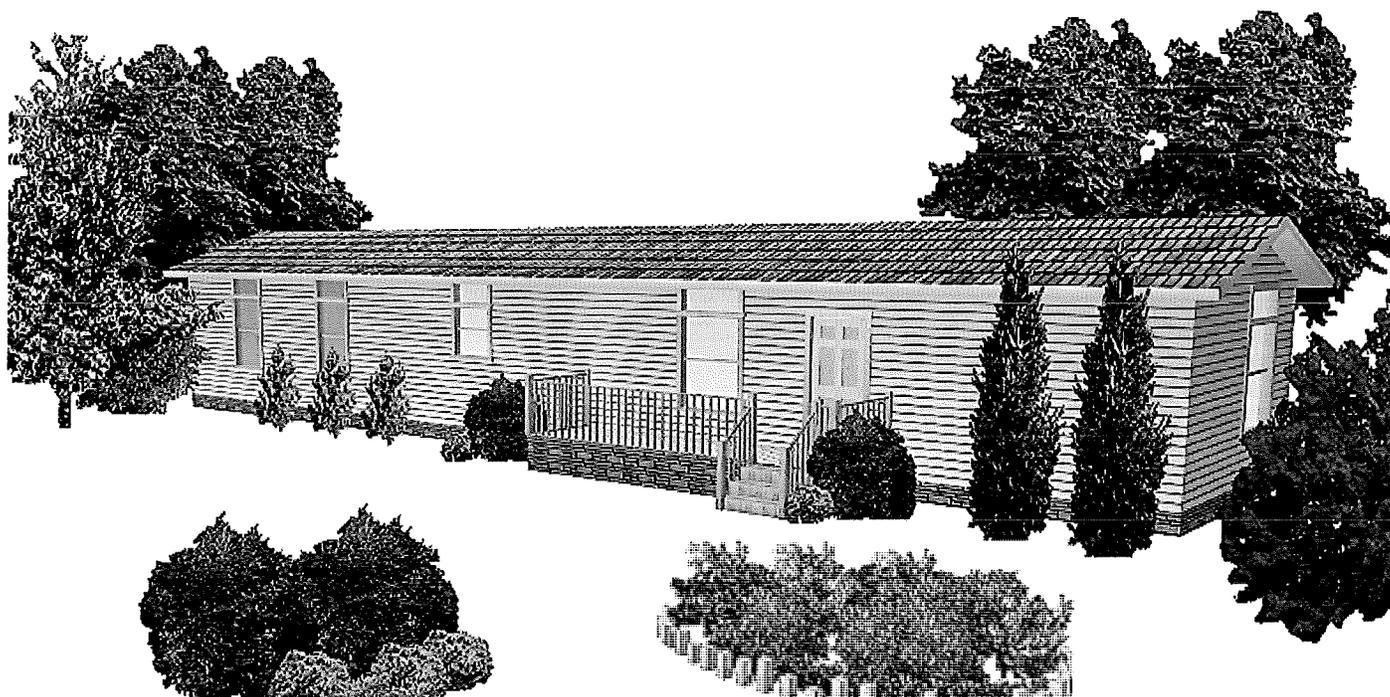


Chief

custom homes



FIELD INSTALLATION MANUAL MANUFACTURED HOMES (HUD) SINGLE SECTION HOMES

Housing Division of Chief[®] Industries, Inc.

111 Grant Street, P.O. Box 127

Aurora, Nebraska 68818-0127

Visit us at www.chiefcustomhomes.com

January 2007

21.0100

FOREWORD

Thank you for choosing Chief® Industries as your home builder. We hope your new home brings you comfort and pleasure for many years to come. This home was engineered, constructed and inspected to comply with the *Federal Manufactured Homes Construction and Safety Standards* in effect on the date of construction. Minimal specifications are required from national standards for the design, construction, thermal protection, heating systems, plumbing systems and electrical systems for HUD homes intended for residential use.

Our intent is to produce a safe and comfortable home for you. Our company standards surpass compliance with national standards. Chief® Industries has highly qualified plant personnel to inspect these standards throughout the construction process.

Before set up can even begin, you must contact the building officials in your area for necessary permits, licenses and inspections required for installation of this home. It is extremely important in preparing your home for its occupancy that it be properly blocked, set and leveled by an experienced HUD home mover, dealer or installer. Correct procedures in setting your home could prevent any costly future reconstruction.

The following step-by-step instructions were designed to assist you with the installation of your home. *Due to changes that are brought about by Chief® Industries continuing effort to improve our product and provide our customers with a wide variety of features; there may be products in or on your home that are not thoroughly covered by this manual.* **Before starting the set up process, you should go completely through your Home Owner's information carefully to see if there are supplemental details before any attempt is made in setting your home.**

NOTICE: This manual addresses the setting, repairing and maintaining of products manufactured by *Chief Custom Homes®*. In the case that the dealer, retailer or customer wishes to vary from these procedures *Chief Custom Homes®* will not be responsible for quality, durability and safety. In such case the entity varying from these procedures shall bear all responsibility for their methodologies in setting, repairing and maintaining of such products.

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INTRODUCTION

This manual contains detailed installation instructions, including specifications and procedures for erection and hookup of your manufactured home. It has been written in an objective and easy-to-understand manner so it can be understood by people without extensive technical training. It discusses the set-up of the home from preparing the site through final inspection. It includes many tables and figures giving important data for proper set-up. Careful adherence to this manual by the homeowner and installation crew, and consultation with a registered professional or structural engineer in those unusual circumstances it does not cover, will assure you of a quality, safe and affordable home for many years to come.

Prior to locating or relocating your home, contact the local authority having jurisdiction for installation to see if permits for such procedures as blocking, anchoring, or utility connections are required. Inspections may be required during installation. On private property, zoning or development covenants may apply and should be taken into consideration. **NOTE: Preparation of the site, when accomplished by other than the home installer, may not be in accordance with these instructions.**

Fire separation distances must be in accordance with the requirements of Chapter 6 of NFAP 501A, 2003 Edition or the requirements of the local authority having jurisdiction. The installer must take into account these and any local requirements.

Only trained crews should install the home. Installers should follow the safety instructions provided in this manual. **USE ENOUGH TEMPORARY WOOD BLOCKING TO SUPPORT THE HOME DURING SET-UP.** No one should be allowed under the home unless it is securely in place, even if it is not moving.

Before installing support or anchorage that is different than those methods specified in these instructions or when the site or other conditions prevent the use of these instructions, the installer must first attempt to obtain DAPIA approved designs and instructions from Chief[®] Industries Inc., Housing Division. If these are not available, obtain an alternate design prepared and certified by a registered engineer that meets the Manufactured Construction and Safety Standards and has been approved by the manufacturer and the DAPIA.

It is recommended that any home that has been reinstalled after its original installation should be inspected after it is set up, in order to assure that it has not been damaged and is properly installed.

CHIEF[®] INDUSTRIES, INC.
HOUSING DIVISION

----CONTENTS----

This booklet contains **Field Installation Specifications**
for all Chief[®] Industries, Inc., Housing Division,
Single Section Homes per category as follows:

SECTION I	REQUIREMENTS FOR LOCATION OF HOME SUPPORT PIERS
SECTION II	PIER CONSTRUCTION
SECTION III	SUPPORT BLOCKING
SECTION IV	PERIMETER FOUNDATION
SECTION V	BASEMENT CONSTRUCTION
SECTION VI	TYPICAL ANCHORAGE & FOOTING INSTRUCTIONS
SECTION VII	SITE ASSEMBLY INSTRUCTIONS

SECTION I
REQUIREMENTS FOR LOCATION
OF HOME SUPPORT PIERS
Single Section Homes

ADDENDUM - LOCATION OF HOME SUPPORT PIERS

Information contained on these addendum pages is to enhance and sometimes supersede the following pages that pertain to the details of the completion of the setting of your home.

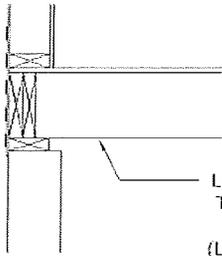
Incorrect size, location or spacing of piers may cause serious structural damage to your home. It is important to install piers around the perimeter if required for your home. Failure to do so may lead to sagging floors, walls and roofs.

The location and spacing of piers depends upon the dimensions and weight of the home, the roof load zone, the type of construction (single-section), and other factors such as the locations of doors, support wall openings or fireplace sidewall locations. Place piers on both sides of exterior door(s), any exterior openings 4' or larger and at fireplace exterior wall locations.

These piers are necessary to transfer concentrated roof loads safely to the ground. The locations of these piers are shown either by dimensioned drawings provided with your home or by labels on the bottom side of the center floor line. (Detail shown on page 21.104)

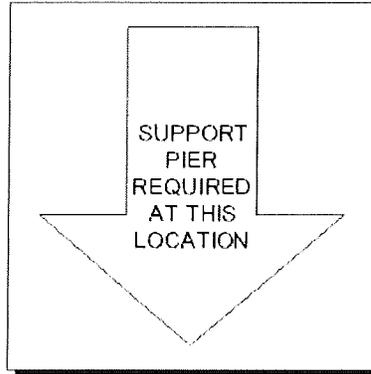
Piers used for perimeter support must be installed with the long dimension parallel to the perimeter rail. Piers may be offset up to 6" in either direction along the supported members to allow for plumbing, electrical, etc. Location of all piers (main beams, perimeter, etc) are designated by the aforementioned labels.

The load that each pier must carry depends on factors such as the dimensions of the home, the roof live load, the spacing of the piers, and the way they are used to support the home.



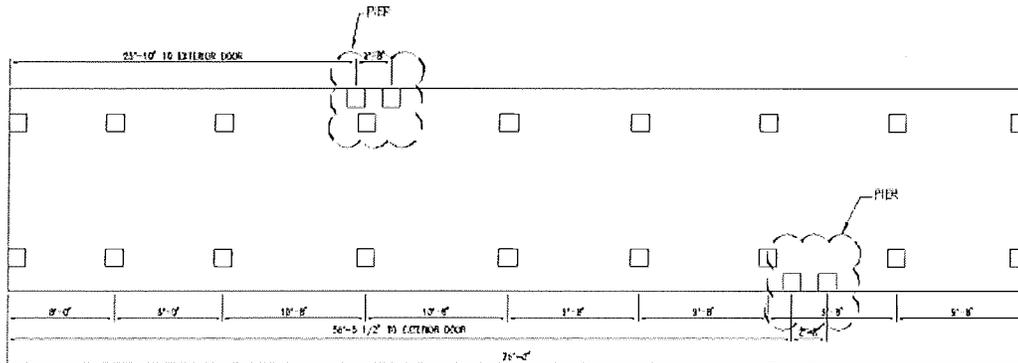
LOCATE LABEL AT EACH PIER LOCATION ON THE UNDERSIDE OF BELLY PAPER, SO IT IS STILL VISIBLE WHEN HOME IS SET. (LABEL SHOWN IN DETAIL) (DO NOT REMOVE)

PIER BLOCKING @ EXTERIOR ON BOTH SIDES OF DOOR OR ANY EXTERIOR OPENING(S) 4'-0" OR LARGER.



DETAIL OF LABEL

TYPICAL FOUNDATION PLAN
SHOWING PLACEMENT OF FOOTINGS AND PIERS



REVISIONS	DATE	 CHIEF® INDUSTRIES HOUSING DIVISION	DRWG. BY: CES 04/13/06
REVISED NOTES	3/17/10		CHKD. BY:
			SCALE: NONE 21.0104

SECTION II
PIER CONSTRUCTION
Single Section Homes

ADDENDUM - PIER CONSTRUCTION

Information contained on these addendum pages is to enhance and sometimes supersede the following pages that pertain to the details of the completion of the setting of your home.

Piers may be concrete blocks or pressure-treated wood, capped and shimmed with wedges, or adjustable manufactured metal or concrete devices. Manufactured piers must be listed and labeled for the required load capacity and installed to the pier manufacturer's installation instructions. Metal or other types of pre-manufactured piers must be provided with corrosion resistance of at least equal to that provided by a coating of zinc on steel of 0.30 oz/sq ft of surface.

You may construct piers less than 36" high out of single, open or closed-cell concrete blocks, 8" x 8" x 16". Install them so that the long side is at right angles to the supported I-beam. Horizontal offsets are not to exceed 1/2" top to bottom. Mortar is not required. Manufactured piers should be listed and labeled. Do not extend their adjusting stands beyond the limits specified by the manufacturer.

Construct all piers between 36" and 67" high, out of double, interlocked concrete blocks. Mortar will not be required. Horizontal offsets are not to exceed 1/2" top to bottom. Piers over 67" high must be designed by a registered professional engineer with consideration also given to the tie down system. They must also be constructed to provide a minimum clearance of 12" between the lowest member of the main frame and the grade under all areas of the home.

Concrete blocks should have nominal dimensions of at least 8" x 16". They must be stacked with their hollow cells aligned vertically. When piers are constructed of blocks stacked side-by-side (double stacked), every layer should be at right angles to the previous one.

Cap hollow block piers to distribute the structural load evenly across them. Caps must be of solid masonry of at least 4" nominal thickness or hard wood, or pressure treated lumber at least 2" nominal thickness, or of corrosion-protected minimum 1/2" steel, and of the same length and width as the piers they rest upon. Avoid plywood, as it may lead to unwanted settling or movement.

When split caps are used on double-stacked blocks, the caps must be installed with the long dimension across the joint in the blocks below.

Use 4" x 6" hardwood or pressure treated shims to level the home and fill any gaps between the base of the I-beam and the top of the pier cap. Always use shims in pairs. Drive them in tightly so they do not occupy more than 1" of vertical space.

Select manufactured pier heights so that their adjustable risers do not extend more than 2" when finally positioned.

All piers must rest on footings that either extend below the frost line or are otherwise protected from frost effects, and are placed on either undisturbed soil or compacted fill. Consult local authorities to determine frost penetration.

Support every pier with a properly designed footing. Footings may consist of precast or poured-in-place concrete, pads, slabs or ribbons with a 28-day compressive strength of at least 3,000 psi. Unreinforced footings must have a depth in accordance with Table 6.1. Precast footings must meet or exceed ASTM C90-02. Poured footings must be 6" thick minimum or per tables (whichever strictest). ABS Footing Pads are permitted provided they are installed in accordance with the pad manufacturer's installation instructions and certified for use in the soil classification and capacity at the site. They must be listed or labeled for the required load capacity.

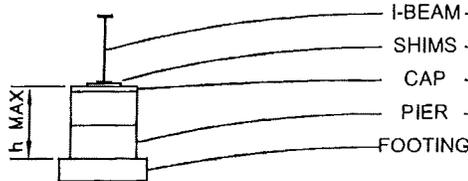
When properly engineered by a registered professional engineer, compatible with the anchorage requirements of section 6, and acceptable to the local authority having jurisdiction, "floating slab system" may be used above the frost line.

Proper sizing of footings depends upon the load-carrying capacity of both the piers and the soil. See Table 6.1 for recommended footing sizes for various pier capacities.

TYPICAL PIER CONSTRUCTION

PIER 1

I-BEAM PIER SINGLE
STACKED BLOCKS

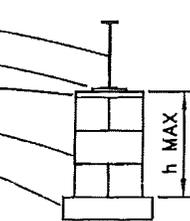


HORIZONTAL OFFSET
OF PIER = $\frac{1}{2}$ " MAXIMUM
SINGLE BLOCKS
MAXIMUM HEIGHT = 36"
(SEE NOTE #2)

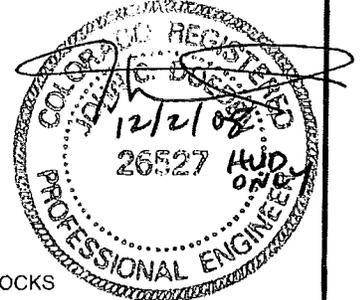
SPECIAL NOTE: MINIMUM SET HEIGHT OF
HOME IS 12" AS MEASURED UNDER HOME
TO GROUND, INCLUDING AREA BETWEEN
THE LOWEST POINT OF THE FRAME OR
CROSSMEMBERS.

