEN DOUBLE HEADED ANCHOR IS CAPABLE OF RESISTING COVERED LOADING.
 3. FRAME TIEDOWNS AND ANCHORS ARE NOT SUPPLIED BY INDIANA BUILDING SYSTEMS.
 4. VERTICAL TIE STRAPS ARE SUPPLIED BY INDIANA BUILDING SYSTEMS. ANCHORS AND END TREATMENTS ARE TO BE SUPPLIED BY OTHERS.
 5. RESISTING AN ULTIMATE TENSION LOAD OF AT LEAST 10,000 LBS. BUT ARE NOT TO EXCEED BEYOND THE SIDEWALL OF THE HOPE.
 6. STEEL ANCHORS EQUIPMENT EXPOSED TO THE WEATHER SHALL BE PROTECTED WITH AT LEAST 0.50 OZ. OF ZINC PER SQUARE FOOT OF STEEL.
 7. DESIGN BASED ON 1/2" I-BEAM SPACING AND A MAXIMUM SIDEWALL HEIGHT OF 16'-0".
 8. LONGITUDINAL TIES ARE INSTALLED JUST INSIDE I-BEAMS AT CROSS-MEMBERS IN ACCORDANCE WITH THE TABLE AND NOTES 4, 5, AND 11.
 9. FRAME TIEDOWNS ARE POSITIONED AT CROSS-MEMBER LOCATIONS (WITHIN 3") WHEN STRAP COMES OFF BOTTOM FLANGE OF BEAM WITH APPROVED BUCKLE OR LOOP.
 10. ANCHORS SHALL BE CERTIFIED FOR THESE CONDITIONS BY A PROFESSIONAL ENGINEER, ARCHITECT OR A NATIONALLY RECOGNIZED TESTING LABORATORY AS TO THEIR RESISTANCE BASED ON THE INSTALLED ANGLE OF DIAGONAL TIE ANCHOR VERTICAL TIE LOADING AND ANGLE OF ANCHOR INSTALLATION AND TYPE OF SOIL IN WHICH THE ANCHOR IS TO BE INSTALLED.
 11. SECOND ANCHORS SHALL BE SPACED BELOW THE FROST LINE AND BE AT LEAST 12" ABOVE THE WATER TABLE AND DEPTH. AND STABILIZER PLATES SHALL BE INSTALLED TO PROVIDE ADDED RESISTANCE TO OVERTURNING OR SLIDING FORCES.
 12. ANCHORING EQUIPMENT SHALL BE CERTIFIED BY A REGISTERED PROFESSIONAL ENGINEER OR ARCHITECT TO RESIST THESE SPECIFIED FORCES IN ACCORDANCE WITH TESTING PROCEDURES IN ASTM STANDARD SPECIFICATION D898-01.
 13. STANDARD SPECIFICATION FOR STRAPPING, FLAT STEEL AND SEALS. STRAPPING TO BE TYPE 1, FIBER 1, GRADE 1 STEEL. STRAPPING 1/4" WIDE AND 288" INCHES IN THICKNESS. CERTIFIED BY A REGISTERED PROFESSIONAL ENGINEER OR ARCHITECT AS CORRESPONDING WITH ASTM STANDARD SPECIFICATION D898-01 STANDARD SPECIFICATION FOR STRAPPING, FLAT STEEL AND SEALS.

NOTE:
TRA DESIGN ANCHORS ARE NOT INSTALLED AT THE ANGLE SPECIFIED OR APPROVE ANY OTHER ANCHOR MANUFACTURER'S INSTRUCTIONS.
The Federal Manufactured Home Construction & Safety Standards.

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* MAX PIER HEIGHT INCLUDES DEPTH OF I-BEAM

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174-16.3

Note: Prior to installation, refer to any local, state and federal regulations, to assure proper compliance. Soil test probe the anchor location in order to match the soil classification with the proper anchor.

Minute Man anchors[®], Inc.

Warning: Before ground anchor installation, determine that the anchor locations around home will not be close to any underground electrical cables, water lines or sewer piping. Failure to determine the location of electrical cables may result in serious personal injury.

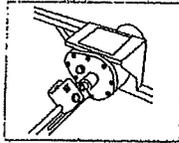
ANCHOR INSTALLATION

There are two basic methods of installing anchors, each equally effective in properly securing manufactured homes to the ground.

CAUTION: The installation of anchors with a drive machine is a two person operation.

MACHINE INSTALLATION

In this method, the anchor is turned to full depth into the ground by an anchor drive machine.

- 

Attach anchor to machine.
- 

Place anchor in proper position in line with strap and machine.
- 

Anchor should be installed at a slight angle as shown to assure head being positioned behind future skirting.

MANUAL INSTALLATION

A hole is dug to a depth of approximately 1/2 the length of the anchor, in the proper position as explained under machine installation.

After the hole is dug to 1/2 the length of the anchor, then the anchor is turned into the ground by hand, using a rod or length of pipe for leverage or by machine.

After anchor is installed full depth, earth is repacked, six inches at a time.

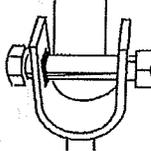


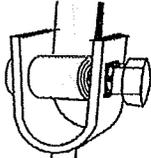
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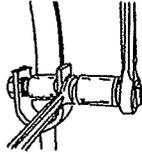
PROPER TENSIONING OF STRAP TO ANCHOR HEAD

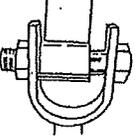
- 

Insert bolt into head; attach nut loosely. Insert strap in slot of 5/8" bolt until strap is flush with far side of bolt.
- 

Bend strap 90° and take at least three complete turns on bolt until strap is taut.

- Bolt is turned with 15/16" socket wrench, or adjustable wrench, on hex head. With square hole in anchor head, hold bolt under tension while repositioning wrench: Place open-end wrench on 5/8" square shoulders of bolt. Align square shoulders of bolt with square hole in anchor head.



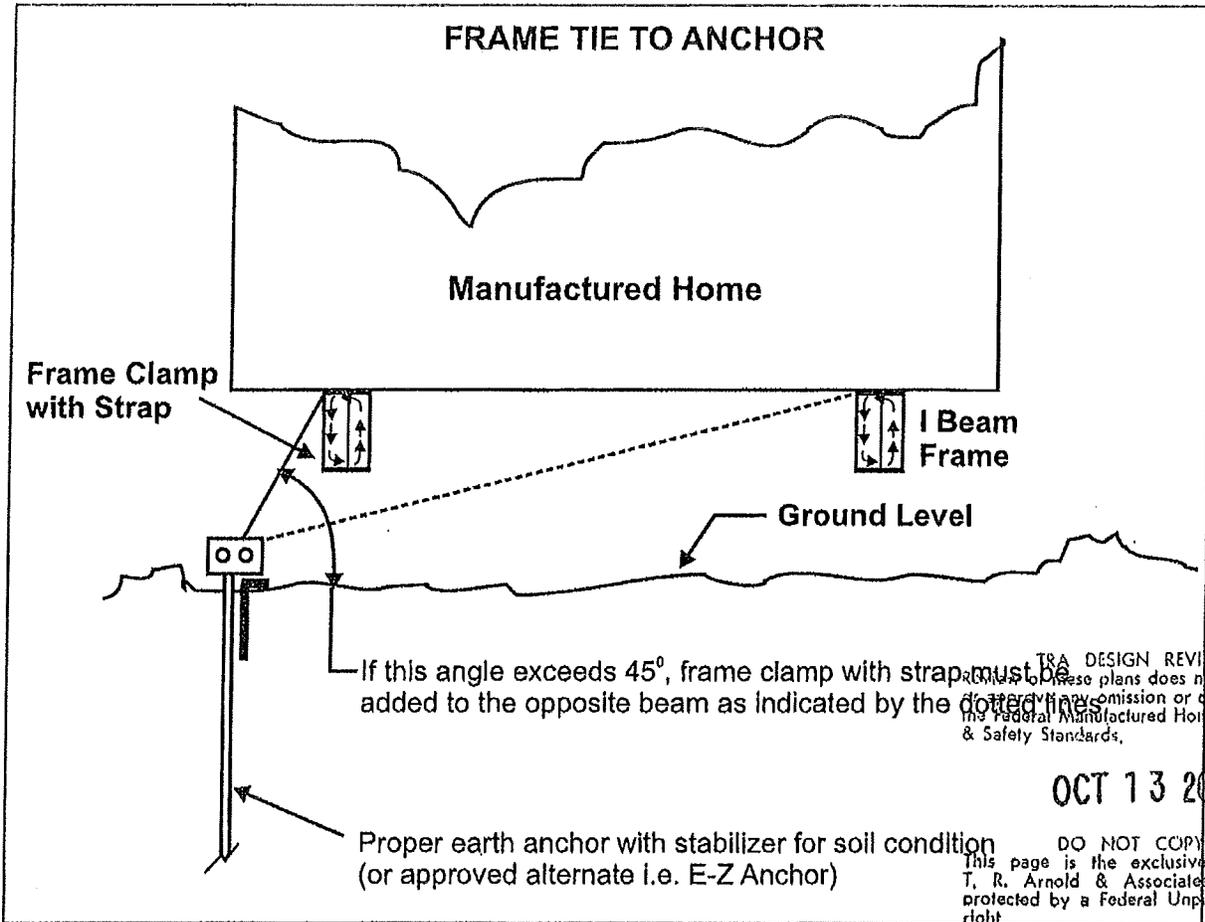
- 

Holding hex head of bolt in position, tighten nut to draw square shoulders into square hole. Shoulders are now in locking position; continue to tighten nut. Tensioning device is now in locked, secure position.

