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INDIANA
BUILDING SYSTEMS, LLC

SET UP INSTRUCTION MANUAL

FOR MULTI SECTION HOMES

KEEP THIS MANUAL WITH YOUR HOME

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IM-2.1.1

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SET UP INSTRUCTIONS FOR MULTI-SECTION HOMES

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INTRODUCTION

Your Indiana Building Systems Home has been thoroughly inspected and bears the label which indicates that all systems including structural, plumbing, heating, electrical, fire safety, and planning considerations are in compliance with the Federal Manufactured Home Construction and Safety Standards. We suggest that you contract the local building officials having jurisdiction in the area of your desired home site to obtain information on necessary permits for set up.

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 of 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.

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

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 ¼" difference between adjacent pier supports (frame or perimeter)

The home set up firm selected should guarantee their work for a reasonable period and you should arrange to have them re-level your home after 90 days, if necessary.

The recommended set up procedure is presented in this manual.

CAUTION: Before performing any digging work or installation of anchors be sure to avoid any underground utilities.

SITE-SPECIFIC FOUNDATION DESIGN

Foundation design other than typical layout and specific design loads contained in this set-up manual are the responsibility of the home owner. All aspects of basement design including, but not limited to, heat loss calculations, electrical schematics, stairway design, egress requirements, light and vent considerations, exterior wall openings, etc are governed by local jurisdiction and should be designed by a qualified engineer or architect.

ALTERNATE SET UP

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 manufacturer or the local authority having jurisdiction. In the event that such designs are not available, an alternate design must be obtained through a registered professional or architect

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.

FOUNDATION REQUIREMENTS

It is important that your home have adequate support to give it proper and lasting stability.

1. Footings for piers or continuous foundation walls must be installed on firm, undisturbed soil or the soil must be compacted to at least 90% of its maximum relative density.
2. The bottom of footings must be below frost line or as required by state or local codes.
3. Poured concrete footings must have a minimum compressive strength of 3,000 PSI @ 28 days. Footings other than poured concrete may be used provided that all applicable building codes and load bearing capacities are met.
4. A 16" minimum pier height (under the I-beam) is recommended to allow clearance for all utility and crossover connections.

The following pages show typical design requirements for a main rail pier set and a perimeter foundation set. All design loads for your home can be derived from the charts and design specifications contained in this manual. Specific, by model, pier locator drawings are available upon request by contacting your dealer or Indiana Building Systems.

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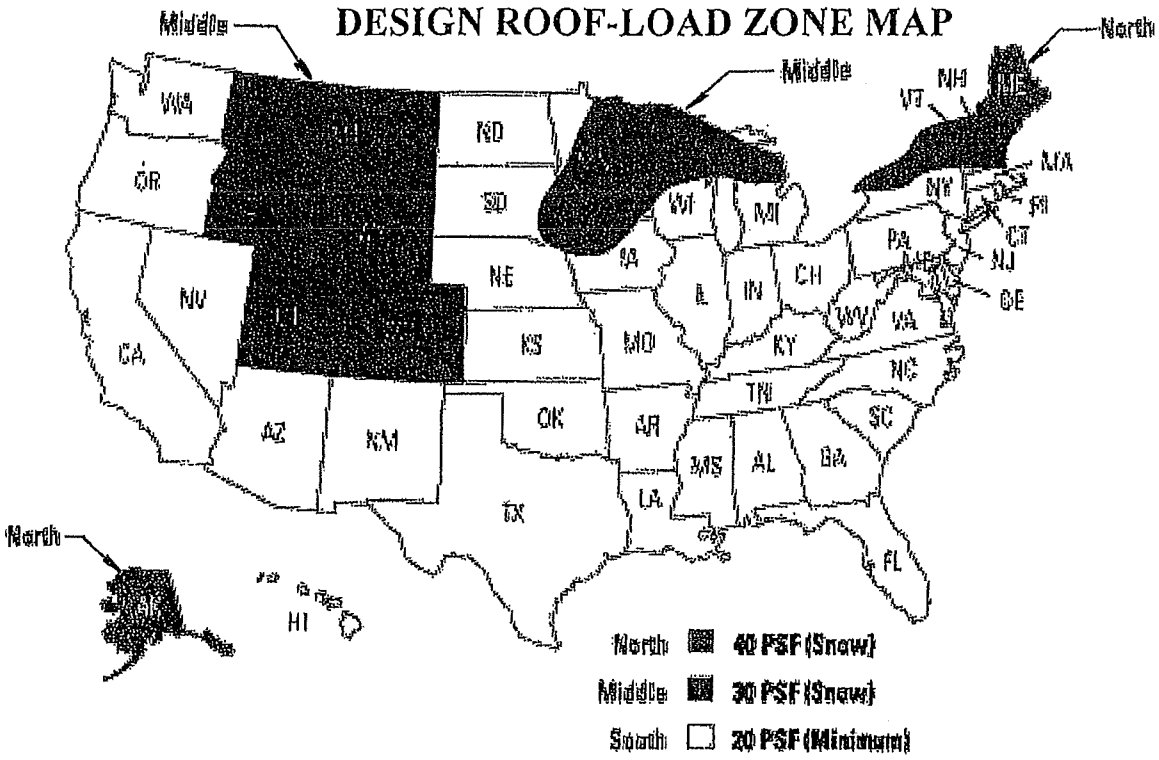
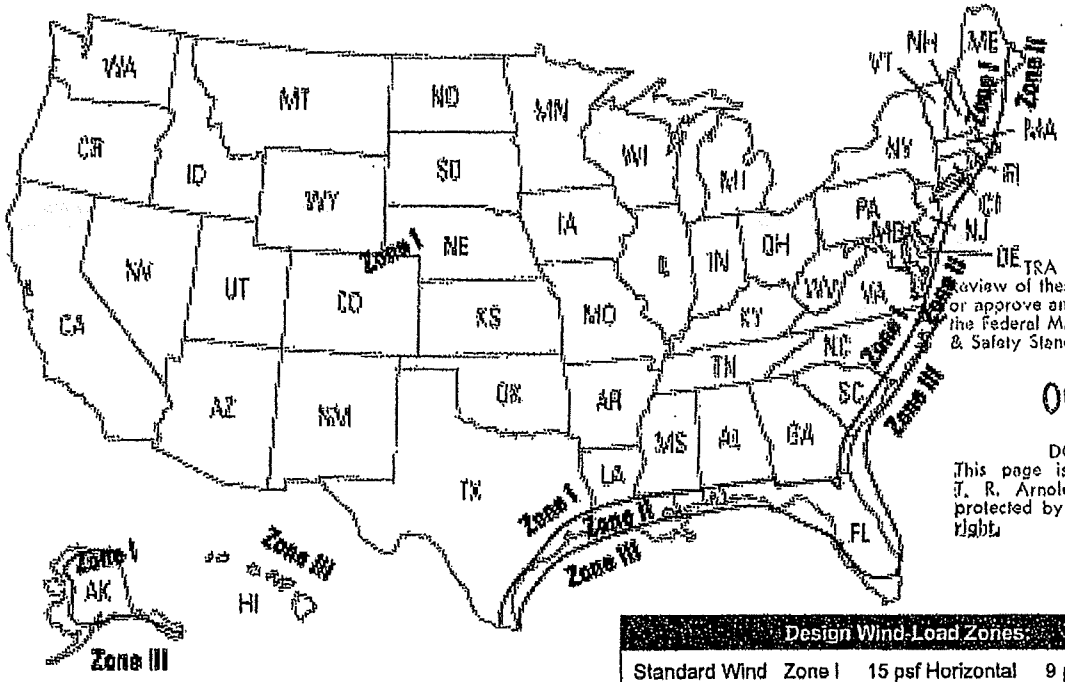
DESIGN ROOF-LOAD ZONE MAP



DESIGN WIND-LOAD ZONES:



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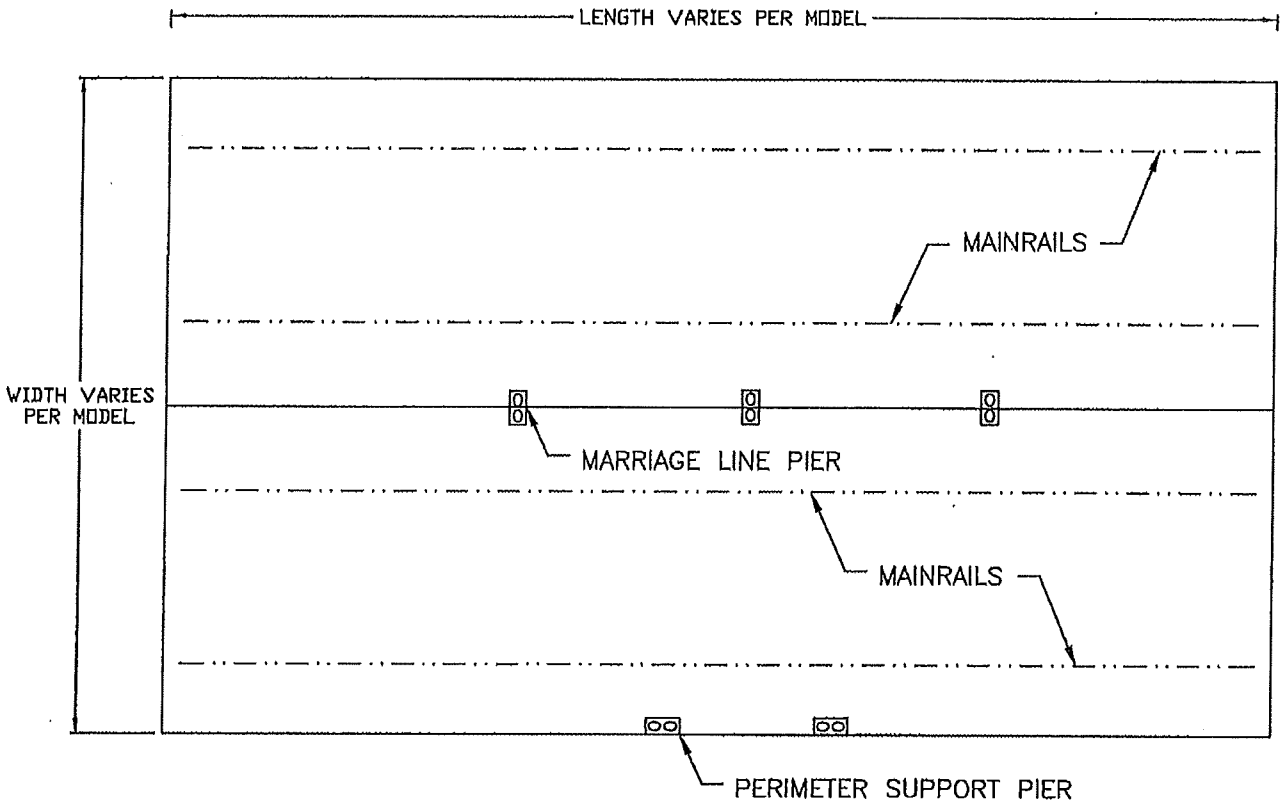
Design Wind-Load Zones			
Standard Wind	Zone I	15 psf Horizontal	9 psf uplift*
Hurricane	Zone II	±39 psf Horizontal	27 psf uplift
Hurricane	Zone III	±47 psf Horizontal	32 psf uplift
			*net uplift
Note: psf: pounds per square foot			

NOTE: ALL MAINLAND STATES NOT SHOWN ARE WIND ZONE 1

IM-2.1.4



COLUMN SUPPORT LOCATIONS AT THE MARRIAGE LINE AND ALL OTHER PERIMETER & SHEARWALL SUPPORT PIERS ARE IDENTIFIED WITH A DECAL SIMILAR TO THE ONE BELOW ON THE UNDER SIDE OF EACH HOME AND ARE TO BE VISIBLE AFTER SET-UP HAS BEEN COMPLETED. A MODEL SPECIFIC COLUMN LAYOUT WILL ALSO BE SUPPLIED WITH EACH HOME.

SUPPORT PIER REQUIRED AT THIS LOCATION

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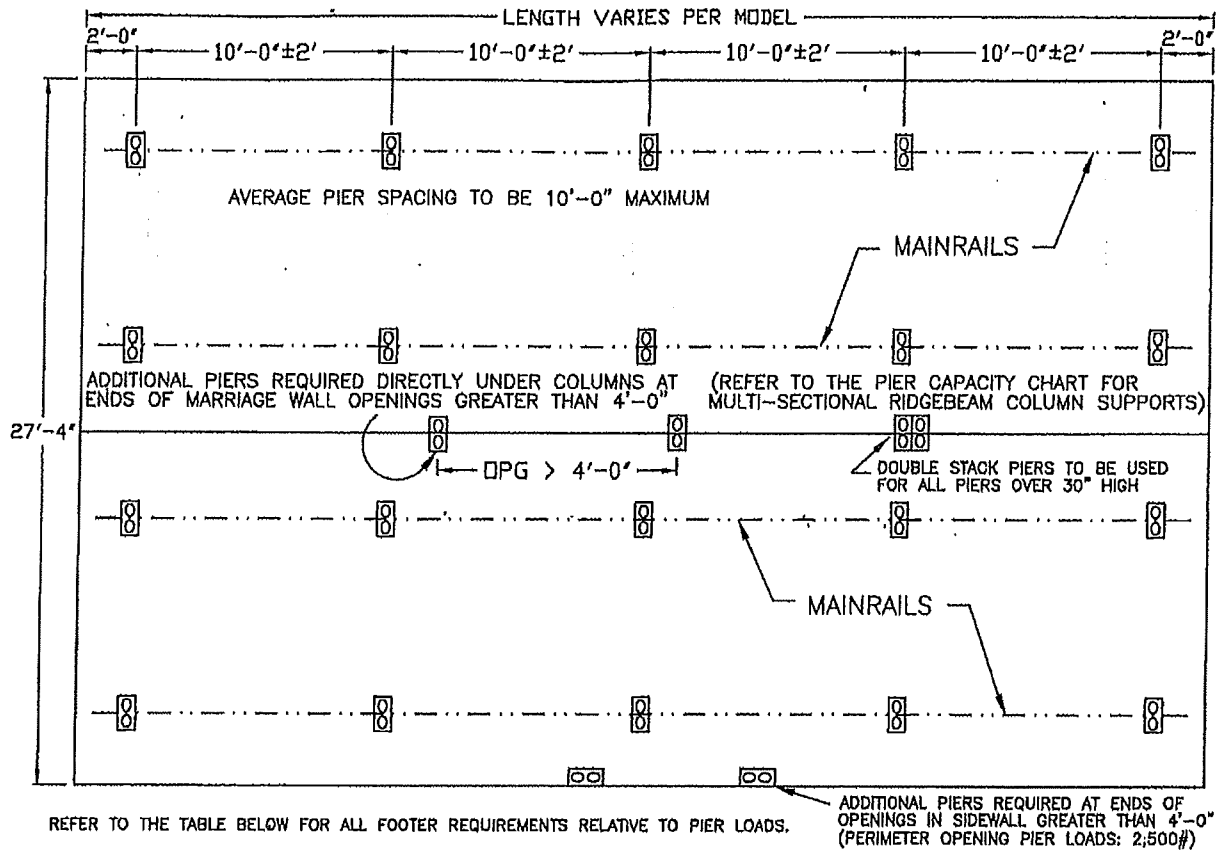
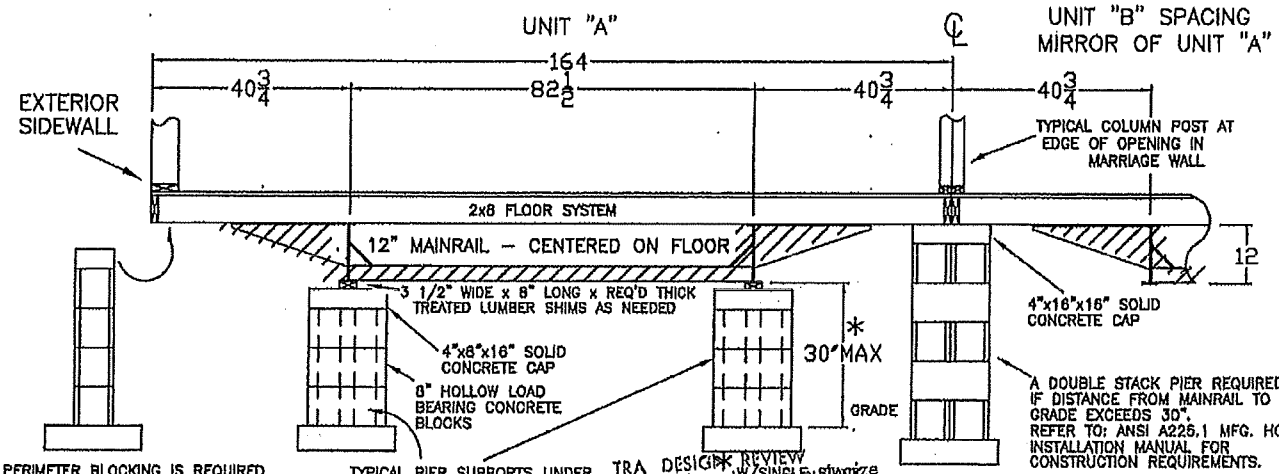
IM-2.1.5

27'-4"-Wide Mainrail Pier Set For 20# & 30# Roof Load Zones



REFER TO THE TABLE BELOW FOR ALL FOOTER REQUIREMENTS RELATIVE TO PIER LOADS.



PERIMETER BLOCKING IS REQUIRED ONLY WHERE A SIDEWALL OPENING GREATER THAN 4'-0" EXISTS.

MAX OPG:	4'-0"	8'-0"	12'-0"
LOAD:	1100#	1835#	2500#

BLOCK EACH SIDE OF PATIO DOOR AND BAY WINDOW OPENINGS.

TYPICAL PIER SUPPORTS UNDER MAINRAIL APPROX. 10'-0" O.C.

* PIER LOAD: 7,320# OR 5,930# @ 8' PIER SPACING

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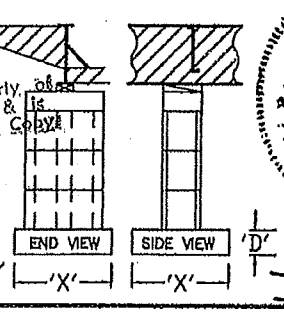
SOIL BEARING CAPACITY/SQ FT	STANDARD PIER 16"x16"x4"	STANDARD PIER 20"x20"x6"	STANDARD PIER 24"x24"x8"
1,000	1,778	2,778	4,000
1,500	2,667	4,167	6,000
2,000	3,556	5,555	8,000
3,000	5,334	8,333 *	12,000 *
4,000	7,112	11,111 *	15,600 *

*DOUBLE STACKED PIER REQUIRED WHEN PIER LOAD EXCEEDS 8,000 LBS

* 'D' MAY BE 6" WITH DOUBLE STACKED PIERS OR WHEN DESIGN CAPACITY IS NOT OVER 2,000 PSF

FOOTING SIZE: 'X'x'X'x'D'
PIER AND FOOTER CAPACITY



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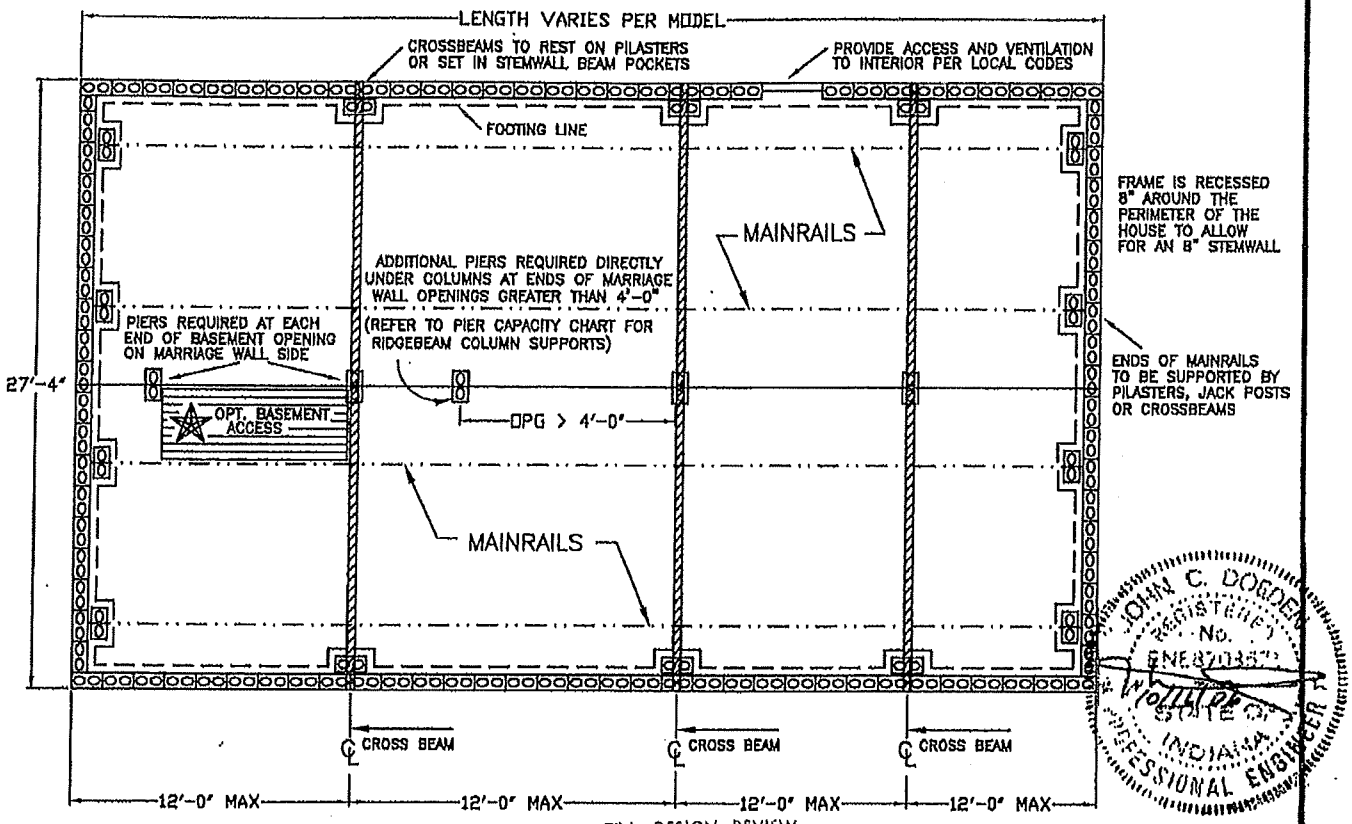
JOHN C. ARNOLD
REGISTERED
PROFESSIONAL ENGINEER
STATE OF INDIANA

IM-2.1.6

27'-4"-Wide Crossbeam Perimeter Foundation For 20# & 30# Roof Load Zones



JOHN C. DODDEN REGISTERED No. ENG87038 STATE OF INDIANA PROFESSIONAL ENGINEER

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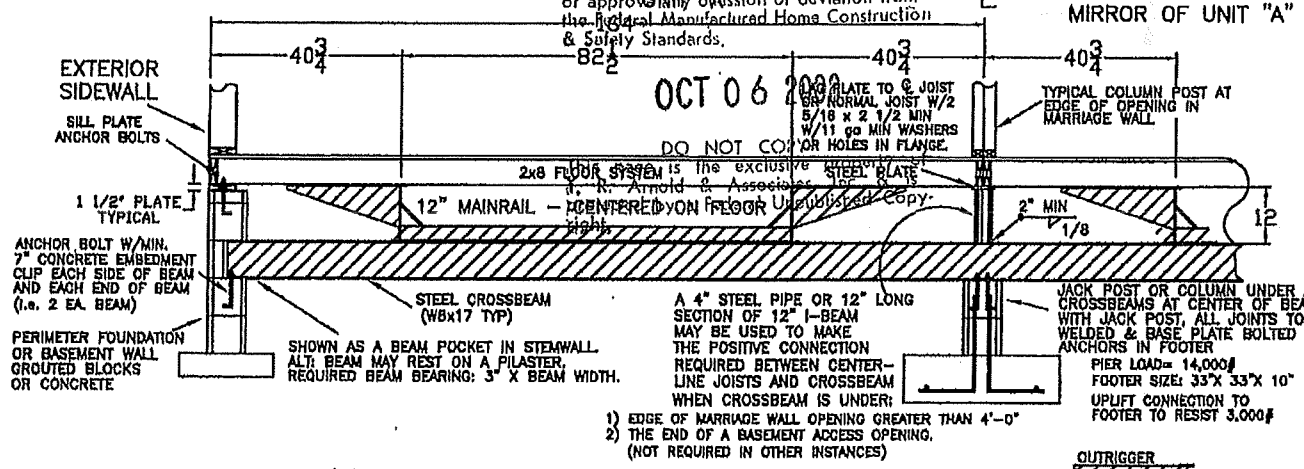
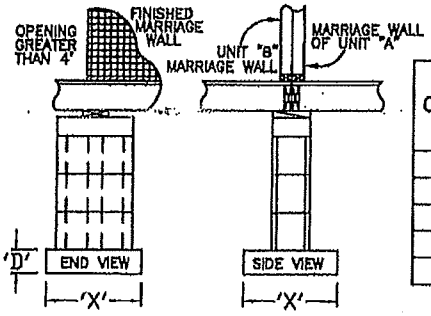


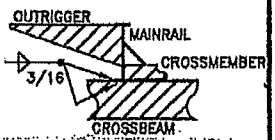


FOOTING SIZE: 'X'x'X'x'D'
PIER AND FOOTER CAPACITY

SOIL BEARING CAPACITY/SQ FT	STANDARD PIER 16"x16"x4"	STANDARD PIER 20"x20"x6"	STANDARD PIER 24"x24"x8"
1,000	1,778	2,778	4,000
1,500	2,667	4,167	6,000
2,000	3,556	5,555	8,000
3,000	5,334	8,333*	12,000*
4,000	7,112	11,111*	15,600*

*DOUBLE STACKED PIER REQUIRED WHEN LOAD EXCEEDS 8,000 lbs.

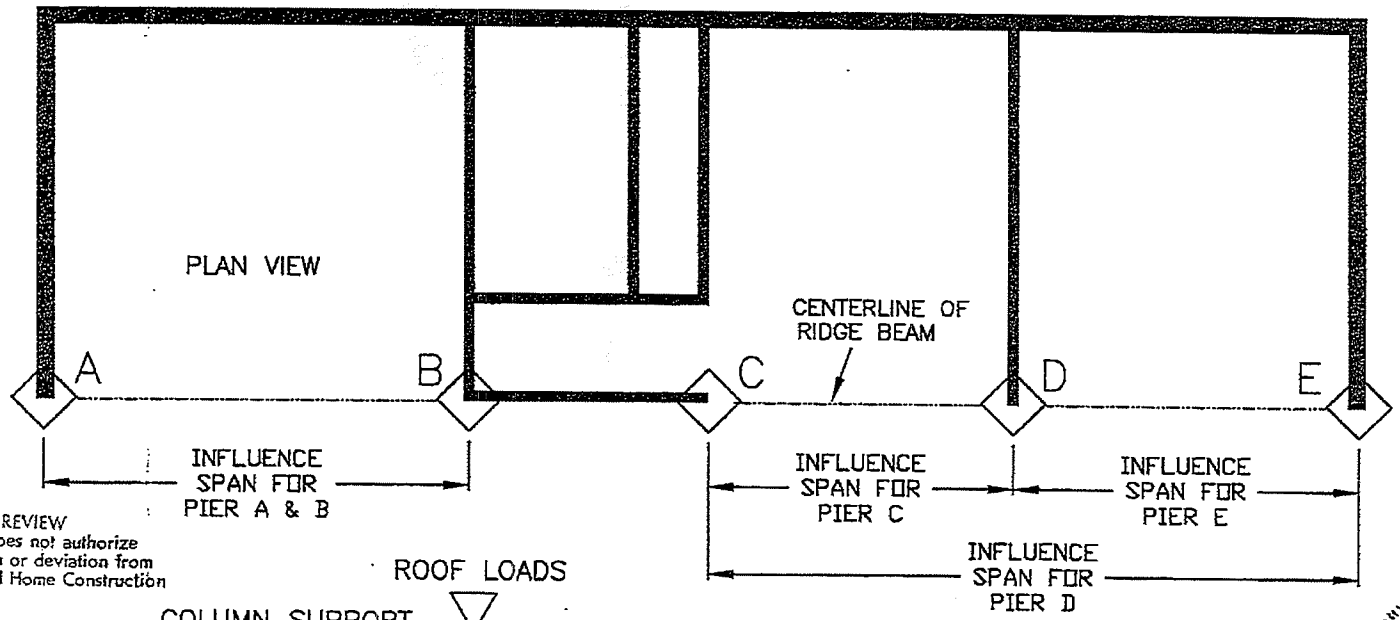
'D' MAY BE 6" WITH 'DOUBLE STACKED PIERS OR WHEN DESIGN CAPACITY IS NOT OVER 2,000 PSF



NOTE: OUTRIGGER AND CROSSMEMBER NEED NOT FALL IN SAME LOCATION AS THE CROSSBEAM

IM-217

27'-4"-Wide Centerline Pier Capacity Chart For Ridgebeam Column Supports



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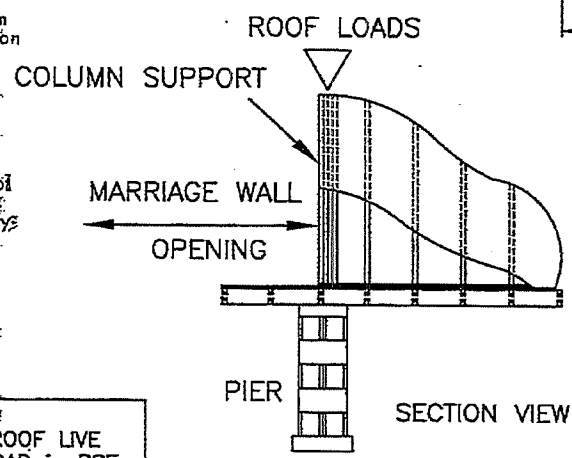

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NOTES:

1) PIER LOADS BASED ON 10 PSF ROOF DEAD LOAD.
2) LOADS TABULATED ARE TOTAL FOR BOTH HAVES AT COLUMN SUPPORT.

TOTAL WIDTH (FEET)	ROOF LIVE LOAD in PSF (ROOF ZONE)	MINIMUM PIER CAPACITY in POUNDS — MAXIMUM SPAN TO NEXT SUPPORT in FEET								
		4'-0"	8'-0"	12'-0"	16'-0"	20'-0"	24'-0"	28'-0"	32'-0"	36'-0"
27'-4"	20 (SOUTH)	1,400#	2,335#	3,265#	4,200#	5,130#	6,060#	6,995#	7,925#	8,855#
	30 (MIDDLE)	1,790#	3,010#	4,230#	5,450#	6,670#	7,895#	9,115#	10,335#	11,555#

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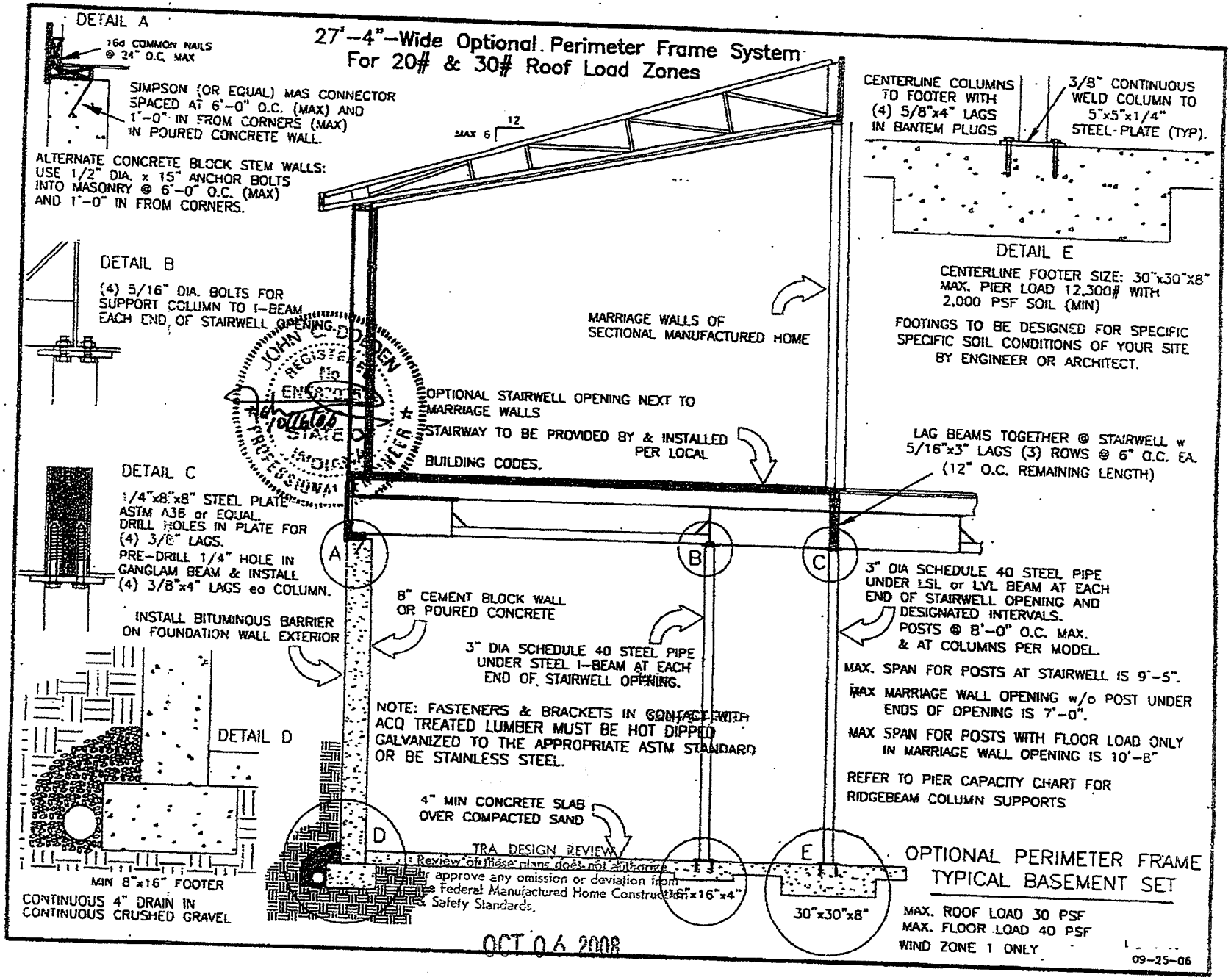
TM-2.1.8

27'-4"-Wide Optional Perimeter Frame System For 20# & 30# Roof Load Zones



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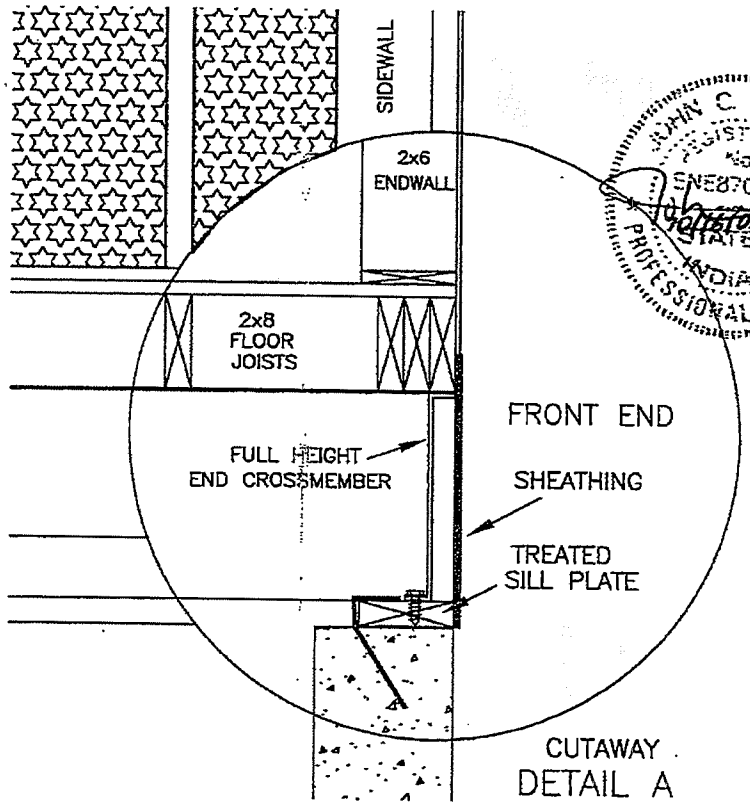
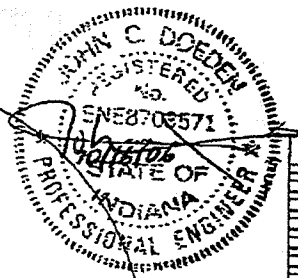
27'-4"-Wide Optional Perimeter Frame System
For 20# & 30# Roof Load Zones

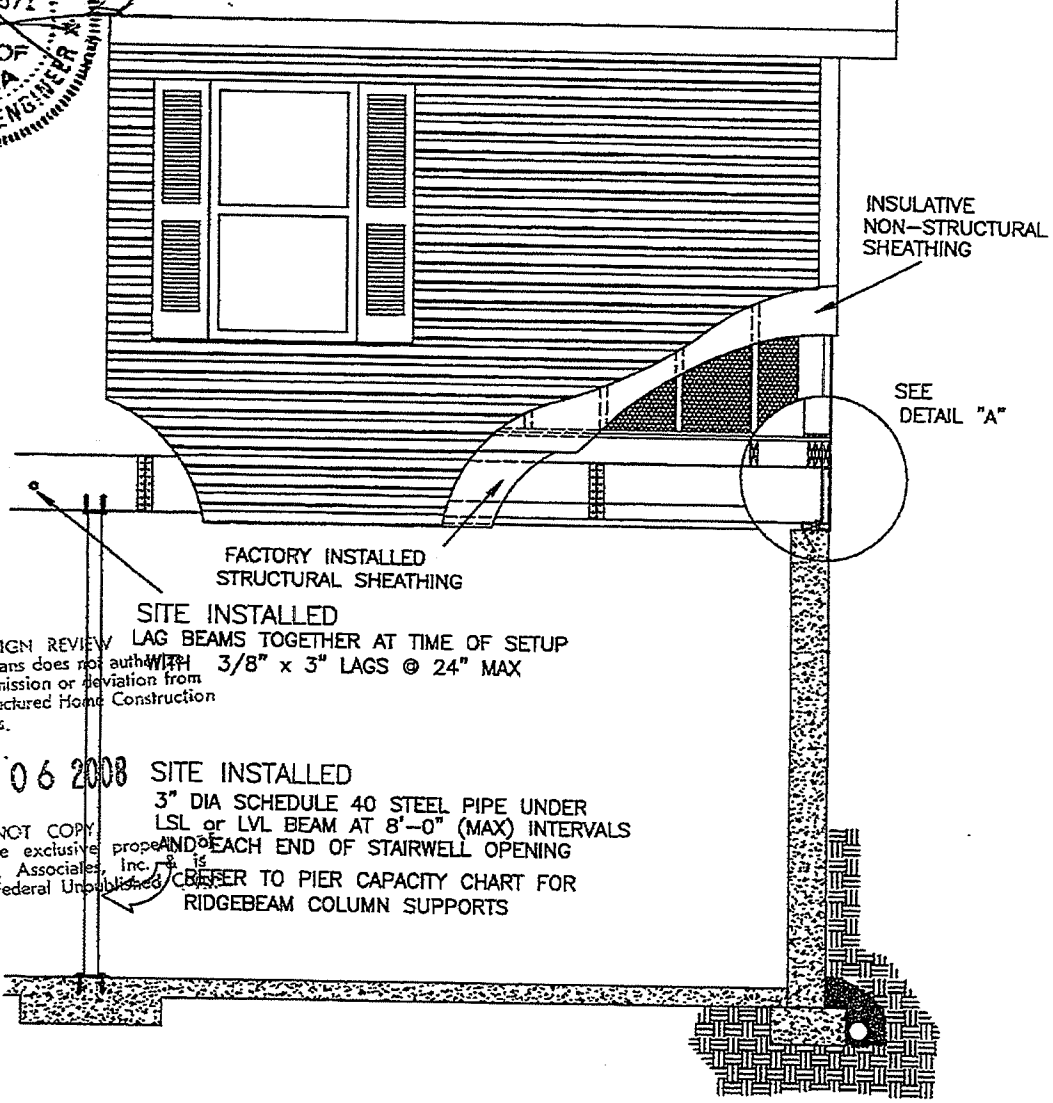


CUTAWAY
DETAIL A



MAX. ROOF LOAD 30 PSF
MAX. FLOOR LOAD 40 PSF

OPTIONAL 27'-4"-WIDE PERIMETER FRAME
TYPICAL BASEMENT SET



NOTES FOR SITE INSTALLED ITEMS FIGURE "A"

1) INSTALL 2x6 TREATED MUDSILL TO END CROSSMEMBER WITH (3) #8 x 1 1/2" SCREWS WITH WASHERS THROUGH HOLES IN CROSSMEMBER.
2) INSTALL 3/8" CONTINUOUS STRIP OF APA RATED SHEATHING TO MUDSILL AND FRONT FLOOR JOIST WITH 7/16" x 1 1/2" x 16 ga. STAPLES @ 3" O.C. @ 20° ROOF. 1" O.C. FOR 6/12 ROOF.
3) SIMPSON (OR EQUAL) MAS CONNECTORS SPACED 54" O.C. (MAX @ 20° ROOF, 14" O.C. @ 6/12 ROOF) AND 1'-0" IN FROM CORNERS IN POURED CONCRETE WALL.

