Sarah Huckabee Sanders
Governor

STATE OF ARKANSAS
ARKANSAS DEPARTMENT OF LABOR AND LICENSING
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Daryl E. Bassett
Secretary Labor and Licensing

ARKANSAS MANUFACTURED HOME COMMISSION

MEMORANDUM

To: All Arkansas Licensed Retailer, Installing Retailers, and Installers
From: Arkansas Manufactured Home Commission
Date: December 5, 2025
Re: Wind Zone I Anchoring Updates

As of November 3, 2025, alternative foundation designs will now exceed HUD code requirements and include specific uplift protection for all homes being placed in Wind Zone I.

All new homes installed in Wind Zone I utilizing an alternative foundation system now require the installation of uplift brackets. These brackets require pre-drilling before final installation to prevent damage to the structural elements of the home. Uplift brackets only need to be installed when using an alternate anchoring system on a home, which will replace the traditional frame ties on single section homes. Brackets are now required on double section homes in accordance with the component manufacturer's instructions. The number and location of these brackets depends on the component manufacturer's charts for roof slope and size of the home. Enclosed are the most recent installation instructions for Minute Man, Oliver Technologies, Inc., and Tie Down, Inc.

The requirement for longitudinal bracing depends on the component manufacturer. All Minute Man alternative foundation systems require the installation of a longitudinal bar, while Tie Down, Inc. and Oliver Technologies, Inc. defer to the home manufacturer's installation instructions and their requirements for wind zone I.

Thank you for your continued dedication to ensure the safety of Arkansas homeowners. As always, if there are any questions or concerns regarding any of these changes, please contact this agency.

Attachments: Tie Down, Inc. Installation Instructions
Minute Man Anchors Installation Instructions
Oliver Technologies, Inc. Installation Instructions

9/5/2025

To Whom it May Concern

Following the recommendation of the Alabama Manufactured Housing Installation Task Force, along with a growing consensus among industry professionals, vertical anchorage for uplift resistance is recognized as a safety enhancement to any home installation.

Effective September 17, 2025, aligning with the updates to the HUD Code and supported by Industry professionals, alternative foundation designs will now exceed HUD Code requirements and include specific uplift protection for all homes being placed in Wind Zone I.

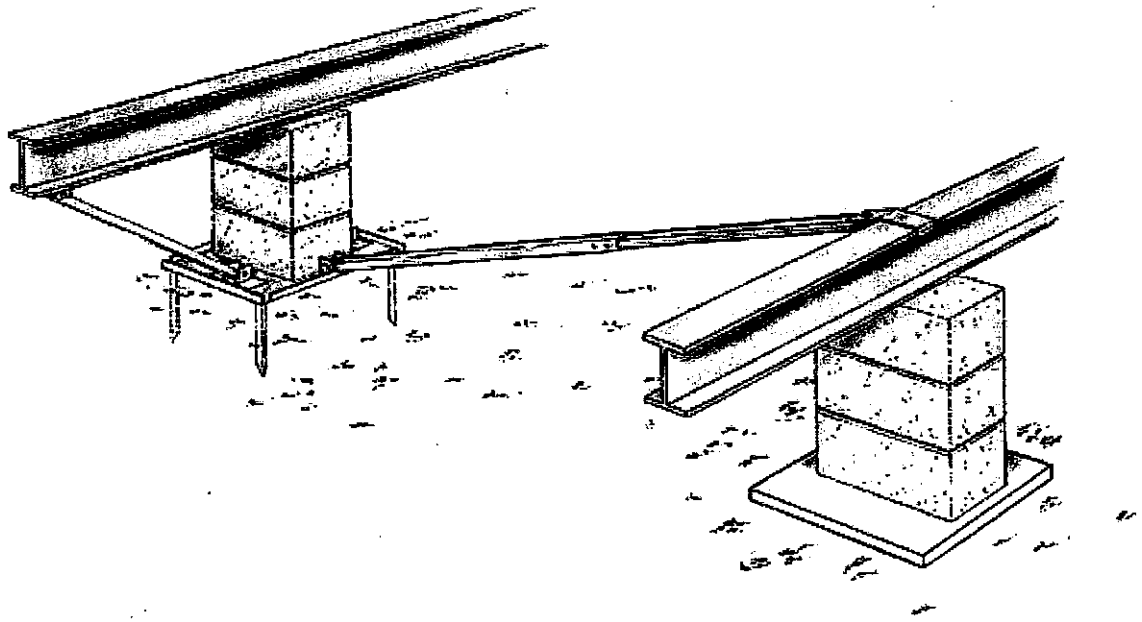
To support a smooth transition and allow distributors and installers to familiarize themselves with this change and align inventories of product, we will allow a grace period through November 3, 2025. During this time, both the prior and updated instructions will be accepted.

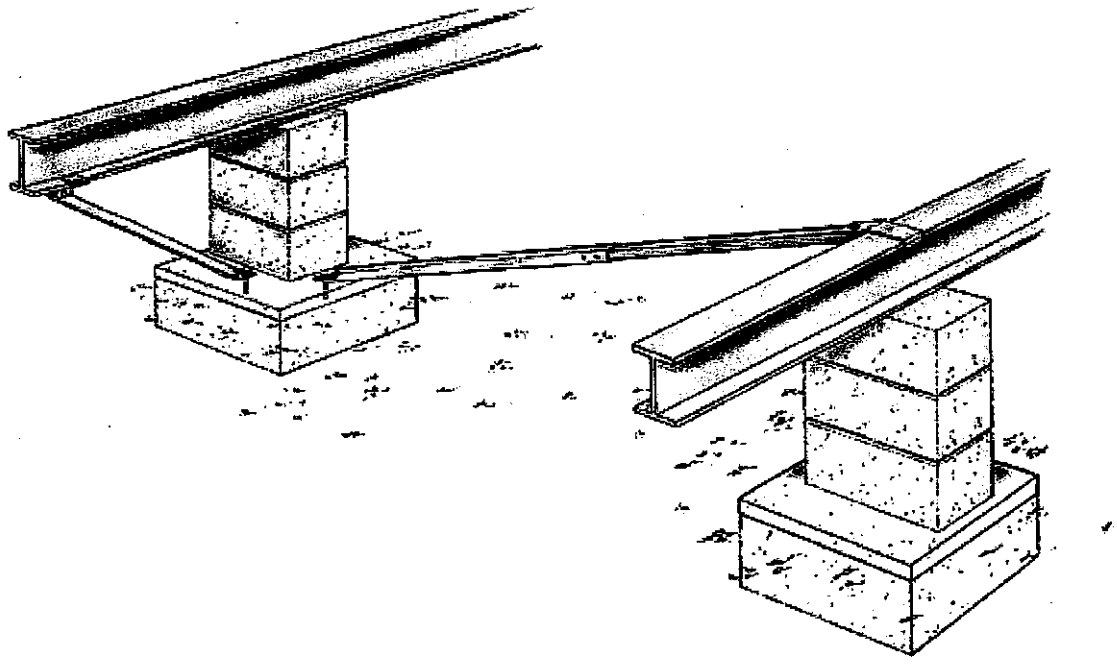
Installers and inspectors should refer to the updated installation instructions provided by the anchor system manufacturers to ensure full compliance with the revised standards by November 3, 2025.

Contact your local supplier for updated manufacturer's installation instruction updates or questions regarding this change.

Minute Man Anchors

Installation Instructions for LLBS Longitudinal and Lateral Bracing System





Thank you for using Minute Man Anchors. If you have any questions, please call us at: (800) 438-7277 • (828) 692-0256, info@minutemanproducts.com

MADE IN THE USA

Rev. 10/25

Minute Man Anchors

LIMITED WARRANTY

Minute Man Anchors warrants its product is free from defects in materials and Workmanship at the time of installation when properly installed in accordance with the Installation instructions. THE FOREGOING WARRANTY IS IN LIEU OF ANY OTHER WARRANTY, WHETHER EXPRESS OR IMPLIED, WRITTEN OR ORAL, INCLUDING ANY WARRANT OF MERCHANTIABILITY OR FITNESS FOR A PARTICULAR PURPOSE. ANY LIABILITY IS EXPRESSLY LIMITED TO AN AMOUNT EQUAL TO THE PURCHASE PRICE PAID, AND ALL CLAIMS FOR SPECIAL, INCIDENTAL AND CONSEQUENTIAL DAMAGES ARE HEREBY EXCLUDED. Minute Man does not assume any other liability or obligation in connection with the sale or use of this product.

If the product is defective at the time of delivery or installation and you give prompt notice to Minute Man no later than thirty (30) days of attempted installation of the defect, Minute Man, at its option, will replace the product at no cost or refund the full amount of the purchase price, provided the defective product is returned to Minute Man with proof of purchase at the address set forth below. PRODUCT REPLACEMENT OR REFUND IS YOUR SOLE AND EXCLUSIVE REMEDY.

This warranty extends only to the distributor and original installer of the product and does not cover a defect resulting from abuse, misuse, neglect, repairs, any use not in conformity with the printed instructions or installation by unauthorized personnel.

This warranty gives you speci c legal rights, and you may also have other legal rights which vary from state to state. Some states do not allow limitations on implied warranties or special, incidental or consequential damages, so the foregoing limitations may not apply to you.

If you have a claim under this warranty, please contact our CUSTOMER SERVICE department (have model and type numbers available):

CUSTOMER SERVICE
Toll Free in the U.S. 1-800-438-7277
1-828-692-0256

OR WRITE TO:
Minute Man-Customer Service
305 West King Street
East Flat Rock, NC 28726

To our knowledge, the information provided in and by the independent, profession engineers' reports and certifications and obtained from other independent sources contained in the installation instructions and product manuals is accurate. However, Minute Man Anchors cannot assume any liability whatsoever for the accuracy or completeness thereof. Final determination of the suitability of any information or material for the use contemplated is the sole responsibility of the user. Specifications are subject to change without notice. The load ratings established in the report are not valid in any application where the use of the product would overload any structural member of the home of foundation.

Minute Man Anchors

LLBS Longitudinal and Lateral Bracing System engineering certification for Wind Zones I, II & III, ground and concrete applications.

Contact Minute Man Anchors for any needed State Engineer Sealed Documents.

Phone: 800-438-7277 or 828-692-0256

e-mail: info@minutemanproducts.com
Or go to: www.minutemanproducts.com

Notes

Minute Man Anchors

Wind Zone I

Patent# 6622439 12/1/09

Installation Instructions for Model LLBS Longitudinal and Lateral Bracing System Zones I

The LLBS is not designed to be used as a supporting pier.

Note: Your set must be designed by a Registered Professional Engineer if the following conditions occur:

Location is within 1,500 feet of Coast
Pier Height exceeds 48"
Sidewall height exceeds 96"
Roof eaves exceeds 16"
Main beam spacing exceeds 99.5"

1. Refer to the Home Manufacturer Installation Instructions for pier locations. Refer to the home manufacturer installation instructions for required footing size and pier spacing. Note: SD3 pad is 2.8 sq. Ft. Vertical Sidewall and Marriage wall anchors may be required by the home manufacturer when using the MMA LLBS systems. See Manufacturer's instructions.* Max Pier Height 48"

2. Refer to the Systems Placement Plans for the location of Longitudinal Lateral Bracing System. **(See Attached)**

3. Remove turf to expose firm soil at each SD3 pad location. Install SD3 pad to manufacturer, state, local codes, and frost line guidelines as it may apply. For extremely hard or rocky soil. mark four [4] slots and pre-drill soil with a 3/4 x 12" masonry drill.

