12-30-05

HOLLY PARK

SET UP INSTRUCTION MANUAL

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For Double Wide Homes

KEEP THIS MANUAL
WITH YOUR HOME

(Rev A)

IM 2.1

SET UP INSTRUCTIONS - FOR DOUBLE WIDE HOMES

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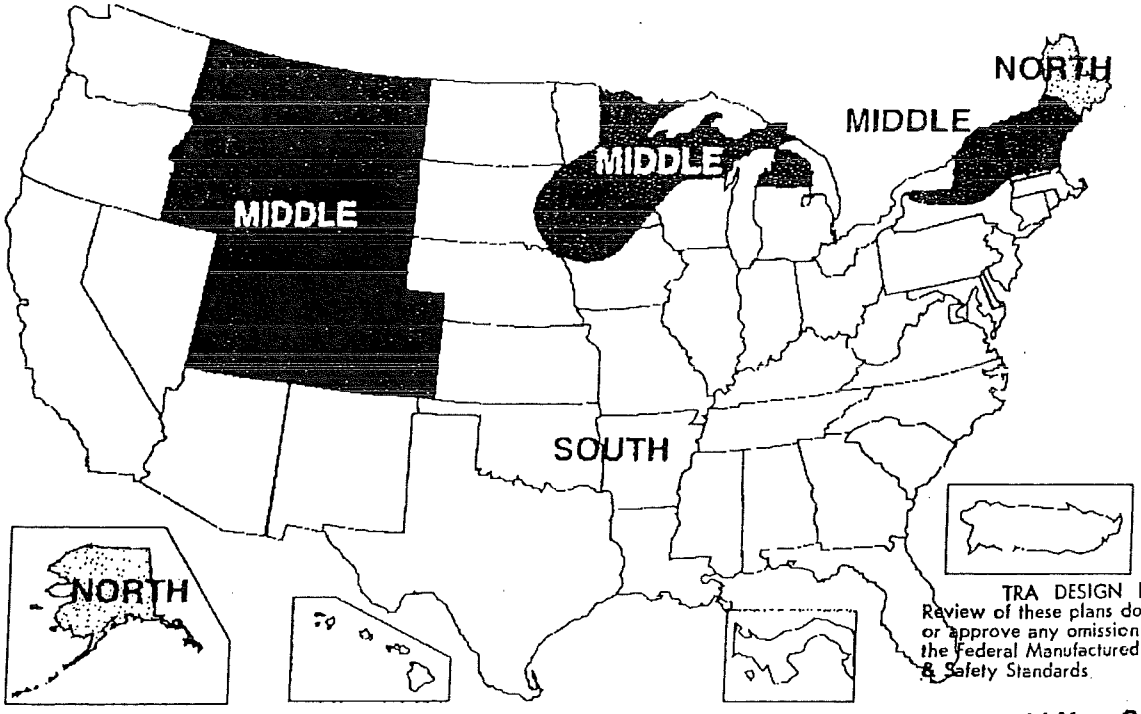
OPTIONAL

Appendix A Hinged roof On-site Set up Instructions
Appendix B Optional On-Site dormer Attachment

INTRODUCTION

Your Holly Park 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 homesite to obtain information on necessary permits for set up

DESIGN ROOF-LOAD ZONE MAP



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DESIGN WIND-LOAD ZONES:

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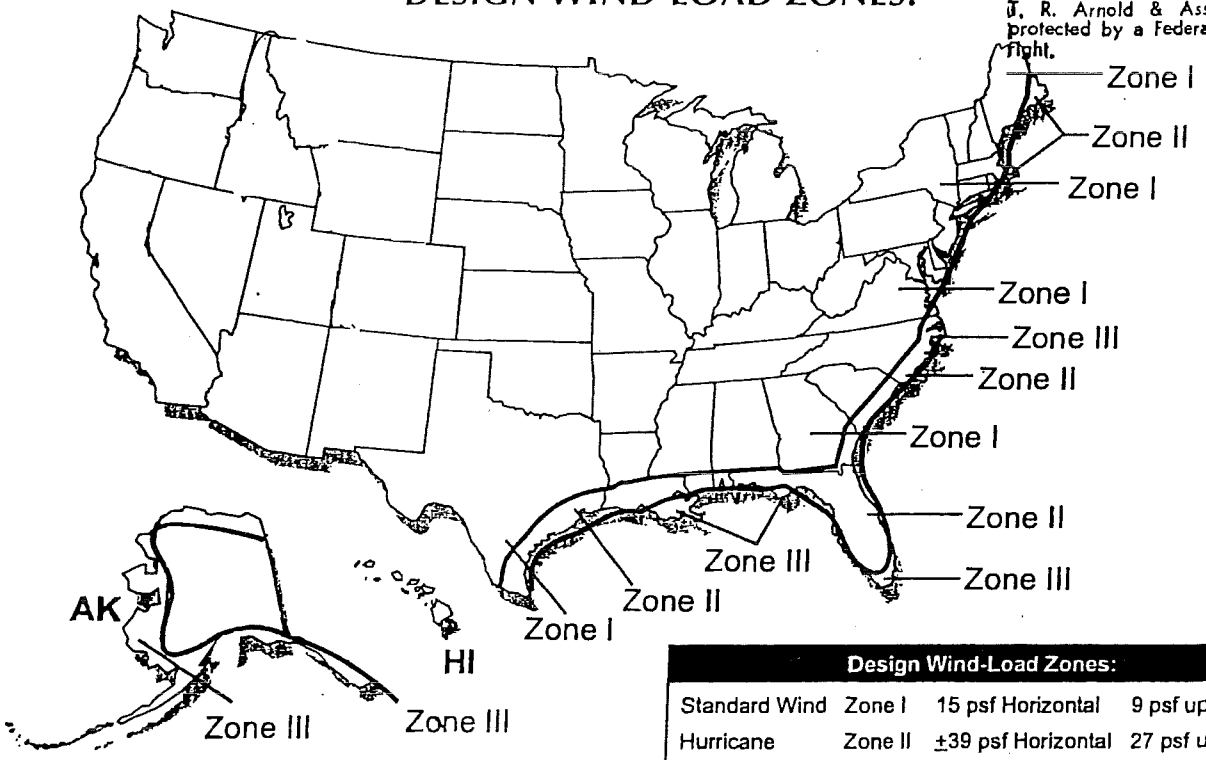

Design Wind-Load Zones:			
Standard Wind	Zone I	15 psf Horizontal	9 psf uplift*
Hurricane	Zone II	±39 psf Horizontal	27 psf uplift
Hurricane	Zone III	±47 psf Horizontal	32 psf uplift
			*net uplift

Note: psf: pounds per square foot

NOTE: ALL MAINLAND STATES NOT SHOWN ARE WIND ZONE 1

(Rev A) IM 2.3

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, where soils are not conducive to good drainage.

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 porperly 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.

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

The recommended set up procedure is pressented 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 countained in this set-up manual are the responsibility of the home owner. All aspects of basement design including, but not imited to, heatloss calculations, electrical schematics, stairway design, egress requirements, light and vent considerations, exterior wall openings, etc are goverened by local jurisdiction and should be designed by a qualified engineer or architect.

FOUNDATION REQUIREMENTS

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

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

The following pages show typical design requirements for mainrail pier set and a perimeter foundation set. All design loa for your home can be derived from the charts and desig specifications contained in this manual. Specific, by model, pi locator drawings are available upon request by contracting yo dealer or Holly Park.

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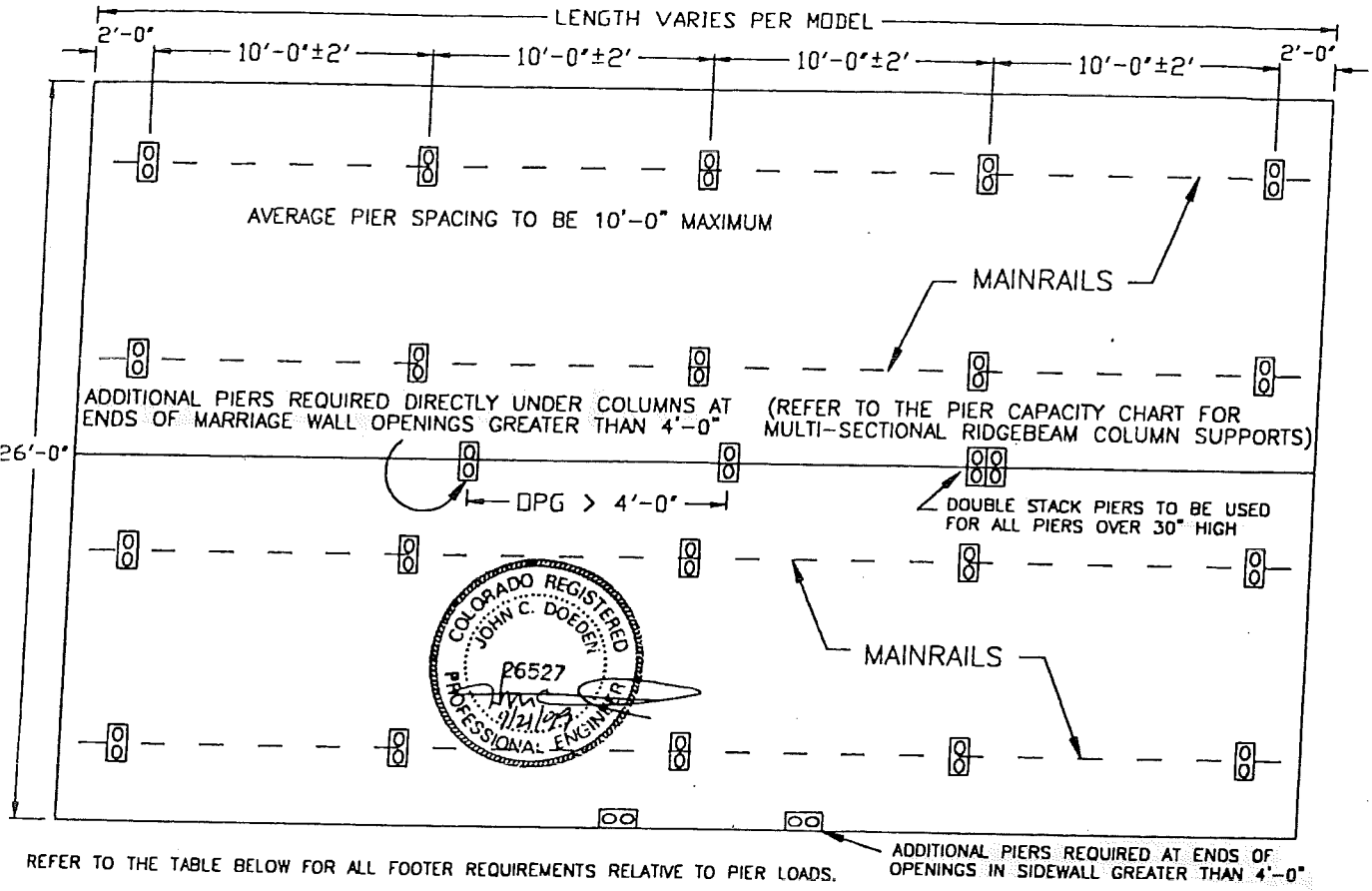
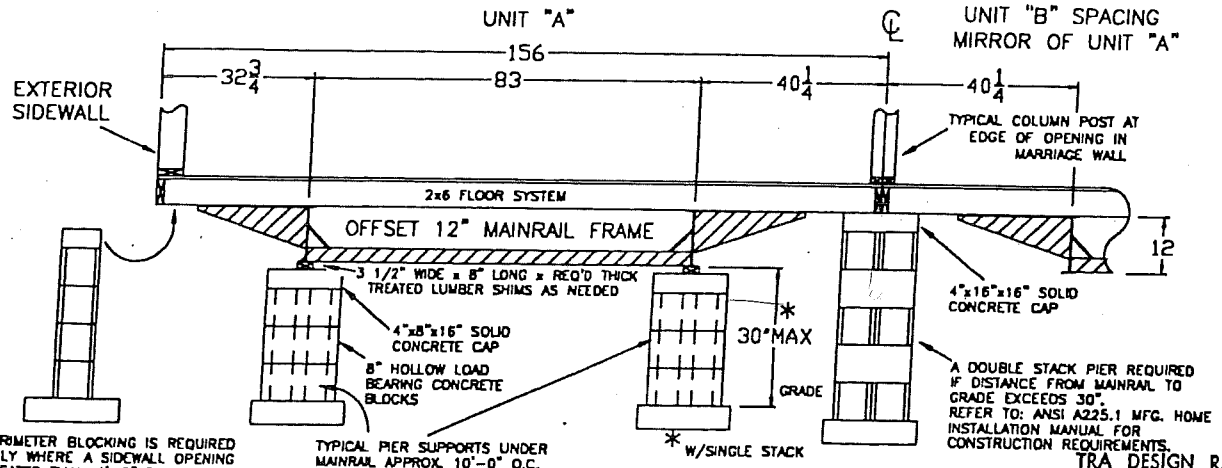
JOHN C. DOEDEN
REGISTERED
No.
ENE8700871
STATE OF
INDIANA
PROFESSIONAL ENGINEER

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



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

COLORADO REGISTERED PROFESSIONAL ENGINEER JOHN C. DOEDEN 26527 9/21/99



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.

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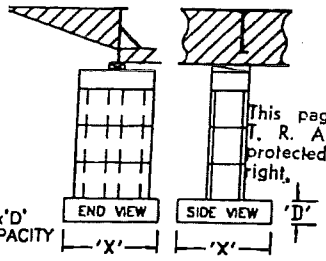
SOIL BEARING CAPACITY/SQ FT	STANDARD PIER 16"x16"x4"	STANDARD PIER 20"x20"x6"	STANDARD PIER 24"x24"x8"
1,000	1,778	2,778	4,000
1,500	2,667	4,167	6,000
2,000	3,556	5,555	8,000
3,000	5,334	8,333	12,000
4,000	7,112	11,111	15,600

'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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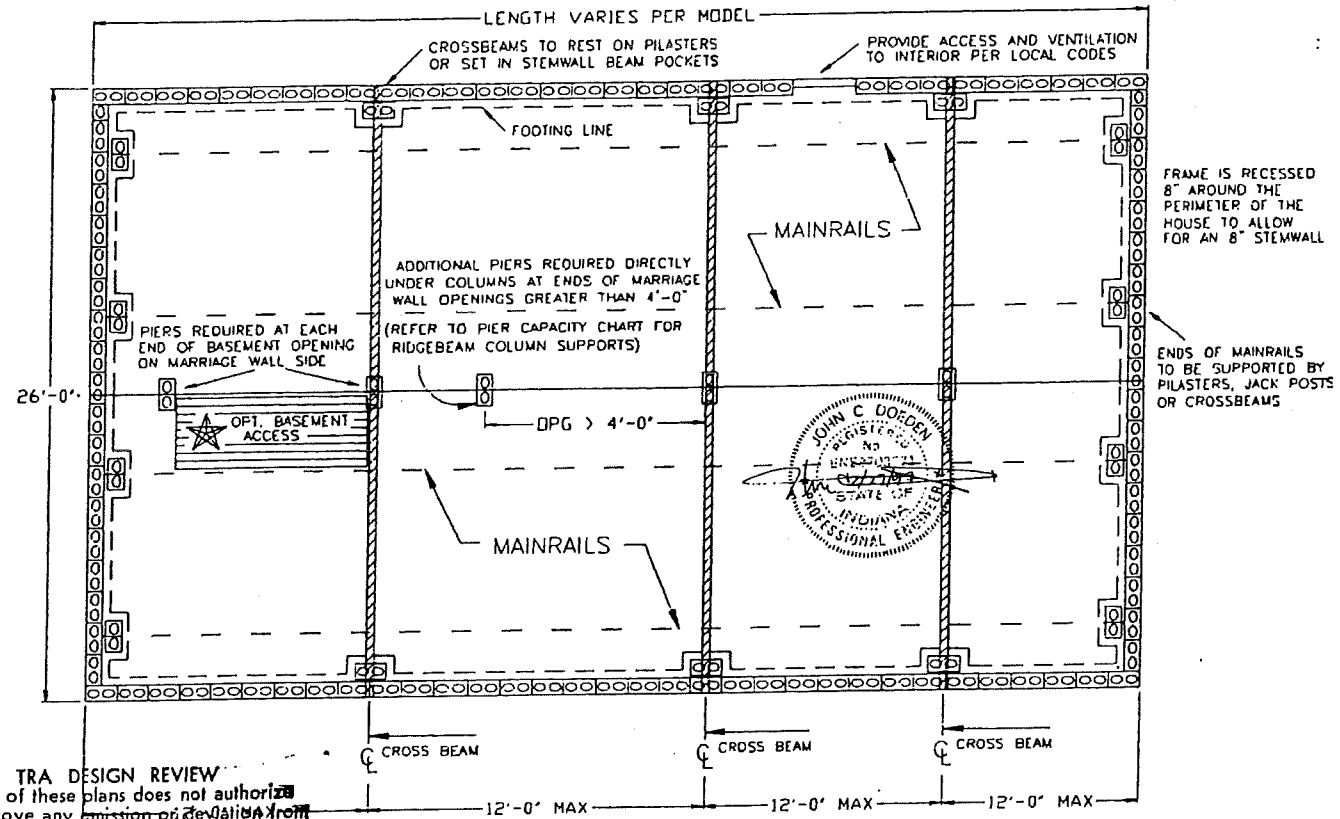
(Rev C) IM2.5

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



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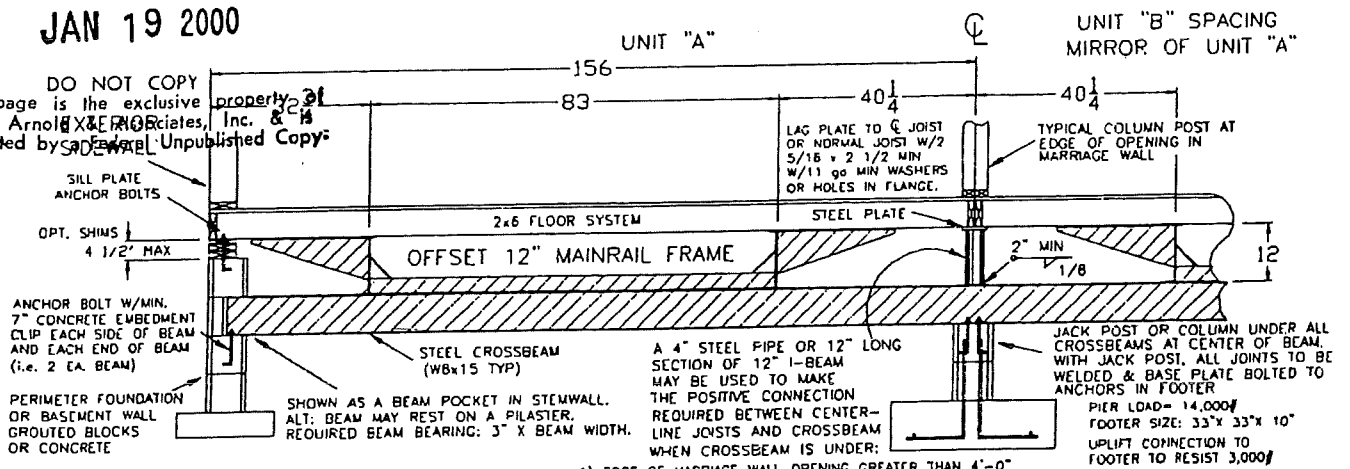
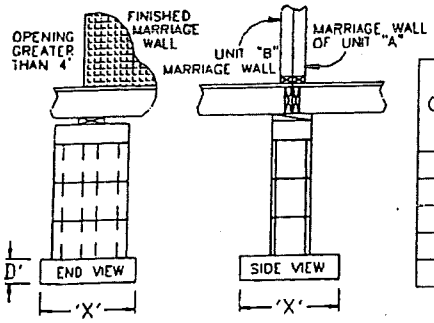
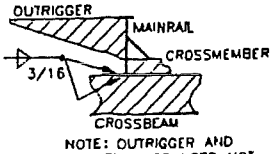




FOOTING SIZE: 'X'x'X'x'D'
PIER AND FOOTER CAPACITY

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

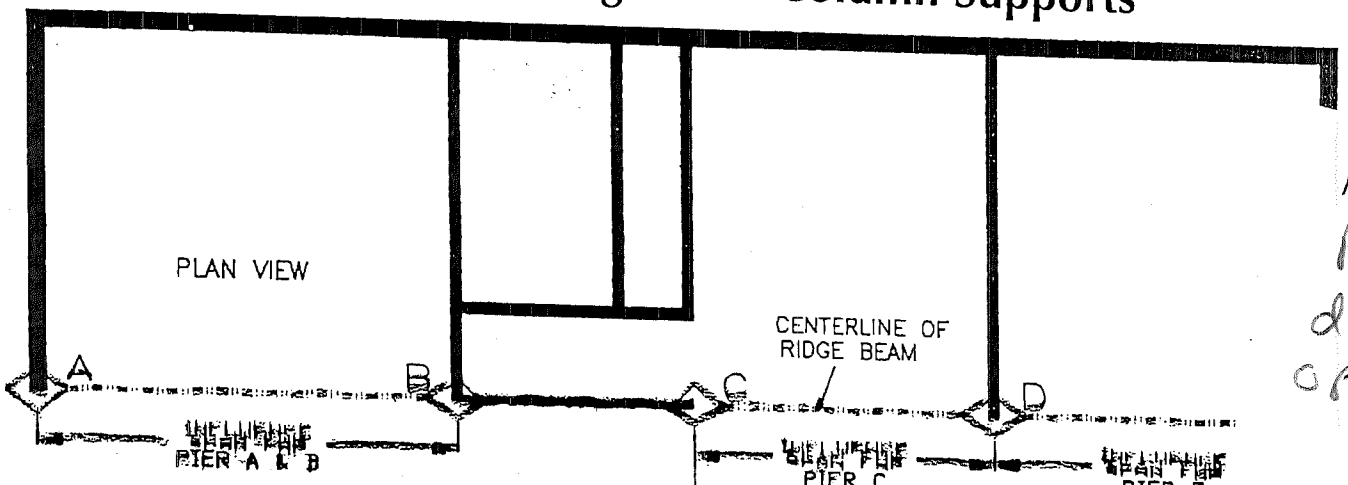
'D' MAY BE 6" WITH 'DOUBLE STACKED PIERS OR WHEN DESIGN CAPACITY IS NOT OVER 2,000 PSF



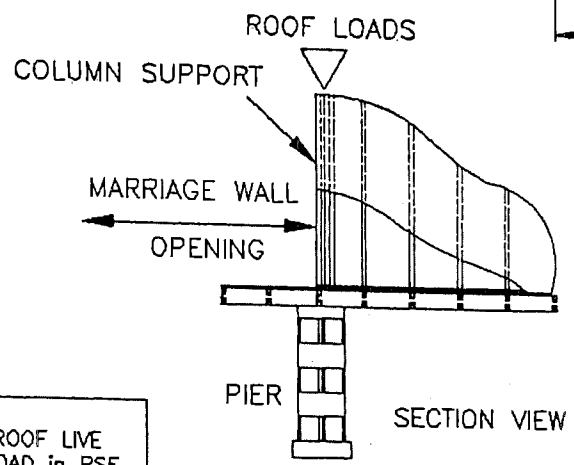
NOTE: OUTRIGGER AND CROSSMEMBER NEED NOT FALL IN SAME LOCATION AS THE CROSSBEAM

(Rev B)

28-Wide Centerline Pier Capacity Chart For Ridgebeam Column Supports



Need floor plans to determine opening size



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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#

IM2-4-3
2-27-97

(Rev C)

IM2.7

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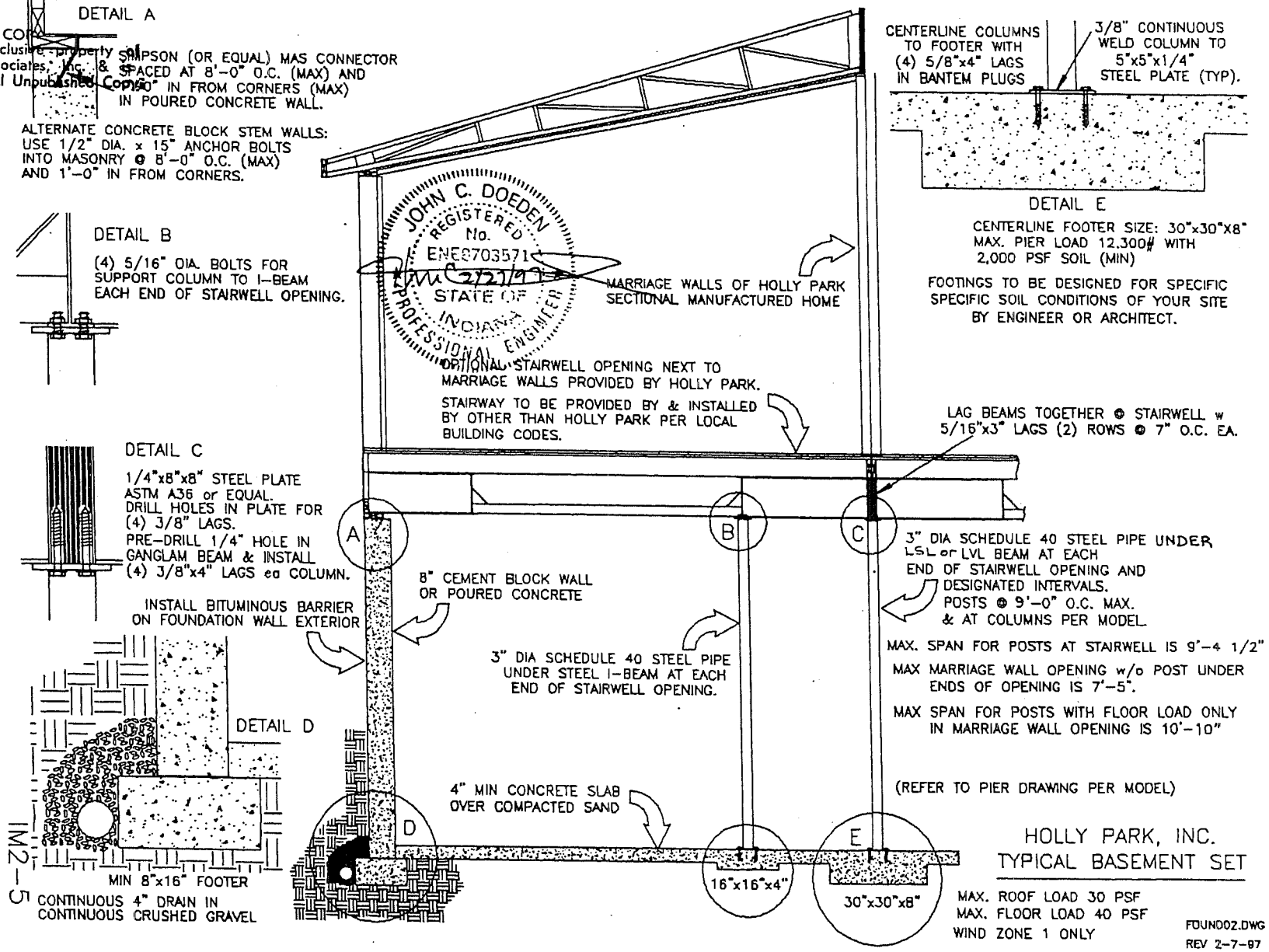
28-Wide Optional Perimeter Frame System For 20# & 30# Roof Load Zones



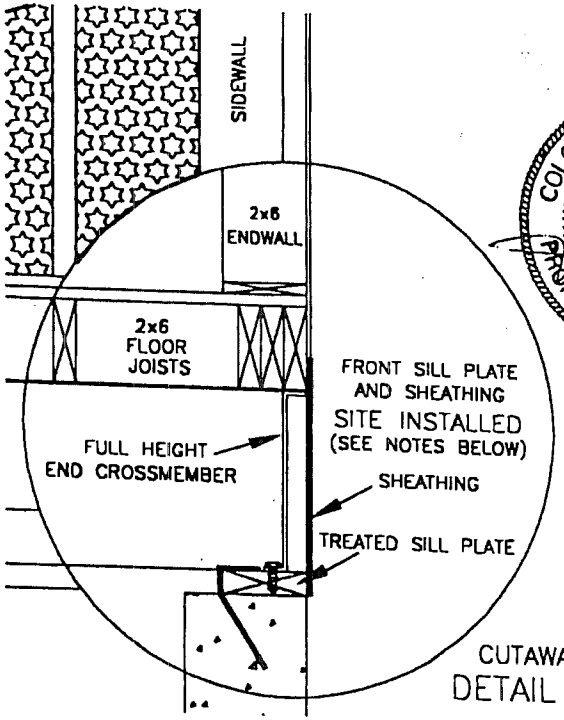
7

(Rev 3)