ALTERNATE CONCRETE BLOCK STEM WALLS:
USE 1/2' DIA. x 15" ANCHOR BOLTS INTO MASONRY 54" O.C. (MAX @ 20° ROOF, 14" O.C. @ 6/12 ROOF.) AND 1'-0" IN FROM CORNERS.

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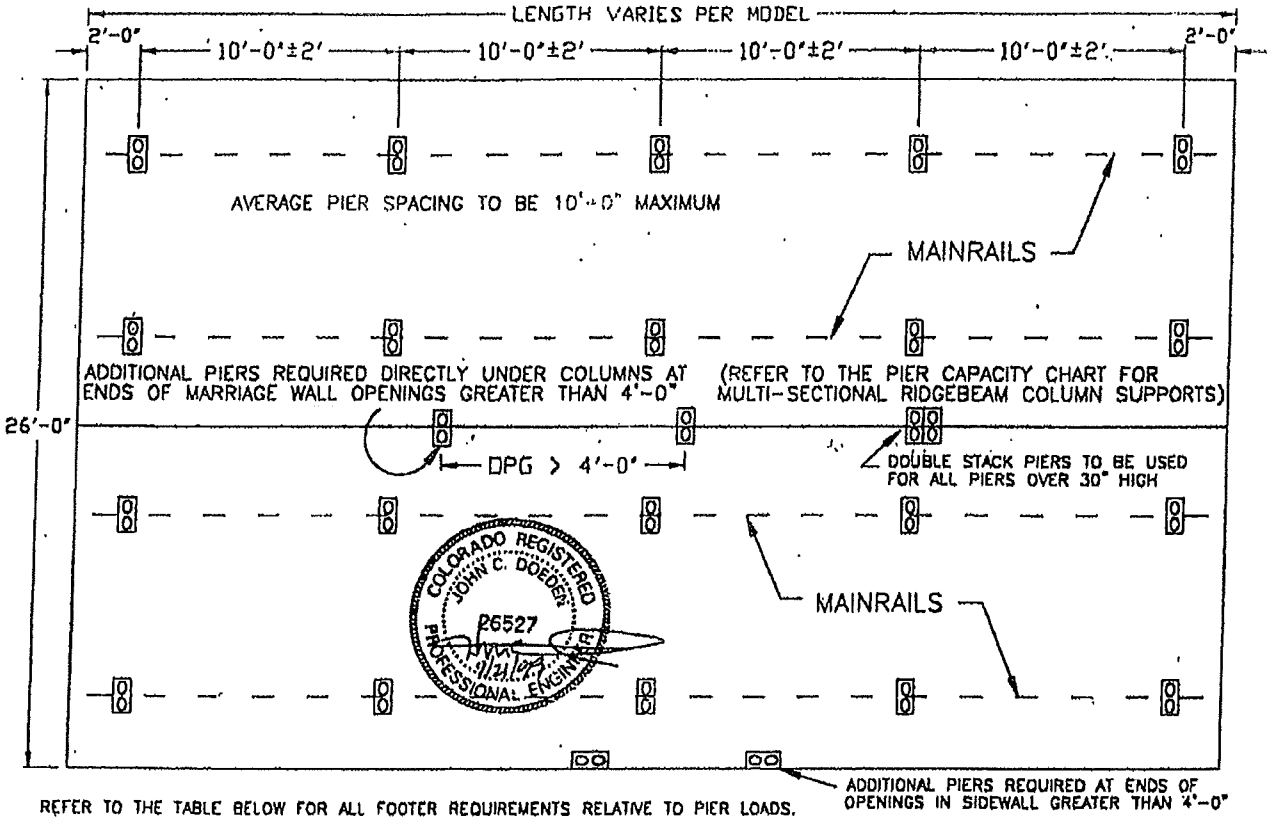
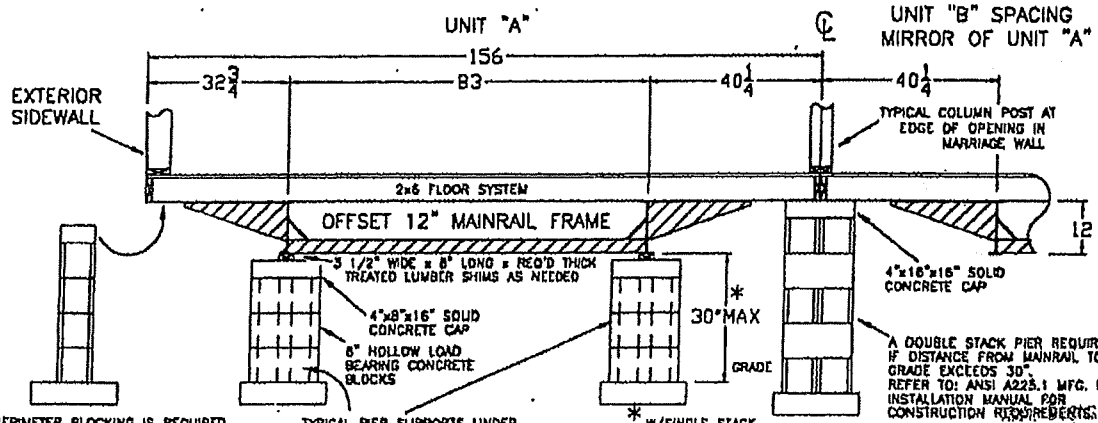
01/12/10

28-Wide Mainrail Pier Set For 20# & 30# Roof Load Zones



REFER TO THE TABLE BELOW FOR ALL FOOTER REQUIREMENTS RELATIVE TO PIER LOADS.



PERIMETER BLOCKING IS REQUIRED ONLY WHERE A SIDEWALL OPENING GREATER THAN 4'-0" EXISTS.

MAX OPG:	8'-0"	12'-0"
LOAD:	1800#	2500#

BLOCK EACH SIDE OF PATIO DOOR AND BAY WINDOW OPENINGS.

TYPICAL PIER SUPPORTS UNDER MAINRAIL APPROX. 10'-0" O.C.
* PIER LOAD: 7,020 # OR 5,700 # @ 8' - 30' O. C. PIER SPACING.

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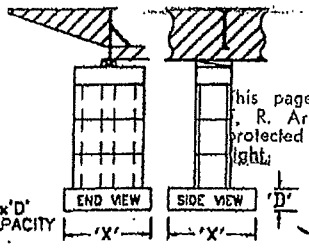
SOIL BEARING CAPACITY/SQ FT	STANDARD PIER 16"x16"x4"	STANDARD PIER 20"x20"x6"	STANDARD PIER 24"x24"x8"
1,000	1,778	2,778	4,000
1,500	2,667	4,167	6,000
2,000	3,556	5,555	8,000
3,000	5,334	8,333	12,000
4,000	7,112	11,111	15,600

'D' MAY BE 6" WITH DOUBLE STACKED PIERS OR WHEN DESIGN CAPACITY IS NOT OVER 2,000 PSF

FOOTING SIZE: 'X'x'X'x'D' PIER AND FOOTER CAPACITY



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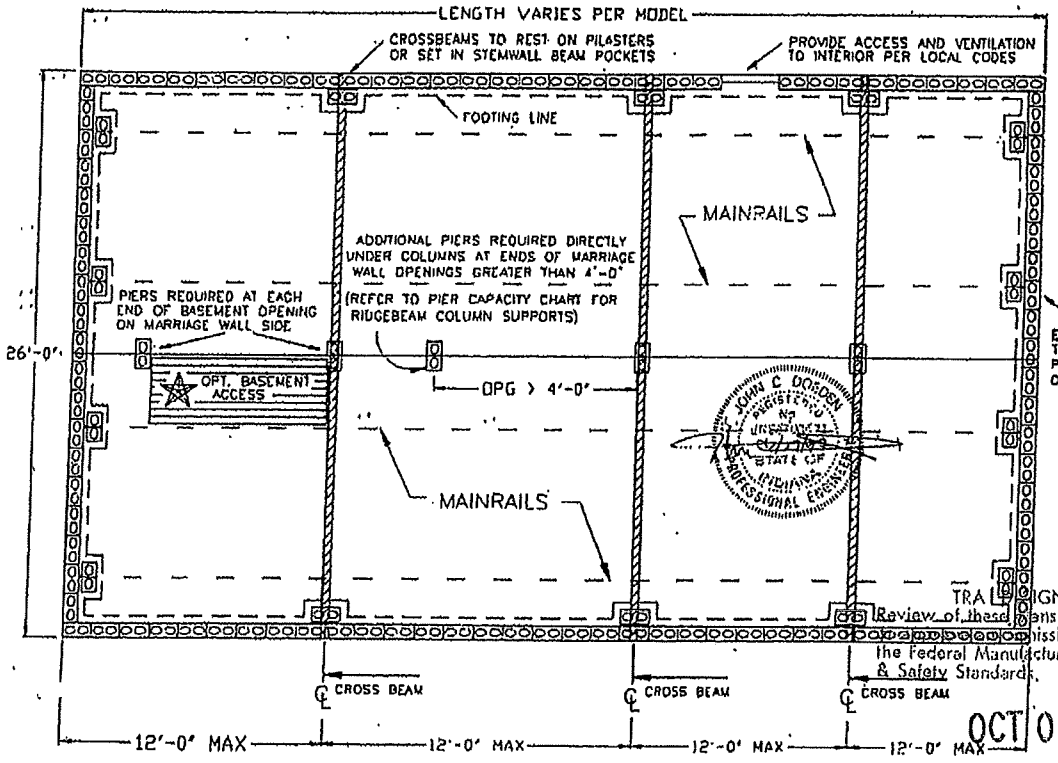
28-Wide Crossbeam Perimeter Foundation For 20# & 30# Roof Load Zones



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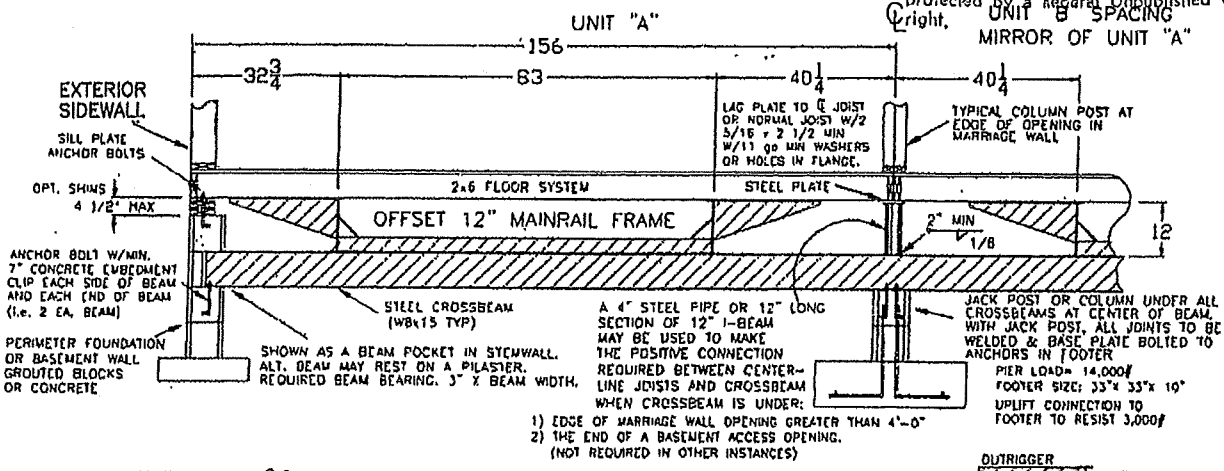
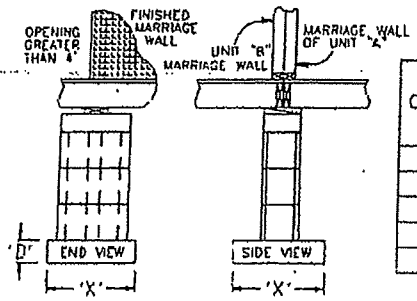
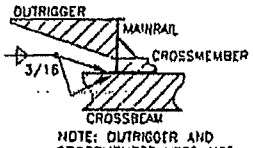




FOOTING SIZE: 'X'x'X'x'D'
PIER AND FOOTER CAPACITY

SOIL BEARING CAPACITY/SQ FT	STANDARD PIER 16"x16"x4"	STANDARD PIER 20"x20"x6"	STANDARD PIER 24"x24"x8"
1,000	1,778	2,778	4,000
1,500	2,667	4,167	6,000
2,000	3,556	5,555	8,000
3,000	5,334	8,333	12,000
4,000	7,112	11,111	15,600

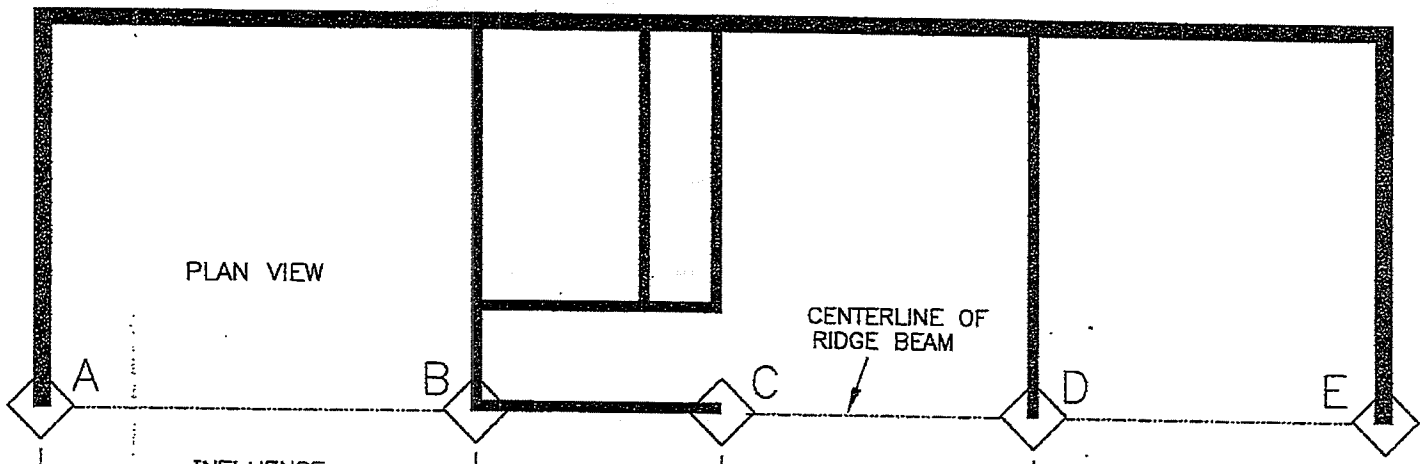
'D' MAY BE 6" WITH DOUBLE STACKED PIERS OR WHEN DESIGN CAPACITY IS NOT OVER 2,000 PSF



NOTE: OUTRIGGER AND CROSSMEMBER NEED NOT FALL IN SAME LOCATION AS THE CROSSBEAM

IM-2.1.12

28-Wide Centerline Pier Capacity Chart
For Ridgebeam Column Supports



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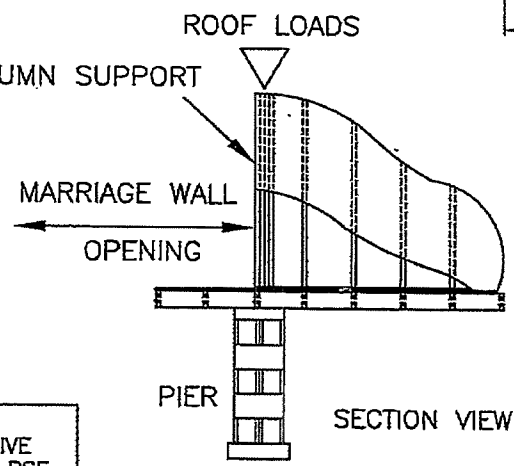

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NOTES:

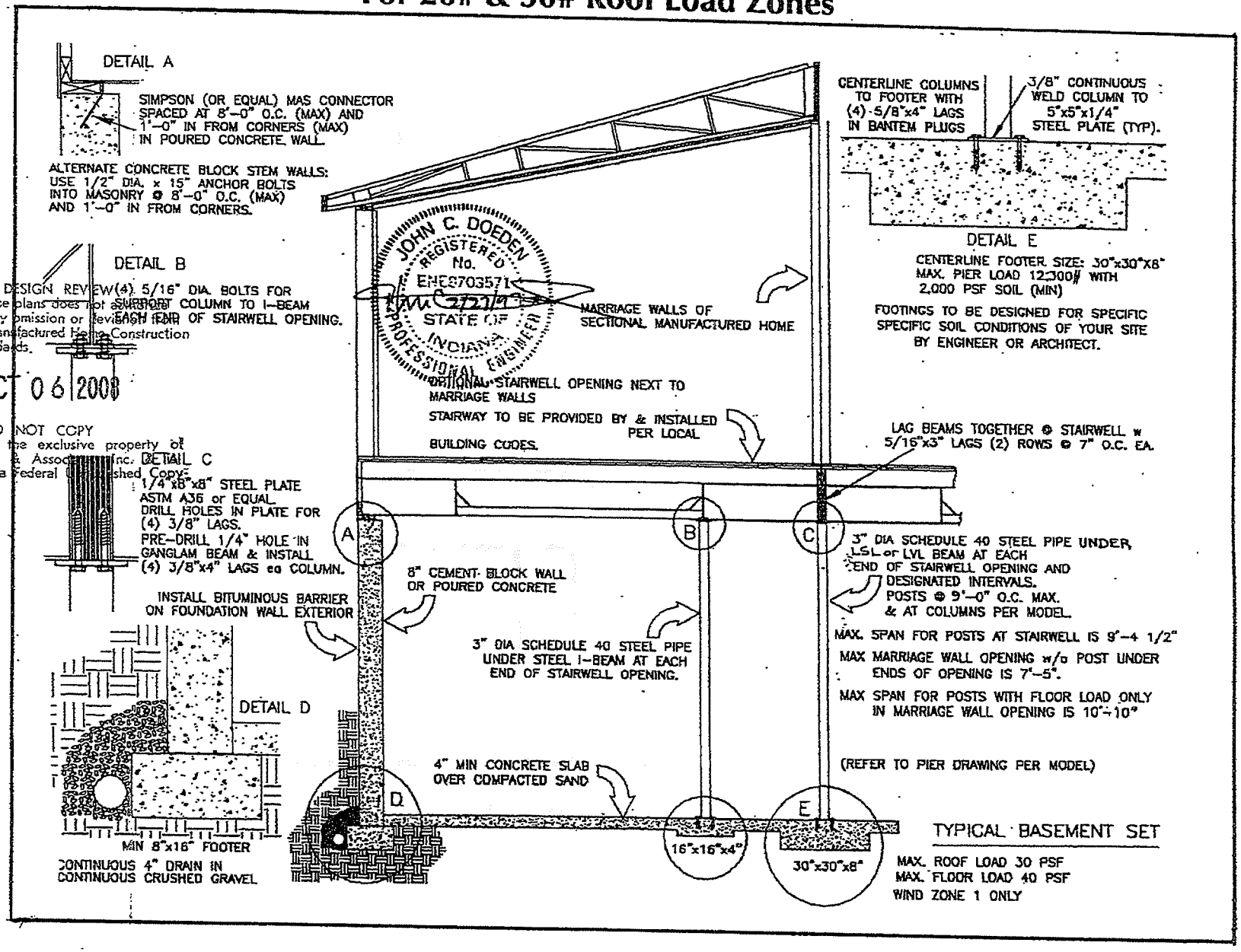
1) PIER LOADS BASED ON 10 PSF ROOF DEAD LOAD.
2) LOADS TABULATED ARE TOTAL FOR BOTH HAVES AT COLUMN SUPPORT.

TOTAL WIDTH (FEET)	ROOF LIVE LOAD in PSF (ROOF ZONE)	MINIMUM PIER CAPACITY in POUNDS — MAXIMUM SPAN TO NEXT SUPPORT in FEET								
		4'–0"	8'–0"	12'–0"	16'–0"	20'–0"	24'–0"	28'–0"	32'–0"	36'–0"
26'–0"	20 (SOUTH)	1,350#	2,240#	3,125#	4,015#	4,900#	5,790#	6,680#	7,570#	8,460#
	30 (MIDDLE)	1,715#	2,880#	4,040#	5,205#	6,370#	7,535#	8,700#	9,865#	11,025#

2–27–97

TM-2-113

28-Wide Optional Perimeter Frame System
For 20# & 30# Roof Load Zones



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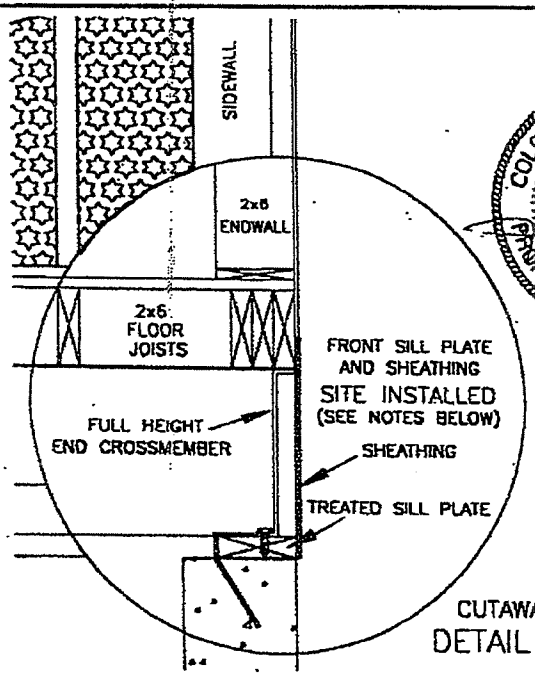
HM-2.1.14

28-Wide Optional P[illegible]meter Frame System
For 20# & 30# Roof Load Zones



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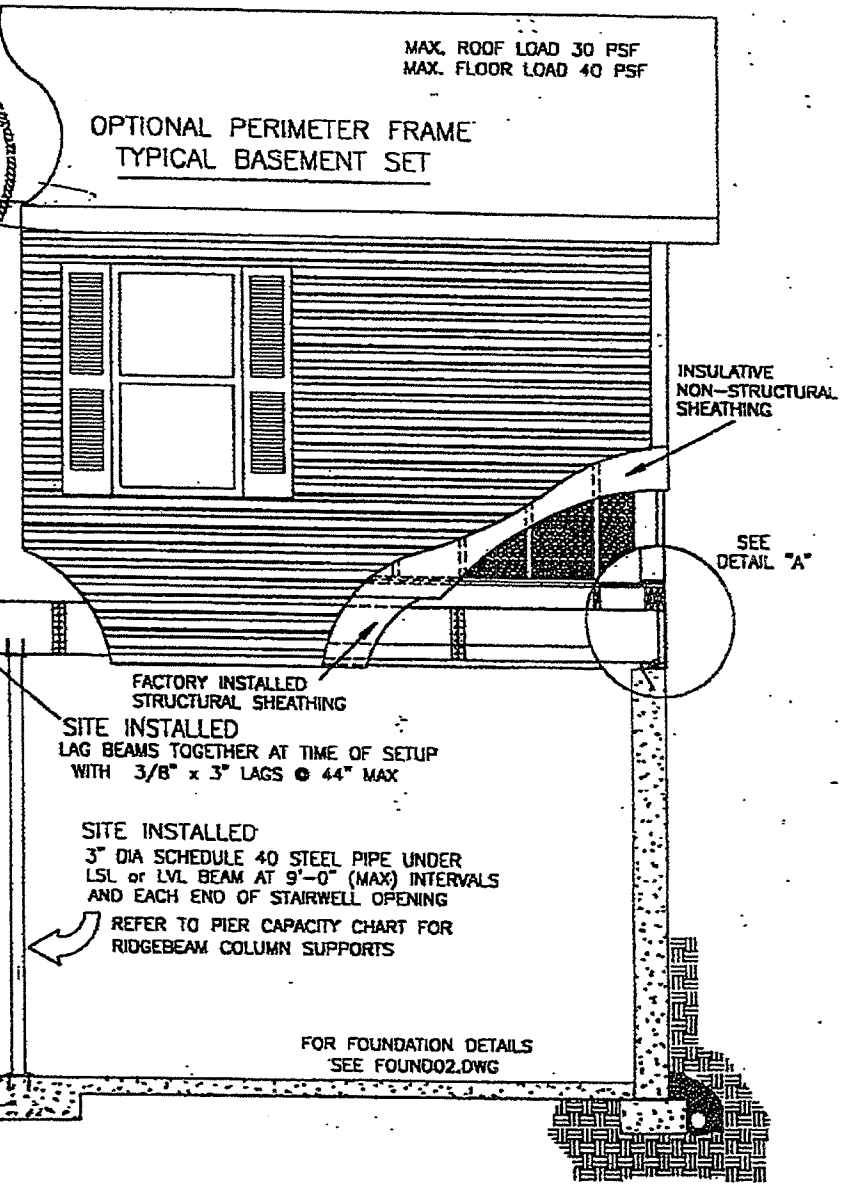
MAX. ROOF LOAD 30 PSF
MAX. FLOOR LOAD 40 PSF

OPTIONAL PERIMETER FRAME
TYPICAL BASEMENT SET



NOTES FOR SITE INSTALLED ITEMS FIGURE "A"

1) INSTALL 2x6 TREATED MUDSILL TO END CROSSMEMBER WITH (3) #8 X 1 1/2" SCREWS WITH WASHERS THROUGH HOLES IN CROSSMEMBER.

2) INSTALL 3/8" CONTINUOUS STRIP OF APA RATED SHEATHING TO MUD SILL AND FRONT FLOOR JOIST WITH 7/16" x 1 1/2" x 16 ga STAPLES @ 10" O.C.

3) SIMPSON (OR EQUAL) MAS CONNECTORS SPACED 8'-0" O.C. (MAX) AND 1'-0" IN FROM CORNERS IN POURED CONCRETE WALL.

ALTERNATE: CONCRETE BLOCK STEM WALLS, USE 1/2" DIA. x 15" ANCHOR BOLTS INTO MASONRY 8'-0" O.C. (MAX) AND 1'-0" IN FROM CORNERS.

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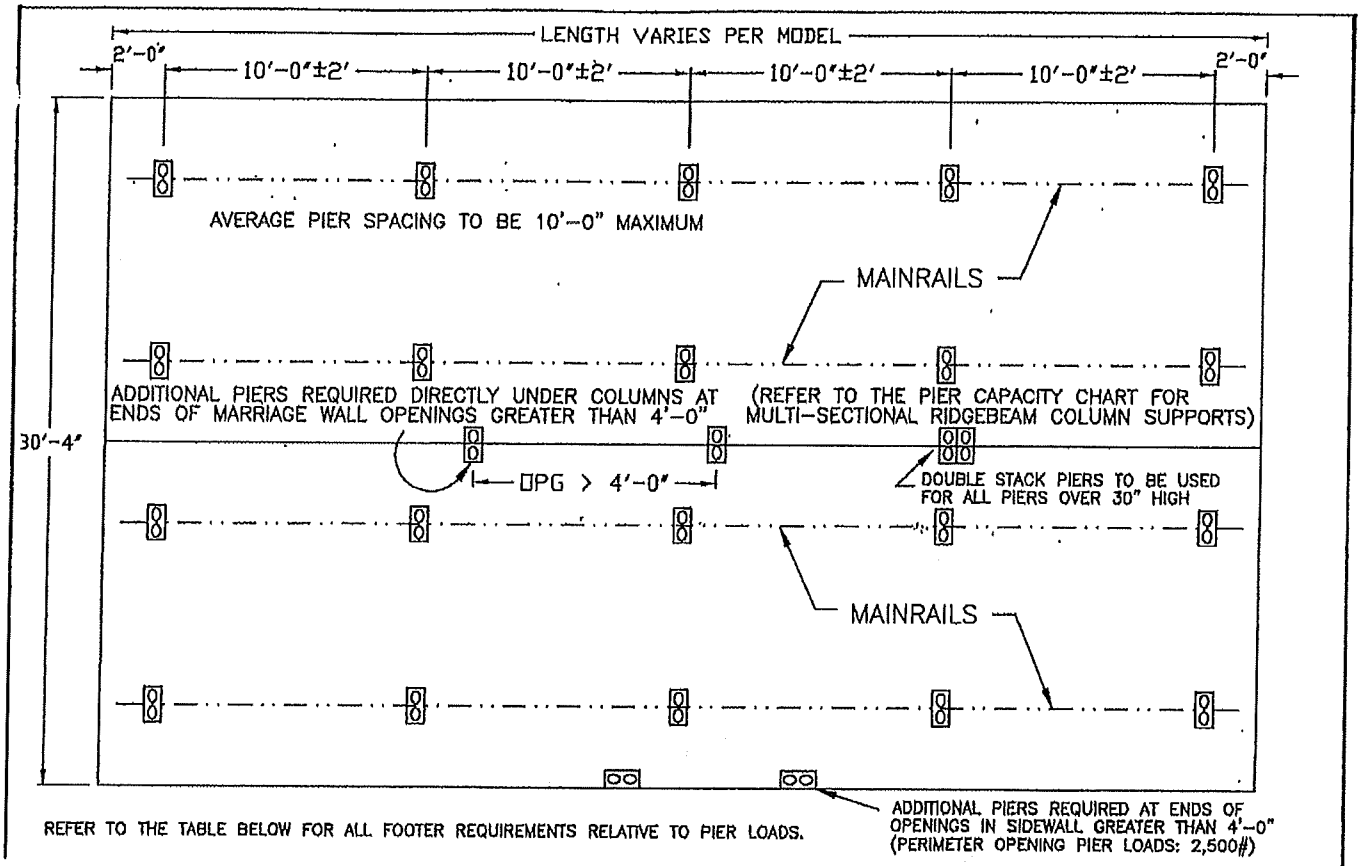
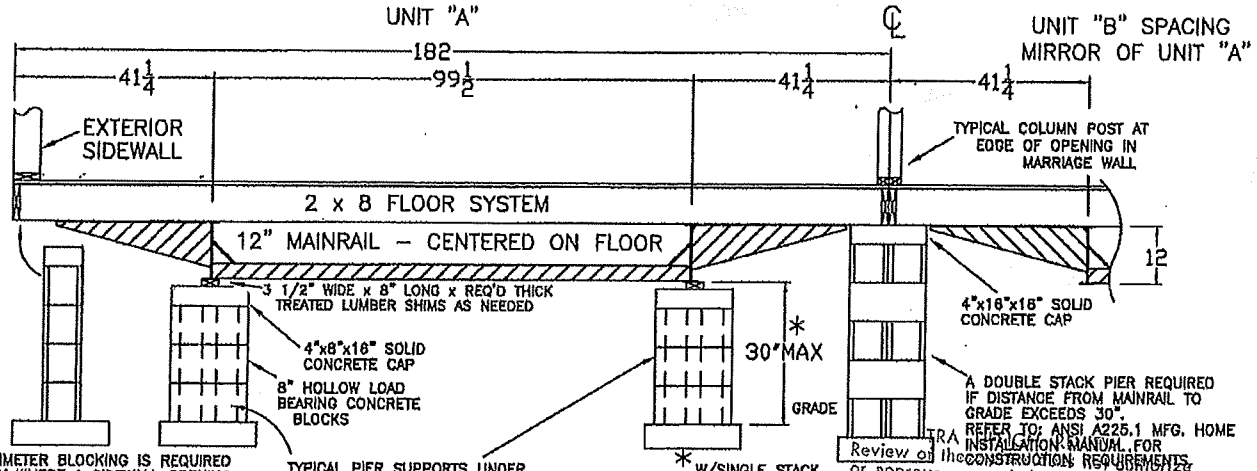
TM-2-1-15

32-Wide Mainrail Pier Set For 20# & 30# Roof Load Zones



REFER TO THE TABLE BELOW FOR ALL FOOTER REQUIREMENTS RELATIVE TO PIER LOADS.



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MAX OPG:	8'-0"	12'-0"
LOAD: 20#	1720#	2470#
LOAD: 30#	2050#	2980#

BLOCK EACH SIDE OF PATIO DOOR AND BAY WINDOW OPENINGS.