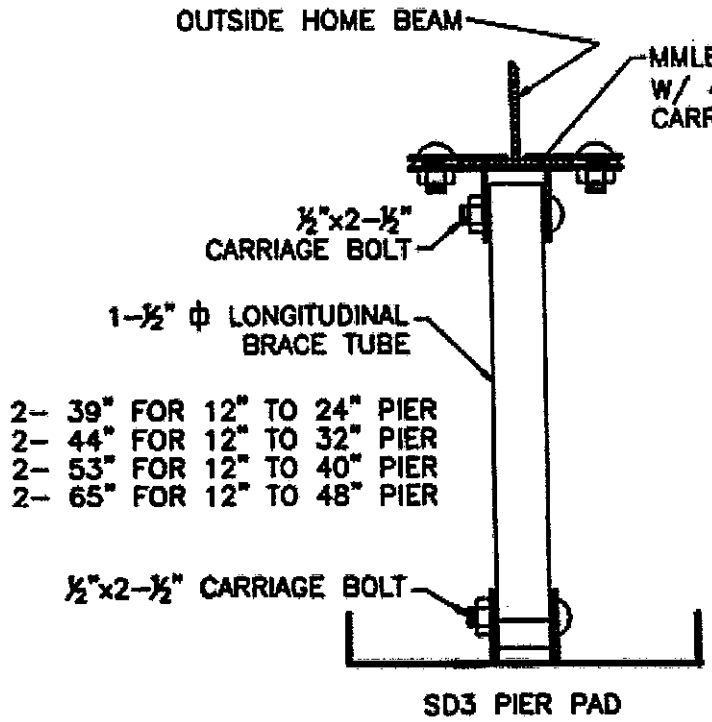
4. Attach tube clip to SD3 pier pads (see Detail Assembly Drawing) center pad under beam, level pad. Angle Drive Pins may be driven vertically through four (4) slots in SD3 pier pad now or after home is totally set. Angle drive pins may be driven up to ten degrees (10) off of vertical. If you choose to drive pins after home is set, do not cover slots in pier pad.

5. Level home on concrete blocks or steel pier by Minute Man.

6. Install Longitudinal and Lateral Bracing in accordance with System Placement Plan and Detail Assembly Drawing. **(1 longitudinal brace tube per system in Wind Zone I only).**

7. Approved uplift anchors with strap installed 75 to 90 degrees are required when using the MMLLB system. Reference uplift anchor chart for number of required anchors.

LONGITUDINAL BRACE DETAIL FOR SD3 PIER PAD



SD3 PIER PAD

NOTES

MAXIMUM PIER HEIGHT 48"

MAX. SIDEWALL HEIGHT 96"

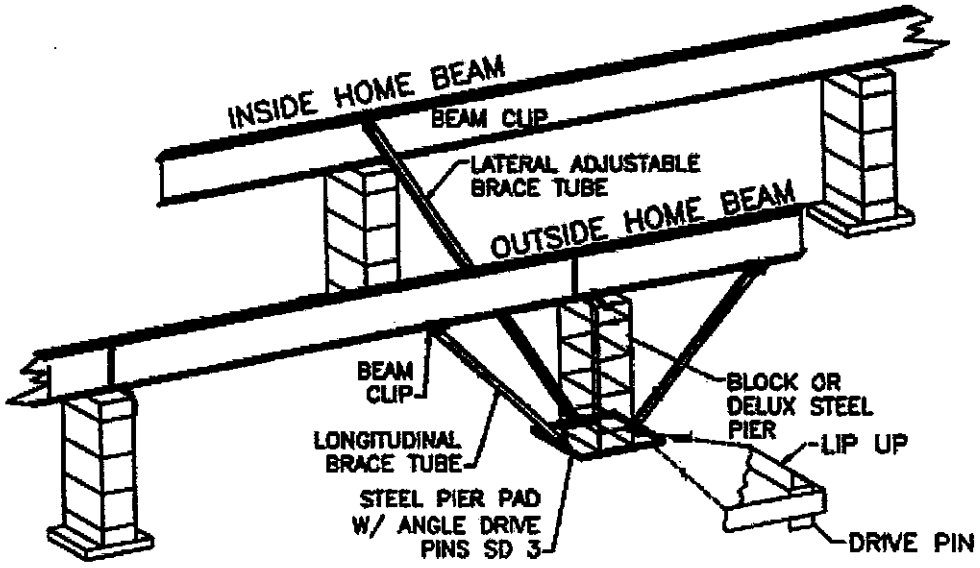
MAX. BEAM SPACING 99.5"

MAX ROOF EAVES 16"

NOTE: 1/2" BOLTS ARE GRADE 5

WHEN USING LONGITUDINAL BRACES, 2ND PIER IN FROM THE END OF THE HOME MAY BE USED TO MAKE ROOM FOR BRACE TUBES.

LONGITUDINAL & LATERAL BRACING SYSTEM DETAIL ASSEMBLY DRAWING



The Minute Man Anchors LLBS Bracing System was tested for Wind Zones I, II, & III

Tested 10/10/01
Rev. 3/6/02
Rev. 7/14/04
Rev. 2/1/10
Rev. 1/1/15
Rev. 9/6/24

Rev. 10/25

Minute Man Anchors

ALTERNATE CONCRETE APPLICATION INSTRUCTIONS FOR MODEL LLBS LONGITUDINAL AND LATERAL BRACING SYSTEM FLEX TUBES WITH ADAPTER USING CONCRETE BLOCK PIERS OR STEEL PIERS

Refer to *Minute Man Anchors Installation Instructions* for LLBS Wind Zones I, II, III for the following information.

- The required number and locations of LLBS Systems.
- Home Manufactures anchor requirements where called for.
- LLBS System detail assembly drawing.

The Longitudinal and Lateral Bracing tubes are engineered to attach directly to ***cast in place concrete*** slabs, runners, square footers and round footers. Refer to HUD Code 3285.312(a)(I,ii} and HUD Code Part 32885.312(b)(1,2,3) for additional information.

Poured Concrete must be a minimum of 3,000 PSI at 28 days.

Concrete Runner at system LLBS locations must be a minimum of 26" wide by 6" deep with 3,000 psi concrete with a minimum 8 linear feet of runner surface per LLBS System location.

Concrete Slab must be a minimum of 6" deep 3,000 psi []ber mesh concrete with 16 sq. feet of slab per LLBS system location. Example 4'-0" x 4'-0".

Shallow Square Concrete Footers at LLBS system locations must be a minimum of 26" x 26" x 8" deep.

Concrete Pile Footers at LLBS systems locations must be a minimum of:

- 18" round or square x 14" deep for Class II soils
- 18" round or square x 18" deep for Class III soils
- 18" round or square x 24" deep for Class IV soils

Instructions

1. Place concrete block or steel pier on the centerline of footer and home's I beam.
2. Attach Flex Tube adapter to square end of *Lateral Brace Tube* and *Longitudinal Brace Tubes.*
3. For *Lateral Brace Tube*, loosely attach tube and hook to top flange of opposite I-beam. Extend flat bottom end of tube to desired location near the base of the pier and mark pilot hole for drilling.
4. For *Longitudinal Brace Tubes*, loosely attach beam clips to bottom flange of overhead I-beam. Slide flat bottom end of tubes to desired location near the base of pier and mark pilot holes for drilling.
5. **THE CENTERLINE OF THE HOLES FOR THE ANCHOR BOLTS MUST BE A MINIMUM OF 4" IN FROM THE EDGE OF THE CONCRETE FOOTING AND 4" FROM OTHER WEDGE BOLTS.**
6. Move flat bottom of Lateral and Longitudinal tubes to the side and drill pilot holes. Drill 5/8 x 3-1/2 holes for 5/8 x 3" wedge anchor. Clean dust from holes and insert wedge anchors full length of "wedge sleeve."

6b. For wet set anchor: align L shaped anchor with leg submerged completely in concrete with only threads extending upright above concrete surface.

7. Place tubes over embedded wedge anchors and tighten nuts (do not use washers). Bend tube to desired angle (when needed), attach top hook or beam clip. Tighten nuts on remaining system connections. All bolts to be tensioned 65 to 70 in. ft. lbs.

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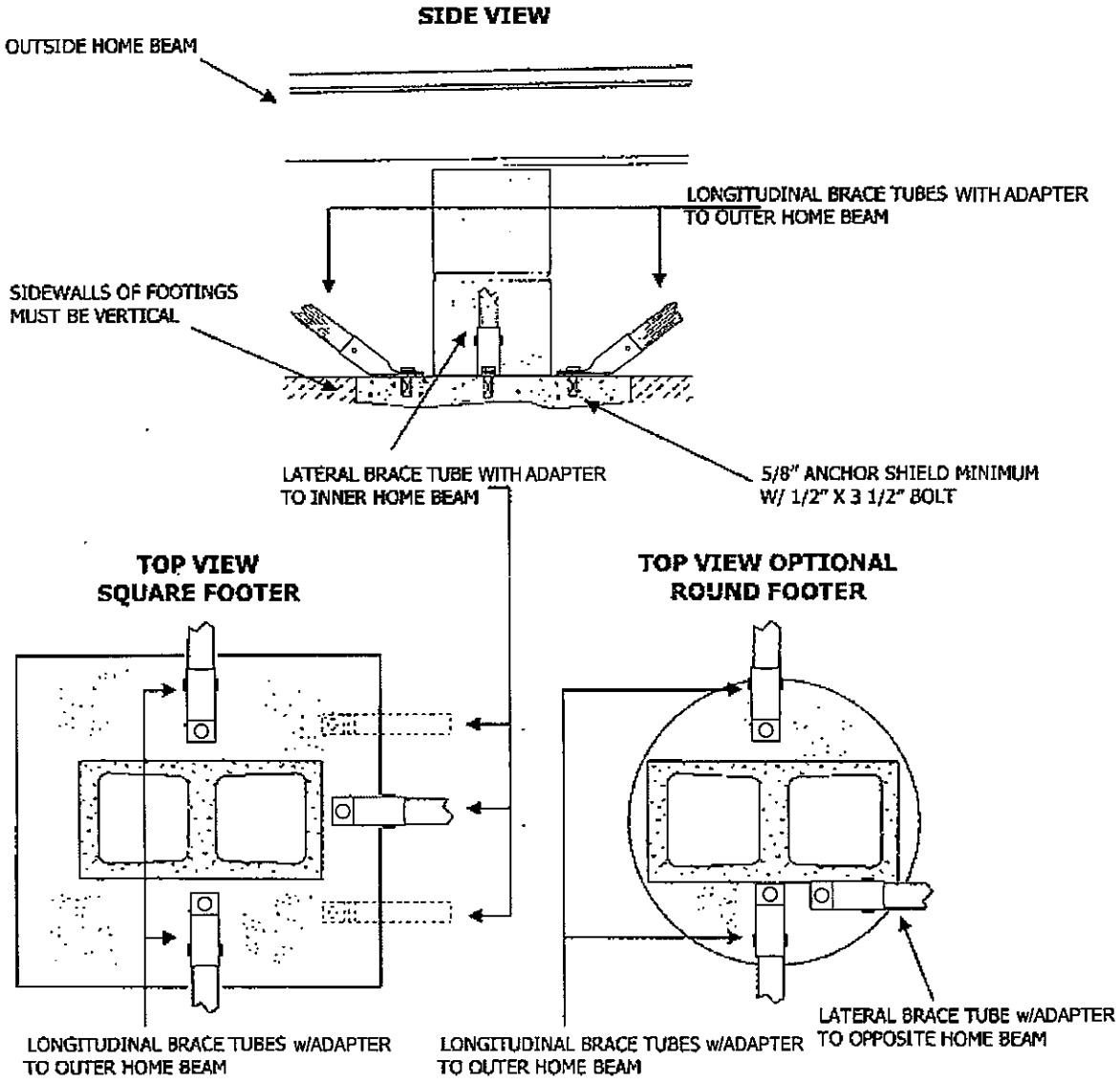
LLBS FLEX TUBES WITH ADAPTER

SAMPLE CONCRETE APPLICATION ILLUSTRATION WITH CONCRETE BLOCK OR STEEL PIER



Conventional footings must be placed below frost line depth for the site unless an insulated foundation or monolithic slab is used.
See HUD CODE part 3285.312(a)(i,ii) and part 3285.312(b)(1,2,3)

CENTERLINE OF HOLES FOR WEDGE ANCHORS MUST BE MINIMUM OF 4" IN FROM THE EDGE OF THE CONCRETE AND 4" FROM OTHER WEDGE ANCHORS.