PIER 2

I-BEAM PIER DOUBLE STACKED
BLOCKS PIERS OVER 36" HEIGHT
TO MAXIMUM HEIGHT, HORIZONTAL
OFFSET = 1" MAXIMUM

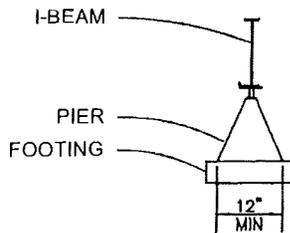


DOUBLE INTERLOCKED BLOCKS
MAXIMUM HEIGHT = 67"
OR AS ILLUSTRATED ON
MAXIMUM PIER HEIGHTS OF
FRAME TIEDOWN SPACING
CHARTS



PIER 3

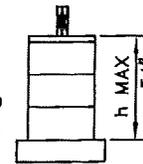
I-BEAM PIER



STEEL OR CONCRETE
MANUFACTURED PIER
(SEE NOTE #5)

PIER 4

SINGLE STACKED PIER SUPPORTING
CENTERLINE COLUMNS OR PERIMETER
OR CENTERLINE JOISTS



SINGLE STACKED
BLOCKS
PERPENDICULAR TO
CENTERLINE JOISTS
OR PARALLEL TO
PERIMETER RAIL
MAX. HEIGHT = 54"

CAPACITY AT
DOUBLE CENTERLINE
JOIST = 8000#
CAPACITY AT SINGLE
PERIMETER JOIST =
8000#

NOTES:

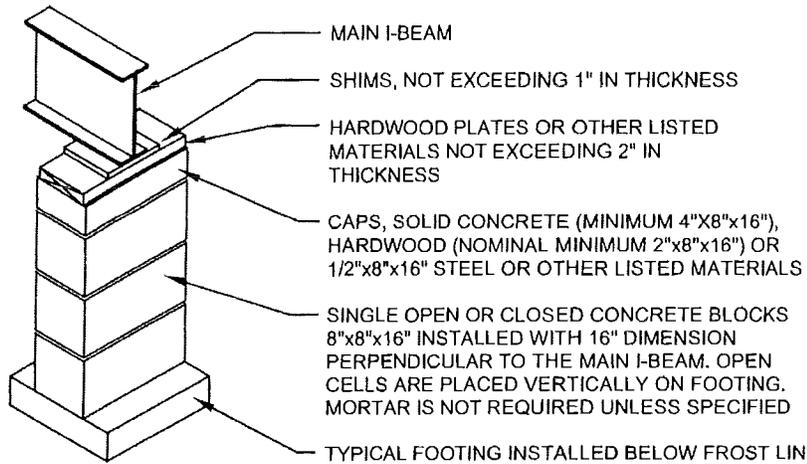
1. CONCRETE BLOCKS FOR PIERS ARE 8x8x16 NOMINAL SIZE, HOLLOW CELL LOAD BEARING CMU'S MANUFACTURED IN CONFORMANCE WITH ASTM C90-70, GRADE 'N'. OPEN CELLS ARE VERTICAL.
2. SINGLE STACKED CONCRETE BLOCKS ARE ORIENTED SO THAT LONG DIRECTION IS PERPENDICULAR TO THE LONG DIRECTION OF THE MAIN BEAM.
3. FOOTERS MAY BE PRECAST OR POURED, BUT, IN EITHER CASE, MUST BE LEVEL IN ALL DIRECTIONS. PRECAST MUST MEET OR EXCEED ASTM C90-02a. POURED FOOTERS MUST BE 6" THICK MINIMUM (OR PER TABLES, WHICHEVER IS STRICTEST) AND MUST BE MINIMUM 3000 psi COMPRESSIVE STRENGTH AT 28 DAYS.
4. PIERS ARE TO BE PLACED ON THE FOOTER APPROXIMATELY CENTERED SO THAT THE FOOTER PROJECTION FROM THE PIER IS EQUAL FROM SIDE-TO-SIDE AND FRONT-TO-BACK. PIERS MUST BE LEVEL VERTICALLY ON ALL SIDES AND SQUARE WITH THE FOOTER.
5. PREFABRICATED PIERS (TYPE #3) MUST BE CERTIFIED FOR A RATED CAPACITY AT LEAST EQUAL TO THE LOAD DETERMINED FROM THE TABLES.
6. CONCRETE TO HAVE A MINIMUM COMPRESSIVE STRENGTH (F_c') OF 3000 PSI AFTER 28 DAYS.
7. GAP BETWEEN TOP OF PIER AND MAIN FRAME MAY BE A WOOD PLATE (NOT EXCEEDING 2" IN THICKNESS) AND SHIMS (NOT EXCEEDING 1" IN THICKNESS). SHIMS SHALL BE AT LEAST 4" WIDE AND 6" LONG, FITTED AND DRIVEN TIGHT BETWEEN WOOD PLATE OR PIER AND MAIN FRAME (SHIMS TO BE PERPENDICULAR TO I-BEAM). TWO INCH OR FOUR INCH SOLID CONCRETE BLOCK MAY FILL REMAINDER OF GAP.
8. PIER HEIGHT IS MEASURED FROM TOP OF FOOTER TO THE TOP OF THE PIER. THESE DRAWINGS TYPIFY THE CONSTRUCTION ONLY OF DIMENSIONED BLOCK HEIGHTS.
9. PIER AND FOOTER DESIGNS SHOWN DO NOT CONSIDER FLOOD OR SEISMIC LOADS AND ARE NOT INTENDED FOR USE IN FLOOD OR SEISMIC HAZARD AREAS. IN THOSE AREAS, THE DESIGN MUST BE DONE BY A PROFESSIONAL ENGINEER.

FIGURE 2.1

REVISIONS	DATE	 CHIEF® INDUSTRIES HOUSING DIVISION	DRWG. BY: CES 11/08/06
REVISE FOR NEW HUD REQ.	10/8/08		CHKD. BY:
			SCALE: NONE 21.0106

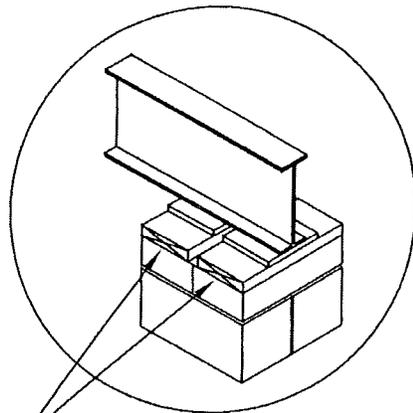
TYPICAL PIER CONFIGURATION

SINGLE STACKED CONCRETE BLOCKS

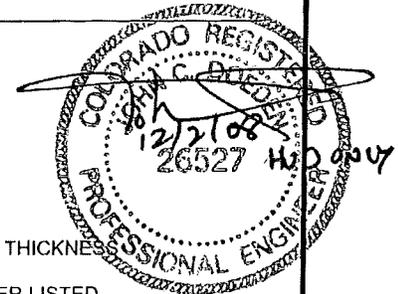
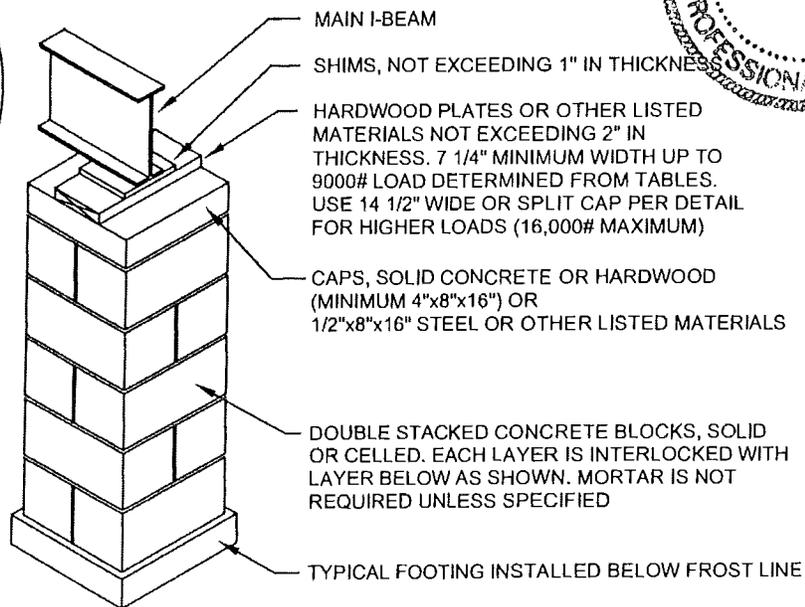


CAPACITY = 8000 LBS.

DOUBLE STACKED CONCRETE BLOCKS



WHEN SPLIT CAPS ARE USED AND THE JOINT RUNS PERPENDICULAR TO THE MAIN I-BEAMS, SHIMS AND BLOCKS MUST BE INSTALLED OVER EACH INDIVIDUAL CAP.



NOTES:

- SHIMS, WHEN REQUIRED, ARE TO BE USED IN PAIRS, INSTALLED IN OPPOSITE DIRECTIONS AND BE FITTED AND DRIVEN TIGHT BETWEEN MAIN I-BEAM FRAME AND SHIMS OR CAPS BELOW. SHIMS MUST BE INSTALLED SO THAT ALL GAPS BETWEEN THE HOME'S BEARING MEMBER (I-BEAM OR RIM JOISTS) ARE FILLED FOR THE LENGTH OF THE PIER OR REQUIRED PLATES. MINIMUM COMPRESSIVE STRESS CAPACITY FOR SHIMS IS 425 psi.
- STEEL CAPS MUST BE PROTECTED BY A MINIMUM OF A 10 MIL COATING OF AN EXTERIOR PAINT OR AN EQUIVALENT CORROSION RESISTANT PROTECTION.

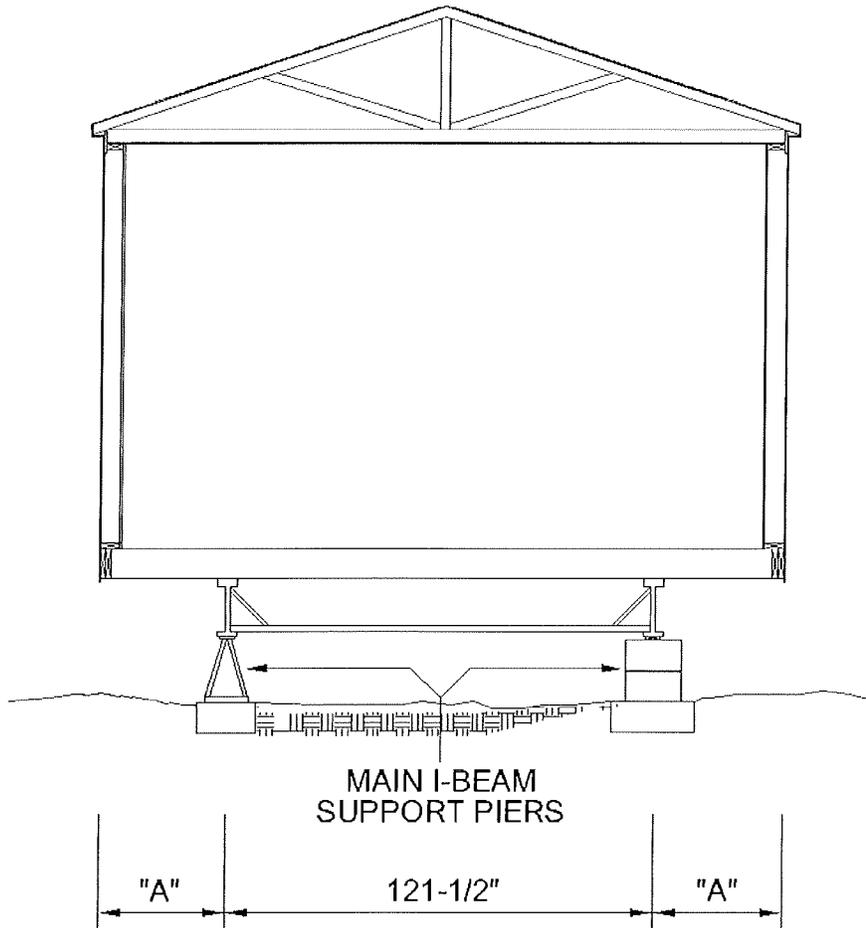
FIGURE 2.2

REVISIONS	DATE	 CHIEF® INDUSTRIES HOUSING DIVISION	DRWG. BY: DM	10/8/08
			CHKD. BY:	
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SECTION III
SUPPORT BLOCKING
Single Section Homes

STANDARD SUPPORT BLOCKING

FOR 30 LB./SQ. FT. ROOF LIVE LOAD



	ACTUAL SIZE	STANDARD ROOF PITCH	"A"
16' SINGLE WIDE	15'-2"	4/12	30-1/4"

REVISIONS	DATE

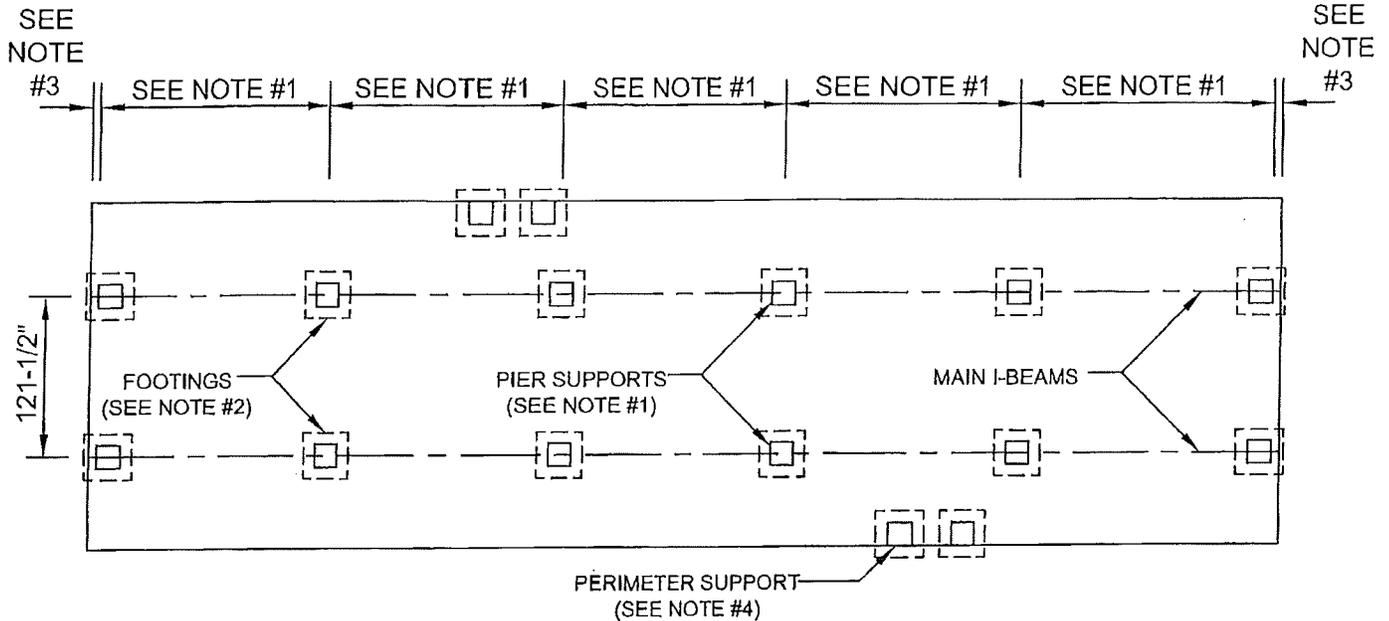


CHIEF® INDUSTRIES
HOUSING DIVISION

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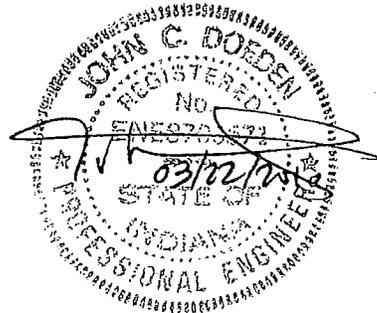
TYPICAL BLOCKING LAYOUTS

SINGLE-SECTION HOMES STANDARD BLOCKING AND 30 LB. ROOF LOAD



NOTES:

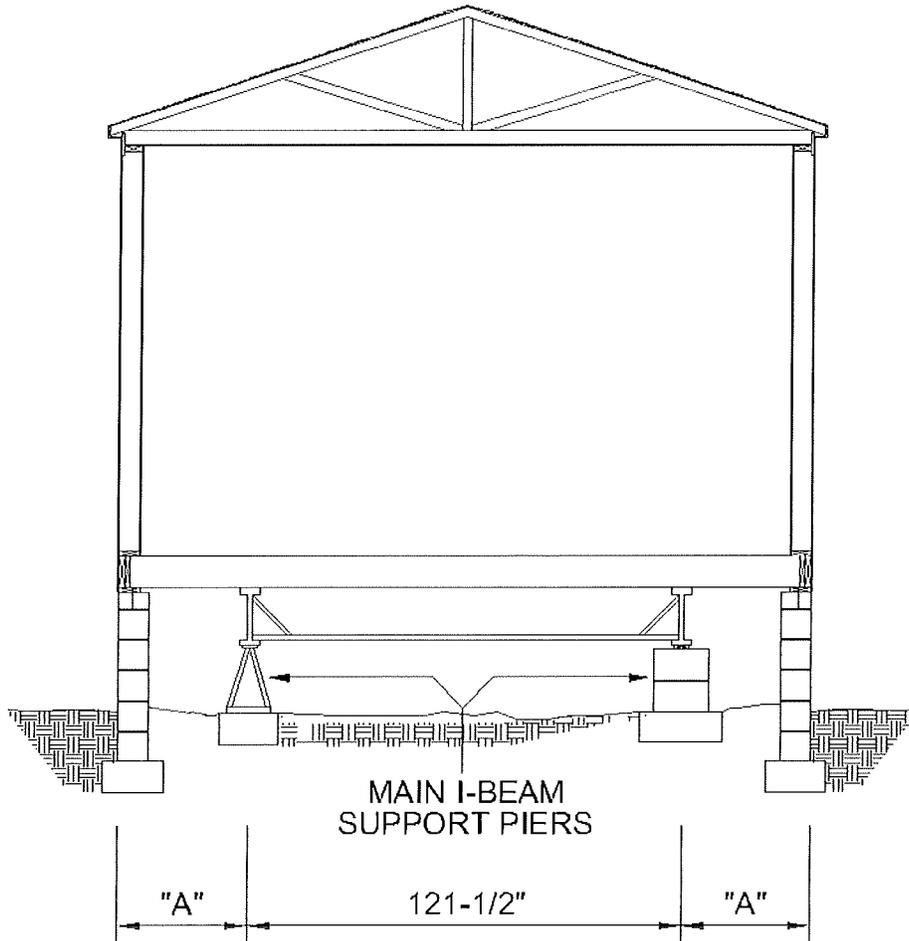
1. SEE TABLE 3.1 FOR REQUIRED PIER CAPACITY AND SPACING.
2. SEE TABLE 6.1 FOR FOOTING REQUIREMENTS.
3.
 - A. THE EDGE OF THE PIER SHALL BE LOCATED (4-1/2) INCHES IN FROM BOTH ENDS OF HOME WITH THE FOUR (4) INCH RECESSED FRAME.
 - B. THE EDGE OF THE PIER SHALL BE LOCATED (10) INCHES IN FROM BOTH ENDS OF HOME WITH THE TEN (10) INCH RECESSED FRAME.
4. PERIMETER PIERS SHALL BE LOCATED ON BOTH SIDES OF ALL SIDEWALL EXTERIOR DOORS, AND ANY OTHER SIDEWALL EXTERIOR OPENING(S) 4'-0" OR LARGER.
5. ABOVE DESIGN IS FOR 30 PSF ROOF LIVE LOADS ONLY.