20# (SOUTH-ZONE)	7,100#
30# (MID-ZONE)	7,930#

PIER LOADS PER ROOF ZONES

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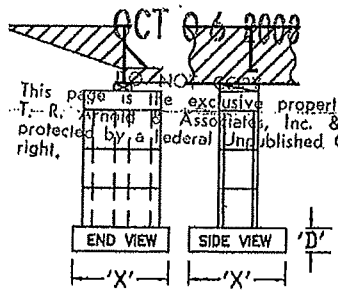
SOIL BEARING CAPACITY/SQ FT	STANDARD PIER 16"x16"x4"	STANDARD PIER 20"x20"x6"	STANDARD PIER 24"x24"x8"
1,000	1,778	2,778	4,000
1,500	2,667	4,167	6,000
2,000	3,556	5,555	8,000
3,000	5,334	8,333	12,000
4,000	7,112	11,111	15,600

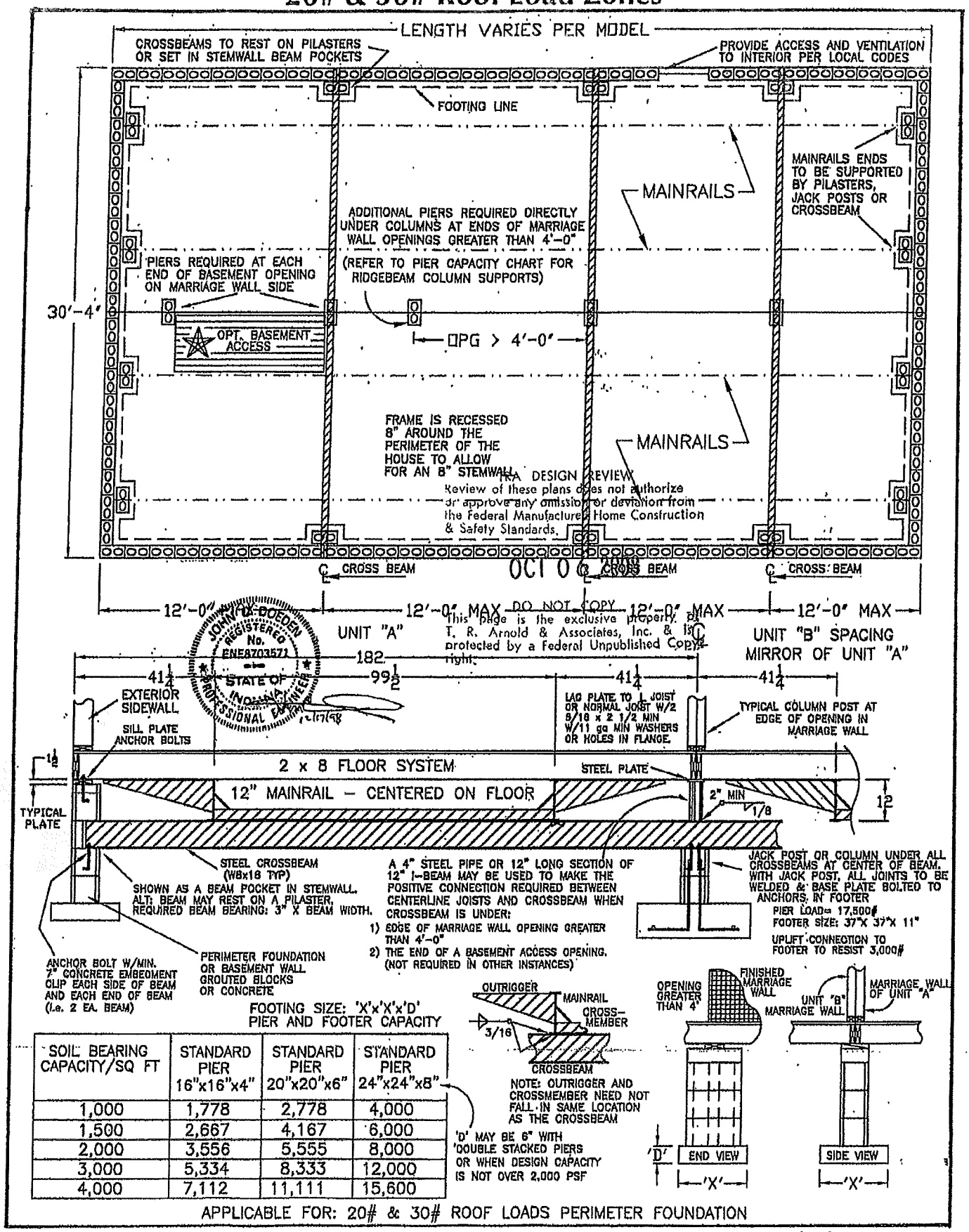
'D' MAY BE 6" WITH 'DOUBLE STACKED PIERS OR WHEN DESIGN CAPACITY IS NOT OVER 2,000 PSF

FOOTING SIZE: 'X'x'X'x'D' PIER AND FOOTER CAPACITY



IM-2.1.16

32-Wide Crossbeam Perimeter Foundation For 20# & 30# Roof Load Zones



FOOTING SIZE: 'X'x'X'x'D'
PIER AND FOOTER CAPACITY

SOIL BEARING CAPACITY/SQ FT	STANDARD PIER 16"x16"x4"	STANDARD PIER 20"x20"x6"	STANDARD PIER 24"x24"x8"
1,000	1,778	2,778	4,000
1,500	2,667	4,167	6,000
2,000	3,556	5,555	8,000
3,000	5,334	8,333	12,000
4,000	7,112	11,111	15,600

'D' MAY BE 6" WITH DOUBLE STACKED PIERS OR WHEN DESIGN CAPACITY IS NOT OVER 2,000 PSF

APPLICABLE FOR: 20# & 30# ROOF LOADS PERIMETER FOUNDATION

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IM-2-1.17

DETAIL A

SIMPSON (OR EQUAL) MAS CONNECTOR SPACED AT 8'–0" O.C. (MAX) AND 1'–0" IN FROM CORNERS (MAX) IN POURED CONCRETE WALL.

ALTERNATE CONCRETE BLOCK STEM WALLS: USE 1/2" DIA. x 15" ANCHOR BOLTS INTO MASONRY @ 8'–0" O.C. (MAX) AND 1'–0" IN FROM CORNERS.

32–WIDE FOUNDATION

MAX. UNIT WIDTH = 30'–4"

DETAIL B

(4) 5/16" DIA. BOLTS FOR SUPPORT COLUMN TO I–BEAM EACH END OF STAIRWELL OPENING.

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DETAIL C

1/4"x8"x8" STEEL PLATE ASTM A36 or EQUAL.
DRILL HOLES IN PLATE FOR (4) 3/8" LAGS.
PRE–DRILL 1/4" HOLE IN GANGLAM BEAM & INSTALL (4) 3/8"x4" LAGS ea COLUMN.

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MARRIAGE WALLS OF SECTIONAL MANUFACTURED HOME

CENTERLINE COLUMNS TO FOOTER WITH (4) 5/8"x4" LAGS IN BANTEM PLUGS

3/8" CONTINUOUS WELD COLUMN TO 5"x5"x1/4" STEEL PLATE (TYP).

DETAIL E

CENTERLINE FOOTER SIZE: 29"x29"X8"
MAX. PIER LOAD 12,000# WITH 2,000 PSF SOIL (MIN)

FOOTINGS TO BE DESIGNED FOR SPECIFIC SPECIFIC SOIL CONDITIONS OF YOUR SITE BY ENGINEER OR ARCHITECT.

OPTIONAL STAIRWELL OPENING NEXT TO MARRIAGE WALLS.

STAIRWAY TO BE PROVIDED BY & INSTALLED PER LOCAL BUILDING CODES.

LAG BEAMS TOGETHER @ STAIRWELL w 5/16"x3" LAGS (2) ROWS @ 6" O.C. EA.

A B C D E

8" CEMENT BLOCK WALL OR POURED CONCRETE

INSTALL BITUMINOUS BARRIER ON FOUNDATION WALL EXTERIOR

3" DIA SCHEDULE 40 STEEL PIPE UNDER STEEL I–BEAM AT EACH END OF STAIRWELL OPENING.

3" DIA SCHEDULE 40 STEEL PIPE UNDER LSL or LVL BEAM AT EACH END OF STAIRWELL OPENING AND DESIGNATED INTERVALS.
POSTS @ 9'–0" O.C. MAX. & AT COLUMNS PER MODEL.

MAX. SPAN FOR POSTS AT STAIRWELL IS 9'–3".

MAX MARRIAGE WALL OPENING w/o POST UNDER ENDS OF OPENING IS 5'–0".

MAX SPAN FOR POSTS WITH FLOOR LOAD ONLY IN MARRIAGE WALL OPENING IS 10'–1".

REFER TO PIER CAPACITY CHART FOR RIDGEBEAM COLUMN SUPPORTS

4" MIN CONCRETE SLAB OVER COMPACTED SAND

DETAIL D

MIN 8"x16" FOOTER

CONTINUOUS 4" DRAIN IN CONTINUOUS CRUSHED GRAVEL

16"x16"x4"

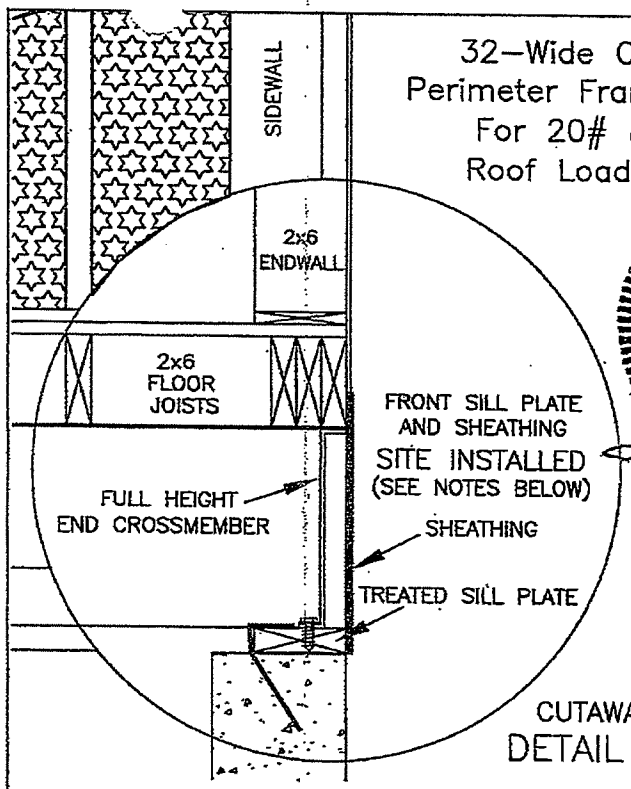
29"x29"x8"

OPTIONAL PERIMETER FRAME
TYPICAL BASEMENT SET

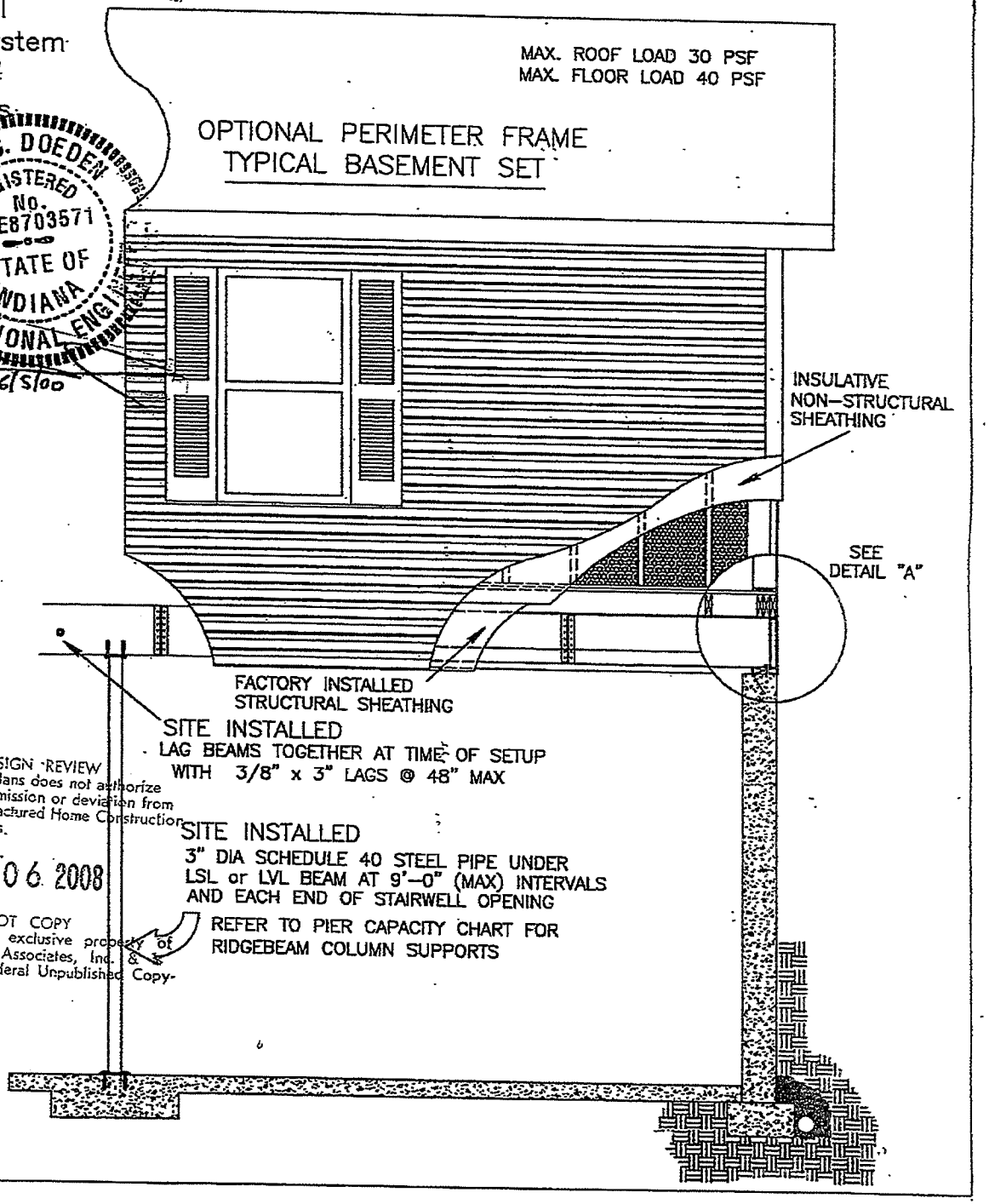
MAX. ROOF LOAD 30 PSF
MAX. FLOOR LOAD 40 PSF
WIND ZONE 1 ONLY

FM-2.1.18

32–Wide Optional Perimeter Frame System For 20# & 30# Roof Load Zones



CUTAWAY
DETAIL A



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NO. ENE8703571
STATE OF INDIANA
PROFESSIONAL ENGINEER
6/5/00

NOTES FOR SITE INSTALLED ITEMS FIGURE "A"

1) INSTALL 2x6 TREATED MUDSILL TO END CROSSMEMBER WITH (3) #8 X 1 1/2" SCREWS WITH WASHERS THROUGH HOLES IN CROSSMEMBER.

2) INSTALL 3/8" CONTINUOUS STRIP OF APA RATED SHEATHING TO MUD SILL AND FRONT FLOOR JOIST WITH 7/16" x 1 1/2" x 16 ga STAPLES @ 10" O.C.

3) SIMPSON (OR EQUAL) MAS CONNECTORS SPACED 8'–0" O.C. (MAX) AND 1'–0" IN FROM CORNERS IN POURED CONCRETE WALL.

ALTERNATE CONCRETE BLOCK STEM WALLS: USE 1/2' DIA. x 15" ANCHOR BOLTS INTO MASONRY 8'–0" O.C. (MAX) AND 1'–0" IN FROM CORNERS.

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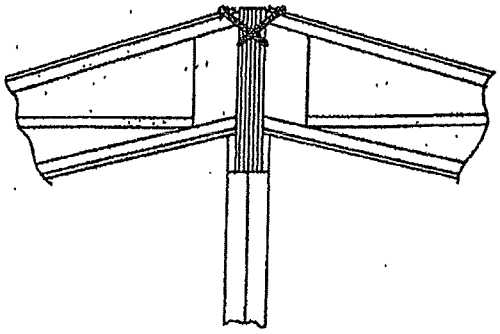
RIDGEBEAM CONNECTION notes: 3 & 4



Doublewide Set Up Procedure
Connection At Centerline
Illustrations

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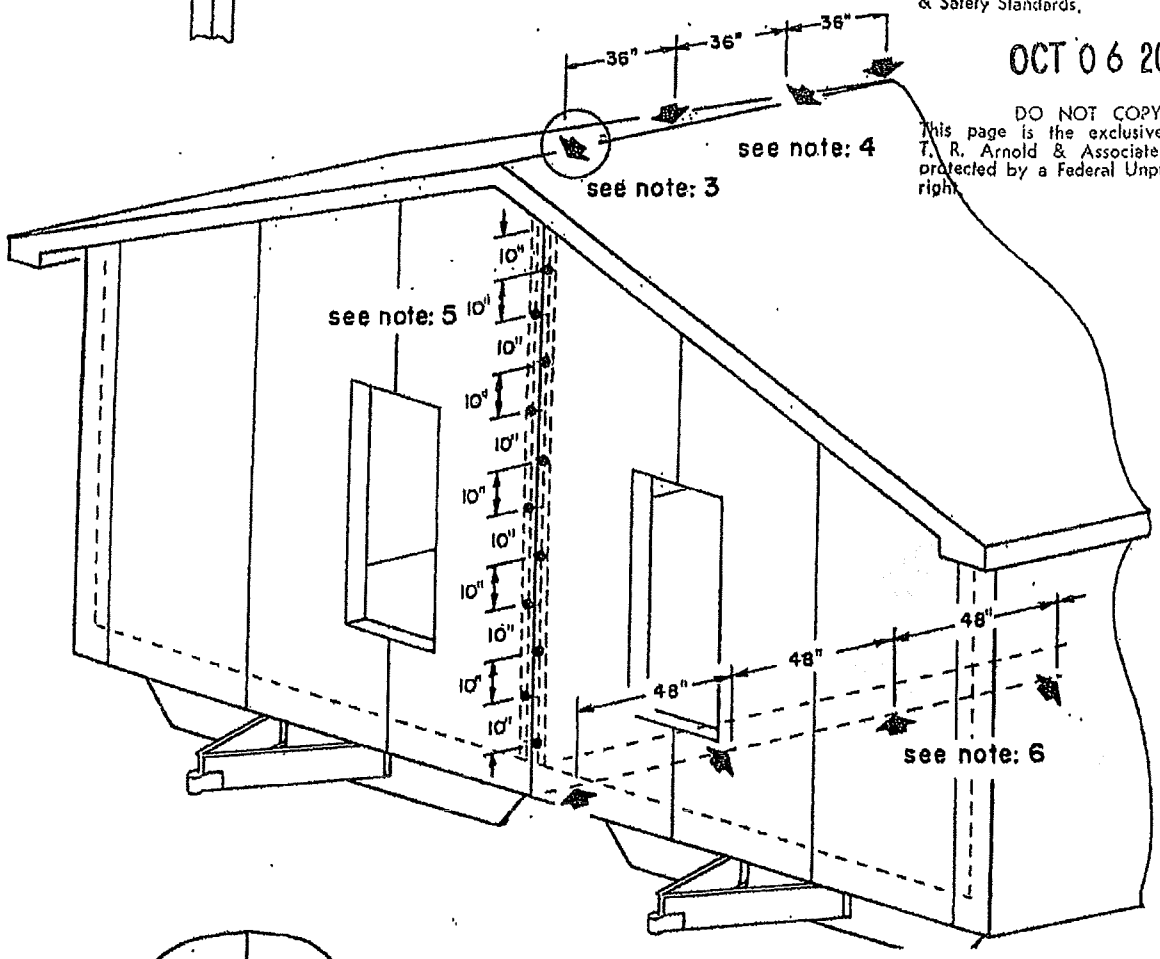
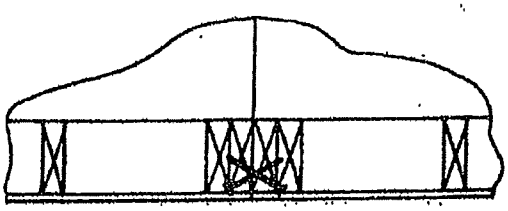
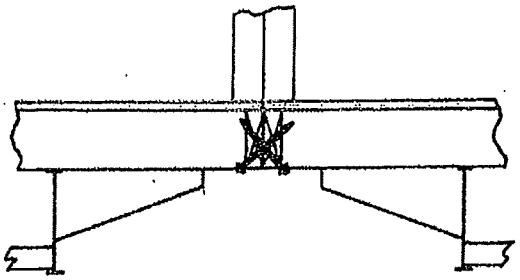




ENDWALL CONNECTION note: 5



FLOOR CONNECTION note: 6

IM-2.1.20

MULTI-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 the home is over-jacked serious damage may result.
5. A minimum 12" clearance under the lowest part of the home from grade to I-beam is required.
6. Application of perimeter skirting or finish materials is soley up to the Owner. It is not required on temporary set models that have no permanent occupancy.

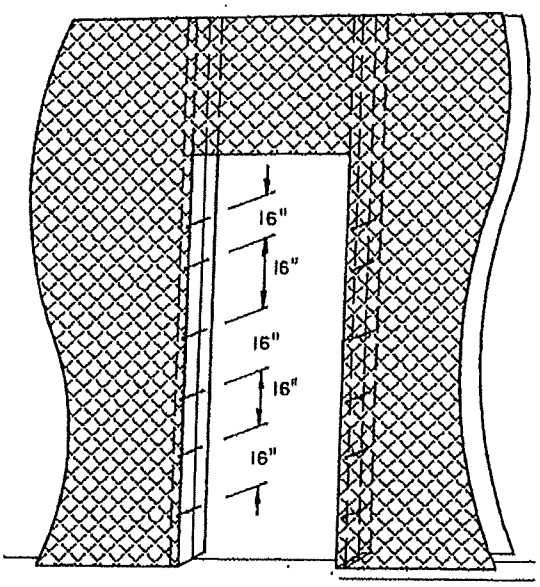
MULTI-SECTION SET UP PROCEDURE FOR PERMANENT APPLICATIONS

A. CONNECTION AT CENTERLINE

The procedure for connecting the two halves together is as follows:

1. Remove factory installed closure materials. Temporarily fold back, onto roof surface, roofing underlayment draped over the ridge beam on both halves of doublewide.
2. Position the halves together in the desired location. Slick sheet metal or greased plywood under the tires may facilitate sliding the two halves together. "Come along" type equipment may also aide in bringing the halves together. Take care not to damage structural members. Deflating the inside tires of the "light half" may be necessary to mate the ridge beam.
3. Jack each side of the home on inside of the I-beam of "light half" to align ceilings at front and rear end walls. Secure ridge beams together at the peak of the roof above ONLY the front and rear end walls with (2) 3/8" x 5" lags as shown on page 20.
4. Align ceiling edges at the centerline along the remainder of the home by jacking on the inside I-beam of "light half". Install 3/8" x 5" lags along the peak at 36" o/c. alternating from one side to the other as shown on page 20.
5. To properly align end walls it may be necessary to pull either floor forward (preferably attaching to hitch). Secure end walls together with #10 x 5" screws 10" o/c. as shown on page 20. Note: For some models these screws may have to be toe screwed (i.e. when siding or sheathing is installed to the homes centerline).
6. Bring floors of both halves together and in alignment by jacking on the inside I-beam of either half as necessary. From underneath the home, toe screw the mating centerline joists together with 3/8" x 5" lags at 48" o/c. as shown on page 20.
7. At door openings and clear span openings of double marriage walls, secure the two halves together with #10 x 5" screws at 16" o/c (see dwg below). Screws to be places so the heads can be concealed by door trim or corner molding. Toe screwing is permitted.

Note: Under ideal conditions there will be no gaps between halves when joined together. A gap to ½" is acceptable when a filler is installed to each fastener, and fastener length is adjusted to provide the same fastener penetration as if there were no gap. Filler fastener penetrations as if there were no gap. Filler material to be rated sheathing (OSB or Plywood). Minimum receiving penetration of receiving member is 1 ½" for 3/8" diameter lags and 1 3/8" for #10 screws.



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MULTI-SECTION SET UP PROCEDURE

B. 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 couple 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 t the axle area and raise the side that is low.
3. Place blocks behind 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 10' intervals. Make continued checks with the level. If jacking is required, jack only under the I-beam 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 the home from grade to I-beam is required.

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.

C. 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 wind Anchors, strapping, installation procedures, etc. are available from Minute Man Anchors, 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.

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 chart 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, so the "pull" on the anchor is straight. If the "pull" is not straight, follow approved methods described by the anchor manufacturer (i.e. stabilizer plates). When tightening the straps with the 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 pier settlement has stopped. AT TIME OF RELEVELING DO NOT JACK THE HOME AGAINST THE STRAPS.

D. ADDITIONAL ANCHORAGE REQUIREMENTS

In accordance with the FMHCSS effective July 13, 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 specified 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.

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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.

ANCHOR INSTALLATION

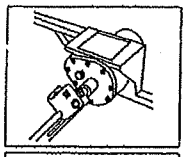
There are two basic methods of installing anchors, each equally effective in properly securing manufactured homes to the ground.

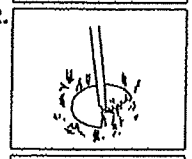
CAUTION: *The installation of anchors with a drive machine is a two person operation.*

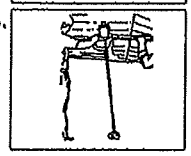
Warning: Before ground anchor installation, determine that the anchor locations around home will not be close to any underground electrical cables, water lines or sewer piping. Failure to determine the location of electrical cables may result in serious personal injury.

MACHINE INSTALLATION

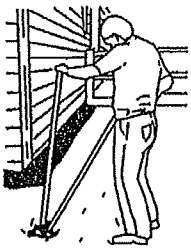
In this method, the anchor is turned to full depth into the ground by an anchor drive machine.

1. 
Attach anchor to machine.

2. 
Placed anchor in proper position in line with strap and machine.

3. 
Anchor should be installed at a slight angle as shown to assure head being positioned behind future skirting.

MANUAL INSTALLATION

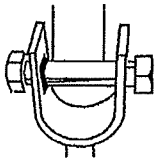


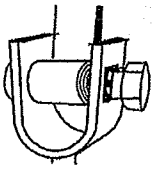
A hole is dug to a depth of approximately ½ the length of the anchor, in the proper position as explained under machine installation.

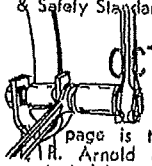
After the hole is dug to ½ the length of the anchor, then the anchor is turned into the ground by hand, using a rod or length of pipe for leverage or by machine.

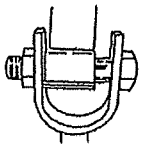
After anchor is installed full depth, earth is repacked, six inches at a time.

PROPER TENSIONING OF STRAP TO ANCHOR HEAD

1. 
Insert bolt into head; attach nut loosely. Insert strap in slot of 5/8" bolt until strap is flush with far side of bolt.

2. 
Bend strap 90° and take at least three complete turns on bolt until strap is taut.

3. 
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.

4. 
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.

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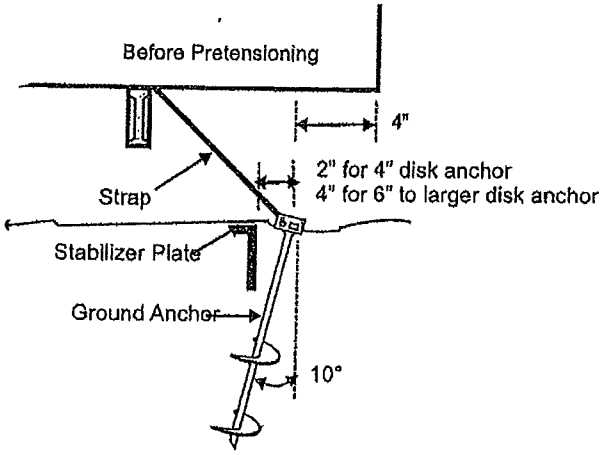
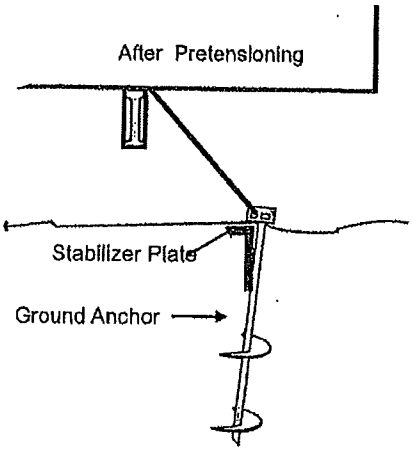
IM-2.1.23

MINUTE MAN ANCHORS, INC.

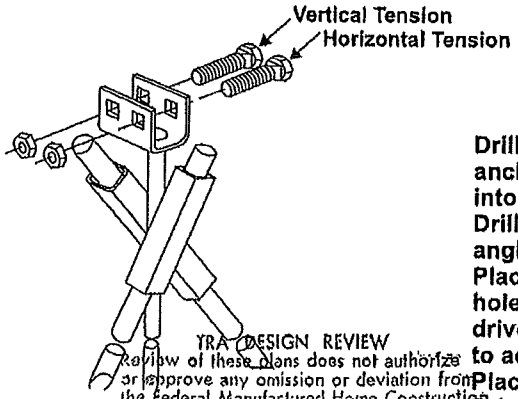
INSTRUCTION FOR USING MINUTE MAN STABILIZING DEVICE

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





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 ½ inch more while it is in contact with the plate using the strap and take-up bolt to move the anchor head.



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Installation Instructions for Cross Drive Rock Anchor

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".

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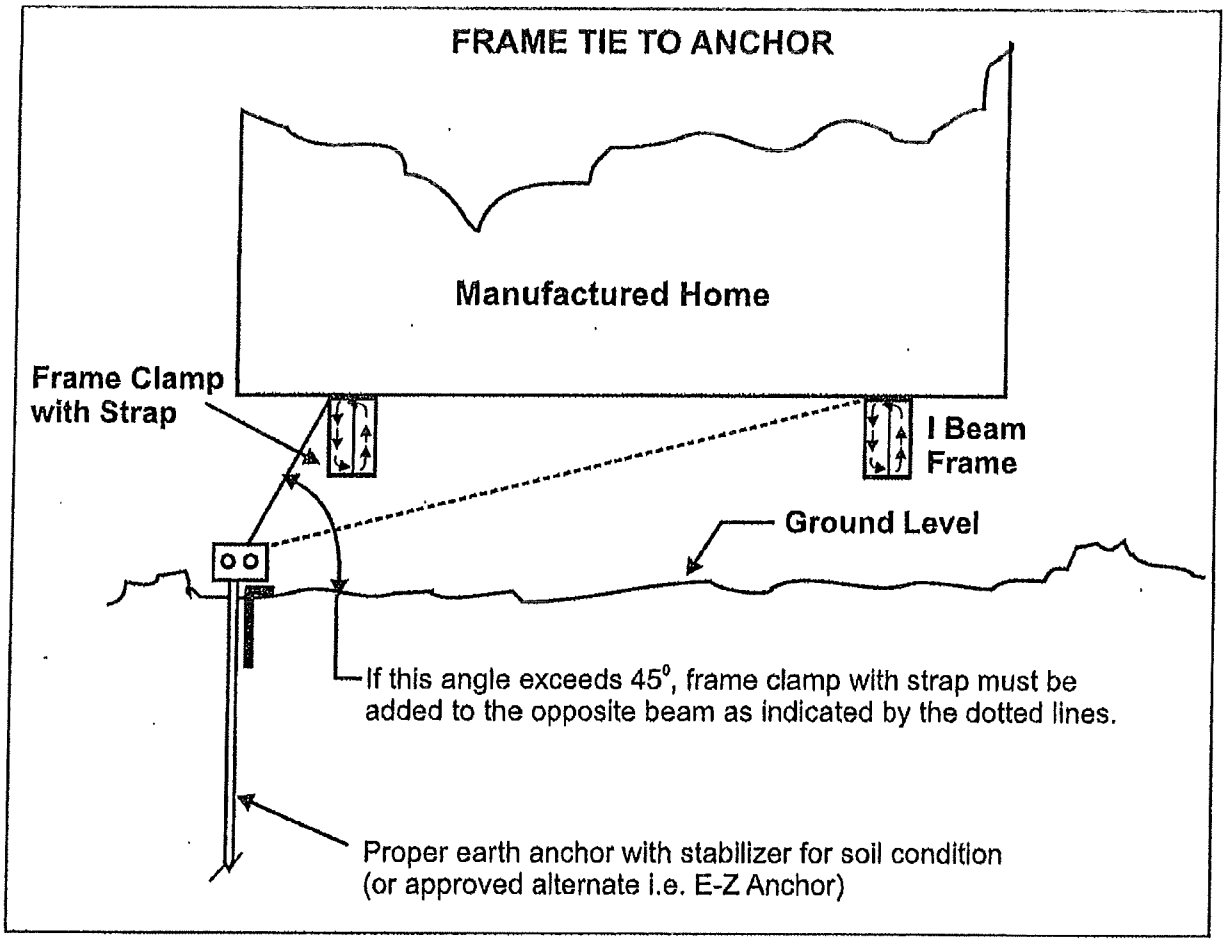
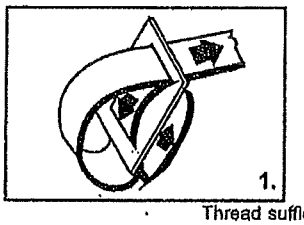
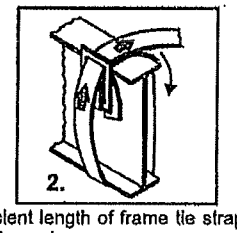


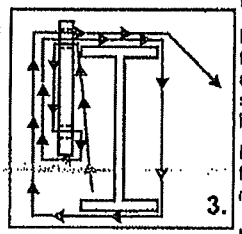
FRAME TIE INSTALLATION INSTRUCTIONS

Frame Tie With Buckle





Thread sufficient length of frame tie strap through buckle as shown.

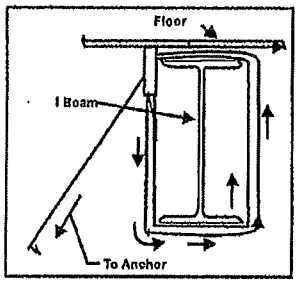


Next, thread long end of strap between frame and floor of home. Bring strap around frame and back through buckle as shown in diagram and fasten to anchor head.

Diagram showing strap in position around frame and through buckle. It is important to remove all slack from system.

Note: Use of a single buckle is an appropriate alternate.

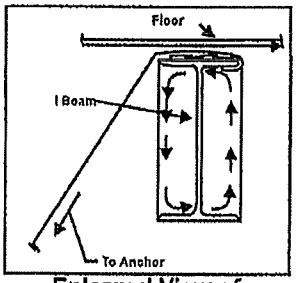
Single Slot Buckle With Strap



Enlarged View of Frame Beam

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.

Frame Tie With Hook



Enlarged View of Frame Beam

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.

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IM-2.1.25

E-Z ANCHOR INSTALLATION METHOD

Note: With machine installation, a Minute-Man adapter designed to fit both the anchor head and drive machine shaft is available. Installers do not need additional or special equipment for E-Z Anchor Installation.
E-Z Anchors are a patented item.

1. MACHINE INSTALLATION

The drive machine is started and the anchor is turned into the ground to a point where the top (stabilizer head plate) is flush with or slightly below ground level. This assures that the E-Z Anchor Stabilizer will be at its required installation position. **See Figure A.**

To achieve full potential, install the E-Z Anchor vertically. A 10° deviation from vertical is acceptable. **See Figure A.**

Note: A slightly greater angle may be used to start anchor to avoid contact with the home and straightened as anchor is ground set. The splitbolt is inserted, strap is fastened, and tightening adjustment made.

E-Z Anchor carries U.S. Patents and manufacture is exclusive to Minute-Man Anchors, Inc.

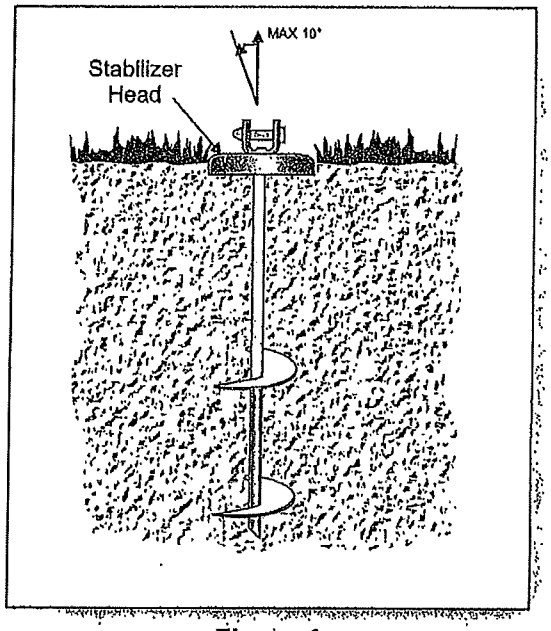

Figure A

2. STANDARDS FOR INSTALLATION

- E-Z Anchors and all components are to be installed per manufacturer's instructions.
- E-Z Anchors are approved for designated Soil Class III, IV.
- E-Z Anchor working load capacity is 3,150 pounds for a single tie or the load of (2) ties combined.. **See Figure B.**
- Consult manufactured home set up instructions for number of frame tie downs, over the roof tie downs and tie down spacing.
- Proper site preparation requires removal of grass and sod prior to installation.

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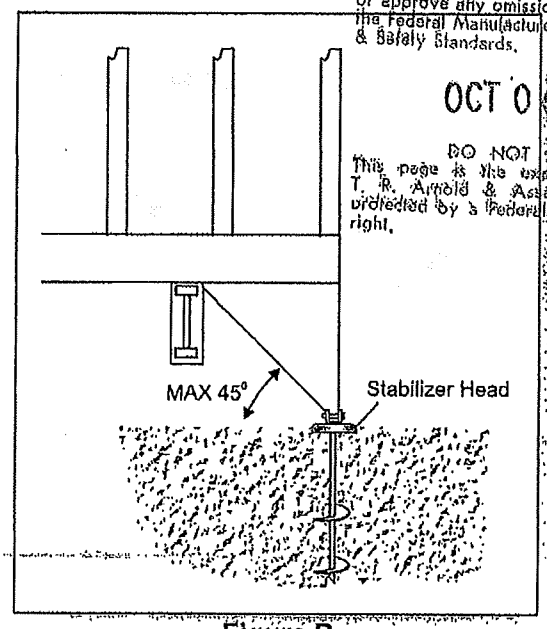
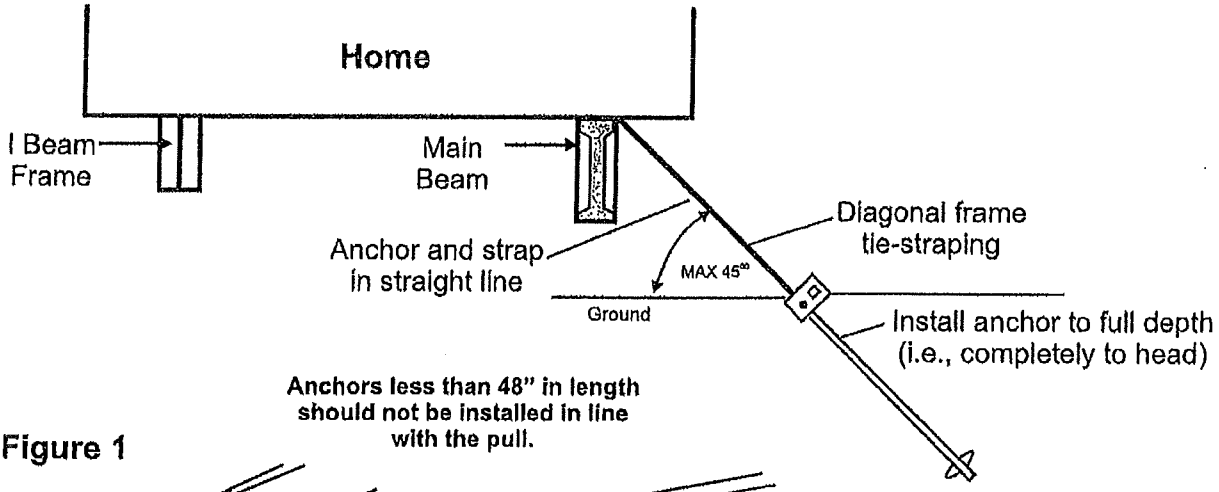


Figure B

For additional information, copies of engineering test(s) and report, Contact Minute-Man Anchors, Inc.

IM-2.1.26

IN LINE INSTALLED AND CONNECTED GROUND ANCHOR AND FRAME CONNECTION



Anchors less than 48" in length should not be installed in line with the pull.