DO NOT USE ANCHOR WASHER ON BRACE TUBES.

POURED CONCRETE MUST BE A MINIMUM OF 3,000 PSI AT 28 DAYS.

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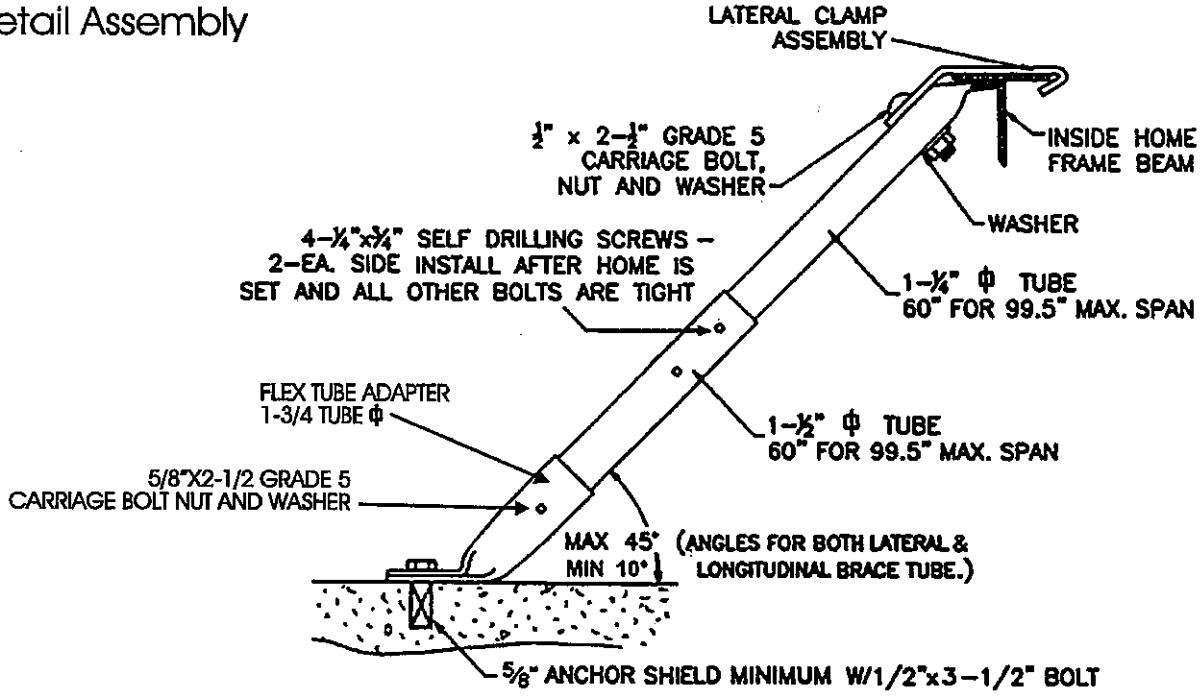
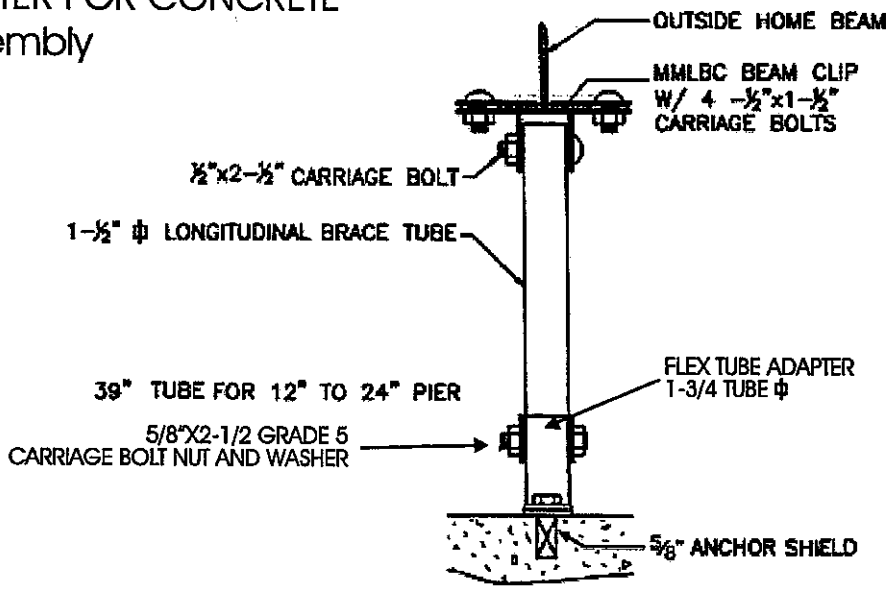
LATERAL BRACE
FLEX ADAPTER FOR CONCRETE
Detail Assembly



LONGITUDINAL BRACE
FLEX ADAPTER FOR CONCRETE
Detail Assembly



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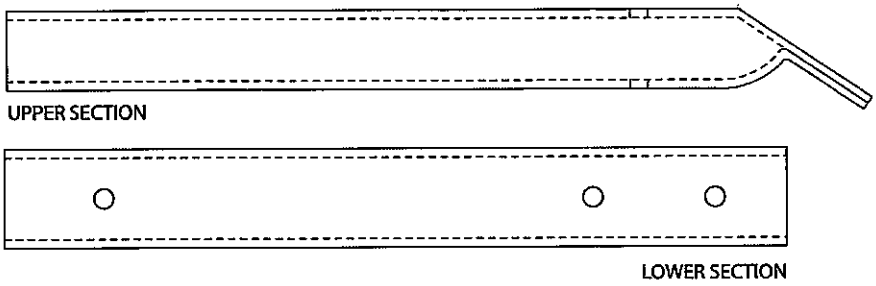
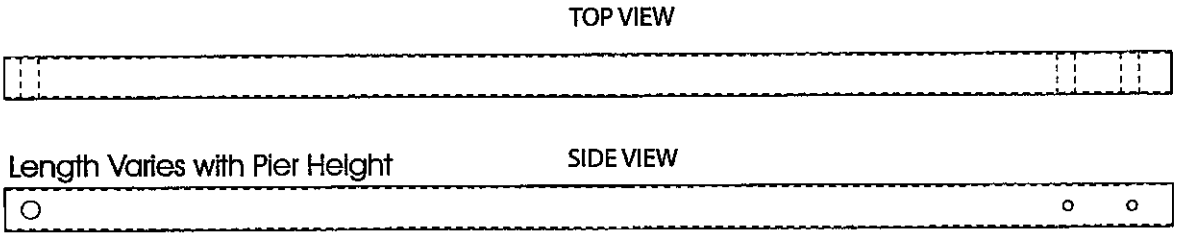
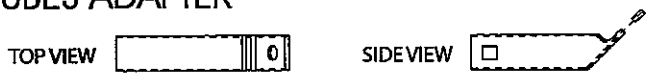
LATERAL BRACE TUBES FOR CONCRETE



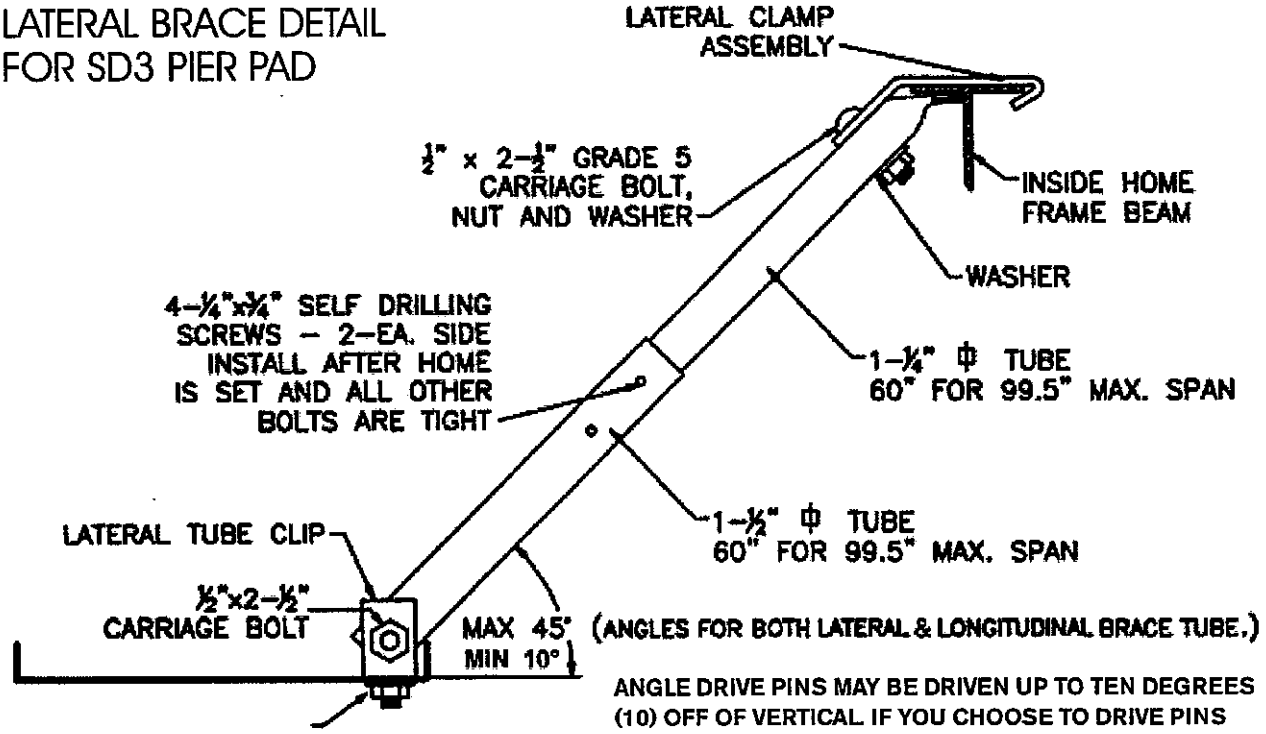
LONGITUDINAL BRACE TUBES FOR CONCRETE



FLEX TUBES ADAPTER



LATERAL BRACE DETAIL FOR SD3 PIER PAD



(ANGLES FOR BOTH LATERAL & LONGITUDINAL BRACE TUBE.)

ANGLE DRIVE PINS MAY BE DRIVEN UP TO TEN DEGREES (10) OFF OF VERTICAL. IF YOU CHOOSE TO DRIVE PINS AFTER HOME IS SET, DO NOT COVER SLOTS IN PIER PAD.

- 12" LONG PINS MAY BE USED IN CLASS III AND II SOILS.
- 16" PINS ARE REQUIRED IN CLASS 4 SOILS.