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REVISED NOTES	3/17/10		CHKD. BY:	
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STANDARD SUPPORT BLOCKING

WITH OPTIONAL ROOF LOADS



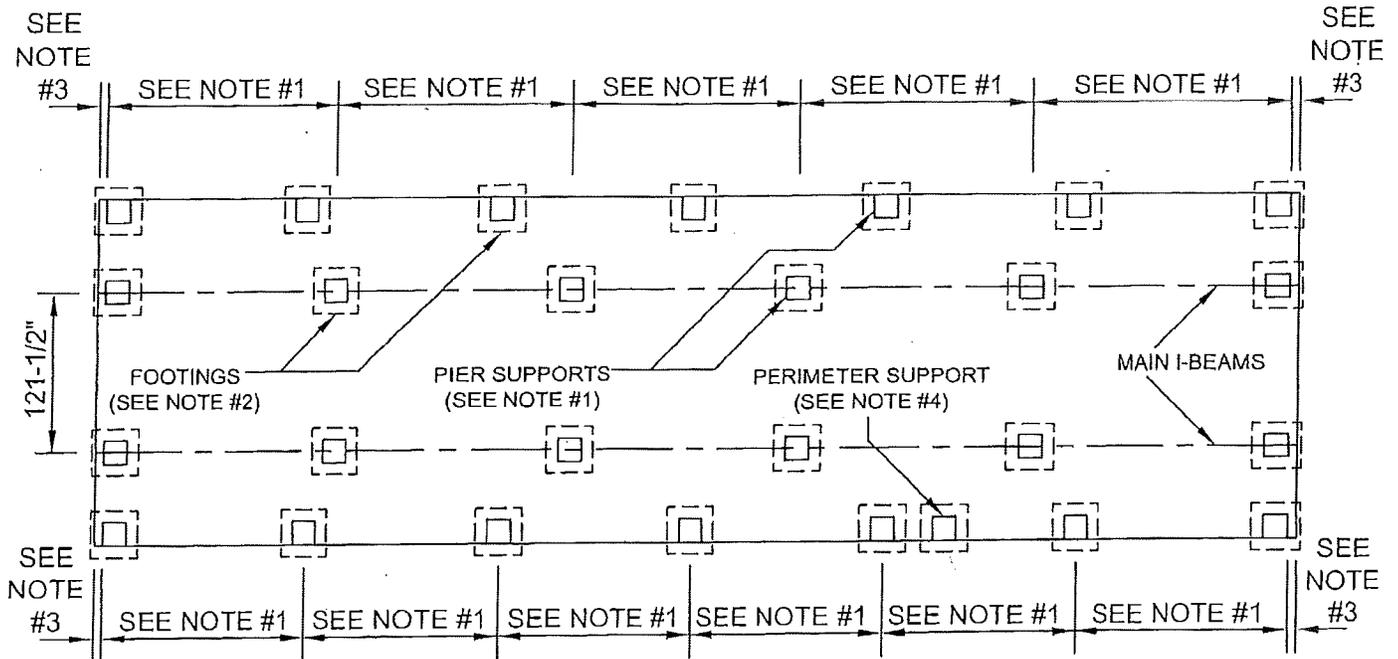
	ACTUAL SIZE	STANDARD ROOF PITCH	"A"
16' SINGLE WIDE	15'-2"	4/12	30-1/4"

REVISIONS	DATE	 CHIEF® INDUSTRIES HOUSING DIVISION	DRWG. BY: CES	01/27/04
			CHKD. BY:	
			SCALE: NONE	21.0110

TYPICAL BLOCKING LAYOUTS

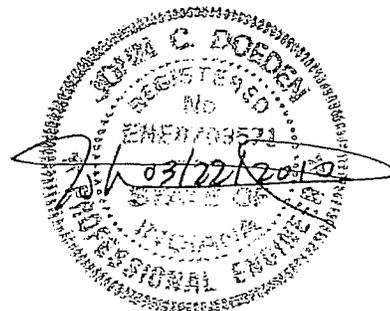
SINGLE-SECTION HOMES OPTIONAL ROOF LOADS W/ PERIMETER BLOCKING

* PERIMETER FOUNDATION MAY BE USED IN LIEU OF BELOW - SEE FIG. 4.1.



NOTES:

1. A. SEE TABLE 3.2 FOR REQUIRED PIER CAPACITY AND SPACING OF MAIN I-BEAM PIERS.
- A. SEE TABLE 3.3 FOR REQUIRED PIER CAPACITY AND SPACING OF PERIMETER (SIDEWALL) PIERS.
2. SEE TABLE 6.1 FOR FOOTING REQUIREMENTS.
3. A. THE EDGE OF THE PIER SHALL BE LOCATED (4-1/2) INCHES IN FROM THE END OF HOME WITH THE FOUR (4) INCH RECESSED FRAME.
- B. THE EDGE OF THE PIER SHALL BE LOCATED TEN (10) INCHES IN FROM THE END OF HOME WITH THE TEN (10) INCH RECESSED FRAME.
4. PERIMETER PIERS SHALL BE LOCATED ON BOTH SIDES OF ALL SIDEWALL EXTERIOR DOORS AND ANY OTHER SIDEWALL OPENING(S) 4'-0" OR LARGER.



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			CHKD. BY:	
			SCALE: NONE	21.0111

MINIMUM PIER CAPACITY TABLES

SINGLE-SECTION HOMES MAIN I-BEAM BLOCKING WITHOUT PERIMETER BLOCKING

SECTION WIDTH (FEET)	ROOF LIVE LOAD (PSF)	MINIMUM PIER CAPACITY (POUNDS)				
		MAXIMUM PIER SPACING (FEET)				
		4'-0"	5'-4"	6'-8"	8'-0"	10'-0"
16 WIDE (182" FLOOR) 6" MAX. EAVE	30 PSF	3420#	4410#	5405#	6395#	7880#

SEE PERIMETER BLOCKING REQUIREMENTS FOR ROOF LOADS HIGHER THAN 30 PSF AND FOR FLOORS NOT CAPABLE OF SUPPORTING ADDITIONAL ROOF LIVE LOADS

NOTES:

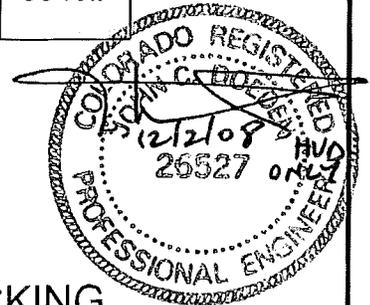
1. MAXIMUM EAVE IS (6) INCHES.
2. MAXIMUM SPACING OF PIERS IS 8'-0" O.C. FOR 8" I-BEAM, 10'-0" O.C. FOR 10" I-BEAM & FOR 12" I-BEAM STARTING NO MORE THAN 2'-0" FROM EACH END.
3. REFERENCE TABLE 6.1 FOR FOOTING SIZES CORRESPONDING TO THE LOAD DETERMINED IN THE TABLES (INCLUDES WIEGHT OF BLOCK PIER AND CONCRETE FOOTER)
4. LOADS BASED ON AN I-BEAM SPACING OF 121-1/2" CENTER TO CENTER.

TABLE 3.1

SINGLE-SECTION HOMES MAIN I-BEAM BLOCKING WITH PERIMETER BLOCKING

SECTION WIDTH (FEET)	ROOF LIVE LOAD (PSF)	MINIMUM PIER CAPACITY (POUNDS)				
		MAXIMUM PIER SPACING (FEET)				
		4'-0"	5'-4"	6'-8"	8'-0"	10'-0"
16 WIDE (182" FLOOR)	40, 60, & 80	1580#	1975#	2365#	2760#	3345#

TABLE 3.2



SINGLE-SECTION HOMES ROOF LOAD SIDEWALL PERIMETER BLOCKING

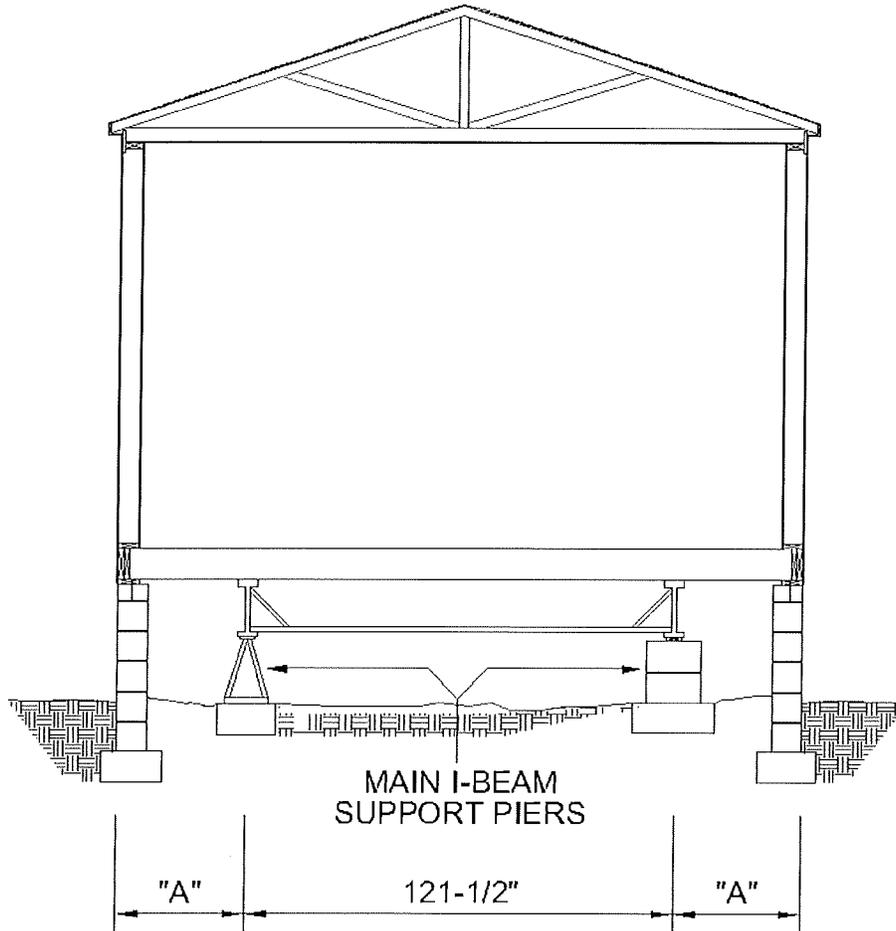
SECTION WIDTH (FEET)	ROOF LIVE LOAD (PSF)	MINIMUM PIER CAPACITY (POUNDS)			
		MAXIMUM PIER SPACING (FEET)			
		4'-0"	5'-4"	6'-8"	8'-0"
16 WIDE (182" FLOOR) 6" EAVE MAX.	40	2405#	3075#	3740#	4410#
	60	3050#	3935#	4820#	5700#
	80	3700#	4800#	5895#	N/A

TABLE 3.3

REVISIONS	DATE	 CHIEF® INDUSTRIES HOUSING DIVISION	DRWG. BY: CES 01/27/04
			CHKD. BY:
			SCALE: NONE 21.0112

SECTION IV
PERIMETER FOUNDATION
Single Section Homes

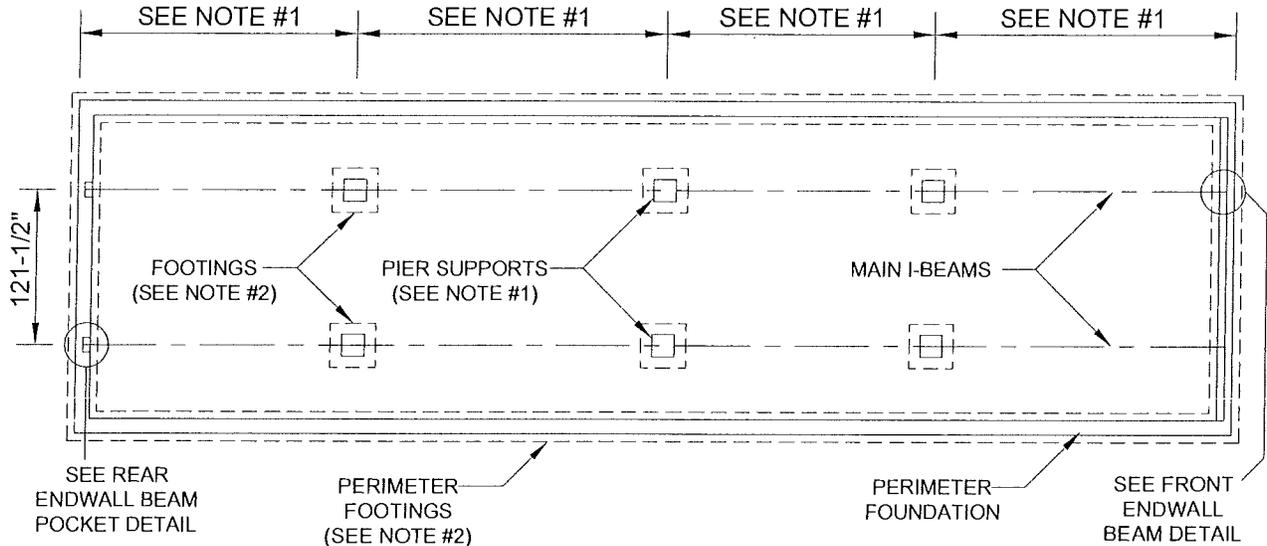
PERIMETER FOUNDATION W/PIERS



	ACTUAL SIZE	STANDARD ROOF PITCH	"A"
16' SINGLE WIDE	15'-2"	4/12	30-1/4"

REVISIONS	DATE	 CHIEF® INDUSTRIES HOUSING DIVISION	DRWG. BY: CES	01/27/04
			CHKD. BY:	
			SCALE: NONE	21.0114

TYPICAL BLOCKING LAYOUT SINGLE-SECTION HOMES PERIMETER FOUNDATION WITH PIERS 4" RECESSED FRAME



NOTES:

1. SEE TABLE 3.2 FOR REQUIRED PIER CAPACITY AND SPACING.
2. SEE TABLE 6.1 FOR FOOTING REQUIREMENTS.
3. FOUNDATION WALL TO BE CONSTRUCTED IN ACCORDANCE WITH 1 AND 2 FAMILY DWELLING CODE OR ANSI A225.1 "MANUFACTURED HOME INSTALLATION" OR PER LOCAL CODES.