Figure 1

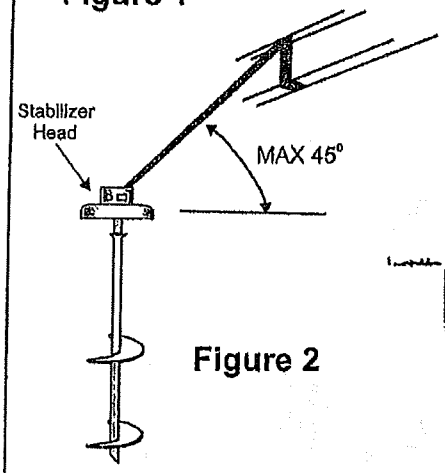


Figure 2

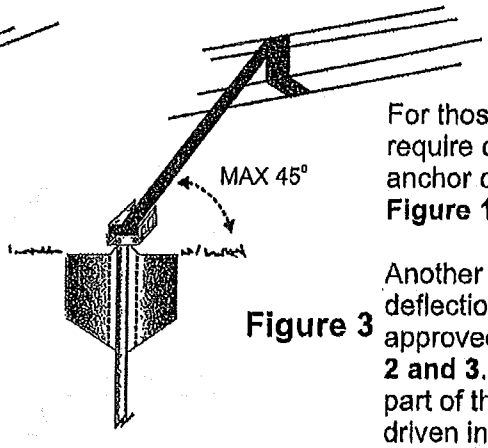


Figure 3

For those homes which are designed to require only diagonal frame ties, the anchor can be installed in line with the ties. **Figure 1.**

Another accepted way to limit lateral deflection is by use of a tested and approved Metal Stabilizing Device. **Figure 2 and 3.** In **Figure 2**, the Stabilizer is a part of the anchor. In **Figure 3**, the plate is driven in front of the anchor's direction of pull and will act to minimize the anchor rod deflection.

See Top of Page 2.

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LOCKING FRAME CLAMP II MMA-33 ASSEMBLED UNIT

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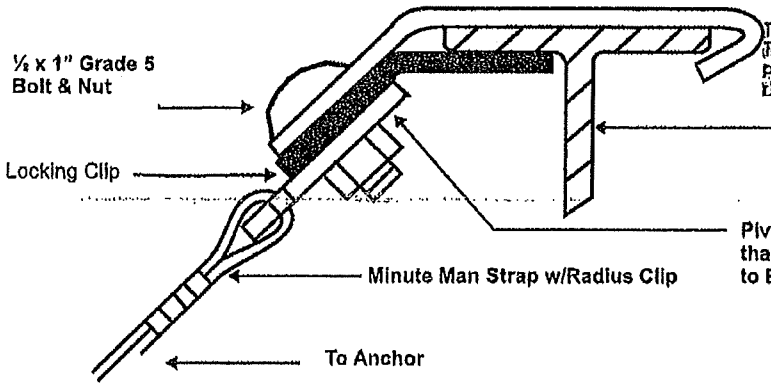


WESTERN STATES

INSTALLATION INSTRUCTIONS

FIRST CHECK FOR UNDERGROUND UTILITY LOCATION.

EZDH EARTH AUGERS

1. SEE DETAIL THIS BOOKLET FOR INSTALLATION INSTRUCTIONS.

EARTH AUGERS

1. INSTALL AUGERS INTO SOIL WITH CONSTANT DOWNWARD PRESSURE TO MINIMIZE SOIL DISTURBANCE LEAVING APPROX. 12" OF SHAFT EXPOSED.
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.

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-SD2 STABILIZER PLATE, OR PLACE 12"x12"x12" DEEP CONCRETE.

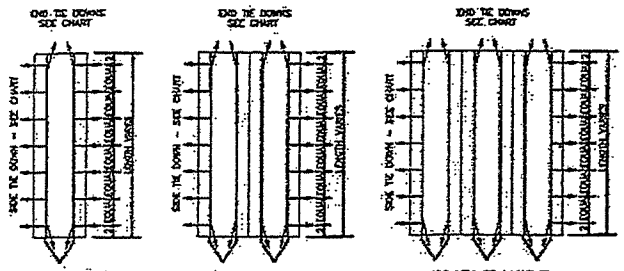
CONCRETE SLAB ANCHORS

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 12" 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.

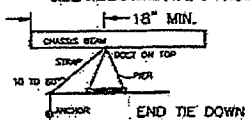
TIE DOWN LOCATIONS



SINGLE WIDE — DOUBLE WIDE — TRIPLE WIDE

EARTH AUGERS					CROSS DRIVE ANCHORS					CONCRETE SLAB ANCHORS				
MAX. LENGTH OF MFG'D HOME	38'	54'	72'		MAX. LENGTH OF MFG'D HOME	32'	42'	52'	62'	73'	MAX. LENGTH OF MFG'D HOME	34'	42'	50'	58'	68'
MAX. NO. OF SIDE TIE DOWNS	2	3	4		MAX. NO. OF SIDE TIE DOWNS	3	4	5	6	7	MAX. NO. OF SIDE TIE DOWNS	4	5	6	7	8

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 1½



END TIE DOWN

NOTE: TIE DOWN STRAPS AT THE CHASSIS BEAM ENDS (END TIE DOWNS) CAN BE ATTACHED TO A CHASSIS SUPPORT PIER WITH A PIER BOLT ON TOP. (SEE SKETCH ABOVE).

MINUTE MAN PRODUCTS
LISTED BY:
TRI STATE TESTING SERVICES, INC.
3101 WALFORD ROAD
MEMPHIS, TN. 38134
LISTING NUMBER MM 13-01
TIE DOWN SYSTEM TO BE IDENTIFIED BY A STICKER PLACED ON THE STEEL STRAP MEMBER
MM-LT1 - STICKER TO CONTAIN THE FOLLOWING:
MINUTE MAN PRODUCTS ETS-119
TRI STATE TESTING SERVICE, INC.
LISTING NO. MM 13-01

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PAGE 2

DAVID A. DAHMEN — STATE OF WASHINGTON — 34175 — REGISTERED PROFESSIONAL ENGINEER
EXPIRES: 11/10/07

REGISTERED PROFESSIONAL ENGINEER — STATE OF MONTANA — 3025 — DAVID A. DAHMEN — CIVIL — 12/31/07

REGISTERED PROFESSIONAL ENGINEER — 7162 — GRADUATE — JULY 14, 1972 — DAVID A. DAHMEN

REGISTERED PROFESSIONAL ENGINEER — 2541 — STATE OF IDAHO — DAVID A. DAHMEN

REGISTERED PROFESSIONAL ENGINEER — DAVID A. DAHMEN — No. 3913 — STATE OF UTAH

REGISTERED PROFESSIONAL ENGINEER — 7162 — DAVID A. DAHMEN — STATE OF ARIZONA

REGISTERED PROFESSIONAL ENGINEER — 13523 — STATE OF COLORADO

MINUTE MAN ANCHORS, INC.

305 WEST KING STREET
EAST FLATROCK, NC 28726
PH: (828) 693-7277

ENGINEERED TIE DOWN SYSTEM

DESIGN & GENERAL NOTES

DESIGN LOADS:

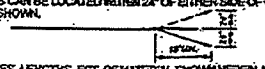
- WIND — 15 PSF (70 MPH EXPOSURE "C")
- SOIL BEARING — 1000 PSF
- TIE DOWN STRAP — 3150# WORKING LOAD
- SEISMIC ZONE — 0

TIE DOWN STRAPS TO BE MIN. 1 1/4" WIDE x 0.035 THICKNESS ZINC PLATED AND MEET ASTM D-385391

- EARTH AUGERS — 2962# MIN. (TESTED TO 4750# MIN.)
- CROSS DRIVES — 2727 # (CALCULATED)
- CONCRETE SLAB ANCHORS — 1300# (CALCULATED)

GENERAL NOTES:

1. THE CHARTS SHOWN HEREIN ARE FOR THE REQUIRED NUMBER OF TIE DOWNS ON THE SIDES OF THE MANUFACTURED HOME.
2. TIE DOWNS ARE REQUIRED AT EACH CHASSIS BEAM, EACH END OF EACH TRANSPORTABLE SECTION OF 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. IN THE EVENT AN EARTH AUGER CANNOT BE INSTALLED DUE TO AN OBSTRUCTION, USE OF CROSS DRIVE ANCHORS IS PERMITTED, PROVIDED (2) CROSS DRIVES ARE INSTALLED FOR EACH EARTH AUGER THAT CANNOT BE INSTALLED.
5. FOR ALL TIE DOWN INSTALLATIONS, THE MFG'D HOME CHASSIS MEMBERS ARE SHOWN AS "I" BEAMS; FOR ILLUSTRATION PURPOSES ONLY. CHASSIS BEAMS CAN ALSO BE "C" SHAPED OR "RFC" SHAPED.
6. END TIE DOWNS CAN BE LOCATED WITHIN 24" OF EITHER SIDE OF CHASSIS BEAM AXIS AS SHOWN.



7. THE SIZES, TYPES, LENGTHS, ECT. OF MATERIAL SHOWN HEREIN ARE MINIMUM. LARGER, LONGER, HEAVIER MATERIALS SUPPLIED BY MINUTE MAN PRODUCTS, MAY BE USED AT THE SAME SPACING & LOCATION SHOWN.
8. ALL PARTS ARE STAMPED MMA - WITH THE APPROPRIATE PART NUMBER.
9. THIS TIE DOWN SYSTEM CAN BE USED WITH 16' WIDE MANUFACTURED HOME SECTIONS WITH 100" CHASSIS CENTERS PROVIDED THE HEIGHT FROM GRADE TO THE BOTTOM OF THE CHASSIS BEAM DOES NOT EXCEED 16".
10. TIE DOWN STRAPS IN THE LONGITUDINAL OR TRANSVERSE DIRECTION CAN BE BOLTED TO THE HITCH ATTACHMENT PLATE THAT IS WELDED TO THE CHASSIS BEAM.

ENGINEER APPROVAL

SEE PAGE "2" FOR LISTING INFORMATION

REGISTERED PROFESSIONAL ENGINEER — DAVID A. DAHMEN — No. 17918 — Exp. 6/30/07 — CIVIL — STATE OF CALIFORNIA

PACIFIC CONSULTING ENGINEERS
2150 BELL AVE. - SUITE 145
SACRAMENTO, CALIFORNIA 95838
PH: (916) 564-6025

STATE APPROVAL

ENGINEERED TIEDOWN SYSTEM
APPROVED
(SUBJECT TO CORRECTIONS NOTED)

Approval does not indicate or approve any omission or deviation from requirements of applicable State laws and regulations.

State of California
Department of Housing and Community Development
DIVISION OF CODES AND STANDARDS

By: [signature] Date: 2/14/07
SPA NO. ETS 119
This Plan Approval Expires: 8/23/09
Renewal 4 years

PAGE 1

LM-2.1.28

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.*

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

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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.

Revised 3/14/07

IM-2.1.29

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	THDHLS	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	FCIIW/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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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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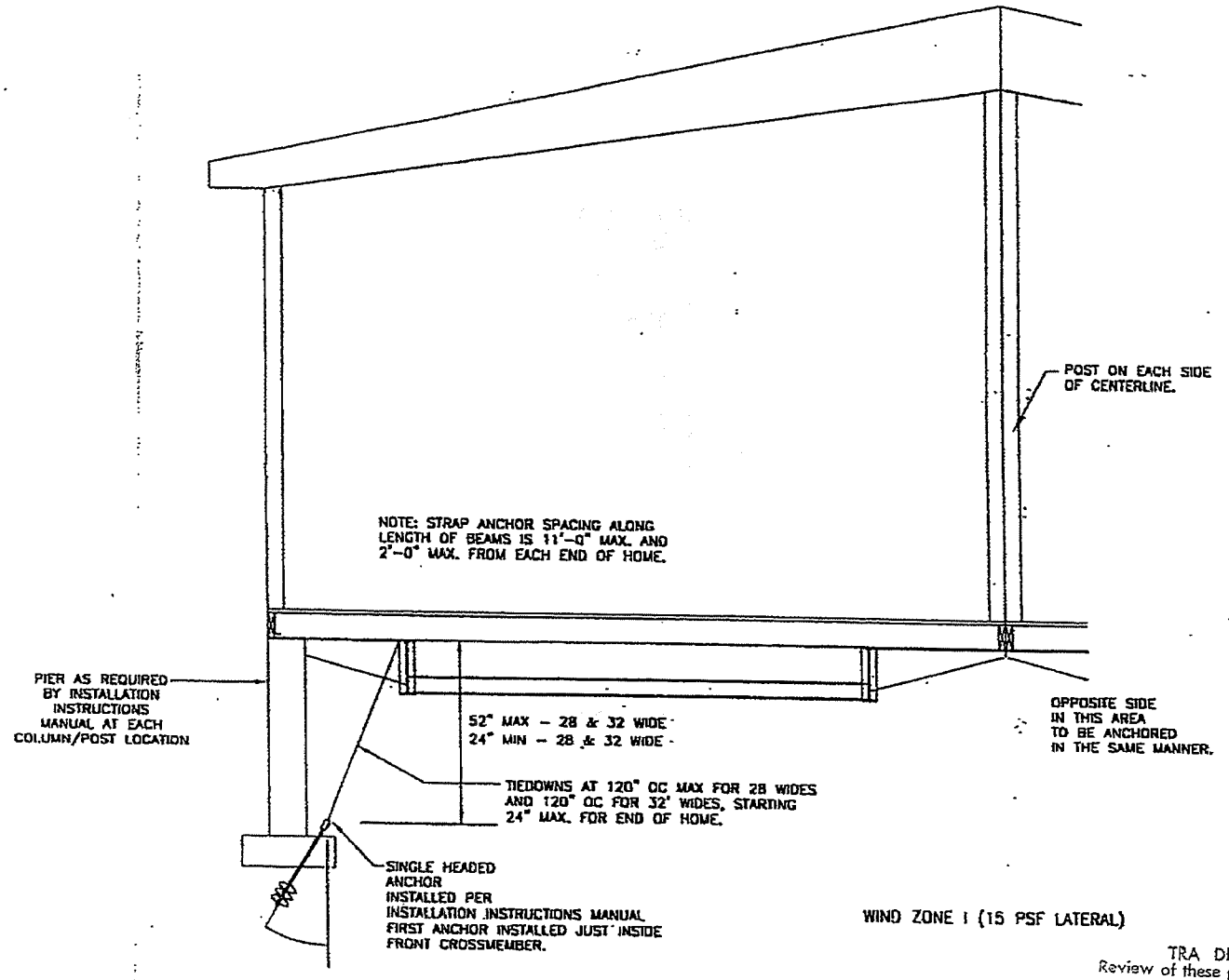

WIND ZONE I (15 PSF LATERAL)

COLORADO REGISTERED PROFESSIONAL ENGINEER
JOHN C. DOEDEN
26527
4/17/08

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ON-SITE INSTALLATION: FULL WIDTH (3 SIDED OPEN) PORCH

NOTES:

1. A COPY OF THIS DRAWING IS TO BE INCLUDED IN THE INSTALLATION INSTRUCTIONS.
2. THIS DESIGN BASED ON AN I-BEAM SPACING OF 99 1/2" ON 32-WIDES AND 82 1/2" ON 28-WIDES.
3. PIER BLOCKS INSTALLED AT COLUMNS PER INSTALLATION INSTRUCTIONS MANUAL.
4. THIS DESIGN FOR FLOOR WIDTH OF 182" PER SECTION FOR 32-WIDES AND 156" FOR 28-WIDES.
5. LONGITUDINAL TIEDOWNS ARE TO BE INSTALLED TO STANDARD REQUIREMENTS

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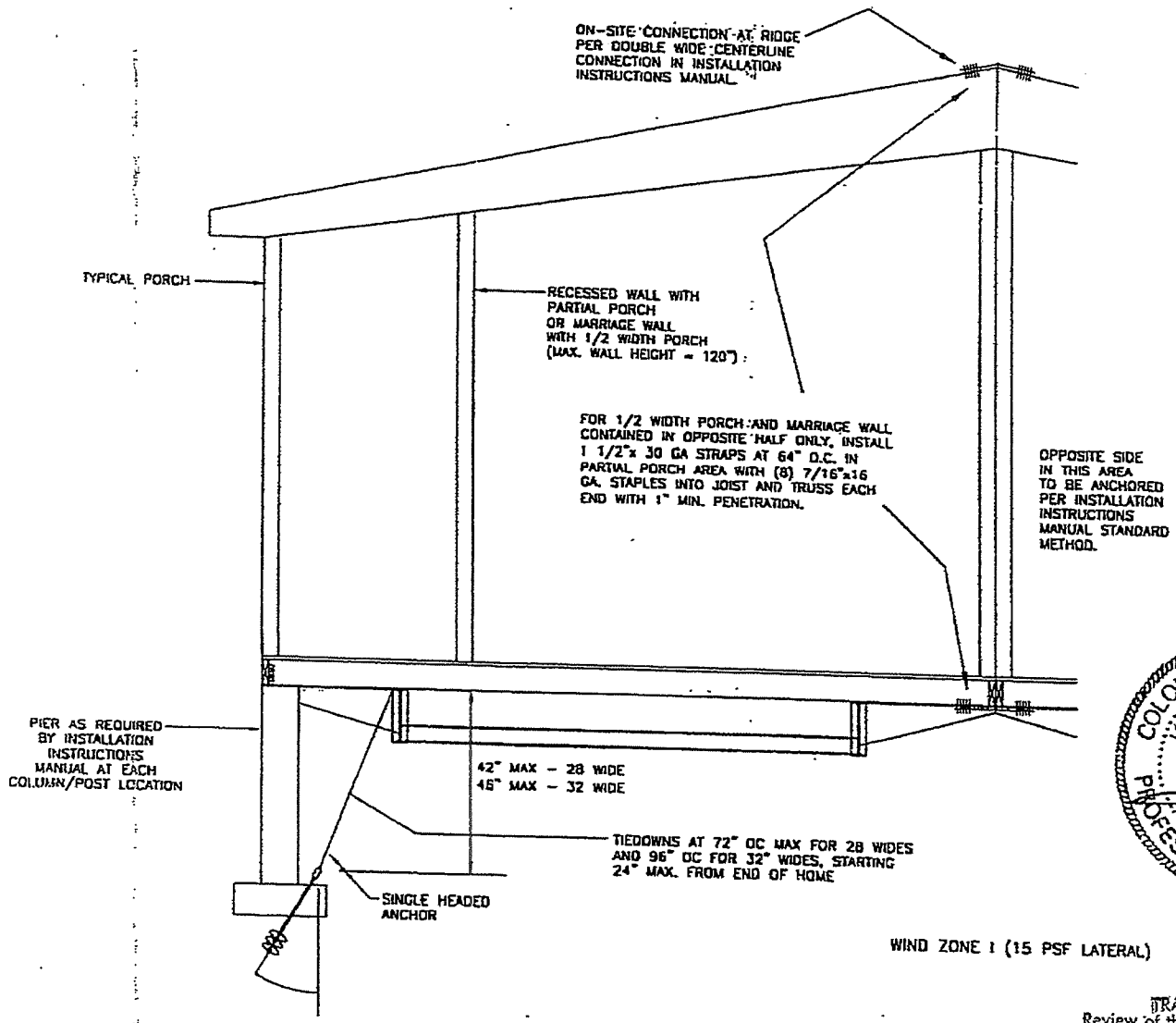
TM-24,32



COLORADO REGISTERED
JOHN C. DOEDEN
26523
PROFESSIONAL ENGINEER
4/17/01

WIND ZONE I (15 PSF LATERAL)

ON-SITE INSTALLATION: RECESSED (PARTIAL PORCH) AREA ONLY

NOTES:

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2. THIS DESIGN BASED ON AN I-BEAM SPACING OF 99 1/2" ON 32-WIDES AND 82 1/2" ON 28-WIDES.
3. PIER BLOCKS INSTALLED AT COLUMNS PER INSTALLATION INSTRUCTIONS MANUAL.
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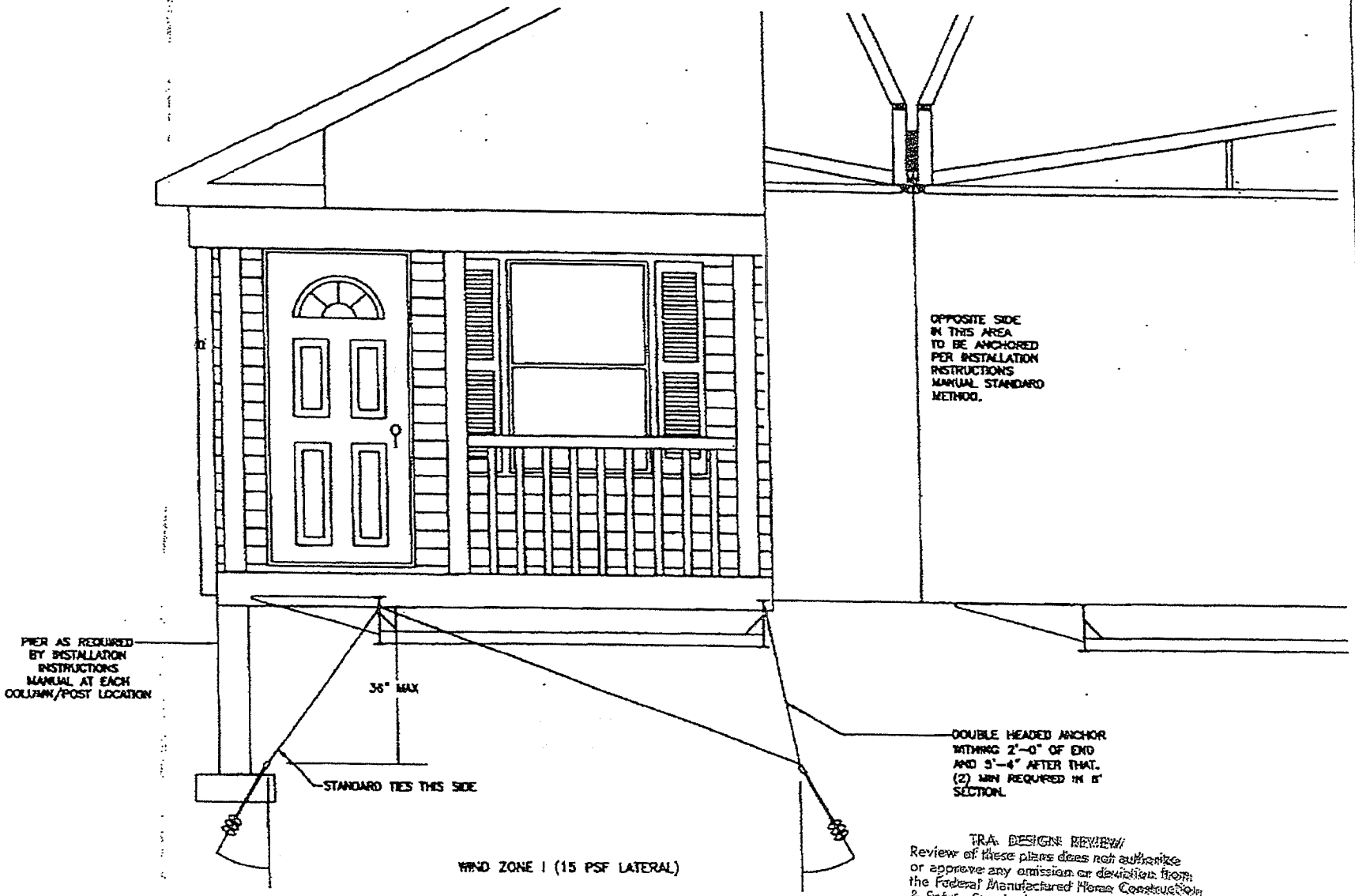

ON-SITE INSTALLATION: RECESSED (PARTIAL PORCH) AREA ONLY

NOTES:
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2. THIS DESIGN BASED ON AN I-BEAM SPACING OF 99½".
3. PIER BLOCKS INSTALLED AT COLUMNS PER INSTALLATION INSTRUCTIONS MANUAL.
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HM-21,354

NOTES:

1) CONNECT ALL CROSSOVER AMP CONNECTORS

2) INSTALL 3/8 APA RATED SHEATHING TO NON-PORCH SIDE MATING WALL
FASTEN WITH 7/16"x1 3/8"x16 GA. STAPLE
6" O.C. EDGE & 12" O.C. FIELD

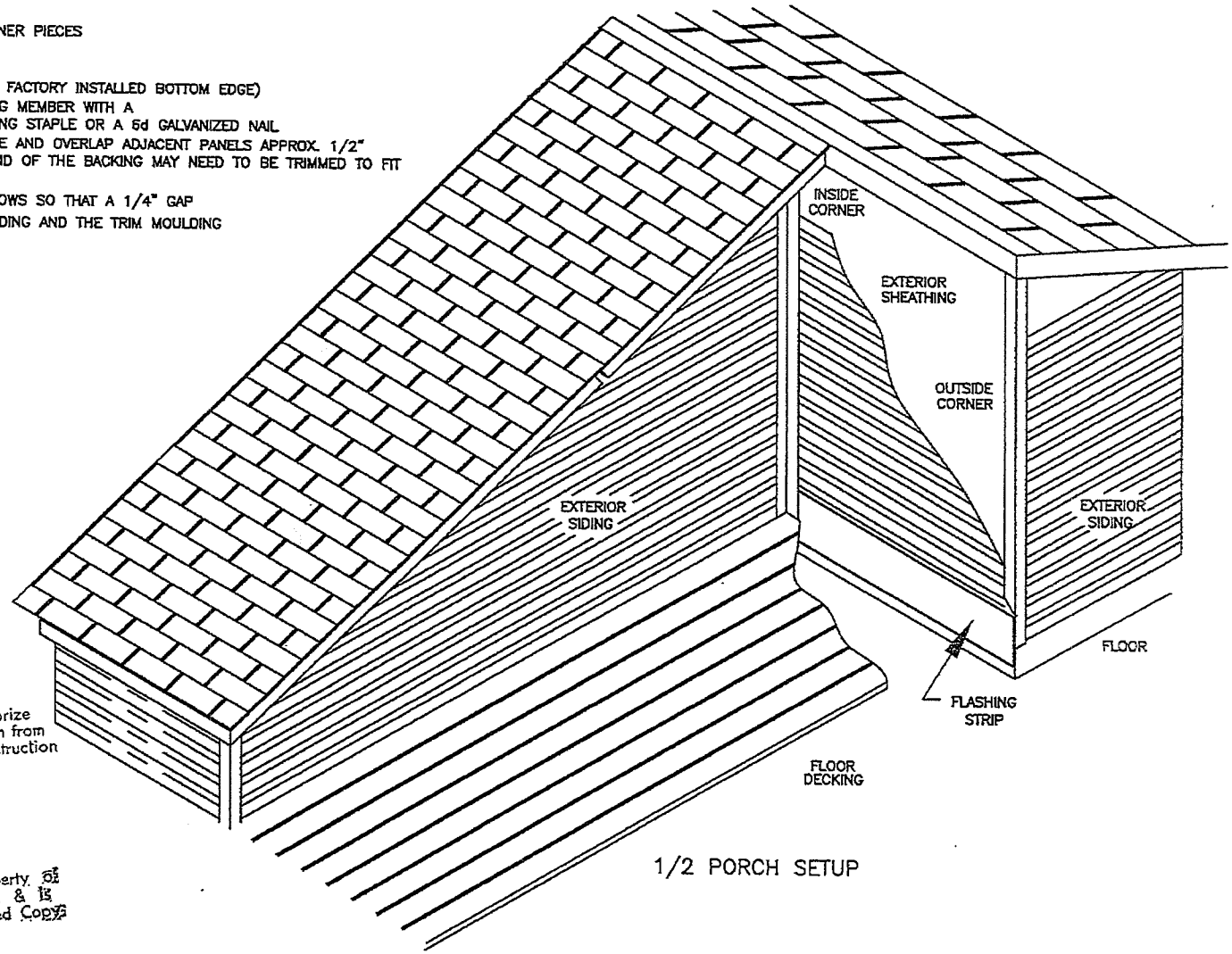
3) INSTALL A 12" MINIMUN FLASHING STRIP OF EXTERIOR GRADE MATERIAL TO NON-PORCH SIDE MATING WALL
(UNDERBELLY BOARD, ALUMINUM, VINYL, ROOF UNDERLAYMENT, OR PLASTIC)
CENTERED AT FLOOR AND WALL CONNECTION

4) INSTALL INSIDE AND OUTSIDE VINYL CORNER PIECES

5) INSTALL LAP SIDING

A) WORKING FROM BOTTOM (INLINE WITH FACTORY INSTALLED BOTTOM EDGE)
FASTEN THE SIDING TO EACH FRAMING MEMBER WITH A
7/16"x1 1/2"x16 GA ALUMINUM SIDING STAPLE OR A 6d GALVANIZED NAIL
INTERLOCK EACH SUCCESSIVE COURSE AND OVERLAP ADJACENT PANELS APPROX. 1/2"
IF BACKED SIDING IS USED, EACH END OF THE BACKING MAY NEED TO BE TRIMMED TO FIT

B) TRIM EACH LAP AT DOORS AND WINDOWS SO THAT A 1/4" GAP
FOR EXPANSION IS LEFT BETWEEN SIDING AND THE TRIM MOULDING



1/2 PORCH SETUP

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TM-2135

E. EXTERIOR CLOSURE

Closure materials are provided including shingles, asphalt plastic cement, soffit metal for joint at gable ends, and exterior siding for closure of the centerline joint at each end. NOTE: Before proceeding with the closure of the centerline joint at the front and rear, the electrical crossover connection must be complete (refer to "Centerline Crossover Connection").

Patch all holes in shingles caused by removal of close-up and shipping materials with asphalt plastic cement.

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LAP SIDING

1. Working from bottom (in line with factory installed bottom edge) fasten the siding to eight framing member with a 7/16" x 1-1/2" x 16 gauge aluminum siding staple or a 6d galvanized nail. Interlock each successive course and overlap adjacent panels approximately 1/2". NOTE: If backed siding is used, each end of the backing may need to be trimmed for fit.

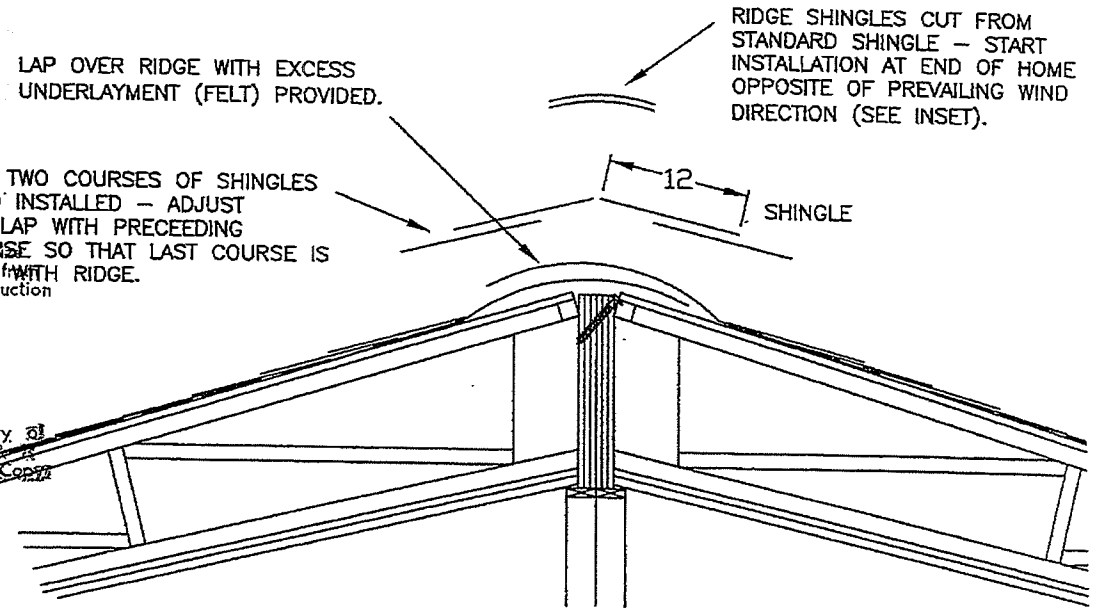
2. Trim each lap at doors and windows so that a 1/16" gap for expansion is left between siding and the trim moulding.

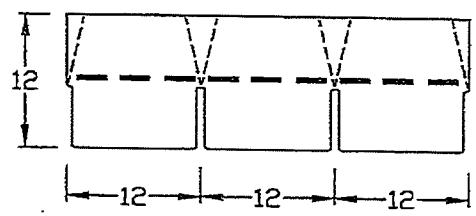
SHINGLE ROOF: (Refer to figure 7)

1. Lay shingle underlayment (previously folded back for centerline connection) flat over ridge and tack down overlapping edge.

2. Install two last courses of shingles each side of ridge per instructions in figure 7 and shingle manufacturer's instructions. NOTE: Each successive course is started with a shingle 6" shorter than first shingle of preceeding course (cut shingle to proper length), or for special shingle application refer to instructions on the back of the bundle.

3> Cut shingles for ridge cap and install away from prevailing wind direction (refer to figure 7).





CUT 3 RIDGE SHINGLES FROM STANDARD SHINGLE AS SHOWN.

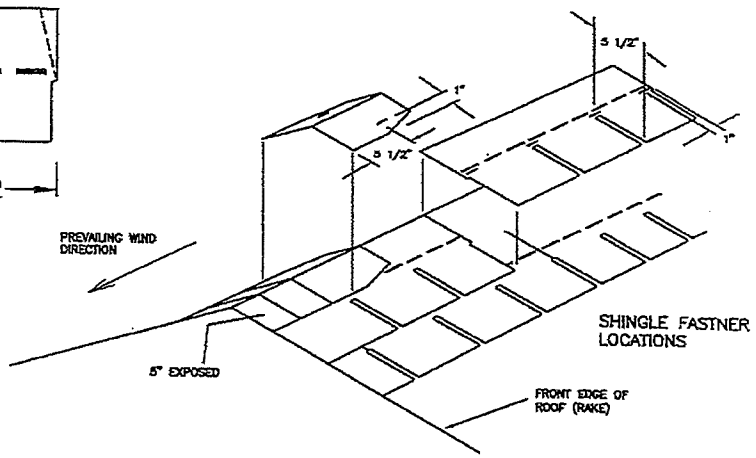


FIGURE 7:
SHINGLE INSTALLATION
STANDARD SHINGLE APPLICATION

TM2-136

F. INTERIOR FINISH

1. Install wide molding or beam provided over the centerline joint and screw heads at cathedral beam inside.
2. Fit and secure carpet over joint at floor using a carpet stretcher. Seams should be properly bonded with heat bond tape and seaming iron.
   Install wall mountings, as necessary, for a finished appearance.

CENTERLINE CROSSOVER CONNECTIONS

WATERLINE AND DRAIN LINE CROSSOVER

Crossover connection is ONLY applicable to home designs in which plumbing exists in both halves. For drain line connection follow procedure under "Connecting Utilities – Drain Lines"

Water line procedure:

1. Remove any temporary caps from ends of lines at the unit centerline (both halves).
2. Install the provided connector(s).
3. Check for leaks.
4. Refer to freeze protection recommendations for exposed pipes. See "Fresh Water Supply" under "Connecting Utilities."

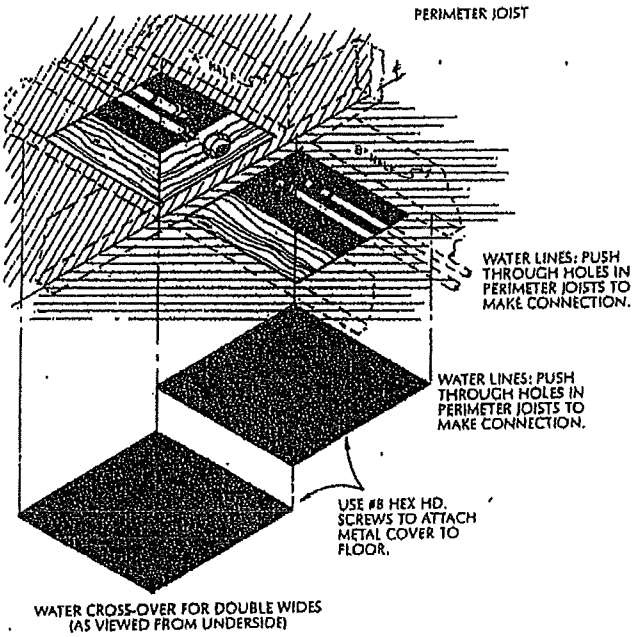
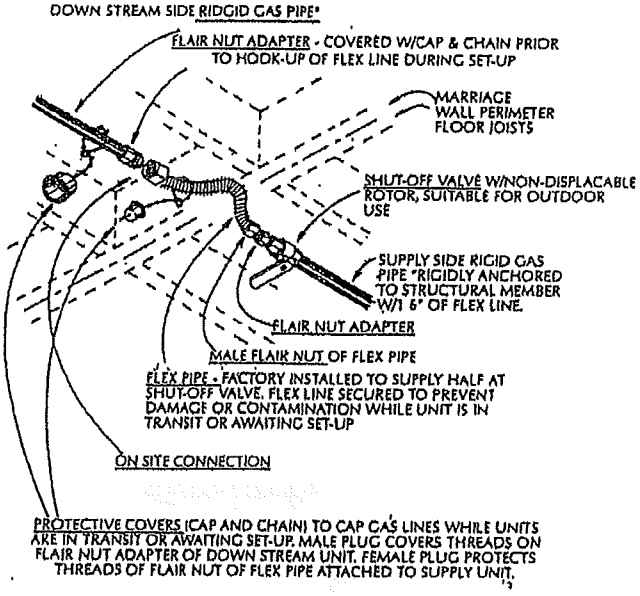


FIGURE 8A: PLUMBING DETAILS

GAS LINE CROSSOVER

Applicable only when gas appliances exist in both halves.

1. Remove protective caps from the connector provided with the home.
2. Connect the flex pipe to down stream rigid gas pipe.
3. Test for leaks with soapy water.