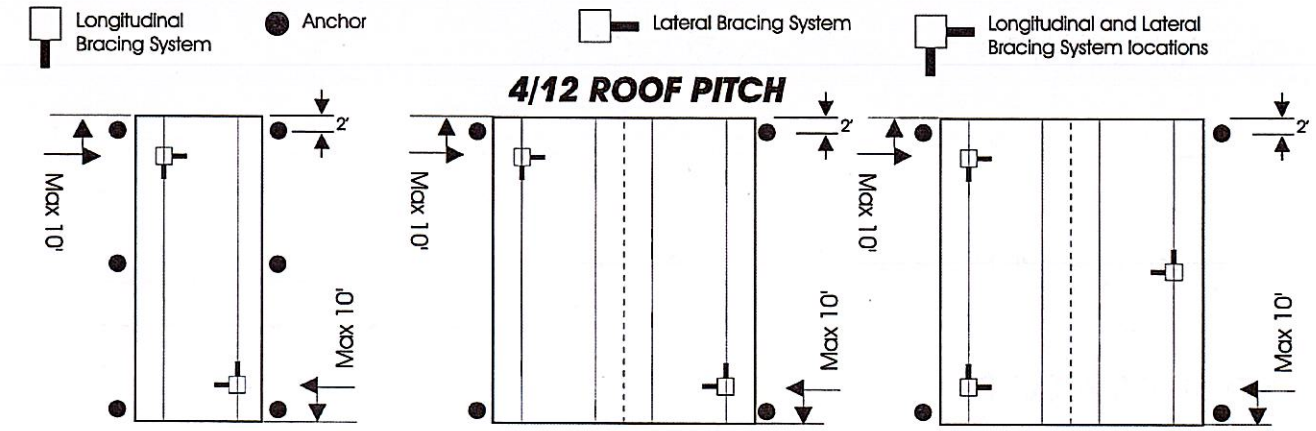
Rev. 10/25

ZONE I LONGITUDINAL AND LATERAL BRACING SYSTEMS PLACEMENT

Approved uplift anchors with strap installed 75 to 90 degrees are required when using the MMA LLBS system. All anchors must have a working load of 3,150 lbs. Systems must be as equally spaced as possible. Triple wide and tag units require 2 additional systems. Place additional systems at the corner ends of the exposed side of the home.

HOME DIMENSIONS REPRESENT BOX SIZE- FOR HOMES OVER 80' CALL MMA

Minimum uplift anchors required. Reference uplift anchor chart for additional required anchors.



SINGLE WIDE HOMES
UP TO 76' LONG - 2 SYSTEMS
76' - 80' LONG - 1 ADDITIONAL SYSTEM

DOUBLE WIDE HOMES
UP TO 76' LONG - 2 SYSTEMS
76' - 80' LONG - 1 ADDITIONAL SYSTEM

SYSTEM LOCATIONS FOR
SINGLE & DOUBLE WIDE HOMES
USING 3 SYSTEMS

LLBS System Requirements for roof pitches over 20° with 8' Sidewalls

Home's Length ft.	Roof Pitch/Degree of Slope				
	5:12	6:12	7:12	8:12	9:12
	22.62°	26.57°	30.26°	33.69°	36.87°
34'	2	2	2	2	2
36'	2	2	2	2	2
38'	2	2	2	2	2
40'	2	2	2	2	2
42'	2	2	2	2	3
44'	2	2	2	3	3
46'	2	2	2	3	3
48'	2	2	3	3	3
50'	2	3	3	3	3
52'	2	3	3	3	3
54'	3	3	3	3	3
56'	3	3	3	3	3

Home's Length ft.	Roof Pitch/Degree of Slope				
	5:12	6:12	7:12	8:12	9:12
	22.62°	26.57°	30.26°	33.69°	36.87°
58'	3	3	3	3	3
60'	3	3	3	3	3
62'	3	3	3	3	3
64'	3	3	3	3	4
66'	3	3	3	4	4
68'	3	3	3	4	4
70'	3	3	4	4	4
72'	3	3	4	4	4
74'	3	3	4	4	4
76'	3	4	4	4	4
78'	3	4	4	4	4
80'	3	4	4	4	4

Call Minute Man Products for system requirements on homes with 9' Sidewalls

Rev. 10/25

Requred Anchors
HUD Wind Zone I
9' max. Sidewalls, 4:12 max Roof Slope
Using Sidewall Anchor Brackets (3)

Home Sections	Home Widths	Home Length (1)	Anchors per Side (2)
Single	12' (up to 140")	up to 63'	3
		64' to 90'	4
	14' to 18' (156" to 210")	up to 73'	3
		74' to 90'	4
Double	20' to 32' (2x118" to 2x186")	up to 90'	2
Triple	36' to 48' (3x140" to 3x186")	up to 90'	2

Notes -
(1) Home length refers to the size of the structure.
(2) Anchors should be placed 2' from each end of the home and evenly spaced.
(3) Brackets to be rated at 3150 lbs. min. allowable.

Requred Anchors
HUD Wind Zone I
9' max. Sidewalls, 5:12 max Roof Slope
Using Sidewall Anchor Brackets (3)

Home Sections	Home Widths	Home Length (1)	Anchors per Side (2)
Single	12' (up to 140")	up to 55'	4
		56' to 74'	5
		75' to 90'	6
	14' to 18' (156" to 210")	up to 58'	4
		59' to 78'	5
		79' to 90'	6
Double	20' (2x118")	up to 90'	3
	24' to 32' (2x140" to 2x186")	up to 90'	2
Triple	36' to 48' (3x140" to 3x186")	up to 90'	2

Notes -
(1) Home length refers to the size of the structure.
(2) Anchors should be placed 2' from each end of the home and evenly spaced.
(3) Brackets to be rated at 3150 lbs. min. allowable.

Requred Anchors
HUD Wind Zone I
9' max. Sidewalls, 7:12 max Roof Slope
Using Sidewall Anchor Brackets (3)

Home Sections	Home Widths	Home Length (1)	Anchors per Side (2)
Single	12' (up to 140")	up to 45'	4
		46' to 62'	5
		63' to 78'	6
		79' to 90'	7
	14' to 18' (156" to 210")	up to 47'	4
		48' to 64'	5
		65' to 81'	6
		82' to 90'	7
Double	20' (2x118")	up to 90'	4
	24' to 32' (2x140" to 2x186")	up to 85'	3
		86' to 90'	4
Triple	36' to 48' (3x140" to 3x186")	up to 90'	2

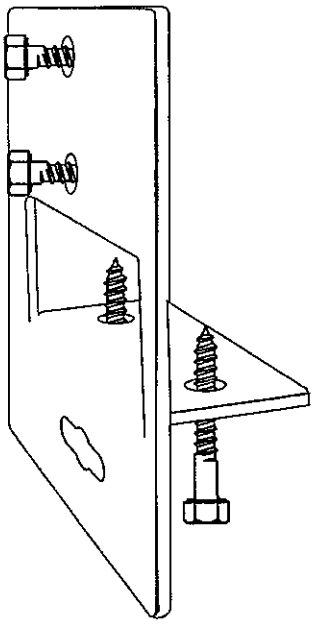
Notes -
(1) Home length refers to the size of the structure.
(2) Anchors should be placed 2' from each end of the home and evenly spaced.
(3) Brackets to be rated at 3150 lbs. min. allowable.

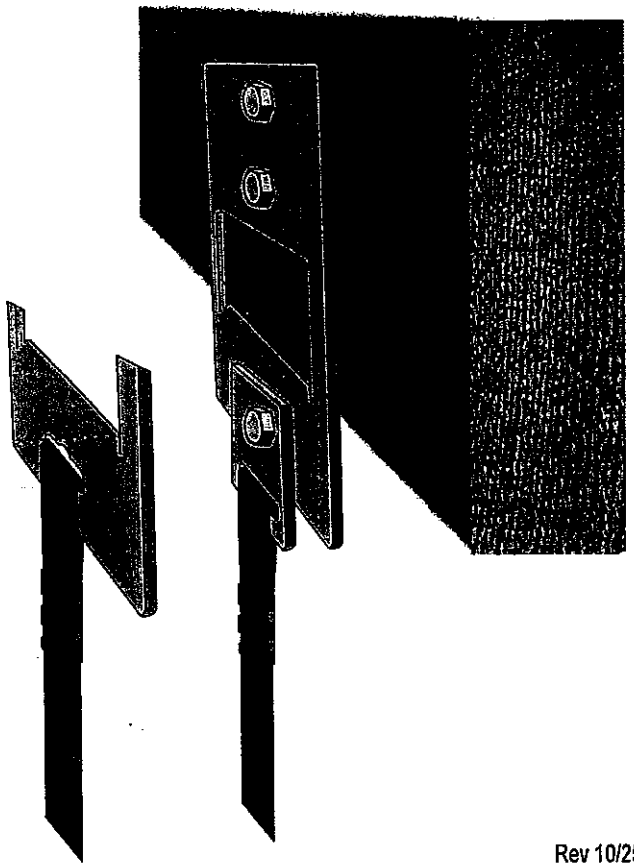
Side Wall Bracket Installation

Position bracket to the bottom of rim joist.
Use (2) 3/8 x 3 1/2 lags, (2) 5/16 x 1 1/4 lags

Strap Installation

Through slot and crimp or 5/8 bolt on pivot clip





Rev 10/25

Minute Man Anchors

Patent Number
6622439

Installation Instructions for Model LLBS Longitudinal and Lateral Bracing System Zone II

Note: Your set must be designed by a Registered Professional Engineer if all or one of the following conditions occur:

- Location is within 1,500 feet of Coast
- Pier Height exceeds 48"
- Sidewall height exceeds 96"
- Roof eaves exceeds 16"
- Main beam spacing exceeds 99.5"

1. Refer to the Home Manufacturer Installation Instructions for pier locations. Note: SD3 pad is 2.8 square foot. Vertical tie anchors are required in accordance with home manufacturer. Vertical ties must be used at all connection points furnished by the home manufacturer. Marriage wall anchors are required in accordance with the Home Manufacturer Instructions.

2. Refer to the Systems Placement Plans for the location of Longitudinal Lateral Bracing System. **(See Attached)**

3. Remove turf to expose firm soil at each SD3 pad location. Install SD3 pad to manufacturer, state, local codes, and frost line guidelines as it may apply. For extremely hard or rocky soil, mark four (4) slots and pre-drill soil with a 3/4 x 12" masonry drill bit.

4. Attach tube clip to SD3 pier pads (see Detail Assembly Drawing) center pad under beam, level pad. Angle Drive Pins may be driven vertically through four (4) slots in SD3 pier pad now or after home is totally set. Angle drive pins may be driven up to ten degrees (10) off of vertical. If you choose to drive pins after home is set, do not cover slots in pier pad.

5. Level home on concrete blocks or steel pier by Minute Man.

6. Install Longitudinal and Lateral Bracing in accordance with Systems Placement Plan and Detail Assembly Drawing. **(2 longitudinal brace tubes per system in Wind Zone II & III).**

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

ZONE II LONGITUDINAL AND LATERAL BRACING SYSTEMS PLACEMENT

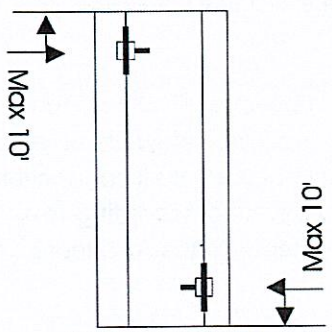
No frame ties or stabilizer plates required. ***Vertical tie anchors are required in accordance with home manufacturer instructions.***

2 longitudinal brace tubes per-system required in Wind Zone II.