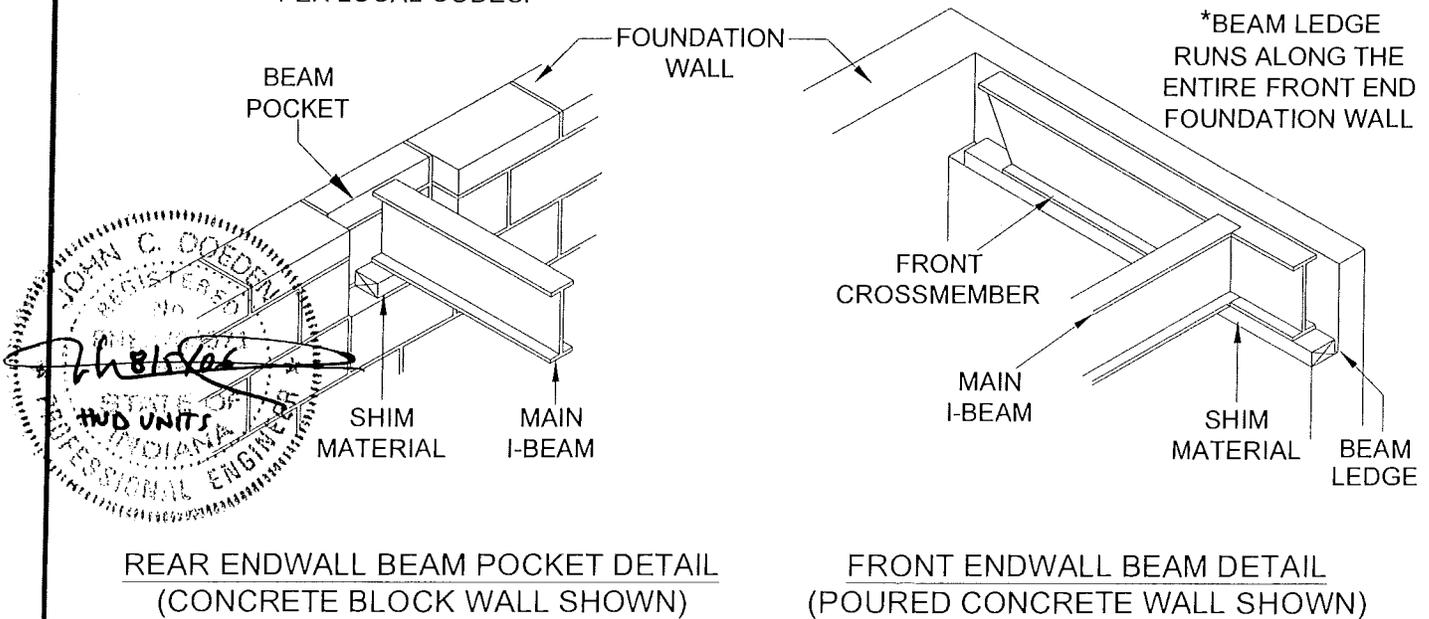
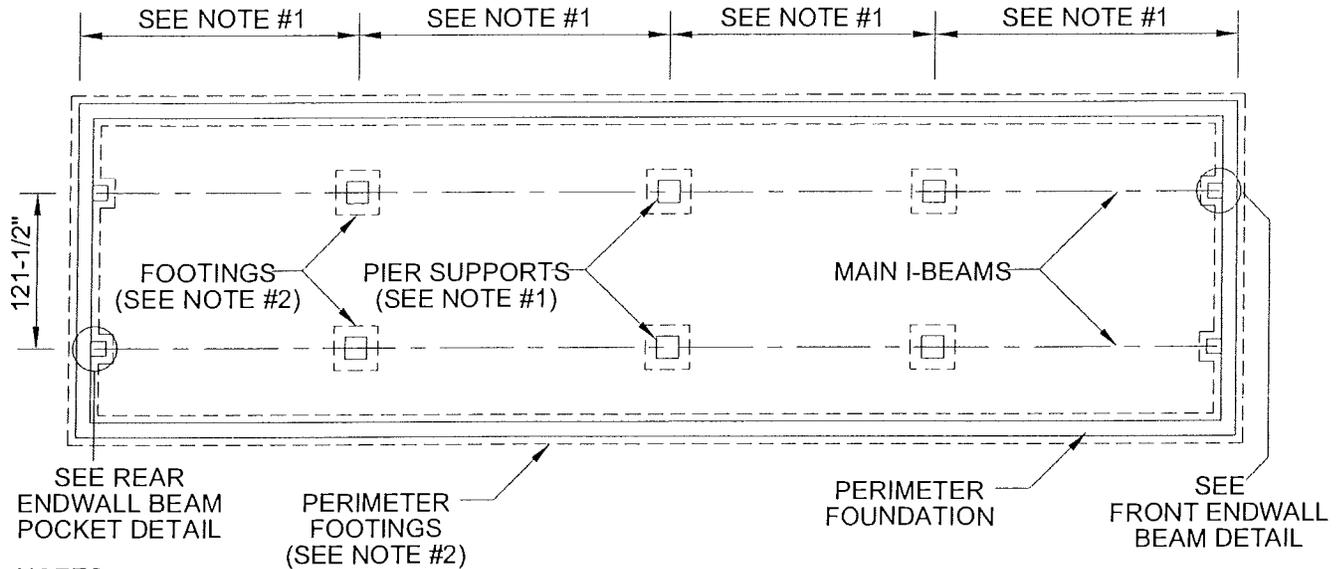


FIGURE 4.1

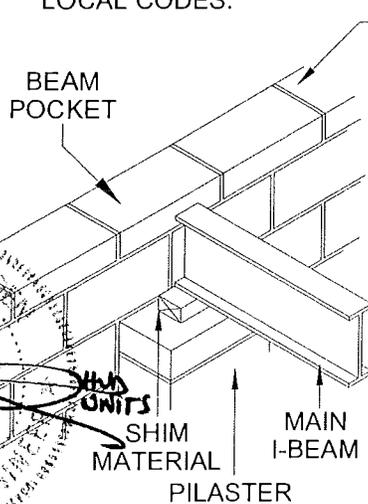
REVISIONS	DATE	 CHIEF® INDUSTRIES HOUSING DIVISION	DRWG. BY: CES 01/28/04	
			CHKD. BY:	
			SCALE: NONE	21.0115

TYPICAL BLOCKING LAYOUT SINGLE-SECTION HOMES PERIMETER FOUNDATION WITH PIERS 10" RECESSED FRAME

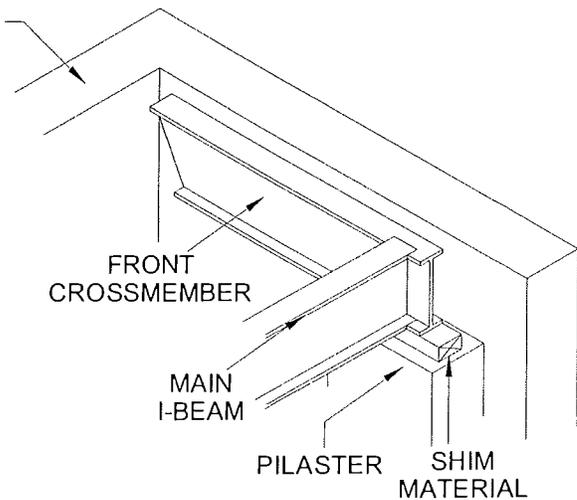


NOTES:

1. SEE TABLE 3.3 FOR REQUIRED PIER CAPACITY AND SPACING.
2. SEE TABLE 6.1 FOR FOOTING REQUIREMENTS.
3. FOUNDATION WALL TO BE CONSTRUCTED IN ACCORDANCE WITH 1 AND 2 FAMILY DWELLING CODE OR ANSI A225.1 "MANUFACTURED HOME INSTALLATION" OR PER LOCAL CODES.



REAR ENDWALL BEAM POCKET DETAIL
(CONCRETE BLOCK WALL SHOWN)



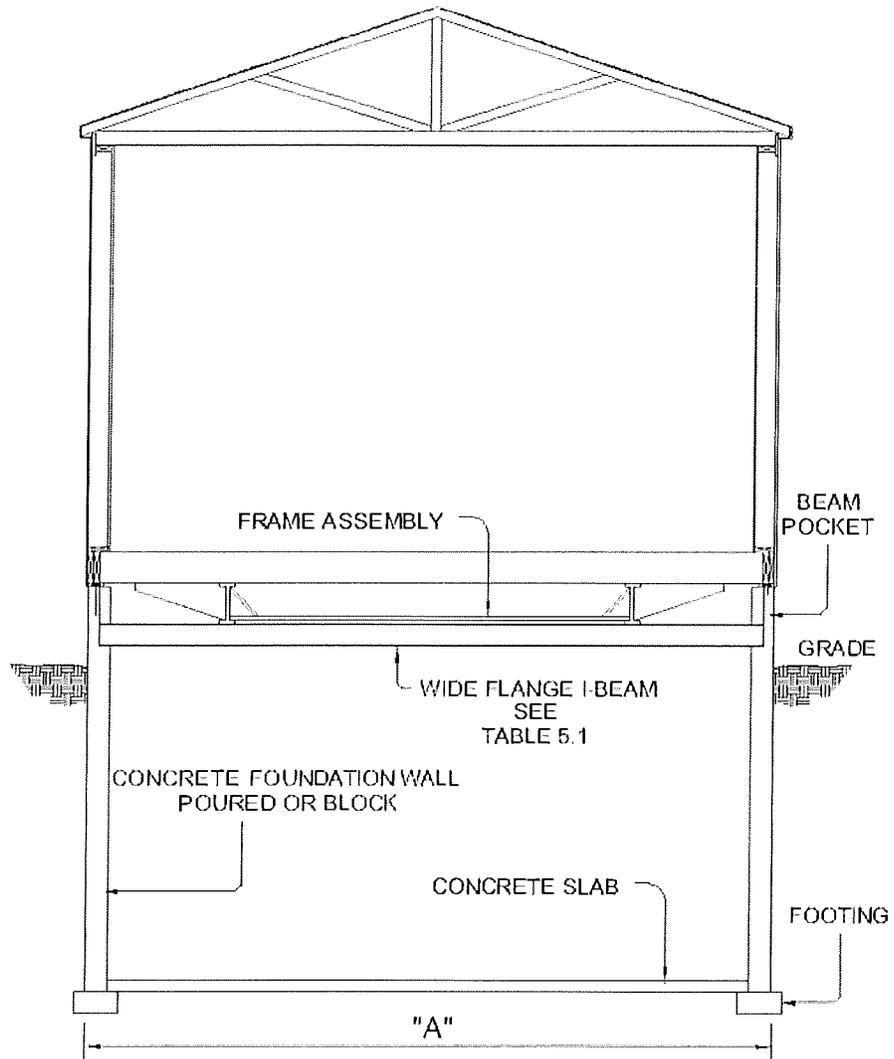
FRONT ENDWALL BEAM DETAIL
(POURED CONCRETE WALL SHOWN)

FIGURE 4.2

REVISIONS	DATE	 CHIEF® INDUSTRIES HOUSING DIVISION	DRWG. BY: CES	01/28/04
			CHKD. BY:	
			SCALE: NONE	21.0116

SECTION V
BASEMENT CONSTRUCTION
Single Section Homes

BASEMENT CONSTRUCTION w/ CROSSBEAMS

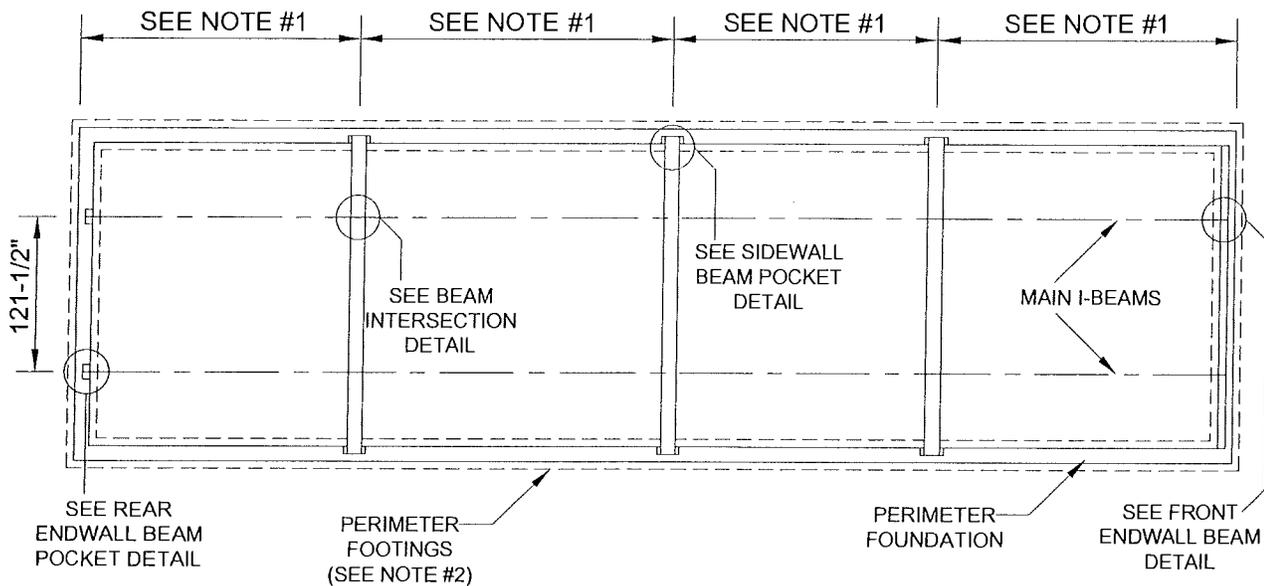


NOTE:
 ALL FOUNDATION AND FOOTING DESIGN AND CONSTRUCTION IS TO BE PROVIDED BY A REGISTER ARCHITECT OR PROFESSIONAL ENGINEER. CHIEF INDUSTRIES DOES NOT PROVIDE THIS INFORMATION DUE TO LOCAL JURISDICTION REQUIREMENTS, VARYING SOIL CLASSIFICATION, BACKFILL COMPOSITION, ETC.

	ACTUAL SIZE	STANDARD ROOF PITCH	"A"
16' SINGLE WIDE	15'-2"	4/12	182"

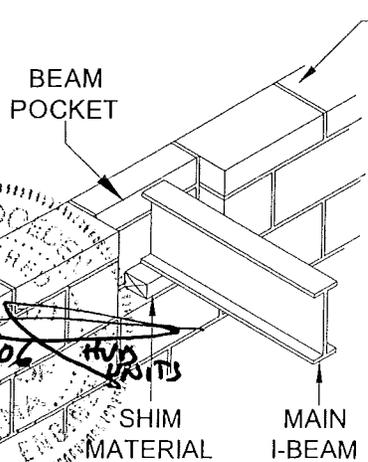
REVISIONS	DATE	 CHIEF® INDUSTRIES HOUSING DIVISION	DRWG. BY: CES	01/28/04
ADDED NOTES	3/18/10		CHKD. BY:	
			SCALE: NONE	21.0118

TYPICAL BASEMENT LAYOUT SINGLE-SECTION HOMES PERIMETER FOUNDATION WITH CROSSBEAMS 4" RECESSED FRAME

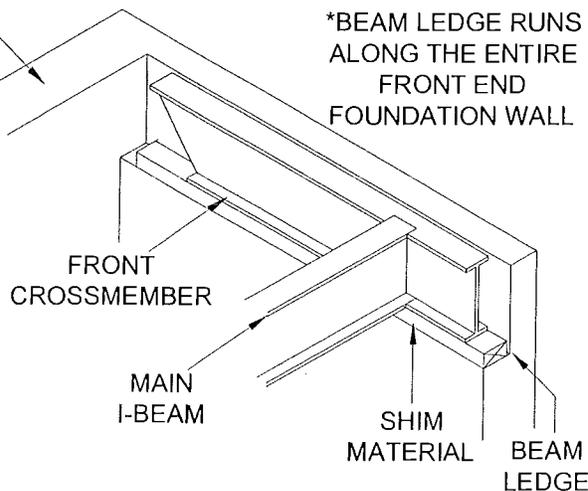


NOTES:

1. SEE TABLE 5.1 FOR REQUIRED BEAM SIZE AND SPACING.
2. SEE TABLE 6.1 FOR FOOTING REQUIREMENTS.



**REAR ENDWALL BEAM POCKET DETAIL
(CONCRETE BLOCK WALL SHOWN)**

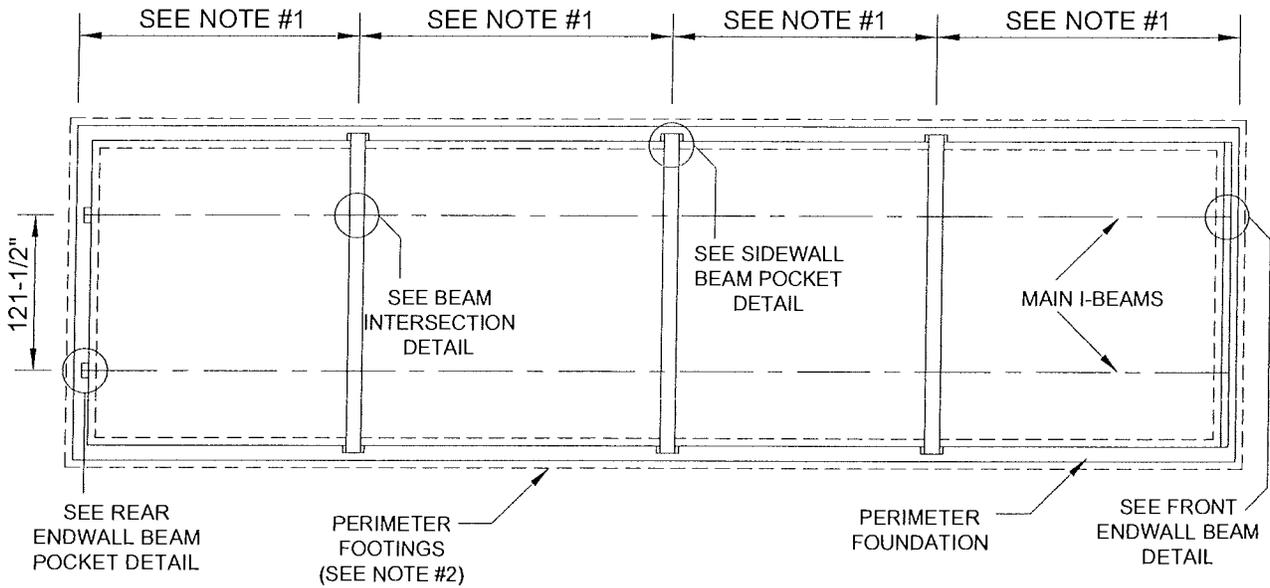


**FRONT ENDWALL BEAM DETAIL
(POURED CONCRETE WALL SHOWN)**

FIGURE 5.1

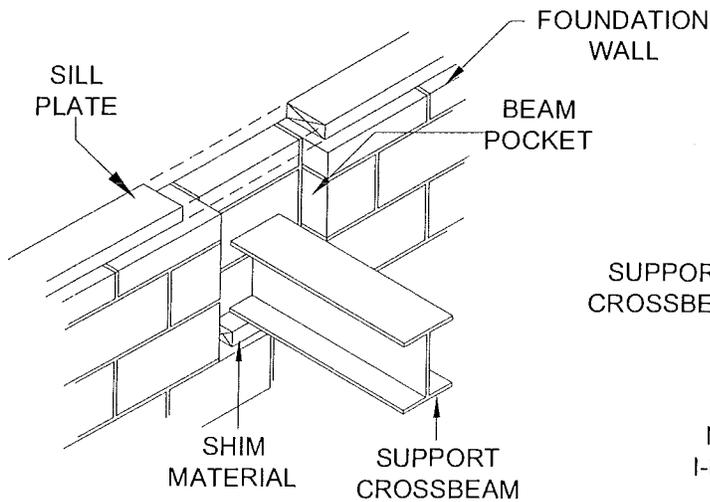
REVISIONS	DATE	CHIEF® INDUSTRIES HOUSING DIVISION	DRWG. BY: CES	01/28/04
			CHKD. BY:	
			SCALE: NONE	21.0119

TYPICAL BASEMENT LAYOUT SINGLE-SECTION HOMES PERIMETER FOUNDATION WITH CROSSBEAMS 4" RECESSED FRAME

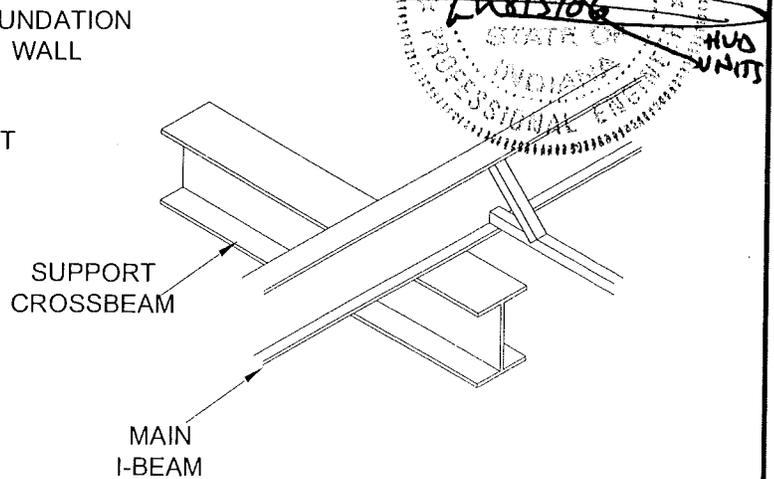


NOTES:

1. SEE TABLE 5.1 FOR REQUIRED BEAM SIZE AND SPACING.
2. SEE TABLE 6.1 FOR FOOTING REQUIREMENTS.



SIDEWALL BEAM POCKET DETAIL
(CONCRETE BLOCK WALL SHOWN)

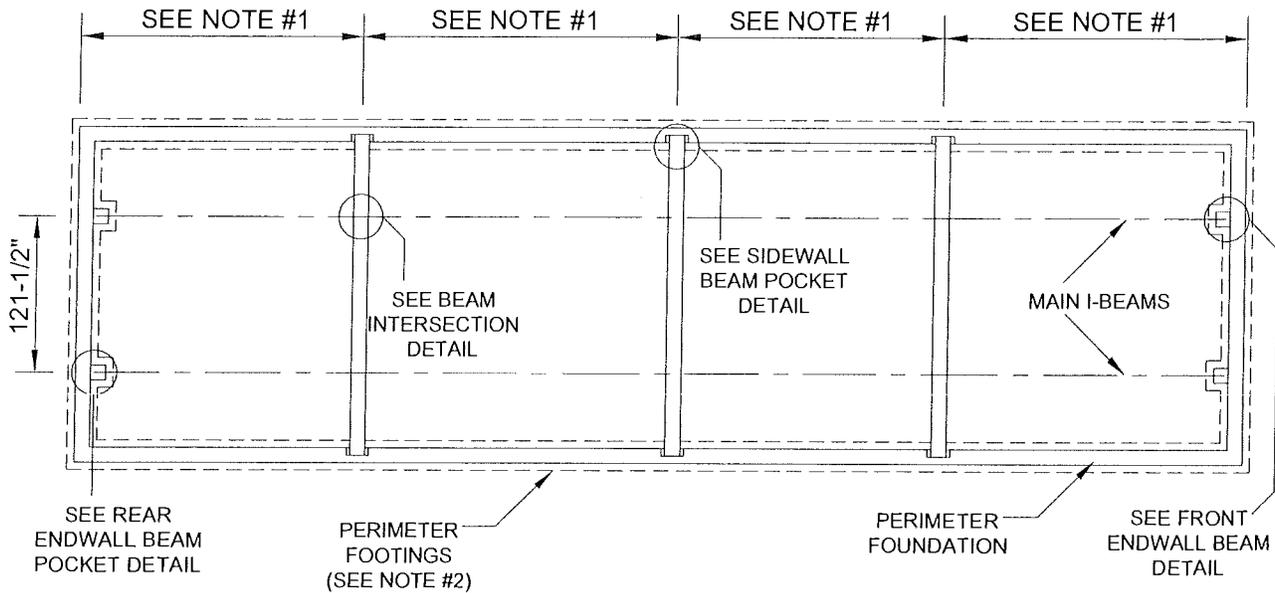


BEAM INTERSECTION DETAIL

FIGURE 5.2

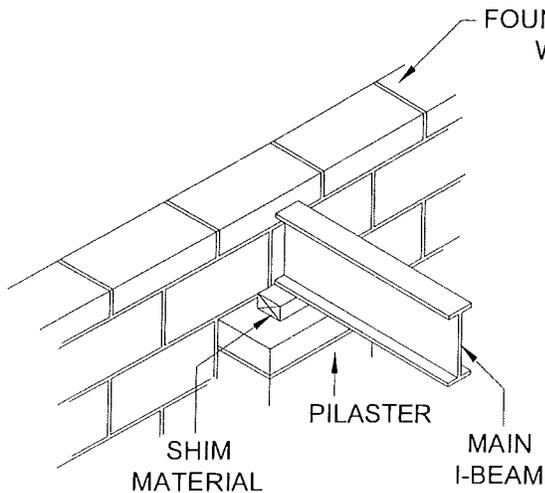
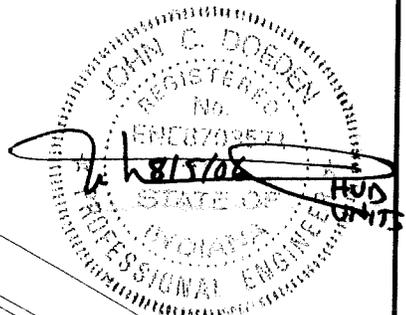
REVISIONS	DATE	CHIEF® INDUSTRIES HOUSING DIVISION	DRWG. BY: CES	01/28/04
			CHKD. BY:	
			SCALE: NONE	21.0120

TYPICAL BASEMENT LAYOUT SINGLE-SECTION HOMES PERIMETER FOUNDATION WITH CROSSBEAMS 10" RECESSED FRAME

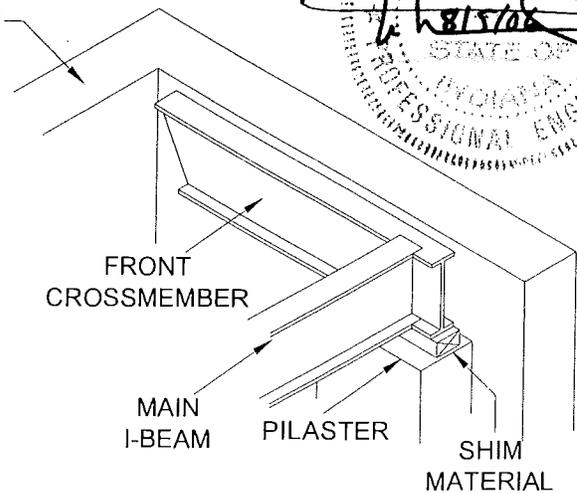


NOTES:

1. SEE TABLE 5.1 FOR REQUIRED BEAM SIZE AND SPACING.
2. SEE TABLE 6.1 FOR FOOTING REQUIREMENTS.



**REAR ENDWALL BEAM POCKET DETAIL
(CONCRETE BLOCK WALL SHOWN)**

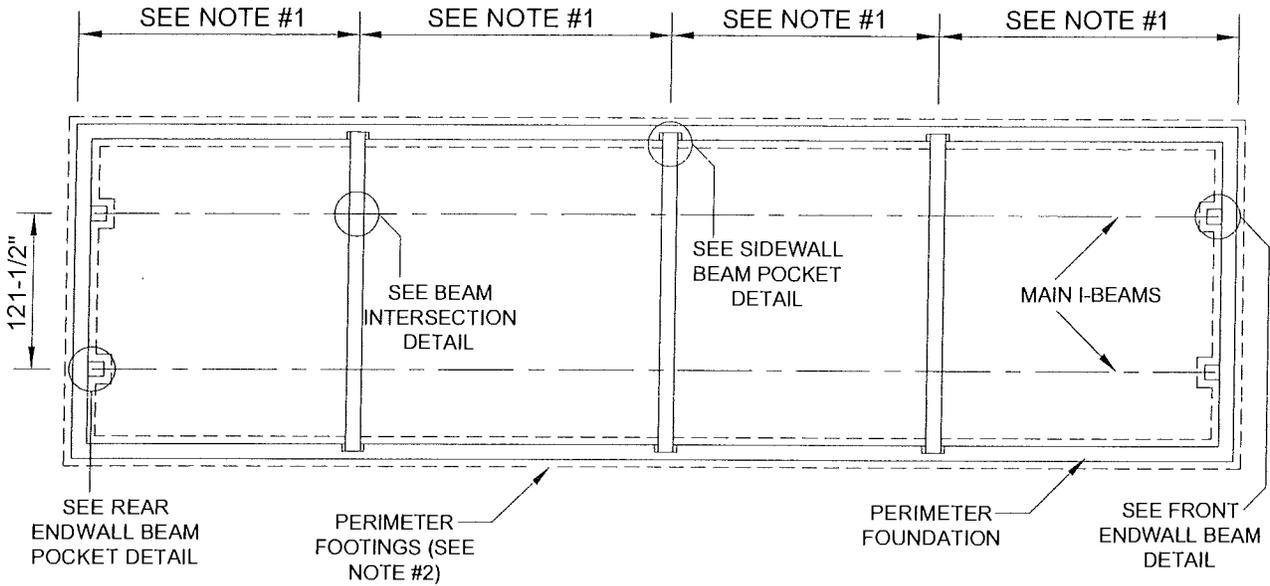


**FRONT ENDWALL BEAM DETAIL
(POURED CONCRETE WALL SHOWN)**

FIGURE 5.3

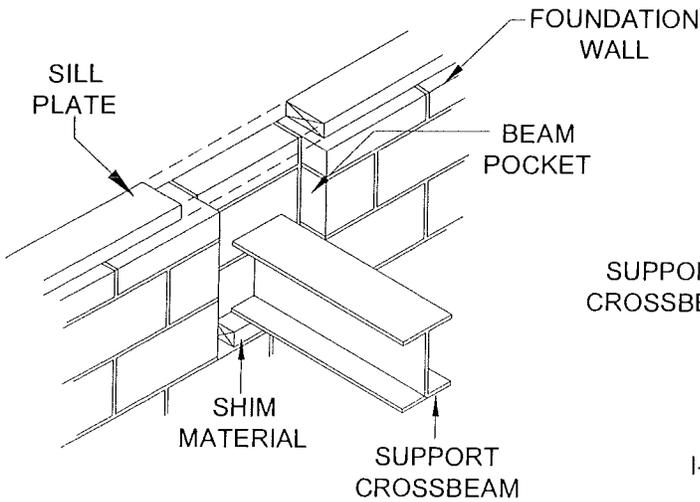
REVISIONS	DATE	CHIEF® INDUSTRIES HOUSING DIVISION	DRWG. BY: CES	01/28/04
			CHKD. BY:	
			SCALE: NONE	21.0121

TYPICAL BASEMENT LAYOUT SINGLE-SECTION HOMES PERIMETER FOUNDATION WITH CROSSBEAMS 10" RECESSED FRAME

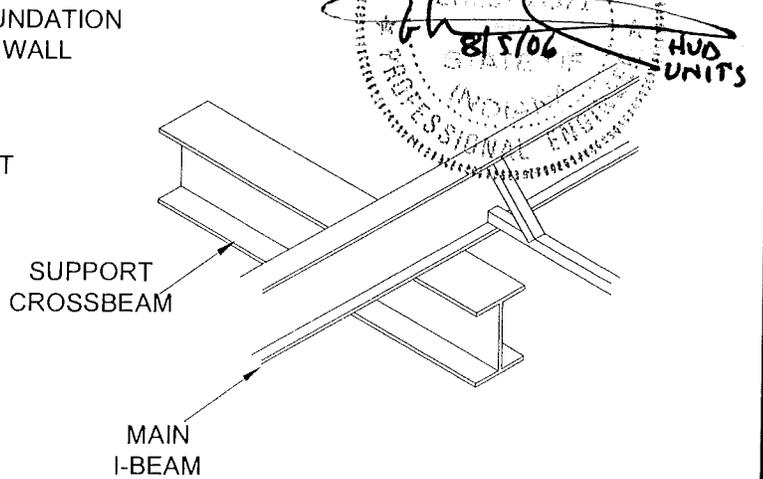


NOTES:

1. SEE TABLE 5.1 FOR REQUIRED BEAM SIZE AND SPACING.
2. SEE TABLE 6.1 FOR FOOTING REQUIREMENTS.



**SIDEWALL BEAM POCKET DETAIL
(CONCRETE BLOCK WALL SHOWN)**



BEAM INTERSECTION DETAIL

FIGURE 5.4

REVISIONS	DATE	CHIEF® INDUSTRIES HOUSING DIVISION	DRWG. BY: CES	01/28/04
			CHKD. BY:	
			SCALE: NONE	21.0122

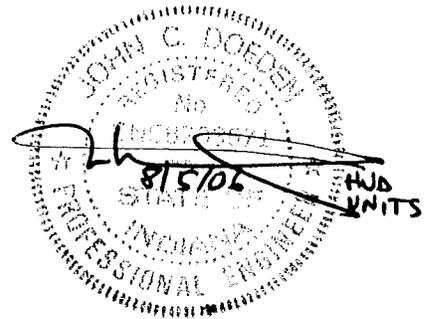
MINIMUM CROSSBEAM CAPACITY TABLES

SINGLE-SECTION HOMES CROSSBEAM SUPPORT

SECTION WIDTH (FEET)	ROOF LIVE LOAD (PSF)	MINIMUM CROSSBEAM SIZE			
		MAXIMUM CROSSBEAM SPACING (FEET)			
		6'-8"	8'-0"	9'-4"	10'-8"
16 WIDE (182" FLOOR)	ALL LOADS	W6X12	W6X12	W6X12	W6X16

ANY ONE BEAM LISTED IN EACH CATEGORY MAY BE USED

TABLE 5.1



REVISIONS	DATE	 CHIEF® INDUSTRIES HOUSING DIVISION	DRWG. BY: CES	01/28/04
			CHKD. BY:	
			SCALE: NONE	21.0123

SECTION VI
TYPICAL ANCHORAGE
& FOOTING INSTRUCTION
Single Section Homes

ADDENDUM - ANCHORAGE

Information contained on these addendum pages is to enhance and sometimes supersede the following pages that pertain to the details of the completion of the setting of your home.