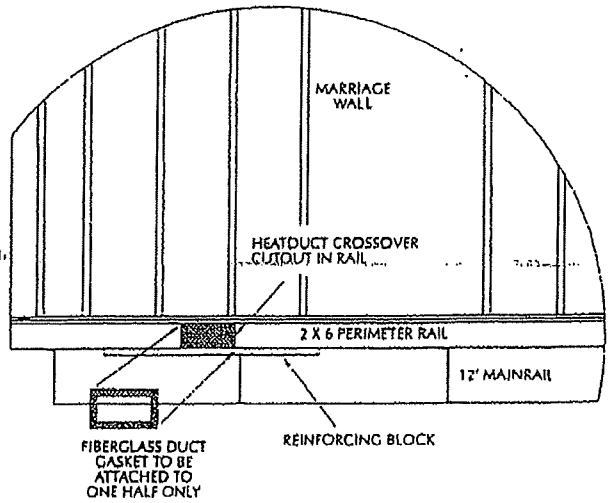


HEAT DUCT CROSSOVER CONNECTION

Your home has an in-floor duct crossover system. There are two (minimum) heat duct crossovers on each home.

1. Remove taped covers from heat duct crossovers at perimeter rails each half of marriage sides.
2. Install the fiberglass duct gasket provided with the ship loose materials in your home to one side only.

This completes the preparation work required for heat duct crossovers prior to moving the two halves together.



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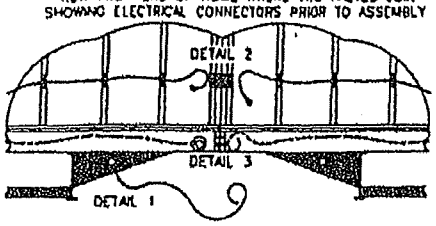
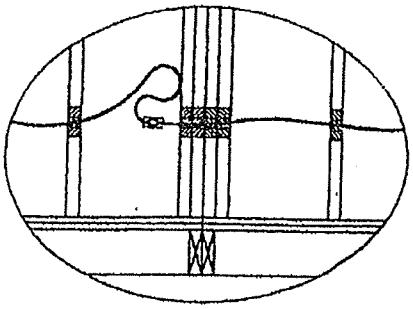
ELECTRICAL CROSSOVER CONNECTION

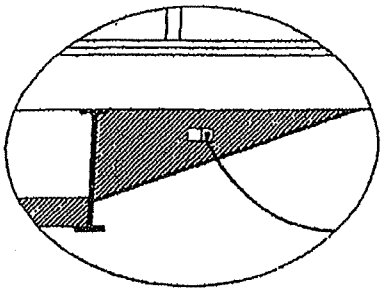
Before proceeding, heed 'CAUTION' notes under "Electrical Connection" in "Connecting Utilities" section.

The various methods of electrical crossover connections are shown below. The procedure for electrical interconnections is as follows:

VIEW FROM END OF HOME WHERE TWO HALVES JOIN SHOWING ELECTRICAL CONNECTORS PRIOR TO ASSEMBLY







DETAIL 1: - Frame Bonding:

1. Neither the frame of the house, nor the frame of any appliance is to be connected to the neutral conductor in the manufactured home.
2. More than one solder less lug may be installed on the chassis to secure all grounding wires. In no case are grounding wires to be twisted or spliced together.
3. Connect the #8 bare copper wire to both halves where the saddle clamps are provided. (Typically on the front cross member).

DETAIL 2: - 15 and 20 amp circuit connection with splicing device:

1. Locate connector ends in each half for splicing appropriate circuits. NOTE: If more than one circuit is to be spliced, match identified circuit connectors.
2. Push A half connector into B half connector until they lock together.

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CONNECTING UTILITIES

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 shut-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. Pressures 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 entire 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 should be wrapped with a heat tape listed by U.L. for manufactured home use. The heat tape should 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.

DRAIN LINES

The drain line system in your home terminates in a standard 3" waste connection.

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 drawing locate the fittings necessary at each outlet and secure these fittings to the outlet. NOTE: All connections of fittings shall be done following the instructions printed on the containers of solvent and adhesive.

Standard lengths of pipes 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 ¼" 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.

ELECTRIC 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):

SIZE OF FIXED FEEDER SUPPLY WIRES, AWG OR MCM

Size of Main Circuit Breaker, in Home, in Amperes	75 C 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

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IM-2.1.39

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, IN INCHES

Size of Main Circuit Breaker In Home, In Amperes	75° C Rated Copper, Type RH, RRH 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. Unqualified people could cause serious or fatal accidents.
- Be sure that the electrical power supply at your home site 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 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 cover 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 most cases, the orifices or setting 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. When a fireplace is installed in a home that is to be placed over a basement, the fresh air kit must be installed such that the fresh air will come from the exterior of the home. It is not acceptable that the fresh air come from the basement of the home.

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

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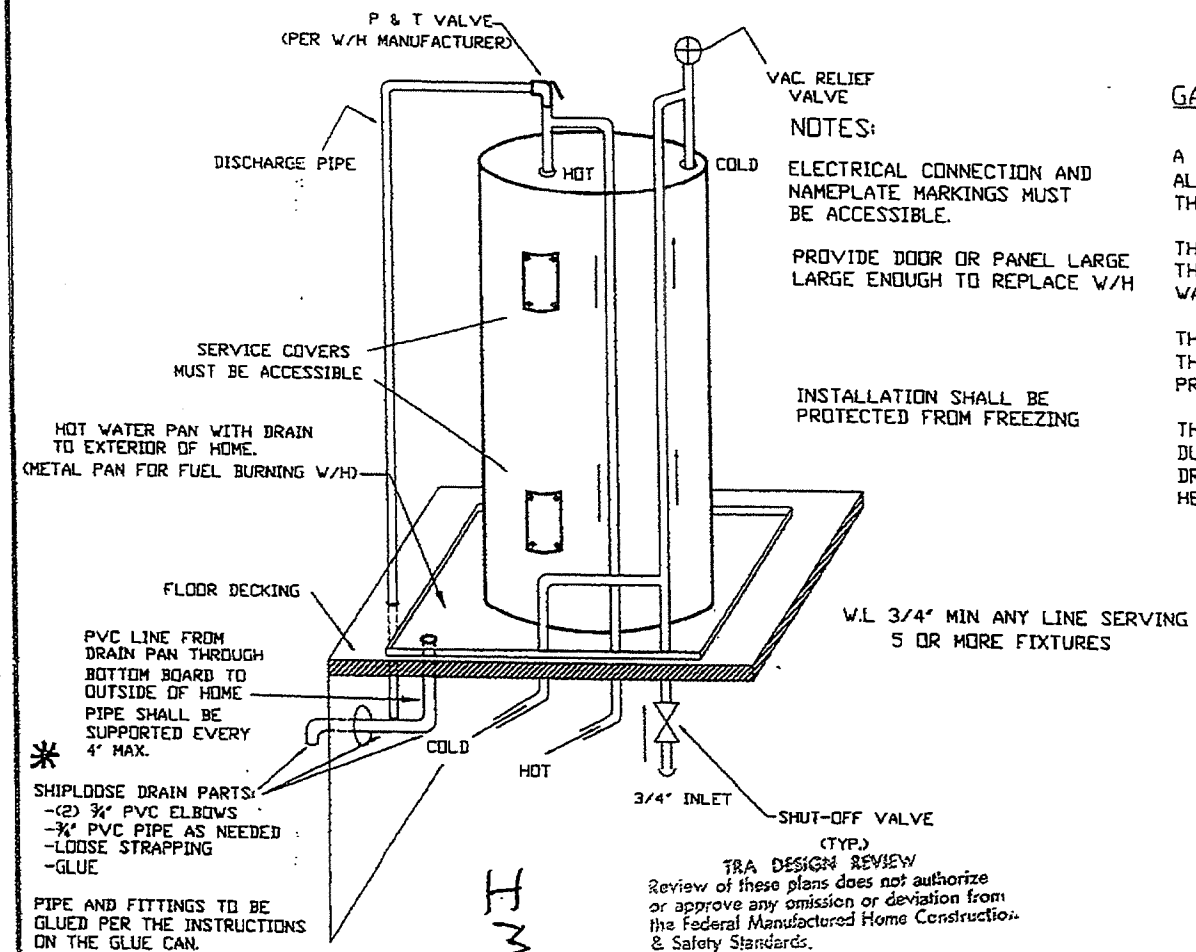
IM-2.1.40

TYPICAL WATER HEATER DETAIL



NOTES:

ELECTRICAL CONNECTION AND NAMEPLATE MARKINGS MUST BE ACCESSIBLE.

PROVIDE DOOR OR PANEL LARGE LARGE ENOUGH TO REPLACE W/H

INSTALLATION SHALL BE PROTECTED FROM FREEZING

W.L 3/4" MIN ANY LINE SERVING 5 OR MORE FIXTURES

GAS W/H APPLICATION:

A HOLE WILL BE CUT IN THE DRAIN PAN TO ALLOW THE COMBUSTION AIR DUCT TO PASS THROUGH.

THE COMBUSTION AIR DUCT WILL EXTEND THROUGH THE DRAIN PAN AND WILL BE CONNECTED TO THE WATER HEATER.

THIS PENETRATION OF THE COMBUSTION AIR DUCT THROUGH THE DRAIN PAN WILL BE SEALED TO PREVENT WATER LEAKAGE.

THE FLANGE PLATE FOR THE COMBUSTION AIR DUCT WILL BE SECURED BY SCREWS THROUGH THE DRAIN PAN INTO THE FLOOR. THESE SCREW HEADS WILL BE SEALED.

HM-21-H

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REVISIONS
REVISED DRAIN NOTES 11-15-06 BKR

C# PD14	BY E.S.	DATE /06	
TITLE: WATER HEATER DETAIL			PD14

INSTALLING CENTRAL AIR CONDITIONING

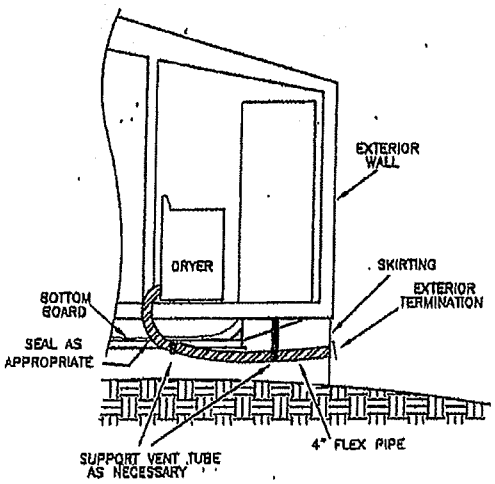
This home is suitable for installation of a central air conditioner provided the electrical supply panel and electrical service is large enough to carry the load. A qualified heating/cooling company will be able to determine if the electrical supply is adequate, and by referring to the information on the comfort cooling certificate located in the home, a qualified heating/cooling company can 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 automatic damper (to prevent cooled air from blowing up into the furnace) may have to be installed in the furnace base. Depending on the furnace installed in your home, this damper 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 damper. 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 contain dampers, or be installed in such a way so that when the furnace runs, heated air does not blow through these ducts into the air conditioning unit.

A combination heating/cooling thermostat will also have to be installed, to prevent 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 home. 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 home should not be notched or cut into in any way when installing the air conditioner supply duct.

A duct carrying return air from the home 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 must not be notched or cut into, in any way when installing the return air duct.



DRYER INSTALLATION AGAINST INTERIOR WALL

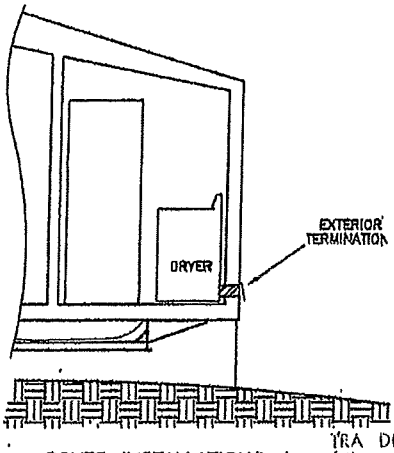
INSTALLING CLOTHES DRYER VENT

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 t 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.

WARNING! If your home was not wired for an electric clothes dryer at the factory, do not install one until a qualified electrician determines that the electrical service is adequate for the increased demand. Any additional wiring should only be done by a qualified electrician. The dryer must be vented in accordance with the foregoing instructions, but you will have to cut the hole for the vent tube in the floor, because this wasn't done at the factory.



DRYER INSTALLATION AGAINST EXTERIOR WALL

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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 (SEMCO Products, Inc. – Model LN 3045) and fasten the perimeter of the patch at 3" intervals.

INSTALLING SKIRTING AROUND YOUR HOME

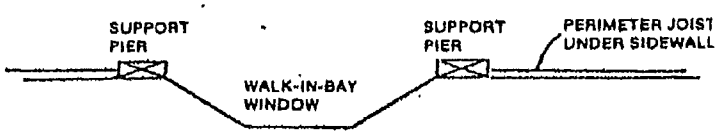
Skirting installed around the perimeter of your home will enhance its appearance, and help keep heating costs down in the winter time. Several types of skirting are available, and may be found in the yellow pages under "Mobile Homes." If you have skirting installed around your home, be sure that the clothes dryer vent (if any) terminates OUTSIDE the skirting. Vents should 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

Multi-section homes are designed for the installation of gutters or downspouts.

THE WALK-IN-BAY WINDOW INSTALLED IN THE SIDEWALL OF THIS HOME IS TO BE PERIMETER SUPPORTED WITH A PIER AT EACH END OF THE OPENING - SEE RECOMMENDATIONS UNDER FOUNDATION SECTION.



PIER LOAD IS: 1,800 LBS. @ SOUTH (20 PSF) ROOF ZONE
3,025 LBS. @ MIDDLE (30 PSF) ROOF ZONE

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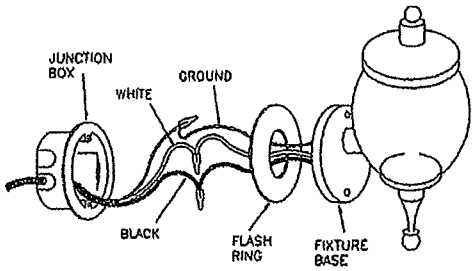
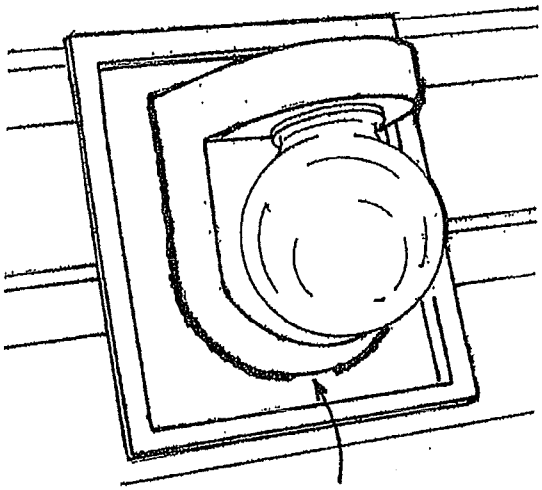
INSTALLATION OF EXTERIOR LIGHT

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 tight 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.

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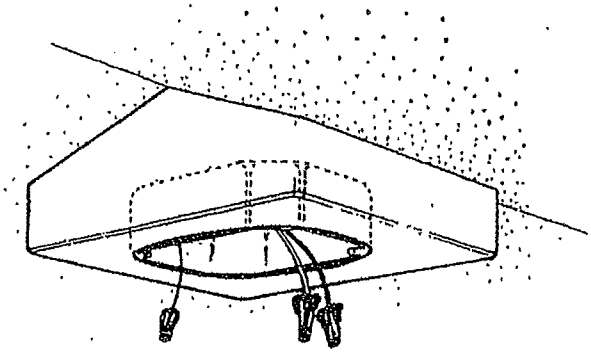
INSTALLATION OF INTERIOR CEILING FAN

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.

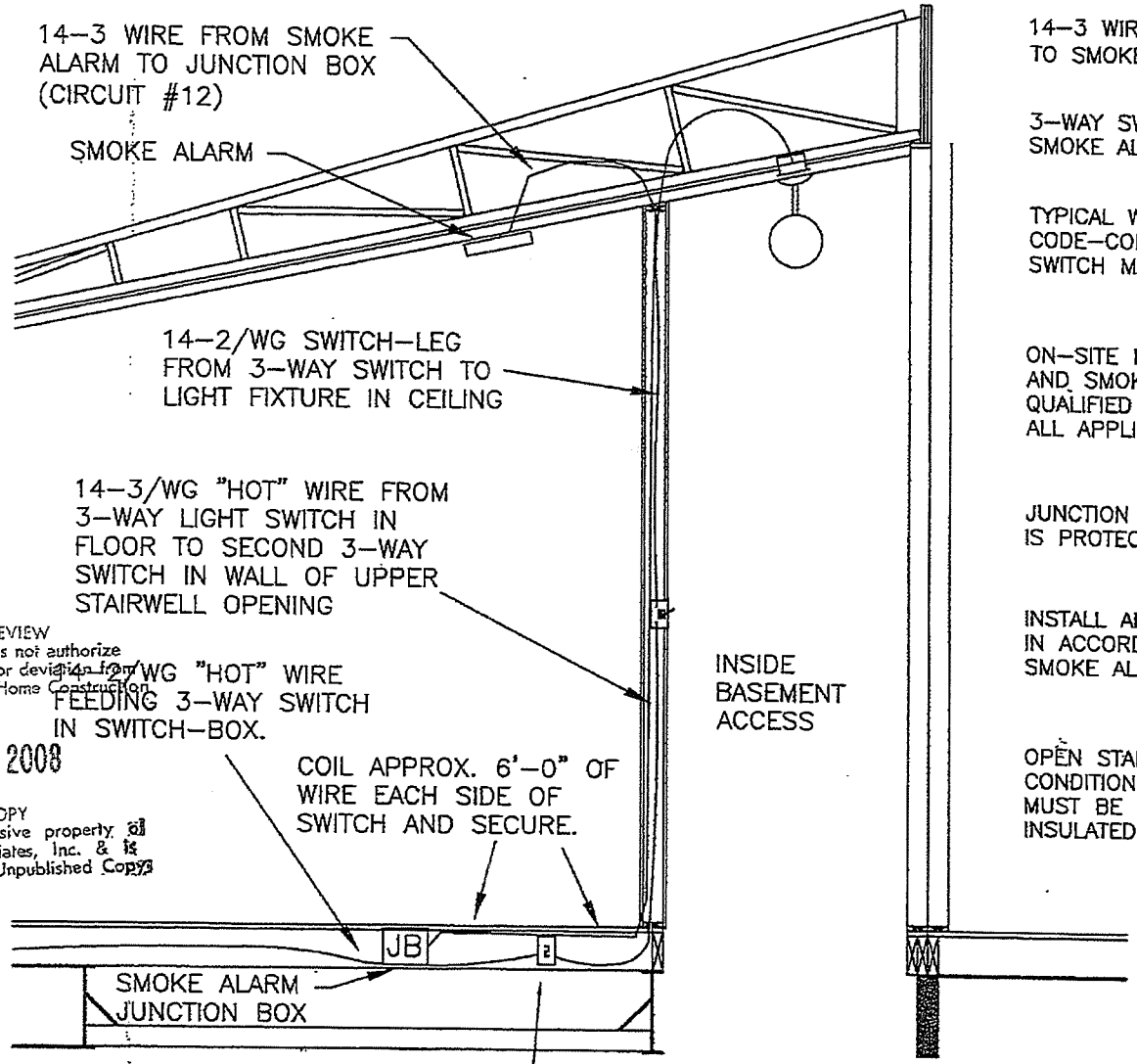
Fan mounting box shown on Cathedral ceiling May be mounted on Flat ceiling or Ridge Beam



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

IM-2.1.44



14–3 WIRE FROM SMOKE ALARM TO SMOKE ALARM ON CIRCUIT #12

3–WAY SWITCHED LIGHT AND SMOKE ALARMS ARE ON SEPERATE CIRCUITS

TYPICAL WIRING METHOD SHOWN. OTHER CODE–COMPLIANT MEANS OF WIRING A 3–WAY SWITCH MAY BE USED

ON–SITE HOOK–UP OF SECOND 3–WAY SWITCH AND SMOKE ALARM TO BE PERFORMED BY QUALIFIED ELECTRICIAN IN ACCORDANCE WITH ALL APPLICABLE CODES.

JUNCTION BOX IS BETWEEN FLOOR JOISTS AND IS PROTECTED BY THE UNDER BELLY MATERIAL.

INSTALL AND TEST SMOKE ALARMS IN ACCORDANCE WITH THE SMOKE ALARM INSTRUCTIONS

OPEN STAIRWELL HOMES MUST BE SET OVER CONDITIONED AIR SPACE OR THE OPENING MUST BE ENCLOSED IN THE BASEMENT BY AN INSULATED DOOR AND WALLS.

LOCATION OF SWITCH AND JUNCTION BOX TO BE IDENTIFIED ON ACCESS PANEL UNDER HOME FOR ON–SITE HOOK–UP.

THIS PAGE TO BE INCLUDED IN SET–UP INSTRUCTIONS OF HOMES WITH OPT. BASEMENT ACCESS. ALSO HOME OWNERS MANUAL.

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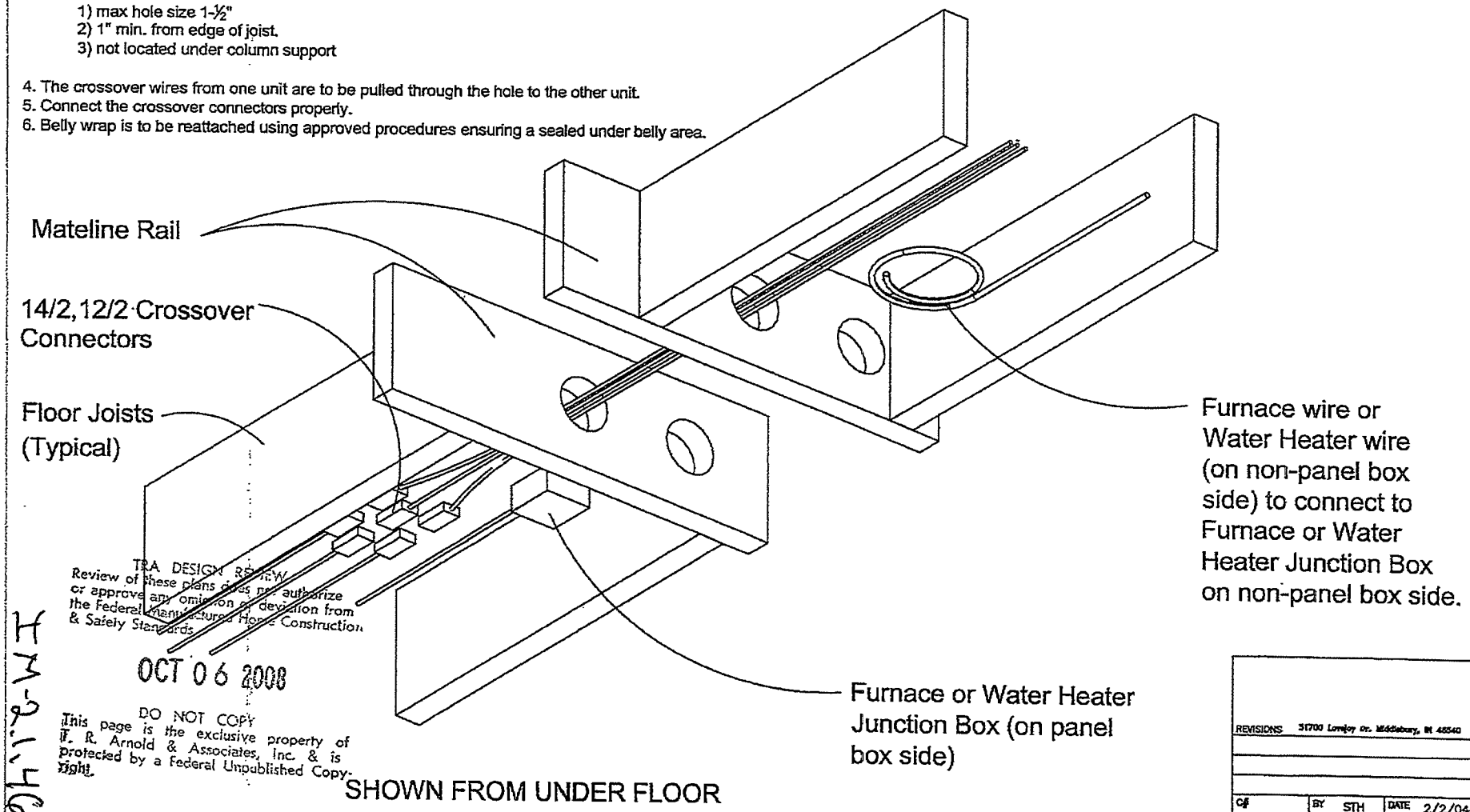
REVISIONS		
ADDED SMOKE ALARM APPL. 8–8–02		
ADDED NOTES 9–13–02		
ADDED OPEN STAIR NOTE 1–27–08		
BY JM	BJH	DATE 7–11–03
TITLE: BASEMENT ELECTRICAL APPL.		NO.

Notes:
1. Belly wrap is not shown for clarity.
2. Once the home has been set at the site, the belly wrap is to be pulled back at locations identified as Crossover Connector Location.
3. Use a Hole Saw to drill a hole completely through perimeter rails.
   Hole size requirements per FL-1:
   2x8 floor joists
      1) max hole size 3"
      2) 2" from edge of joist (min)
      3) not located under column support
      4) up to 3 holes minimum 6'-0" apart
   2x6 floor joists
      1) max hole size 1-½"
      2) 1" min. from edge of joist.
      3) not located under column support

4. The crossover wires from one unit are to be pulled through the hole to the other unit.
5. Connect the crossover connectors properly.
6. Belly wrap is to be reattached using approved procedures ensuring a sealed under belly area.



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SHOWN FROM UNDER FLOOR

REVISIONS 31700 Lorraine Dr. Middlebury, IN 46540		
CJ	BY STH	DATE 2/2/04
TITLE: CROSSOVER CONNECTORS		

HM-9.1.46

Appendix – A

Hinged Roof On-site Setup Instructions

Before You Begin

1. Review the parts list and assure you have located all the parts and components necessary for completion. Do not uncover the roof until you have located all of the parts.
2. You will need certain tools before you begin:
   A. Five roof jacks capable of lifting the roof to the proper height or a boom truck capable of lifting the upper roof section which weighs between 1500 and 2000 pounds.
   B. Ladders for egress from the roof.
   C. Basic hand tools such as hammer, saw, etc.
   D. Manpower needed is a minimum of two people, however, five is preferred.

Step 1: Plastic Removal

1. We recommend that you remove only the weatherproofing necessary to raise the roof. This should be the fastening along the mate line wall. By removing only this area, the home could quickly be re-protected in case of rain or snow.
2. Fold the weatherproofing back out of the way being careful not to step on loose materials which could cause a fall from the roof.

Step 2: Preparing To Raise The Roof

1. Measuring the length of the home and divide that by the number of lifting points you intend to use. (We require no less than five for a home larger than 56 feet.) (Example: 64 foot home divided by 5 lifting points = 12'-8")
2. Take the results of item 1 above and divide by 2. (Example: 12'-8" divided by 2 = 6'-4"). This will be where you place your first jack. The second jack will be placed 12'-8" from the first jack. Repeat for jacks 3, 4 and 5.
3. This should result in the last jack being the same distance from the end as the first jack was, in this example 6'-4".
4. Lift each jack equally until the roof is supported by the jacks, recheck for any problems before raising further.
5. If everything is still O.K., continue to raise the roof equally until the hinged king posts (hinged inside the roof to the top chord) fit into place and fasten per the included drawing. At this time, position the gable end wall wedges into the end trusses. Fasten to chords as shown on included drawing.

Step 3: Finish

1. For shipping purposes the factory has left a row or two or three of shingles out of the hinge area. Once the roof has been raised these shingles will need to be installed along with the necessary felt or ply-dry underlayment. Any holes left exposed when the shipping plastic was removed should be tarred.
2. Installed the soffit, j-rails and fascia needed.
3. Installed gable end sheathing and siding as needed.

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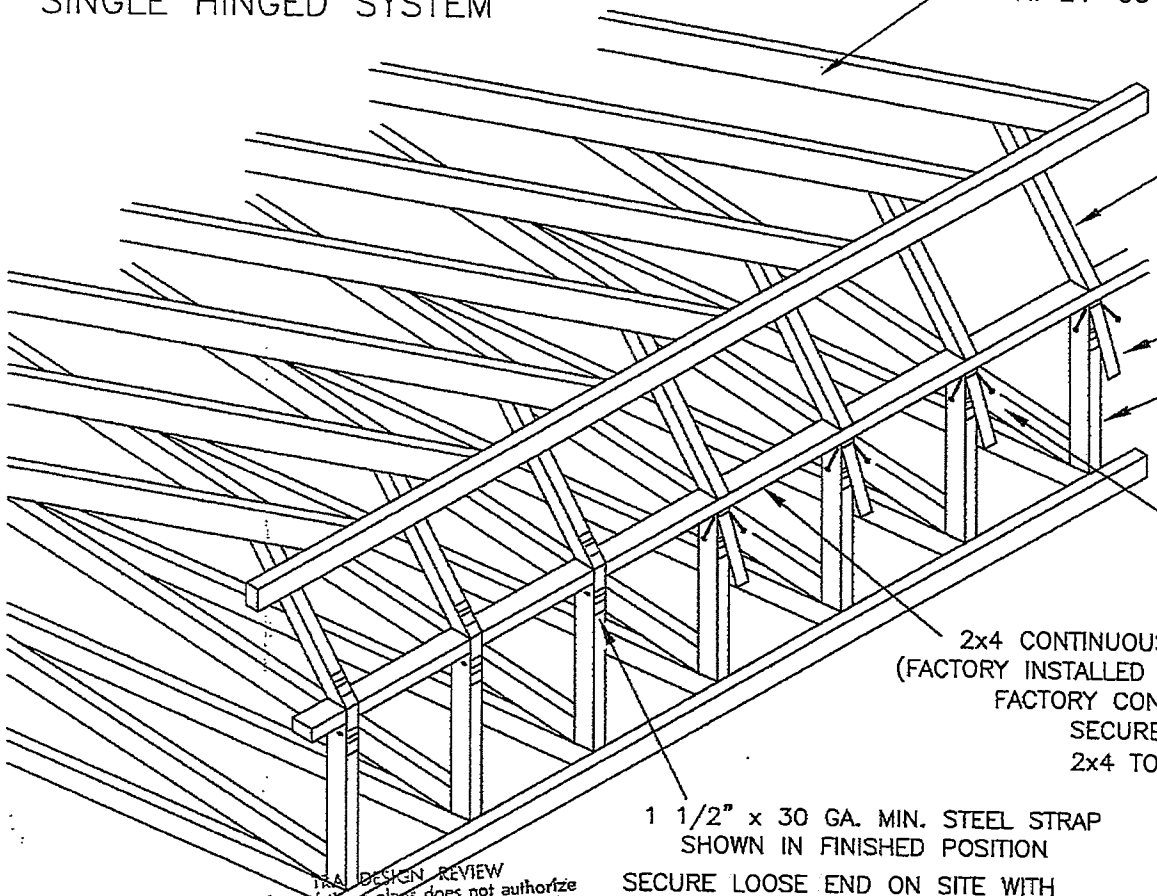
ROOF ILLUSTRATED IS A
SINGLE HINGED SYSTEM



ON SITE SET-UP

EXTEND HINGED ROOF PER INSTRUCTIONS.

TOE SCREW WITH (2) #8 x 3" SCREWS UPWARD THROUGH EACH FIXED KING POST INTO 2x4 CONTINUOUS RAIL

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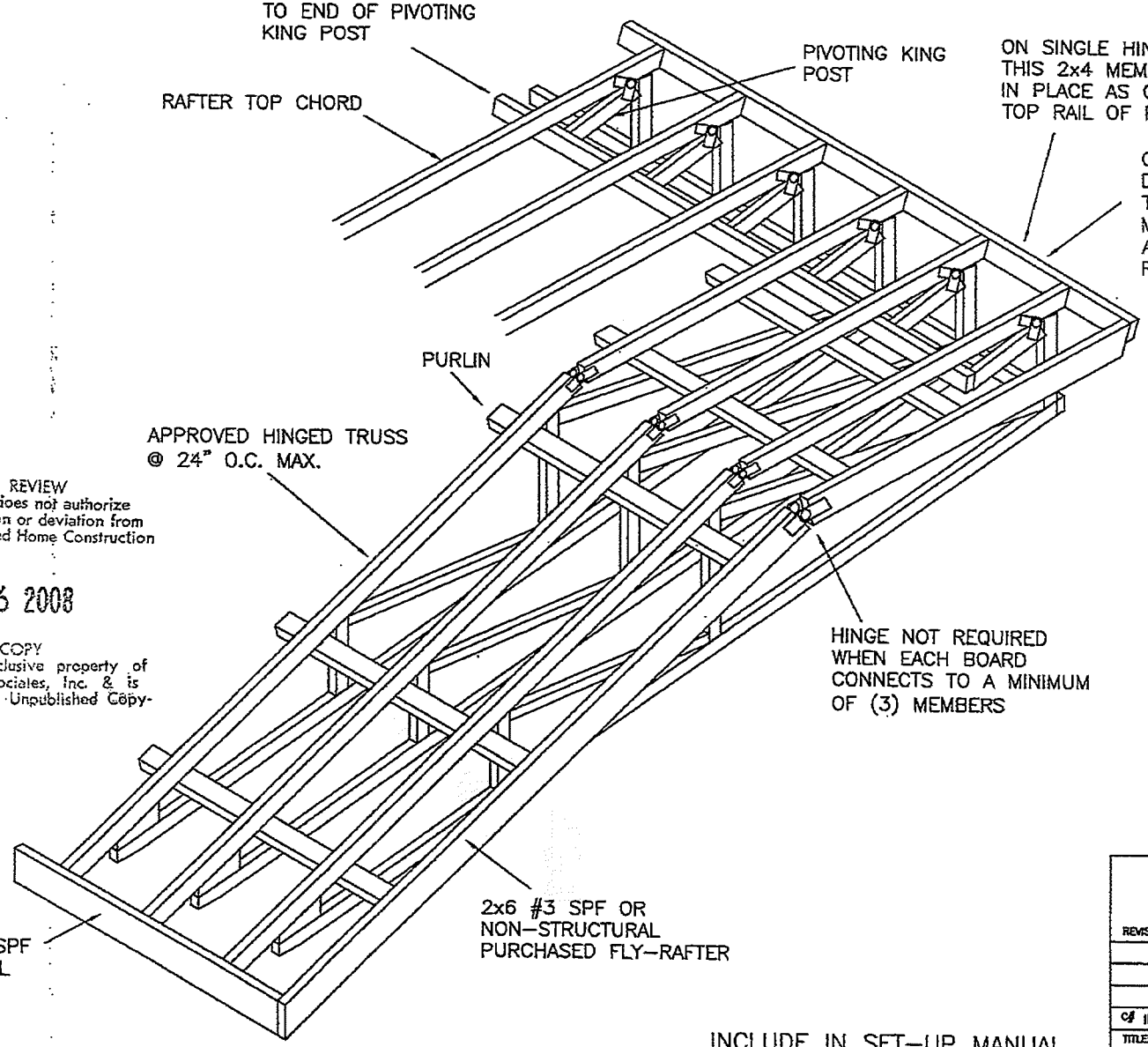
INCLUDE IN SET-UP MANUAL

REVISIONS			
2x4 TO HINGED LEG 3-18-99			
C# IM2-29	BY TOM V.M.	DATE 1-22-99	
TITLE: HINGED ROOF		NC	

FM-218

ROOF ILLUSTRATED IS A SINGLE HINGED SYSTEM



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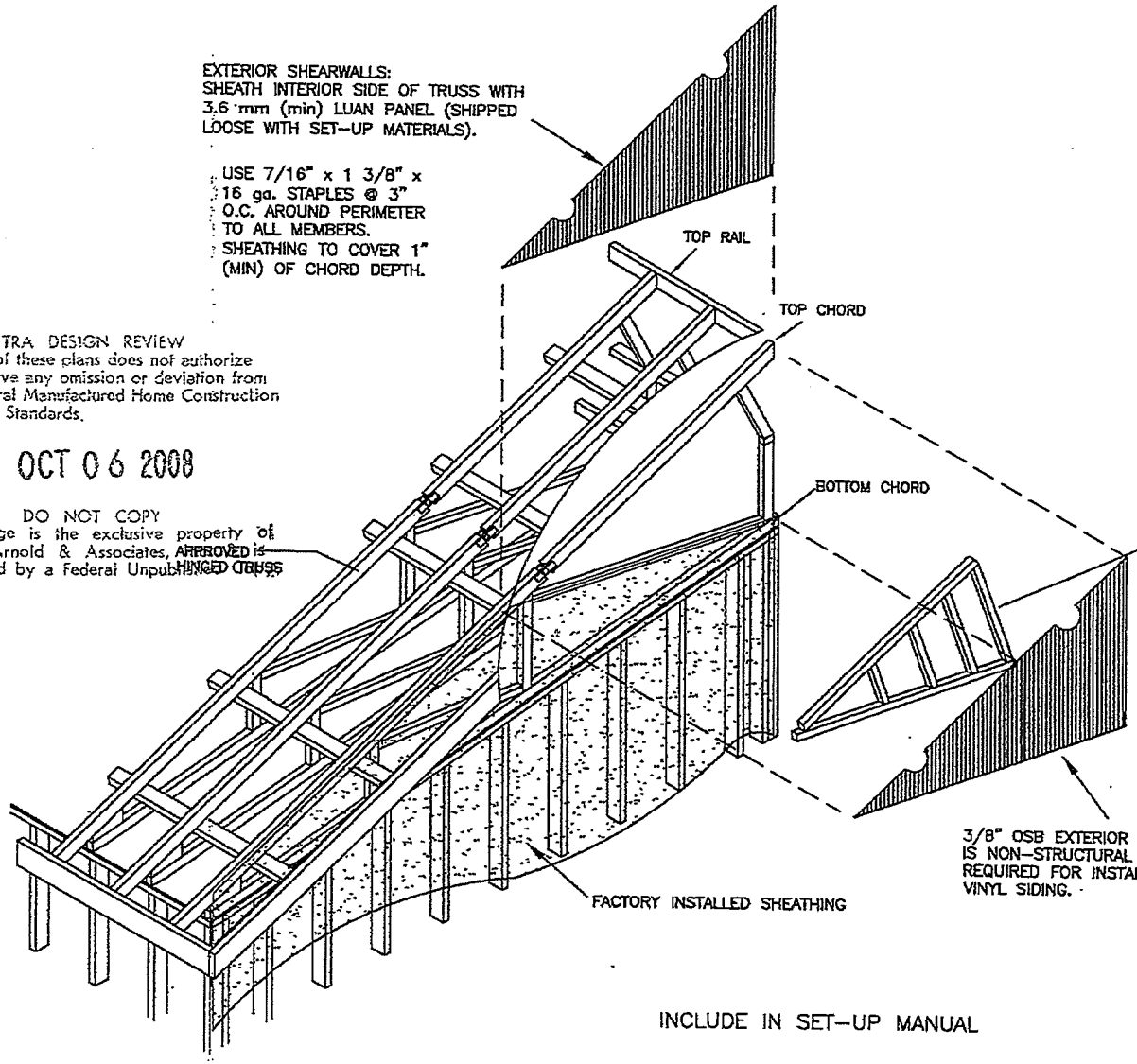
INCLUDE IN SET-UP MANUAL

REVISIONS			
IM2-30	BY TOM V.M.	DATE 2-19-99	
TITLE: HINGED ROOF			NO.