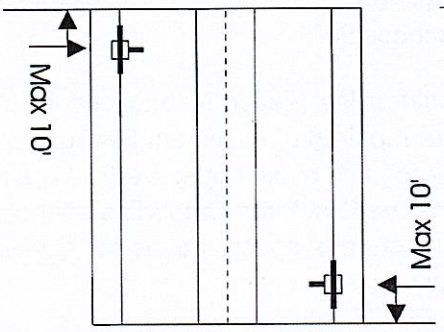
LEGEND Longitudinal and Lateral Bracing System — Lateral Bracing System

HOME DIMENSIONS REPRESENT BOX SIZE- FOR HOMES OVER 80' CALL MMA

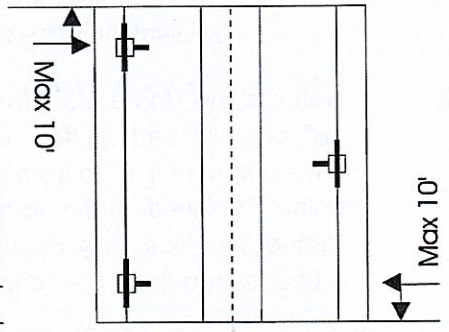
4/12 ROOF PITCH



SINGLE WIDE HOMES
UP TO 76' LONG - 2 SYSTEMS
76' - 80' LONG - 1 ADDITIONAL SYSTEM



DOUBLE WIDE HOMES
UP TO 76' LONG - 2 SYSTEMS
76' - 80' LONG - 1 ADDITIONAL SYSTEM



SYSTEM LOCATIONS FOR
SINGLE & DOUBLE WIDE HOMES
USING 3 SYSTEMS

Home's Length ft.	Roof Pitch/Degree of Slope				
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36'	2	2	2	2	2
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40'	2	2	2	2	2
42'	2	2	2	2	3
44'	2	2	2	3	3
46'	2	2	2	3	3
48'	2	2	3	3	3
50'	2	3	3	3	3
52'	2	3	3	3	3
54'	3	3	3	3	3
56'	3	3	3	3	3

Home's Length ft.	Roof Pitch/Degree of Slope				
	5:12	6:12	7:12	8:12	9:12
	22.62°	26.57°	30.26°	33.69°	36.87°
58'	3	3	3	3	3
60'	3	3	3	3	3
62'	3	3	3	3	3
64'	3	3	3	3	4
66'	3	3	3	4	4
68'	3	3	3	4	4
70'	3	3	4	4	4
72'	3	3	4	4	4
74'	3	3	4	4	4
76'	3	4	4	4	4
78'	3	4	4	4	4
80'	3	4	4	4	4

Call Minute Man Anchors for system requirements on homes with 9' Sidewalls

Rev. 10/25

Minute Man Anchors

Patent Number
6622439

Installation Instructions for Model LLBS Longitudinal and Lateral Bracing System Approved for Florida

Note: Your set must be designed by a Registered Professional Engineer if all or one of the following conditions occur:

Location is within 1,500 feet of Coast
Pier Height exceeds 48"
Sidewall height exceeds 96"
Roof eaves exceeds 16"
Main beam spacing exceeds 99.5"

1. Refer to the Home Manufacturer Installation Instructions for pier locations. 6" Disc anchors 48" long with vertical ties are required at maximum 5'-4" center along both sidewalls starting a maximum of 2'-0" in from each end of the home. Vertical ties must be used at all connection points furnished by the home manufacturer. Centerline anchors to be sized according to soil torque condition. Any manufacturer's specifications for sidewall anchor loads in excess of 4,000 lbs require a 5' anchor.

2. Refer to the Systems Placement Plans for the location of Longitudinal Lateral Bracing System. **(See Attached)**. Each system is required to have a frame tie and stabilizer attached at each lateral arm stabilizing location.

3. Remove turf to expose firm soil at each SD3 pad location.

4. Attach tube clip to SD3 pier pads (see Detail Assembly Drawing) center pad under beam, level pad. Angle Drive Pins may be driven vertically through four (4) slots in SD3 pier pad now or after home is totally set. Angle drive pins may be driven up to ten degrees (10) off of vertical. If you choose to drive pins after home is set, do not cover slots in pier pad. 16" Drive pins must be used in Florida.

5. Level home on concrete blocks or deluxe steel pier by Minute Man.

6. Install Longitudinal and Lateral Bracing in accordance with Systems Placement Plan and Detail Assembly Drawing.

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

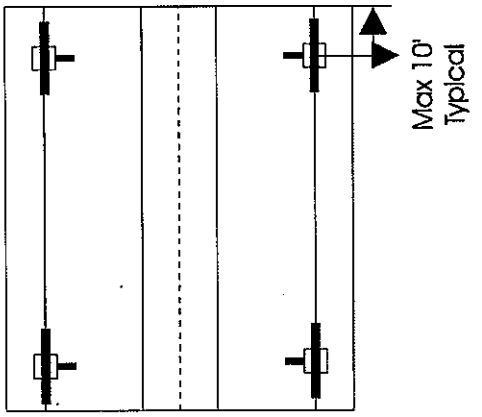
FLORIDA ZONE II AND III LONGITUDINAL AND LATERAL BRACING SYSTEMS PLACEMENT

For Roof slopes up to 4/12 pitch

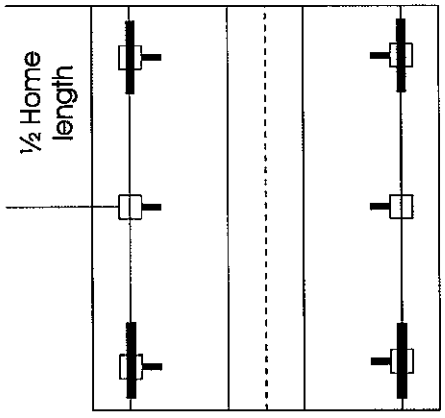
Each system is required to have a frame tie and stabilizer attached at each lateral arm stabilizing location.

HOME DIMENSIONS REPRESENT BOX SIZE

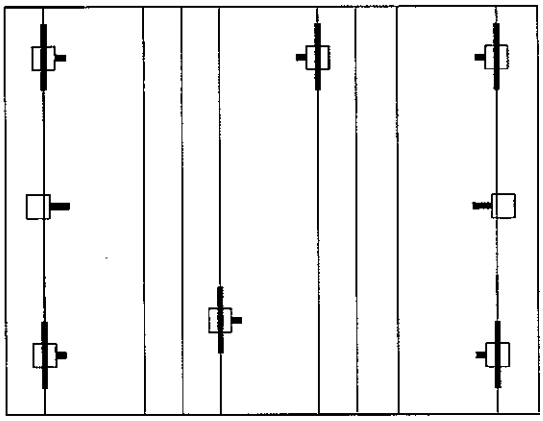
LEGEND Longitudinal Bracing System | Longitudinal and Lateral Bracing System | Lateral Bracing System



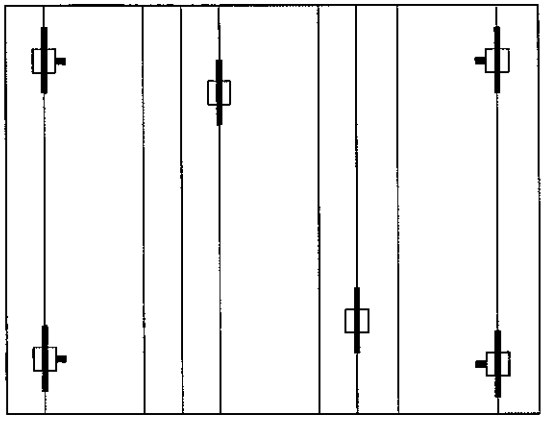
SINGLE AND DOUBLE WIDE
UP TO 48' LONG - 4 SYSTEMS
52' INCLUDING HITCH



SINGLE AND DOUBLE WIDE
49'-76' LONG - 6 SYSTEMS
80' INCLUDING HITCH



FOR TRIPLE WIDE OR TAG UNITS-
8 SYSTEMS OVER 52' BOX/ 56' INCLUDING HITCH



FOR TRIPLE WIDE OR TAG UNITS-
6 SYSTEMS UP TO
52' BOX/ 56' INCLUDING HITCH

Rev. 10/25

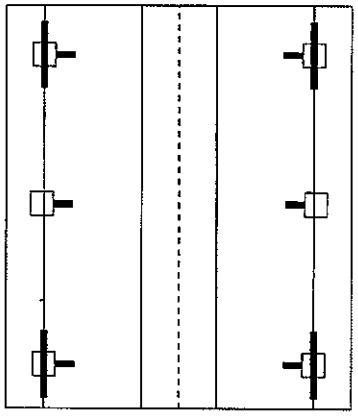
FLORIDA ZONE II AND III LONGITUDINAL AND LATERAL BRACING SYSTEMS PLACEMENT

For 5/12 Roof Pitch

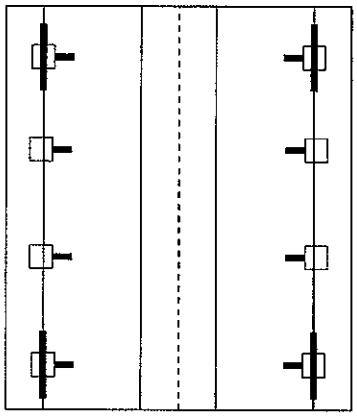
Each system is required to have a frame tie and stabilizer attached at each lateral arm stabilizing location. Systems must be as evenly spaced as possible.

HOME DIMENSIONS REPRESENT BOX SIZE

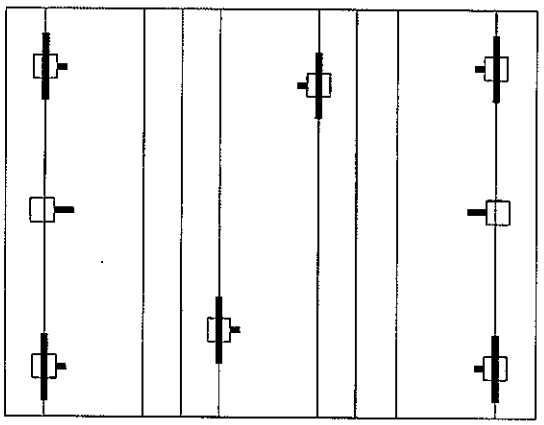
LEGEND — Longitudinal Bracing System; Longitudinal and Lateral Bracing System; Lateral Bracing System



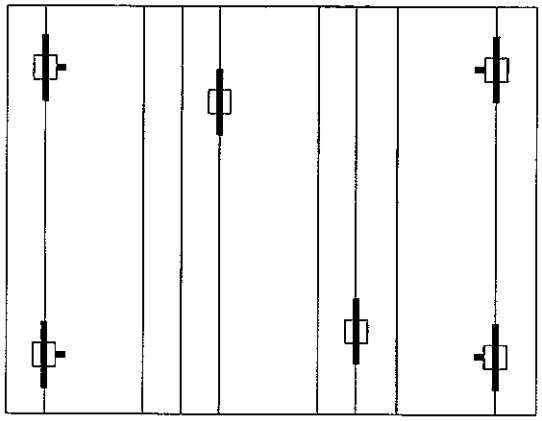
SINGLE AND DOUBLE WIDE
UP TO 32' WIDE AND 52' LONG
6 SYSTEMS
56' INCLUDING HITCH