After blocking and leveling, the installer must secure the home against the wind. In order for the manufactured home to be secure against high winds, it must be anchored to the ground. The homeowner is cautioned that if the manufactured home is not properly anchored, it is highly susceptible to wind damage when high wind conditions occur.

Select the number and location of straps and anchors from the appropriate chart and diagram in Section 6. Use only listed and approved ground anchors capable of resisting a minimum ultimate load of 4725 pounds and a working load of 3150 pounds as installed unless reduced capacities are specified by the anchor manufacturer. A reduced capacity of the ground anchor or strap will require a reduced tiedown strap and anchor spacing proportional to that given in the charts. However, ground anchors must not be spaced closer than the minimum spacing permitted by the listing or certification.

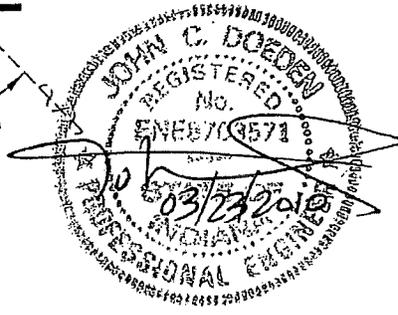
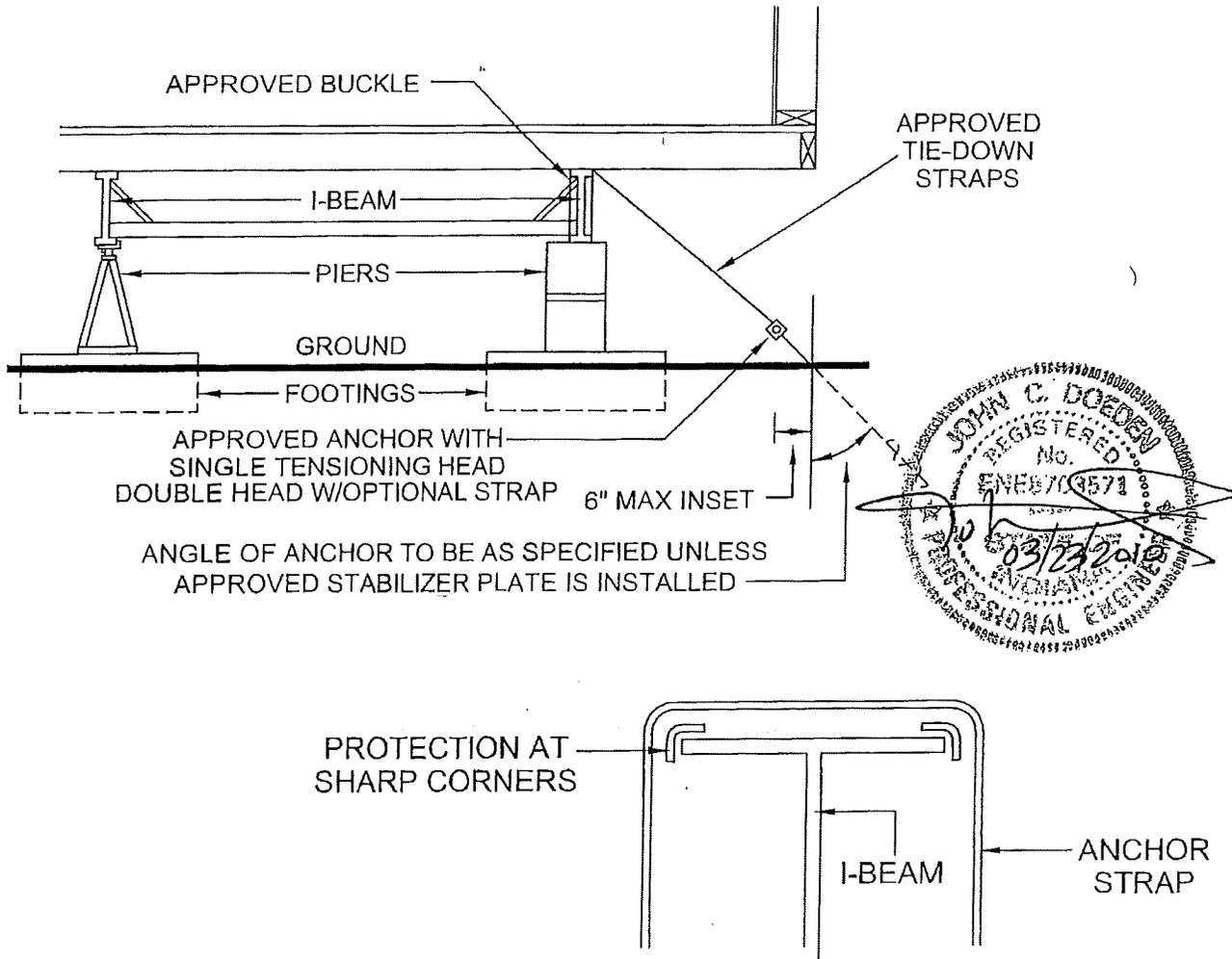
Install the anchors at the locations indicated in Section 6, following the anchor manufacturer's instructions. Install double-headed anchors at all vertical tie locations. Line up the shaft of each anchor with its strap or resultant angle between vertical tie and diagonal tie or install an approved stabilizer plate. You may want to consult a registered professional or structural engineer to determine the correct angles for the anchors. See notes in figures regarding stabilizer plate installation when this angle cannot be achieved.

If your home is re-leveled at some date after the initial tensioning of the anchoring straps, the straps should be re-tensioned as specified in the anchor manufacturer's installation instructions. Straps must be inspected periodically to assure that proper tension is provided in each strap. If straps are found to be loose, then re-tensioning of the straps must be performed.

Protection shall be provided at sharp corners such as I-beam flange, crossmembers, angle brackets, etc. at point of load on strap by placing an additional layer of strapping 2" long, (when possible) approximately centered between the strap and the sharp corner.

The anchor tables and designs do not consider floor or seismic loads and is not intended for use in flood or seismic hazard areas. In those areas the anchorage system is to be designed by a Registered Professional Engineer.

TIE-DOWN STRAP AND ANCHORING POSITION INSTALLATION WITHOUT VERTICAL TIES



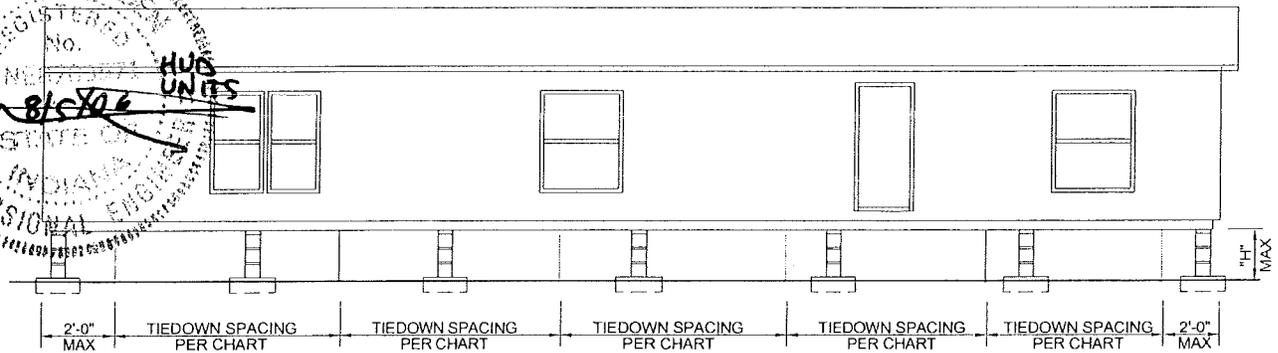
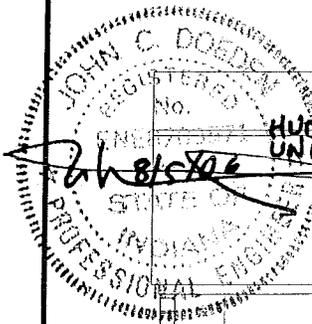
NOTES:

1. TIE-DOWN STRAPS AND DEVICES TO HAVE A MINIMUM WORKING LOAD RATING OF 3150# (OVERLOAD OF 4725#) AND MUST BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
2. PROTECTION SHALL BE PROVIDED AT SHARP CORNERS WHERE THE ANCHORING SYSTEM REQUIRES THE USE OF EXTERNAL STRAPS OR CABLES.
3. SEE FIGURE 6.2 THRU 6.7 FOR ADDITIONAL REQUIREMENTS.

FIGURE 6.1

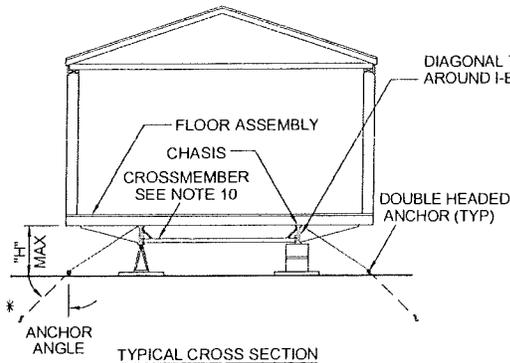
REVISIONS	DATE	CHIEF® INDUSTRIES HOUSING DIVISION	DRWG. BY: CES	01/28/04
			CHKD. BY:	
			SCALE: NONE	21.0125

RECOMMENDED TIEDOWN SYSTEM WIND ZONE 1 & 4/12 ROOF PITCH



TYPICAL SIDE ELEVATION SHOWING TIEDOWN SPACING

LOADS: HORIZONTAL = 15 PSF X 1.5 SAFETY FACTOR
UPLIFT = 9 PSF X 1.5 SAFETY FACTOR



TYPICAL CROSS SECTION

FRAME TIE-DOWN SPACING CHART SINGLE SECTION HOMES			
WIND ZONE I			
FLOOR WIDTH	SPACING	MAX. PIER HEIGHT "H MAX."	ANCHOR ANGLE
15'-2" MAX.	8'-0"	36"	30° - 35°
	6'-0"	52"	25° - 30°

* GROUND ANCHORS NOT INSTALLED AT ANGLE SPECIFIED MUST HAVE AN APPROVED STABILIZER PLATE INSTALLED.

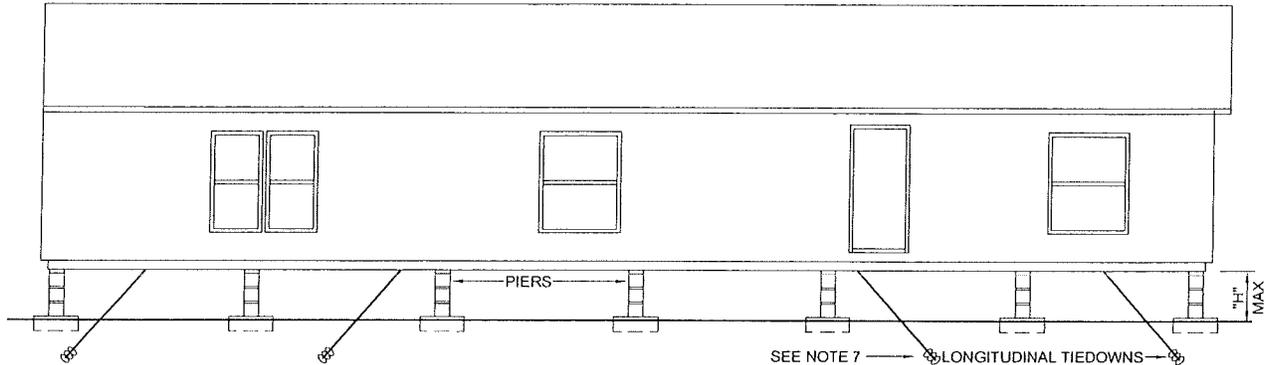
NOTES:

- FRAME TIE-DOWN SHOULD BE INSTALLED TO PROPERLY SECURE THE HOME.
- OPTIONAL VERTICAL TIES MAY BE SECURED TO THE SAME GROUND ANCHOR AS THE DIAGONAL TIE-DOWNS WHEN DOUBLE HEADED ANCHOR IS CAPABLE OF RESISTING COMBINED LOADING. 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.
- DIAGONAL TIE-DOWNS AND ANCHORS ARE NOT SUPPLIED BY CHIEF INDUSTRIES HOUSING DIVISION.
- ALL TIE STRAPS ARE SUPPLIED BY OTHERS. ANCHORS AND END TREATMENTS ARE TO BE SUPPLIED BY OTHERS.
- GROUND ANCHORS AND FRAME TIES SHALL BE CAPABLE OF RESISTING AN ULTIMATE TENSION LOAD OF 4,725 LBS AND ARE TO BE INSTALLED PER THE MANUFACTURER'S INSTALLATION INSTRUCTIONS, BUT ARE NOT TO EXTEND BEYOND THE SIDEWALL OF THE HOME.
- STEEL ANCHORING EQUIPMENT EXPOSED TO THE WEATHER SHALL BE PROTECTED WITH AT LEAST 0.30 OZ. OF ZINC PER SQUARE FOOT OF STEEL.
- DESIGN BASED ON 121-1/2" I-BEAM SPACING AND A MAXIMUM SIDEWALL HEIGHT OF 9'-0".
- LONGITUDINAL TIES ARE INSTALLED JUST INSIDE I-BEAMS AT CROSSMEMBERS IN ACCORDANCE WITH THE TABLE AND NOTES 4, 6, & 7.
- FRAME TIE-DOWNS ARE POSITIONED AT CROSSMEMBER LOCATIONS (WITHIN 3") WHEN STRAP COMES OFF FLANGE OF BEAM WITH APPROVED BUCKLE OR LOOP.
- ANCHORS SHOULD 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.
- GROUND ANCHORS SHOULD BE EMBEDDED BELOW THE FROST LINE AND BE AT LEAST 12" ABOVE THE WATER TABLE. ANCHORS SHOULD ALSO BE INSTALLED TO THEIR FULL DEPTH, AND STABILIZER PLATES INSTALLED TO PROVIDE RESISTANCE TO OVERTURNING OR SLIDING FORCES.
- ANCHORING EQUIPMENT SHOULD BE CERTIFIED BY A REGISTERED PROFESSIONAL ENGINEER OR ARCHITECT TO RESIST THESE SPECIFIED FORCES IN ACCORDANCE WITH TESTING PROCEDURES IN ASTM STANDARD SPECIFICATION D3953-91, STANDARD SPECIFICATION FOR STRAPPING, FLAT STEEL AND SEALS.

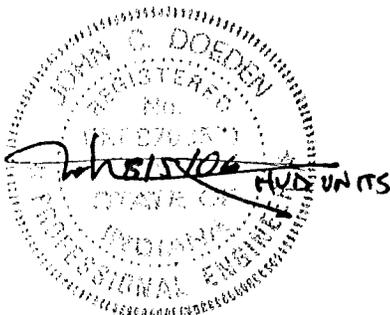
FIGURE 6.2

REVISIONS	DATE	CHIEF® INDUSTRIES HOUSING DIVISION	DRWG. BY: CES	01/28/04
			CHKD. BY:	
			SCALE: NONE	21.0126

RECOMMENDED LONGITUDINAL TIEDOWN SYSTEM SINGLE SECTION WIND ZONE 1 (15 PSF LATERAL) / 9'-0" MAX. SIDEWALL



TYPICAL SIDE ELEVATION SHOWING LONGITUDINAL TIEDOWNS



4:12 MAXIMUM ROOF SLOPE-SINGLE SECTION HOMES
NO RESTRICTION AS TO PIER TYPE OR HEIGHT
(EXCEPT AS LIMITED BY OTHER DETAILS)

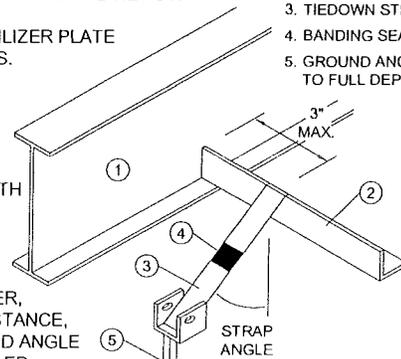
FLOOR WIDTH	MINIMUM QUANTITY EACH END OF EACH SECTION	MINIMUM STRAP ANGLE (DEGREES)
15'-2" MAX.	2	38°

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 CHIEF INDUSTRIES.
4. GROUND ANCHORS AND FRAME TIES SHALL BE CAPABLE OF RESISTING AN ULTIMATE TENSION LOAD OF 4,725 LBS. AND 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 SQ FT OF STEEL.
6. DESIGN BASED ON A MAX. SIDEWALL HEIGHT OF 8'-0" AND I-BEAM SPACING OF 12 1/2"
7. LONGITUDINAL TIES ARE INSTALLED JUST INSIDE I-BEAMS AT CROSSMEMBERS IN ACCORDANCE WITH THE TABLE AND NOTES 3, 4, 5, 12, AND 13.
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. ANCHORS SHALL ALSO BE INSTALLED TO THEIR FULL DEPTH, AND STABILIZER PLATES INSTALLED TO PROVIDE RESISTANCE TO OVERTURNING OR SLIDING FORCES.
10. ANCHORING EQUIPMENT SHALL BE CERTIFIED BY A REGISTERED PROFESSIONAL ENGINEER OR ARCHITECT TO RESIST THESE SPECIFIED FORCES IN ACCORDANCE WITH TESTING PROCEDURES IN ASTM STANDARD SPECIFICATION D3953-91, STANDARD SPECIFICATION FOR STRAPPING, FLAT STEEL AND SEALS.
11. STRAPPING TO BE TYPE 1, FINISH B, GRADE 1 STEEL STRAPPING, 1 1/4" WIDE AND .035" 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.
12. 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 DETAIL.
13. WHEN THIS ANCHOR ANGLE IS NOT ATTAINABLE, INSTALL ANCHOR PER MANUFACTURER'S INSTRUCTIONS WITH APPROVED STABILIZING PLATE.