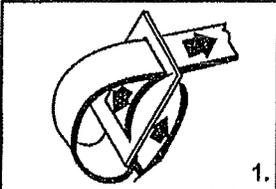
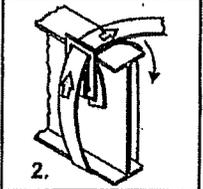
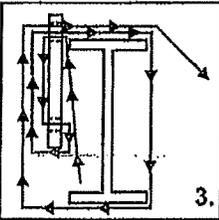
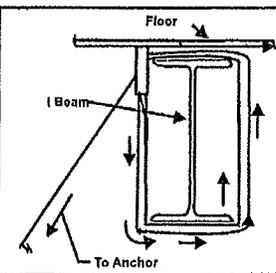
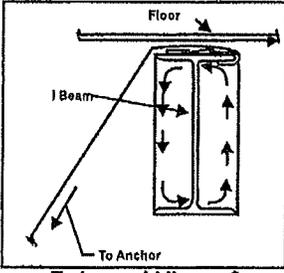
Note: The tensioning bolt can be inserted in the head from either side.

Notice: In areas of severe cold weather, where possible damage could occur from frost heave, the homeowner should be prepared to adjust tension on the straps to take up slack.

REV. D.
 IM-1.7



FRAME TIE INSTALLATION INSTRUCTIONS

Frame Tie With Buckle	Single Slot Buckle With Strap	Frame Tie With Hook
 <p style="text-align: right;">1.</p>  <p style="text-align: right;">2.</p> <p>Thread sufficient length of frame tie strap through buckle as shown.</p>  <p style="text-align: right;">3.</p> <p>Next, thread long end of strap between frame and floor of home. Bring strap around frame and back through buckle as shown in diagram and fasten to anchor head.</p> <p>Diagram showing strap in position around frame and through buckle. It is important to remove all slack from system.</p> <p>Note: Use of a single buckle is an appropriate alternate.</p>	 <p style="text-align: center;">Enlarged View of Frame Beam</p> <p>Place buckle at top of anchor side of beam, pass strap around beam and through buckle. Pass strap back around beam and through buckle to anchor. Strap will wrap beam twice. Remove all slack from system.</p>	 <p style="text-align: center;">Enlarged View of Frame Beam</p> <p>Attach Frame Clamp (Hook) inside top flange of home frame. Bring strap around frame. Place strap between frame and home as shown in sketch. Pull strap tight and attach to anchor tension head.</p>

REV. C
IM-1.8

MINUTE MAN ANCHORS, INC.

INSTRUCTION FOR USING MINUTE MAN STABILIZING DEVICE

Minute Man stabilizing devices are designed for use with Minute Man anchors and intended to laterally restrict movement of the anchor through the soil.

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1. Place the anchors approximately four inches to the inside of the exterior wall line of the home or a sufficient distance to avoid interference with the skirting (see above)
2. Hold the anchor at an angle of approximately 10 degrees off of vertical so that the head of the anchor is just outside the sidewall (see above)
3. Install the anchor to a depth of approximately one-third (1/3) the anchor length.
4. Place a stabilizer plate to the inside of the anchor shaft (side of shaft toward center of house) and the distance indicated from the shaft.
5. Drive the stabilizer plate into the ground until the top of the plate is 1" below the surface of the ground.
6. Install the anchor to its full depth.
7. Pretension the anchor by pulling it up to the stabilizer plate. Pull the anchor approximately 1/2 inch more while it is in contact with the plate using the strap and take-up bolt to move the anchor head.

INSTALLATION INSTRUCTIONS

Drill 5/8" diameter hole 5 1/2" deep, in center of anchor location, for pilot stud. Insert pilot stud into hole.

Drill two - 3/4" diameter holes in rock at 45 degree angles, using anchor head as a locating guide.

Place rod through top of (1) square tube and into hole. Drive rod to desired depth. (Rod must be driven into rock at least 80% of its length in order to achieve minimum allowable pullout resistance.)

Place second rod through top of remaining tube. Drive rod to desired depth to lock.

Maximum pullout resistance is developed when anchor head is low as possible and ground surface is solid rock. Distance from square tubing to rock surface should not exceed 1".

Installation Instructions for Cross Drive Rock Anchor

REV. E
 IM-1.9

For tie down strap and anchor spacing, See the Mobile Home Manufacturers Installation Manual. Each state, county or municipality may require a specific anchor from the groups shown for each soil classification. Check local regulations before installation.

Note:

- Soil test probe the anchor location in order to match the proper anchor with the soil classification.
- Stabilizer plates or certified stabilizing device must be used with anchors when anchors are used to resist horizontal forces.
- The distance from the end of the home to the first anchor must not exceed 2'-0".
- All homes located in Wind Zones II and III must have a vertical tie installed at each diagonal tie location.

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SOIL CLASSIFICATION CHART

Soil Class	Soil Description	Blow Count (ASTM D1586)	Test Probe Value	Recommended Minute Man Anchor
1	Sound hard rock	NA	NA	Cross Drive or Rock Anchor
2	Very dense &/or cemented sands, coarse gravel and cobbles, caliche, preloaded silts, and clays.	40-up	551 lb. in. Up	4430DH 650DH 4430 EZDH 4636 EZDH 636 EZDH GW-2 12" Stabilizer Plate Nu-Concept Stabilizer Cap
3	Medium dense coarse sands, sandy gravels, very stiff silts, and clays.	24-39	351 to 550 lb in.	636 DH 4430 EZDH 650DH 636 EZDH 4430DH 4636 EZDH 4636 DH 650 EZDH GW-2 12" Stabilizer Plate Nu-Concept Stabilizer Cap
4(a)	Loose to medium dense sands, firm to stiff clays and silts alluvial fill.	18-23,3	276 to 350 lb. in.	4636 DH 4450DH 650DH 4636 EZDH 4636 NU Concept Stabilizer Cap 12" Stabilizer Plate
4(b)	VERY loose to medium dense sands, firm to stiff clays and silts, alluvial fill.	12-17	175 to 275 lbs. in	760DH 860DH 1060DH 17" Stabilizer Plate

Remember: Each state, county or municipality may require a specific anchor from the groups shown for each soil classification. Check local regulations first. Soils less than 4B, see home manufacturer's instructions.

Note: Many anchors are designed for particular soil condition(s) and are unacceptable for use in other type soils. We have listed the soils for which each anchor is designed and approved. Soil classifications are taken from the "standard for the installation on mobile homes", Part 3280 each anchor model listed has been tested by an independent professional engineer to meet ANSI A225.1 and ASTM D3953.91 codes.

REV. C Revised 3/14/07

IM-1.10

Following is a list of Minute-Man Anchors with an allowable working load equal to or exceeding 3,150 lbs. and are capable of withstanding a 50% overload (4,725 lbs. total). Stabilizer devices must be used with anchors when anchors are used to resist horizontal forces. HUD Part 3280.506(f)