IM 2.00

IM2-5

for 20# & 30# Roof Load Zones

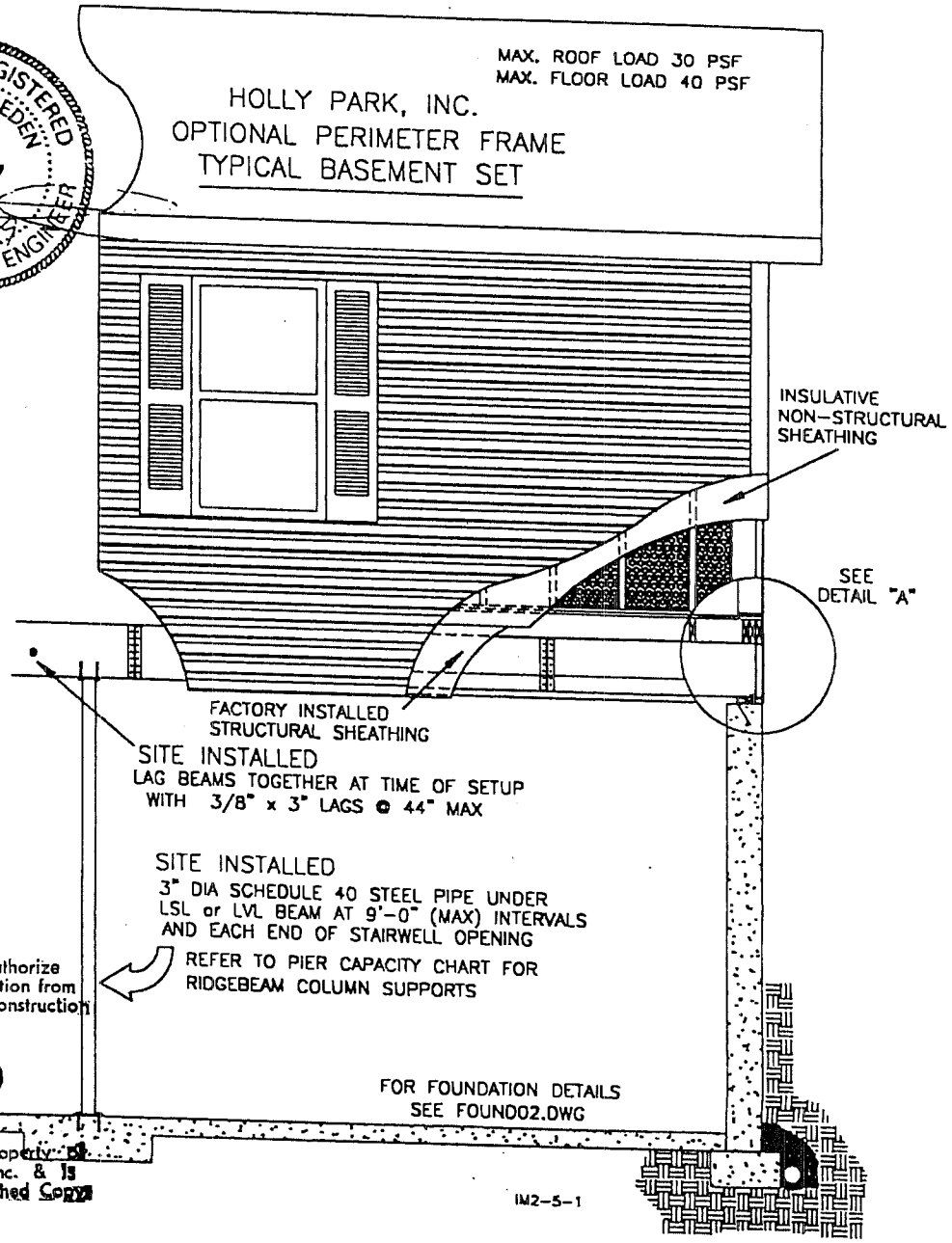


CUTAWAY
DETAIL A

COLORADO REGISTERED
JOHN C. DOEDEN
26527
PROFESSIONAL ENGINEER
9/21/99

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

HOLLY PARK, INC.
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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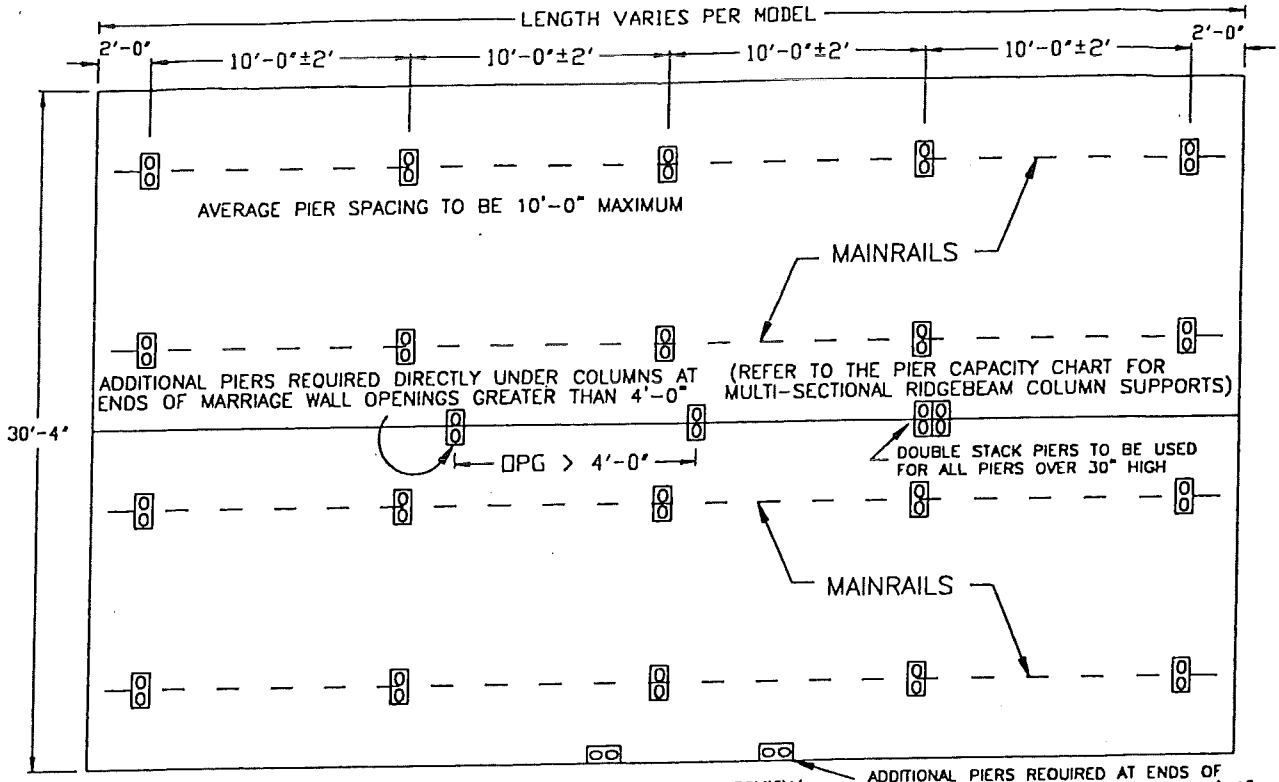
8

(Rev 8)

IM 2.9

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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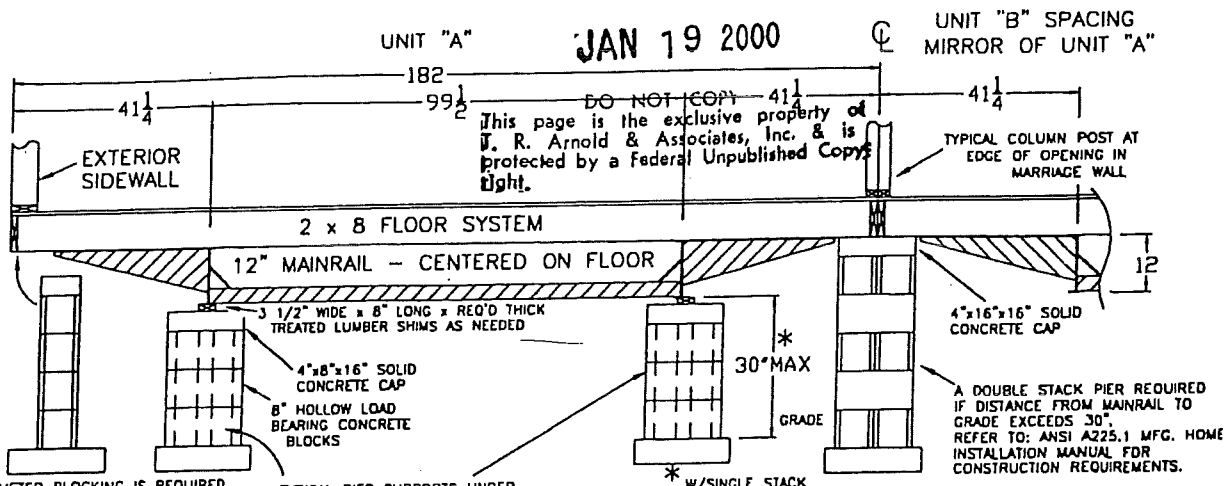

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MAX OPG:	8'-0"	12'-0"
LOAD: 20#	1720#	2470#
LOAD: 30#	2050#	2980#

BLOCK EACH SIDE OF PATIO DOOR AND BAY WINDOW OPENINGS.

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

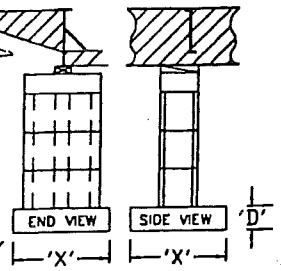
PIER LOADS PER ROOF ZONES

COLORADO REGISTERED PROFESSIONAL ENGINEER JOHN C. DOEDEN 26527 9/21/99

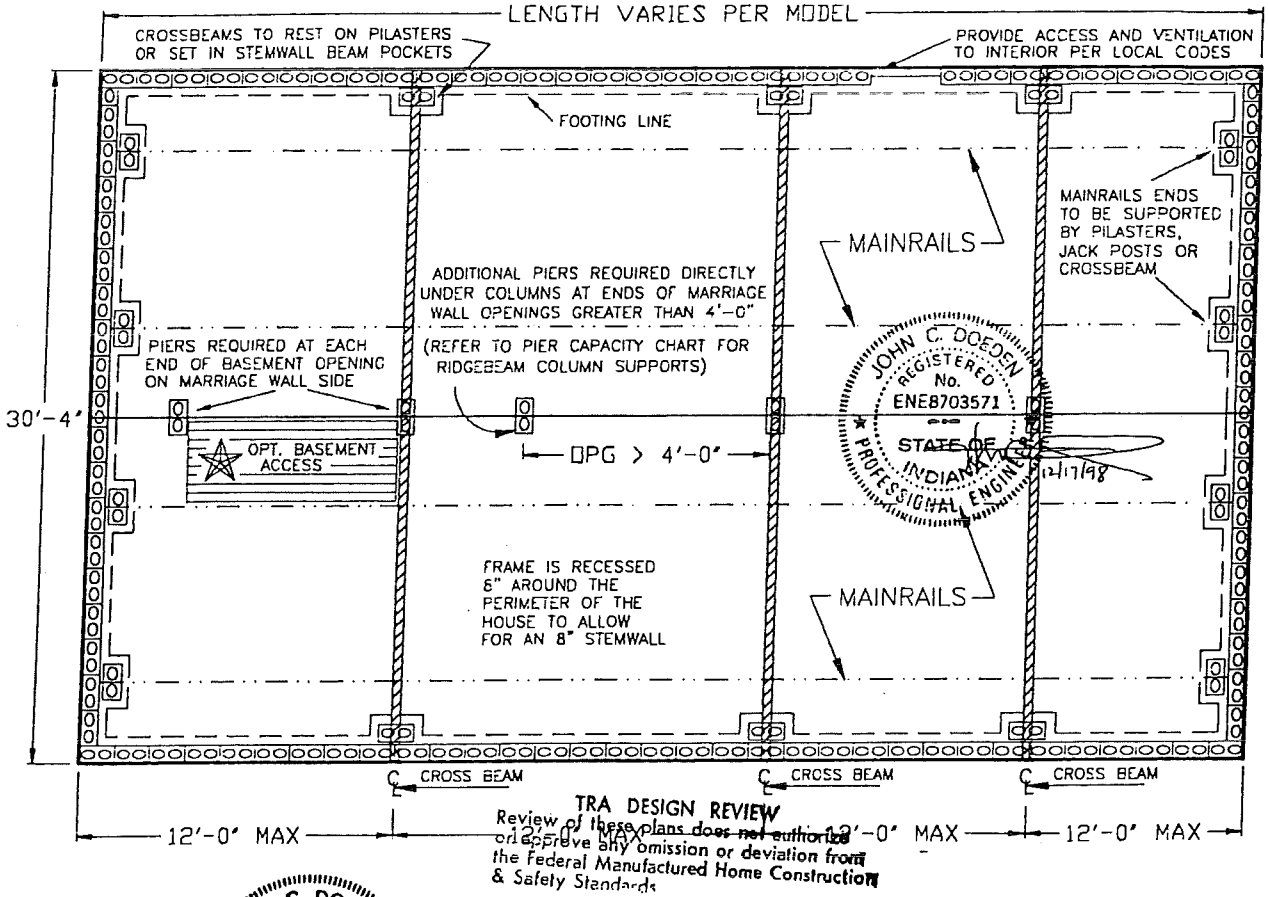
SOIL BEARING CAPACITY/SQ FT	STANDARD PIER 16"x16"x4"	STANDARD PIER 20"x20"x6"	STANDARD PIER 24"x24"x8"
1,000	1,778	2,778	4,000
1,500	2,667	4,167	6,000
2,000	3,556	5,555	8,000
3,000	5,334	8,333	12,000
4,000	7,112	11,111	15,600

'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



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



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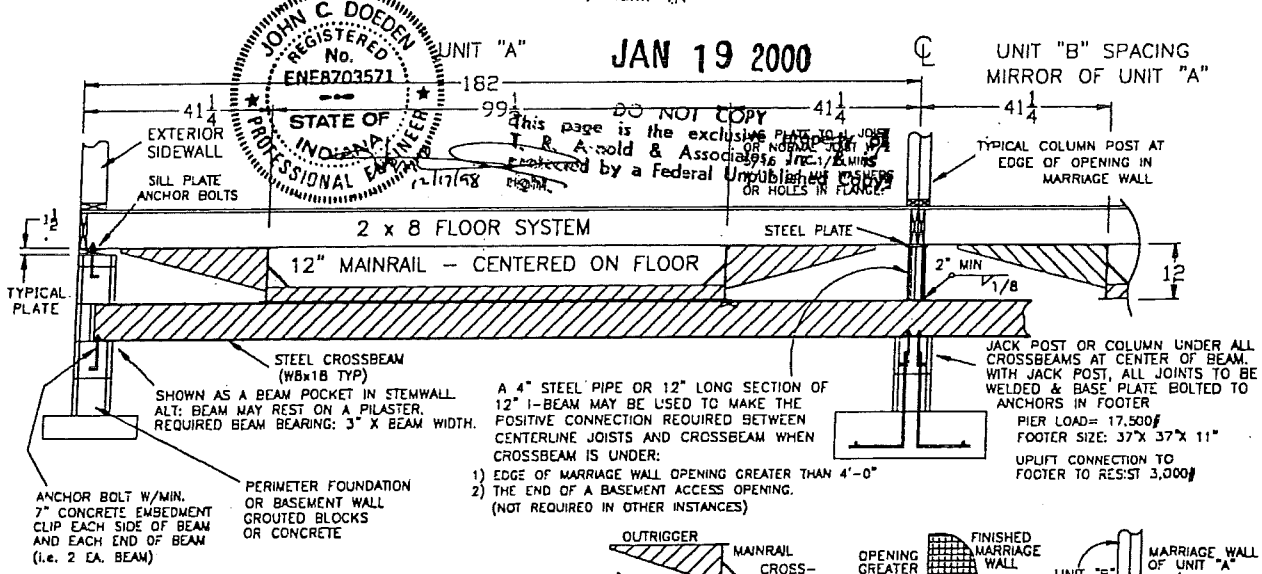

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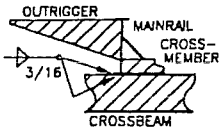
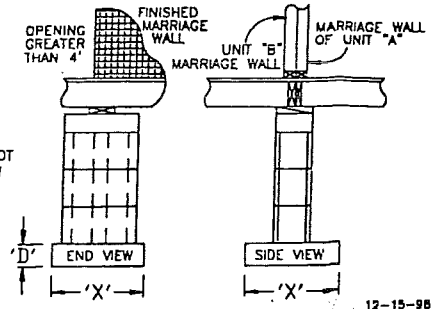
FOOTING SIZE: 'X'x'X'x'D'
PIER AND FOOTER CAPACITY

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

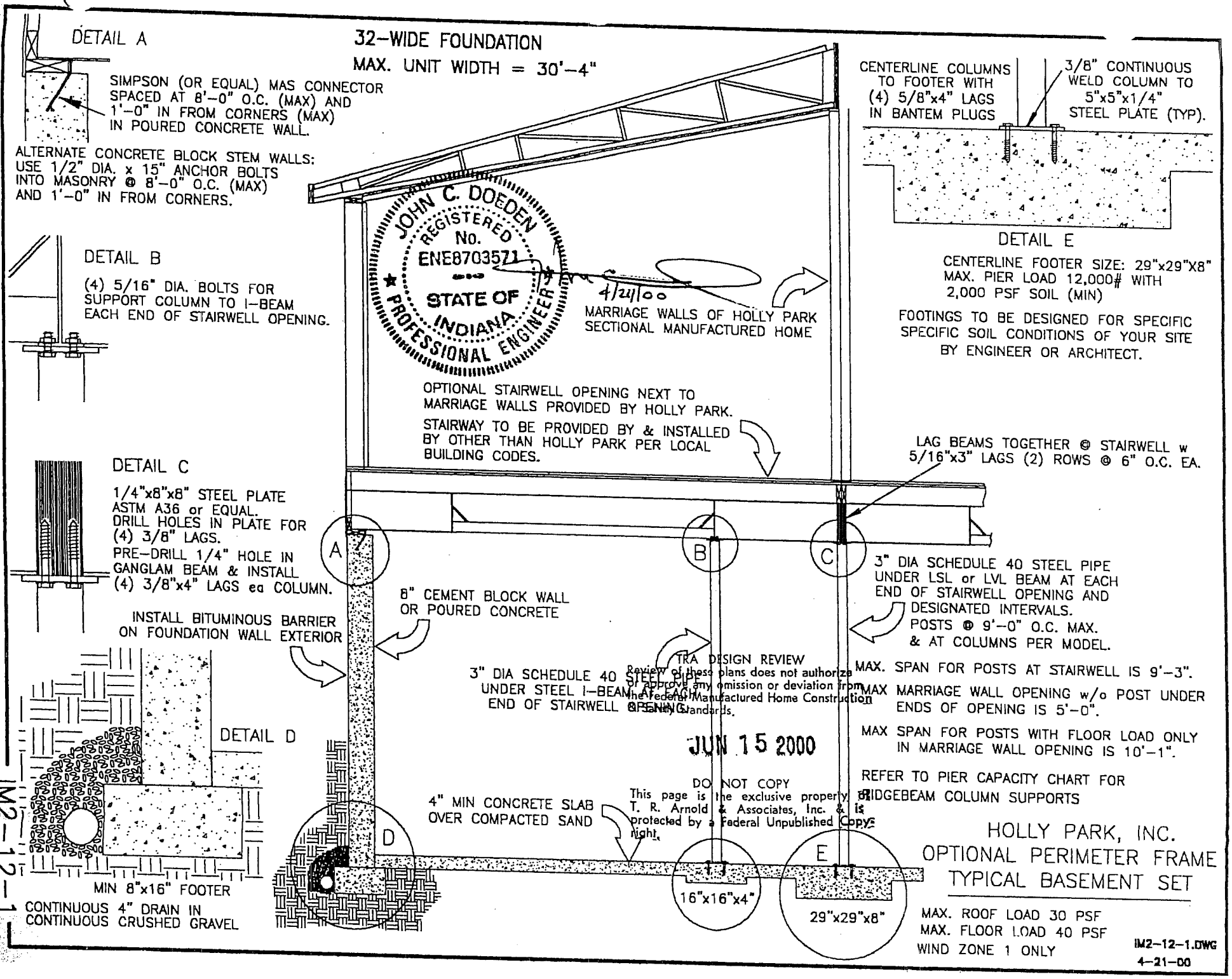


NOTE: OUTRIGGER AND CROSSMEMBER NEED NOT FALL IN SAME LOCATION AS THE CROSSBEAM



12-15-98
IM2-4-7

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


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"
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.
DETAIL B
(4) 5/16" DIA. BOLTS FOR SUPPORT COLUMN TO I-BEAM EACH END OF STAIRWELL OPENING.
JOHN C. DOEDEN
REGISTERED
No.
ENE8703571
STATE OF
INDIANA
PROFESSIONAL ENGINEER
4/24/00
MARRIAGE WALLS OF HOLLY PARK SECTIONAL MANUFACTURED HOME
OPTIONAL STAIRWELL OPENING NEXT TO MARRIAGE WALLS PROVIDED BY HOLLY PARK.
STAIRWAY TO BE PROVIDED BY & INSTALLED BY OTHER THAN HOLLY PARK PER LOCAL BUILDING CODES.
LAG BEAMS TOGETHER @ STAIRWELL w 5/16"x3" LAGS (2) ROWS @ 6" O.C. EA.
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.
A
B
C
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.
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
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JUN 15 2000
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 BRIDGEBEAM COLUMN SUPPORTS
DETAIL D
4" MIN CONCRETE SLAB OVER COMPACTED SAND
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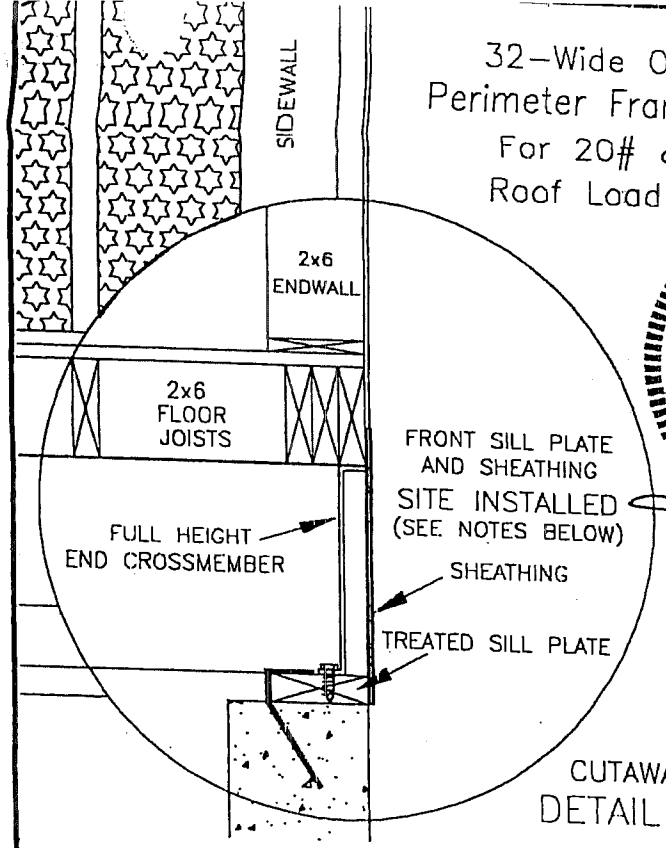
D
E
16"x16"x4"
29"x29"x8"
MIN 8"x16" FOOTER
CONTINUOUS 4" DRAIN IN CONTINUOUS CRUSHED GRAVEL
HOLLY PARK, INC.
OPTIONAL PERIMETER FRAME
TYPICAL BASEMENT SET
MAX. ROOF LOAD 30 PSF
MAX. FLOOR LOAD 40 PSF
WIND ZONE 1 ONLY
IM2-12-1.DWG
4-21-00
IM2-12-1

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

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

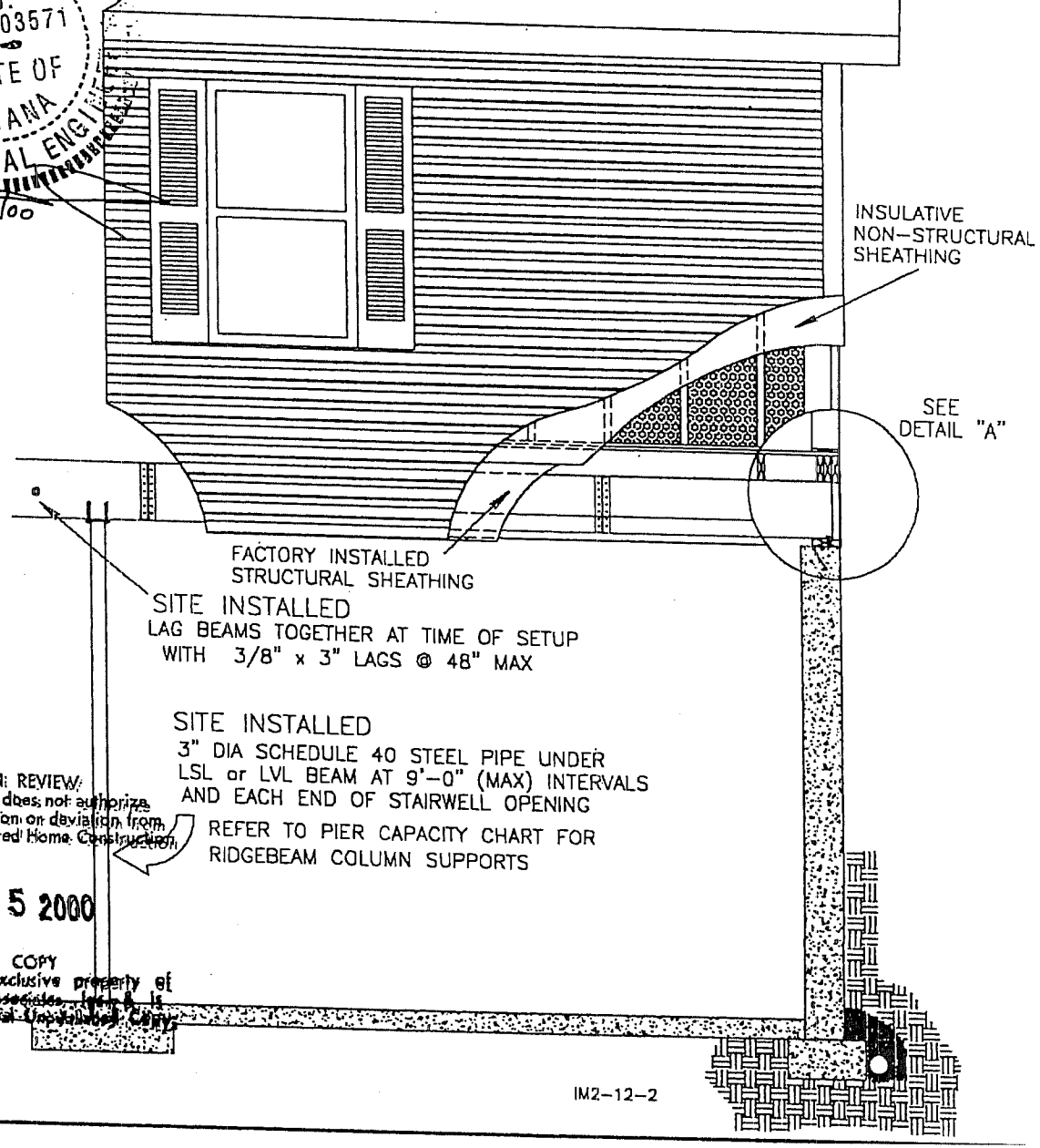
HOLLY PARK, INC.
OPTIONAL PERIMETER FRAME
TYPICAL BASEMENT SET



CUTAWAY
DETAIL A

JOHN C. DOEDEN
REGISTERED 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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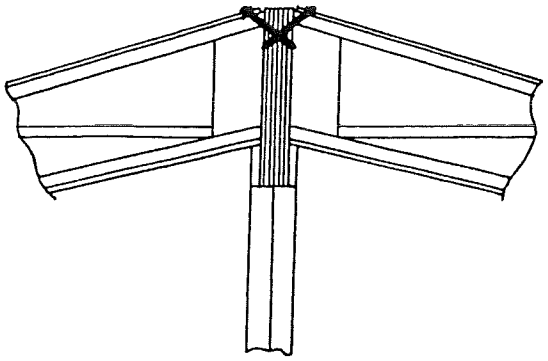
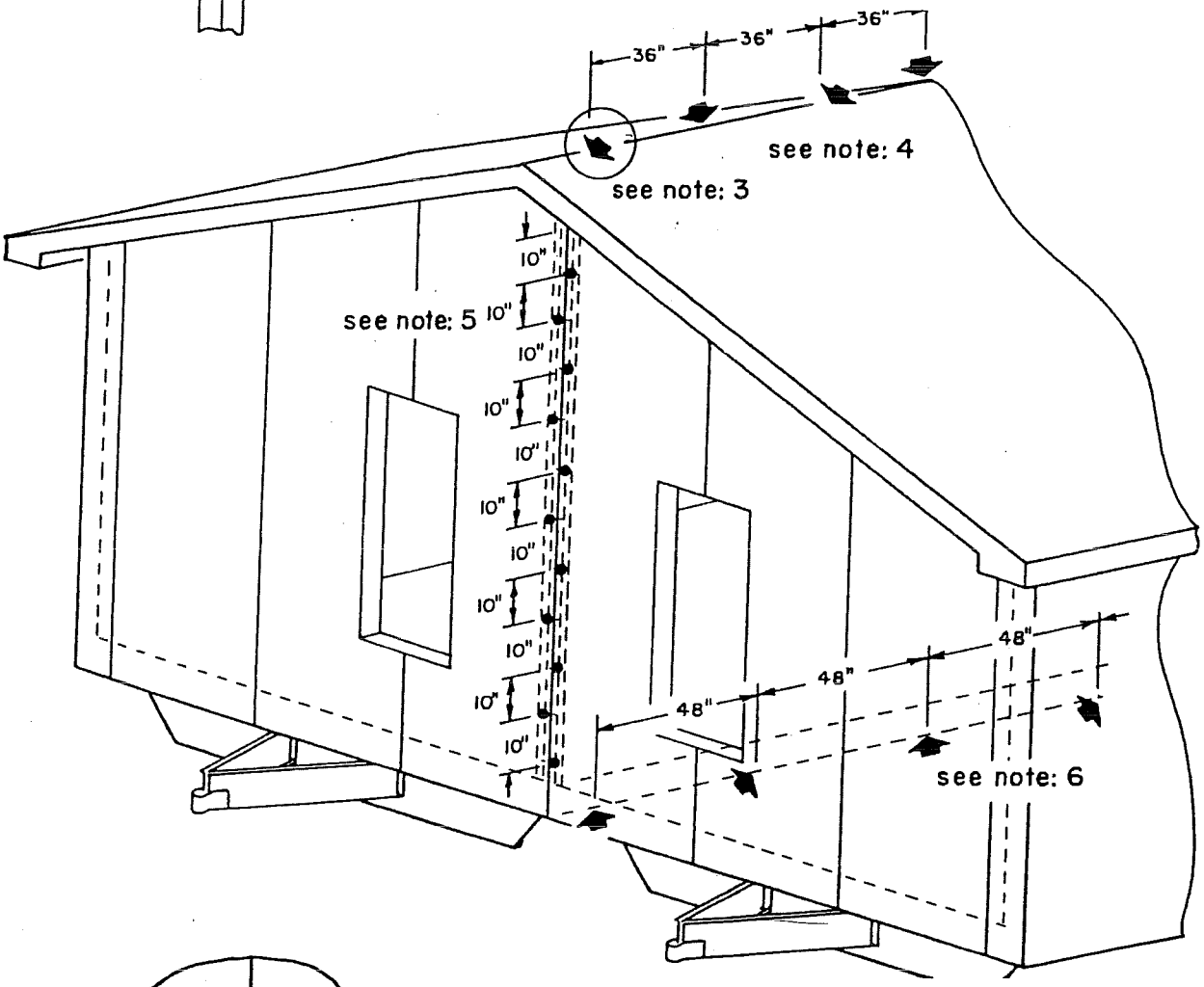
IM2–12–2

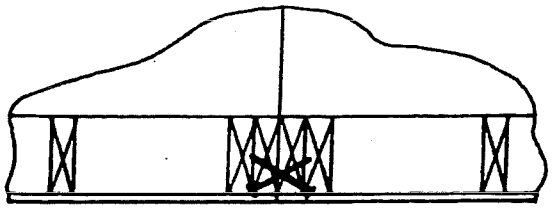
IM2–12–2

RIDGEBEAM CONNECTION notes: 3&4



Doublewide Set Up Procedure Connection At Centerline Illustrations, Referenced On Page 8.