SINGLE AND DOUBLE WIDE
UP TO 32' WIDE AND 76' LONG
8 SYSTEMS
80' INCLUDING HITCH



FOR TRIPLE WIDE OR TAG UNITS-
8 SYSTEMS OVER 52' BOX/ 56' INCLUDING HITCH

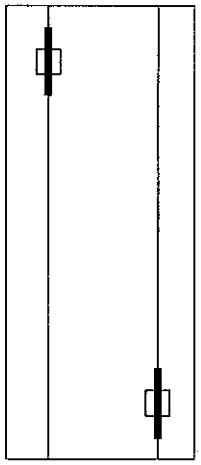


FOR TRIPLE WIDE OR TAG UNITS-
6 SYSTEMS UP TO
52' BOX/ 56' INCLUDING HITCH

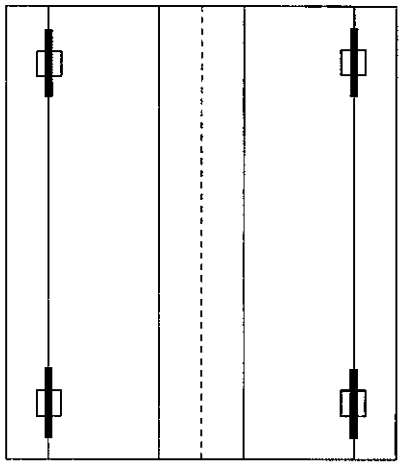
Rev. 10/25

LONGITUDINAL BRACING SYSTEMS PLACEMENT FOR FLORIDA

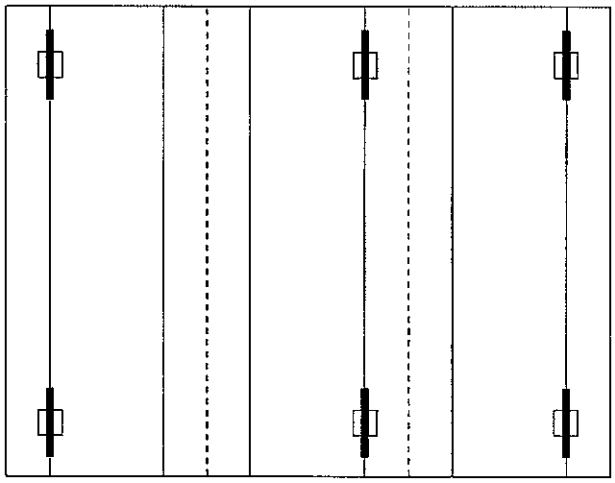
Use minimum 650 DH anchors and 180 square inch stabilizers with frames at maximums 5'-4' centers. Vertical ties must be used at all connection points furnished by the home manufacturer's instructions or in the case of used homes where designated on centerline. *(SEE FLORIDA RULE 15C-1)*. Marriagewall anchors must be used in accordance with home manufacturers instructions. For roof slopes up to 5/12 pitch systems must be placed no more than 16' from end of home.



UP TO 16' SINGLE WIDE



UP TO 32' DOUBLE WIDE



UP TO 52' TRIPLE WIDE
OR DOUBLE WIDE WITH TAG

See Longitudinal and Lateral Bracing System detail assembly drawing.

Xi2-24 Zone 1
Rim Joist Uplift Hook Up

MADE IN THE USA

Strap can either be bolted with the swivel to the end of bracket, slid through swivel connector or through the slot in the bracket and crimped to fit. Provides joist bracket attachment for uplift strap.

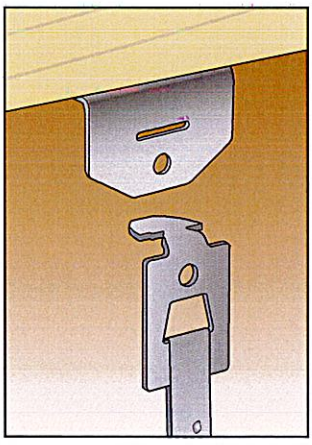
Installs with (2) 1/2" X 3.25" w/ minimum 3" threads lag bolts from the bottom into the perimeter joist rail.

Rim Joist Bracket
#59699
4-11/16" x 2.75"
9 ga. Carbon Steel - Galvanized
3,150 lb. Design Load.

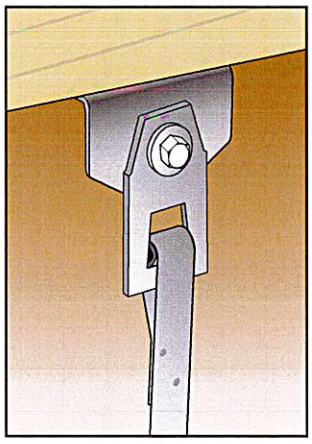
Lag Bolt
#10424
1/2" x 3.25"
w/min. 3" threads.

Rim Joist Bracket Kit
#59700
Capacity 3,150 lbs.

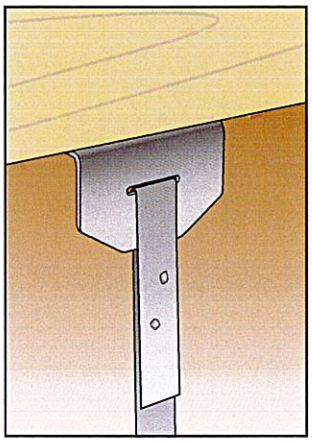
Kit Includes:
2 - Wall Brackets
4 - Lag Bolts



Hook Up
w/ Universal Strap
59207 - 5 ft. Length
59208 - 6 ft. Length
3,150 lb. Design Load.



Hook Up
w/Swivel Strap
59725 - 5 ft. Length
59726 - 6 ft. Length
3,150 lb. Design Load.



Rim Joist Bracket w/Strap
59698 - 5 ft. Length
3,150 lb. Design Load.

404-344-0000 • tiedown.com
605 Stonehill Drive SW, Atlanta, GA 30336
sales@tiedown.com

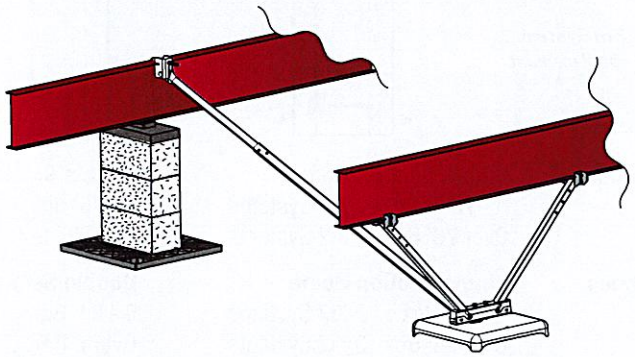
TIE DOWN
MANUFACTURING INGENUITY

XVG Steel Pier Ground System Installation Instructions for Wind Zone I, II & III Except Florida and California

Effective November 3, 2025

US Patent No.11,898,318

The XV Steel Pier System replaces the standard pier support and base pad. Installation instructions are for replacing normal lateral frame tie and longitudinal end tie anchorage and plates. In addition, the system requires a minimum amount of uplift anchors in Wind Zone I for enhanced wind protection. Check Anchor charts for details.



Ground Installation Requirements

- Install in type 4B (175-275 lbs.) soil or better.
- Main rail spacing must be 75.5" - 99.5". An exception could be made at 112" with the proper strut.
- Maximum pier height must be 48" with 6" maximum rise from the location of the system to the end of the home. For all other piers, use the manufacturers set up instructions.
- Maximum vertical projection at sidewall is 9' wall and 12" eave at roof rim. Higher walls may be used when possible for design loads to be adjusted accordingly. For 10' walls, check with Tie Down.
- Longitudinal strut angles need to be no more than 60 degrees and no less than 40 degrees.
- The XV System is installed on one of the pier footers required by the home manufacturer set up instructions. No other base pad required.
- Two systems designed to work with each other must be placed as evenly as possible. Measuring from the center of the block/pier, systems are to be placed a minimum of 2' and a recommended maximum of 10' (when needed may be a maximum of 1/4 the length of the home) from each end of the home as shown on pier placement chart.
- For roof slopes greater than 20 degrees (4.37" in 12" Pitch), see page 3.
- Although soil is the recommended base for the XV pan, properly selected and installed gravel may also be used. The gravel must be smooth (not crushed rock), clean, 3/8" diameter maximum, installed and compacted as necessary. Installing the incorrect gravel may not allow the system to obtain full design capacity.
- This system only replaces normal lateral frame tie and or longitudinal end tie anchorage, with minimum uplift anchorage added for Wind Zone I. Wind zones II & III (100+ mph) require additional vertical sidewall anchorage for high wind areas. The home manufacturer may require additional vertical anchor ties that are unique to the homes design. These locations may include shear walls, marriage line ridge beam supports, and rim plates. Check manufacturers installation instructions for set up requirements.

XV components exceed HUD code 3280.306 g "Anchoring equipment exposed to weathering shall have a resistance to weather deterioration at least equivalent to that provided by a coating of zinc on steel of not less than 0.30 ounces per square foot of surface coated. The XVG Foundation System by Tie Down complies with 24CFR Part 3280 & 3285 when installed in accordance with the instructions provided by Tie Down.

MADE IN THE USA

Up To Date Ground Installation Manual

WARNING: This product can expose you to chemicals including Nickel, which is known to the State of California to cause cancer. For more information go to: www.P65Warnings.ca.gov

Instruction #08461 (D2042 - Rev. 9/12/25)

TIE DOWN
MANUFACTURING INGENUITY

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605 Stonehill Drive SW, Atlanta, GA 30336
sales@tiedown.com

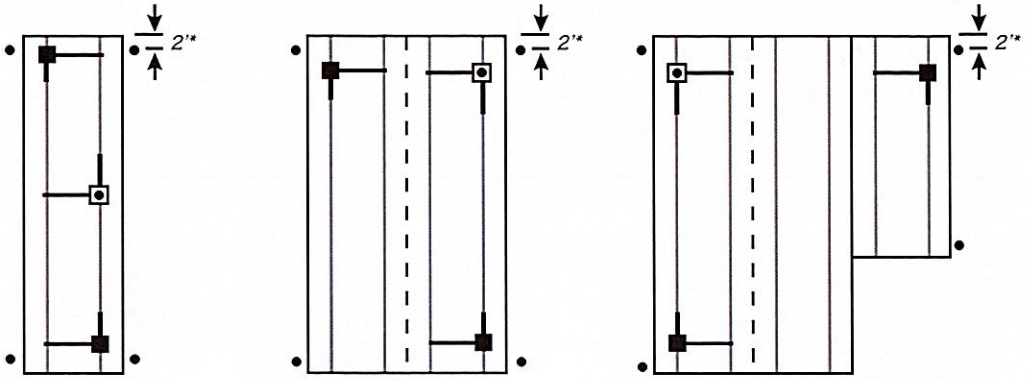
XVG Steel Pier Placement

● *Approved Anchors must begin within 2' of the end of home*.*

Xi2 System Placement

3rd System for placement

**See anchor chart below*



	Single Section Home	Double Section Home	Triple Section Home
Wind Zones I & II	0 - 76' Box 2 Xi2 Systems Over 76' Box 3 Xi2 Systems	0 - 76' Box 2 Xi2 Systems Over 76' Box 3 Xi2 Systems	0 - 76' Box 2 Xi2 Systems Over 76' Box 3 Xi2 Systems
Wind Zones III	0 - 64' Box 2 Xi2 Systems Over 64' Box 3 Xi2 Systems	0 - 64' Box 2 Xi2 Systems Over 64' Box 3 Xi2 Systems	0 - 64' Box 2 Xi2 Systems Over 64' Box 3 Xi2 Systems

Wind Zone I Uplift Anchors Chart

Home Section	Home Width	4:12 Home Length	4:12 Anchors Per Side	5:12 Home Length	5:12 Anchors Per Side	6:12-7:12 Home Length	6:12-7:12 Anchors Per Side
Single	12 ft. up to 140 in.	up to 63 ft.	3	up to 55 ft.	4	up to 45 ft.	4
		64 ft. to 90 ft.	4	56 ft. to 74 ft.	5	46 ft. to 62 ft.	5
				75 ft. to 90 ft.	6	63 ft. to 78 ft.	6
						79 ft. to 90 ft.	7
	14 ft.-18 ft. 156 in. to 210 in.	up to 73 ft.	3	up to 58 ft.	4	up to 47 ft.	4
		74 ft. to 90 ft.	4	59 ft. to 78 ft.	5	48 ft. to 64 ft.	5
				79 ft. to 90 ft.	6	65 ft. to 81 ft.	6
						82 ft. to 90'	7
Double	20 ft. to 32 ft. 2 x 118 in. to 2 x 186 in.	up to 90 ft.	2				
		up to 90 ft.	2				
	20' (2 x 118 in.)			up to 90 ft.	3	up to 90 ft.	4
	24 ft. to 32 ft. 2 x 140 in. to 2 x 186 in			up to 90 ft.	2	up to 90 ft.	3
Triple	36 ft. to 48 ft. 3 x 140 in. to 3 x 186 in.	up to 90 ft.	2	up to 90 ft.	2	up to 90 ft.	2

IMPORTANT: System Uplift Anchors are to be installed to the bottom of the rim joist with 3150lb. bracket and lag bolts, not I-beam. The corner anchors should be installed within 2' of the end of the home and any additional anchors installed as evenly as possible per side.