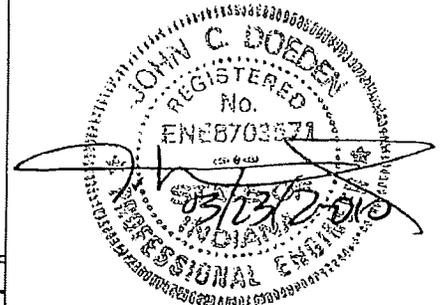
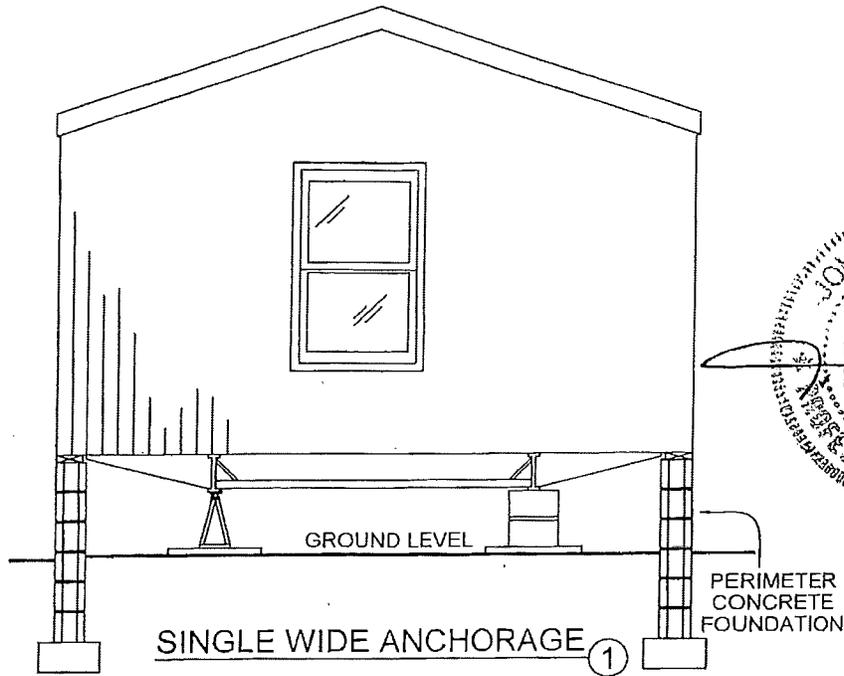
ATTACHMENT DETAIL

1. TYPICAL LONGITUDINAL BEAM
2. TYPICAL FRAME CROSSMEMBER (2" x 2" x 3/16" ANGLE IRON)
3. TIEDOWN STRAP
4. BANDING SEAL
5. GROUND ANCHOR - INSTALLED TO FULL DEPTH OF ANCHOR HEAD

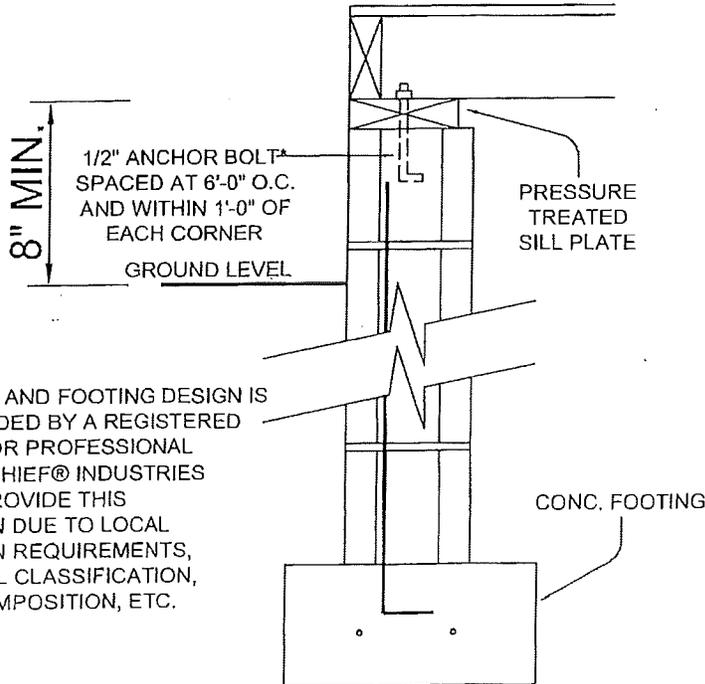


REVISIONS	DATE	 CHIEF INDUSTRIES HOUSING DIVISION	DRWG. BY: CES	07/11/06
			CHKD. BY:	
			SCALE: NONE	21.0127

SINGLE WIDE HOME ANCHORAGE DETAILS ANCHORAGE DETAILS FOR PERIMETER FOUNDATION



BASEMENT CONSTRUCTION.



NOTE:
FOUNDATION AND FOOTING DESIGN IS TO BE PROVIDED BY A REGISTERED ARCHITECT OR PROFESSIONAL ENGINEER. CHIEF® INDUSTRIES DOES NOT PROVIDE THIS INFORMATION DUE TO LOCAL JURISDICTION REQUIREMENTS, VARYING SOIL CLASSIFICATION, BACKFILL COMPOSITION, ETC.

DETAIL 2 APPLIES TO BOTH PERIMETER FOUNDATION WITH PIERS AND BASEMENT CONSTRUCTION

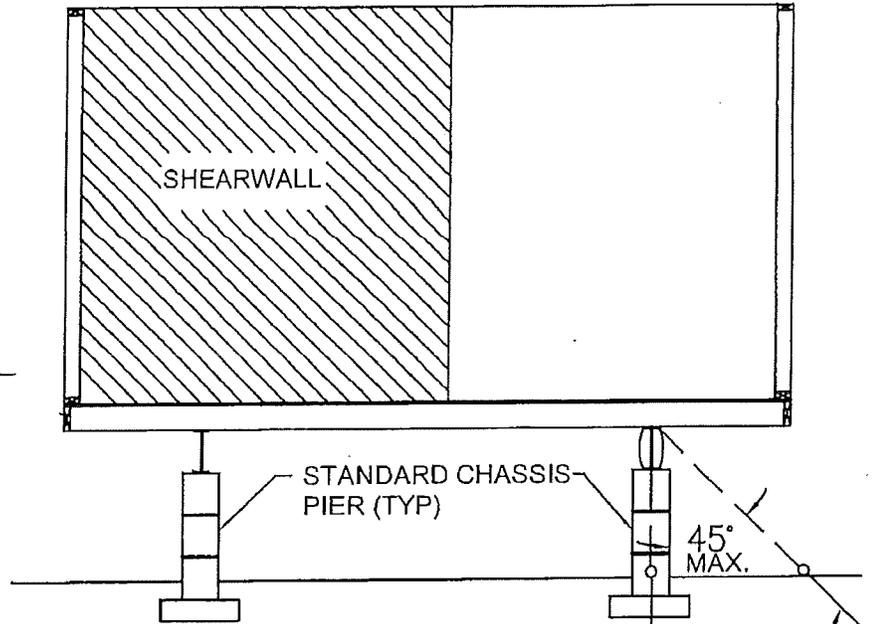
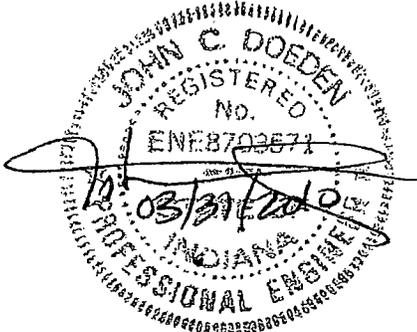
* ANCHOR BOLTS EMBEDDED 7" MIN IN POURED CONCRETE WALLS AND 15" MIN IN MASONRY WALLS

ANCHORAGE DESIGNED FOR STANDARD WIND ZONE 1 (15 PSF HORIZONTAL, 9 PSF UPLIFT)

SECTION THROUGH PERIMETER ②

FIGURE 6.3

REVISIONS	DATE	CHIEF® INDUSTRIES HOUSING DIVISION	DRWG. BY: CES	01/29/04
REVISED NOTES	3/17/10		CHKD. BY:	
			SCALE: NONE	21.0128



NOTE: TO FACILITATE ANCHOR INSTALLATION AFTER HOME IS SET A HOLE MAY BE DUG, 8" DIAMETER MAX. BACKFILL HOLE AND COMPACT TO ORIGINAL DENSITY AFTER ANCHOR INSTALLATION.

GROUND ANCHOR WITHIN 12" OF SHEARWALL

ALTERNATE APPLICATION*
TIEDOWN STRAP AND ANCHOR AT I-BEAM OPPOSITE SIDEWALL TO WHICH SHEARWALL IS ATTACHED.

* MAXIMUM SHEARWALL DSV FOR ALTERNATE APPLICATION IS 320 PLF FOR 84" SIDEWALLS, 300 PLF FOR 90" SIDEWALLS, 280 PLF FOR 96" SIDEWALLS AND 250 PLF FOR 108" SIDEWALLS.

NOTES:

1. SHEARWALL LOCATIONS ARE IDENTIFIED BY FACTORY INSTALLED TAGS OR PAINT OR SHIP LOOSE FLOOR PLANS.
2. FOR SINGLE WIDE ZONE 1 UNITS THE END SHEARWALL TIEDOWN STRAP SHOWN ON THIS DETAIL AT THE I-BEAM MAY BE OMITTED AT A FULL DEPTH CROSSMEMBER LOCATION.

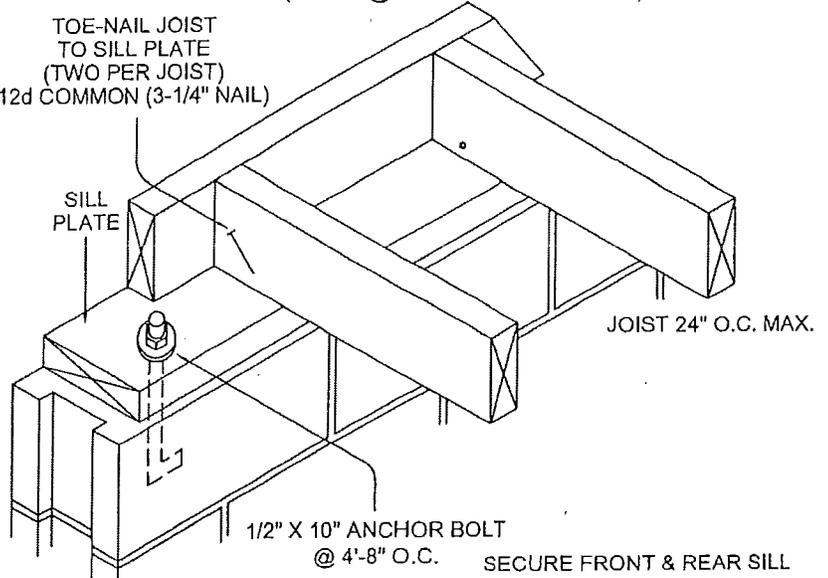
TYPICAL SHEARWALL TIEDOWN INSTALLATION
WIND ZONE I

REVISIONS	DATE		CHIEF® INDUSTRIES	DRWG. BY: Hdg 03/31/10
			HOUSING DIVISION	CHKD. BY:
				SCALE: NONE 21.0128.1

SINGLE WIDE HOME ANCHORAGE DETAILS FOR PERIMETER FOUNDATION

SECURE FRONT AND REAR RIM JOIST
TO SILL PLATE WITH 1 - 12d COMMON
NAIL @ 2-1/8" O.C. @ 6/12 ROOF
(4" O.C. @ 20° MAX. ROOF SLOPE)

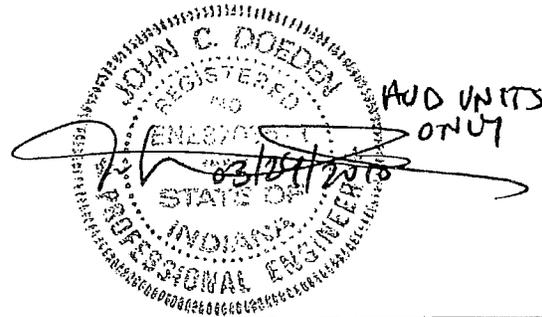
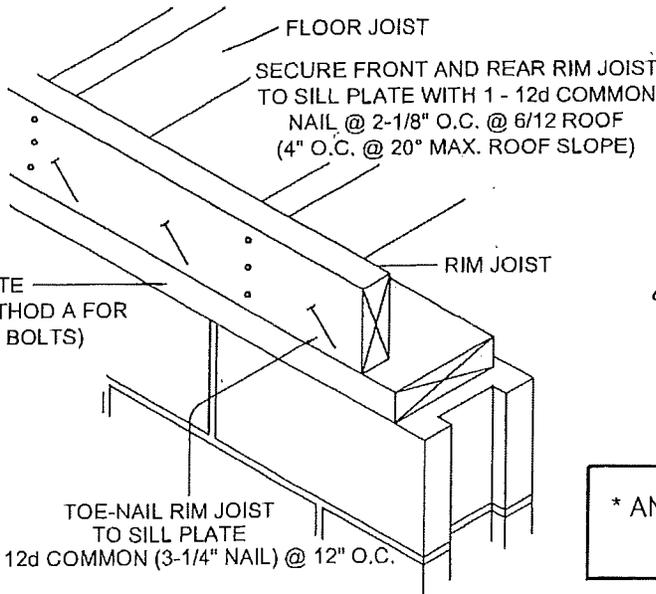
TOE-NAIL JOIST
TO SILL PLATE
(TWO PER JOIST)
12d COMMON (3-1/4" NAIL)



* DETAILS 1 AND 2 APPLY TO
BOTH PERIMETER FOUNDATION WITH PIERS AND
BASEMENT CONSTRUCTION.