ENDWALL CONNECTION note: 5

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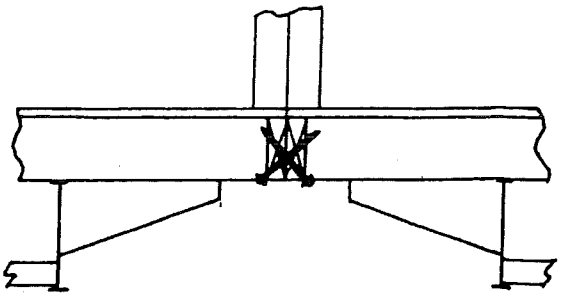

FLOOR CONNECTION note: 6

(RWA) IM 2.13

DOUBLEWIDE SET UP PROCEDURE

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. "Comealong" 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 endwalls. Secure ridge beams together at the peak of the roof above ONLY the front and rear endwalls with (2) 3/8" x 5" lags as shown on page 12.
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 12.
5. To properly align endwalls it may be necessary to pull either floor forward (preferably attaching to hitch). Secure endwalls together with #10 x 5" screws 10" o/c. as shown on page 12. NOTE: For some models these screws may have to be toe screwed (i.e. when siding or sheathing is installed to the home's 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, toescrew the mating centerline joists together with 3/8" x 5" lags at 48" o/c. as shown on page 12.
7. At door openings and clearspan openings of double marriage walls, secure the two halves together with #10 x 5" screws at 16" o/c. Screws to be places so the heads can be concealed by door trim or corner molding. Toescrewing is permitted.

Note: Under ideal conditions there will be no gaps between halves when joined together. A gap to 1/2" is acceptable when a filler is installed at each fastener and fastener length is adjusted to provide the same fastener penetration as if there were no gap. Filler fastener penetration as if there were no gap. Filler material to be rated sheathing (OSB or Plywood). Minimum receiving penetration of receiving member is 1 1/2" for 3/8" diameter lags and 1 3/8" for #10 screws.

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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 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 10' intervals. Make continued checks with the level. If jacking is required, jack only under the I-beams and only enough to keep it level. If the home is over-jacked serious damage may result.

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

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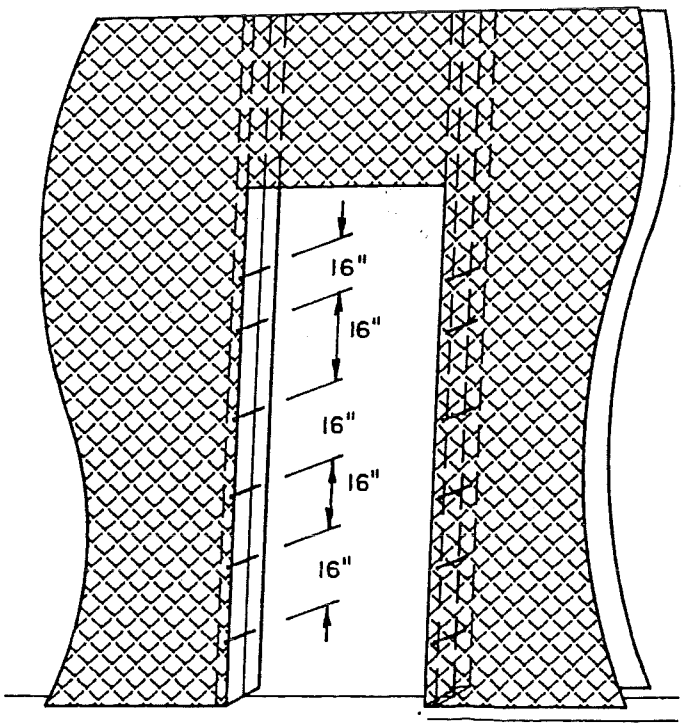

(Rev c)

IM 2.14

DOUBLEWIDE SET UP PROCEDURE

C. TIE DOWN REQUIREMENTS

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

Ground ties are installed to resist lateral movement caused by high winds 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 overtensioning the straps as this could pull the home off the piers. It is recommended that all straps be tightened enough to remove the slack. After all straps are installed and the slack removed, tension the straps. NOTE: Strap tension should be checked periodically until all pier settlement has stopped. AT TIME OF RELEVELING DO NOT JACK THE HOME AGAINST THE STRAPS.

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

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(Rev A)

IM 2 15

Minute Man anchors®, Inc.

ANCHOR INSTALLATION

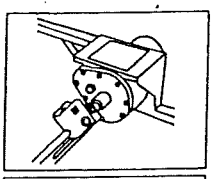
There are two basic methods of installing anchors, each equally effective in properly securing manufactured homes to the ground.

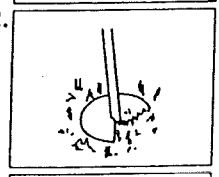
Warning: Before ground anchor installation, determine that the anchor locations around home will not be close to any underground electrical cables, water lines or sewer piping. Failure to determine the location of electrical cables may result in serious personal injury.

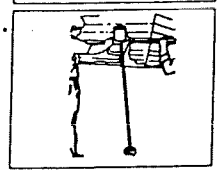
CAUTION: The installation of anchors with a drive machine is a two person operation.

MACHINE INSTALLATION

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

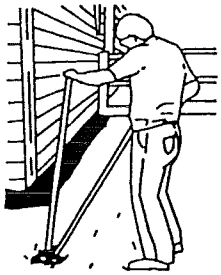
1. 
Attach anchor to machine.

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 two feet in the proper position as explained under machine installation.



After the hole is dug to 24" depth, the anchor is turned into the ground by hand, using a rod or length of pipe for leverage.

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

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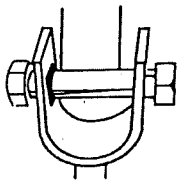
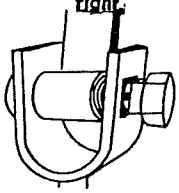
PROPER TENSIONING OF STRAP TO ANCHOR HEAD

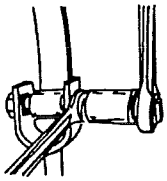


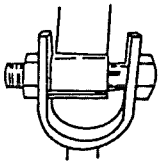
1. Insert bolt into head; attach nut loosely. Insert strap in slot of 5/8" bolt , or until strap is flush with far side of bolt.



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.

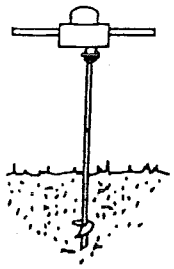
Note: The tensioning bolt can be inserted in the head from either side.

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.

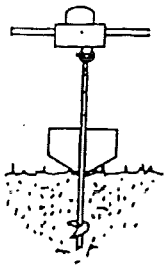
MINUTE MAN ANCHORS, INC.

INSTRUCTION FOR USING MINUTE MAN STABILIZING DEVICE

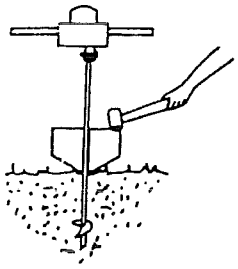
Minute Man stabilizing devices are designed for use with Minute Man anchors and intended to laterally restrict movement of the anchor through the soil.



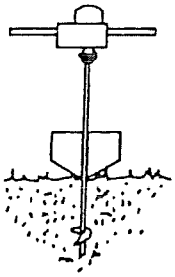
1. Install the anchor into the ground leaving 12" - 18" of the shaft exposed.



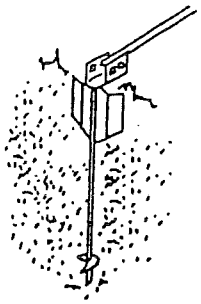
2. Place the stabilizing device next to the shaft in the direction of pull.



3. Drive the stabilizing device into the ground.



4. The anchor is then turned in the rest of the way into the soil until the head of the anchor is flush with the stabilizing device.



5. As the frame tie is tightened the anchor will be pre-loaded against the stabilizing device preventing lateral movement of anchor through the soil.

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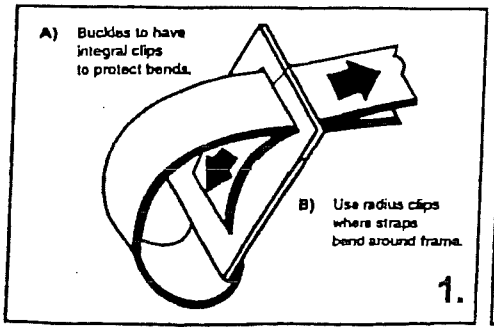
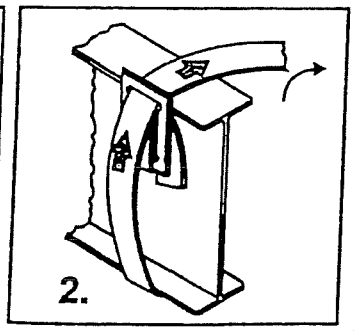
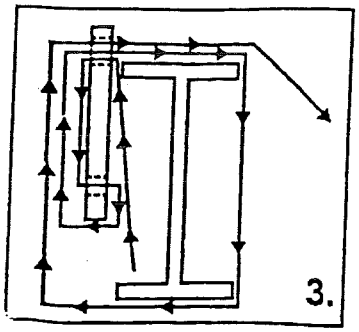
FRAME TIE INSTALLATION INSTRUCTIONS

Frame Tie With Buckle





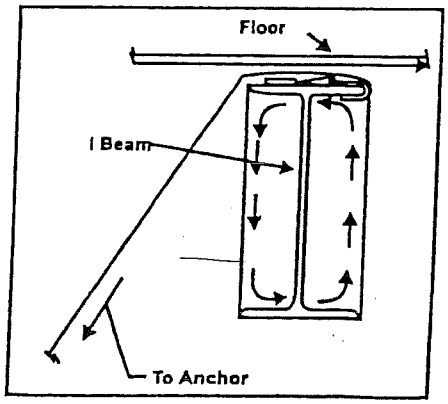


Thread sufficient length of frame tie strap through buckle as shown.

Next, thread long end of strap between frame and floor of home. Bring strap 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.

Frame Tie With Hook



Enlarged View of Frame Beam

Attach Frame Clamp (Hook) inside top flange of home frame. Place strap between frame and home as shown in sketch. Pull strap tight and attach to anchor tension head.

(Rev B)

IM 2.17

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.

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.

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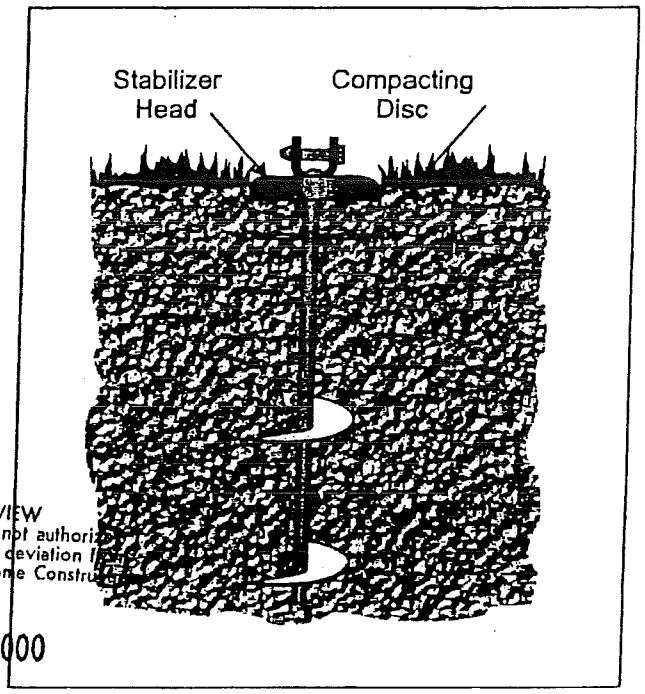

Figure A

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.
- E-Z Anchor working load capacity is 3,150 pounds for a single tie or the load of (2) ties combined which is 40 to 50 degrees from vertical. **See Figure B.**
- Consult manufactured home set up instructions for number of frame tie downs and tie down spacing.
- Proper site preparation required removal of grass and sod prior to installation.

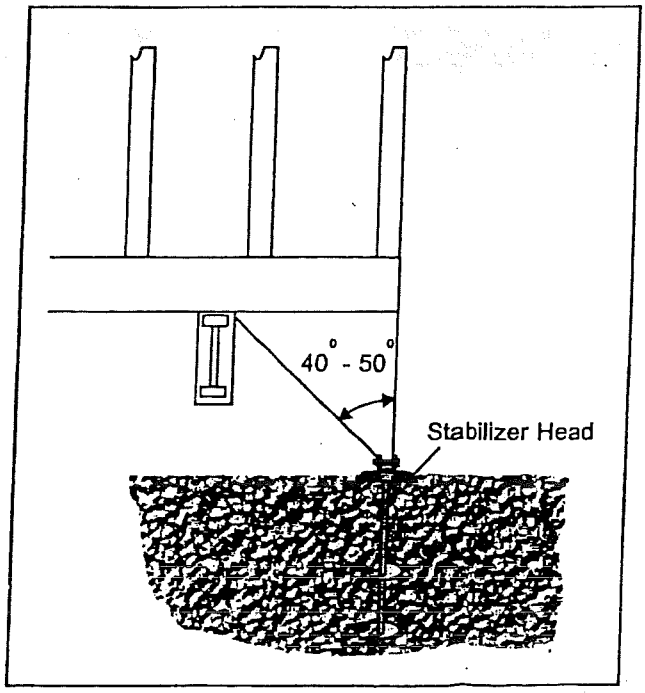

Figure B

For additional information, copies of engineering test(s) and report, Contact Minute-Man Anchors, Inc. (Revised: November 1998)

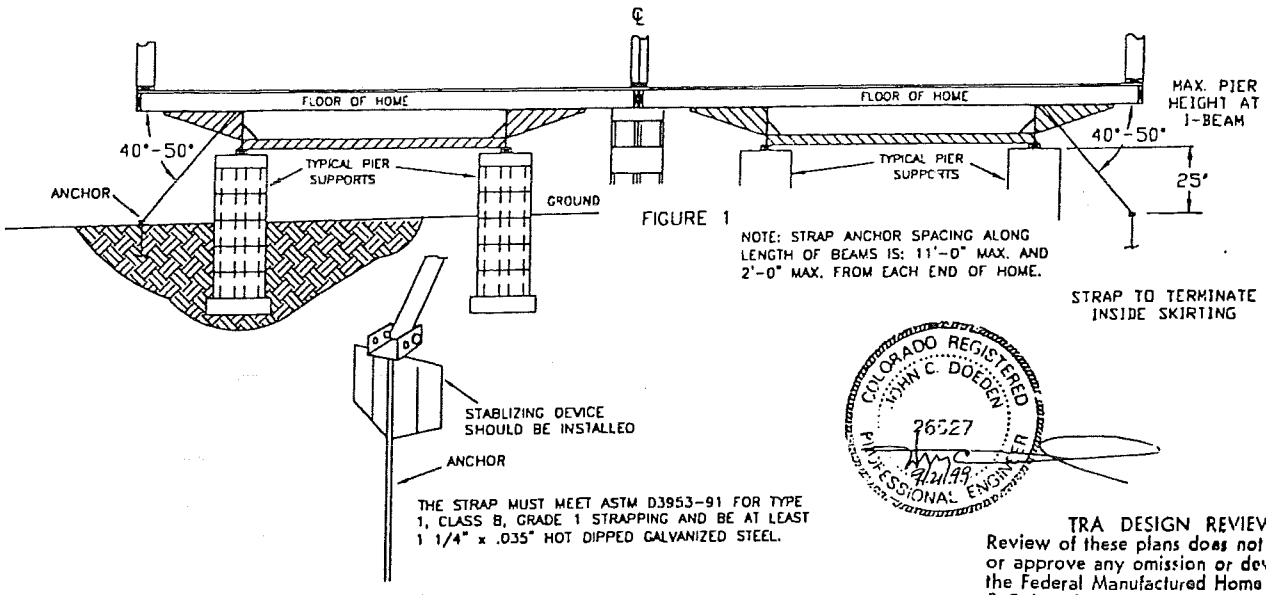

FIGURE 1

COLORADO REGISTERED JOHN C. DOEDEN 26527 PROFESSIONAL ENGINEER 9/21/99

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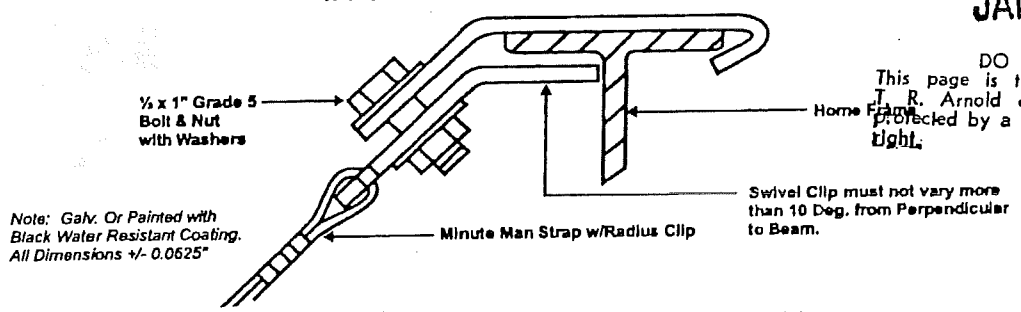
LOCKING FRAME CLAMP II MMA-33 ASSEMBLED UNIT



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(a)	Very dense &/or cemented sands, coarse gravel and cobbles, caliche, preloaded silts, and clays.	40-up	551 lb. in. Up	4430DH 650DH 4430 EZDH 636 EZDH 24 BA
2(b)	Coral	40-up	551 lb. In. up	4430 DH 650DH 24BH
3	Medium dense coarse sands, sandy gravels, very stiff silts, and clays.	24-39	351 to 550 lb in.	4430 DH 4430 EZDH 636 EZDH 650DH
4(b)	Loose to medium dense sands, firm to stiff clays and silts alluvial fill.	18-23,3	276 to 350 lb. in.	650DH 6650 EZVDH Fla.
4(b)	VERY loose to medium dense sands, firm to stiff clays and silts, alluvial fill.	12-17	175 to 275 lbs. in	1060DH

Remember: Each state, county or municipality may require a specific anchor from the groups shown for each soil classification. Check local regulations first.

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". Each anchor listed meets ANSI A225.1 and ASTM D3953.91 codes.

Following is a list of Minute-Man Anchors with a minimum holding power of 4,725 pounds (2143 kg.).

MARK	MODEL	DESCRIPTION	USE IN SOIL TYPE
MMA-2	650-DH 5/8	6" DISC, 50" ANCHOR	2,3,4
MMA-4	650-DH 3/4	6" DISC, 50" ANCHOR	2,3,4
MMA-38	650-DH 11/16	6" DISC, 50" ANCHOR	2,3,4
MMA-40	636-DH 5/8	6" DISC, 36" ANCHOR	2,3,4
MMA-28	636-DH 3/4	6" DISC, 36" ANCHOR	2,3,4
MMA-30	4430-DH 5/8	DOUBLE 4" DISC, 30" ANCHOR	2
MMA-36	4430-DH 11/16	DOUBLE 4" DISC, 30" ANCHOR	2
MMA-6	4430-DH 3/4	DOUBLE 4" DISC, 30" ANCHOR	2
MMA-35	35-XDH	36" CROSS DRIVE ANCHOR	1
MMA-8	48-XDH	48" CROSS DRIVE ANCHOR	1
MMA-71	1060-DH 3/4	10" DISC, 60" ANCHOR	4b (Fla.)
MMA-50	4442-DH 5/8	DOUBLE 4" DISC, 42" ANCHOR	2,3,4
MMA-52	4636-DH 3/4	4" & 6" DISC, 36" ANCHOR	2,3,4
MMA-54	4450-DH 11/16	DOUBLE 4" DISC. 50" ANCHOR	2,3,4
MMA-55	4450-DH 3/4	DOUBLE 4" DISC, 50" ANCHOR	2,3,4
MMA-92	4430-EZDH 3/4	DOUBLE 4" DISC, 30" EZ ANCHOR	2,3
MMA-94	636-EZDH 3/4	6" DISC, 36" EZ ANCHOR	2,3
MMA-95	660-EZDH 3/4	6" DISC, 60" EZ ANCHOR	2,3
MMA-96	650-EZDH 3/4	6" DISC, 50" EZ ANCHOR	2,3,4
MMA-98	650 EZVDH 3/4	DOUBLE 6" DISC. VERT. STABILIZER	2,3,4A (Fla.)
MMA-18	THDH	DOUBLE HEAD TENSION DEVICE	SLAB
MMA-18	THDHLS	DH TENSION DEVICE W/LAG	SLAB
MMA-10	36-DH	CORAL ANCHOR	CORAL
MMA-12	210-DH	CONCRETE ANCHOR	SLAB
MMA-14	210-PDH	WET CONCRETE ANCHOR	SLAB
MMA-42	210-JDH	SWIVEL HEAD WET CONCRETE ANCHOR	SLAB
MMA-BR	24 BA	BARB ROCK ANCHOR	1
MMA-22	100-DH	DOUBLE HEAD TENSION ADAPTER	
MMA-SDA2		STABILIZER	
MMA-SD2		STABILIZER	FLA.
MMA-29	FCIIW/S	FRAME CLAMP II W/STRAP	
MMA-29	FCIW/S	FRAME CLAMP I W/STRAP	
MMA-31	FRAME TIE	LONGITUDINAL FRAME TIE	FLA.
MMA-32	BUC/WS	BUCKLE W/STRAP	
MMA-33	FCII (LOCKING)	LOCKING FRAME CLAMP II	FLA.
MMA-71	CT/WS	CORNER TIE W/STRAP	
MMA-71	CT/WS	CORNER TIE II STRAP	FLA.
MMA	SBN	STRAP BOLT & NUT	
MMA-25	22 BUCKLE	DOUBLE SLOT BUCKLE	
MMA-32	SS BUCKLE	SINGLE SLOT BUCKLE	
	44RB	4X4" ROOF BRACKET	
	66 RB	6X6" ROOF BRACKET	
	POCKET PENETROMETER	POCKET PENETROMETER	
	SOIL TEST PROBE	SOIL TEST PROBE	
	PERIMETER JACK	PERIMETER JACK	
	JACKING PLATE	I BEAM JACKING PLATE	
MMP-6	6" PIER	STANDARD MOBILE HOME PIER	
MMP-8	8" PIER	STANDARD MOBILE HOME PIER	
MMP-10	10" PIER	STNADARD MOBILE HOME PIER	
MMP-12	12" PIER	STANDARD MOBILE HOME PIER	
MMP-14	14" PIER	STANDARD MOBILE HOME PIER	
MMP-16	16" PIER	STANDARD MOBILE HOME PIER	
MMP-18	18" PIER	STNADARD MOBILE HOME PIER	
MMP-20	20" PIER	STANDARD MOBILE HOME PIER	
MMP-22	22" PIER	STANDARD MOBILE HOME PIER	
MMP-24	24" PIER	STANDARD MOBILE HOME PIER	
MMP-26	26" PIER	STANDARD MOBILE HOME PIER	
MMP-28	28" PIER	STANDARD MOBILE HOME PIER	
MMP-30	30" PIER	STANDARD MOBILE HOME PIER	
MDP-16	16" DELUXE PIER	LOCKING HEAD HEAVY DUTY PIER	FLA.
MDP-20	20" DELUXE PIER	LOCKING HEAD HEAVY DUTY PIER	FLA.
MDP-24	24" DELUXE PIER	LOCKING HEAD HEAVY DUTY PIER	FLA.
MDP-28	28" DELUXE PIER	LOCKING HEAD HEAVY DUTY PIER	FLA.
MDP-32	32" DELUXE PIER	LOCKING HEAD HEAVY DUTY PIER	FLA.

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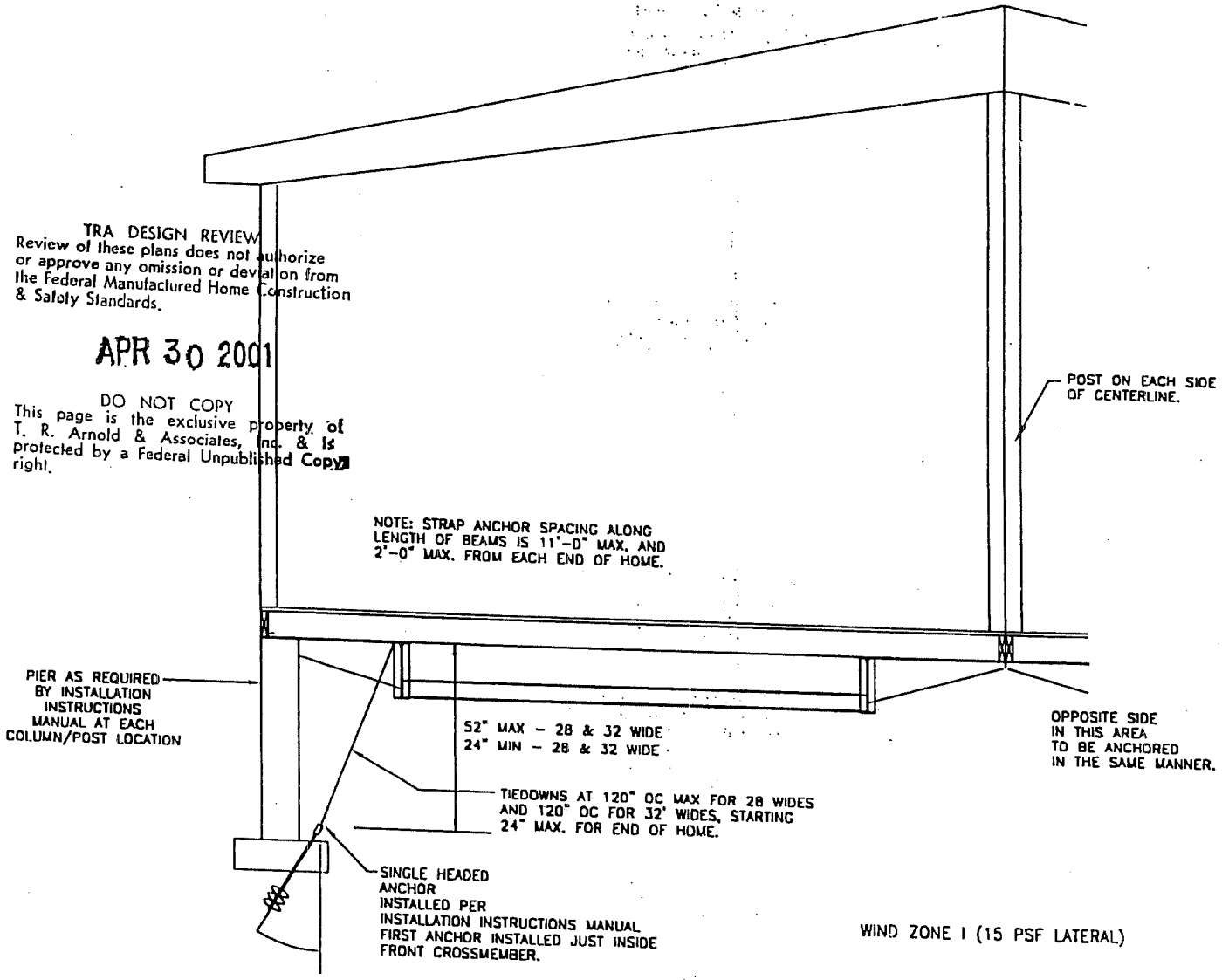

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COLORADO REGISTERED JOHN C. DOEDEN 26527 PROFESSIONAL ENGINEER
4/17/01

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

HOLLY PARK
MIDDLEBURY, IN 46540

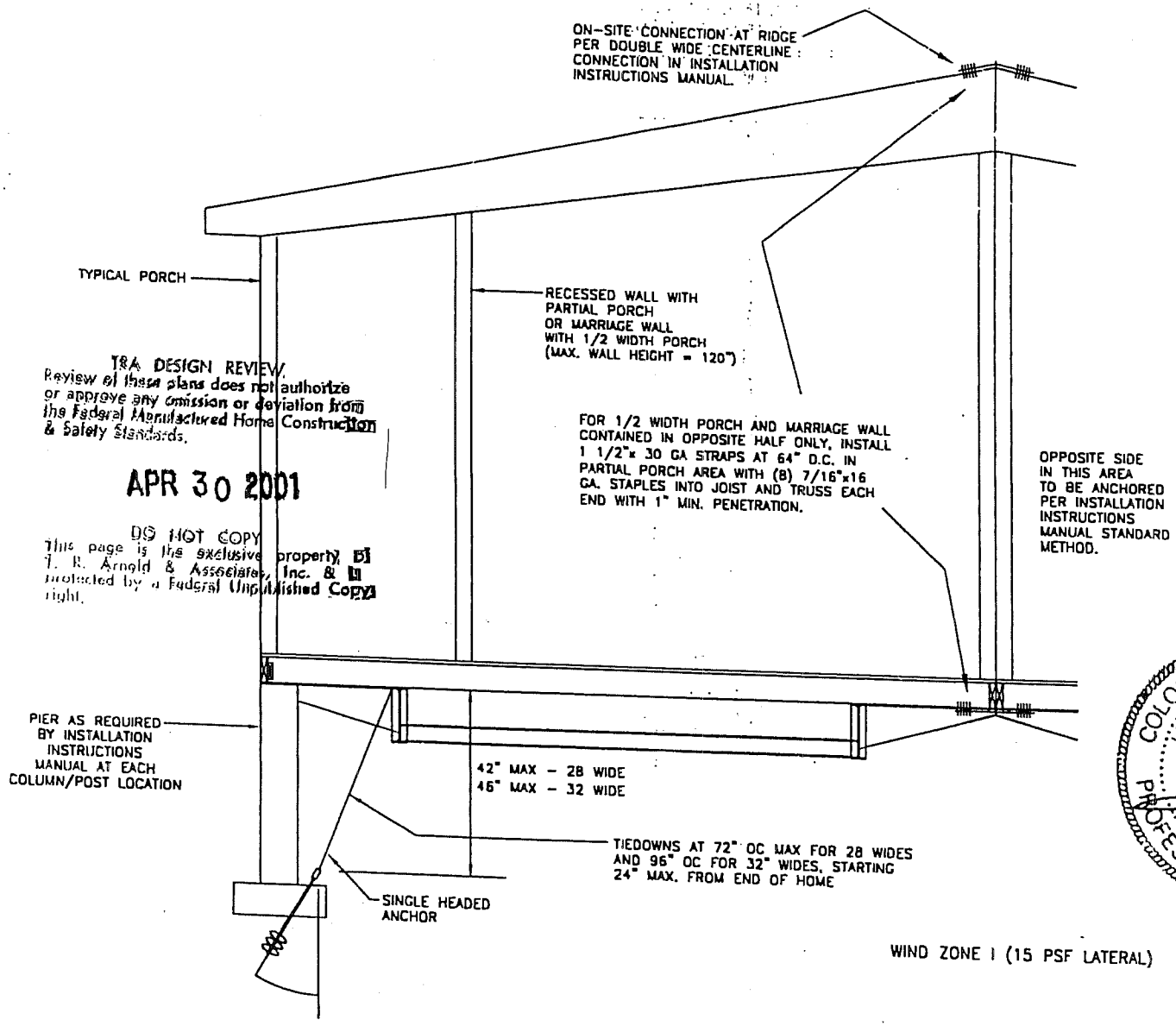
REVISIONS

C/ PRCH10A	BY TOM V.M.	DATE 02-14-

TITLE: 28/32 WIDE ON-SITE SET-UP

NO. IM2-20-

IM 2-20-1



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COLORADO REGISTERED PROFESSIONAL ENGINEER
JOHN C. DOEDEN
26527
4/17/01