ITEM #	MARK	MODEL	DESCRIPTION	USE IN SOIL TYPE
1071	MMA-2	650-DH 5/8"	6" DISC, 50" ANCHOR	2,3,4(a)
1101	MMA-4	650-DH 3/4	6" DISC, 50" ANCHOR	2,3,4(a)
1131	MMA-28	636-DH 3/4	6" DISC, 36" ANCHOR	2,3
1241	MMA-30	4430-DH 5/8	DOUBLE 4" DISC, 30" ANCHOR	2,3
1271	MMA-6	4430-DH 3/4	DOUBLE 4" DISC, 30" ANCHOR	2,3
1349	MMA-35	36-XDH	36" CROSS DRIVE ANCHOR	1
1350	MMA-8	48-XDH	48" CROSS DRIVE ANCHOR	1
1390	MMA-BR	24 BA	BARB ROCK ANCHOR	1
1287	MMA-86	860-DH 3/4	8" DISC, 60" ANCHOR	4(b) (Fla.)
1288	MMA-71	1060-DH 3/4	10" DISC, 60" ANCHOR	4(b)
1291	MMA-75	760-DH 3/4	7" DISC, 60" ANCHOR	2,3,4(a), 4(b)
1346	MMA-52	4636-DH 3/4	4" & 6" DISC, 36" ANCHOR	2,3,4(a)
1284	MMA-55	4450-DH 3/4	DOUBLE 4" DISC, 50" ANCHOR	2,3,4(a)
1282	MMA-50	4442-DH 3/4	DOUBLE 4" DISC, 42" ANCHOR	2,3
1312	MMA-57	4636 NU 7/8	4" & 6" DISC, NU CONCEPT CAP	2,3,4(a)
1592	MMA-92	4430-EZDH 3/4	DOUBLE 4" DISC, 30" EZ ANCHOR	2,3
1593	MMA-93	4636-EZDH 3/4	4" DISC, 6" DISC, 36" EZ ANCHOR	2,3,4
1594	MMA-94	636-EZDH 3/4	6" DISC, 36" EZ ANCHOR	2,3
1596	MMA-96	650-EZDH 3/4	6" DISC, 50" EZ ANCHOR	2,3
1598	MMA-98	6650 EZVDH 3/4	DOUBLE 6" DISC, VERT. STABILIZER	2,3,4(a) (Fla.)
1599	MMA-99	8860 EZVDH 3/4	DOUBLE 8" DISC, VERT. STABILIZER	4(b) (Fla.)
2390	MMA-18	THDH	DOUBLE HEAD TENSION DEVICE	SLAB
2391	MMA-18	THDHL	DH TENSION DEVICE W/LAG	SLAB
1420	MMA-12	210-DH	CONCRETE ANCHOR	SLAB
1450	MMA-14	210-PDH	WET CONCRETE ANCHOR	SLAB
1445	MMA-42	210-JDH	SWIVEL HEAD WET CONCRETE ANCHOR	SLAB
1321	MMA	G W1	G W 1 ROCK ANCHOR	1
1322	MMA	G W2	G W 2 SOIL ANCHOR	2,3
2200	MMA-SD2A		STABILIZER- 12"	2,3,4(a)
2202	MMA-SD2		STABILIZER- 17"	FLA. 2,3,4(a),4(b)
2211	N C1		NU CONCEPT STABILIZER CAP	2,3,4(a)
2691	MMA-29	FCIW/S	FRAME CLAMP II W/STRAP	
2820	MMA-31	FRAME TIE	LONGITUDINAL FRAME TIE-8 BOLT	FLA.
2822	MMA-34	FRAME TIE	LONGITUDINAL FRAME TIE-4 BOLT	

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REV.C.
 IM-1.11

ITEM #	MARK	MODEL	DESCRIPTION	USE IN SOIL TYPE
2700	MMA-32	BUC/WS	BUCKLE W/STRAP	
2801	MMA-33	FCII (LOCKING)	LOCKING FRAME CLAMP II	
2704	MMA-71	CT/WS	CORNER TIE W/STRAP	
2706	MMA-71-C	CT/WS	CORNER TIE W/STRAP	
2709	MMA-71-C	CT/WS	CORNER TIE W/ REG. STRAP	
2010	MMA	SBN	STRAP BOLT & NUT	
2510	MMA-25	22 BUCKLE	DOUBLE SLOT BUCKLE	
2530	MMA-32	SS BUCKLE	SINGLE SLOT BUCKLE	
2491		44 RB	4X4" ROOF BRACKET	
2492		66 RB	6X6" ROOF BRACKET	
2150		POCKET PENETROMETER	POCKET PENETROMETER	
2100		SOIL TEST PROBE	SOIL TEST PROBE	
2250		JACKING PLATE	I BEAM JACKING PLATE	
3006	MMP-6	6" PIER	STANDARD MOBILE HOME PIER	
3008	MMP-8	8" PIER	STANDARD MOBILE HOME PIER	
3010	MMP-10	10" PIER	STANDARD MOBILE HOME PIER	
3012	MMP-12	12" PIER	STANDARD MOBILE HOME PIER	
3014	MMP-14	14" PIER	STANDARD MOBILE HOME PIER	
3016	MMP-16	16" PIER	STANDARD MOBILE HOME PIER	
3018	MMP-18	18" PIER	STANDARD MOBILE HOME PIER	
3020	MMP-20	20" PIER	STANDARD MOBILE HOME PIER	
3022	MMP-22	22" PIER	STANDARD MOBILE HOME PIER	
3024	MMP-24	24" PIER	STANDARD MOBILE HOME PIER	
3026	MMP-26	26" PIER	STANDARD MOBILE HOME PIER	
3028	MMP-28	28" PIER	STANDARD MOBILE HOME PIER	
3030	MMP-30	30" PIER	STANDARD MOBILE HOME PIER	
3521	MMSD3	20" STEEL PIER PAD	LONGITUDINAL AND LATERAL BRACING SYSTEM	
3530	MMAST	60" LATERAL TUBE	LONGITUDINAL AND LATERAL BRACING SYSTEM	
3539	MMLBT	39" BRACE TUBE	LONGITUDINAL AND LATERAL BRACING SYSTEM	
3544	MMLBT	44" BRACE TUBE	LONGITUDINAL AND LATERAL BRACING SYSTEM	
3553	MMLBT	53" BRACE TUBE	LONGITUDINAL AND LATERAL BRACING SYSTEM	
3510	MMLBC	BEAM CLIP W/B&N	LONGITUDINAL AND LATERAL BRACING SYSTEM	
3534	CAF	CONCRETE DRY SET	LONGITUDINAL AND LATERAL BRACING SYSTEM	
3536	CFW	CONCRETE WET SET	LONGITUDINAL AND LATERAL BRACING SYSTEM	

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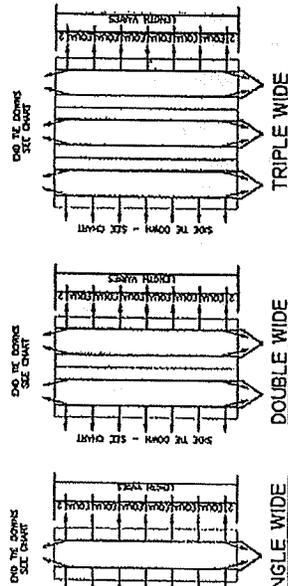
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WESTERN STATES

INSTALLATION INSTRUCTIONS

- FIRST CHECK FOR UNDERGROUND UTILITY LOCATION:
 1. SEE DETAIL THIS BOOKLET FOR INSTALLATION INSTRUCTIONS.
- EZDH EARTH AUGERS**
 1. INSTALL AUGERS INTO SOIL WITH CONSTANT DOWNWARD PRESSURE TO MINIMIZE SOIL DISTURBANCE.
 2. INSTALL STABILIZER PLATE - DRIVE FLUSH WITH GROUND SURFACE.
 3. COMPLETE TURNING AUGER INTO GROUND UNTIL AUGER HEAD IS FLUSH WITH GROUND SURFACE AND TOP OF STABILIZER PLATE.
- EARTH AUGERS**
 1. INSTALL AUGERS INTO SOIL WITH CONSTANT DOWNWARD PRESSURE TO MINIMIZE SOIL DISTURBANCE.
 2. COMPLETE TURNING AUGER INTO GROUND UNTIL AUGER HEAD IS FLUSH WITH GROUND SURFACE AND TOP OF STABILIZER PLATE.
- CROSS DRIVE ANCHORS**
 1. CROSS DRIVES ARE USED WHERE HARD, ROCKY SOIL OCCURS. IF THE GROUND SURFACE IS OTHER THAN ROCK OR MINIMUM 2" ASPHALT, INSTALL MMA-S02 STABILIZER PLATE, OR PLACE 12"X12" DEEP CONCRETE CONCRETE SLAB ANCHORS
- CONCRETE SLAB ANCHORS**
 1. CONCRETE SLAB TO BE MINIMUM 3 1/2" THICK AND IN GOOD CONDITION.
 2. MINIMUM SLAB AREA REQUIRED FOR EACH ANCHOR IS 28 SQ. FEET.
 3. DRILL PROPER SIZE HOLE IN SLAB MINIMUM 1/2" FROM ANY EDGE.
- ALL APPLICATIONS**
 1. ATTACH STRAPS TO CHASSIS BEAM IN MANNER SHOWN.
 2. INSERT STRAP THROUGH SPLIT NUT, CUT OFF EXCESS STRAP AND TIGHTEN UNTIL SNUG.

TIE DOWN LOCATIONS



NOTE: IF OBSTRUCTIONS PRECLUDE THE PLACEMENT OF THE SIDE TIE DOWNS AT THE 2' LOCATION SHOWN SIDE TIE DOWNS AT 2'-0" FROM EACH END HAVE A TOLERANCE OF 1/2" UNLESS NOTED OTHERWISE.

MIN. 18" MIN.

CHASSIS BEAM
 STRAP
 END TIE DOWN
 ANCHOR

NOTE: TIE DOWN STRAPS AT THE CHASSIS BEAM ENDS AND THE DOWNLINE CAN BE ATTACHED TO A CHASSIS SUPPORT POST WITH A TREE BOLT ON TOP. USE SPLIT NUTS.