Note: In the event that the home has a solid foundation wall at the sidewall, instead of a bracket at the sidewall as described previously, the bracket can be relocated to a floor joist a maximum of 10" from the sidewall and connected with a vertical strap to a ground anchor, as long as the following limitations to the regular anchor spacings are observed.

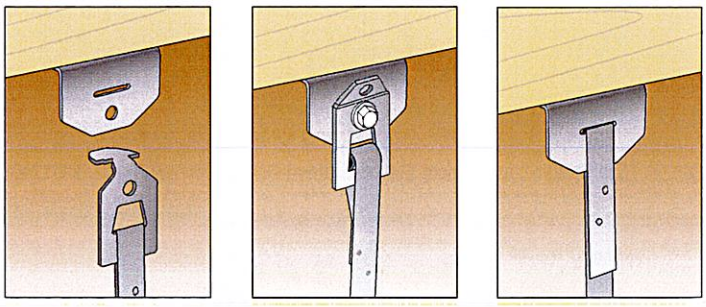
Single Sections: 5/12 Max roof slope -add one bracket and anchor, evenly spaced per side.
7/12 Max roof slope -add two brackets/anchors evenly spaced per side.

Doubles and Triple sections – no additional anchors required.

Uplift Rim Joist Bracket

Bracket attaches to the bottom of rim joist with (2) 1/2"-3.25" lag bolts with minimum 3" threads. Bracket can face inward or outward. Install lag bolts into 2 pre drilled 5/16" holes.

Strap can either be bolted with swivel to end of bracket, slid through swivel connector or through the slot in the bracket and crimped to fit. Strap angle must be 75 deg. to 90 deg.



Xi2-24 System Requirements for Roof Pitches Higher than 20 degrees

Additional Systems:
On a single section home, the 3rd system is placed in the middle of the home. When using 3 or 4 systems (double and triple sections), install on opposite corners. If needed, a 5th system would be in the center of the unit on either side.

Xi2 Longitudinal Stabilization for Wind Zones II & III

When using longitudinal stabilization only, in higher wind zones, Systems must be spaced as evenly as possible, no more than 10' from the end of the home. Longitudinal Struts DO NOT replace anchors on single section homes.

NOTE: On triple section homes in Wind Zones II & III an additional longitudinal system is required. It should be installed on the center section.

Length (Feet)	Wind Zone I				Wind Zone II				Wind Zone III			
	5:12	6:12	7:12	9:12	5:12	6:12	7:12	9:12	5:12	6:12	7:12	9:12
34	2	2	2	2	2	2	2	2	2	2	3	3
36	2	2	2	2	2	2	2	3	2	2	3	3
38	2	2	2	3	2	2	2	3	2	3	3	3
40	2	2	2	3	2	2	2	3	3	3	3	3
42	2	2	3	3	2	2	3	3	3	3	3	3
44	2	2	3	3	2	2	3	3	3	3	3	3
46	2	3	3	3	2	3	3	3	3	3	3	4
48	2	3	3	3	3	3	3	3	3	3	3	4
50	3	3	3	3	3	3	3	3	3	3	3	4
52	3	3	3	3	3	3	3	3	3	3	4	4
54	3	3	3	3	3	3	3	3	3	3	4	4
56	3	3	3	3	3	3	3	3	3	3	4	4
58	3	3	3	3	3	3	3	3	3	3	4	4
60	3	3	3	3	3	3	3	3	3	3	4	5
62	3	3	3	3	3	3	3	3	4	4	4	5
64	3	3	4	4	3	3	4	4	4	4	4	5
66	3	3	4	4	3	3	4	4	4	4	4	5
68	3	4	4	4	3	4	4	4	4	4	5	5
70	3	4	4	4	3	4	4	4	4	4	5	5
72	3	4	4	4	4	4	4	5	4	4	5	5
74	4	4	4	5	4	4	4	5	4	5	5	5
76	4	4	4	5	4	4	4	5	4	5	5	6
78	4	4	4	5	4	4	4	5	4	5	5	6
80	4	4	4	5	4	4	4	5	4	5	5	6

Fig. 3-1

Step 1
- Stand the steel pan on its side. Slide the u-bolt from the underside of the pan passing through to the top.
- Attach two flange nuts over the u-bolt, just enough to prevent the u-bolt from coming loose during pan installation. See Fig. 3-2.
- Clear all organic matter and debris from the pan site.
- Place pan centered under I-beam.
- Press or drive pan into ground until the top of the pan is level and flush with prepared surface.

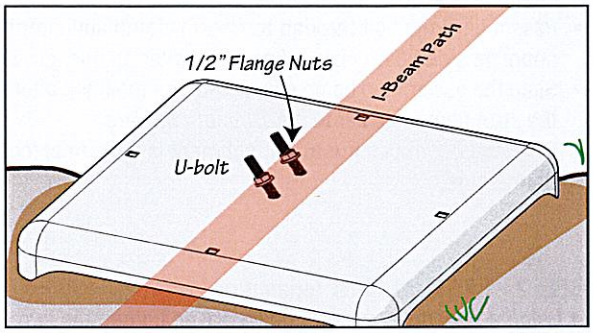


Fig. 3-2

Step 2
- Remove the flange nuts from the U-bolt. Place the U-bolt in a upright position.
- Slide the end of the lateral strut over the outer u-bolt leg as shown in Fig 3-3.
- Slide the pan washer over the u-bolt leg and on top of the lateral strut.
- Slide the lower tension bracket over the u-bolt/pan washer/lateral strut.
- Slide the upper tension bracket over the u-bolt and place it inside the lower tension bracket as shown right in Fig 3-3.
- Attach two flange nuts over the u-bolt and tension bracket. Loosely tighten flange nuts, DO NOT FULLY TIGHTEN NUTS.

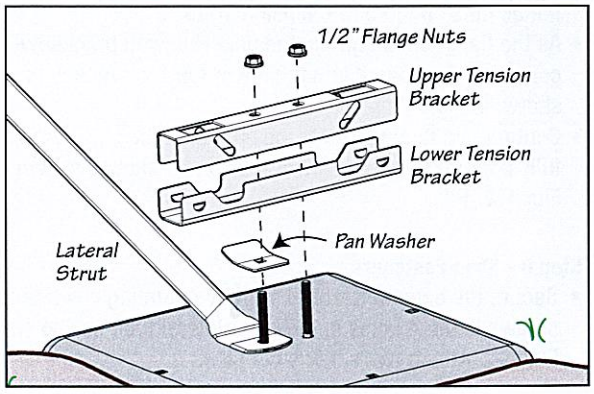


Fig. 3-3

Step 3 - Longitudinal Struts
- Insert the black end caps into the bottom end of two longitudinal struts.
- Insert longitudinal struts into the ends of the assembled tension bracket as shown in Fig. 3-4,. The struts will hang loose.

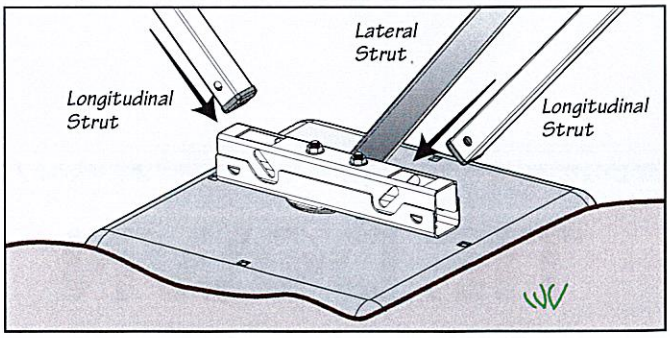


Fig. 3-4

Step 4 - Longitudinal Beam Clamp

- Position two longitudinal beam clamps on both sides of the I-beam. The I-beam frame will slide into the slots on the clamps.
- Raise the longitudinal strut upward and position it between the two beam brackets as shown right in Fig. 4-1.
- Insert a 4" carriage bolt through the clamp, strut, and opposite clamp as shown right.
- Attach a flange nut to the carriage bolt.

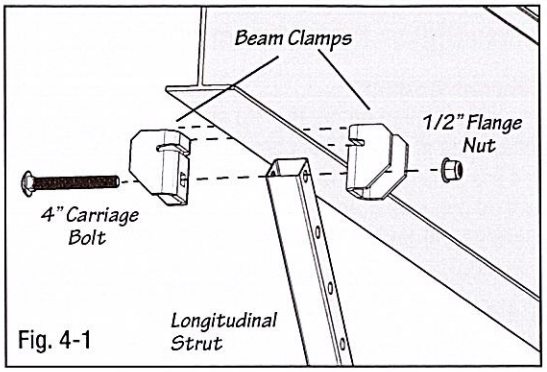


Fig. 4-1

Step 5 - Longitudinal Strut

- Pull the beam bracket assembly outward removing any loose slack between the beam clamp and base.
- Using a 3/4" deep socket/impact driver, tighten the flange nut on the beam clamp assembly. Note: As the bolt/nut tighten, the two beam clamps will begin to crimp the I-beam frame.

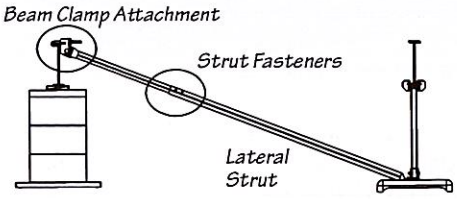


Fig. 4-2

Step 6 - Beam Clamp

- Extend the lateral strut outward to the opposite side I-beam as shown above. NOTE: The fully extended strut must maintain a minimum 6" to 8" overlap between inner and outer tubes.
- Slide the "J" bolt over the I-beam and between the home frame.
- Slide the beam clamp over the "J" bolt end passing through the top of the beam clamp and slide the clamp over the I-beam frame as shown in Fig. 4-3. Attach flange nut over the "J" bolt and loosely tighten nut.
- Align/insert the lateral strut end in the mounting slot on the bottom of the beam clamp. As shown right in Fig. 4-3.
- Pass a carriage bolt through the beam clamp and lateral strut coming out the opposite side beam clamp. Loosely tighten flange nut. Do not fully tighten nut.
- Slide the assembled beam clamp with the mounted lateral strut left or right aligning the strut perpendicular to the XV pan/hardware.
- Once the beam clamp/strut attachment is in its final location, tighten the two flange nuts.