WIND ZONE I (15 PSF LATERAL)

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

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HOLLY PARK
MIDDLEBURY, IN 46540

REVISIONS

C# PRCH11A	BY TOM V.M.	DATE 02-14-
TITLE: 28/32 WIDE ON-SITE SET-UP		NO. IM2-20-

IM 2-20-2

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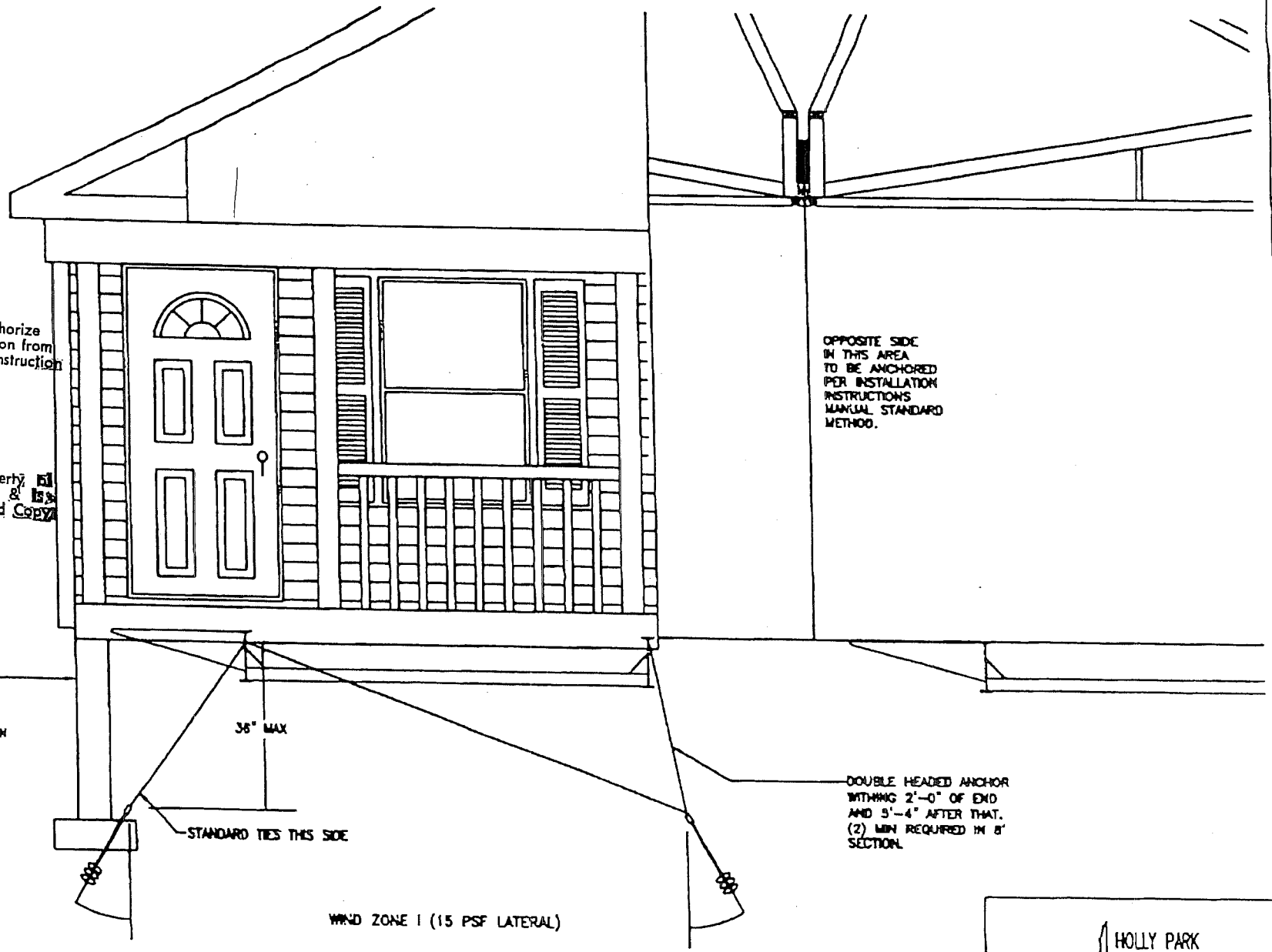


ON-SITE INSTALLATION: RECESSED (PARTIAL PORCH) AREA ONLY

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 99½".
3. PIER BLOCKS INSTALLED AT COLUMNS PER INSTALLATION INSTRUCTIONS MANUAL.
4. THIS DESIGN FOR FLOOR WIDTH OF 182" PER SECTION FOR 32-WIDES
5. LONGITUDINAL TIEDOWNS ARE TO BE INSTALLED TO STANDARD REQUIREMENTS

HOLLY PARK
MIDDLEBURY, IN 46540

REVISIONS

PRCH11B	BY SMPAD	DATE 4-8-03
TITLE: 28/32 WIDE ON-SITE SET-UP		NO. IM2-20-3

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

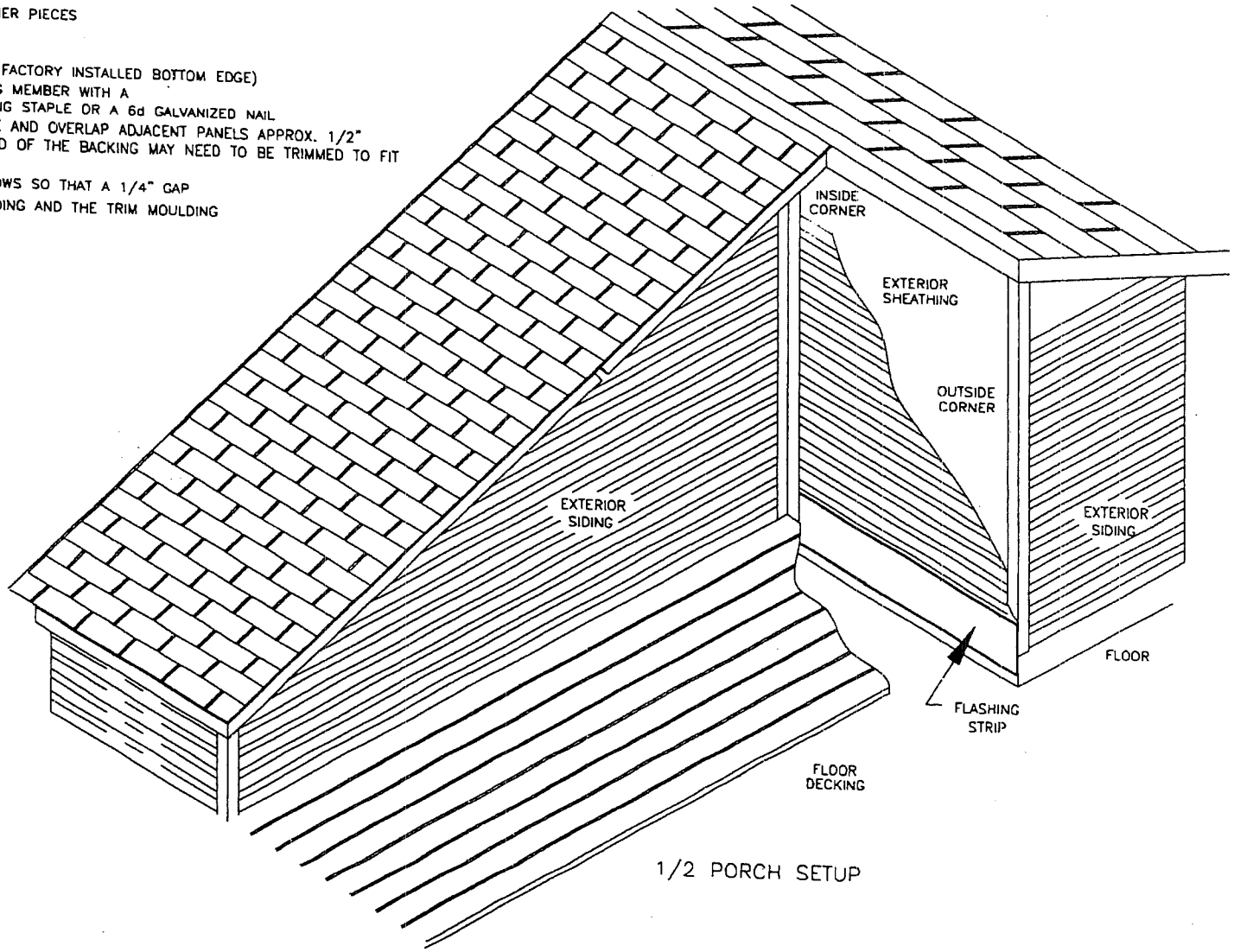
3) INSTALL A 12" MINIMUN FLASHING STRIP OF EXTERIOR GRADE MATERIAL TO NON-PORCH SIDE MATING WALL (UNDERBELLY BOARD, ALUMINUM, VINYL, ROOF UNDERLAYMENT, OR PLASTIC) CENTERED AT FLOOR AND WALL CONNECTION

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

IM2-20-4

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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.

LAP SIDING

1. Working from bottom (in line with factory installed bottom edge) fasten the siding to each 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 8" 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).

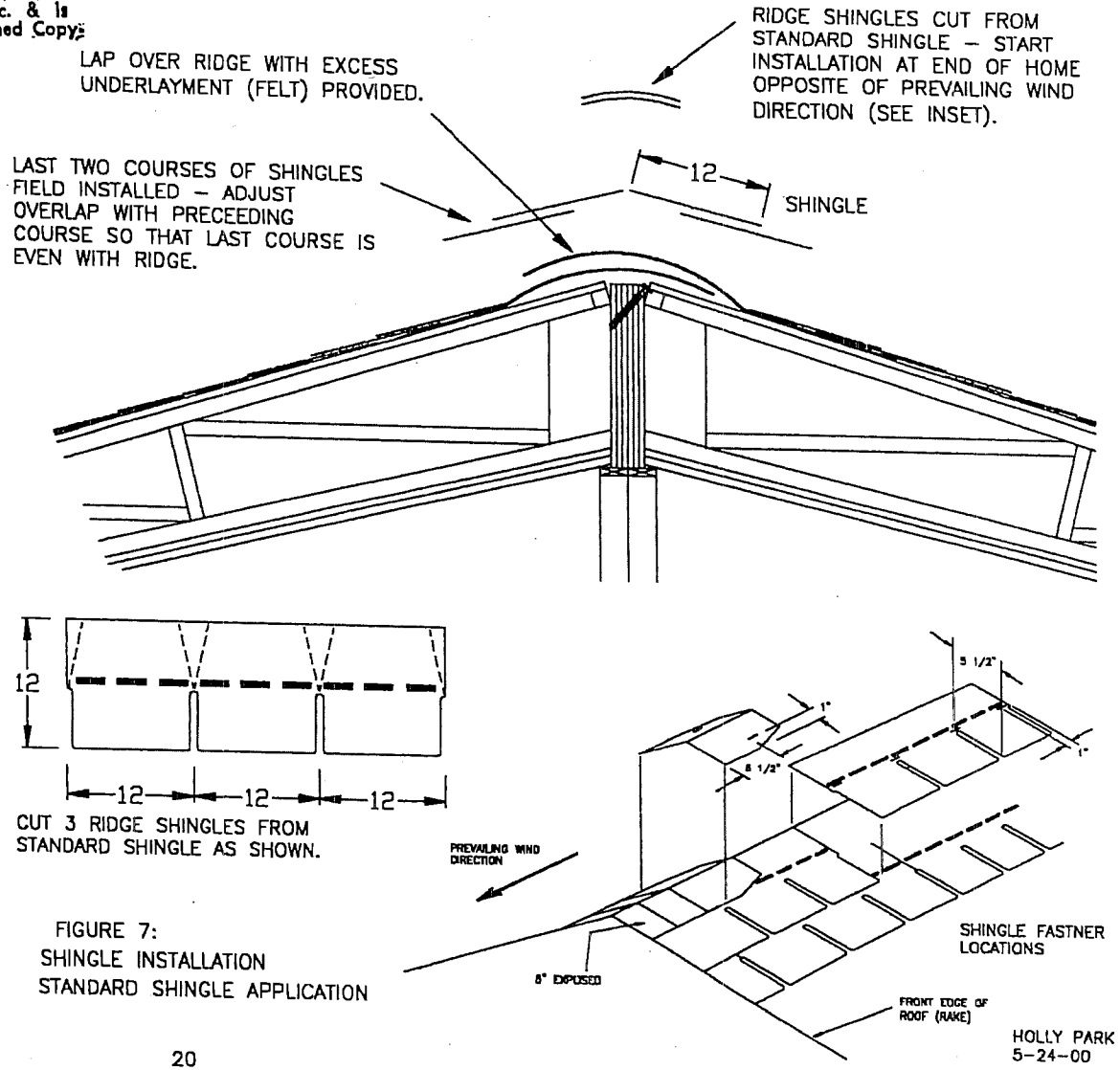


FIGURE 7:
SHINGLE INSTALLATION
STANDARD SHINGLE APPLICATION

HOLLY PARK
5-24-00
IM2-21

(Rev B)

IM2-21

F. INTERIOR FINISH

1. Install wide moulding 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 mouldings, 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."

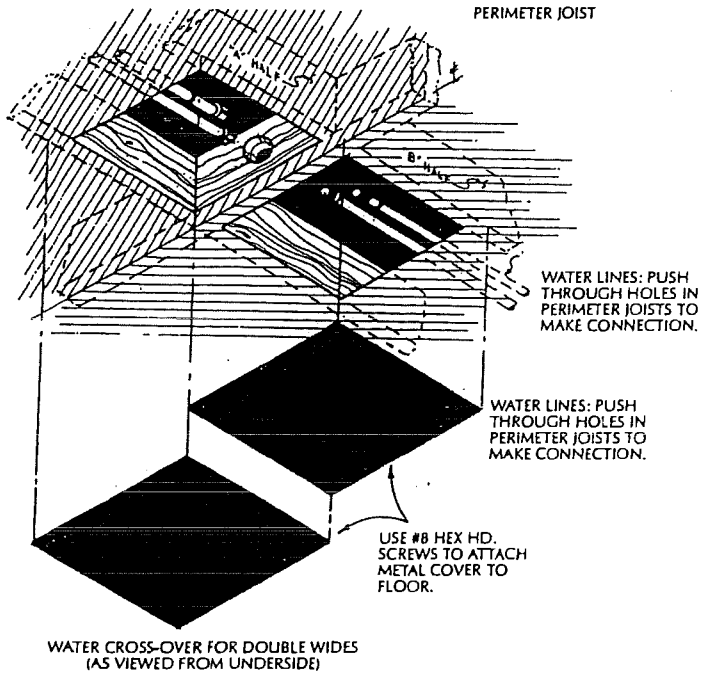
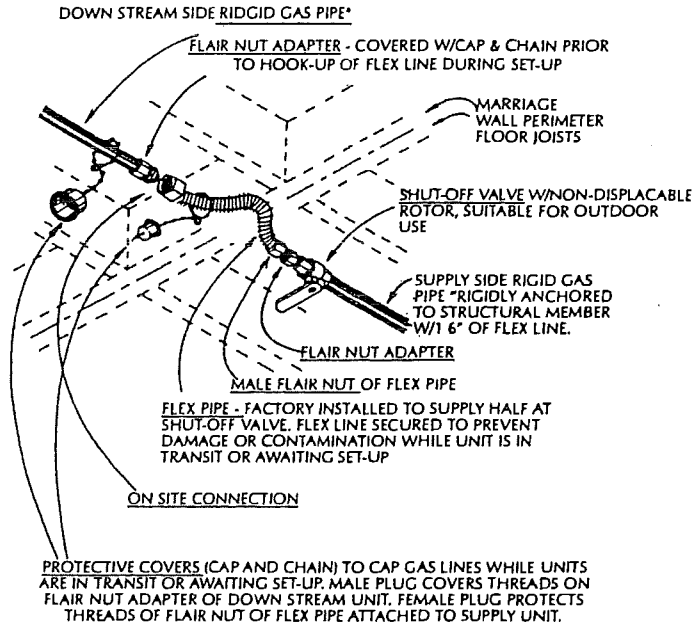


FIGURE 8A: PLUMBING DETAILS

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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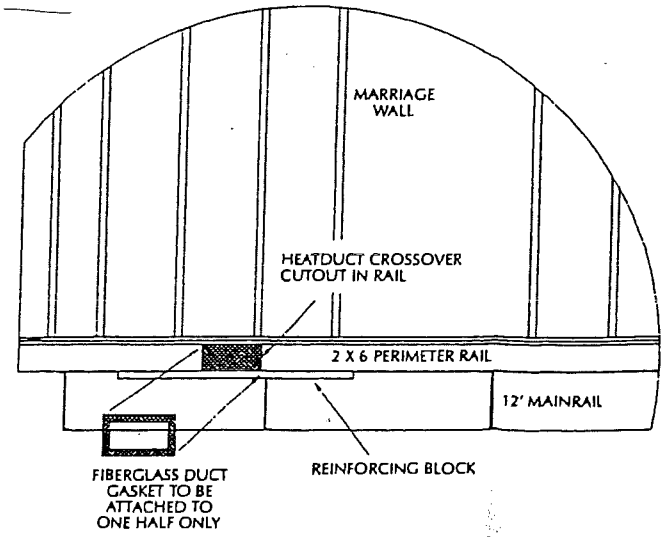


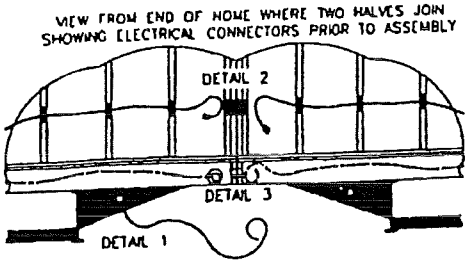
(Rev B.)

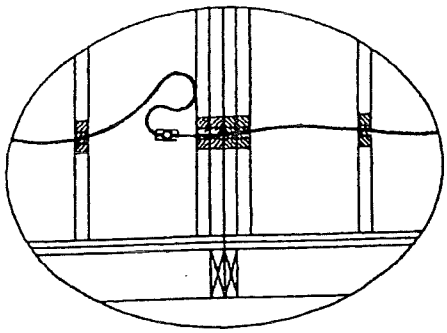
IM 2.22

ELECTRICAL CROSSOVER CONNECTION

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

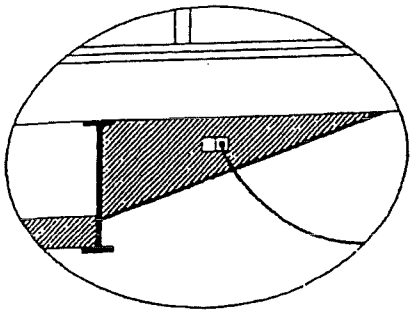
The various methods of electrical crossover connections are shown below. The procedure for electrical interconnection is as follows:





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.



DETAIL 1: - Frame Bonding:

1. Neither the frame of the home, nor the frame of any appliance is to be connected to the neutral conductor in the manufactured home.
2. More than one solderless 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 crossmember).

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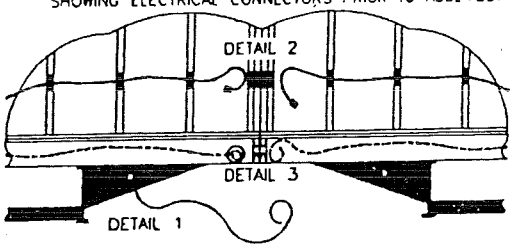
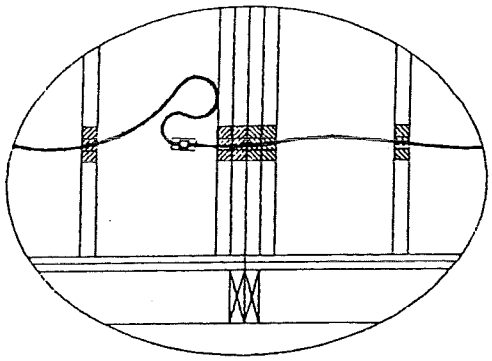
ELECTRICAL CROSSOVER CONNECTION

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 interconnection is as follows:

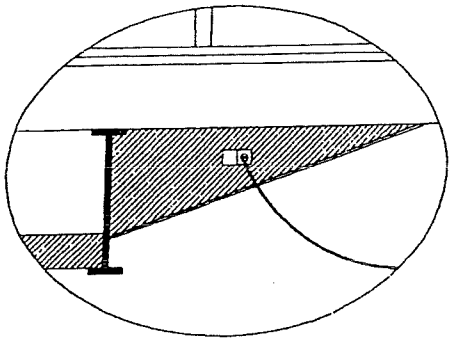
VIEW FROM END OF HOME WHERE TWO HALVES JOIN SHOWING ELECTRICAL CONNECTORS PRIOR TO ASSEMBLY





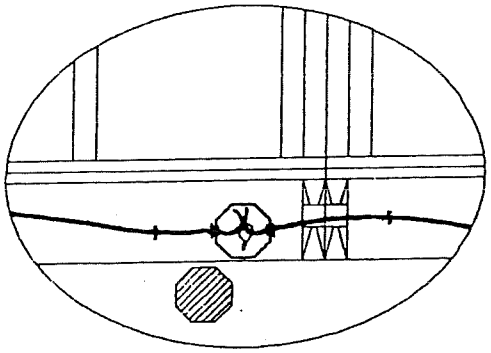
DETAIL 2: - 15 and 20 amp circuit connection with splicing device:

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.



DETAIL 1: - Frame Bonding:

1. Neither the frame of the home, nor the frame of any appliance is to be connected to the neutral conductor in the manufactured home.
2. More than one solderless 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 crossmember).



DETAIL 3: - 30 amp and larger circuit connections in a single junction box in the floor cavity.

1. Locate junction box by identifying marks on perimeter rail of marriage side (Usually located at marriage line directly across from panel box on panel box side) prior to fastening the two halves of the manufactured home together.
2. Assure all power is off at the main panel box.
3. Carefully open "bottom board" to access the junction box and coiled wire on opposite half.
4. Remove cover of the junction box.
5. Uncoil the wire(s) and feed them through the predrilled hole(s) in perimeter rails. (If no holes exist, a 1" hole must be drilled in the perimeter rails at the approximate center of width.)
6. Connect wires per applicable code and assure that any multiple wires are joined per the markings on the wires.
7. Recover the junction box and re-tuck the insulation to close all voids.
8. Repair "bottom board" to protect your home from the entrance of varmints.

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HOLLY PARK

CONNECTING UTILITIES

FRESH WATER SUPPLY

The water inlet is located underneath the home and is marked vith 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 outlets. Note: All connections of fittings shall be done following the instructions printed on the containers of solvent and adhesive.

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

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

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

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

ELECTRICAL CONNECTION

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

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

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

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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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, RHH RHW without Outer Covering THW or XHHW	Junction Box
100	1-1/4	8 x 8 x 4
150	1-1/2	10 x 10 x 4
200	2	12 x 12 x 4

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

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

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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 lest 7 inches of water column, but not more than 10-1/2 inches of water column.

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

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

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

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

INSTALLING FLUE ON OPTIONAL WOOD BURNING FIREPLACE

CAUTION! If the home includes an optional wood burning fireplace installed at 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 only in accordance with the manufacturer's instructions.

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 return 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.

INSTALLING CLOTHES DRYER VENT

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

To install the duct, first remove the temporary patches covering the hole in the floor. Push the vent tube into the hole, and attach 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 to the outside. If you use a clothes dryer which is not 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.

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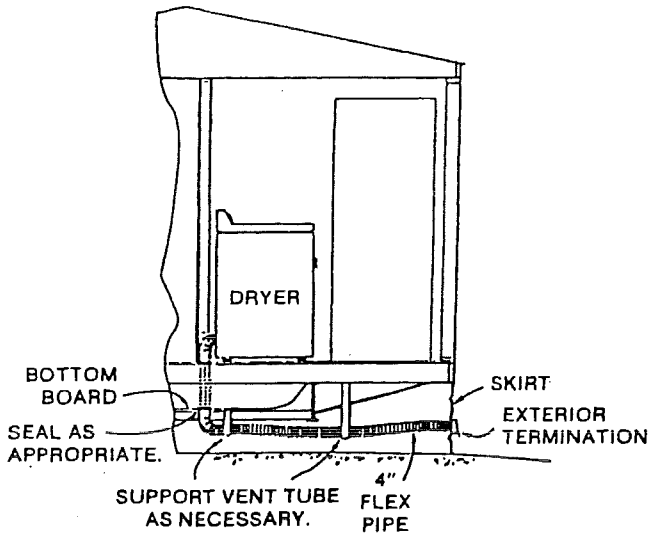
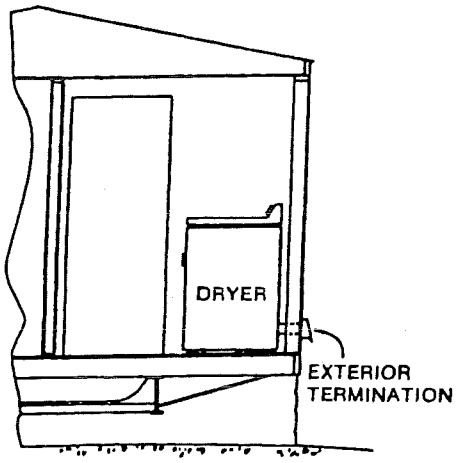


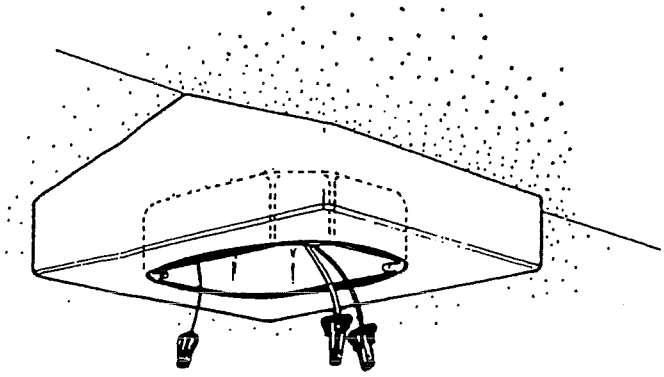
DRYER INSTALLATION AGAINST INTERIOR WALL



DRYER INSTALLATION AGAINST EXTERIOR WALL

OPTIONAL CEILING FAN

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

PATCHING THE BOTTOM COVERING

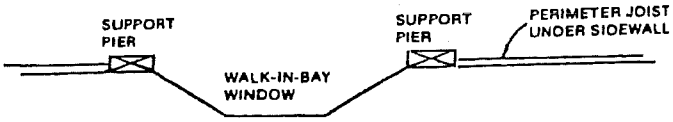
It is important that any holes, tears, etc. in the bottom covering underneath your home be promptly repaired. Following are three alternative methods for doing this:

- Cut the patch to size out 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 No. 91B, to mend occasional small holes, tears or cuts.
- Cut the patch to size out of any suitable material, and tape it in place. Use an air-operated outward flare tacker (Senco Products, Inc. – Model LN 3045) and fasten the perimeter of the patch at 3" intervals.

INSTALLING SKIRTING AROUND YOUR HOME

Skirting installed around the perimeter of your home will enhance its appearance, and help keep heating costs down in the wintertime. 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 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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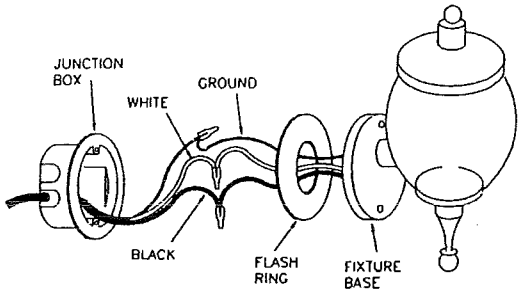
INSTALLATION OF EXTERIOR LIGHT

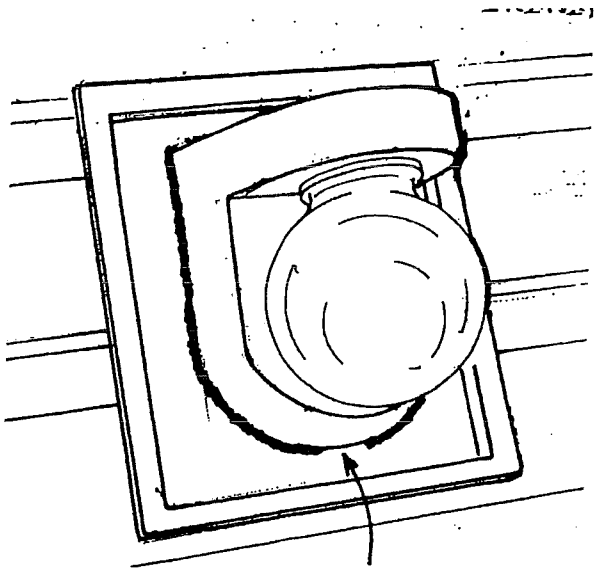
The exterior light(s) of your home may have been shipped loose to prevent damage during transit.