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MINUTE MAN ANCHORS, INC.
 1000 EAST FLORISSA, NO. 2774
 EAST FLORISSA, MO. 63024
 TEL: (636) 426-7277
 FAX: (636) 426-7277
 WWW.MMANCHORS.COM

DESIGN & GENERAL NOTES

DESIGN LOADS:
 * WIND: 18 PSF @ 104 MPH EXPOSURE 'C'
 * SOIL BEARING: 1000 PSF
 * THE DOWN STRAP: 3150 LB WORKING LOAD
 * SEISMIC CODE: 1997 (CALCULATED)

GENERAL NOTES:
 1. THE CHARTS SHOWN HEREIN ARE FOR THE REQUIRED NUMBER OF TIE DOWNS ON THE SIDES OF THE MANUFACTURED HOME.
 2. THE MANUFACTURER'S REQUIREMENTS AT EACH CHASSIS BEAM, EACH END OF EACH TIE DOWN AND THE MANUFACTURED HOME AND CAN BE ANY OF THE TYPES SHOWN HEREIN.
 3. COMBINATIONS OF THE DIFFERENT TYPES OF TIE DOWNS CAN BE USED.
 4. THE DOWNLINE ANCHOR CANNOT BE INSTALLED DUE TO AN OBSTRUCTION. THE DOWNLINE ANCHOR CAN BE INSTALLED ON EITHER SIDE OF THE CHASSIS BEAM.
 5. CROSS DRIVES ARE INSTALLED FOR EACH EARTH ANCHOR THAT CANNOT BE INSTALLED.
 6. FOR ALL TIE DOWN INSTALLATIONS, THE MINIMUM HOME CHASSIS MEMBERS ARE 2" MINIMUM THICK AND 12" MINIMUM SPACING. THE DOWNLINE ANCHOR CAN ALSO BE "C" SHAPED OR "RSC" SHAPED.
 7. THE SIZES, TYPES, LENGTHS, ECT. OF MATERIAL SHOWN HEREIN ARE MINIMUM. LONGER, LARGER, HEAVIER MATERIALS SUPPLIED BY MINUTE-MAN CAN BE USED AT THE SAME SPACING & LOCATION SHOWN.
 8. ALL PARTS ARE TO BE USED AS SHOWN.
 9. THIS TIE DOWN SYSTEM CAN BE USED WITH EITHER MANUFACTURED HOME SECTIONS WITH 100' CHASSIS CENTERS PROVIDED THE HEIGHT FROM GRADE TO THE DOWNLINE ANCHOR IS 10' MINIMUM.
 10. THE DOWNLINE ANCHOR CAN BE INSTALLED ON EITHER SIDE OF THE CHASSIS BEAM. THE TIE DOWN ATTACHMENT PLATE THAT IS WELDED TO THE CHASSIS BEAM.

ENGINEER APPROVAL
 SEE PAGE 27 FOR TIE DOWN INFORMATION

STATE APPROVAL
 ENGINEERED TIE-DOWN SYSTEM
 APPROVED
 subject to construction items:
 1. Follow the rules and regulations of applicable state laws and regulations.
 2. Department of Housing and Community Development
 DIVISION OF CLUES AND STANDARDS
 By: [Signature] Date: 7/24/07
 SAJMD ETS 119
 This Plan Approval Expires: 12-31-07
 Renewal 4 pages

REGISTERED PROFESSIONAL ENGINEER
 DAVID A. DAKHLEN
 No. 3513
 STATE OF CALIFORNIA
 SACRAMENTO, CALIFORNIA, 95833
 P.E. (E) 564-4028

REGISTERED PROFESSIONAL ENGINEER
 DAVID A. DAKHLEN
 No. 3513
 STATE OF CALIFORNIA
 SACRAMENTO, CALIFORNIA, 95833
 P.E. (E) 564-4028



HM-1.11.2

NOTE: Certain items in your home may be protected by a plastic cover, e.g. skylights, fan, light globes. Covers should be removed for proper use.

FRESH WATER SUPPLY

The water inlet is located underneath the home and is marked with a label fastened to the side of the home. You must install a cut-off valve in the supply line, adjacent to the home. Connect the supply line to the water inlet.

CAUTION – the water distribution system in this home was designed for a maximum water pressure of 80 pounds per square inch (psi) at the inlet. Pressure in excess of this can cause burst pipes, leaky faucets, etc. If the water pressure exceeds 80 psi, you must install a pressure reducing valve at the inlet. IMMEDIATELY after connecting the water supply and turning the water on you should check the home for any possible water leaks which may have occurred. (Over the road vibrations, etc. may have loosened a joint.)

CAUTION – Do not start the water heater (either electric or gas) until the water supply has been connected and the water heater has been filled.

If the home is located in an area where pipes may freeze, the exposed water pipe shall be wrapped with a heat tape listed by U.L. for manufactured home use. The heat tape shall be installed in accordance with its manufacturer's instructions. An electrical receptacle is located on the underside of the home, near the water inlet, where the heat tape may be plugged in.

DRAINING THE WATER LINES

Follow these steps in order to drain the water lines in your home:

- A. Turn off water heater.
- B. Turn off water supply.
- C. Open all faucets throughout home.
- D. Disconnect water supply inlet.
- E. Open water heater drain valve, after attaching a hose to the valve so the water drains outside the home.
- F. Let water supply system and water heater drain completely.
- G. Flush toilets and drain water tanks completely.
- H. Close all water faucets with the exception of one.
- I. Connect 30 to 50 pounds per square inch air supply to water inlet connection.
- J. With the air supply on the system, open one faucet at a time throughout the home.
- K. After entire system has been drained of all water, disconnect the air supply and close off water inlet valve.
- L. Pour antifreeze solution into all drain traps, including sinks, tubs, and toilets.

DRAIN LINES

Most of the DWV (Drain, Waste & Venting) system is installed at the manufacturing facility. In some instances, the system must be completed beneath the home after the home is set-up and blocked. All materials needed to complete the system is sent with the home by the manufacturer. A plumbing diagram (as required by Federal Standards and reviewed and approved by an independent engineering firm) depicting the necessary information (fittings, pipe sizes, locations and configuration) necessary to complete this system is included with the close-up kit in your home.

First locate the outlets visible beneath the home. Using the above referenced diagram locate the fittings necessary at each outlet and secure these fittings to the outlets. Note: All connections of fittings shall be done following the instructions printed on the containers of solvent and adhesive.

Standard lengths of pipe are provided. These must be cut to necessary lengths as required by distance between outlets being connected. All cut ends shall be cleaned and de-burred before being joined. Couplings are provided for joining pipe lengths if necessary.

After fittings are installed and pipe sections are completed, assemble the pipe to the fittings between outlets, again per the proper solvent and adhesive instructions.

When installing these drain lines, ensure they are installed with a slope towards the main drain of 1/4" per foot, or if a clean out fitting is located at the upper end of each branch, a min. of 1/8" per foot is acceptable.

All drain lines must be supported every 4'-0" on center to ensure the required slope. If you live in an area that is subject to extreme cold, care must be taken to prevent line freeze by wrapping with insulation.

ELECTRICAL CONNECTION

The home was completely wired at the factory, up to and including the service panel containing the main circuit breaker and individual branch circuit breakers. The electrical system in the home is 115/230 volt, 3-pole, 4-wire, including ground. Conduit from the service panel to the outside of the home, in which to run the electrical supply wires, has also been installed at the factory. It is very important to properly ground the service panel. Each branch circuit and each non-current carrying conductor (exterior metal, gas lines, heat duct, etc.) is grounded to an electrically isolated grounding bar in the service panel. The neutral (white) wire in the electrical system should never be grounded in the service panel or to the ground (green) wire.

The main electrical supply lines, outside conduit, disconnects, etc. have not been supplied with the home since requirements vary from location to location, and the connection must conform to all local requirements.

The following table shows the proper size wire to be used in connecting the main service panel in your home to the electrical source (proper wire size depends on the type of wire and the electrical demand of the home):

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REV. E

IM-1.12

**SIZE OF FIXED FEEDER SUPPLY
WIRES, AWG OR MCM**

Size of Main Circuit Breaker, In Home, In Amperes	75C Rated Copper Type RH, RHW, without Outer Covering THW or XHHW	Size of Grounding Wire
100	3	8
150	1/0	6
200	3/0	4

The electrical supply wires should be run in conduit from the home to the electrical source. The following table shows the proper size junction box and conduit to use, which depends on the type of wire used and the electrical demand of the home:

MINIMUM JUNCTION BOX AND CONDUIT SIZE

Size of Main Circuit Breaker, in Home, In Amperes	IN INCHES	
	75° C Rated Copper, Type RH, RHH RHW without Outer Covering THW or XHHW	Junction Box
100	1-1/4	8 x 8 x 4
150	1-1/2	10 x 10 x 4
200	2	12 x 12 x 4

CAUTION! Several things are very important concerning the electrical connection to your home.