64.2.1 IM2

USAGE: 5/12 ROOF PITCH



KNEEWALL FRAMING TO BE 2 X 2 SPF #3 MIN FASTENED WITH (2) 7/16 X 2-1/2 X 15 GA MIN (OR EQUAL) AT EACH CONNECTION. TO BE INSTALLED ON SITE.

KNEEWALL TO BE FASTENED TO TRUSS MEMBERS WITH #8 X 3" WOOD SCREWS (OR EQUAL) 8" O. C. MAX.

3/8" OSB EXTERIOR SHEATHING IS NON-STRUCTURAL BUT REQUIRED FOR INSTALLATION OF VINYL SIDING.

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APPROVED HINGED TRUSS

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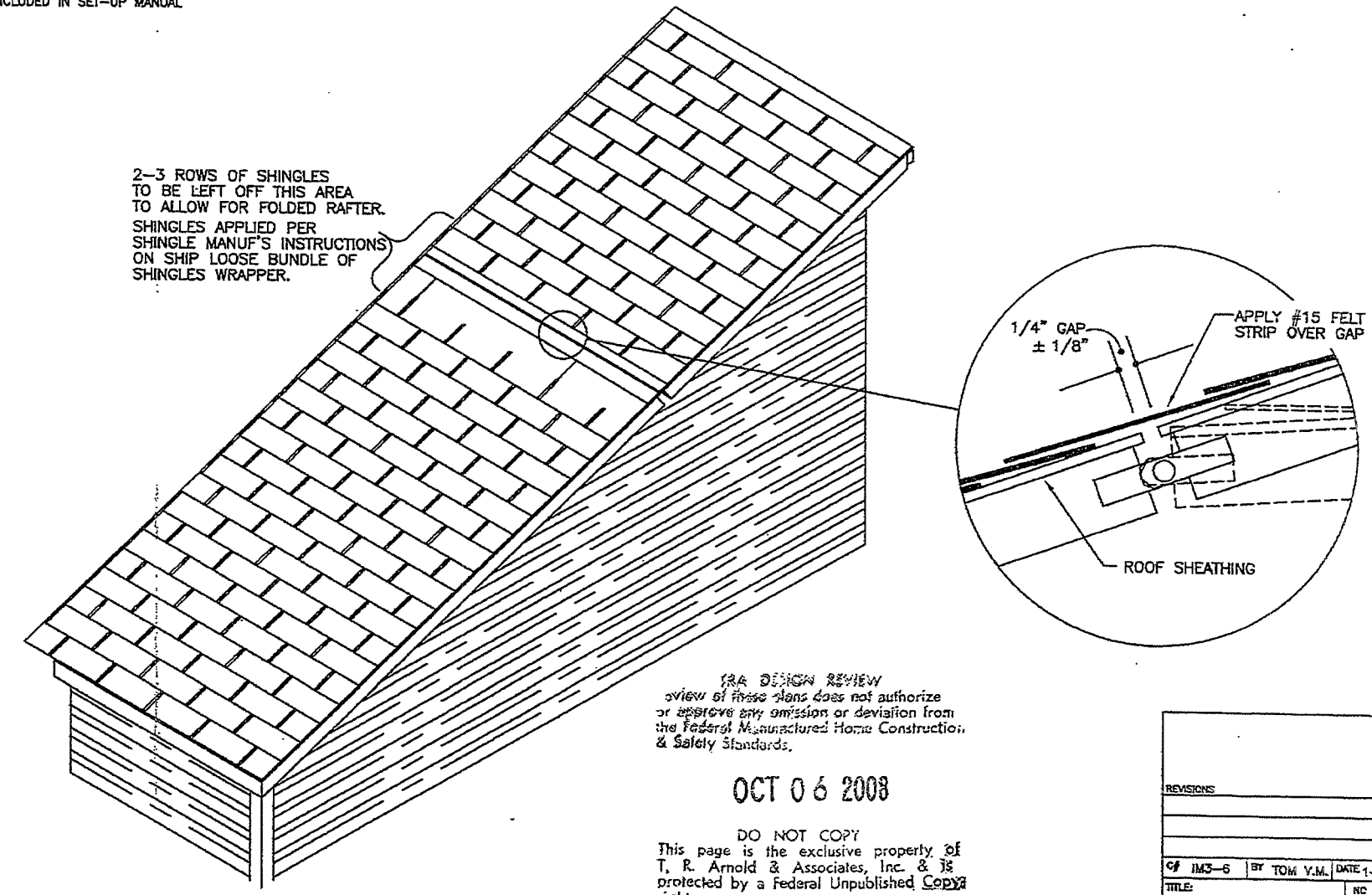
INCLUDE IN SET-UP MANUAL

REVISIONS			
9/30/03 MODIFIED SHEATHING NOTE.			
REVISED SCREW SPACING 05/29/06			
C# IM2-31	BY TOM V.M.	DATE 06-14-02	
TITLE: HINGED ROOF			NO.

NDS01

IM-21-50

THIS DETAIL TO BE
INCLUDED IN SET-UP MANUAL



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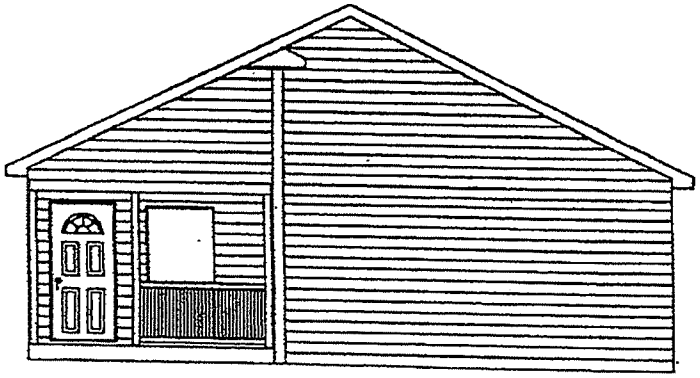
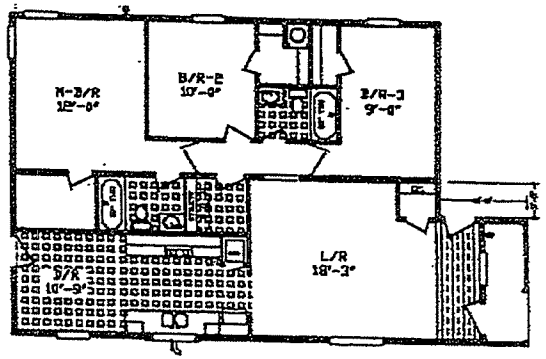
REVISIONS

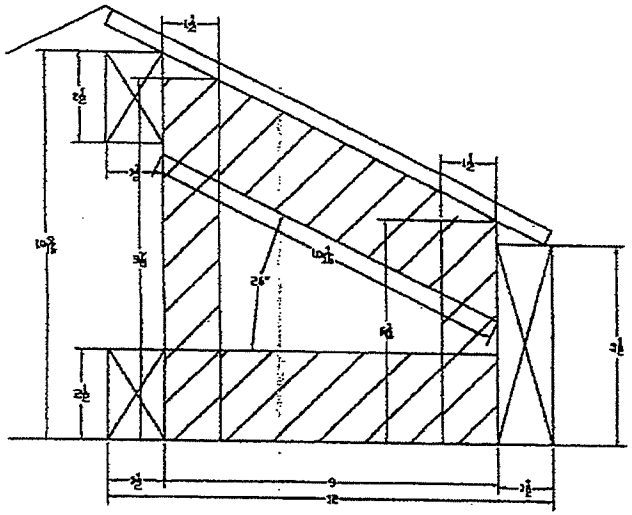
IM3-6	BY TOM Y.M.	DATE 1-22-99
TITLE: HINGED ROOF		NO 1

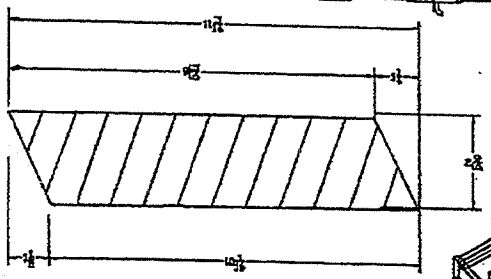
TM-9.1.51

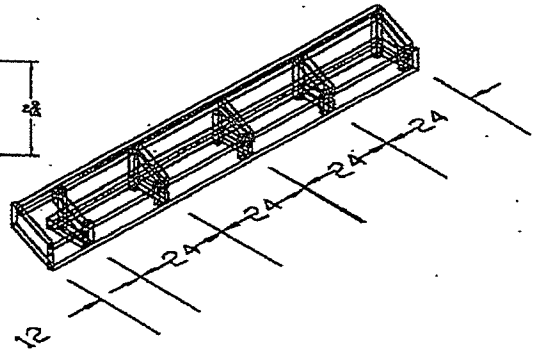


END VIEW









ON SITE INSTALLATION NOTES:

1. ADD VERTICLE 'WALL STUDS' AT EACH TRUSS LOCATION. FASTEN WITH (3) 7/16 X 2-1/2 X 15 GA STAPLES (OR EQUAL) AT EACH CONNECTION.
2. ATTACH ROOF ASSEMBLY TO WALL STUDS WITH #8X3" WOODSCREWS - 1 @ EACH RAIL CONNECTION (TOP AND BOTTOM).
3. SHINGLE AND TRIM PER TYPICAL DETAILS.

FASTENING NOTES:

1. 2X6 FASCIA BOARD
2. 2X3 SPF #3 TRUSS STRINGERS.
3. FRAMING IS 24" O.C.
4. FRAMING MEMBERS ARE 2X3 SPF #3 (MIN).

4a. VERTICLE FRAMING IS 2X2 SPF#3 (MIN). LOCATED AT THE TOP PEAK AND HEAL OF THE HORIZONTAL MEMBERS.

5. FASTENING AT ALL FRAMING LOCATIONS - (3) 7/16X2-1/2X15 GA (MIN) @ EA CONNECTION.
6. DECKING IS 7/16" RATED SHEATHING
7. FASTENING FOR DECKING IS 7/16X16 GA. STAPLES @ 6" O.C. MAX. SPACING.

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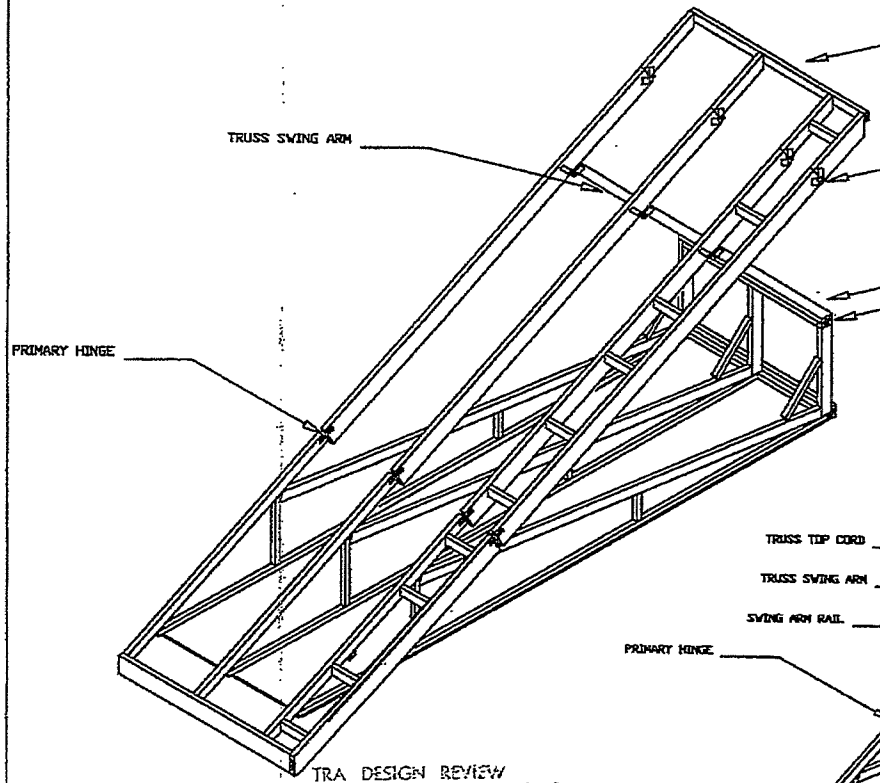
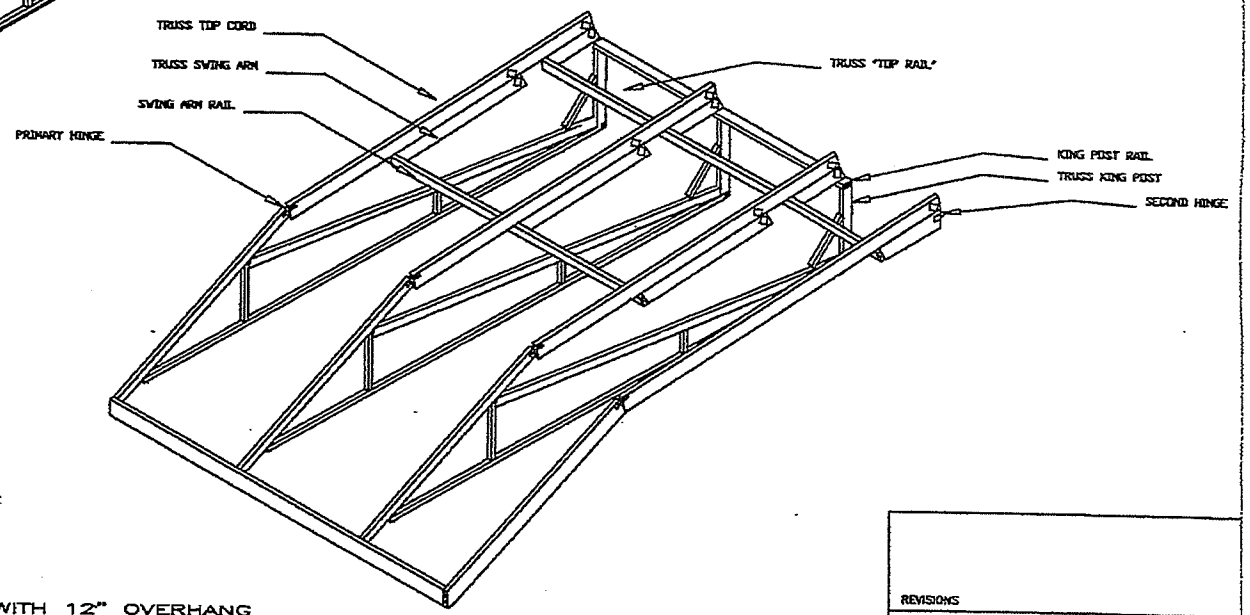
OFFSET BOX OVERHANG CONSTRUCTION DETAIL.





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HM-2.1.53

182" FLOOR WIDTH 6/12 ROOF PITCH WITH 12" OVERHANG

NOTES:

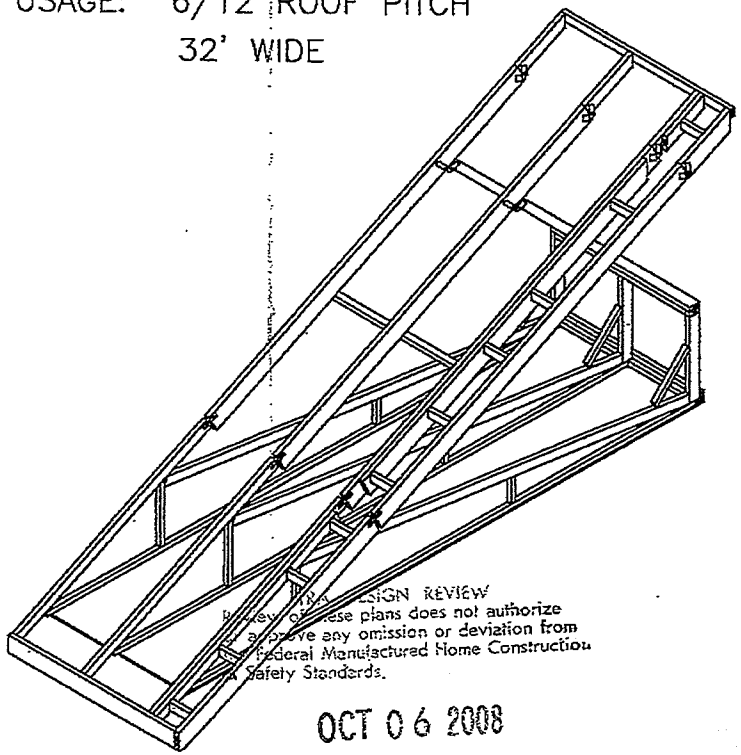
1) OVERHANG BLOCKS INSTALLED PER DETAIL THIS SECTION (NOT SHOWN).

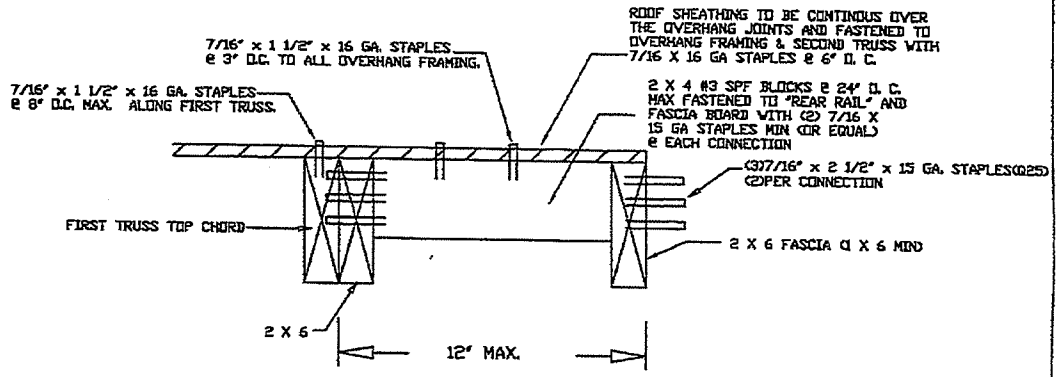
2) FLY-RAFTER TO BE SPF #3 OR NON-STRUCTURAL PURCHASED FLY-RAFTER.

3) FLY RAFTER TO BE FASTENED TO FASCIA AND TO EDGE RAIL WITH (5)-7/16 X 2-1/2 X 15 GA STAPLES AT EACH CONNECTION (OR EQUAL).

REVISIONS		
C/ IM 2.34	BY SJH	DATE 07-11-03
TITLE: 6/12 TRUSS W/ BOXED OVERHANG		NO.

USAGE: 6/12 ROOF PITCH
32' WIDE





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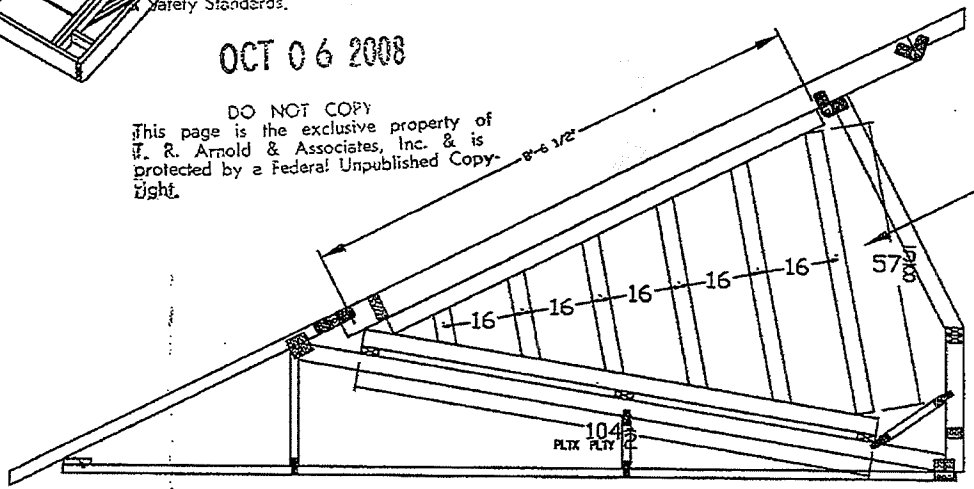


KNEEWALL FRAMING TO BE 2x4 SPF#3 LAYED FLAT @ 16"O.C. FASTENED WITH (2) 7/16 X 2-1/2 X 15 GA MIN (OR EQUAL) AT EACH CONNECTION. TO BE INSTALLED ON SITE.

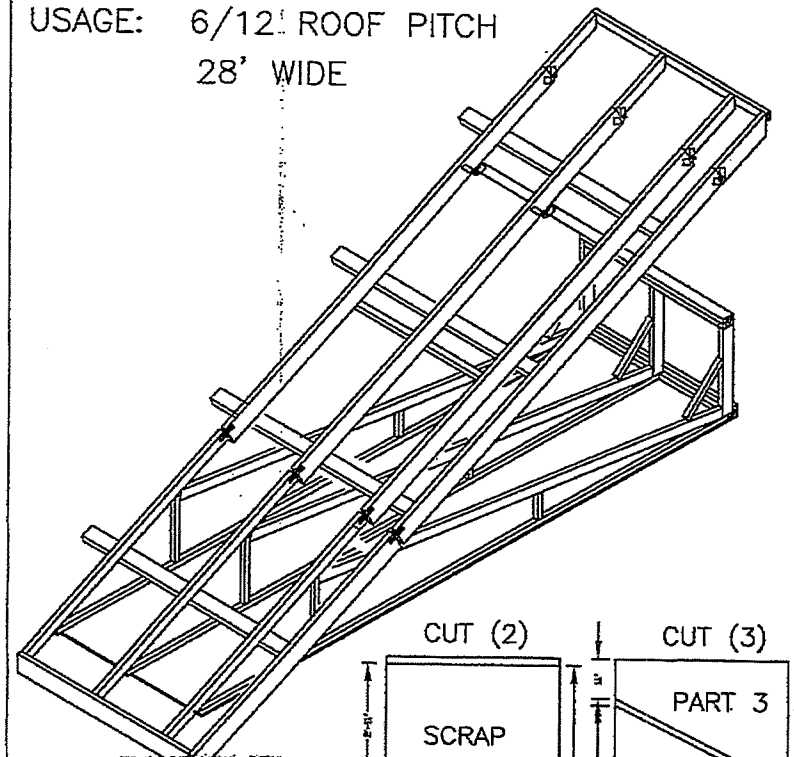
KNEEWALL TO BE FASTENED TO TRUSS MEMBERS WITH #8 X 3" WOOD SCREWS (OR EQUAL) 8" O. C. MAX.

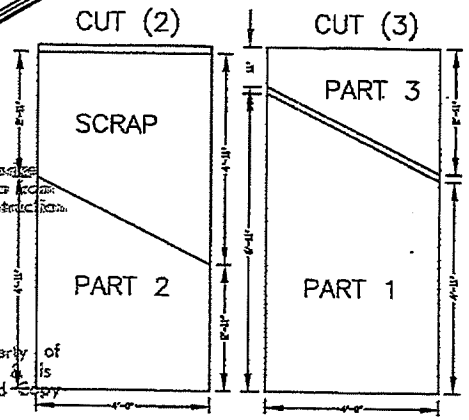
REVISIONS		
9/30/03 REV. BLOCK OVERHANG DETAIL		
11/25/03 RE. KNEEWALL FRAMING		
REVISED SCREW SPACING 05/29/06		
C# JM2-35	BY BJH	DATE 06-17-03
TITLE: 6/12 TRUSS W/ BOXED OVERHANG		NO.

NDS01

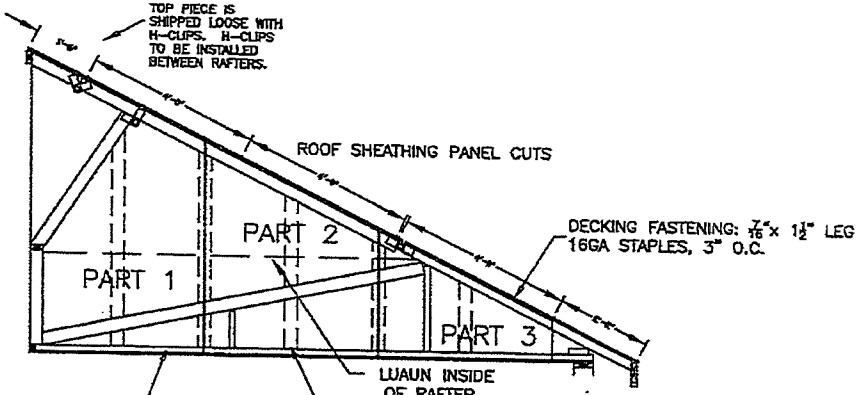
H 5'1.2'M

USAGE: 6/12 ROOF PITCH
28' WIDE





END-TRUSS SHEATHING CUTS



NOTES:
1) MATERIAL IS 3/8" OSB OR PLYWOOD

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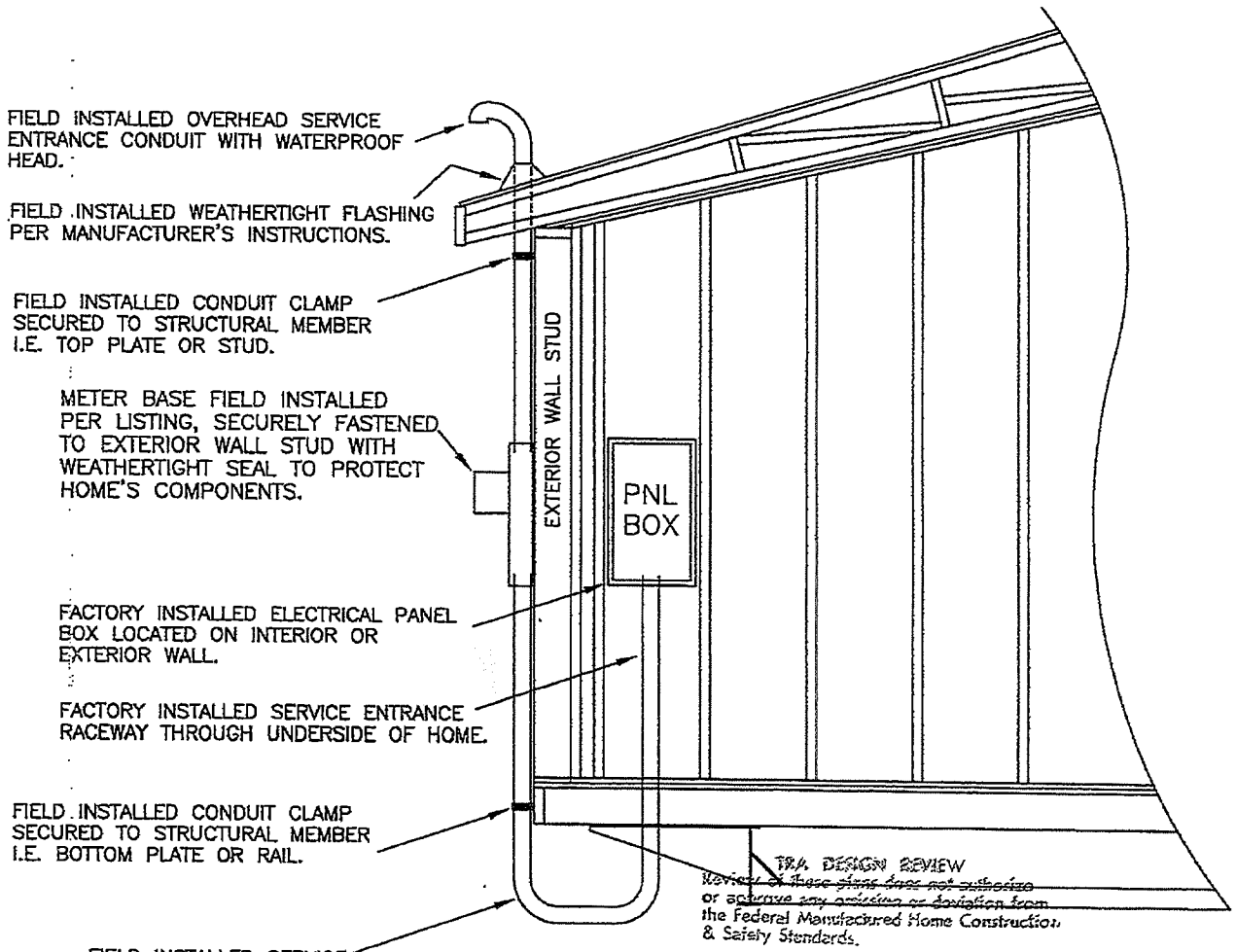
H-12-1-55

REVISIONS		
CFCE 1-9-2	BY MMW	DATE 10/24/03
TITLE: 6/12 HINGED ROOF		NO.



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REVISIONS			
OF ELEMST	BY TOM V.M.	DATE 6-29-95	
TITLE: FIELD INSTALLATION OF ELECT. SERVICE EQUIP.			NO. ED

HM-2-156

Electrical Service Equipment Attachment

Indiana Building Systems, manufacturer of single and multi-section homes produced under the Federal Manufactured Home Construction and Safety Standards (HUD code), provides the following guidelines for field installation of electrical service equipment.

The FMHCSS does not specifically provide for. However, inasmuch as some States and local governments allow the attachment of service equipment directly to a manufactured home, the following guidelines and information are provided.

1. The structural members of our manufactured homes (wall studs and top plates) are designed with sufficient load bearing capacities to support a mast weather head, meter base and disconnect when this equipment is directly attached to the wall structural members

2. Any modification to the home such as cutting, and flashing shall be done in accordance with accepted building practices and local building codes.

3. All work involving installations of electrical services equipment should be done according to the National Electric Code and local building codes.

4. Indiana Building Systems will not be responsible for any damage done to a home by such installation and does not warrant any aspect of the home that has been altered by the attachment of the equipment.

5. The drawing illustrates a typical installation and is not a specific approval or plan for installation of electrical service equipment.

6. The service equipment (main electrical panel box) is to be grounded on site with a grounding electrode and a grounding electrode conductor (No 8 copper for 100 amp and No 4 copper for 200 amps).

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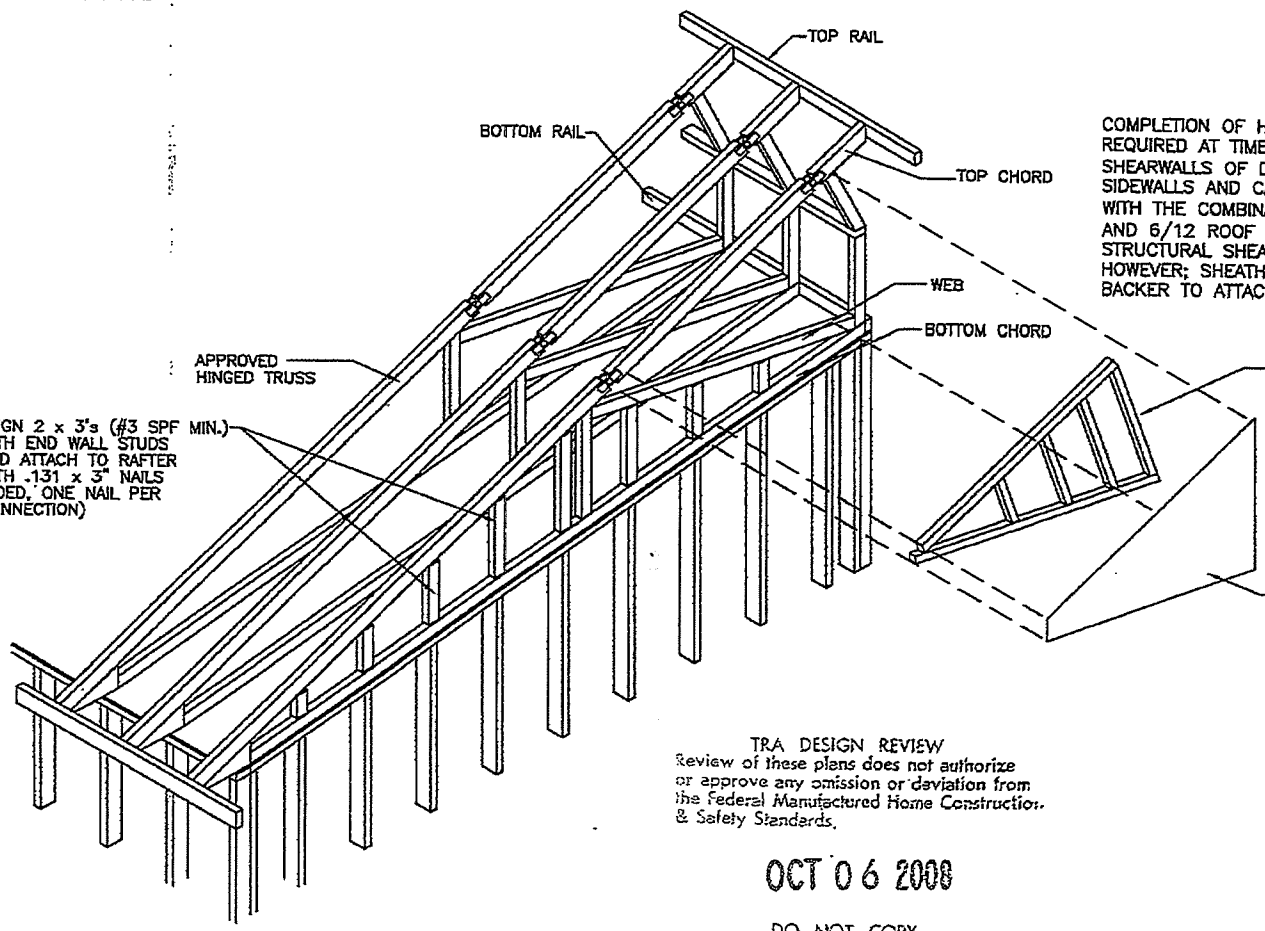
THIS DETAIL TO BE INCLUDED IN SET-UP MANUAL



COMPLETION OF HINGED TRUSS SHEATHING IS REQUIRED AT TIME OF SET-UP ON END SHEARWALLS OF DOUBLEWIDES WITH 7'-0" SIDEWALLS AND CATHEDRAL CEILINGS. HOMES WITH THE COMBINATION OF 8'-0" SIDEWALLS AND 6/12 ROOF PITCH ARE EXEMPT OF THE STRUCTURAL SHEATHING REQUIREMENT. HOWEVER; SHEATHING IS REQUIRED FOR BACKER TO ATTACH TO SIDING.

KNEEWALL FRAMING TO BE 2 X 2 SPF #3 MIN FASTENED WITH (2) 7/16 X 2-1/2 X 15 GA MIN (OR EQUAL) AT EACH CONNECTION. TO BE INSTALLED ON SITE.

KNEEWALL TO BE FASTENED TO TRUSS MEMBERS WITH #8 X 3" WOOD SCREWS (OR EQUAL) 8" O. C. MAX.

PLYWOOD SHIPPED LOOSE FOR BACKER TO ATTACH SIDING TO.

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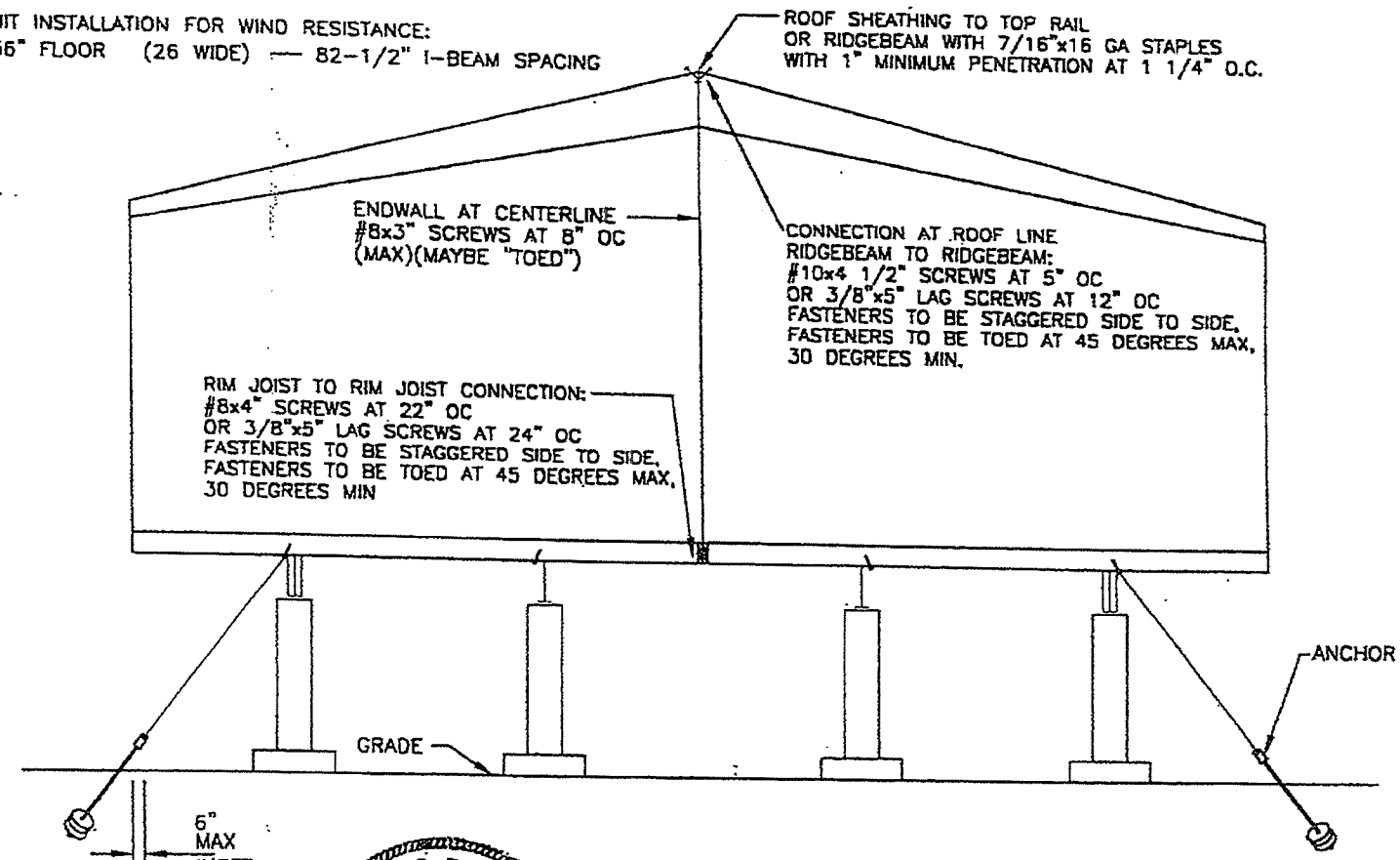
REVISIONS		
9/30/03 MOD. PLYWOOD NOTE.		
10/21/03 ADDED NOTES		
REVISED SCREW SPACING 05/29/06		
C# IM3-5-3	BY B.BUTT	DATE 3-4-03
TITLE: 6/12 DOUBLE HINGED ROOF		

NDS01

85-1,2-M1

ON-SITE CONNECTION DET
6 ON 12 ROOF PITCH (MAX)

UNIT INSTALLATION FOR WIND RESISTANCE:
156" FLOOR (26 WIDE) — 82-1/2" I-BEAM SPACING



COLORADO REGISTERED
JOHN C. DOEDEN
26527
PROFESSIONAL ENGINEER
3/14/02

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NOTES:
1. ANCHOR EQUIPMENT AND DEVICES, INCLUDING STRAPS, TO BE RATED AT 3150# (4725# ULTIMATE).