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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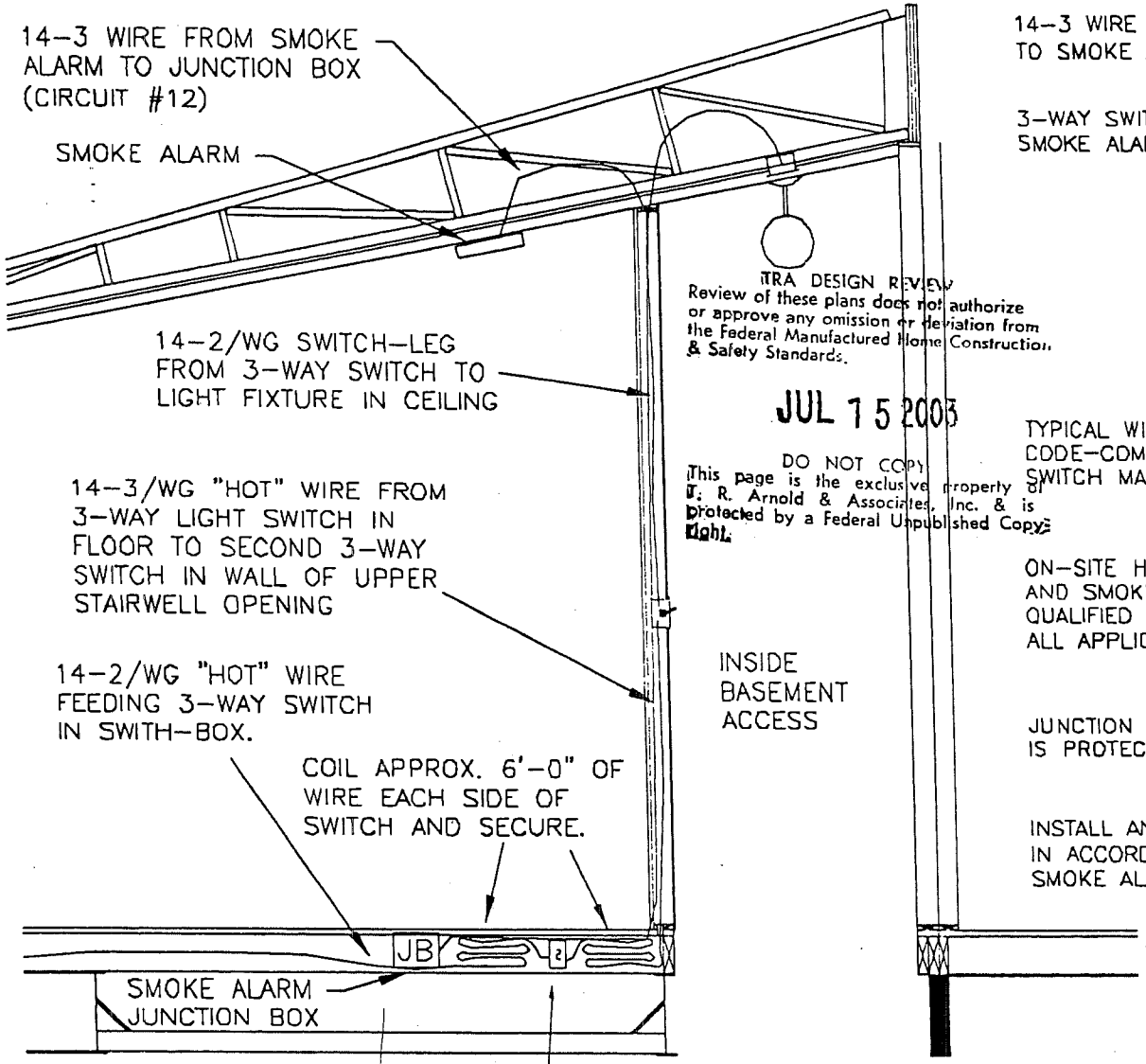

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14-3 WIRE FROM SMOKE ALARM TO SMOKE ALARM ON CIRCUIT #12

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

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.

HOLLY PARK
MIDDLEBURY, IN 46540

REVISIONS
ADDED SMOKE ALARM APPL. 8-8-02
ADDED NOTES 8-13-02

SH IM 2.27.1	BY BJH	DATE 7-11-03
TITLE BASEMENT ELECTRICAL APPL.		NO. IM 2.27.2

IM 2.27.2 (Ref. ED3-6)

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MODEL USI-1203/USI-1204
(Part #USI-1203HA/USI-1204HA)
COMMERCIAL RESIDENTIAL (UTHA)
SMOKE & FIRE ALARM
WITH SILENCE CONTROL

READ ALL INSTRUCTIONS

The smoke alarm has a recommended service life of at least 10 years under normal conditions. The smoke alarm uses an extremely small amount of a radioactive element in the ionization chamber. Do not tamper with radioactive sealed source or try to repair the smoke alarm yourself. Refer to instructions for repairs.

SMOKE ALARM LIMITATIONS AND FUNCTIONS

- THERE ARE TWO BASIC SMOKE ALARM TYPES - IONIZATION AND PHOTOELECTRIC. Ionization smoke alarms (such as this Smoke Alarm) are your best overall choice for reliability and fast response time, since they quickly sense small "invisible" smoke particles and will also sense larger "visible" smoke particles. Photoelectric smoke alarms may respond more quickly in certain types of fires, for example - slow smoldering fires with large "visible" smoke particles. ALL TYPES OF SMOKE ALARMS HAVE LIMITATIONS. NO TYPE OF SMOKE ALARM CAN SENSE EVERY KIND OF FIRE OR SMOKE EVERY TIME.
- WARNING - SMOKE ALARMS WILL NOT WORK DURING A LOSS OF POWER. SINCE A SMOKE ALARM WILL NOT WORK WITHOUT POWER, having an alarm(s) that works from two completely different power sources, such as an AC direct wire with battery backup smoke alarm, can give you an extra measure of protection in case of an AC power failure or a dead battery.
- USING A SMOKE ALARM IN A SMOKY AREA LIKE A KITCHEN, OR IN A HIGH HUMIDITY AREA NEAR A SHOWER, CAN CAUSE FALSE ALARMS. DO NOT TURN OFF THE AC POWER TO QUIET THE ALARM. A SMOKE ALARM WILL NOT HELP PROTECT YOU IF IT IS NOT POWERED. Properly locate your alarm to avoid nuisance alarms.
- A SMOKE ALARM MAY NOT ALWAYS WARN YOU ABOUT FIRES CAUSED BY CARELESSNESS AND SAFETY HAZARDS LIKE SMOKING IN BED, VIOLENT EXPLOSIONS, ESCAPING GAS, IMPROPER STORAGE OF FLAMMABLE MATERIALS, OVERLOADED ELECTRICAL CIRCUITS, CHILDREN PLAYING WITH MATCHES, NATURAL CAUSES SUCH AS LIGHTNING, OR ARSON. FIRE PREVENTION IS YOUR BEST SAFEGUARD.
- INSTALLING SMOKE ALARMS MAY MAKE YOU ELIGIBLE FOR LOWER INSURANCE RATES, but SMOKE ALARMS ARE NOT A SUBSTITUTE FOR INSURANCE. Homeowners and renters alike should continue to insure their lives and properties.
- SMOKE ALARMS CANNOT WORK WITHOUT POWER. Battery operated units cannot work if the batteries are missing, disconnected or dead, if the wrong type of batteries are used or if the batteries are not installed correctly. AC (only) powered units cannot work if the AC power is cut off for any reason. If you are concerned about the limitations of battery or AC power, install both types of units.
- SMOKE ALARMS CANNOT DETECT FIRES IF THE SMOKE DOES NOT REACH THEM. Smoke from fires may not reach the sensing chamber and set off the alarm. One unit should be installed inside each bedroom or sleeping area.
- SMOKE ALARMS MAY NOT DETECT FIRE ON ANOTHER FLOOR OR AREA OF THE HOME. Recommended minimum protection is at least one unit in every sleeping area and every bedroom on every level of your home. Interconnected units may provide earlier warning than stand-alone units since all units alarm when one detects smoke.
- SMOKE ALARMS MAY NOT BE HEARD. The alarm horn in this unit meets or exceeds current standards, but it may not be heard if: (1) the unit is located outside a closed or partially closed door; (2) residents recently consumed alcohol or drugs; (3) the alarm is drowned out by noise from stereos, TV's, air conditioners or other appliances or (4) if residents are hearing impaired or sound sleepers.
- SMOKE ALARMS ARE NOT FOOLPROOF. You must test the unit weekly to ensure your continued protection. Smoke alarms cannot prevent or extinguish fires.
- SMOKE ALARMS HAVE A LIMITED LIFE. The unit should be replaced immediately if it is not operating properly. You should always replace a smoke alarm after 10 years.

RECOMMENDED LOCATION OF ALARMS

- Locate the first smoke alarm in the immediate area of the bedrooms. Try to protect the exit path as the bedrooms are usually farthest from an exit. If more than one sleeping area exists, locate additional smoke alarms in each sleeping area.
- Locate additional smoke alarms to protect any stairway as stairways act like chimneys for smoke and heat.
- Locate at least one smoke alarm on every floor level.
- Locate a smoke alarm in any area where a smoker sleeps or where electrical appliances are operated in sleeping areas.
- Smoke, heat and other combustion products rise to the ceiling and spread horizontally. Mounting the smoke alarm on the ceiling in the center of the room places it closest to all points in the room. Ceiling mounting is preferred in ordinary residential construction. However, in mobile homes, wall mounting on an inside partition is preferred to avoid the thermal barrier that may form at the ceiling.
- When mounting smoke alarm on the ceiling, locate it a minimum of 4" (10cm) from a side wall or corner (see Diagram A)
- When mounting smoke alarm on a wall, if local codes allow, use an inside wall with the top edge of the smoke alarm a minimum of 4" (10cm) and a maximum of 12" (30.5cm) below the ceiling/wall intersections (See Diagram A).

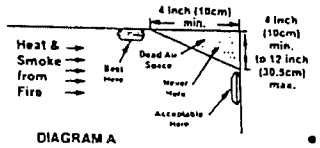
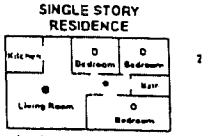
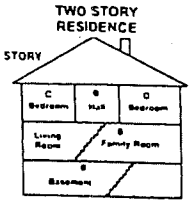


DIAGRAM A



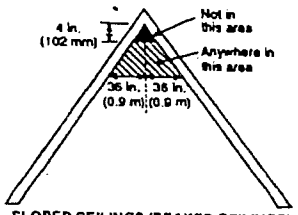
● Smoke Alarms for Minimum Protection

O Recommended Smoke Alarms for Additional Protection

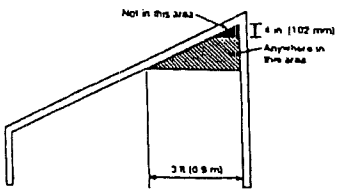


Existing Homes:
The NFPA requires a smoke alarm on every level and outside each sleeping area in existing construction. An existing household with one level and one sleeping area is required to have one smoke alarm.

New Construction Homes and Manufactured Homes:
The NFPA requires AC-powered, interconnected smoke alarms to be installed inside each bedroom, outside each bedroom area, and on every level of the home. They also require a minimum of two AC-powered, interconnected smoke alarms in any new construction home.



SLOPED CEILINGS (PEAKED CEILINGS)



SLOPED CEILINGS (SHED CEILINGS)

Sloped Ceilings (Peaked Ceilings)
Smoke alarms or smoke detectors mounted on a peaked ceiling shall be located within 36 in. (914 mm) horizontally of the peak, but not closer than 4 in. (102 mm) vertically to the peak.

Sloped Ceilings (Shed Ceilings)
Smoke alarms or smoke detectors mounted on a sloped ceiling having a rise greater than 1 ft. in 8 ft. (1 m in 8 m) horizontally shall be located within 36 in. (914 mm) of the high side of the ceiling, but not closer than 4 in. (102 mm) from the adjoining wall surface.

Mobile Home Installation:
For minimum protection, smoke alarms should be installed in compliance with H.U.D. Manufactured Home Construction Safety Standards, Title 24 CFR, Section 3280.208 and Section 3282. For additional protection, see Single Story Residence smoke alarm requirements/recommendations for Existing Homes and New Construction Homes.

Note: For mobile homes built before 1978, install smoke alarms on inside walls between 4" and 12" 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.

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AVOID THESE LOCATIONS

- the garage – products of combustion are present when you start your automobile.
- near appliances or areas where normal combustion regularly occurs (kitchens, near furnaces, gas hot water heaters). Use smoke alarms with Silence Control for these areas.
- in areas with high humidity, like bathrooms or areas near dishwashers or washing machines. Install at least 3 feet (0.9 meters) away from these areas.
- in areas of turbulent air such as air returns or heating and cooling supply vents. Install at least 3 feet (0.9 meters) away from these areas. The air could blow smoke away from the smoke alarm, interrupting its alarm.
- in extremely dusty, dirty or insect-infested areas. Loose particles interfere with smoke alarm operation.
- in areas where temperature may fall below 40°F (4.4°C) or rise above 100°F (37.8°C).
- closer than 5 feet (1.5m) from fluorescent lights, electrical "noise" and flickering may affect the alarm's operation.

THIS SMOKE ALARM WILL NOT WORK WITHOUT 120 VAC POWER AND A GOOD BATTERY PROPERLY INSTALLED. THE SMOKE ALARM SHOULD BE TESTED WHEN INSTALLED AND THEN TESTED WEEKLY AFTER THAT.

FALSE ALARMS

The smoke alarm is designed to minimize false alarms. Smoking will not normally set off the alarm unless smoke is blown directly into the smoke alarm. Combustion particles from cooking may set off the alarm if the smoke alarm is located close to the kitchen cooking surface. Large quantities of combustion particles are generated from spills or broiling.

If the smoke alarm does sound, check for fires first. If a fire is discovered, get out and call the fire department. If no fire is present, check to see if one of the reasons listed above may have caused the alarm. Use the "silence" feature if it is a false alarm.

⚠WARNING!

INSTALLATION

Installation of this unit must conform to the electrical codes in your area; Article 760 of the National Electrical Code, NFPA 72, 101; SBC (SBCCI); UBC (ICBO); NBC (BOCA): OTFDC (CABO), and any other local or building codes that may apply. Wiring and installation must be performed by a licensed electrician. Failure to follow these guidelines may result in injury or property damage.

This unit must be powered by a 24-hour, 120V AC 60Hz circuit. Be sure the circuit cannot be turned off by a switch, dimmer or ground fault circuit interrupter. Failure to connect this unit to a 24-hour circuit may prevent it from providing constant protection.

IMPORTANT: Do not subject this smoke alarm to megger, high voltage or high-pot tests. Remove the smoke alarm(s) before high-potting tests occur on the circuit or system. (Ref. Section 550-17, National Electric Code, 2002 Edition).

⚠DANGER!

ELECTRICAL SHOCK HAZARD

Turn off power to the area where you will install this unit at the circuit breaker or fuse box before beginning installation. Failure to turn off the power before installation may result in serious electrical shock, injury or death.

TAMPER LOCKING PIN: To make your smoke alarm somewhat tamper resistant, a locking pin has been provided. Using this pin will deter children and others from removing the alarm from the mounting ring. To use the pin, insert it into the hole in the side of the alarm after it has been installed on the mounting ring. Note that the tamper pin will have to be removed in order to change the battery, which can be done easily with a pair of long nose pliers. Using the long nose pliers, pull the pin out of the hole. It is now possible to remove the smoke alarm from the mounting ring.

1. Turn the smoke alarm counterclockwise to remove it from the mounting ring. NOTE: The smoke alarm is sealed and the cover is not removable. Your smoke alarm is also equipped with a safety device which prevents mounting unless a battery is installed. If your smoke alarm will not lock onto the mounting ring, check to make sure a battery is installed.

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2. Wiring Instructions:

   a. The appropriate power supply is 120 Volt single phase power supplied from a non-switchable circuit NOT protected by a ground fault circuit interrupter.

   b. Turn off main power to the circuit before wiring the smoke alarm.

   c. There are three pigtail leads (black, white and yellow) coming from the AC QUICK CONNECTOR. The proper wire connection is as follows:

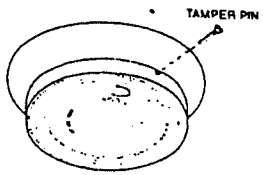
WIRES FROM QUICK CONNECTOR	CONNECT TO
BLACK	"HOT" side of AC line
WHITE	"NEUTRAL" side of AC line
YELLOW	Interconnect wires of other units

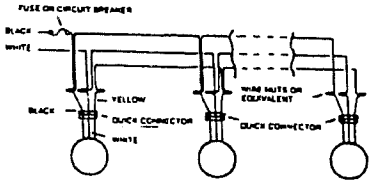
⚠CAUTION!

For units that are used as single smoke alarms, do not connect the yellow wire to anything. Insulate this wire (tape it) in place to make certain the yellow wire cannot contact any metal parts.

Interconnected units can provide earlier warning of fire than stand-alone units, especially if a fire starts in a remote area of the dwelling. If any unit in the series senses smoke, all units will alarm. This smoke alarm may be interconnected with as many as 11 other USI ELECTRIC model smoke alarms and 6 other units which may be a combination of USI-2430 Heat Alarms or USI-960 Relay Modules for a total of not more than 18 interconnected devices.

The yellow wire is used only for multiple station operation with USI ELECTRIC Models USI-1103, USI-1203, USI-1204, USI-1208 AND USI-1213 only. Connecting this yellow wire to any other circuits may result in damage. When smoke alarms are interconnected, all units must be powered from a single AC branch circuit. If local codes do not permit be sure the neutral wire is common to both phases. The maximum wire run distance between the first and last smoke alarm in an interconnected system is 1,000 feet. NOTE: Use standard household wire (18 gauge or larger, rated at least 300V, as required by local codes) available at all electrical supply/hardware stores.





MULTIPLE UNIT INSTALLATION SET-UP

⚠CAUTION!

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 alarm installed in each separate sleeping area (in the vicinity of, but outside of, the bedrooms) and heat or smoke alarms in living rooms, dining rooms, kitchens, hallways, attics, furnace rooms, closets, utility storage rooms, basements and attached garages. Test the smoke alarm weekly to assure proper operation.

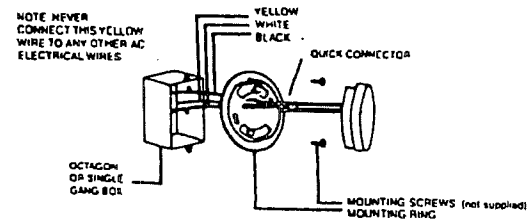
3. Attach the mounting ring to the electrical junction box.

4. To activate 9 volt battery and smoke alarm, pull and remove the thin colored plastic tab at battery door hinge. Discard plastic tab.

5. Plug the AC QUICK CONNECTORS together. Push and turn the smoke alarm clockwise onto the mounting ring.

6. See "TAMPER LOCKING PIN."

7. Turn on AC power and check the LED's for proper operation. The green LED lights to indicate AC power. The red LED will flash every 40-60 seconds to indicate proper operation.



OPERATION, TESTING & MAINTENANCE

OPERATION: The smoke alarm is operating once the power is connected and turned on (the battery must also be installed). When products of combustion are sensed, the unit sounds a loud alarm which continues until the air is cleared.

This alarm incorporates the internationally recognized horn signal for evacuation. During alarm mode, the horn produces three short beeps followed by a two second pause and then repeats.

STANDBY CONDITION: The red LED flashes once every 40-60 seconds to indicate the unit is properly functioning.

LOCAL ALARM CONDITION: The red LED flashes rapidly and the unit emits a loud, pulsating alarm sound.

REMOTE ALARM CONDITION: The red LED is off and the unit emits a loud, pulsating alarm.

GREEN LED: The green LED is on whenever AC power is turned on.

TESTING: Test by pushing the test button on the smoke alarm cover until the alarm sounds, then release. The alarm sounds if all electronic circuitry, horn and battery are working. The alarm may continue to sound for up to 10 seconds after the button is released. If no alarm sounds, the unit may have a defective battery or other failure. **Test the smoke alarm weekly to assure proper operation.**

⚠WARNING!

NEVER use an open flame of any kind to test this unit. You might accidentally damage or set fire to the unit or to your home. The built-in test switch accurately tests the unit's operation as required by Underwriters Laboratories Inc. (UL).

(UTHA) Sensitivity Indicating Means
The sensivity indicating means for this Smoke and Fire Alarm is the use of the analyzer for Smoke Detectors Model 501-A or 501-A/Bat Aerosol Generator Manufactured by Gemini Scientific Corp., 1122-Aaster Ave., Sunnyvale, CA 94086.

The Equivalent UL 268 Light obscuration %/Ft as measured by this instrument must be between 1.55% Obs./Ft. and 0.85% Obs./Ft (1.20 ± 0.35% Obs./Ft.).

(UTHA) Go/No-Go Field Test
The Go/No-Go test for this Smoke and Fire Alarm is the use of a UL Listed can type aerosol smoke detector tester. The instructions for the use of this tester are given on the container.

⚠CAUTION!

If you choose to use an aerosol smoke product to test the smoke alarm, be certain to use one that has been Listed to Underwriters Laboratories, Inc. Safety Standards and use it only as directed. Use of non-UL Listed products or improper use of UL Listed products may affect the smoke alarm's sensitivity.

FALSE ALARMS "SILENCE" CONTROL: Units with the "silence" feature have the capability of temporarily reducing the sensitivity of the alarm circuit for approximately 3-5 minutes. This feature is to be used only when a known alarm condition such as smoke from cooking activates the smoke alarm. The smoke alarm is deactivated by pushing the test button on the smoke alarm cover for at least three seconds. The smoke alarm will automatically reduce sensitivity and "beep" every 30-40 seconds for approximately 3-5 minutes to indicate the alarm is in the temporary silent condition. The smoke alarm will gradually reactivate and sound the alarm if particles of combustion are still present. The "silence" feature may be used repeatedly until the air has cleared.

M2.27.2.3

⚠CAUTION!

Before using the alarm "silence" feature, identify the source of smoke and be certain that safe conditions exist.

(UTHA) MAINTENANCE:

The smoke alarm is virtually maintenance free. However, under dusty conditions, a vacuum hose may be used to clear the sensing chamber of dust.

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 a 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.

⚠WARNING!

BACKUP BATTERY REPLACEMENT

Disconnect AC power before changing battery. Shock hazard exists if AC power is miswired.

The smoke alarm uses a 9 Volt battery. The battery should last for at least one year under normal operating conditions. The smoke alarm has a low battery indicator, an audible "beep." It will operate at 30-40 second intervals for a minimum of 7 days. When this indication occurs, replace the battery with an Alkaline type (Radio Shack Cat. No. 23-553, Eveready Energizer #522, Duracell #MN1604), Carbon-Zinc type (Gold Peak #1604P [UL], Eveready #216), or Lithium type (ULTRALIFE U9VL-J).

Push and lift the battery door latch and remove the battery from the battery door. While observing polarity, push the replacement battery into the battery door until it is held securely in place. Carefully close and latch the battery door.

REPAIRS AND SERVICES

The smoke alarm contains less than 1 microcurie (37 kilobecquerel) of Americium 241, a radioactive material. This substance requires that the smoke alarm be returned to the manufacturer or the Department of Health for disposal. Do not dispose of in any other way. If the smoke alarm is defective in any way, do not tamper with the unit. Return the unit for servicing. (See warranty for instructions or in-warranty returns.) There will be a service charge for repairing out of warranty units.

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DEVELOP AND PRACTICE A PLAN OF ESCAPE

BASICS OF ESCAPE PLAN

- Make a floor plan indicating all doors and windows and at least two escape routes from each room. Second story windows may need a rope or chain ladder.
- Have a family meeting and discuss your escape plan, showing everyone what to do in case of fire.
- Determine a place outside your home where all of you can meet if a fire occurs.
- Familiarize everyone with the sound of the smoke alarm and train them to leave your home when they hear the sound.
- Identify children's bedrooms with red stickers placed in the upper left corner of the windows. They are available from your local fire department.
- Practice a fire drill at least every six months. Practice allows you to test your plan before an emergency. You may not be able to reach your children. It is important they know what to do!

WHAT TO DO WHEN THE ALARM SOUNDS

- Leave immediately by your plan of escape. Every second counts, so don't waste time getting dressed or picking up valuables.
- In leaving, don't open any inside door without first feeling its surface. If hot, or if you see smoke seeping through cracks, ***don't open that door!*** Instead, use your alternate exit. If inside door is cool, place your shoulder against it, open it slightly and be ready to slam it shut if heat and smoke rush in.
- Stay close to the floor if air is smoky. Breathe shallowly through a cloth, wet if possible.
- Once outside, go to your selected meeting place and make sure everyone is there.
- Call the fire department from your neighbor's home – ***not from yours!***
- Don't return to your home until fire officials say that it is all right to do so.

NATIONAL FIRE PROTECTION ASSOCIATION REQUIRED PROTECTION

For your information, the National Fire Protection Association's Standard 72, 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 shall be installed in each sleeping room."

"A-2.5.2.1 Smoke Detection - Are More Smoke Detectors Desirable? The required number of smoke detectors might 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 the basement, bedrooms, dining room, furnace room, utility room, and hallways not protected by the required smoke detectors. The installation of smoke detectors in kitchens, attics (finished or unfinished), or garages is not normally recommended, as these locations occasionally experience conditions that can result in improper operation."

The equipment should be installed in accordance with the National Fire Protection Association's Standard 72. (National Fire Protection Association, Batterymarch Park, Quincy, MA 02269).

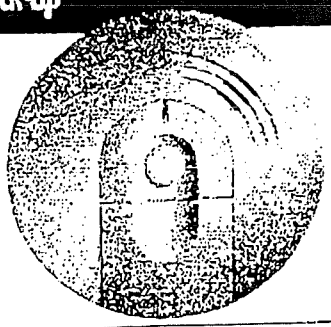
THIS PRODUCT IS LISTED TO UL STANDARD FOR SAFETY, UL217 5TH EDITION, BY UNDERWRITERS LABORATORIES.

1M2.27.2.4

120V AC Ionization Smoke Alarm with 9V Battery Back-up

FIREX® Smoke Alarm

110-761C



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

IMPORTANT SAFETY INFORMATION PLEASE READ AND SAVE THESE INSTRUCTIONS

WARNING

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

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IM 2.27.3

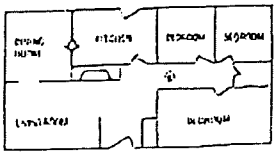
fast-burning, explosive, or intentional. Others are caused by carelessness or safety hazards. Smoke may not reach the smoke alarm QUICKLY ENOUGH to ensure safe escape.

- **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

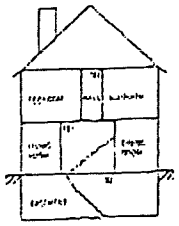
Maple Chase recommends complete coverage protection achieved by installing a smoke alarm in every room of your home. The National Fire Protection Association's (NFPA) minimum requirement, as stated in Standard 72, Chapter 2, reads as follows:

"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."



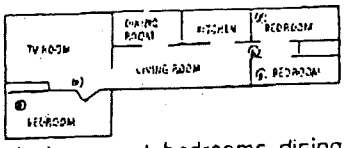
Chapter 2 also reads as follows:

"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:

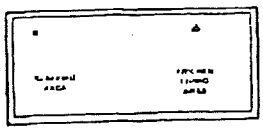
"Early warning fire detection is best achieved by the installation of fire detection equipment in all rooms and areas of the household as follows: a smoke detector installed in each separate sleeping area (in the vicinity, but outside the bedrooms), and heat or smoke detectors in the living rooms, dining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

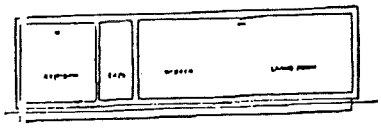
In addition, we recommend that all smoke alarms be interconnected.

Typical Efficiency Home (Apartment)

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



EFFICIENCY APARTMENT



MOBILE HOME

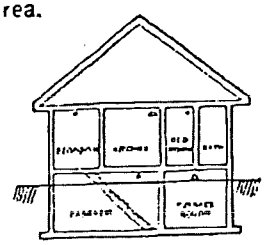
Typical Mobile Home

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.



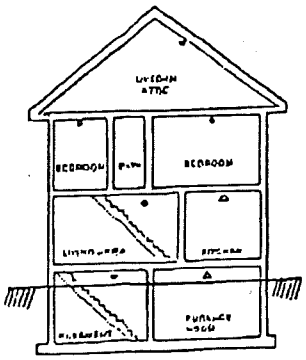
SINGLE STORY

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
△ Smoke Alarm with False Alarm Control™

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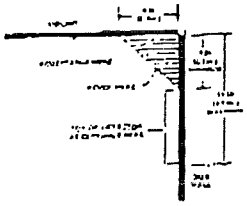
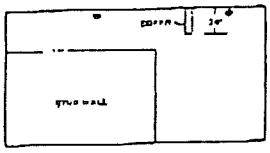
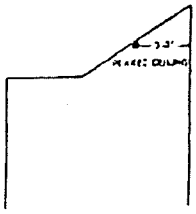
IMPORTANT SMOKE ALARM PLACEMENT AND EXCEPTION INFORMATION



- 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.

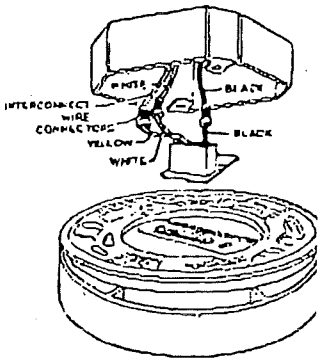
HOW TO INSTALL THIS SMOKE ALARM

⚠ 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).

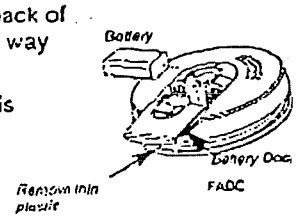
- Install smoke alarm on a 4-inch octagon or single gang junction box only.



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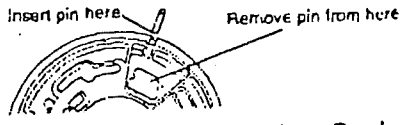
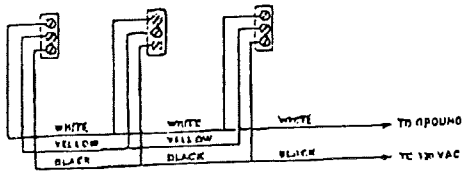
10. Position smoke alarm to mounting plate and turn clockwise to lock into place. For tamper-resist, use long-nosed pliers to remove thin plastic from notch on smoke alarm edge. Insert pin into notch on edge of smoke alarm after smoke alarm is positioned properly in base.



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™. 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, or of it initially goes into False Alarm Control™ then resounds the alarm, the smoke is too heavy and could be a 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. Pack it in a well-padded carton, shipping prepaid, to:

Maple Chase
Product Service Department
28C Leigh Fisher Blvd.
El Paso, TX 79906

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 SMOKE ALARM)

Maple Chase 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 smoke alarms sold with an Ultralife U9VL-J 9-volt battery, Maple Chase 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 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. 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 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
28C Leigh Fisher Blvd.
El Paso, TX 79906
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
P.O. Box 622
1350 Route 88 South
Newark, NY 14513

Invensys. Maple Chase
191 E. North Avenue
Carol Stream, Illinois 60188
United States of America

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Installation Instructions for Optional Outside Wall Intake Air Vent Kit

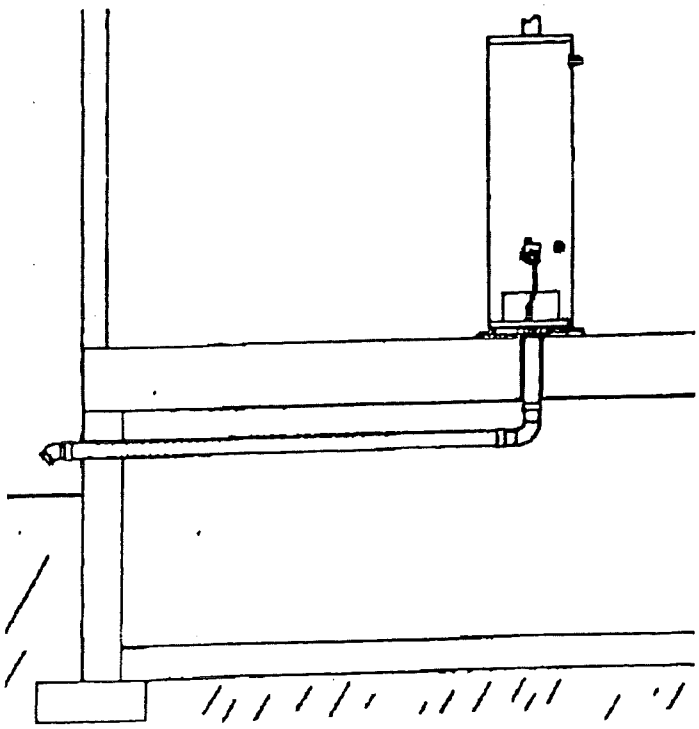
THE OPTIONAL OUTSIDE WALL INTAKE AIR VENT KIT IS FOR USE ONLY ON RESIDENTIAL DIRECT VENT MANUFACTURED HOME GAS WATER HEATERS.