- Only a qualified electrician should perform the electrical hook-up, or make any extensions or changes in the electrical system.
- Be sure that the electrical power supply at your home is adequate to supply the electrical demands of your home. Inadequate power supply or wiring supplying electricity to your home can be hazardous.
- It is very important that proper polarity be maintained when the electricity is connected to your home. The white (neutral) wire should NEVER be connected to, or come in contact with, either one of the black or red (positive or "hot") wires. In addition, the white (neutral) wire should NEVER be connected to, or come in contact with the green (ground) wire.
- The home must be properly grounded, by running a proper sized wire from the grounding bar in the main service panel through the conduit to the outside of the home, and attaching it to a proper copper rod driven full length into the ground.
- Installation of any type of telephone wiring, TV antenna, or other service which includes penetrating the exterior siding and/or exterior side or end wall or interior partitions of the home should only be done by a qualified person, observing the following procedures.
 1. Disconnect the main circuit breaker, in the service panel.
 2. Do not pierce the side or end walls more than 12" from the bottom edge of the home, and do not pierce interior partitions more than 5" from the top of the floor.
 3. After completing the installation, complete a dielectric strength test of the entire electrical system in the home.
 4. Return the main circuit breaker to "On".
 5. test all light fixtures, electrical receptacles and appliances for proper operation

GAS CONNECTION

If your home was built at the factory with a gas burning furnace, range or water heater, the inlet for the gas pipe is located underneath the home and is marked with a label fastened to the side of the home. The gas piping system of the home was tested for leaks at the factory; however, because of over the road vibration, etc., the entire system should again be pressure tested for leaks by a qualified person. The gas piping system for this home has been designed for the following pressures:

Natural gas – pressure of at least 7 inches of water column, but not more than 10-1/2 inches of water column.

LP gas – pressure of at least 11 inches of water column, but not more than 14 inches of water column.

After the system has been determined to be leak free, the gas pipe should be connected to the gas supply, in accordance with local requirements.

CAUTION! Several things are important concerning the gas connection to your home.

- If the home has a gas burning hot water heater installed at the factory, with the flue pipe and roof cap NOT installed but furnished with the home, do not operate the water heater until the protective covering has been removed from the roof and the flue pipe and cap have been properly installed in accordance with the water heater manufacturer's instructions. The water heater flue pipe and cap (when not installed, but furnished with the home) was not installed at the factory to prevent possible damage during shipment.
- Only a qualified person should check the system for leaks and connect it to the supply. Unqualified people could cause serious or fatal accidents.
- Install a gas shut off valve outside the home when connecting the system to the supply.
- In some cases, the orifices or settings included in the gas burning appliances (including furnaces and water heaters) at the factory are for NATURAL gas only. If you intend to use LP gas, a qualified person must convert the appliance in accordance with its manufacturer's instructions. Be sure to check all connections for leaks after the appliances have been converted.
- After the supply is connected, the installer should light the pilot light (if any) on each appliance and determine that the appliance is working properly.

**INSTALLING FLUE ON OPTIONAL
WOOD BURNING FIREPLACE**

CAUTION! If the home includes an optional wood burning fireplace installed in the factory, DO NOT START A FIRE IN IT until the protective covering has been removed from the top of the chimney and the remaining sections of the flue pipe and the flue top assembly have been properly installed in accordance with the fireplace manufacturer's instructions. The flue pipe and top assembly, which are furnished with the home, were not installed at the factory because of the possibility of damage while in transit.

CAUTION! Be sure to use the optional wood burning fireplace in accordance with the manufacturer's instructions.

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REV. C

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INSTALLING CENTRAL AIR CONDITIONING

This home is suitable for installation of a central air conditioner, provided the electrical supply panel and electrical service is large enough to carry the load. A qualified heating/cooling company will be able to determine the proper sized air conditioner that will be needed.

If a self-contained central air conditioning unit is to be used (separate from the furnace) an outdoor condenser (the outdoor coil) will have to be installed in the furnace area. Depending on the furnace installed in your home, the condenser may already have been installed at the factory, or in some cases, the furnace may be a type which is labeled as suitable for use with air conditioning without such a condenser. In addition, the ducts carrying cooled air from the air conditioning unit into the home and returned air from the home to the air conditioning unit must be sealed properly, or be installed in such a way so that when the furnace next heated air does not flow through these ducts into the air conditioning unit.

A combination heating/cooling furnace will also have to be installed in proper simultaneous operation of the furnace and the air conditioner.

The duct carrying cooled air from the air conditioner to the home should be connected to the bottom of the main duct located in the floor of the house. The connection should be located so that an equal number of floor registers are on each side of the connection. The floor joists running crosswise within the floor of the house should not be notched or cut into in any way when installing the air conditioner supply duct.

A duct carrying return air from the house back to the air conditioning unit will probably be necessary. If so, the return air register should be located so that air passage is not restricted, and it should be located between the floor joists within the floor. The floor joists need not be notched or cut into in any way when installing the return air duct.

INSTALLING A SEPARATE, EXTERNAL HEATING AND/OR COOLING DEVICE

It is possible that the home was manufactured at the factory with the furnace removed, if so removed that way by the dealer. If so, a duct adapter has been installed at the factory in the duct with in the floor, for connection to the external heating and/or cooling device. In addition, a return air grille, to return air from the home to the external device, has also been installed at the factory. The following items must be completed with in the installation of an external heating and/or cooling device:

- * The installation should only be done by a qualified heating/cooling company. The device must be properly sized for the home, and it must be installed in accordance with the manufacturer's instructions. The installer should have the manufacturer's installation and operating instructions with you.
- * A qualified electrician should connect the device in conformity with local requirements, after being sure that the electrical supply is adequate for the load.
- * The device should be installed in such a location that it is readily accessible for inspection, service, repair and/or replacement.
- * The ducts carrying air from the device to the home, and returning air to the device, must be designed and manufactured so as to comply with Section 901.112 of the Federal Manufactured Home Construction and Safety Standard.
- * The installer should complete the appropriate portion of the heating installation.

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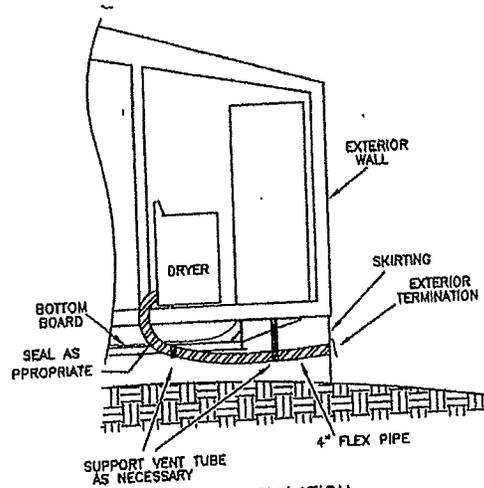
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INSTALLING CLOTHES DRYER VENT

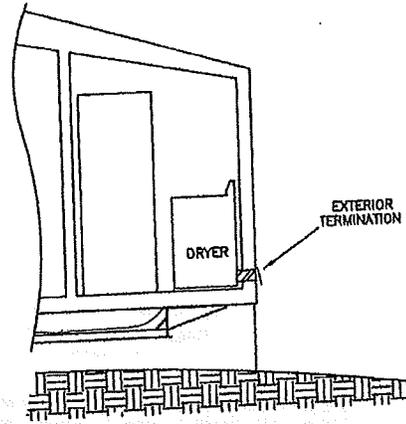
If the home was ordered with optional wiring for an electric clothes dryer, a hole was cut through the floor (and temporarily resealed) at the dryer area, through which the vent tube is to be run. The vent tube was not supplied with the home, unless an electric clothes dryer was installed at the factory, the necessary vent tube and outlet fitting were shipped loose inside the home from the factory, and must be installed when the home is set up. The vent tube and external fitting were not installed at the factory because of possible damage while the home was being delivered and set up.)

To install the duct, first remove the temporary patches covering the hole in the floor. Push the vent tube into the hole, and attached the end inside the home to the outlet on the rear of the dryer. From underneath the home, pull the vent tube through the floor so it is snug, and extend it to the side of the home. DO NOT allow the vent tube to terminate underneath the home. Fasten the termination fitting to the end of the vent tube, and fasten the fitting at the edge of the home. Support the vent tube as necessary, and seal around the opening in the bottom board (underneath the home) as appropriate.

WARNING! Do not use a clothes dryer in this home unless it has been properly vented, you will introduce a substantial amount of water into the air inside the home, which could cause condensation, which could damage your home.