1/2" X 10" ANCHOR BOLT
@ 4'-8" O.C. SECURE FRONT & REAR SILL
PLATE TO FOUNDATION
W/ 1/2" X 10" ANCHOR BOLT @ 3'-0"
O.C. W/ 1-3/4" WASHER
(6'-0" O.C. @ 20° MAX. ROOF SLOPE)

JOIST TO SILL CONNECTION ① (METHOD A)



* ANCHORAGE DESIGNED FOR STANDARD WIND
ZONE 1 (15 PSF HORIZONTAL, 9 PSF UPLIFT)

RIM JOIST TO SILL CONNECTION ② (METHOD B)

FIGURE 6.4

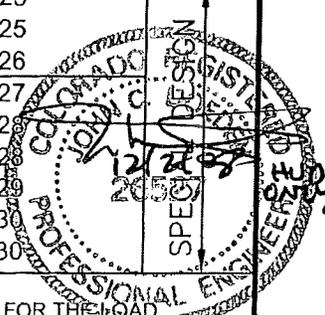
REVISIONS	DATE	 CHIEF® INDUSTRIES HOUSING DIVISION	DRWG. BY: CES	01/29/04	
			CHKD. BY:		
			SCALE: NONE		21.0129

MINIMUM FOOTING SIZE (OR EQUAL AREA) (INCHES)

PIER CAPACITY (POUNDS)	SOIL BEARING CAPACITY (PSF)				
	1000	1500	2000	4000	
600	12x12	12x12	12x12	12x12	SINGLE ↓ STACK CMU
800	12x12	12x12	12x12	12x12	
1000	12x12	12x12	12x12	12x12	
1500	15x15	12x12	12x12	12x12	
2000	17x17	14x14	12x12	12x12	
2500	19x19	15x15	13x13	12x12	
3000	21x21	17x17	15x15	12x12	
3500	22x22	18x18	16x16	12x12	
4000	24x24	20x20	17x17	12x12	
4500	25x25	21x21	18x18	13x13	
5000	27x27	22x22	19x19	13x13	
5500	28x28	23x23	20x20	14x14	
6000	29x29	24x24	21x21	15x15	
6500	31x31	25x25	22x22	15x15	
7000	32x32	26x26	22x22	16x16	
7500	33x33	27x27	23x23	16x16	
8000	34x34	28x28	24x24	17x17	
8500	35x35	29x29	25x25	17x17	
9000	36x36	29x29	25x25	18x18	
9500	37x37	30x30	26x26	19x19	
10000	38x38	31x31	27x27	19x19	
11000	40x40	32x32	28x28	20x20	
12000	42x42	34x34	29x29	21x21	
13000	43x43	35x35	31x31	22x22	
14000	45x45	37x37	32x32	22x22	
15000	46x46	38x38	33x33	23x23	
16000	48x48	39x39	34x34	24x24	
17000	49x49	40x40	35x35	25x25	
18000	51x51	42x42	36x36	25x25	
19000	52x52	43x43	37x37	26x26	
20000	54x54	44x44	38x38	27x27	
21000	55x55	45x45	39x39	28x28	
22000	57x57	46x46	40x40	28x28	
23000	58x58	47x47	41x41	29x29	
24000	59x59	48x48	42x42	30x30	
25000	60x60	49x49	43x43	30x30	

SINGLE
↓
STACK CMU

DOUBLE
↑
STACKED CMU



NOTES:
 1. FOOTING SIZES SHOWN ARE FOR SQUARE PADS AND ARE BASED ON THE AREA (SQ. INCHES) REQUIRED FOR THE LOAD. OTHER FOOTING CONFIGURATIONS, SUCH AS RECTANGULAR, MAY BE USED PROVIDED THE AREA (SQ. INCHES) IS EQUAL TO OR GREATER THAN THE AREA OF THE SQUARE FOOTING SHOWN IN THE TABLE. FOR EXAMPLE, A 12"x22" (288 SQ. IN.) FOOTING MAY BE USED IN PLACE OF A 16"x16" (256 SQ. IN.) FOOTING. ALSO, TWO 12"x24" PADS MAY BE USED IN PLACE OF ONE 24"x24" PAD. PROJECTION SHALL NOT EXCEED "P".
 2. THE FOLLOWING TABLE SPECIFIES THE MAXIMUM FOOTING SIZE FOR VARIOUS FOOTING THICKNESSES. THIS TABLE IS BASED ON UNREINFORCED FOOTINGS. REINFORCED FOOTINGS MAY REQUIRE A SMALLER THICKNESS THAN THAT LISTED BUT MUST BE DESIGNED BY A LICENSED ENGINEER.
 3. THE FOOTING CAPACITIES TABULATED ARE FOR TOTAL LOAD. THE GRAVITY LOADS PRESENTED IN THE TABLES IN THIS MANUAL INCLUDE THE WEIGHT OF THE PIER AND FOOTER AND NO FURTHER ADJUSTMENT IS REQUIRED. HOWEVER, WHEN ADDITIONAL LOAD CALCULATIONS ARE REQUIRED THE LOAD MUST INCLUDE THESE WEIGHTS. PIER CMU BLOCKS TYPICALLY WEIGH APPROXIMATELY 30 POUNDS APIECE AND CONCRETE FOOTERS WEIGH APPROXIMATELY 150 PCF (EXAMPLE: 24x24x6 FOOTER WEIGHS 300#)

TABLE 6.1 FOOTING SIZES

REVISIONS	DATE	 CHIEF® INDUSTRIES HOUSING DIVISION	DRWG. BY: CES 11/08/06
REVISE FOR NEW HUD REQ.	10/8/08		CHKD. BY:
			SCALE: NONE 21.0130

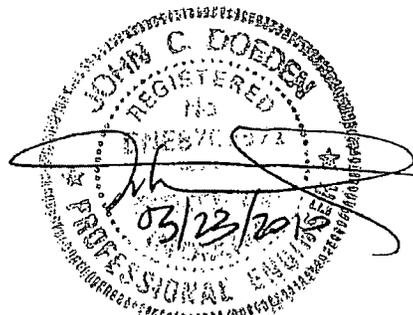
FOUNDATION DESIGN: GENERAL NOTES

GENERAL NOTES:

1. THIS FOUNDATION HAS BEEN DESIGNED FOR SITES WITH AN ALLOWABLE SOIL BEARING CAPACITY OF 2000 PSF MINIMUM.
2. FOUNDATIONS TO BE CONSTRUCTED ON SOIL WITH A LOWER BEARING CAPACITY SHALL BE DESIGNED IN ACCORDANCE WITH ACCEPTED ENGINEERING PRACTICE BY A LICENSED ENGINEER TO LOCAL CONDITIONS AND CODES.
3. CONCRETE COMPRESSIVE STRENGTH AT 28 DAYS TO BE 3000 PSI MINIMUM.
4. REINFORCING STEEL SPECIFIED TO BE GRADE 60 BARS MEETING ASTM A615, A616, AND A617.
5. THESE SPECIFICATIONS ARE TYPICAL. LOCAL CODES MAY CONTAIN ADDITIONAL REQUIREMENTS.
6. FOUNDATION WALL STEMS MAY BE CONCRETE OR CONCRETE BLOCK.
7. CONCRETE BLOCK SHALL CONFORM TO ASTM C-90.
8. ALL LUMBER IN CONTACT WITH CONCRETE SHALL BE OF PRESSURE TREATED TYPE OR OF SPECIES APPROVED FOR USE IN DIRECT CONTACT WITH CONCRETE. STEEL (FASTENERS, CONNECTORS OR BEAMS) MUST BE EITHER ISOLATED FROM ANY CONTACT WITH LUMBER CONTAINING COPPER PRESERVATIVES OR MUST BE ZINC PLATED TO MEET G185 COATING RATING.
9. THE INSTALLATION SITE MUST BE GRADED SO THAT WATER DRAINAGE IS AWAY FROM STRUCTURE AND DOES NOT ACCUMULATE UNDER THE HOME.
10. BACK FILL ADJACENT TO THE FOUNDATION SHALL NOT BE PLACED UNTIL THE WALL HAS SUFFICIENT STRENGTH OR HAS BEEN BRACED TO PREVENT DAMAGE.
11. MINIMUM FOUNDATION VENTILATION REQUIREMENTS:
 - a. 18" X 24" ACCESS CRAWL SPACE TO UNDER FLOOR AREA.
 - b. 1-1/2 SQUARE FEET OF VENTILATION PER (25) LINEAL FEET OF FOUNDATION WALL.
 - c. COVER VENT OPENINGS WITH CORROSION-RESISTANT WIRE MESH NOT LESS THAN (1/8") NO MORE THAN (1/2") IN ANY DIRECTION.
12. THIS FOUNDATION SYSTEM FOR USE WITH FLOOR SYSTEMS WHICH ARE DESIGNED TO SPAN FROM PERIMETER WALL TO CENTERLINE SUPPORTS.
13. DAMP PROOFING OF CONCRETE OR MASONRY WALLS TO BE IN ACCORDANCE WITH LOCAL CODES. IN THE ABSENCE OF CODE REQUIREMENTS, THE FOLLOWING SHALL APPLY:
 - a. EXTERIOR FOUNDATION WALLS OF MASONRY CONSTRUCTION ENCLOSING BASEMENTS SHALL BE DAMP PROOFED BY APPLYING NOT LESS THAN (3/8") OF PORTLAND CEMENT PARGING TO THE WALL FROM THE FOOTING TO THE FINISH GRADE. THE PARGING SHALL BE COVERED WITH A COAT OF APPROVED BITUMINOUS MATERIAL APPLIED AT THE RECOMMENDED RATE. EXTERIOR FOUNDATION WALLS OF CONCRETE CONSTRUCTION ENCLOSING BASEMENTS SHALL BE DAMP ROOFED BY APPLYING A COAT OF APPROVED BITUMINOUS MATERIAL TO THE WALL FROM THE FOOTING TO THE FINISH GRADE AT THE RECOMMENDED RATE.
 - b. FOUNDATION WALL OF HABITABLE ROOMS LOCATED BELOW GRADE SHALL BE WATER PROOFED WITH MEMBRANES EXTENDING FROM THE EDGE OF THE FOOTING TO THE FINISH GRADE LINE. THE MEMBRANE SHALL CONSIST OF EITHER 2-PLY HOT MOPPED FELT, 6-MIL POLYVINYL CHLORIDE, 55 LB. ROLL ROOFING OR EQUIVALENT MATERIAL. THE LAP IN THE MEMBRANE SHALL BE SEALED AND FIRMLY AFFIXED TO THE WALL.
 - c. FOUNDATION WALLS MAY BE DAMP PROOFED OR WATER PROOFED USING MATERIALS AND METHODS OF CONSTRUCTION OTHER THAN COVERED IN THIS SECTION WHEN APPROVED BY THE LOCAL BUILDING OFFICIAL.

GENERAL NOTES:

14. DRAINS SHALL BE PROVIDED AROUND FOUNDATIONS ENCLOSING HABITABLE OR USEABLE SPACES LOCATED BELOW GRADE AND WHICH ARE SUBJECT TO GROUND WATER CONDITIONS. DRAINS SHALL BE INSTALLED AT OR BELOW THE AREA TO BE PROTECTED AND SHALL DISCHARGE BY GRAVITY OR MECHANICAL MEANS INTO AN APPROVED DRAINAGE SYSTEM.
15. THE TOP OF OPEN JOINTS OF DRAIN TILES SHALL BE PROTECTED WITH STRIPS OF BUILDING PAPER AND THE DRAINAGE TILES SHALL BE PLACED ON TWO (2) INCHES OF WASHED GRAVEL OR CRUSHED ROCK ONE (1) SIEVE SIZE LARGER THAN THE TILE JOINT OPENING OR PERFORATION AND COVERED WITH NOT LESS THAN SIX (6) INCHES OF THE SAME MATERIAL.
16. THE DESIGNS ON THIS AND ACCOMPANYING SHEETS AREA APPLICABLE TO SEISMIC ZONES 0, 1, AND 2.
17. THIS FOUNDATION DESIGN IS NOT FOR INSTALLATION ON A FLOOD PLAIN. WHEN INSTALLING CRAWL SPACE OR BASEMENT IN AN AREA WITH SOILS HAVING POOR DRAINAGE, CONSIDERATION SHOULD BE GIVEN TO METHODS OF ELIMINATING ACCUMULATION OF WATER IN THE CRAWL SPACE OR BASEMENTS, SUCH AS THE USE OF SUMP PUMP(S). INSTALLATION OF SUMP PUMP(S) TO BE IN ACCORDANCE WITH LOCAL CODE REQUIREMENTS.



REVISIONS	DATE		CHIEF® INDUSTRIES	DRWG. BY: CES 02/14/05
REVISED NOTES	3/17/10		HOUSING DIVISION	CHKD. BY:
				SCALE: NONE 21.0131

SECTION VII
SITE ASSEMBLY INSTRUCTIONS
Single Section Homes

ADDENDUM – SITE PREPARATION

Information contained on these addendum pages is to enhance and sometimes supersede the following pages that pertain to the details of the completion of the setting of your home.

Grade the home site to permit water to drain from under the home. All drainage at the home site must be diverted away from the home and must slope a minimum of $\frac{1}{2}$ " per foot away from the foundation for the first ten feet.

Cover the entire area under the home using a polyethylene sheeting or its equivalent, at least six mils thick. Overlap it at least 12" at all joints with adhesive at all joints. Where soil and frost conditions permit placement of footings at grade level, place the sheeting directly beneath them. Sheeting shall be sealed or caulked at all penetration for piers, utility connections or other items. Repair any voids or tears in the retarder by patching with like material, maintaining a 12" minimum overlap and sealing joints with mastic.

If the crawlspace under the home is to be enclosed with skirting or other material you must provide ventilation of this space. Skirting installed around the home should have non-closing vents located at or near each corner and as high as possible to cross-ventilate the entire space under the home. Vent free area should be equal to at least one square foot for every 150 square feet of the home's floor area. This area should be further increased when insect screens, slats, etc. are used over the open vent area. When a 6 mil plastic vapor retarder is installed under the home, the ventilation requirement may be reduced to one square foot per every 1500 square feet of floor area. In freezing climates, install skirting so as to accommodate 1 – 2 inches of frost heave uplift to prevent buckling of floors. Take care that rainwater cannot be channeled or trapped between the skirting and siding. Skirting is to be installed in such a manner that the vinyl will be allowed to slide (expand and contract)

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Summary

General

Introduction

Thank you for choosing Chief® Industries as your home builder. We hope your new home brings you comfort and pleasure for many years to come. This home was engineered, constructed and inspected to comply with the *Federal Manufactured Homes Construction and Safety Standards* in effect on the date of construction. Minimal specifications are required from national standards for the design, construction, thermal protection, heating systems, plumbing systems and electrical systems for HUD homes intended for residential use.

Our intent is to produce a safe and comfortable home for you. Our company standards surpass compliance with national standards. Chief® Industries has highly qualified plant personnel to inspect these standards throughout the construction process.

Before set-up can even begin, you must contact the building officials in your area for necessary permits, licenses and inspections required for installation of this home. It is extremely important in preparing your home for its occupancy that it be properly blocked, set and leveled by an experienced HUD home mover, dealer or installer. Correct procedures in setting your home could prevent any costly future reconstruction.

The following step-by-step instructions were designed to assist you with the installation of your home. *Due to changes that are brought about by Chief® Industries continuing effort to improve our product and provide our customers with a wide variety of features; there may be products in or on your home that are not thoroughly covered by this manual. Before starting the set up process, you should go completely through your home owner's information carefully to see if there are supplemental details before any attempt is made in setting your home.*

Data describing the roof and wind loads for which your home was designed may be found on the data plate in your home. Load zone maps of the United States showing roof load, wind load and thermal zones are also included in the Homeowner's Manual. The support system must resist all vertical loads from the weight of your home, plus temporary extra roof loading and it must resist side loads imposed on the structure by wind gust.

All HUD home installers shall comply with the requirements of local zoning ordinances and conditional use permits established by local authorities pertaining to any health and/or safety codes.

IMPORTANT: The HUD label attached to the exterior of the home needs to remain visible. Do not obstruct the view and/or permanently remove. If siding needs to be repaired or replaced make sure to reattach the HUD label in the same or equivalent method. The HUD label should be located on the endwall at the rear of the home (12) inches in from the left side and (12) inches up from the bottom of the home. The label looks like the picture following:

FOREWORD

Thank you for choosing Chief® Industries as your home builder. We hope your new home brings you comfort and pleasure for many years to come. This home was engineered, constructed and inspected to comply with the *Federal Manufactured Homes Construction and Safety Standards* in effect on the date of construction. Minimal specifications are required from national standards for the design, construction, thermal protection, heating systems, plumbing systems and electrical systems for HUD homes intended for residential use.

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NOTICE: This manual addresses the setting, repairing and maintaining of products manufactured by *Chief Custom Homes®*. In the case that the dealer, retailer or customer wishes to vary from these procedures *Chief Custom Homes®* will not be responsible for quality, durability and safety. In such case the entity varying from these procedures shall bear all responsibility for their methodologies in setting, repairing and maintaining of such products.

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INTRODUCTION

This manual contains detailed installation instructions, including specifications and procedures for erection and hookup of your manufactured home. It has been written in an objective and easy-to-understand manner so it can be understood by people without extensive technical training. It discusses the set-up of the home from preparing the site through final inspection. It includes many tables and figures giving important data for proper set-up. Careful adherence to this manual by the homeowner and installation crew, and consultation with a registered professional or structural engineer in those unusual circumstances it does not cover, will assure you of a quality, safe and affordable home for many years to come.

Prior to locating or relocating your home, contact the local authority having jurisdiction for installation to see if permits for such procedures as blocking, anchoring, or utility connections are required. Inspections may be required during installation. On private property, zoning or development covenants may apply and should be taken into consideration. **NOTE: Preparation of the site, when accomplished by other than the home installer, may not be in accordance with these instructions.**

Fire separation distances must be in accordance with the requirements of Chapter 6 of NFAP 501A, 2003 Edition or the requirements of the local authority having jurisdiction. The installer must take into account these and any local requirements.

Only trained crews should install the home. Installers should follow the safety instructions provided in this manual. **USE ENOUGH TEMPORARY WOOD BLOCKING TO SUPPORT THE HOME DURING SET-UP.** No one should be allowed under the home unless it is securely in place, even if it is not moving.

Before installing support or anchorage that is different than those methods specified in these instructions or when the site or other conditions prevent the use of these instructions, the installer must first attempt to obtain DAPIA approved designs and instructions from Chief[®] Industries Inc., Housing Division. If these are not available, obtain an alternate design prepared and certified by a registered engineer that meets the Manufactured Construction and Safety Standards and has been approved by the manufacturer and the DAPIA.

It is recommended that any home that has been reinstalled after its original installation should be inspected after it is set up, in order to assure that it has not been damaged and is properly installed.