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

KIT #9002987 – For 50 Gallon Models – 4"

Site installation over a basement or crawl space.

Typical Installation



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Save these instructions for Future Reference.

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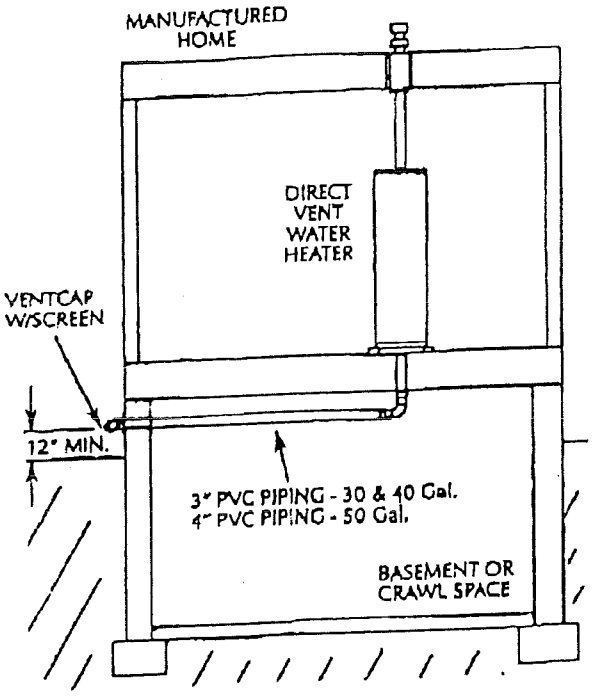
Installing the New Intake Air Vent

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

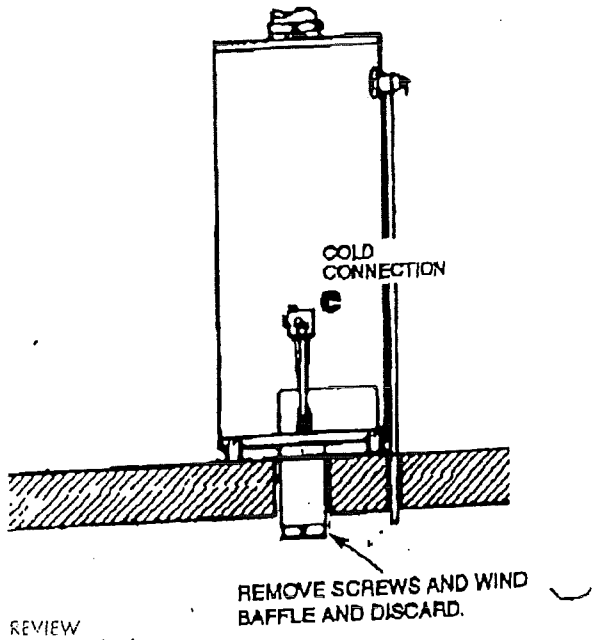
3" PVC Schedule 40 intake air vent piping; Optional Kit No. 9002986 contains a 3" PVC Schedule 40-45° vent cap with screen and two 3" wall collars.

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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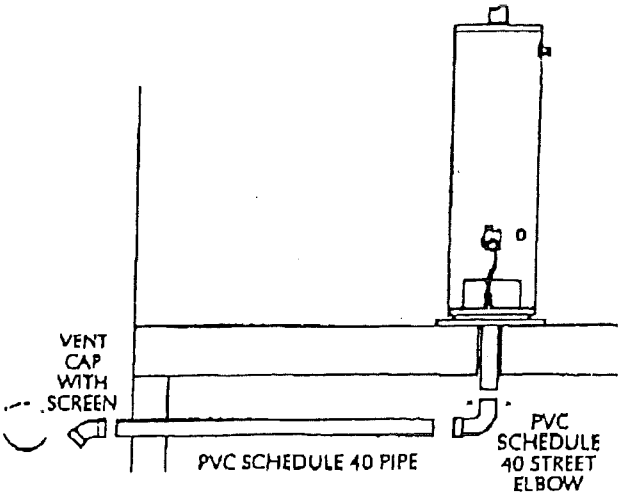
Installing the New Intake Air Vent (cont'd)

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.

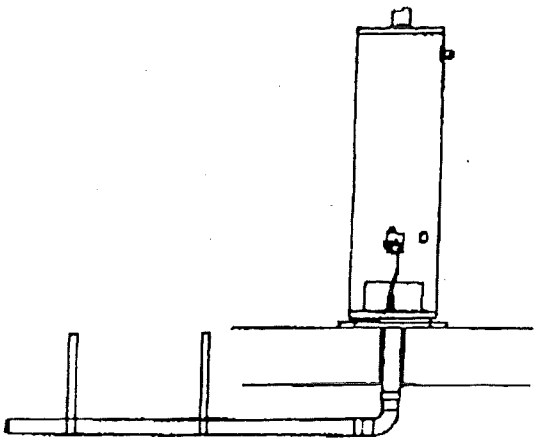
   3" size - 30 and 40 gallon models
   4" size - 50 gallon models

See page 4 for cementing instructions.

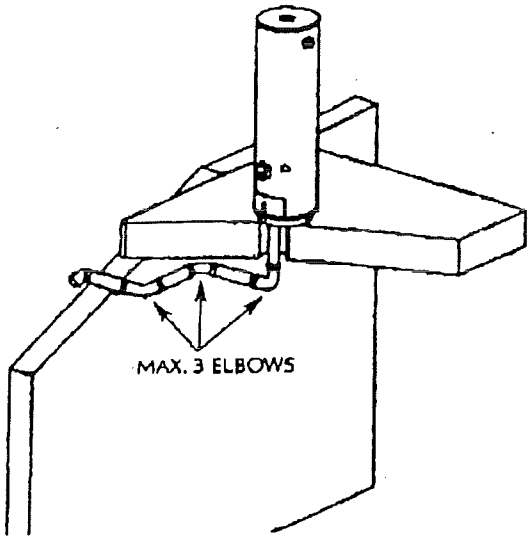


NOTE: Vent cap must be located a minimum of 12" above the ground.

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.

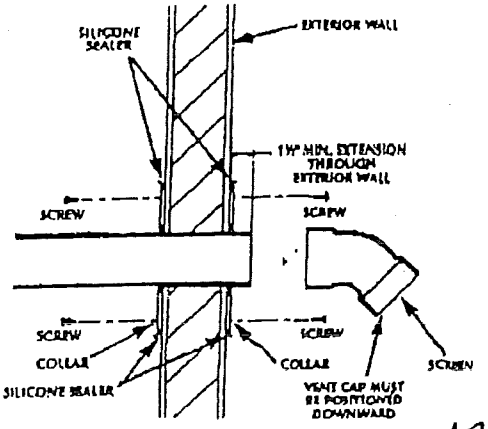


CUTTING OPENING THROUGH AN OUTSIDE WALL AND COLLAR INSTALLATION

Determine the location of the opening in the wall and cut a 3¼" hole (30 & 40 gal.) or 4¾" 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.

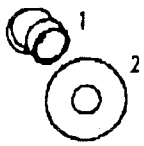
APPROXIMATE SETTING TIME FOR 2½" TO 4" PIPE JOINTS

	MOVEMENT OF JOINT	COMPLETE SET
90°F to 150°F	¾ 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	MODEL NUMBERS 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.

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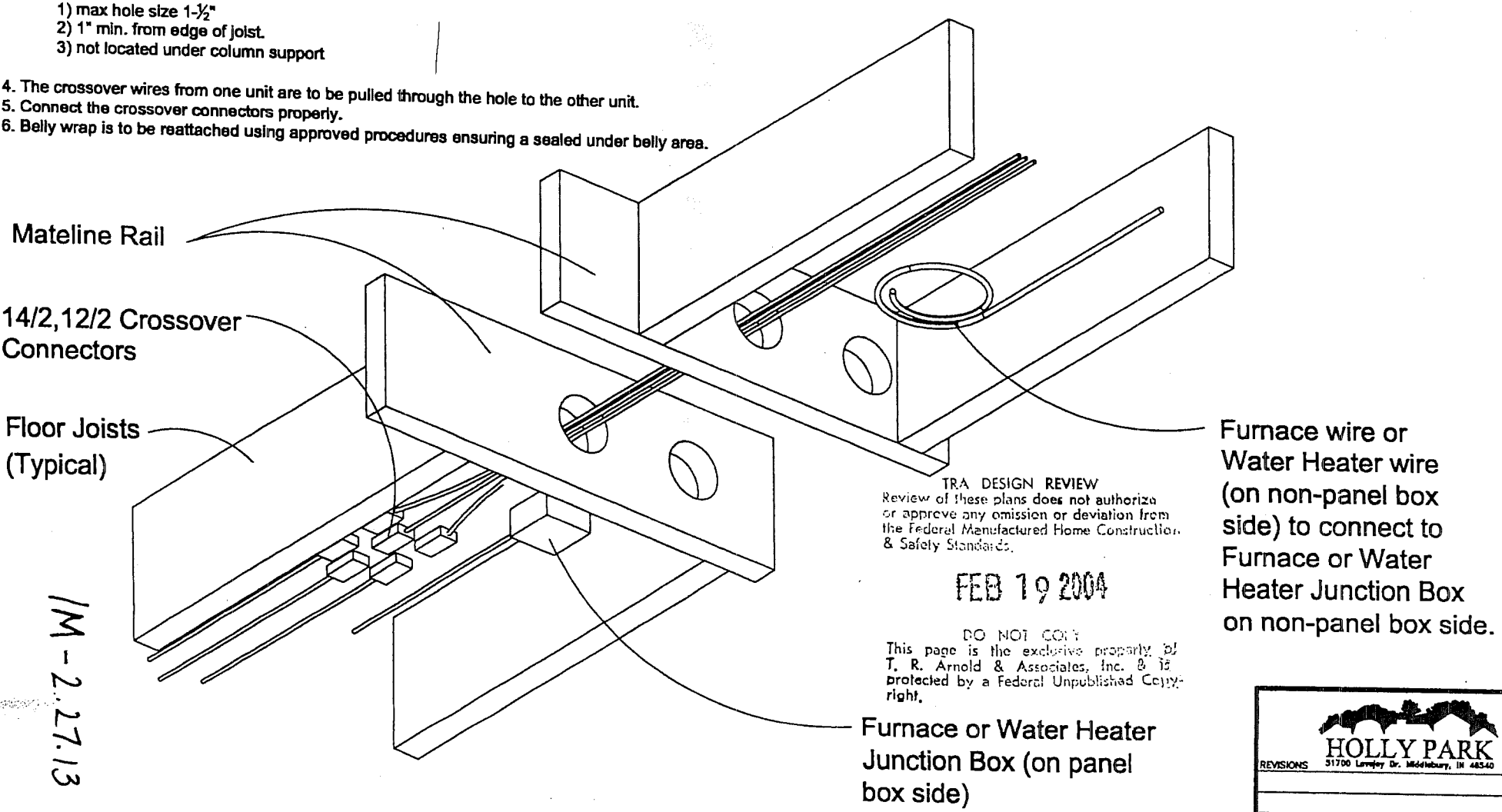
Notes:
1. Belly wrap is not shown for clarity.
2. Once the home has been set at the site, the belly wrap is to be pulled back at locations identified as Crossover Connector Location.
3. Use a Hole Saw to drill a hole completely through perimeter rails.
   Hole size requirements per FL-1:
   - 2x8 floor 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.



SHOWN FROM UNDER FLOOR

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HOLLY PARK
51700 Langley Dr. Middlebury, IN 46540

REVISIONS

C#	BY STH	DATE 2/2/04
TITLE: CROSSOVER CONNECTORS		NO. IM-2.27.13

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:
   c. 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.
   d. Ladders for egress from the roof.
   e. Basic hand tools such as hammer, saw, etc.
   f. 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. Measure 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. Install the soffit, j-rails and fascia as needed.
3. Installed gable end sheathing and siding as needed.

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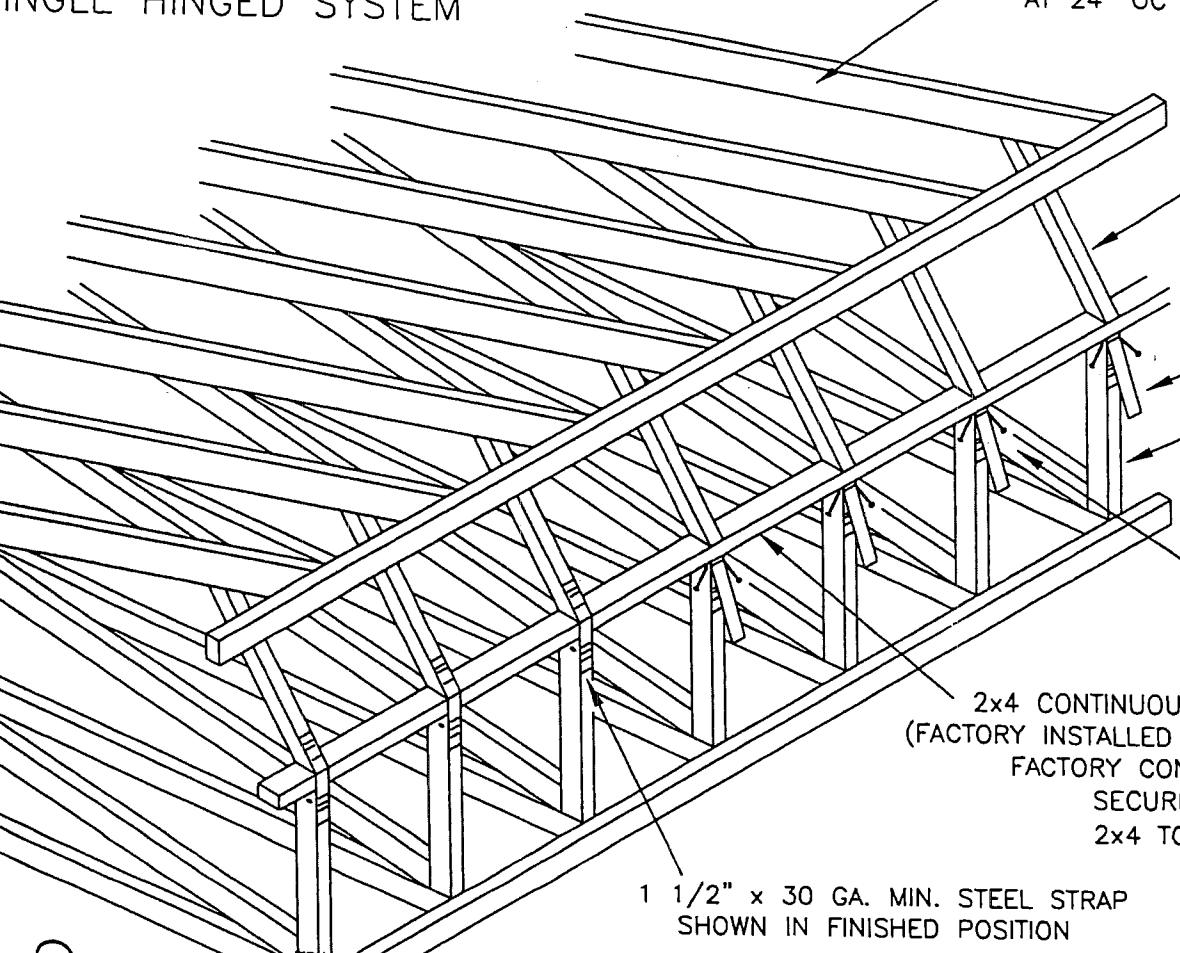
IM 2.28

OOF ILLUSTRATED IS A
INGLE HINGED SYSTEM



APPROVED HINGED TRUSS
AT 24" OC MAX

HINGED KING POST

STRAP IN SHIPPING POSITION

FIXED KING POST

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

2x4 CONTINUOUS RAIL
(FACTORY INSTALLED TO HINGED KING POST)
FACTORY CONNECTION AS FOLLOWS:
SECURE w (4) 7/16" x 2 1/2" x 15 GA. STAPLES
2x4 TO EACH HINGED KING POST

1 1/2" x 30 GA. MIN. STEEL STRAP
SHOWN IN FINISHED POSITION

SECURE LOOSE END ON SITE WITH
w (3) 7/16" x 1" x 16 GA STAPLES

FACTORY CONNECTION AS FOLLOWS:
ONE END OF STRAP TO FIXED KING POST
w (3) 7/16" x 1" x 16 GA STAPLES

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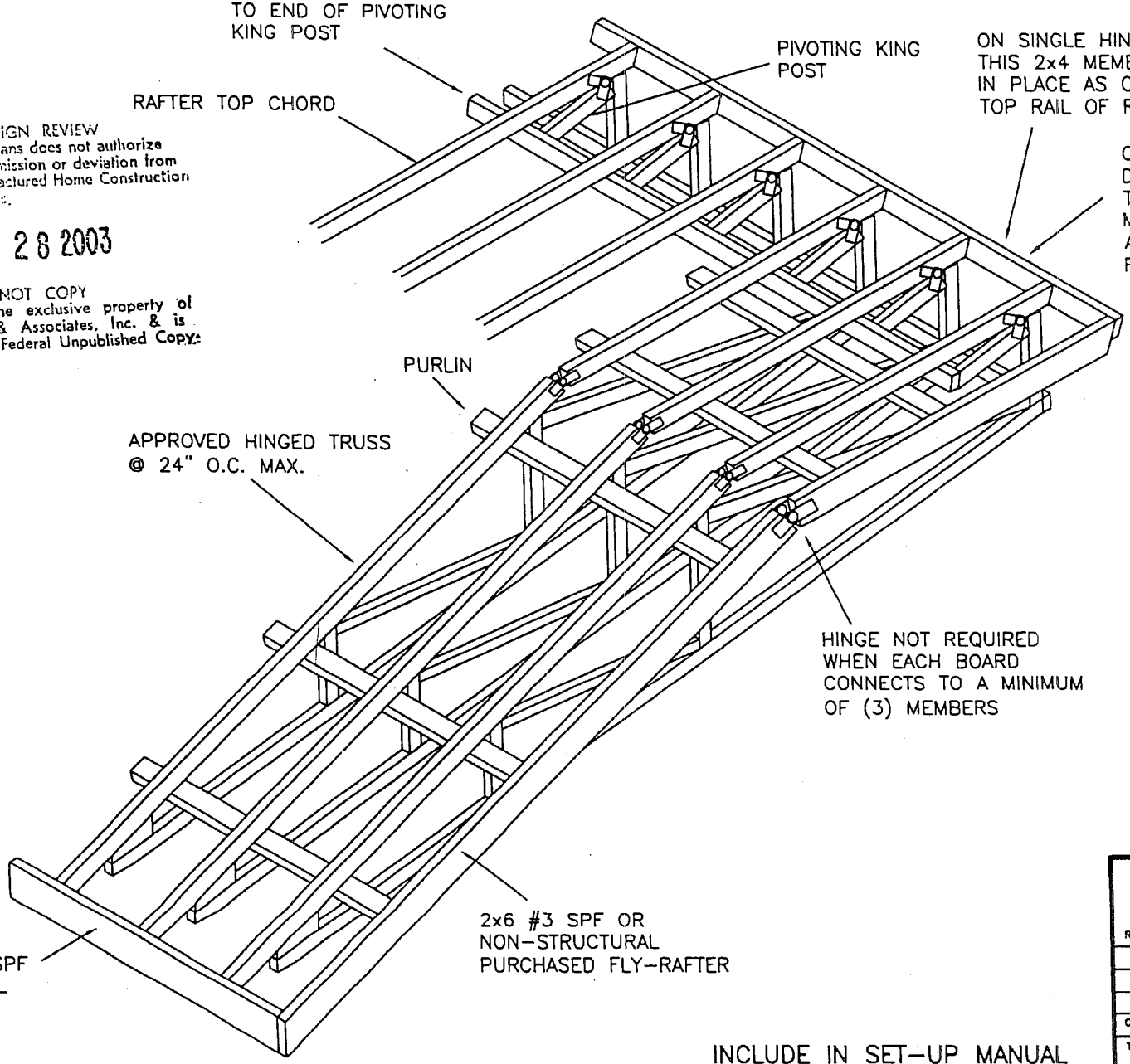
HOLLY PARK
MIDDLEBURY, IN 46540

REVISIONS
2x4 TO HINGED LEG 3-18-99

C# IM2-29	BY TOM V.M.	DATE 1-22-99
TITLE: HINGED ROOF		NO. IM2-29

ROOF ILLUSTRATED IS A SINGLE HINGED SYSTEM



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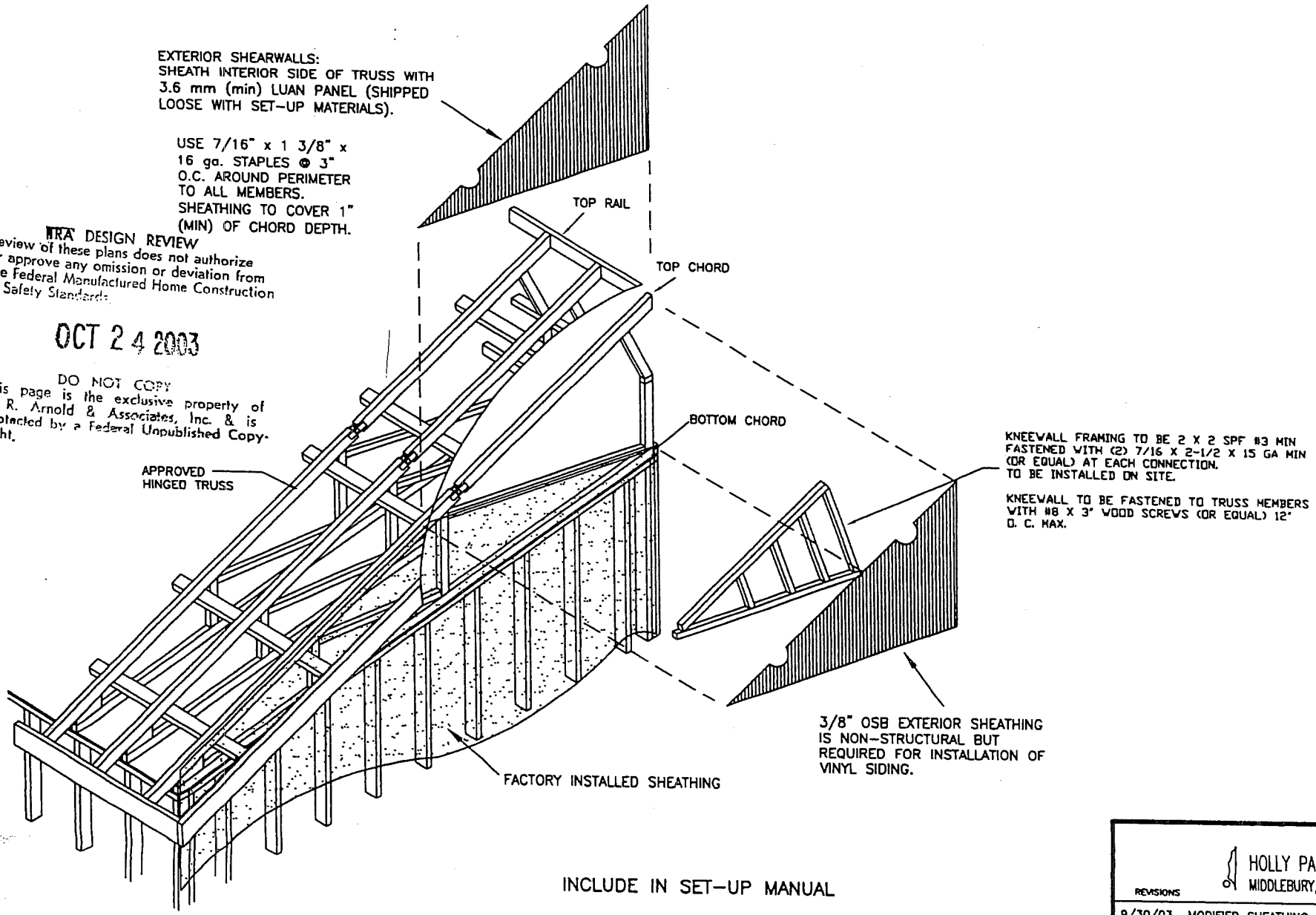
REVISIONS	HOLLY PARK MIDDLEBURY, IN 46540		
C# IM2-30	BY TOM V.M.	DATE 2-19-99	
TITLE: HINGED ROOF			NO. IM2-30

USAGE: 5/12 ROOF PITCH



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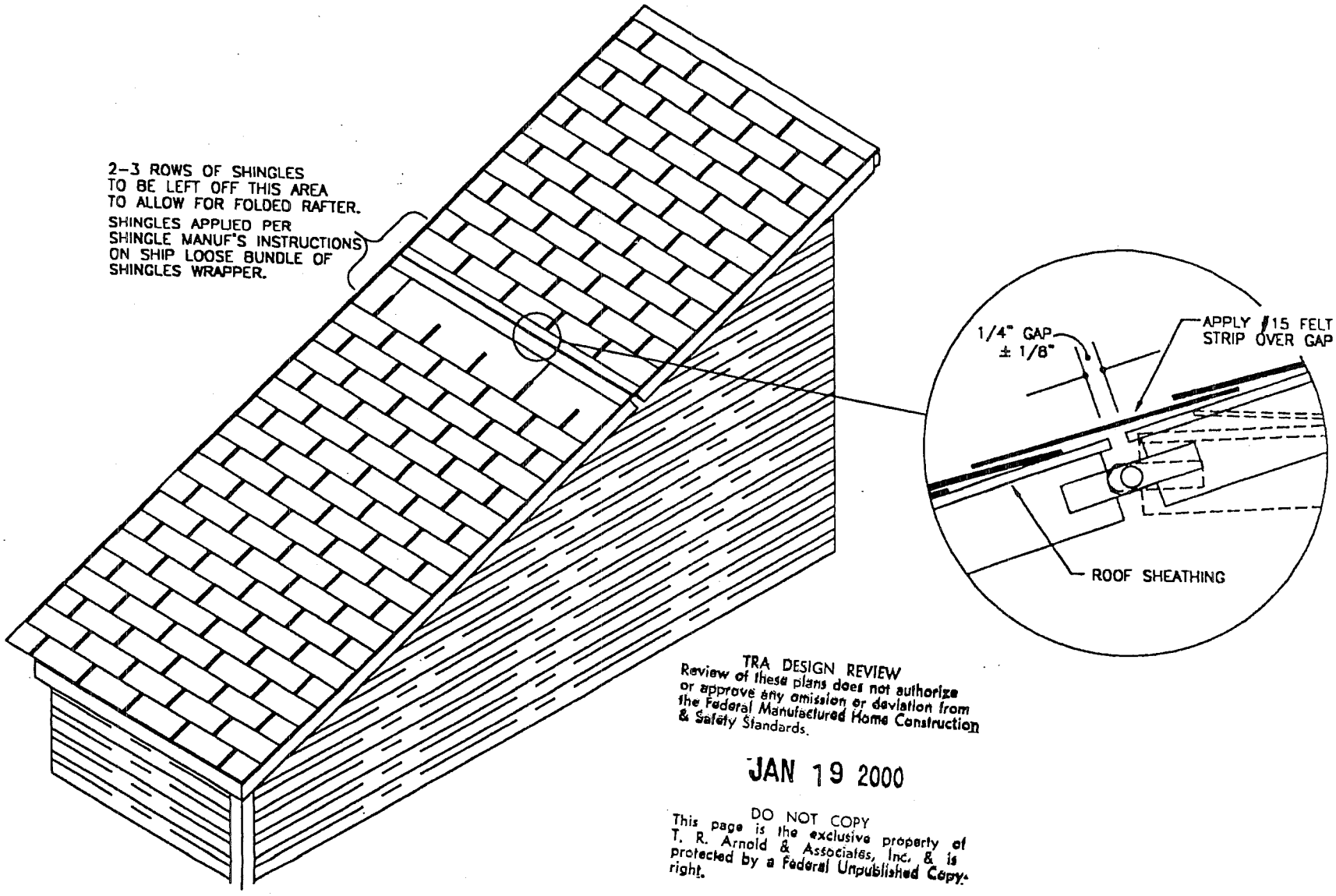
HOLLY PARK
MIDDLEBURY, IN 46540

REVISIONS

9/30/03 MODIFIED SHEATHING NOTE.