DRYER INSTALLATION AGAINST INTERIOR WALL



DRYER INSTALLATION AGAINST EXTERIOR WALL

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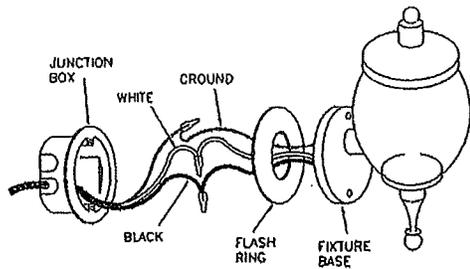
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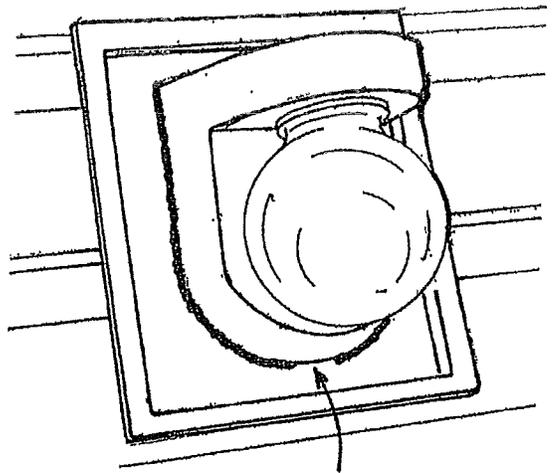
INSTALLATION OF EXTERIOR LIGHT

The exterior light(s) of your home may have been shipped loose to prevent damage during transit. Installation shall be done in a workman like manner by a qualified electrician.

1. Follow the light manufacturer's instructions.
2. Be certain all power to the device is turned "off" to prevent personal injury from electrical shock.
3. Before connecting, install the provided flash ring which is at least the size of the fixture base.
4. Connect wiring and push into junction box.
5. Upon completion of light assembly to structure, apply a bead of caulk around the base of the fixture to make a water light seal. A gap of up to 1" may be left at the bottom of the base to allow condensation or moisture to "weep" out of fixture.



TYPICAL EXTERIOR LIGHT INSTALLATION



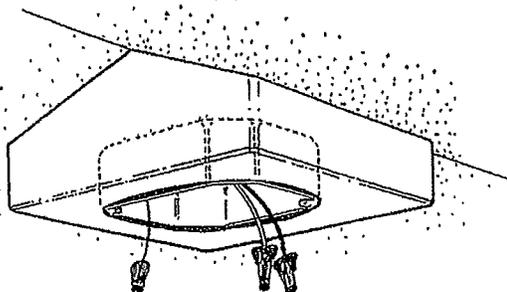
Maximum 1" gap in caulking at bottom of fixture.

INSTALLATION OF INTERIOR CEILING FAN

The ceiling fan(s) of your home have been shipped loose to prevent damage during transit. Installation shall be done in a workman like manner by a qualified electrician.

1. Follow the light manufacturer's instructions.
2. Be certain all power to the device is turned "off" to prevent personal injury from electrical shock.
3. Connect wiring and push into junction box.

Fan mounting box shown on Cathedral ceiling
May be mounted on Flat ceiling or Ridge beam



Three wires have been provided for Field installation of Ceiling Fan. Typically a Black (Hot), a White (Neutral) and a bare copper ground wire. Installation should be made by qualified Electrician.

Follow Instructions That Came With The Fan To Be Installed

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REV. C
I.M. 1.15

PATCHING THE BOTTOM COVERING

It is important that any holes, tears, etc. in the bottom covering underneath your home be promptly repaired. Following are three alternative methods for doing this:

- Cut the patch to size out any suitable material. Use a double-faced tape (such as 3M No. 950) and affix the sticky side to the patch. Remove the paper from the other side of the tape, and apply the patch to the area under repair.
- Use pressure sensitive tape, such as Tuck N. 91B, to mend occasional small holes, tears or cuts.
- Cut the patch to size out of any suitable material, and tape it in place. Use an air-operated outward flare tacker (Senco Products, Inc. - Model LN 3045) and fasten the perimeter of the patch at 3" intervals.

INSTALLING SKIRTING AROUND YOUR HOME

Skirting installed around the perimeter of your home will enhance its appearance, and help keep heating costs down in the winter time. Several types of skirting are available, and may be found in the yellow pages under "Mobile Homes." If you have skirting installed around your home, be sure that the clothes dryer vent (if any) terminates OUTSIDE the skirting. Vents are required to be installed in the skirting and at least two such vents should be kept open throughout the winter. The vents must be capable of ventilating your crawlspace 1 to 150. Simply multiply your homes length x width then divide by 150 to achieve the required free air.

You must install an access into your crawlspace area not less than 18" x 24". This can be located any where you desire, but must be present.

INSTALLING GUTTERS TO YOUR HOME

Single section homes are not designed for the installation of gutters or downspouts.

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HOME SET ADDENDUM

This Addendum to the Indiana Building Systems Set-up Manual is to provide the Home Owner whose home is located in a Manufactured Housing Park where the site is well established with the option to not require a "Frost-free Foundation System". A licensed professional engineer should establish that the site/design does not require a frost free foundation system.

The following criteria must be met for this type of home set:

1. Properly compacted soil.
2. Ground water to be well drained away from home.
3. Properly sized footings for correct loads and bearing.
4. Home must be checked annually (minimum) to ensure home is level and to adjust if needed.

The home owner must sign below to show that this option has been taken.

Home Owner

Date

Serial #

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MODEL FADC

PLEASE READ AND SAVE THIS MANUAL

Installer: Please leave this manual with the product.



The ionization type alarms are generally more effective at detecting fast, flaming fires which consume combustible materials rapidly and spread quickly. Sources of these fires include paper burning in a waste container or a grease fire in the kitchen. The photoelectric type alarms are generally more effective at detecting slow, smoldering fires which smolder for hours before bursting into flame. Sources of these fires may include cigarettes burning in couches or bedding.

SMOKE ALARM FEATURES

- This smoke alarm is powered by 120V AC and a 9-volt battery back-up source. AC/DC smoke alarms offer added protection in the event of a power failure or a drained battery.
- Unique power connector prevents interconnection with incompatible smoke alarms or security systems.
- This smoke alarm may be interconnected with as many as 11 other Firex model FADC, AD, ADC, PAD or FX1218 smoke alarms, and as many as 6 Firex model ADH heat alarms for a total of not more than 18 interconnected devices.
- Optional tamper-resist feature can serve as a safeguard against tampering.
- The smoke alarm will sound a short beep about once a minute if the battery is weak or improperly connected. Item 5000 also blinks the red LED 4 times each minute to help identify the alarm.
- Green and red LED indicator(s) show when the smoke alarm is receiving AC power, working under normal operation, in alarm, or under false alarm control.
- Loud alarm horn—85 decibels at 10 feet—sounds to alert you of an emergency.
- This alarm incorporates the internationally recognized horn signal for evacuation. During alarm mode, the horn produces three short beeps followed by a 2 second pause and then repeats. This pattern is somewhat different than the previous alarm sound, which continually beeped.
- Test button checks smoke alarm operation and activates False Alarm Control™ feature which quiets unwanted alarms for up to 15 minutes.
- Item 5000 features a latching LED which blinks the initiating alarm's red LED 3 times each minute until manually reset.
- Item 5000 has a ramp-up test horn feature which emits 2 reduced-volume beeps before reaching the full 85db level during testing.

IMPORTANT SAFETY INFORMATION PLEASE READ AND SAVE THESE INSTRUCTIONS

WARNING

- This smoke alarm requires constant 120-volt, AC power AND a working 9-volt battery to operate properly. This smoke alarm WILL NOT work if AC power is not connected or has failed or been interrupted for any reason AND the battery is removed, drained or improperly connected. DO NOT use any other kind of battery except as specified in this manual. DO NOT connect this smoke alarm to any other type of smoke alarm or auxiliary device, except those listed in this manual.
- DO NOT remove or disconnect battery or turn off AC power to quiet unwanted alarms. This will remove your protection. Open windows or fan the air around smoke alarm to silence it. This smoke alarm features a False Alarm Control™ button which, when activated, will quiet unwanted alarms for up to 15 minutes.
- The Push-to-Test button accurately tests all smoke alarm functions. DO NOT use any other test method. Test smoke alarm weekly to ensure proper operation.
- This smoke alarm should be installed only by a licensed, qualified electrician. Observe and follow all local and national electrical and building codes for installation.
- This smoke alarm is designed to be used inside a single family household only. In multi-family buildings, each individual living unit should have its own smoke alarms. Do not install in non-residential buildings or places which house many people like hotels, motels, dormitories, hospitals, nursing homes, or group homes of any kind. This smoke alarm is not a substitute for a complete alarm system.
- Install a smoke alarm in every room and on every level of the home. Smoke may not reach the smoke alarm for many reasons. For example, if a fire starts in a remote part of the home, on another level, in a chimney, wall, roof, or on the other side of a closed door, smoke may not reach the smoke alarm in time to alert household members. A smoke alarm will not promptly detect a fire EXCEPT in the area or room in which it is installed.
- Interconnected smoke alarms installed in every room and on every level of the household offers maximum protection. The National Fire Protection Agency (NFPA) recommends interconnecting smoke alarms so that when one smoke alarm senses smoke and sounds its alarm, all others will sound as well. Do not interconnect smoke alarms from one individual family living unit to another. Do not connect this smoke alarm to any other type of alarm or auxiliary device.
- Smoke alarms may not alert every household member every time. The alarm horn is loud in order to alert individuals of a potential danger. However, there may be limiting circumstances where a household member may not hear the alarm (e.g. outdoor or indoor noise, sound sleepers, drug or alcohol usage, the hard of hearing, etc.). If you suspect that this smoke alarm may not alert a household member, install and maintain specially smoke alarms. Household members must hear the alarm's warning sound and quickly respond to it to reduce the risk of damage, injury, or death that may result from fire. If a household member is hard of hearing, install special smoke alarms with lights or vibrating devices to alert occupants.
- Smoke alarms can only sound their alarms when they detect smoke. Smoke alarms detect combustion particles in the air. They do not sense heat, flame, or gas. This smoke alarm is designed to give audible warning of a developing fire. However, many fires are

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REV A

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fast-burning, explosive, or intentional. Others are caused by carelessness or safety hazards. Smoke may not reach the smoke alarm QUICKLY ENOUGH to ensure safe escape.