HM-2.1.59

GENERAL NOTES

THIS DOCUMENT HAS BEEN PREPARED BY
HOUSING DESIGN GROUP
1885 S. QUEBEC WAY #E15
DENVER, CO 80231

REVISIONS

NO	REVISED BY	DATE	DESCRIPTION

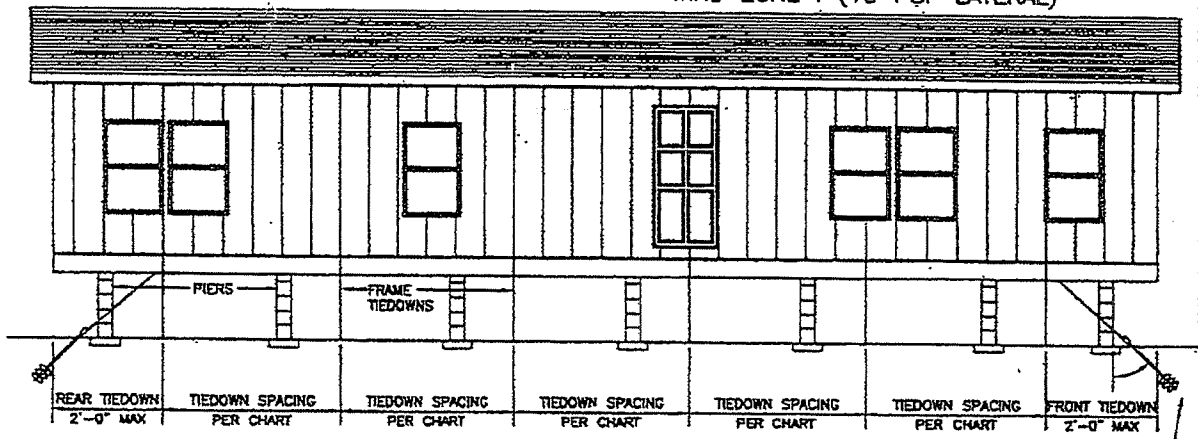
WIND SUMMARY

ZONE 1 (15 PSF LATERAL)

DRAWN BY: R. ULLMAN 03/14/02
CHECKED BY:

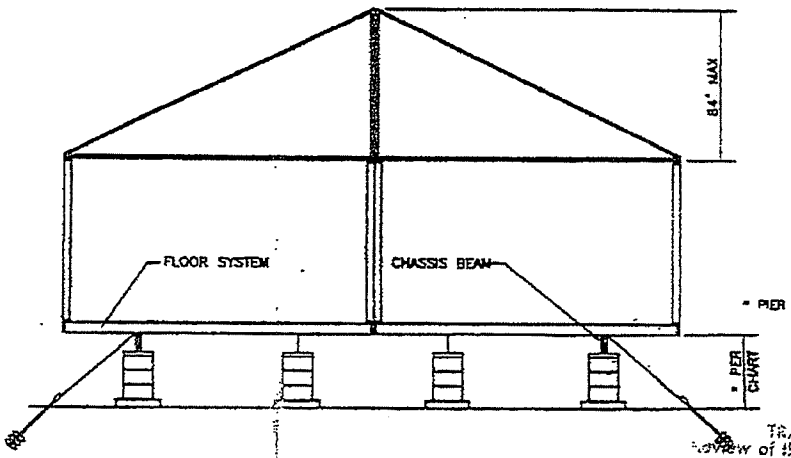
DRAWING NO.

RECOMMENDED TIEDOWN SYSTEM
5 ON 12 ROOF SLOPE
WIND ZONE I (15 PSF LATERAL)



TYPICAL SIDE ELEVATION SHOWING TIEDOWN SPACINGS

LONGITUDINAL TIEDOWNS-SEE CHART ON LONGITUDINAL TIEDOWN REQUIREMENTS DRAWING



* PIER HEIGHT INCLUDES DEPTH OF I-BEAM

TYPICAL CROSS SECTION SHOWING TIEDOWNS

NOTES:
1. FRAME TIE-DOWN SHALL BE INSTALLED TO PROPERLY SECURE THE HOME.
2. OVER-THE-ROOF TIES ARE NOT REQUIRED WITH PROPERLY SPACED AND INSTALLED FRAME TIEDOWNS. HOWEVER, IF OVER-THE-ROOF TIEDOWNS ARE REQUIRED BY THE LOCAL JURISDICTION THEY MAY BE INSTALLED.
3. OVER-THE-ROOF TIES (WHEN REQUIRED) MAY BE SECURED TO THE SAME GROUND ANCHORS AS THE FRAME TIEDOWNS.
4. FRAME TIEDOWNS AND ANCHORS ARE NOT SUPPLIED.
5. OVER-THE-ROOF STRAPS (WHEN REQUIRED) ARE SUPPLIED, ANCHORS AND END TREATMENTS ARE TO BE SUPPLIED BY OTHERS.
6. GROUND ANCHORS AND FRAME TIES SHALL BE CAPABLE OF RESISTING A TENSILE LOAD OF 4725 POUNDS AND 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 0.30 OZ. OF ZINC PER SQUARE FOOT OF STEEL.
8. PLACEMENT OF FRAME TIEDOWN STRAPS AND ANCHORS MAY BE OFFSET UP TO 1/2 THE REQUIRED SPACING PROVIDED NO DECREASE IN THE TOTAL NUMBER OF FRAME TIEDOWNS RESULTS.
9. DESIGN BASED ON 82 1/2" BEAM SPACING WITH OFF SET FLOOR AND AND A SIDEWALL HEIGHT OF 8'-0".
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 AND/OR VERTICAL TIE LOADING AND ANGLE OF ANCHOR INSTALLATION, AND TYPE OF SOIL IN WHICH THE ANCHOR IS TO BE INSTALLED:
11. GROUND ANCHORS SHALL BE EMBEDDED BELOW THE FROST LINE AND BE AT LEAST 12" ABOVE THE WATER TABLE AND.
12. GROUND ANCHORS SHALL BE INSTALLED TO THEIR FULL DEPTH, AND STABILIZER PLATES SHALL BE INSTALLED TO PROVIDE ADDED RESISTANCE TO OVERTURNING OR SLIDING FORCES.
13. 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 D3593-91, STANDARD SPECIFICATION FOR STRAPPING, FLAT STEEL AND SEALS.
14. STRAPPING TO BE TYPE 1, FINISH B, GRADE 1 STEEL STRAPPING, 1-1/4" WIDE AND .035 INCHES IN THICKNESS, CERTIFIED BY A REGISTERED PROFESSIONAL ENGINEER OR ARCHITECT AS CONFORMING WITH ASTM STANDARD SPECIFICATION D3953-91, "STANDARD SPECIFICATION FOR STRAPPING, FLAT STEEL AND SEALS".
15. ANGLE OF ANCHOR TO BE AT SAME ANGLE AS STRAP UNLESS APPROVED STABILIZER PLATE OR COLLAR IS INSTALLED.

JOHN C DOEDEN REGISTERED No E-E870357 STATE OF INDIANA PROFESSIONAL ENGINEER

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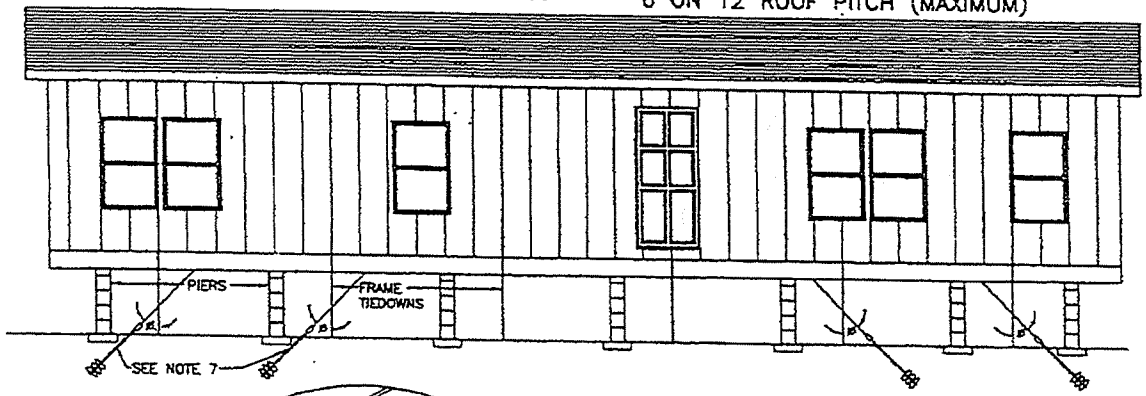
FRAME TIEDOWN SPACING CHART

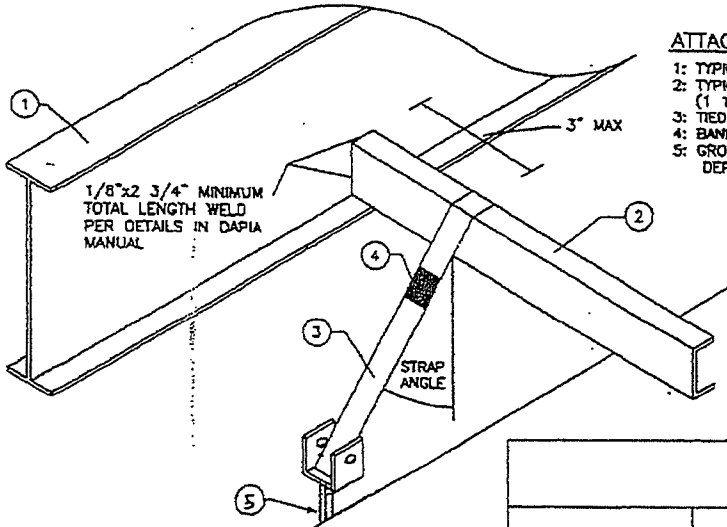
FLOOR WIDTH	SIDEWALL HEIGHT	EAVE OVERHANG	TIEDOWN SPACING	MAX * PIER HEIGHT
26'-0" (26 WIDE)	96" MAX	12" MAX	6'-0"	29"
26'-0" (26 WIDE)	96" MAX	12" MAX	5'-0"	40"

FM-2.1.00

WIND ZONE 1 (15 PSF LATERAL)
RECOMMENDED TIEDOWN SYSTEM
LONGITUDINAL TIEDOWN REQUIREMENTS
6 ON 12 ROOF PITCH (MAXIMUM)

TYPICAL SIDE ELEVATION SHOWING TIEDOWN SPACINGS





ATTACHMENT DETAIL

1: TYPICAL LONGITUDINAL I-BEAM
2: TYPICAL FRAME CROSSMEMBER (1 1/2" x 2" x 1 1/2" x 13 GA MINIMUM)
3: TIEDOWN STRAP
4: BANDING SEAL
5: GROUND ANCHOR – INSTALLED TO FULL DEPTH OF ANCHOR HEAD

NOTES:
1. SEE OTHER DRAWINGS FOR FRAME TIEDOWN REQUIREMENTS. THIS DETAIL IS FOR LONGITUDINAL TIEDOWN DESIGN ONLY.
2. 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.
3. LONGITUDINAL TIEDOWNS AND ANCHORS ARE NOT SUPPLIED
4. 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 EXTEND BEYOND THE SIDEWALL OF THE HOME.
5. STEEL ANCHORING EQUIPMENT EXPOSED TO THE WEATHER SHALL BE PROTECTED WITH AT LEAST 0.30 OZ. OF ZINC PER SQUARE FOOT OF STEEL.
6. DESIGN BASED ON A MAXIMUM SIDEWALL HEIGHT OF 8'-0".
7. LONGITUDINAL TIES ARE INSTALLED JUST INSIDE I-BEAMS AT CROSSMEMBERS IN ACCORDANCE WITH THE TABLE AND NOTES 3, 4, 5, 13 AND 14.
8. 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.
9. GROUND ANCHORS SHALL BE EMBEDDED BELOW THE FROST LINE AND BE AT LEAST 12" ABOVE THE WATER TABLE AND
10. GROUND ANCHORS SHALL BE INSTALLED TO THEIR FULL DEPTH, AND STABILIZER PLATES SHOULD BE INSTALLED TO PROVIDE ADDED RESISTANCE TO OVERTURNING OR SLIDING FORCES.
11. 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 D3953-91, STANDARD SPECIFICATION FOR STRAPPING, FLAT STEEL AND SEALS.
12. STRAPPING TO BY TYPE 1, FINISH B, GRADE 1 STEEL STRAPPING, 1-1/4" WIDE AND .035 INCHES IN THICKNESS, CERTIFIED BY A REGISTERED PROFESSIONAL ENGINEER OR ARCHITECT AS CONFORMING WITH ASTM STANDARD SPECIFICATION D3953-91, "STANDARD SPECIFICATION FOR STRAPPING, FLAT STEEL AND SEALS".
13. SELECT A CROSSMEMBER WHERE PIERS DO NOT INTERFERE WITH THE REQUIRED ANGLE OF THE STRAP. INSTALL THE STRAP JUST INSIDE THE MAIN BEAMS LOOPED AROUND THE CROSSMEMBER AND TIE TO AN ANCHOR LOCATED DIRECTLY UNDER THE MAIN BEAM AT THE ANGLE SPECIFIED IN THE CHART BELOW (SEE DETAIL).
14. WHEN THIS ANCHOR ANGLE IS NOT ATTAINABLE INSTALL ANCHOR PER MANUFACTURER'S INSTRUCTIONS WITH AN APPROVED STABILIZING PLATE.
15. LONGITUDINAL TIES ARE INSTALLED JUST INSIDE I-BEAM AT CROSSMEMBERS AT EACH END AND CANNOT BE DOUBLED.

JOHN C. DOEDEN REGISTERED NO. 10900173 STATE OF INDIANA PROFESSIONAL ENGINEER

DOUBLE WIDE UNITS (ALTERNATE WITH BLOCK PIERS*)				NO RESTRICTION AS TO PIER TYPE OR HEIGHT (EXCEPT AS LIMITED BY OTHER DETAILS)		
	MINIMUM UNIT LENGTH		NUMBER OF LONGITUDINAL TIES (TOTAL EACH END)		MINIMUM QUANTITY EACH END OF EACH SECTION.	MINIMUM STRAP ANGLE (DEGREES)
FLOOR WIDTH	SINGLE STACK	DOUBLE STACK		FLOOR WIDTH		
26'-0" DOUBLE WIDE	62'-0"	54'-0"	0	156" DOUBLE WIDE*	2	35
	32'-0"	32'-0"	2			
30'-4" DOUBLE WIDE	68'-0"	60'-0"	0	182" DOUBLE WIDE*	2	45
	37'-0"	32'-0"	2			

* FOR USE IN ABOVE TABLE:
SINGLE STACK BLOCK PIERS = 24" MAXIMUM HEIGHT
DOUBLE STACK BLOCK PIERS = 55" MAXIMUM HEIGHT
MINIMUM ANGLE OF STRAP = 40 DEGREES.

*MAY REDUCE TO 0 OR 1 LONGITUDINAL TIE PER HALF WITH PIER RESTRICTIONS PER CHART TO LEFT

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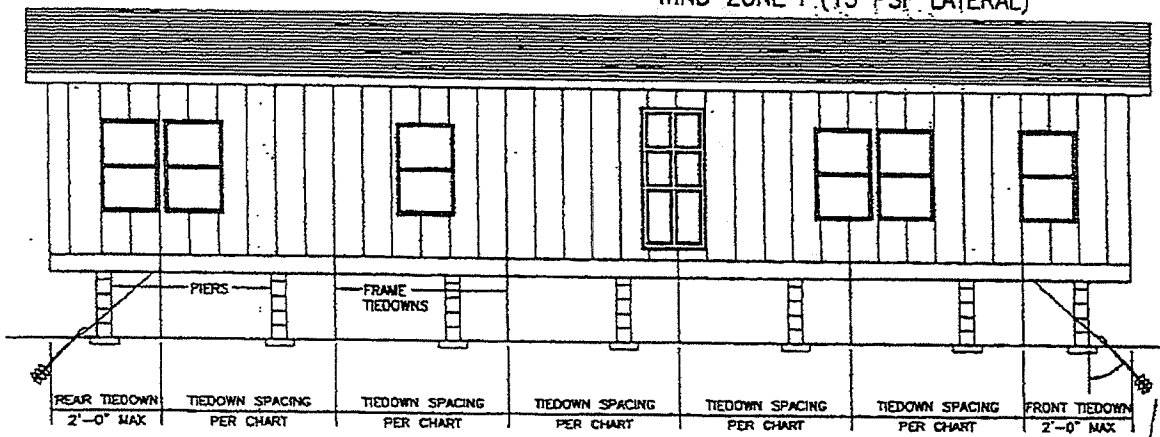
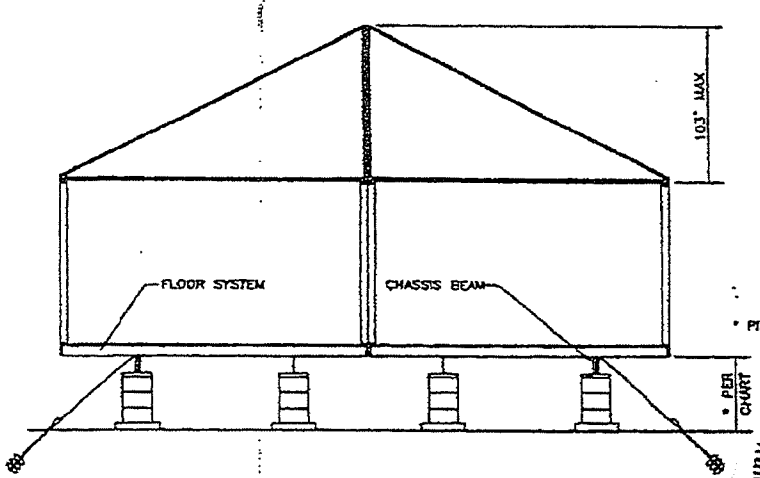
19124

RECOMMENDED TIEDOWN SYSTEM
6 ON 12 ROOF SLOPE
WIND ZONE I (15 PSF LATERAL)



TYPICAL SIDE ELEVATION SHOWING TIEDOWN SPACINGS

LONGITUDINAL TIEDOWNS-SEE CHART ON LONGITUDINAL TIEDOWN REQUIREMENTS DRAWING



* PIER HEIGHT INCLUDES DEPTH OF I-BEAM

TYPICAL CROSS SECTION SHOWING TIEDOWNS

NOTES:
1. FRAME TIE-DOWN SHALL BE INSTALLED TO PROPERLY SECURE THE HOME.
2. OVER-THE-ROOF TIES ARE NOT REQUIRED WITH PROPERLY SPACED AND INSTALLED FRAME TIEDOWNS. HOWEVER, IF OVER-THE-ROOF TIEDOWNS ARE REQUIRED BY THE LOCAL JURISDICTION, THEY MAY BE INSTALLED.
3. OVER-THE-ROOF TIES (WHEN REQUIRED) MAY BE SECURED TO THE SAME GROUND ANCHORS AS THE FRAME TIEDOWNS.
4. FRAME TIEDOWNS AND ANCHORS ARE NOT SUPPLIED.
5. OVER-THE-ROOF STRAPS (WHEN REQUIRED) ARE SUPPLIED. ANCHORS AND END TREATMENTS ARE TO BE SUPPLIED BY OTHERS.
6. GROUND ANCHORS AND FRAME TIES SHALL BE CAPABLE OF RESISTING A TENSILE LOAD OF 4725 POUNDS AND 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 0.30 OZ. OF ZINC PER SQUARE FOOT OF STEEL.
8. PLACEMENT OF FRAME TIEDOWN STRAPS AND ANCHORS MAY BE OFFSET UP TO FOUR FEET TO ALLOW ALIGNMENT WITH OVER-THE-ROOF STRAPS PROVIDED NO DECREASE IN THE TOTAL NUMBER OF FRAME TIEDOWNS RESULTS.
9. DESIGN BASED ON 99 1/2" BEAM SPACING WITH OFF SET FLOOR AND AND A SIDEWALL HEIGHT OF 8'-0".
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 AND/OR VERTICAL TIE LOADING AND ANGLE OF ANCHOR INSTALLATION, AND TYPE OF SOIL IN WHICH THE ANCHOR IS TO BE INSTALLED:
11. GROUND ANCHORS SHALL BE EMBEDDED BELOW THE FROST LINE AND BE AT LEAST 12" ABOVE THE WATER TABLE AND
12. GROUND ANCHORS SHALL BE INSTALLED TO THEIR FULL DEPTH, AND STABILIZER PLATES SHALL BE INSTALLED TO PROVIDE ADDED RESISTANCE TO OVERTURNING OR SLIDING FORCES.
13. 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 D3593-91, STANDARD SPECIFICATION FOR STRAPPING; FLAT STEEL AND SEALS.
14. STRAPPING TO BE TYPE 1, FINISH B, GRADE 1 STEEL STRAPPING, 1-1/4" WIDE AND .035 INCHES IN THICKNESS, CERTIFIED BY A REGISTERED PROFESSIONAL ENGINEER OR ARCHITECT AS CONFORMING WITH ASTM STANDARD SPECIFICATION D3953-91, "STANDARD SPECIFICATION FOR STRAPPING, FLAT STEEL AND SEALS".
15. ANGLE OF ANCHOR TO BE AT SAME ANGLE AS STRAP UNLESS APPROVED STABILIZER PLATE OR COLLAR IS INSTALLED.

JOHN C. DOEDEN
REGISTERED
No.
STATE OF
INDIANA
PROFESSIONAL ENGINEER

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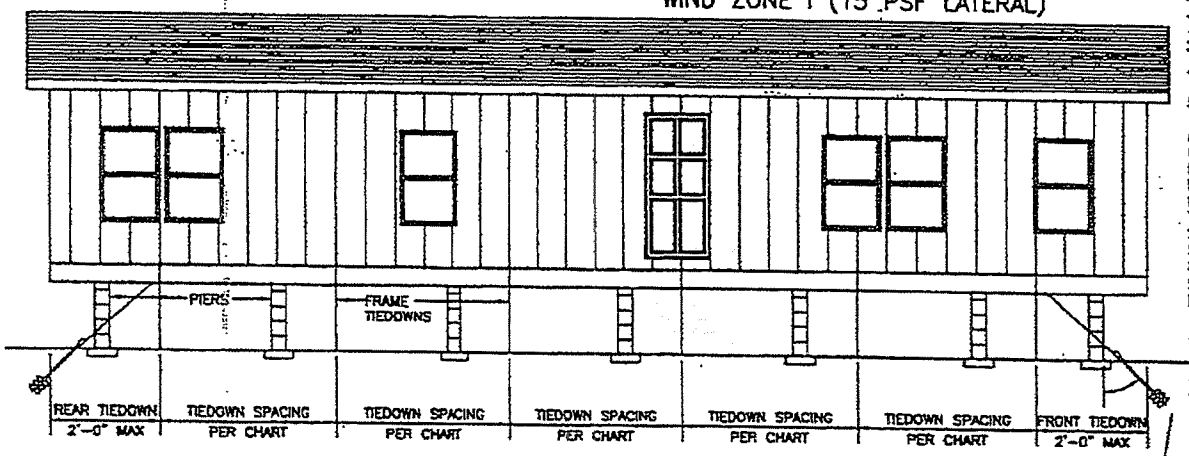
FRAME TIEDOWN SPACING CHART

FLOOR WIDTH	SIDEWALL HEIGHT	EAVE OVERHANG	TIEDOWN SPACING	MAX * PIER HEIGHT
30'-4" (32 WIDE)	96" MAX	12" MAX	6'-0"	32"
30'-4" (32 WIDE)	96" MAX	12" MAX	5'-0"	44"

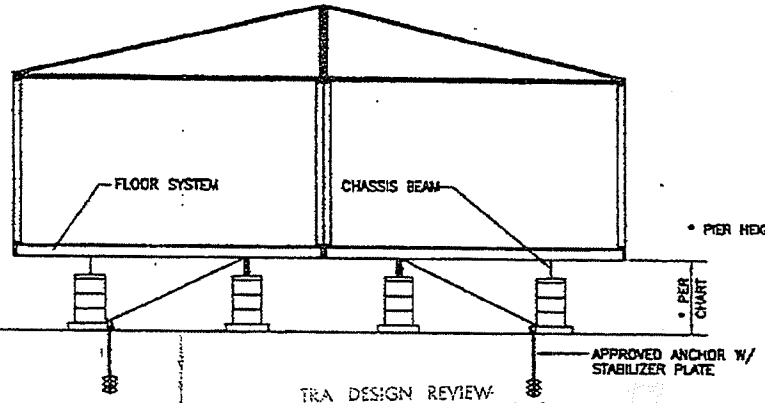
TM-2-1-08

RECOMMENDED TIEDOWN SYSTEM
20 DEGREE (MAX) ROOF SLOPE
WIND ZONE I (15 PSF LATERAL)



TYPICAL SIDE ELEVATION SHOWING TIEDOWN SPACINGS

LONGITUDINAL TIEDOWNS SEE CHART ON LONGITUDINAL TIEDOWN REQUIREMENTS



* PIER HEIGHT INCLUDES DEPTH OF I-BEAM

TYPICAL CROSS SECTION SHOWING TIEDOWNS

NOTES:
1. FRAME TIE-DOWN SHALL BE INSTALLED TO PROPERLY SECURE THE HOME.
2. OVER-THE-ROOF TIES ARE NOT REQUIRED WITH PROPERLY SPACED AND INSTALLED FRAME TIEDOWNS. HOWEVER, IF OVER-THE-ROOF TIEDOWNS ARE REQUIRED BY THE LOCAL JURISDICTION, THEY MAY BE INSTALLED.
3. OVER-THE-ROOF TIES (WHEN REQUIRED) MAY BE SECURED TO THE SAME GROUND ANCHORS AS THE FRAME TIEDOWNS.
4. FRAME TIEDOWNS AND ANCHORS ARE NOT SUPPLIED.
5. OVER-THE-ROOF STRAPS (WHEN REQUIRED) ARE SUPPLIED, ANCHORS AND END TREATMENTS ARE TO BE SUPPLIED BY OTHERS.
6. GROUND ANCHORS AND FRAME TIES SHALL BE CAPABLE OF RESISTING A TENSILE LOAD OF 4725 POUNDS AND 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 0.30 OZ. OF ZINC PER SQUARE FOOT OF STEEL.
8. RESERVED.
9. DESIGN BASED ON 82 1/2" BEAM SPACING WITH OFF SET FLOOR AND AND A SIDEWALL HEIGHT OF 7'-0".
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 AND/OR VERTICAL TIE LOADING AND ANGLE OF ANCHOR INSTALLATION, AND TYPE OF SOIL IN WHICH THE ANCHOR IS TO BE INSTALLED:
11. GROUND ANCHORS SHALL BE EMBEDDED BELOW THE FROST LINE AND BE AT LEAST 12" ABOVE THE WATER TABLE AND
12. GROUND ANCHORS SHALL BE INSTALLED TO THEIR FULL DEPTH, AND STABILIZER PLATES SHALL BE INSTALLED TO PROVIDE ADDED RESISTANCE TO OVERTURNING OR SLIDING FORCES.
13. 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 D3593-91, STANDARD SPECIFICATION FOR STRAPPING, FLAT STEEL AND SEALS.
14. STRAPPING TO BE TYPE 1, FINISH B, GRADE 1 STEEL STRAPPING, 1-1/4" WIDE AND .035 INCHES IN THICKNESS, CERTIFIED BY A REGISTERED PROFESSIONAL ENGINEER OR ARCHITECT AS CONFORMING WITH ASTM STANDARD SPECIFICATION D3953-91, "STANDARD SPECIFICATION FOR STRAPPING, FLAT STEEL AND SEALS".
15. ANGLE OF ANCHOR TO BE AT SAME ANGLE AS STRAP UNLESS APPROVED STABILIZER PLATE OR COLLAR IS INSTALLED.

JOHN C. DOEDEN
REGISTERED
NO.
ENG11203571
STATE OF
INDIANA
PROFESSIONAL ENGINEER

FRAME TIEDOWN SPACING CHART

FLOOR WIDTH	SIDEWALL HEIGHT	EAVE OVERHANG	TIEDOWN SPACING	MAX * PIER HEIGHT
20'-0" (20 WIDE)	84" MAX	12" MAX	16'-0"	45"
24'-0" (24 WIDE)	84" MAX	12" MAX	16'-0"	45"

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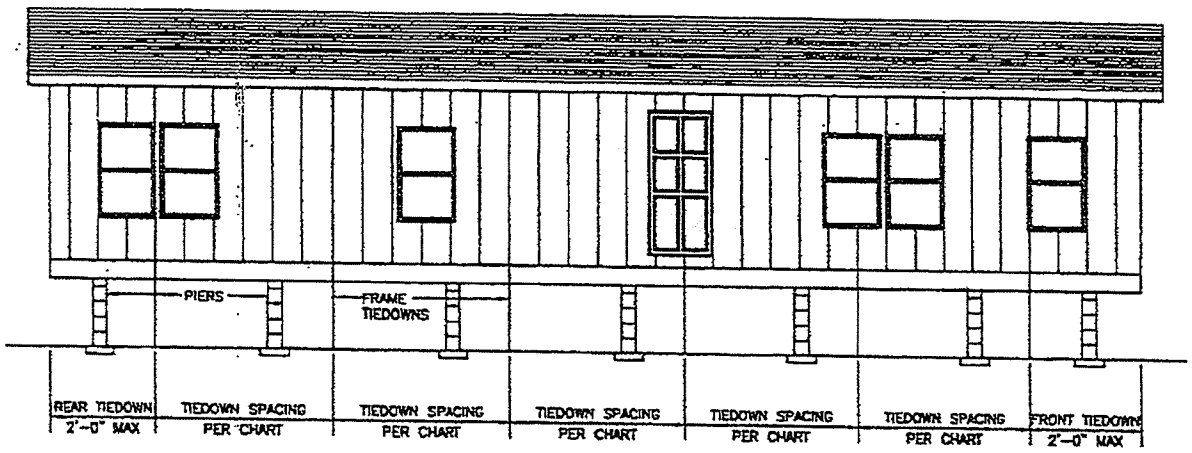
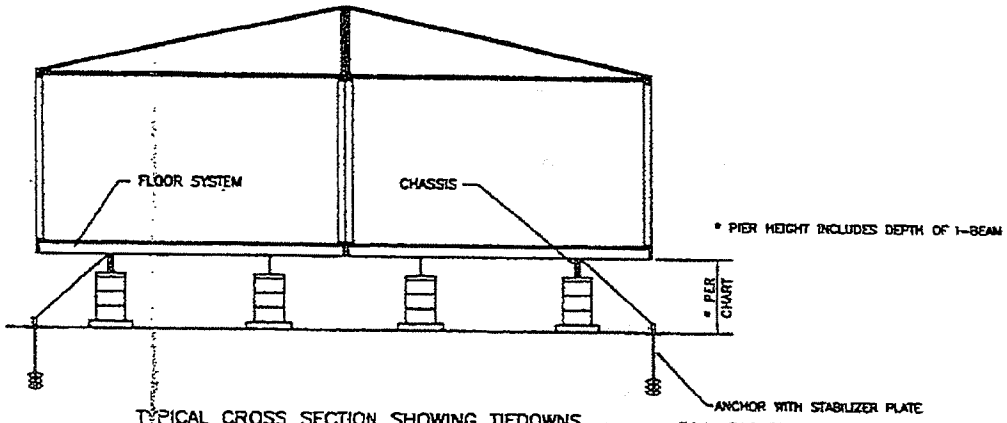
TM-2,1,63

TIEDOWN SYSTEM
WIND ZONE I (15 PSF LATERAL)



TYPICAL SIDE ELEVATION SHOWING TIEDOWN SPACINGS



* PIER HEIGHT INCLUDES DEPTH OF I-BEAM

TYPICAL CROSS SECTION SHOWING TIEDOWNS

NOTES:
1. FRAME TIE-DOWNS SHALL BE INSTALLED TO PROPERLY SECURE THE HOME.
2. VERTICAL TIES ARE NOT REQUIRED WITH PROPERLY SPACED AND INSTALLED FRAME TIEDOWNS.
3. VERTICAL TIES (WHEN INSTALLED) MAY BE SECURED TO THE SAME GROUND ANCHORS AS THE FRAME TIEDOWNS.
4. FRAME TIEDOWNS AND ANCHORS ARE NOT SUPPLIED.
5. VERTICAL TIE DOWN STRAPS (WHEN INSTALLED) ARE SUPPLIED, ANCHORS AND END TREATMENTS ARE TO BE SUPPLIED BY OTHERS.
6. GROUND ANCHORS AND FRAME TIES SHALL BE CAPABLE OF RESISTING A TENSILE LOAD OF 4725 POUNDS AND 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 0.30 OZ. OF ZINC PER SQUARE FOOT OF STEEL.
8. RESERVED FOR FUTURE USE.
9. DESIGN BASED ON 82 1/2" BEAM SPACING AND A MAXIMUM SIDEWALL HEIGHT OF 7'-0".
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 AND/OR VERTICAL TIE LOADING AND ANGLE OF ANCHOR INSTALLATION, AND TYPE OF SOIL IN WHICH THE ANCHOR IS TO BE INSTALLED:
11. GROUND ANCHORS SHALL BE EMBEDDED BELOW THE FROST LINE AND BE AT LEAST 12" ABOVE THE WATER TABLE AND
12. GROUND ANCHORS SHALL BE INSTALLED TO THEIR FULL DEPTH, AND STABILIZER PLATES SHALL BE INSTALLED TO PROVIDE ADDED RESISTANCE TO OVERTURNING OR SLIDING FORCES.
13. 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 D3953-91, STANDARD SPECIFICATION FOR STRAPPING, FLAT STEEL AND SEALS.
14. STRAPPING TO BY TYPE 1, FINISH B, GRADE 1 STEEL STRAPPING, 1-1/4" WIDE AND .035 INCHES IN THICKNESS, CERTIFIED BY A REGISTERED PROFESSIONAL ENGINEER OR ARCHITECT AS CONFORMING WITH ASTM STANDARD SPECIFICATION D3953-91, "STANDARD SPECIFICATION FOR STRAPPING, FLAT STEEL AND SEALS".