C# IM2-31	BY TOM V.M.	DATE 06-14-02	
TITLE: HINGED ROOF			NO. IM2-31

IM 2-31 (Ref. CE1-9-1)



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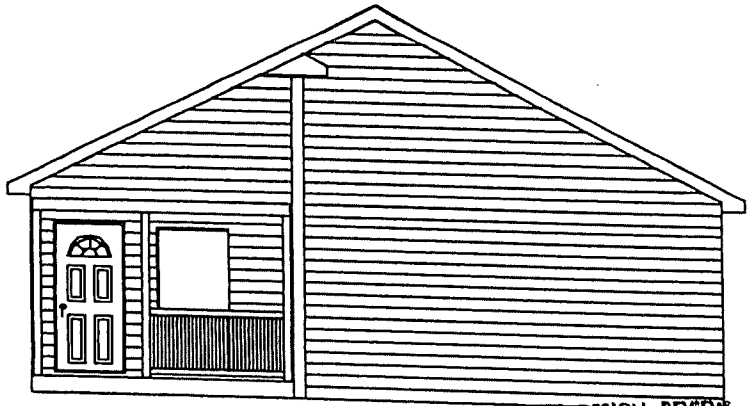
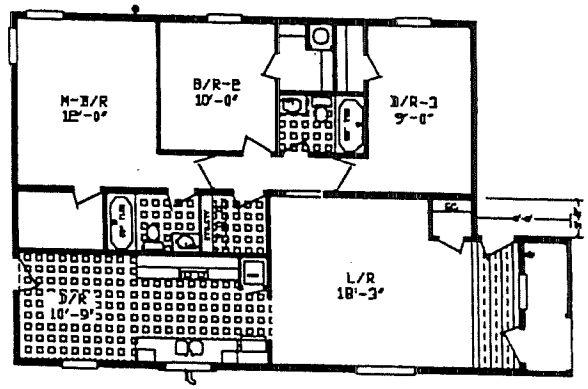
IM 2.32



END VIEW



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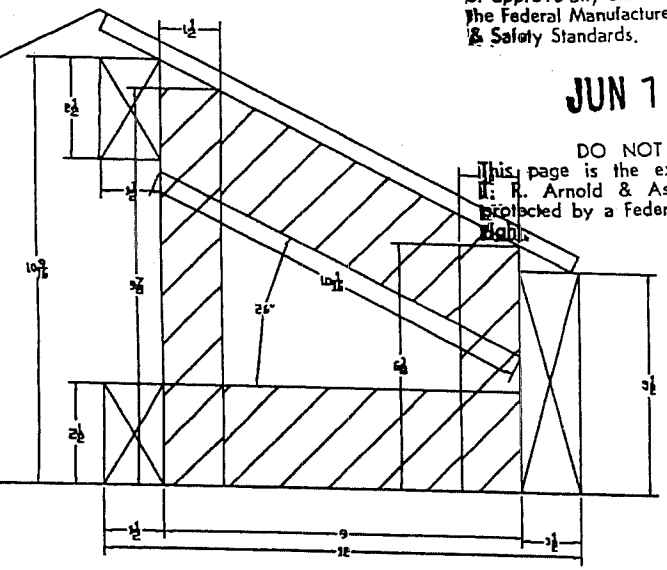
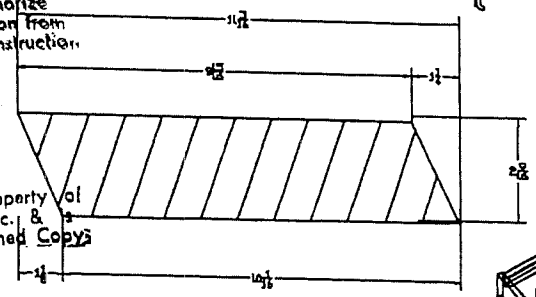
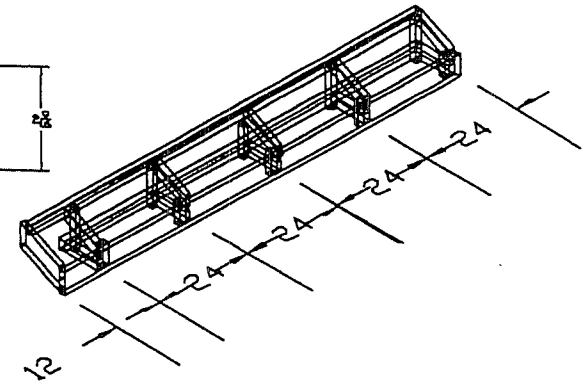






FASTENING NOTES:

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

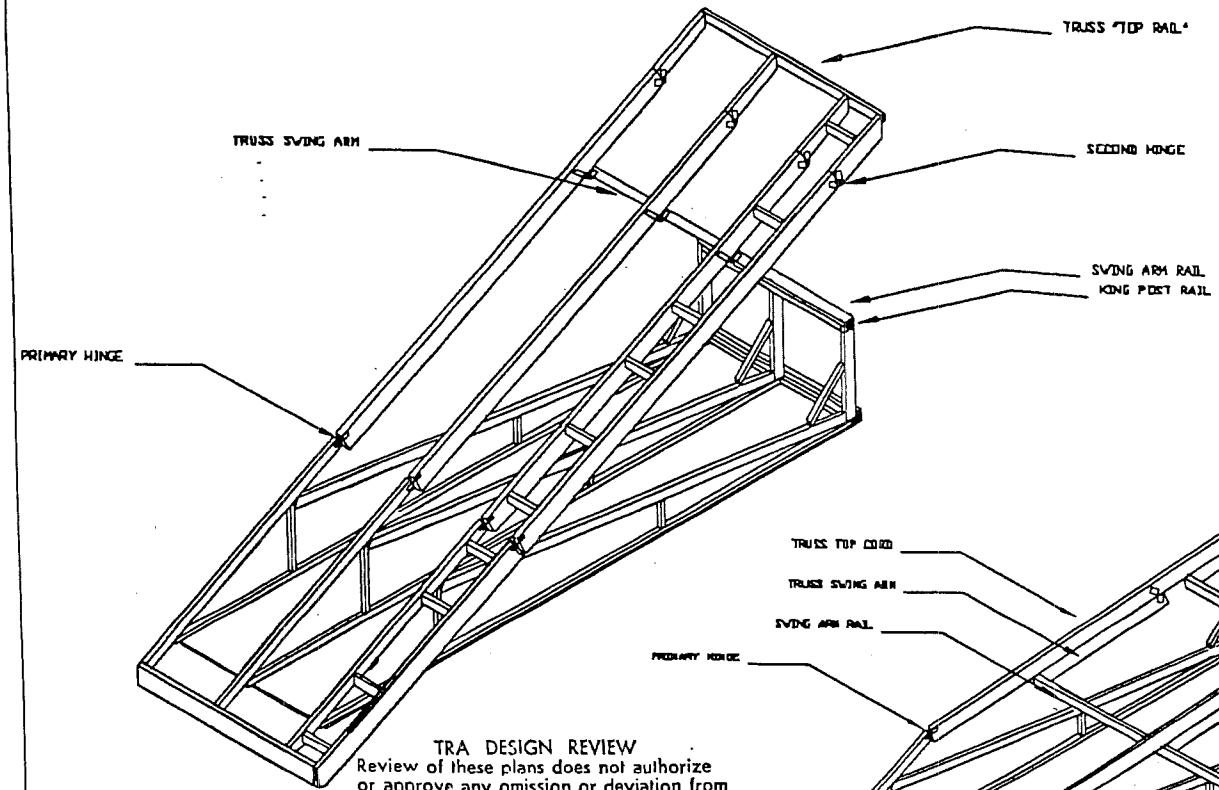
4a. VERTICLE FRAMING IS 2X2 SPF#3 (MIN). LOCATED AT THE TOP PEAK AND HEAL OF THE HORIZONTAL MEMBERS.

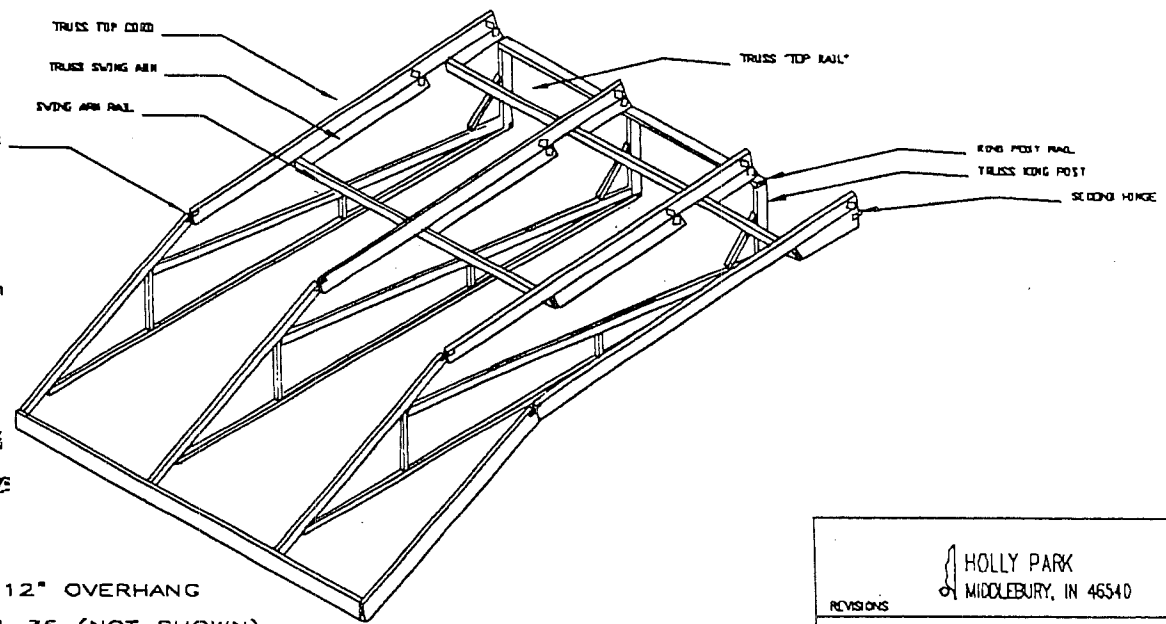
5. FASTENING AT ALL FRAMING LOCATIONS – (3) 7/16X2-1/2X15 GA (MIN) @ EA CONNECTION
6. DECKING IS 7/16" RATED SHEATHING
7. FASTENING FOR DECKING IS 7/16X16 GA STAPLES @ 6" O.C. MAX. SPACING.

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.

OFFSET BOX OVERHANG CONSTRUCTION DETAIL.





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IM 2.34 (Ref. CE 1-10)

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

NOTES:

1) OVERHANG BLOCKS INSTALLED PER IM 2-35 (NOT SHOWN).

2) FASCIA BOARD NOT FASTENED TO TRUSS TOP RAIL UNTIL ON-SITE SET-UP.

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

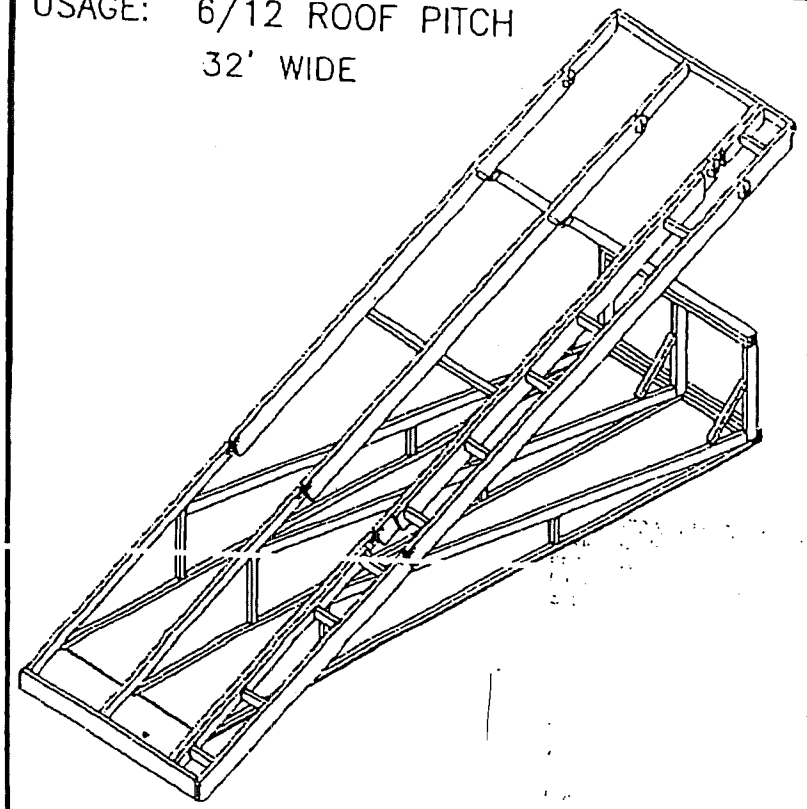
4) FLY RAFTER TO BE FASTENED TO FASCIA AND TO EDGE RAIL WITH (5)-7/16 X 2-1/2 X 15 GA STAPLES AT EACH CONNECTION (OR EQUAL).

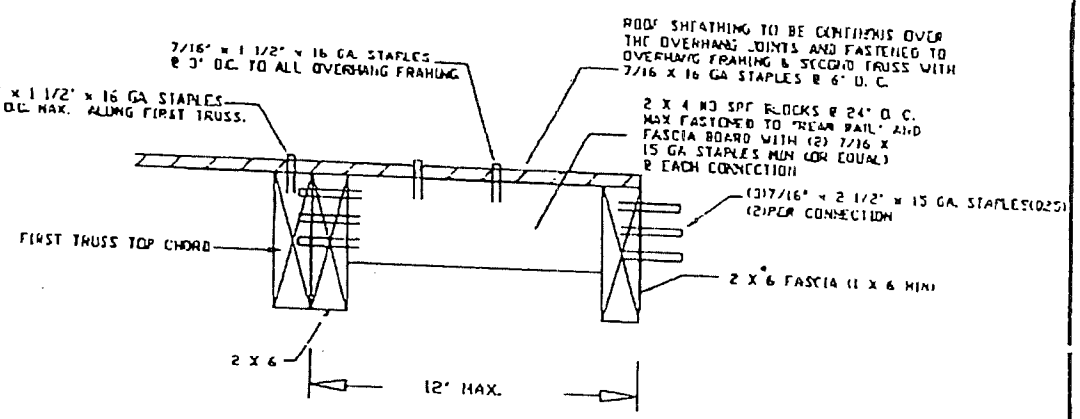
HOLLY PARK
MIDDLEBURY, IN 46540

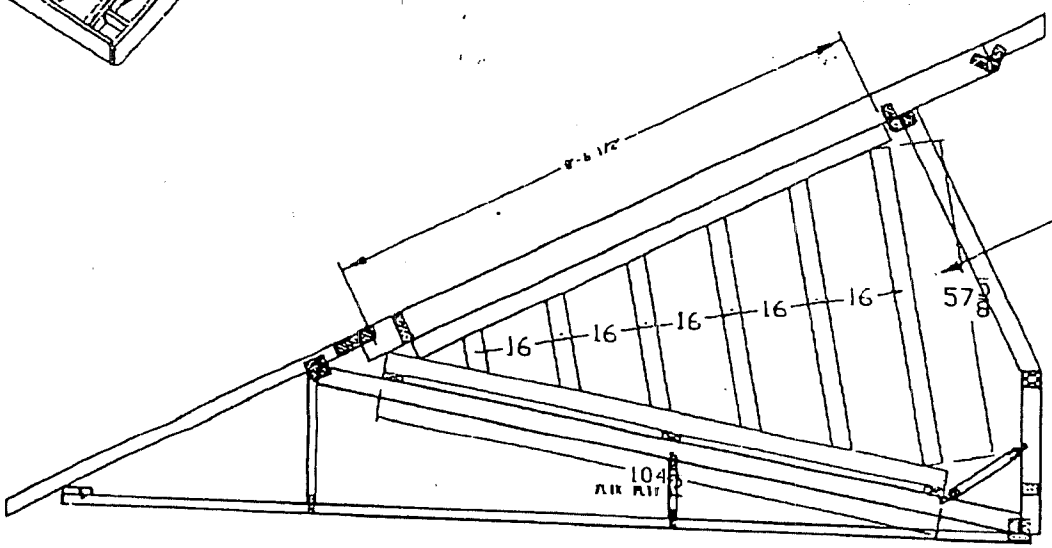
REVISIONS

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

USAGE: 6/12 ROOF PITCH
32' WIDE







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) 12" O. C. MAX.

HOLLY PARK
MIDDLEBURY, IN 46540

REVISIONS

9/30/03	REV. BLOCK OVERHANG DETAIL
11/25/03	REV. KNEEWALL FRAMING

CE 1-10	BJH	DATE 08-17-03

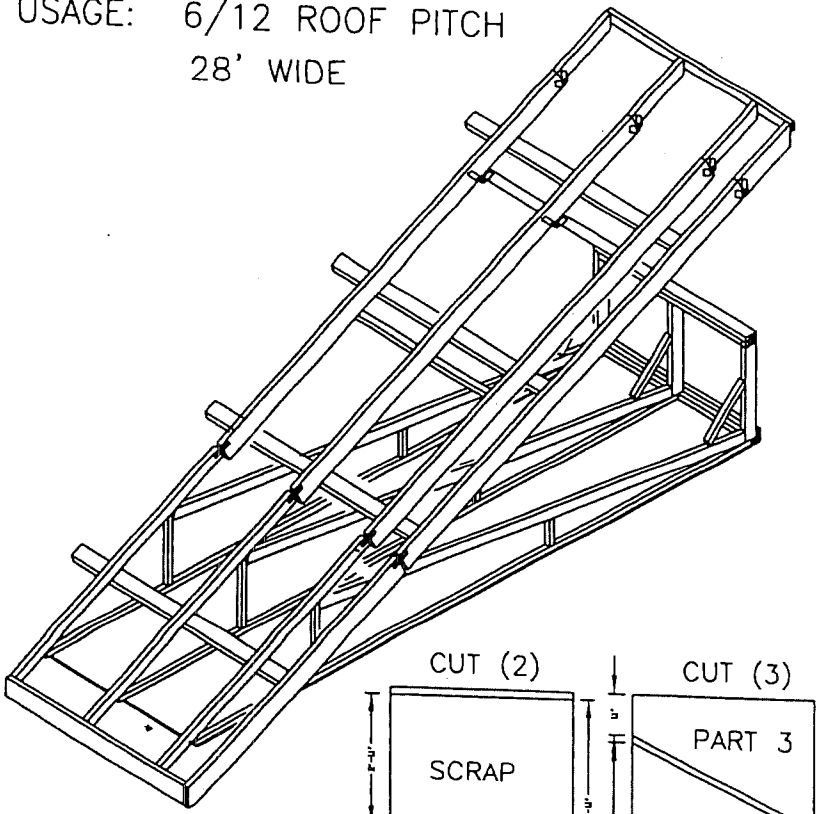
TITLE: 6/12 TRUSS W/ ROOF OVERHANG

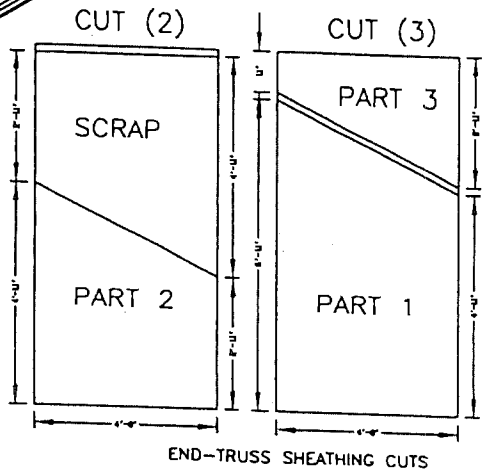
NO. IM 2.35

IM 2.35 (Ref. CE 1-10-1)

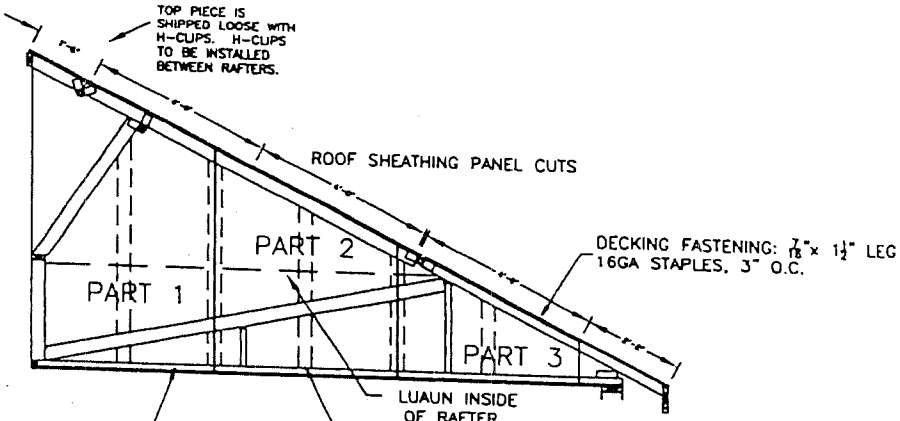
(REV. B)

USAGE: 6/12 ROOF PITCH
28' WIDE





END-TRUSS SHEATHING CUTS



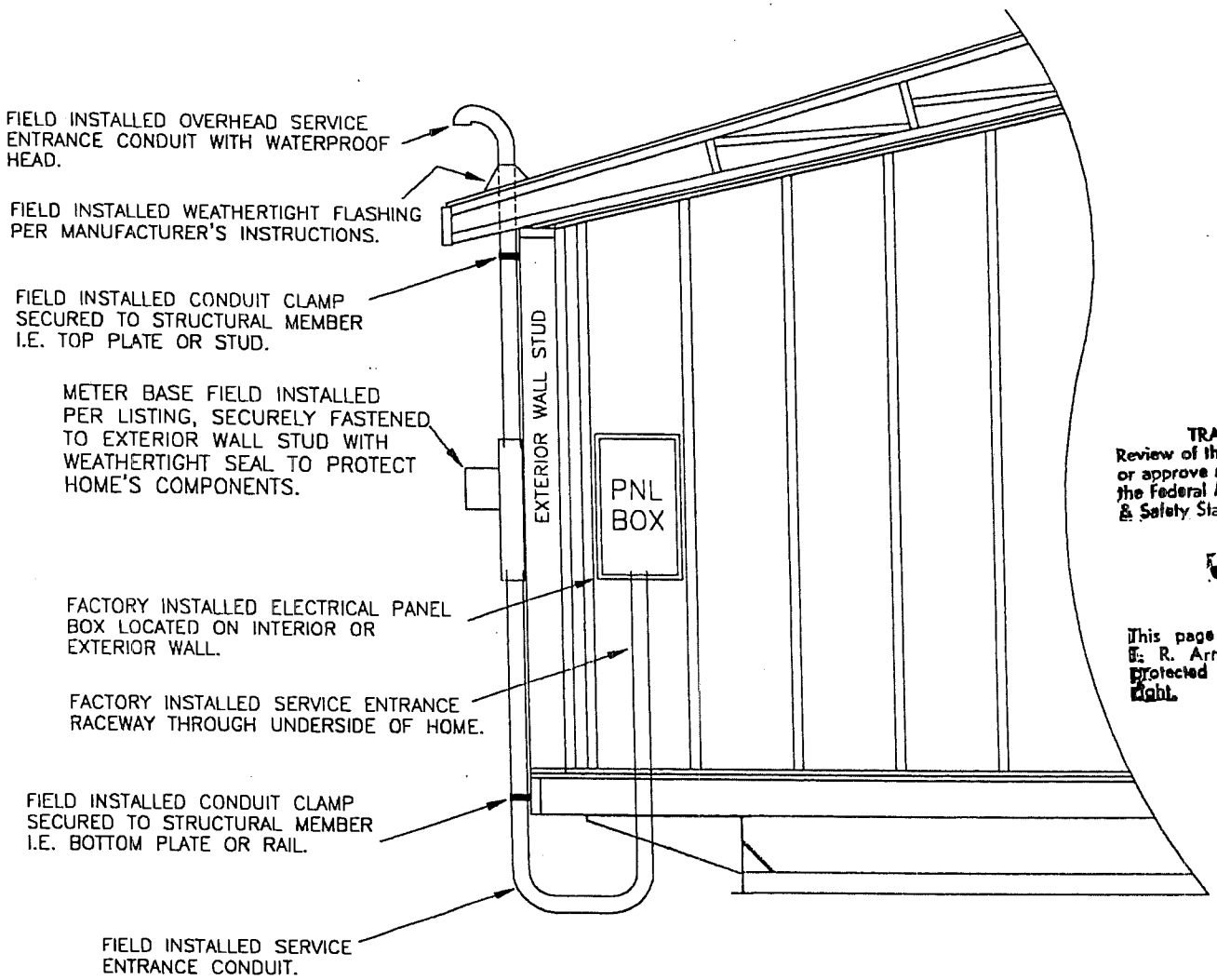
NOTES:
1) MATERIAL IS 3/8" OSB OR PLYWOOD

IM 2.36 (Ref. CE 1-9-2)

HOLLY PARK
MIDDLEBURY, IN 46540

REVISIONS

C/CE 1-9-2	BY MMW	DATE 10/24/03
TITLE: 6/12 HINGED ROOF		NO. IM 2.36



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HOLLY PARK, INC.
MIDDLEBURY, IN 46540

REVISIONS

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

(Rev 4)

IM 3.1

Electrical Service Equipment Attachment

Holly Park, Inc., manufacturer of singlewide 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 weatherhead, 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 installation of electrical service equipment should be done according to the National Electric Code and local building codes.
4) The New Holly Park 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 amp).

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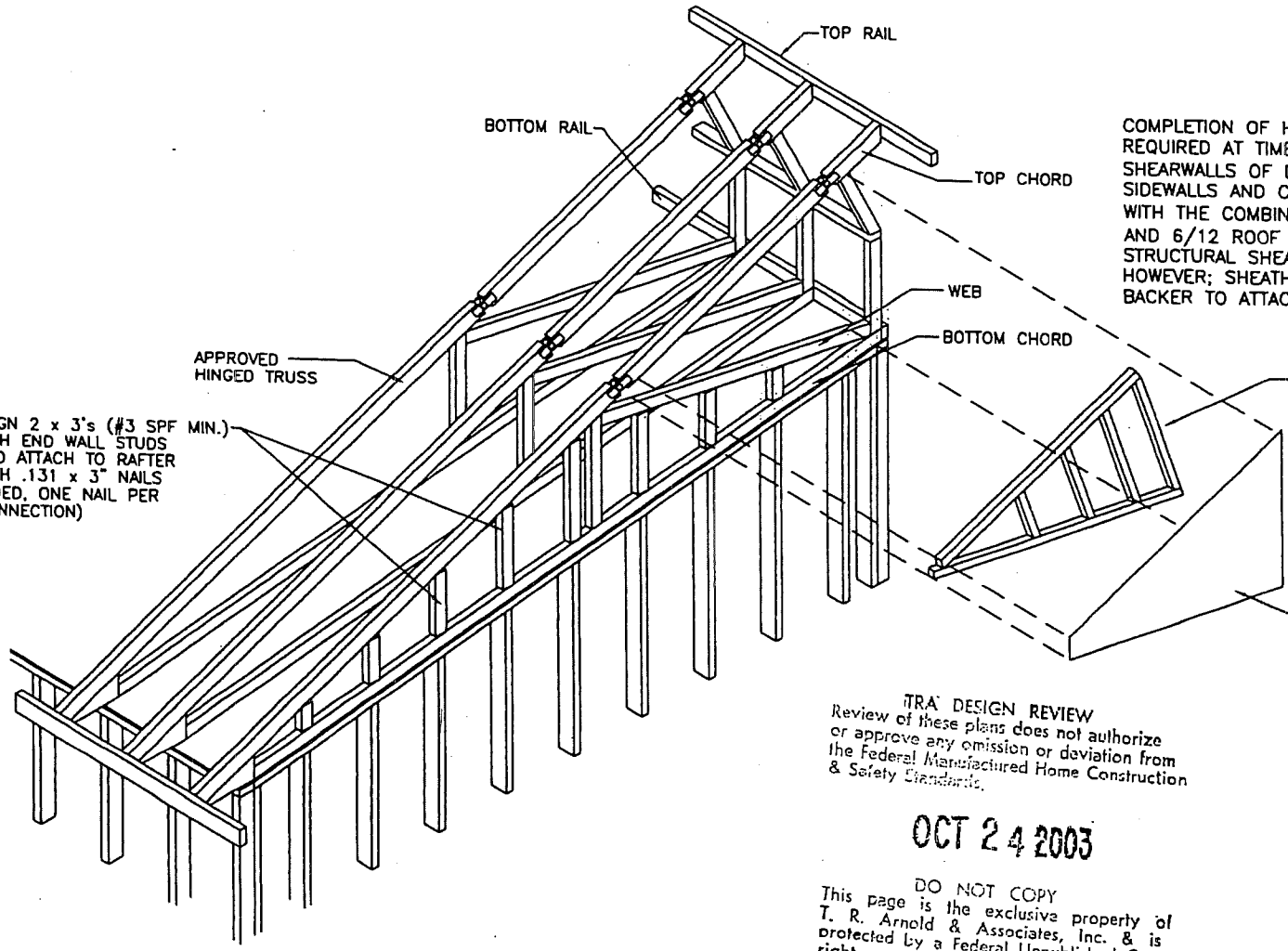
THIS DETAIL TO BE
INCLUDED IN SET-UP MANUAL



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) 12" O. C. MAX.

PLYWOOD SHIPPED LOOSE FOR BACKER TO ATTACH SIDING TO.