- **Smoke alarms have limitations.** This smoke alarm is not foolproof and is not warranted to protect lives or property from fire. Smoke alarms are not a substitute for insurance. Homeowners and renters should insure their lives and property. In addition, it is possible for the smoke alarm to fail at any time. For this reason, you must test the smoke alarm weekly and replace every 10 years.

SMOKE ALARM PLACEMENT

Maple Chase Company recommends complete coverage protection achieved by installing a smoke alarm in every room of your home. The National Fire Protection Association's (NFPA) minimum requirement, as stated in Standard 72, Chapter 2, reads as follows:

"2-2.1.1.1 Smoke detectors shall be installed outside of each separate sleeping area in the immediate vicinity of the bedrooms and on each additional story of the family living unit including basements and excluding crawl spaces and unfinished attics. In new construction a smoke detector also shall be installed in each sleeping room."

Chapter 2 also reads as follows:

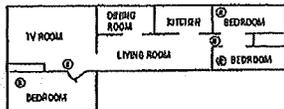
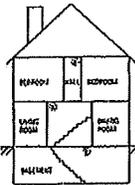
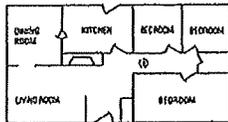
"2-2.2.1 In new construction, where more than one smoke detector is required by 2-2.1, they shall be so arranged that operation of any smoke detector shall cause the alarm in all smoke detectors within the dwelling to sound."

The NFPA, 1993 Edition, Appendix A further states:

"The required number of smoke detectors may not provide reliable early warning protection for those areas separated by a door from the areas protected by the required smoke detectors. For this reason, it is recommended that the householder consider the use of additional smoke detectors for those areas for increased protection. The additional areas include: basement, bedrooms, dining room, furnace room, utility room, and hallways not protected by the required smoke detectors."

Also, as required by the California State Fire Marshal:

"Early warning fire detection is best achieved by the installation of fire detection equipment in all rooms and areas of the household as follows: a smoke detector installed in each separate sleeping area (in the vicinity, but outside the bedrooms), and heat or smoke detectors in the living rooms, dining rooms, bedrooms, kitchens, hallways, attics, furnace rooms, closets, utility and storage rooms, basements and attached garages."

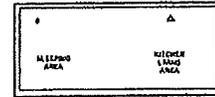


FOR BEST PROTECTION, WE RECOMMEND THAT YOU INSTALL A SMOKE ALARM IN EVERY ROOM.

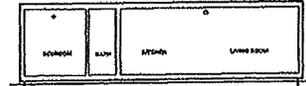
In addition, we recommend that all smoke alarms be interconnected.

Typical Efficiency Home (Apartment)

- Install a smoke alarm on the ceiling or wall closest to the sleeping area.



EFFICIENCY APARTMENT



MOBILE HOME

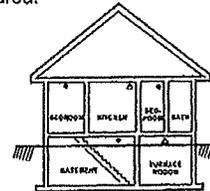
Typical Mobile Home

NOTE: For mobile homes built before 1978, install smoke alarms on an inside wall between 4 and 12 inches from the ceiling. (Older mobile homes have little or no insulation in the ceiling.) This is especially important if the ceiling is unusually hot or cold.

- Install a smoke alarm inside each bedroom and in the hallway outside each separate sleeping area.

Typical Single-Story Home

- Install a smoke alarm on the ceiling or wall inside each bedroom and in the hallway outside each separate sleeping area. If a bedroom area hallway is more than 30 feet long, install a smoke alarm at each end.



SINGLE STORY

If there is a basement:

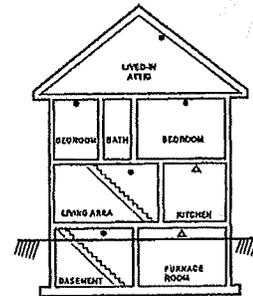
- Install a smoke alarm on the basement ceiling at the bottom of the stairwell.

Typical Two-Story or Split Level Home

- Install a smoke alarm on the ceiling or wall inside each bedroom and in the hallway outside each separate sleeping area. If a bedroom area hallway is more than 30 feet long, install a smoke alarm at each end.
- Install a smoke alarm at the top of a first-to-second floor stairwell.

If there is a basement:

- Install a smoke alarm on the basement ceiling at the bottom of the stairwell.



TWO STORY

Key

- Smoke Alarm
- △ Smoke Alarm with False Alarm Control™

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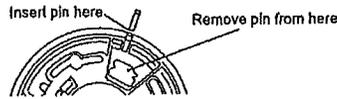
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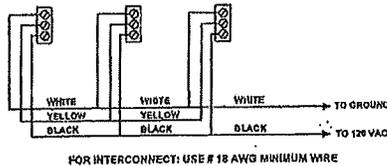
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10. Position smoke alarm to mounting plate and turn clockwise to lock into place. For tamper-resist, use long-nosed pliers to remove thin plastic from notch on smoke alarm edge. Insert pin into notch on edge of smoke alarm after smoke alarm is positioned properly in base.



11. Remove arrow tab and close battery door. Smoke alarm may beep briefly as door is closed.
 12. Turn on power at main fuse box or circuit breaker.
 13. Test smoke alarm. See "TESTING THE SMOKE ALARM."



INTERCONNECTING SMOKE ALARMS

- Use #18 AWG minimum solid or stranded wire. When interconnecting, maximum wire length between any two is 1,500 feet for #18 AWG or 4,000 feet for #14 AWG (20 OHMS loop resistance).
- This smoke alarm may be interconnected with as many as 11 other Firex model FADC, AD, ADC, PAD or FX1218 smoke alarms, and as many as 6 Firex model ADH heat alarms for a total of not more than 18 interconnected devices. DO NOT connect to any other type or model smoke alarm.
- Connect smoke alarms to a single AC branch circuit. If local codes do not permit, be sure the neutral wire is common to both phases.

LED INDICATOR(S)

Model FADC features one combined LED indicator. The following section explains what condition the LED indicator is describing:

- | | |
|--|--|
| • Constant GREEN on | - AC power is present |
| • GREEN is off | - AC power is NOT present |
| • RED blinks once a minute | - testing for presence of good battery |
| • RED blinks once a second | - smoke alarm senses smoke and simultaneously sounds an alarm |
| • RED blinks once every 10 seconds | - smoke alarm is quieting an unwanted alarm (Models ADC and FADC only) |
| • RED is off and detector in alarm (interconnected systems only) | - another smoke alarm in the network has sensed smoke and is signaling this alarm. |

Item 5000 only

- | | |
|--|--|
| • RED blinks 3 times every minute | - indicates this unit initiated an alarm in an interconnected system (press the test button to reset). |
| • RED blinks 4 times every minute preceded by an audible chirp | - indicates weak or improperly connected battery. |

FALSE ALARM CONTROL™

Model FADC features a False Alarm Control™ that, when activated, quiets unwanted alarms for up to 15 minutes.

To use the False Alarm Control™:

Press and release the test button during an unwanted alarm. The alarm should stop within ten seconds. The RED LED will blink once every 10 seconds. This means the smoke alarm is in False Alarm Control™. Just before returning to normal operation, the smoke alarm will sound two short beeps. This signals the end of False Alarm Control™. For Item 5000, the Initiating alarm RED LED in an interconnected system will continue to blink until reset by pressing the test button.

When there are multiple units interconnected, each alarm that is sensing smoke must have its test button depressed in order to silence the remaining alarms.

If the smoke alarm(s) does not go into False Alarm Control™ and continues to sound its loud alarm horn, the smoke is too heavy and could be a possibly dangerous situation — take emergency action.

TESTING THE SMOKE ALARM

WARNING

- Test each smoke alarm to be sure it is installed correctly and operating properly.
- Test all smoke alarms in an interconnected system after installation.
- The Push-to-Test button accurately tests all functions. DO NOT use an open flame to test this smoke alarm. You may ignite and damage the smoke alarm or your home.
- Test smoke alarms weekly and upon returning from vacation or when no one has been in the household for several days.