JOHN C. DOEDEN
REGISTERED
No.
ENE8703571
STATE OF
INDIANA
PROFESSIONAL ENGINEER

20 DEGREE MAXIMUM ROOF SLOPE

FRAME TIEDOWN SPACING CHART

FLOOR WIDTH	EAVE OVERHANG	TIEDOWN SPACING	MAX * PIER HEIGHT
20'-0" DOUBLE	12" MAX	6'-0"	36"
24'-0" DOUBLE	12" MAX	10'-0"	38"
20'-0" DOUBLE	12" MAX	5'-0"	44"
24'-0" DOUBLE	12" MAX	8'-0"	50

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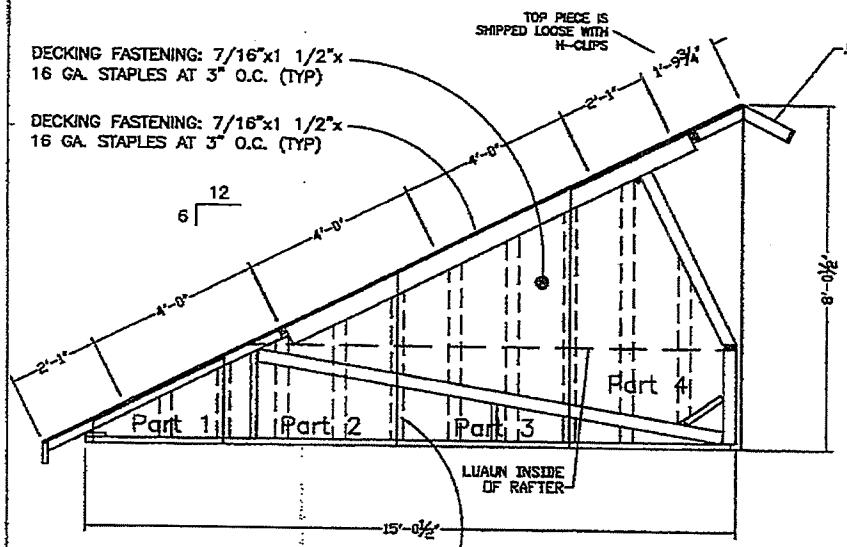
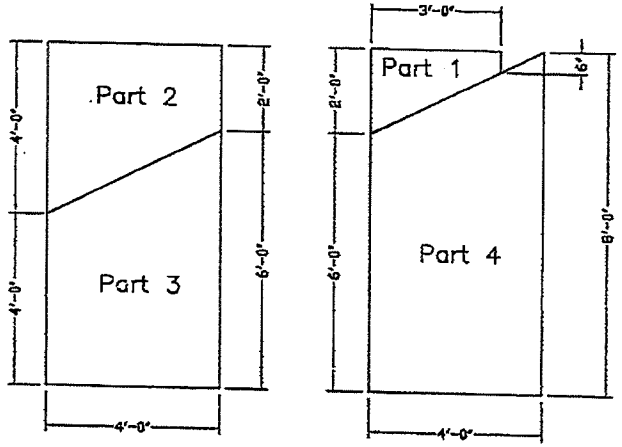
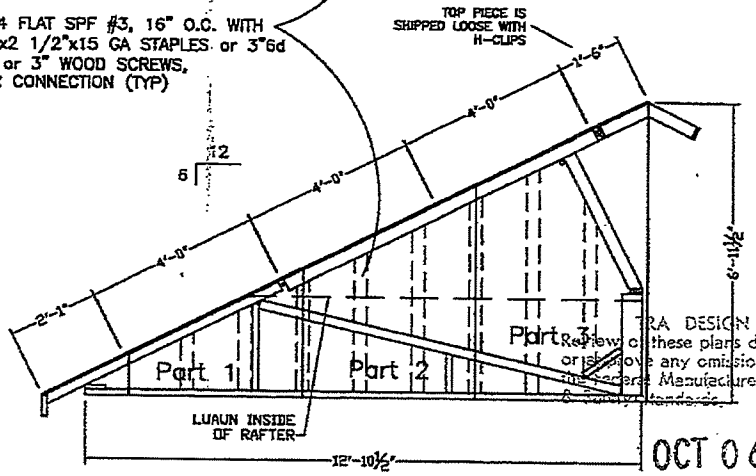
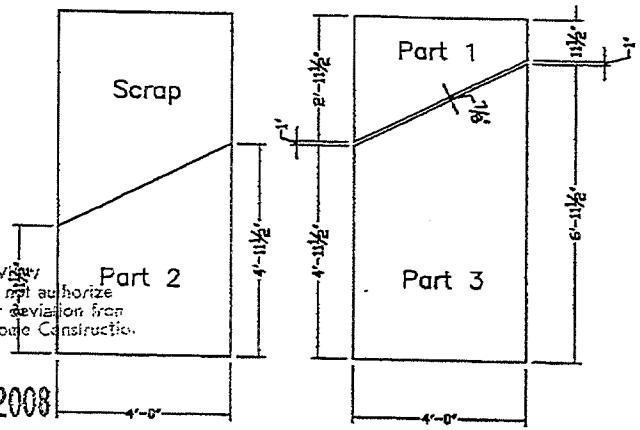




END–TRUSS SHEATHING CUTS

5) 2x4 FLAT SPF #3, 16" O.C. WITH 7/16"x2 1/2"x15 GA STAPLES or 3"6d NAILS or 3" WOOD SCREWS, 3 PER CONNECTION (TYP)





NOTES:
1) MATERIAL IS 3/8" OSB OR PLYWOOD
2) ENDWALL SHEATHING IS NON–STRUCTURAL BUT NECESSARY FOR INSTALLATION OF VINYL SIDING.
3) BACKERS AT VERTICAL JOINTS RECOMMENDED BUT NOT REQUIRED.

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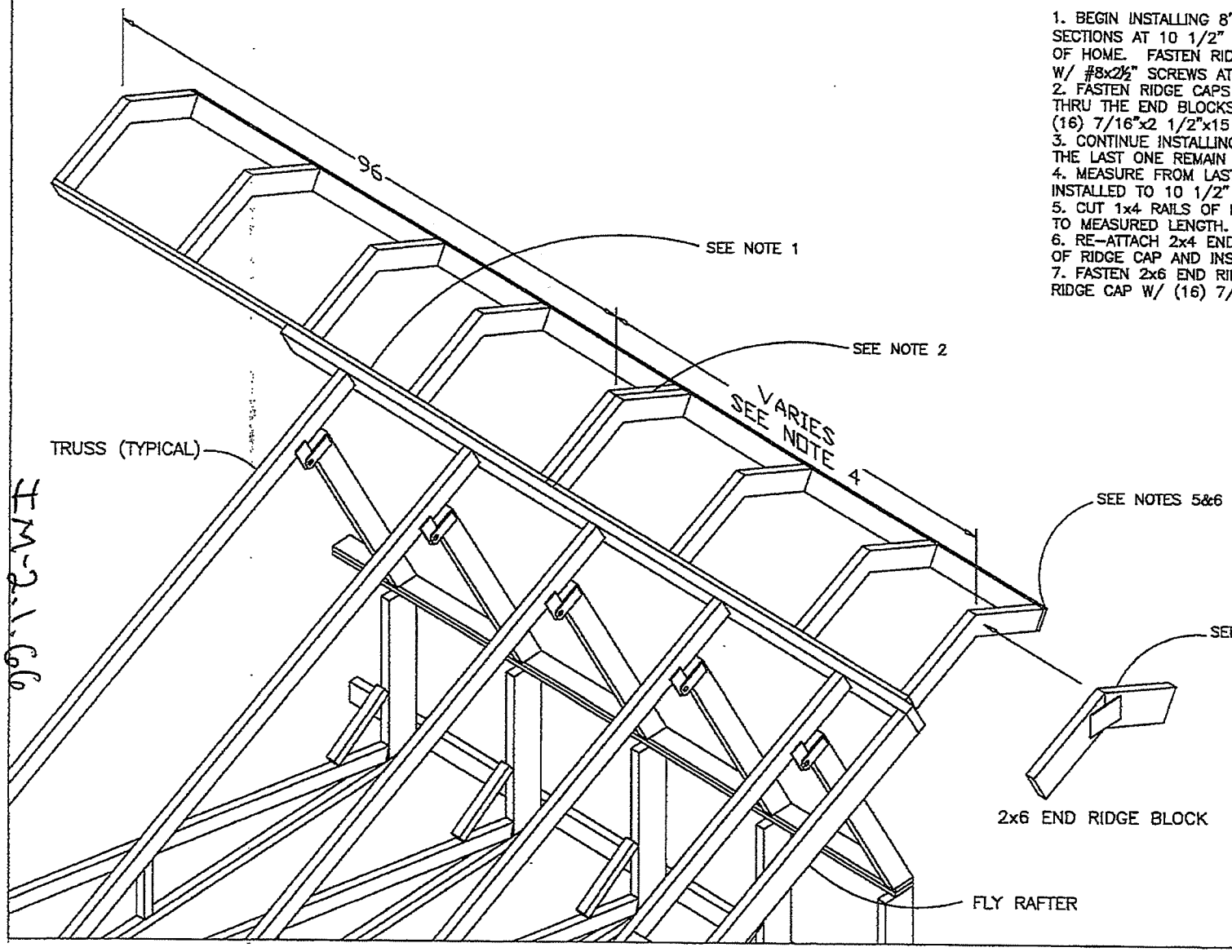
REVISIONS			
CE–11–3	BY: STH	DATE 12/08/03	
TITLE: ROOF DECKING		NO.	

TM-21.65



1. BEGIN INSTALLING 8' RIDGE BEAM SECTIONS AT 10 1/2" PAST ONE END OF HOME. FASTEN RIDGE CAP TO TOP RAIL W/ #8x2½" SCREWS AT 12" O.C. MAX.
2. FASTEN RIDGE CAPS END TO END TOGETHER THRU THE END BLOCKS WITH (16) 7/16"x2 1/2"x15 GA. STAPLES
3. CONTINUE INSTALLING RIDGE CAPS UNTIL THE LAST ONE REMAIN UNISTALLED.
4. MEASURE FROM LAST RIDGE CAP SECTION INSTALLED TO 10 1/2" PAST END OF HOME.
5. CUT 1x4 RAILS OF REMAINING RIDGE CAP TO MEASURED LENGTH.
6. RE-ATTACH 2x4 END RIDGE BLOCK TO END OF RIDGE CAP AND INSTALL ON ROOF.
7. FASTEN 2x6 END RIDGE BLOCK TO END OF LAST RIDGE CAP W/ (16) 7/16"x2 1/2"x15 GA. STAPLES

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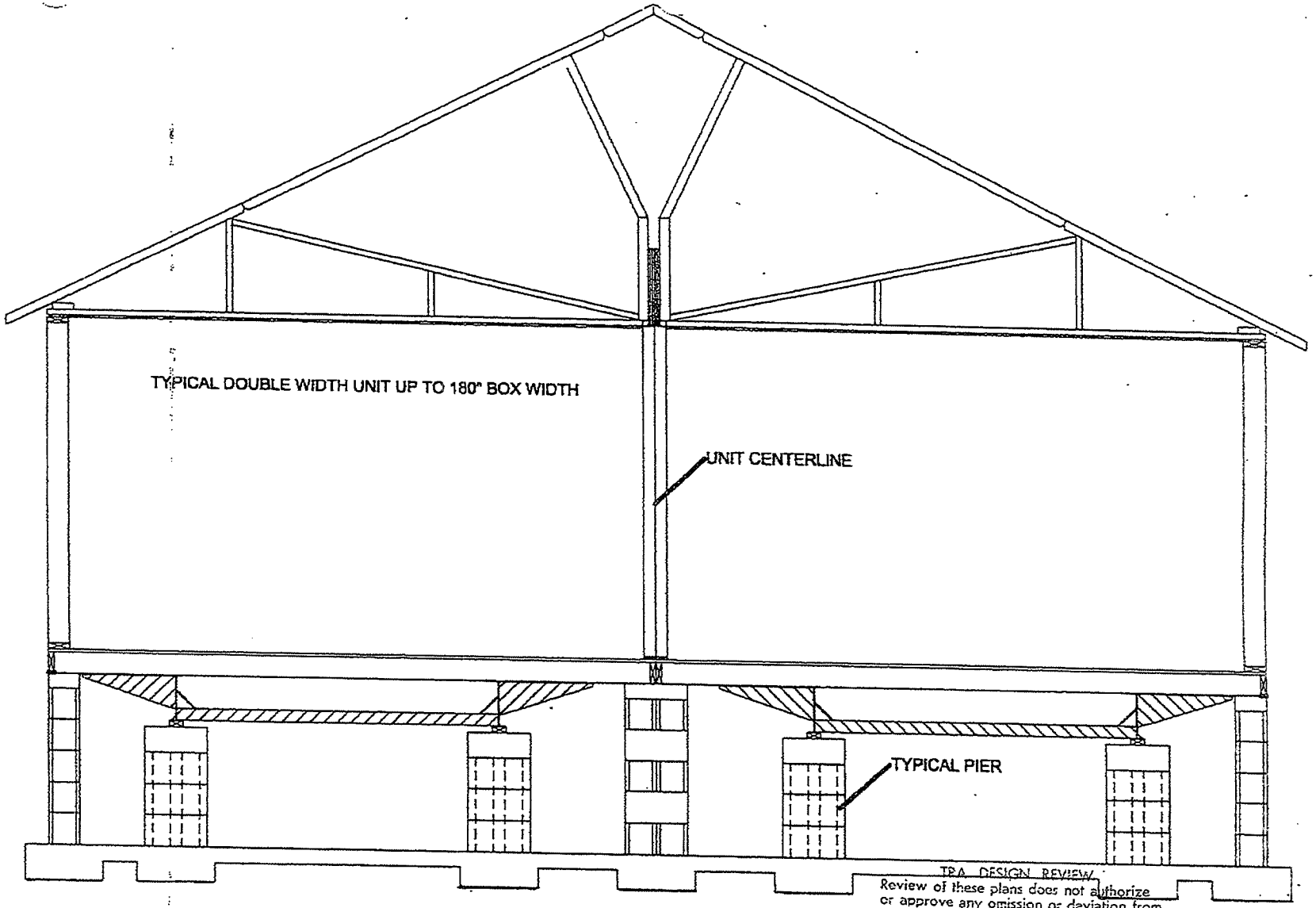
HM-21.66

REVISIONS		
CE1-11-4	BY STH	DATE 12/08/03
TITLE: RIDGE CAP INSTALLATION		



FLOATING SLAB SYSTEM

NOTES:

6 MIL VAPOR BARRIER UNDER PAD
PAD TO BE SLOPED OUTWARD 1/8" PER FOOT
THICKENED SLAB AT PIERS AND PERIMETER
SYSTEM MUST BE ACCEPTABLE TO LOCAL JURISDICTION HAVING AUTHORITY
SYSTEM TO BE DESIGNED "SITE SPECIFIC" BY ENGINEER PER LOCAL SOIL CONDITIONS

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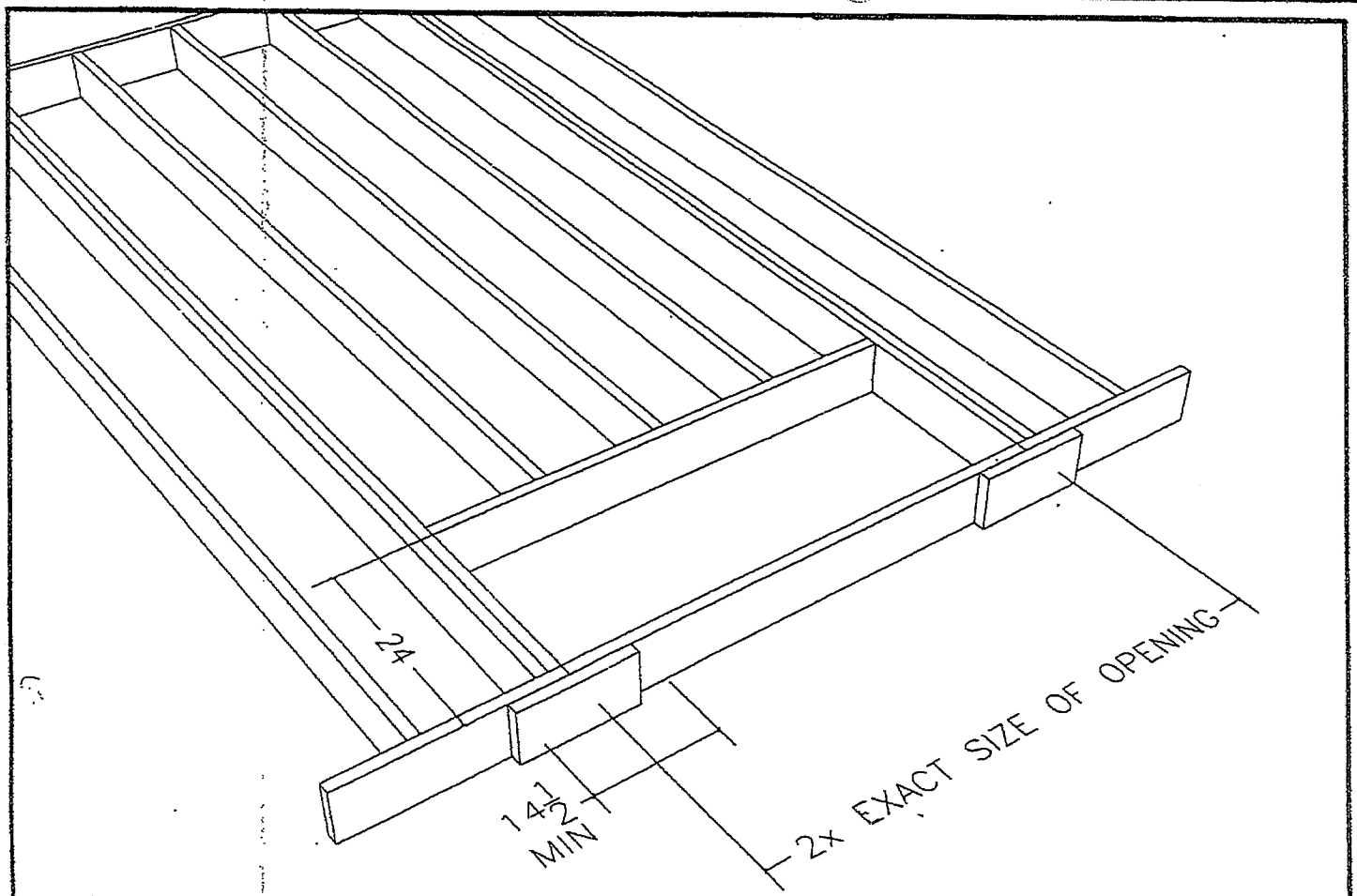
L9-12-WT



SPLICE BLOCK FASTENED WITH
(10) #8 x 2 1/2" SCREWS
5 EACH SIDE OF SPLICE

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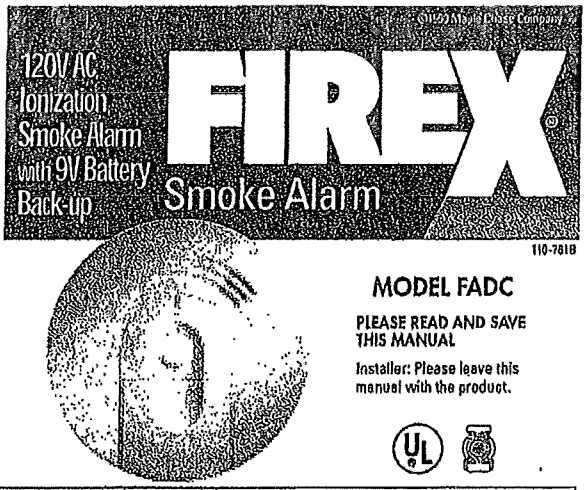
REPAIR FOR PERIMETER RAIL WHEN RETRANSPORTING HOUSE WITH RECESS ENTRY

51700 Lovejoy Dr. Middlebury, IN 46540

802SP45	BY DH	DATE 3-24-05
TITLE: RECESS. ENTRY		NO. 802

TM-2.1.08



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 specialty 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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IM-2.1.69

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.

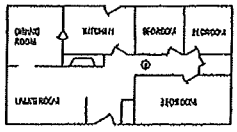
- **Smoke alarms have limitations.** This smoke alarm is not foolproof and is not warranted to protect lives or property from fire. Smoke alarms are not a substitute for insurance. Homeowners and renters should insure their lives and property. In addition, it is possible for the smoke alarm to fail at 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:

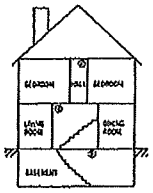
"2-2.1.1.1 Smoke detectors shall be installed outside of each separate sleeping area in the immediate vicinity of the bedrooms and on each additional story of the family living unit including basements and excluding crawl spaces and unfinished attics. In new construction a smoke detector also shall be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

Chapter 2 also reads as follows:

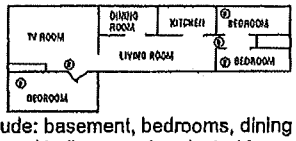


"2-2.2.1 In new construction, where more than one smoke detector is required by 2-2.1, they shall be so arranged that operation of any smoke detector shall cause the alarm in all smoke detectors within the dwelling to sound."

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:

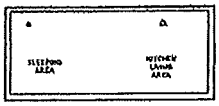
"Early warning fire detection is best achieved by the installation of fire detection equipment in all rooms and areas of the household as follows: a smoke detector installed in each separate sleeping area (in the vicinity, but outside the bedrooms), and heat or smoke detectors in the living rooms, dining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

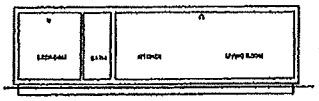
In addition, we recommend that all smoke alarms be interconnected.

Typical Efficiency Home (Apartment)

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



EFFICIENCY APARTMENT



MOBILE HOME

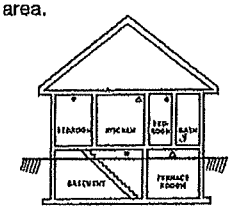
Typical Mobile Home

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.



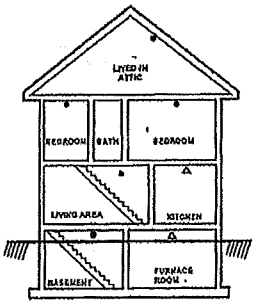
SINGLE STORY

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.



TWO STORY

If there is a basement:

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

Key
- **Smoke Alarm**
- **Δ Smoke Alarm with False Alarm Control™**

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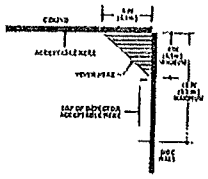
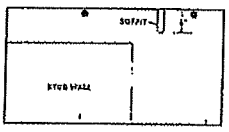
IMPORTANT SMOKE ALARM PLACEMENT AND EXCEPTION INFORMATION

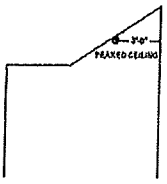
- Install a smoke alarm as close to the center of the ceiling as possible. If this is not practical, mount no closer than 4 inches from a wall or corner. Also, if local codes allow, install smoke alarms on walls, between 4 and 12 inches from ceiling/wall intersections.



- Install a minimum of two smoke alarms in every home, no matter how small the home. New construction codes require a minimum of two interconnected smoke alarms in newly built homes.
- Install a smoke alarm in each room that is divided by a partial wall (either coming down from the ceiling at least 24 inches, or coming up from the floor).



- Install smoke alarms on peaked, cathedral, or gabled ceilings 3 feet from the highest point (measured horizontally).



- Install a smoke alarm in lived-in attics or attics which house electrical equipment like furnaces, air conditioners, or heaters.

DO NOT install smoke alarm:

Near appliances or areas where normal combustion regularly occurs (kitchens, near furnaces, hot water heaters). Use specialized smoke alarms with unwanted alarm control for these areas.

In areas with high humidity, like bathrooms or areas near dishwashers or washing machines, install at least 10 feet (3 meters) away from these areas, if possible.

Within 3 ft. horizontally from heating and cooling supply vents and outside of the air flow from these registers. The air could blow smoke away from the detector, interrupting its alarm.

In rooms where temperatures may fall below 40°F (4°C) or rise above 100°F (38°C).

In extremely dusty, dirty, or insect-infested areas. Loose particles interfere with smoke alarm operation.

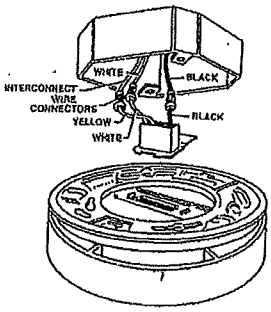
HOW TO INSTALL THIS SMOKE ALARM

⚠ DANGER: **ELECTRICAL SHOCK HAZARD. Turn off power at the main fuse box or circuit breaker by removing the fuse or switching the circuit breaker to the OFF position.**

⚠ WARNING: **This smoke alarm should be installed only by a qualified electrician. Smoke alarm installation must be in accordance with the requirements of Article 760 of the National Electrical Code and any local codes that may apply.**

THIS SMOKE ALARM SHOULD BE INSTALLED IN ACCORDANCE WITH THE NATIONAL FIRE PROTECTION ASSOCIATION'S STANDARD 72 (National Fire Protection Association, One Batterymarch Park, Quincy, MA 02269).

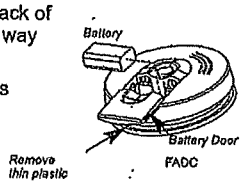
- Install smoke alarm on a 4-inch octagon or single gang junction box only.



1. From back of smoke alarm, remove mounting plate. To later engage tamper-resist feature, twist out and set aside one of the pins molded into the plate. Both pins are exactly the same.
2. Align recessed slots on plate with mounting holes of a 4-inch octagon or single gang junction box.
3. Gently pull household wires through center hole of plate.
4. Secure plate to junction box using mounting screws.
5. With a small wire connector, connect white wire from connector plug to white household wire.
6. Connect black wire from connector plug to black household wire.
7. If interconnection is desired, connect yellow wire from connector to interconnect wire between smoke alarms. See section, "INTERCONNECTING SMOKE ALARMS."

NOTE: If this will be a single-station smoke alarm, cover yellow wire with electrical tape and tuck into junction box.

8. Attach connector plug to pins on back of smoke alarm. Plug will only fit one way and will snap into place.
9. Gently tug connector to be sure it is attached securely.



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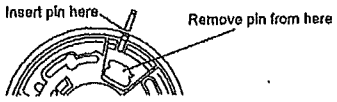
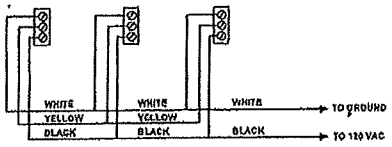
10. Position smoke alarm to mounting plate and turn clockwise to lock into place. For tamper-resist, use long-nosed pliers to remove thin plastic from notch on smoke alarm edge. Insert pin into notch on edge of smoke alarm after smoke alarm is positioned properly in base.



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."



FOR INTERCONNECT: USE # 18 AWG MINIMUM WIRE

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

⚠ W A R N I N G

- 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 trouble-shooting 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!	1. Check that AC power is turned on. 2. Turn off power. Remove smoke alarm from mounting plate and: 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.	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.	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.	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.	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

An Invensys company

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Installation Instructions for Optional Outside Wall Intake Air Vent Kit

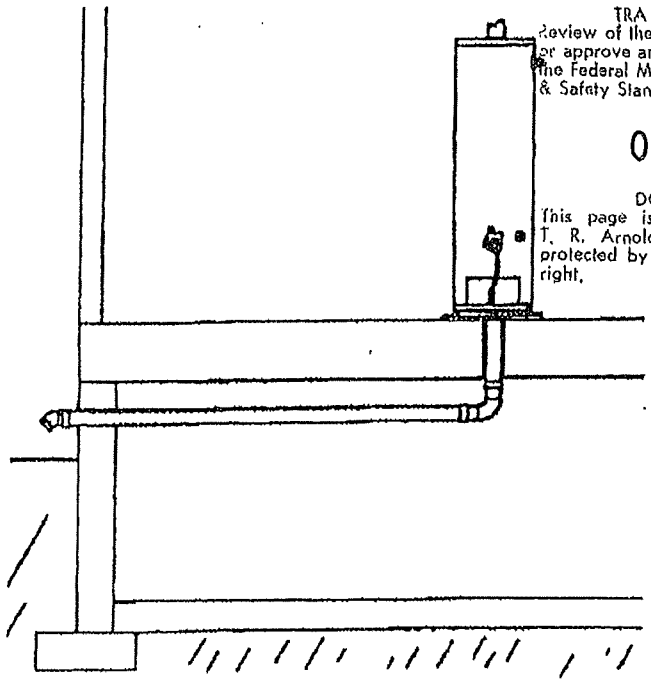
THE OPTIONAL OUTSIDE WALL INTAKE AIR VENT KIT IS FOR USE ONLY ON RESIDENTIAL DIRECT VENT MANUFACTURED HOME GAS WATER HEATERS.

KIT #9002986 – For 30 and 40 Gallon Models – 3″

KIT #9002987 – For 50 Gallon Models – 4″

Typical Installation

Site installation over a basement or crawl space.



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Save these instructions for Future Reference

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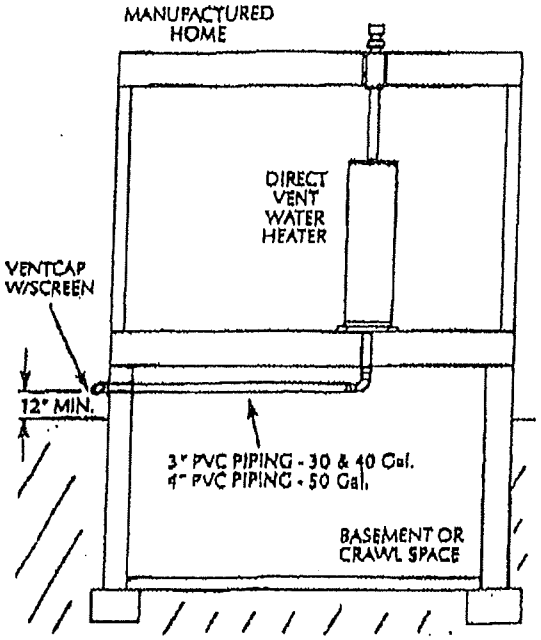
Installing the New Intake Air Vent

Facts to Consider About the Location

If the manufactured home is installed over a basement or crawlspace, combustion air must be supplied from outside the manufactured home. The combustion air intake piping can be 3" PVC for 30 and 40 gallon models and 4" PVC for 50 gallon models. The air intake piping cannot exceed a total of 30 feet including vertical and horizontal runs and have no more than 3 elbows. All horizontal runs require adequate support at 3½ feet intervals.



⚠ WARNING

A gas water heater cannot operate properly without the correct amount of air for combustion. Provide ventilation and combustion air by means of floor and wall openings as shown in the drawings. Never obstruct the flow of combustion and ventilation air. If you have any doubts or questions at all, call your gas company. Failure to provide the proper amount of combustion air can result in a fire or explosion and can cause DEATH, SERIOUS BODILY INJURY, OR PROPERTY DAMAGE.

MANUFACTURED HOME INSTALLED OVER A BASEMENT OR CRAWLSPACE – AIR INTAKE THROUGH AN OUTSIDE WALL

ALL 30 AND 40 GALLON MODELS

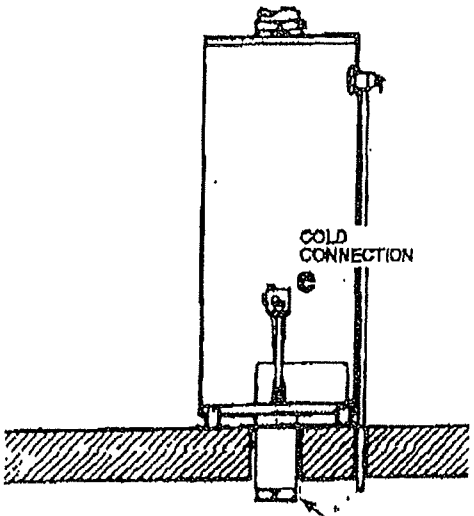
3" PVC Schedule 40 intake air vent piping:
Optional Kit No. 9002986 contains a 3" PVC Schedule 40-45° vent cap with screen and two 3" wall collars.

ALL 50 GALLON MODELS

4" PVC Schedule 40 intake air vent piping:
Optional Kit No. 9002987 contains a 4" PVC Schedule 40-45° vent cap with screen and two 4" wall collars.

ALL MODELS

1. PVC, ABS or CPVC Schedule 40 piping and fittings are acceptable materials for the intake air vent system.
2. The intake air vent system must terminate horizontally to the outdoors.
3. Remove the screws which attach the wind baffle to the existing metal air intake vent pipe underneath the home. Discard the wind baffle and screws.



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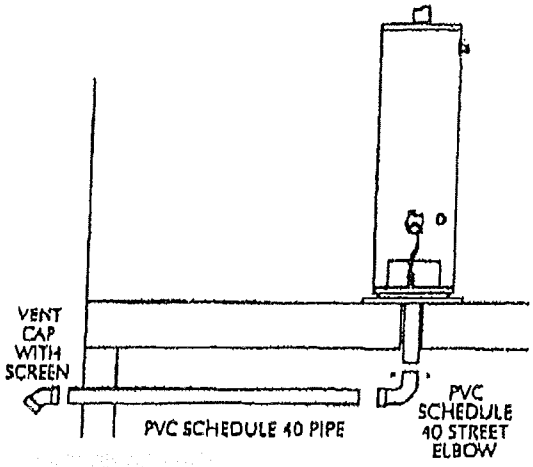
Installing the New Intake Air Vent (cont'd)

4. Attach a 3" or 4" PVC street elbow to the metal air intake vent using 3 sheet metal screws. Continue PVC piping to outside wall and terminate with vent cap and screen.

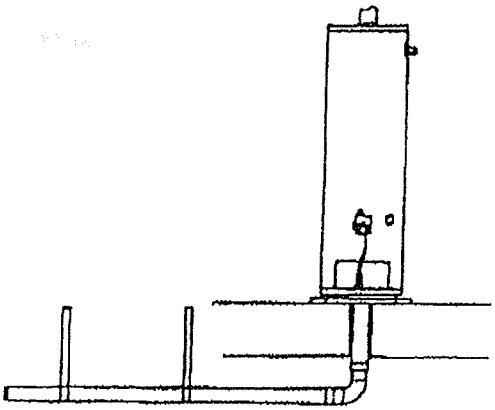
   3" size - 30 and 40 gallon models
   4" size - 50 gallon models

See page 4 for cementing instructions.

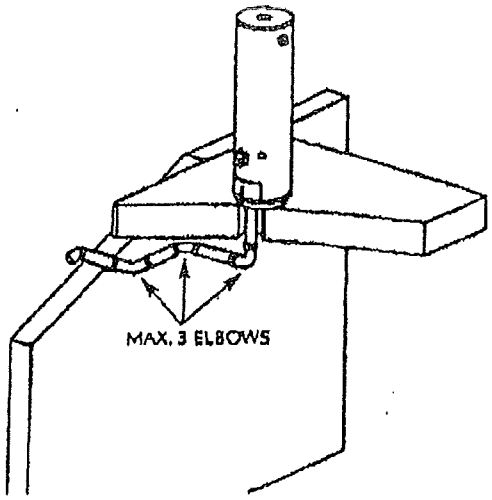


NOTE: Vent cap must be located a minimum of 12" above the ground.

5. Vertical and horizontal runs must be securely supported at 3½ foot intervals.



6. The intake air vent piping can be installed with no more than 3 elbows.

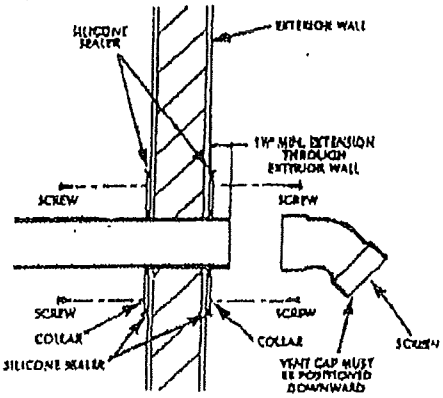


CUTTING OPENING THROUGH AN OUTSIDE WALL AND COLLAR INSTALLATION

Determine the location of the opening in the wall and cut a 3¼" hole (30 & 40 gal.) or 4¼" hole (50 gal.) through an outside wall.

The 3" or 4" PVC, ABS or CPVC Schedule 40 vent pipe can be run from the water heater through the wall or from the wall to the water heater, whichever is most convenient. The vent pipe must extend a minimum of 1½" through the exterior wall. Note that the inside collar must be slipped over the vent piping before locating the pipe through the wall. Before securing the inside and outside collars to the wall, use a silicone sealer between pipe and opening to insure a water and air tight seal.

INSTALLATION SHOWING USE OF PVC, ABS OR CPVC PIPE



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Installing the New Intake Air Vent

Cementing PVC, ABS OR CPVC Pipe and Fittings

Read and observe all safety information printed on primer, cleaner, and cement containers.

⚠ DANGER

Primer, cleaner, and cements are extremely flammable. They are harmful or fatal if swallowed. The vapors are harmful. They may irritate eyes and skin and can be absorbed through the skin.

⚠ PRECAUTIONS

Always store primers, cleaner, and cements in cool, dry, well ventilated places. Do not store them near heat, sparks, or flames. Keep containers closed. Use them in well ventilated areas. Wear impervious clothing while handling. Do not smoke, eat, or drink while handling. Wash thoroughly after handling and before eating. Wear eye protection when handling. If swallowed, drink water, do not induce vomiting, and call a physician or poison control center immediately. If inhaled, get fresh air and seek medical attention if ill feelings persist. In case of eye and skin contact, immediately flush with plenty of water for 15 minutes and seek medical attention if irritation persists. KEEP OUT OF REACH OF CHILDREN.

All primers, cleaners, and cements must meet all local codes and applicable standards of the American Society For Testing Materials Standards.

Before using primers, cleaners, and cements, stir or shake, making sure contents are liquid. Do not use if found to be lumpy or jelly-like.

1. Cut pipe ends squarely removing all burrs and dirt.
2. Dry fit pipe and fittings to be connected for proper fit.
3. Clean pipe and fitting with a primer/cleaner.
4. Apply a thin coat of cement to fitting, avoiding puddling inside.
5. Apply a liberal coat of cement to pipe leaving no voids.
6. QUICKLY assemble parts while cement is fluid! If you wait too long, re-coat pipes.
7. Push pipe completely into socket of fitting, turning as it goes until it bottoms.
8. Hold pipe and fitting together for 30 seconds. Then carefully clean off excess with a cloth. Allow connections a sufficient time to cure before disturbing.
9. Remember that vent pipes must be adequately and securely supported.

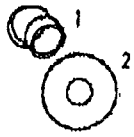
APPROXIMATE SETTING TIME FOR 2½" TO 4" PIPE JOINTS

	MOVEMENT OF JOINT	COMPLETE SET
90°F to 150°F	¼ hr.	8 hrs.
50°F to 90°F	1 hr.	15 hrs.
0°F to 50°F	1½ hr.	18 hrs.

Repair Parts

KIT #9002986 – For 30 and 40 Gallon Models – 3"

KIT #9002987 – For 50 Gallon Models – 4"



KEY NO.	PART DESCRIPTION	MODEL NUMBERS 9002986	9002987
		PART NUMBERS	
1.	Vent Cap w/Screen	9001957	9003005
2.	Wall Collar	9001993	9002786

Now that you have purchased this Intake Air Vent Kit, should a need ever exist for repair parts or service, simply contact the company it was purchased from or direct from the manufacturer listed on the rating plate on the water heater.

Be sure to provide all pertinent facts when you call or visit.

Selling prices will be furnished on request or parts will be shipped at prevailing prices and you will be billed accordingly.

The model number of your Gas Water Heater will be found on the model rating plate located above the gas control valve.

WHEN ORDERING REPAIR PARTS, ALWAYS GIVE THE FOLLOWING INFORMATION:

MODEL NUMBER — PART DESCRIPTION
SERIAL NUMBER — PART NUMBER

THIS IS A REPAIR PARTS LIST, NOT A PACKING LIST.

TRA 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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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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