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HOLLY PARK, INC.
MIDDLEBURY, IN 46540

REVISIONS

9/30/03	MOD. PLYWOOD NOTE.
10/21/03	ADDED NOTES

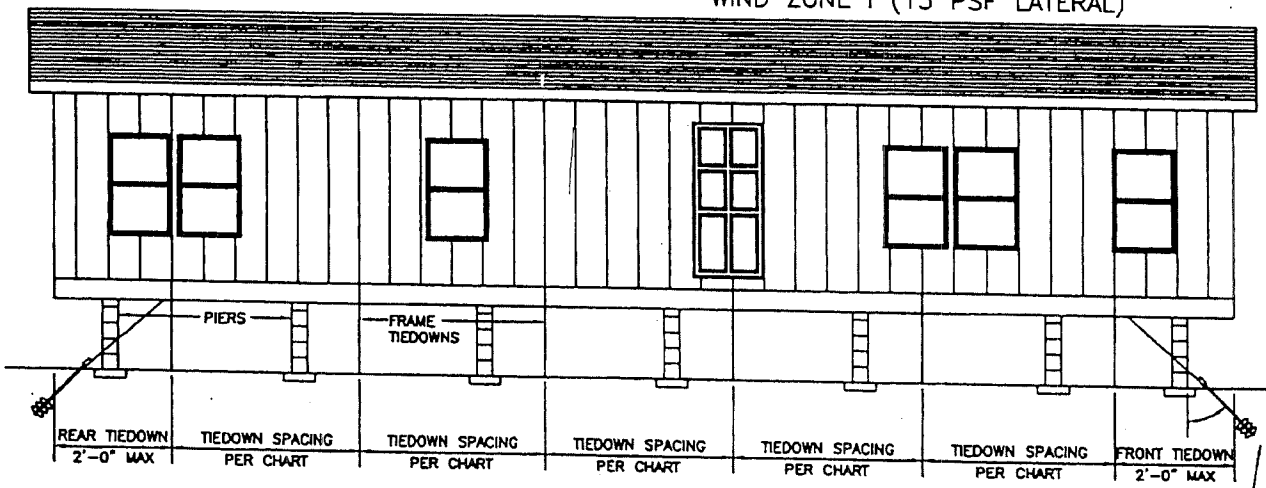
C# IM3-5-3	BY B.BUTT	DATE 3-4-03

TITLE: 6/12 DOUBLE HINGED ROOF

NO. IM3-5-3

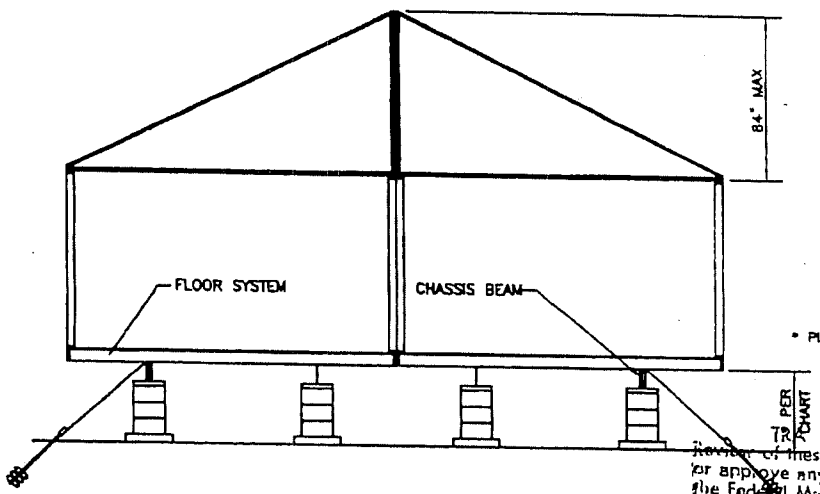
IM3-5-3

HOLLY PARK HOMES
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

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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 BY HOLLY PARK HOMES.
5. OVER-THE-ROOF STRAPS (WHEN REQUIRED) ARE SUPPLIED BY HOLLY PARK HOMES. 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
ENE8703571
STATE OF
INDIANA
PROFESSIONAL ENGINEER

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"

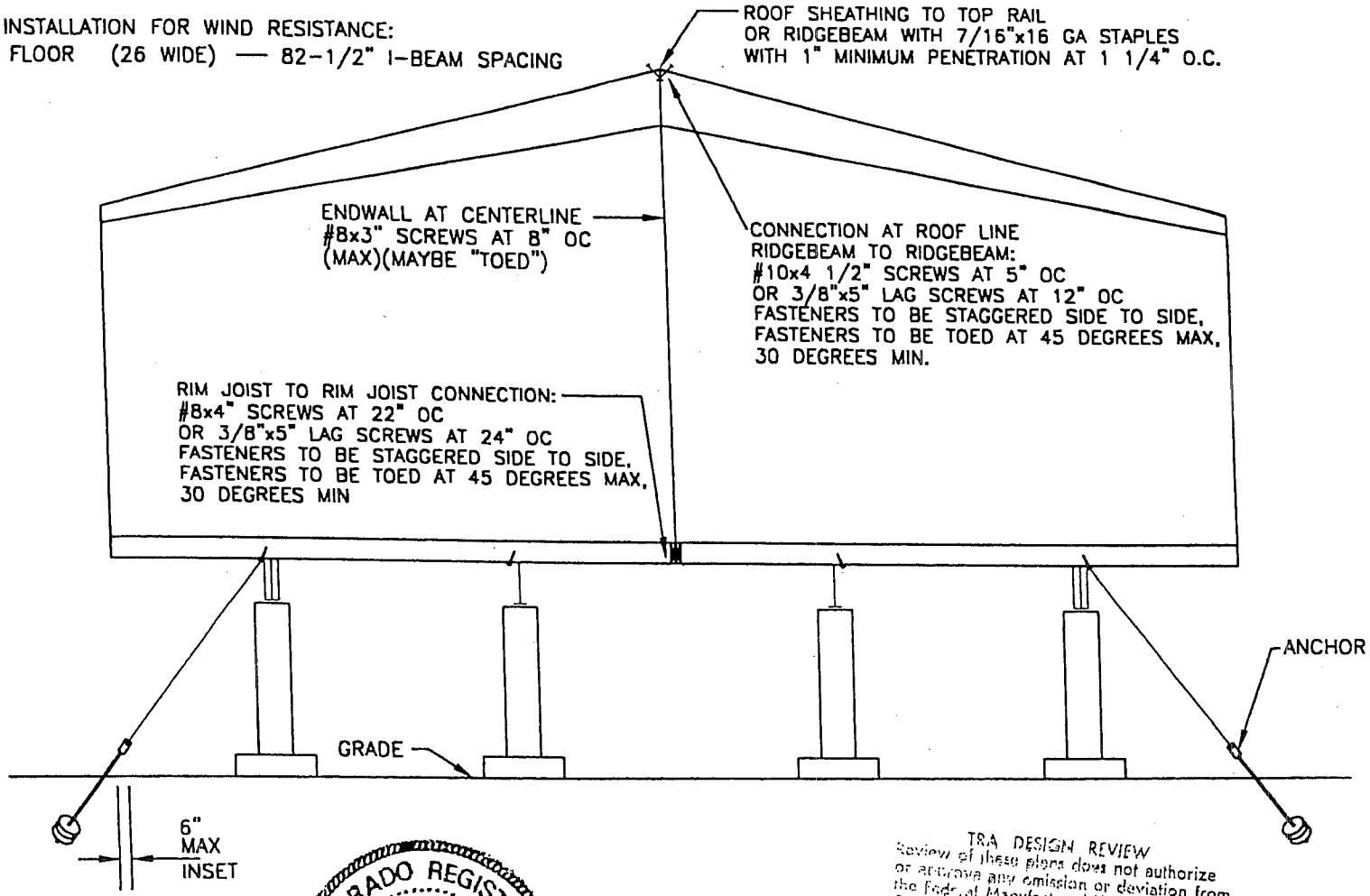
IM4.1

ON-SITE CONNECTION DET
6 ON 12 ROOF PITCH (MA

HOLLY K HOMES

GENERAL NOTES

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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1M 4.2

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

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

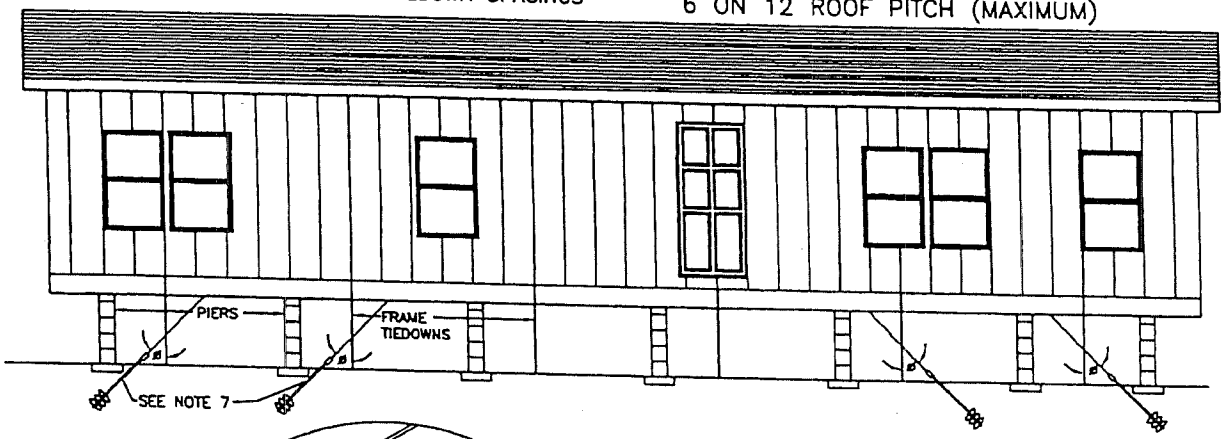
ZONE 1 (15 PSF LATERAL)

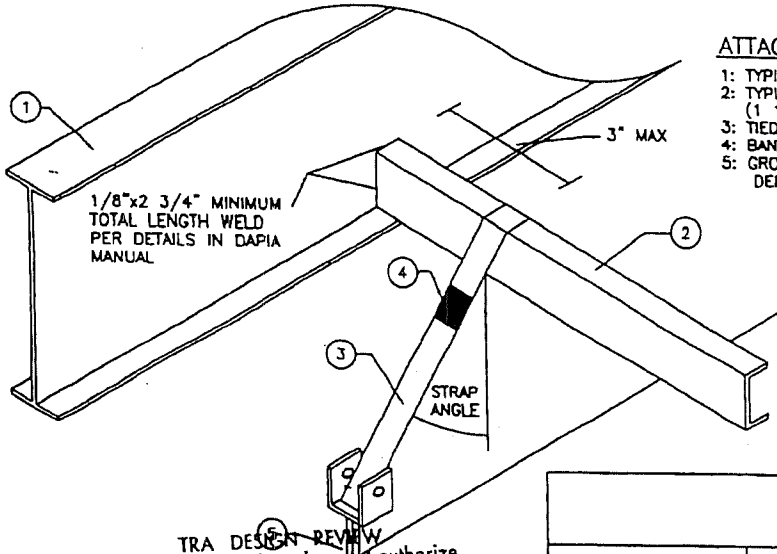
DRAWN BY: R. ULLMAN 03/14/02
CHECKED BY:

DRAWING NO.

HOLLY PARK HOMES
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 BY HOLLY PARK HOMES.
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 D3593-91, 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. 880000 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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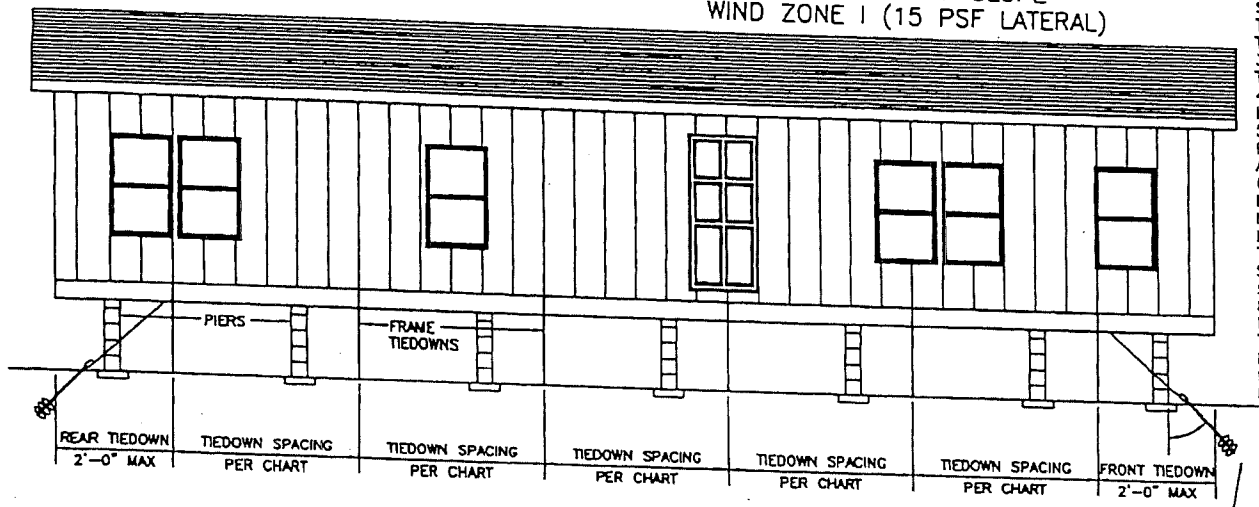
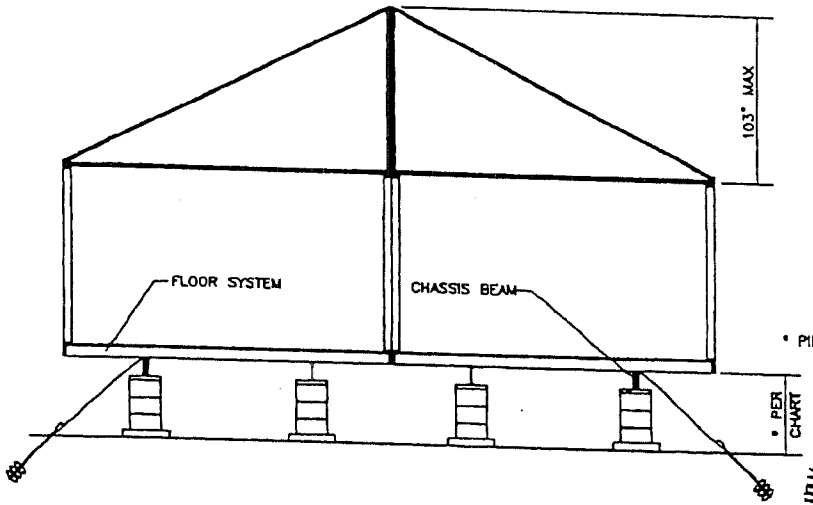
HOLLY PARK HOMES
RECOMMENDED TIEDOWN SYSTEM
6 ON 12 ROOF SLOPE
WIND ZONE I (15 PSF LATERAL)



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 BY HOLLY PARK HOMES.
5. OVER-THE-ROOF STRAPS (WHEN REQUIRED) ARE SUPPLIED BY HOLLY PARK HOMES. 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.

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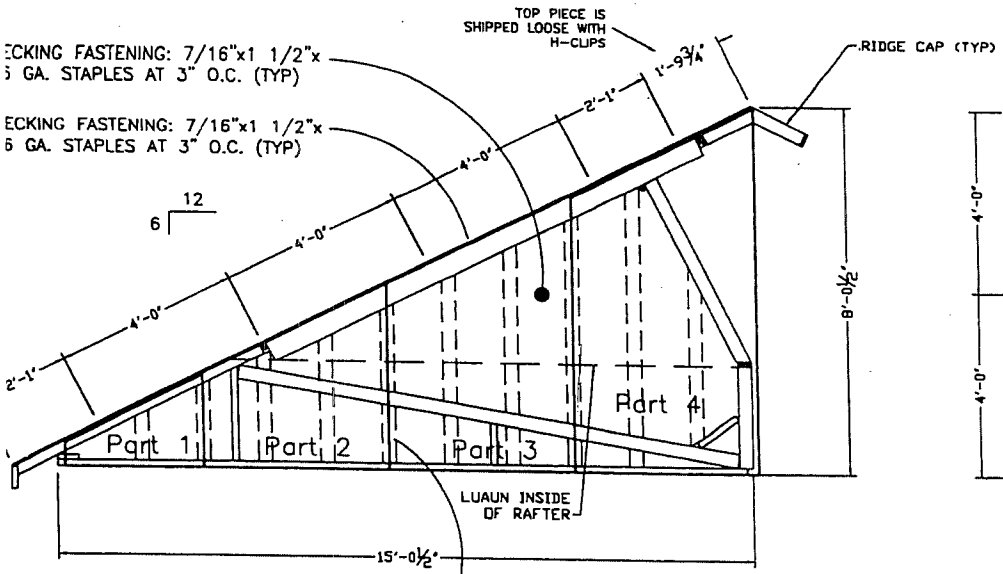
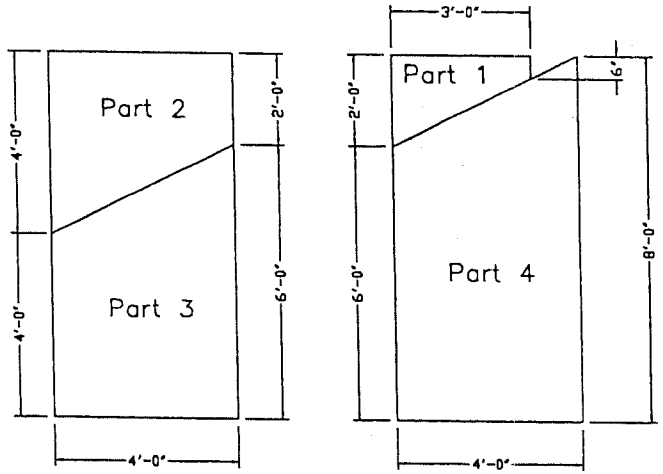
FRAME TIEDOWN SPACING CHART

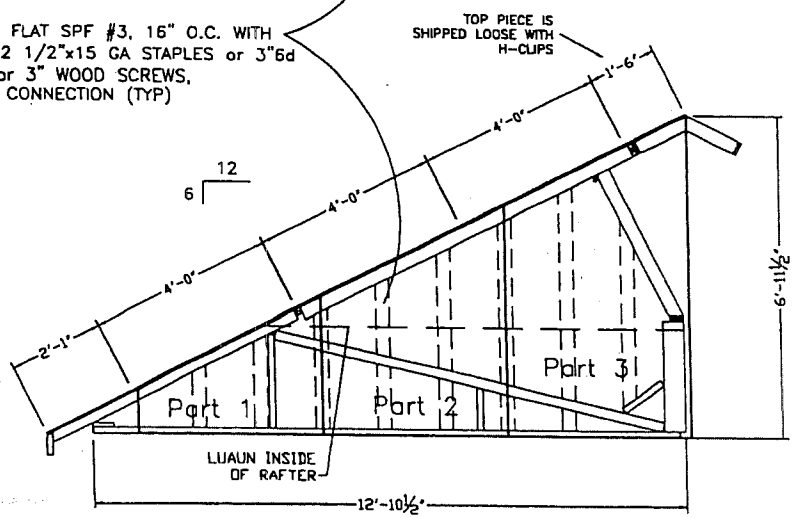
FLOOR WIDTH	SIDEWALL HEIGHT	EAVE OVERHANG	TIEDOWN SPACING	MAX * PIER HEIGHT
30'-4" (32 WIDE)	96" MAX	12" MAX	6'-0"	32"
30'-4" (32 WIDE)	96" MAX	12" MAX	5'-0"	44"

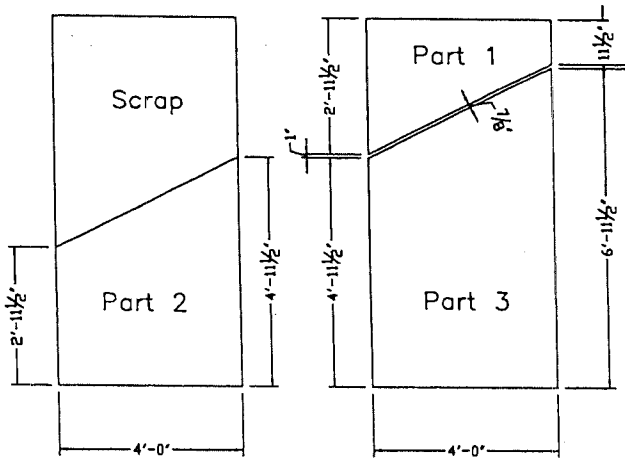




900 SERIES

END-TRUSS SHEATHING CUTS





800 SERIES

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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.

HOLLY PARK
MIDDLEBURY, IN 46540

REVISIONS

C/ CE-11-3	BY STH	DATE 12/08/03
TITLE: ROOF DECKING		NO. IM4-5

IM4-5

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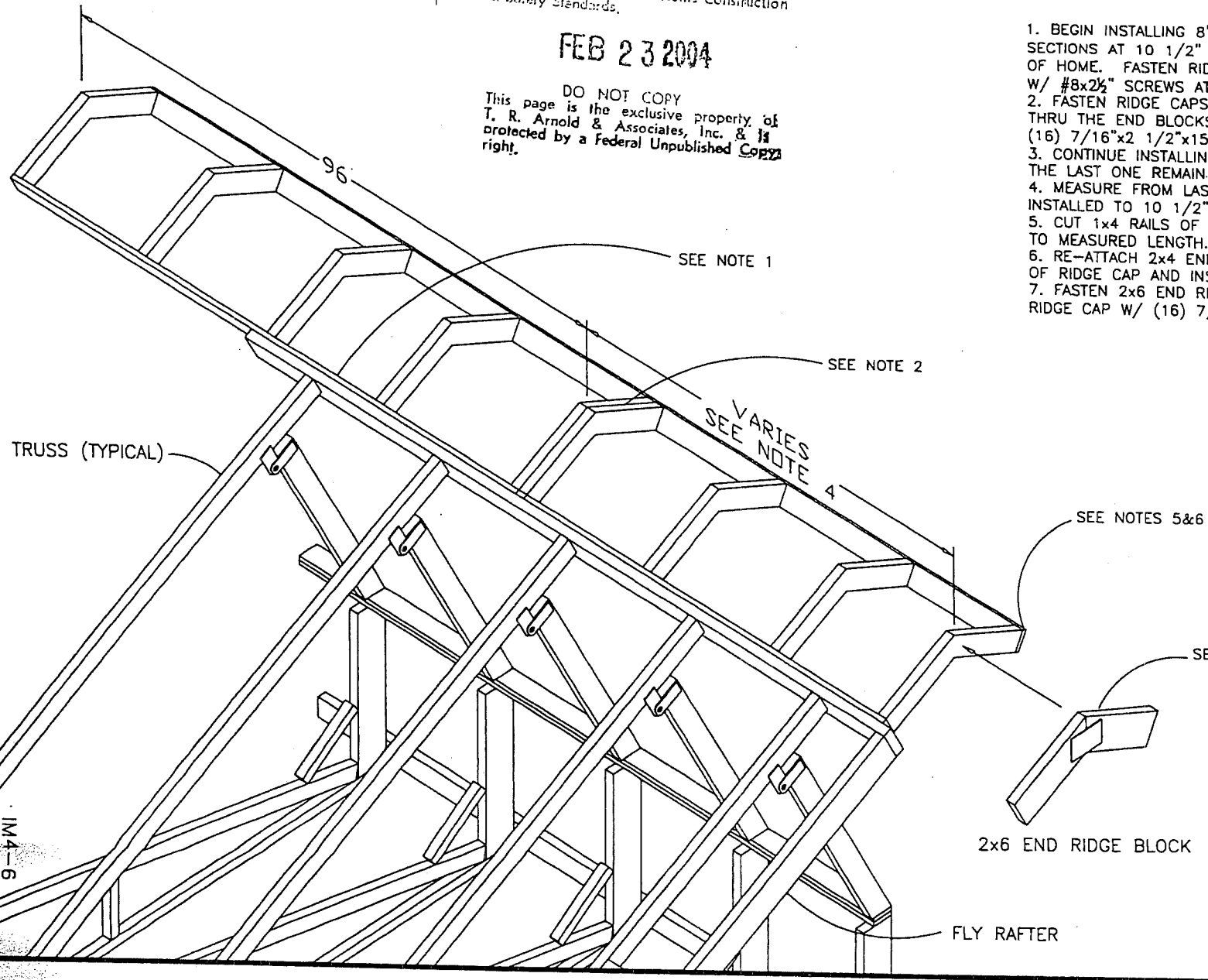
1. BEGIN INSTALLING 8' RIDGE BEAM SECTIONS AT 10 1/2" PAST ONE END OF HOME. FASTEN RIDGE CAP TO TOP RAIL W/ #8x2½" SCREWS AT 12" O.C. MAX.
2. FASTEN RIDGE CAPS END TO END TOGETHER THRU THE END BLOCKS WITH (16) 7/16"x2 1/2"x15 GA. STAPLES
3. CONTINUE INSTALLING RIDGE CAPS UNTIL THE LAST ONE REMAIN UNISTALLED.
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



800/900 SERIES

HOLLY PARK
MIDDLEBURY, IN 46540

REVISIONS

C# CE1-11-4	BY STH	DATE 12/08/03	
TITLE: RIDGE CAP INSTALLATION		NO. IM4-6	

Home Set Addendum

This Addendum to the Holly Park 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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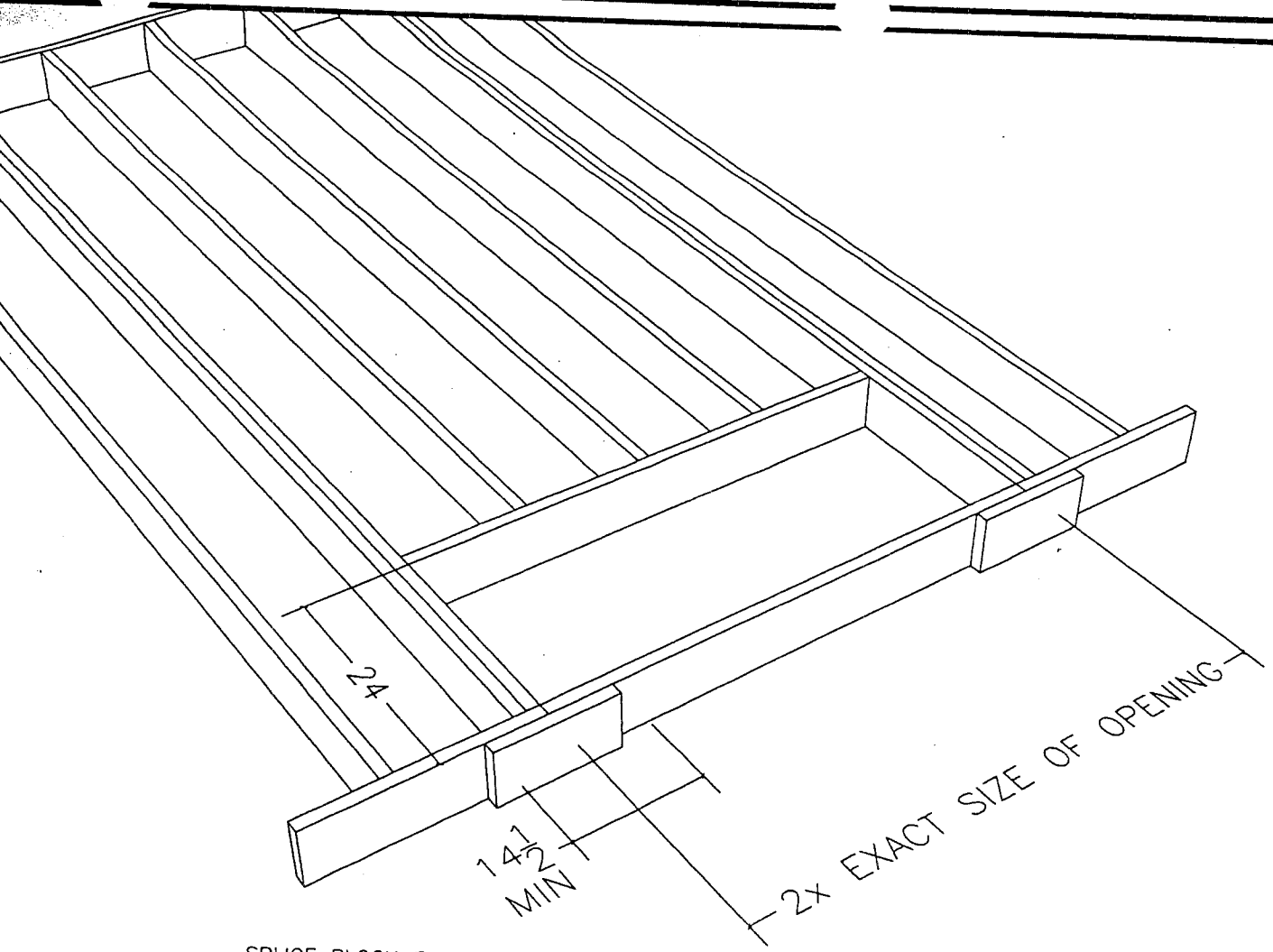

SPLICE BLOCK FASTENED WITH
(10) #8 x 2 1/2" SCREWS
5 EACH SIDE OF SPLICE

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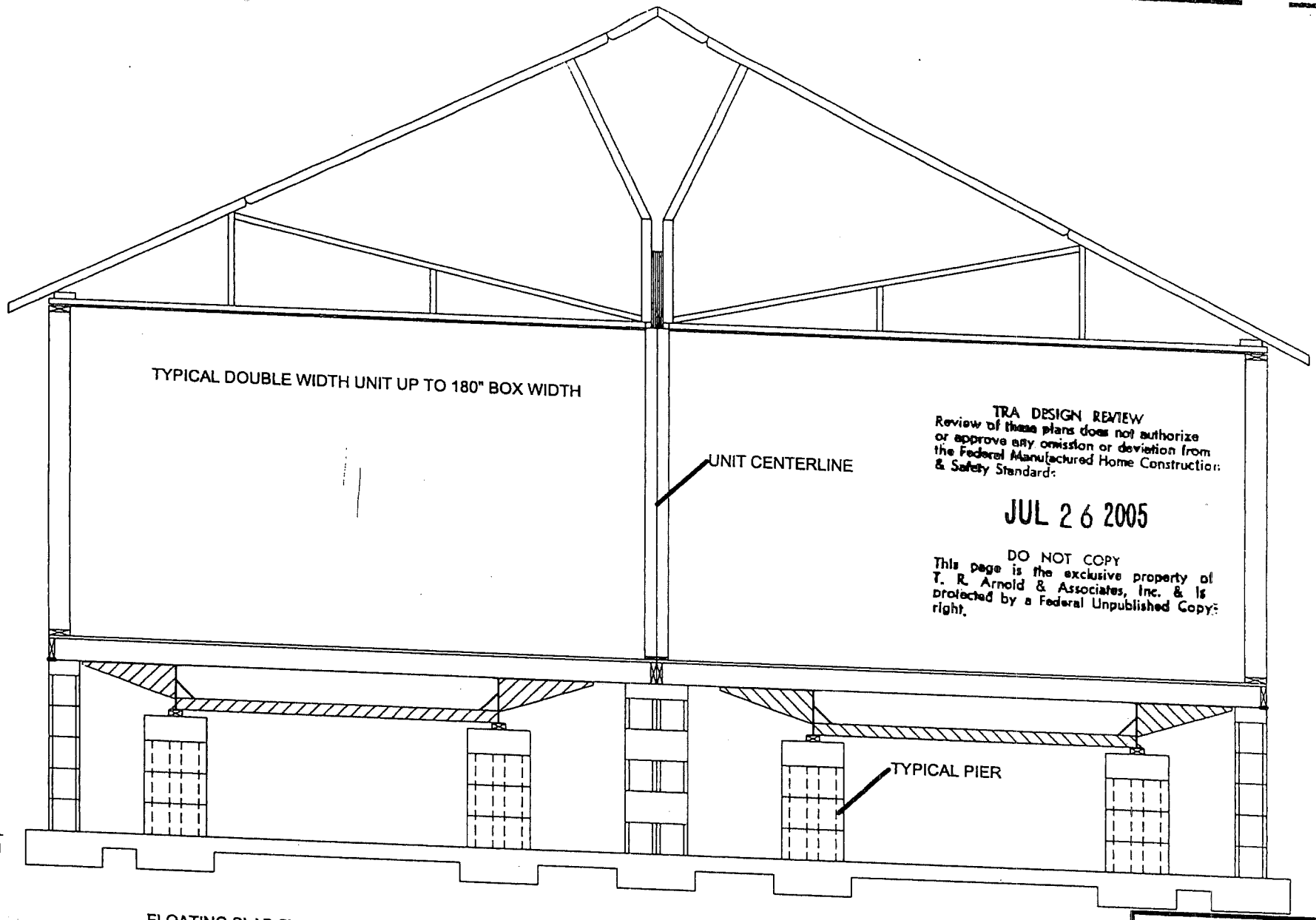
HOLLY PARK
51700 Lovejoy Dr. Middlebury, IN 46540

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

REPAIR FOR PERIMETER RAIL WHEN RETRANSPORTING HOUSE WITH RECESS ENTRY

IM-6



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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

HOLLY PARK
51700 Lovejoy Dr. Middlebury, IN 46540

REVISIONS

C/ SLAB	BY DH	DATE 7-5-05

TITLE: FLOATING SLAB SYSTEM

NO.

IM-S.1

2005 DEC 30 PM 2:50
DIV. OF ADMIN.
BLDG CODES & STDS. DIV.