Test all smoke alarms weekly by doing the following:

1. Observe the green LED. A constant green light indicates the smoke alarm is receiving 120V AC power.
2. Firmly depress the Push-to-Test button for at least five (5) seconds. On Item 5000, the smoke alarm will sound 2 short, reduced-volume beeps, and then 1 short loud beep, followed by a pause, then repeats. All other items will sound 3 short loud beeps followed by a 2-second pause and then repeats. The alarm may sound for up to 10 seconds after releasing the Push-to-Test button.

NOTE: If smoke alarms are interconnected, all smoke alarms should sound an alarm within three seconds after any test button is pushed and the tested smoke alarm sounds.

3. If smoke alarm does not sound, turn off power at main fuse box or circuit breaker and check wiring. Retest smoke alarm.

⚠ DANGER: If alarm horn sounds, and smoke alarm is not being tested, the smoke alarm is sensing smoke. THE SOUND OF THE ALARM HORN REQUIRES YOUR IMMEDIATE ATTENTION AND ACTION.

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MAINTENANCE AND CLEANING

In addition to weekly testing, this smoke alarm requires yearly battery replacement and periodic cleaning to remove dust, dirt, and debris.

⚠ DANGER: ELECTRICAL SHOCK HAZARD. Turn off power at main service panel by removing fuse or switching appropriate circuit breaker to OFF position before replacing battery or cleaning smoke alarm.

BATTERY REPLACEMENT

Always turn off power to smoke alarm before replacing battery. Replace battery at least once a year or immediately when the low battery chirp sounds once a minute, even though the smoke alarm is receiving AC power. On Item 5000 the red LED will also blink 4 times every minute after each low battery chirp.

Use only the following batteries as replacements in this smoke alarm:

Eveready 216, 522, 1222, Duracell MN 1604 or Ultralife U9VL-J.

⚠ WARNING: DO NOT USE ANY OTHER TYPE OF BATTERY, EXCEPT AS SPECIFIED IN THIS MANUAL. DO NOT USE RECHARGEABLE BATTERIES.

1. Turn off power to smoke alarm at main service panel.
2. Slide battery door open as shown on page 6 in the Installation section.
3. Remove drained battery from compartment and discard.
4. Install a fresh 9-volt battery.
5. Slide battery door closed.
6. Turn on power and test smoke alarm using Push-to-Test button.

CLEANING

Clean the smoke alarm at least once a month to remove dust, dirt, or debris. Always turn off power to smoke alarm before cleaning.

- Using the soft brush or wand attachment to a vacuum cleaner, vacuum all sides and cover of smoke alarm. Be sure all the vents are free of debris.
- If necessary, turn off power and use a damp cloth to clean smoke alarm cover.

IMPORTANT: Do not attempt to remove the cover or clean inside the smoke alarm. THIS WILL VOID YOUR WARRANTY.

REPAIR

⚠ CAUTION: Do not attempt to repair this smoke alarm. Doing so will void your warranty.

If smoke alarm is not operating properly, see "TROUBLESHOOTING." If necessary and if still under warranty, return smoke alarm to Maple Chase Company. Pack it in a well-padded carton, shipping prepaid, to:

Maple Chase Company
Product Service Department
2820 Thatcher Road
Downers Grove, IL 60515-4040

If the smoke alarm is no longer under warranty, have a licensed electrician replace the smoke alarm immediately with a comparable Firex brand smoke alarm.

PRACTICE FIRE SAFETY

If the smoke alarm sounds its alarm horn, and you have not pushed the test button, it is warning of a dangerous situation. Your immediate response is necessary. To prepare for such occurrences, develop family escape plans, discuss them with ALL household members, and practice them regularly.

- Expose everyone to the sound of a smoke alarm and explain what the sound means.
- Determine TWO exits from each room and an escape route to the outside from each exit.
- Teach all household members to touch the door and use an alternate exit if the door is hot. **INSTRUCT THEM NOT TO OPEN THE DOOR IF THE DOOR IS HOT.**
- Teach household members to crawl along the floor to stay below dangerous smoke, fumes, and gases.
- Determine a safe meeting place for all members outside the building.

WHAT TO DO IN CASE OF A FIRE

1. Don't panic; stay calm.
2. Leave the building as quickly as possible. Touch doors to feel if they are hot before opening them. Use an alternate exit if necessary. Crawl along the floor, and DO NOT stop to collect anything.
3. Meet at a pre-arranged meeting place outside the building.
4. Call the fire department from OUTSIDE the building.
5. DO NOT GO BACK INSIDE A BURNING BUILDING. Wait for the fire department to arrive.

These guidelines will assist you in the event of a fire. However, to reduce the chance that fires will start, practice fire safety rules and prevent hazardous situations.

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TROUBLESHOOTING

⚠ DANGER: Always turn off power at main fuse box or circuit breaker before taking troubleshooting action.

⚠ WARNING: DO NOT disconnect battery or AC power to quiet an unwanted alarm. This will remove your protection. Fan the air or open a window to remove smoke or dust.

PROBLEM	SOLUTION
Smoke alarm does not sound when tested. NOTE: Push test button for at least five (5) seconds while testing!	<ol style="list-style-type: none"> 1. Check that AC power is turned on. 2. Turn off power. Remove smoke alarm from mounting plate and: <ol style="list-style-type: none"> a. check that connector plug is securely attached. b. check that battery is properly attached to connector. 3. Clean smoke alarm.
The horn makes 2 quiet beeps and one loud beep when tested.	<ol style="list-style-type: none"> 1. The alarm is operating correctly. Item 5000 has a ramp-up test horn feature. This allows you to release the test button before the alarm emits the loud beeps.
Smoke alarm beeps about once a minute.	<ol style="list-style-type: none"> 1. Turn off power and replace battery. (See "Battery Replacement" in the "MAINTENANCE AND CLEANING" section.) 2. On Item 5000 only. Be sure red LED is extinguished after replacing battery.
Smoke alarm sounds unwanted alarms intermittently or when residents are cooking, taking showers, etc.	<ol style="list-style-type: none"> 1. Hire an electrician to move smoke alarm to a new location. See "SMOKE ALARM PLACEMENT" 2. Clean smoke alarm. See "Cleaning" in the "MAINTENANCE AND CLEANING" section.
Interconnected smoke alarms do not sound when system is tested.	<ol style="list-style-type: none"> 1. Press and hold test button for at least three seconds after the first unit sounds.

WARRANTY INFORMATION

5-YEAR LIMITED SMOKE ALARM WARRANTY AND 10-YEAR LIMITED ULTRALIFE U9VL-J LITHIUM BATTERY WARRANTY (WHEN SOLD WITH MAPLE CHASE COMPANY SMOKE ALARM)

Maple Chase Company warrants to the original consumer purchaser each new smoke alarm to be free from defects in material and workmanship under normal use and service for a period of five (5) years from the date of purchase. For Maple Chase Company smoke alarms sold with an Ultralife U9VL-J 9-volt battery, Maple Chase Company warrants to the original consumer purchaser each new Ultralife U9VL-J 9-volt battery to be free from defects in material and workmanship under normal use and service for a period of ten (10) years from the date of purchase. Maple Chase Company agrees to repair or replace, at its option, any defective smoke alarm or Ultralife U9VL-J 9-volt battery (when sold with Maple Chase smoke alarm) provided that it is returned with postage prepaid and with proof of purchase date to Maple Chase Company. This warranty does not cover damage resulting from accident, misuse or abuse or lack of reasonable care of the product. This warranty is in lieu of all other express warranties, obligations or liabilities. THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE LIMITED TO A PERIOD OF FIVE (5) YEARS FOR THE SMOKE ALARM AND TEN (10) YEARS FOR THE ULTRALIFE LITHIUM U9VL-J 9-VOLT BATTERY (WHEN SOLD WITH MAPLE CHASE SMOKE ALARM) FROM PURCHASE DATE. Some states do not allow limitations on how long an implied warranty lasts, so the above limitations may not apply to you. IN NO CASE SHALL MAPLE CHASE COMPANY BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES FOR BREACH OF THIS OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED, WHATSOEVER, EVEN IF THE LOSS OR DAMAGE IS CAUSED BY ITS NEGLIGENCE OR FAULT. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This warranty gives you specific legal rights, and you may also have other legal rights which vary from state to state.

This smoke alarm's manufacture and distribution are licensed by the U.S. Nuclear Regulatory Commission.

This product meets all the requirements of U.L. Standard 217.

WHERE TO SEND YOUR SMOKE ALARM FOR SERVICE

To return smoke alarms under warranty, send the smoke alarm with postage prepaid, a note describing the nature of the difficulty, and proof of date of purchase to:

Maple Chase Company
2820 Thatcher Road
Downers Grove, Illinois 60515
United States of America

To return Ultralife 10-year lithium batteries under warranty, include the lithium battery, a note describing the nature of the difficulty, with proof of date of purchase, postage and return postage prepaid to:

ULTRALIFE BATTERIES, INC.
c/o MAPLE CHASE COMPANY
P.O. Box 622
1350 Route 88 South
Newark, NY 14513

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