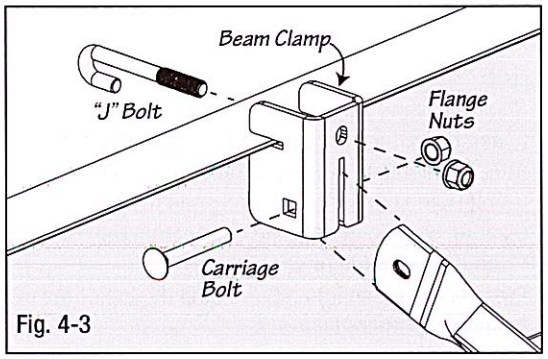


Fig. 4-3

Step 7 - XVG Base Final Tensioning

- Using a 3/4" deep socket/impact driver, tighten the two flange nuts on top of the tension bracket.
- As the flange nuts tighten, the upper tension bracket will compress downward into the lower tension bracket as shown in Fig 4-4 "A".
- Continue tightening the flange nuts until the upper bracket fully compress into the lower tension bracket as shown in Fig. 4-4 "B"

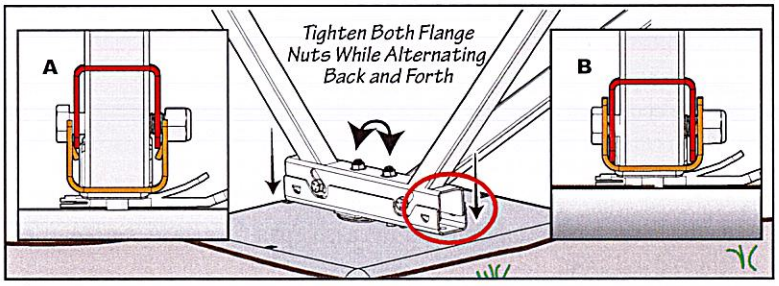


Fig. 4-4

Step 8 - Strut Fasteners

- Secure the extended lateral strut by mounting 4 self tapping screws in the 4 holes in the outer lateral tube as shown in Fig. 4-2. Attach two screws per side.

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Instruction #08461 (D2042 Rev. 9/12/25)

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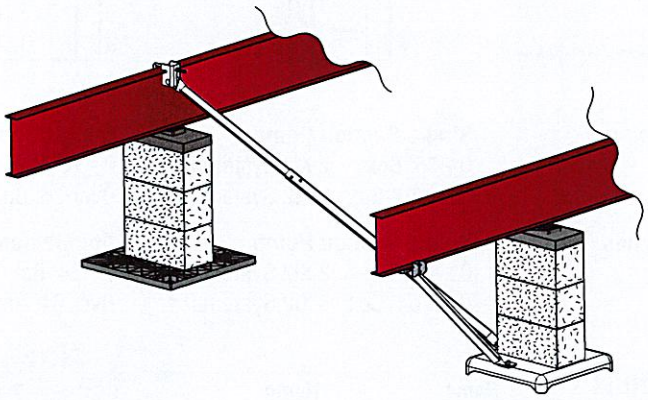
Xi2-24 Ground Foundation System Installation Instructions for Wind Zone I, II & III Except Florida and California

Effective November 3, 2025

US Patent No.11,898,318

The Xi2-24 System Instructions use the lateral and longitudinal struts to replace normal lateral frame tie and longitudinal end tie anchorage and stabilizer plates. In addition the system requires a minimum amount of uplift anchors in Zone I for enhanced wind protection. Check anchor charts for details



Installation Requirements

- Install in any type soil, 4B (175-275 lbs.) or better.
- Main rail spacing must be 75.5" – 99.5", 112" exception with proper strut.
- Maximum pier height at system 48", with 6" maximum rise from location of system to end of home. For all other piers use the home manufacturers set up instructions.
- Maximum vertical projection at sidewall is 9' wall and roof rim (9' wall and 12" eave). Higher walls may be used, when possible for design loads to be adjusted accordingly. For 10' walls, check with Tie Down.
- Longitudinal strut angle no more than 50 degrees and no less than 25 degrees. The longitudinal component of the Xi2 system replaces end frame ties. Check manufacturers requirements.
- The Xi2-24 System is installed on or under one of the pier footers required by manufacturers set up instructions, no other base pad required. If home is already set, a new pier can be added between existing piers as long as the other requirements are met.
- For roof slopes greater than 20 degrees, (4.37" in 12" pitch) see page 3.
- Two systems designed to work with each other must be placed as evenly as possible. Measuring from the center of the block/pier, systems are to be placed a minimum of 2' to a recommended maximum of 10' (when needed may be a maximum of 1/4 the length of the home) from each end of home as shown on pier placement chart. Components of the Xi-24 system such as the longitudinal strut and connecting hardware, may extend beyond pier location and can face in or out as long as both systems share the same direction, both either facing in or both facing out.
- Although soil is the recommended base for the Xi-2 pan, properly selected and installed gravel may also be used. The gravel must be smooth (not crushed rock), clean, 3/8" diameter maximum, installed and compacted as necessary. Installing incorrect gravel may not allow the system to obtain full design capacity.
- This System only replaces normal lateral frame tie and or longitudinal end tie anchorage, with minimum uplift anchorage for Wind Zone I. Wind Zones II & III (100+ mph) require additional vertical sidewall anchorage for high wind areas. The home manufacturer may require additional vertical anchor ties that are unique to the home's design. These locations may include shear walls, marriage line ridge beam supports, and rim plates. Check the Manufacturers installation instructions for set-up requirements.

WARNING: This product can expose you to chemicals including Nickel, which is known to the State of California to cause cancer. For more information go to: www.P65Warnings.ca.gov

MADE IN THE USA

Up To Date Ground Installation Instructions

Instruction #08463 (D2044 - Rev. 9/12/25)

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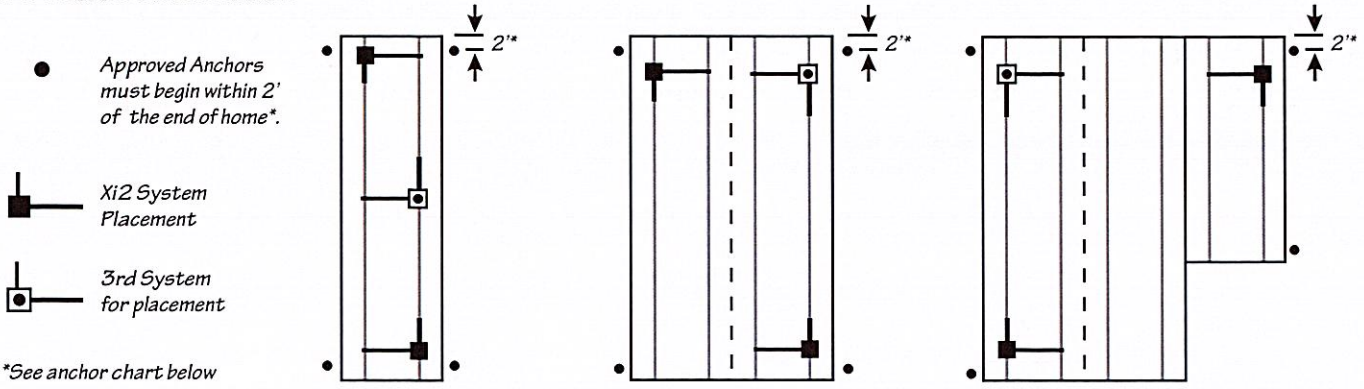
Xi2 Lateral Stabilization



Wind Zones I & II	**Single Section Home**	**Double Section Home**	**Triple Section Home**
	0 - 76' Box 2 Xi2 Systems	0 - 76' Box 2 Xi2 Systems	0 - 76' Box 2 Xi2 Systems
	Over 76' Box 3 Xi2 Systems	Over 76' Box 3 Xi2 Systems	Over 76' Box 3 Xi2 Systems
Wind Zones III	**Single Section Home**	**Double Section Home**	**Triple Section Home**
	0 - 64' Box 2 Xi2 Systems	0 - 64' Box 2 Xi2 Systems	0 - 64' Box 2 Xi2 Systems
	Over 64' Box 3 Xi2 Systems	Over 64' Box 3 Xi2 Systems	Over 64' Box 3 Xi2 Systems

Wind Zone I Uplift Anchors Chart

Home Section	Home Width	4:12 Home Length	4:12 Anchors Per Side	5:12 Home Length	5:12 Anchors Per Side	6:12-7:12 Home Length	6:12-7:12 Anchors Per Side
Single	12 ft. up to 140 in.	up to 63 ft.	3	up to 55 ft.	4	up to 45 ft.	4
		64 ft. to 90 ft.	4	56 ft. to 74 ft.	5	46 ft. to 62 ft.	5
				75 ft. to 90 ft.	6	63 ft. to 78 ft.	6
						79 ft. to 90 ft.	7
	14 ft.-18 ft. 156 in. to 210 in.	up to 73 ft.	3	up to 58 ft.	4	up to 47 ft.	4
		74 ft. to 90 ft.	4	59 ft. to 78 ft.	5	48 ft. to 64 ft.	5
				79 ft. to 90 ft.	6	65 ft. to 81 ft.	6
						82 ft. to 90'	7
Double	20 ft. to 32 ft. 2 x 118 in. to 2 x 186 in.	up to 90 ft.	2				
		up to 90 ft.	2				
	20' (2 x 118 in.)			up to 90 ft.	3	up to 90 ft.	4
	24 ft. to 32 ft. 2 x 140 in. to 2 x 186 in			up to 90 ft.	2	up to 90 ft.	3
Triple	36 ft. to 48 ft. 3 x 140 in. to 3 x 186 in.	up to 90 ft.	2	up to 90 ft.	2	up to 90 ft.	2

IMPORTANT: System Uplift Anchors are to be installed to the bottom of the rim joist with 3150lb. bracket and lag bolts, not I-beam. The corner anchors should be installed within 2' of the end of the home and any additional anchors installed as evenly as possible per side.

Note: In the event that the home has a solid foundation wall at the sidewall, instead of a bracket at the sidewall as described previously, the bracket can be relocated to a floor joist a maximum of 10" from the sidewall and connected with a vertical strap to a ground anchor, as long as the following limitations to the regular anchor spacings are observed.

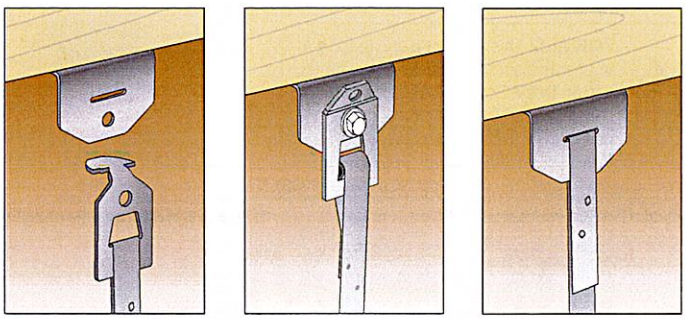
Single Sections: 5/12 Max roof slope -add one bracket anchor, evenly spaced per side.
7/12 Max roof slope -add two brackets/anchors evenly spaced per side.

Doubles and Triple sections – no additional anchors required.

Uplift Rim Joist Bracket

Bracket attaches to the bottom of rim joist with (2) 1/2"-3.25" lag bolts with minimum 3" threads. Bracket can face inward or outward. Install lag bolts into 2 pre drilled 5/16" holes.

Strap can either be bolted with swivel to end of bracket, slid through swivel connector or through the slot in the bracket and crimped to fit. Strap angle must be 75 deg. to 90 deg.



Xi2-24 System Requirements for Roof Pitches Higher than 20 degrees

Additional Systems:

On a single section home, the 3rd system is placed in the middle of the home. When using 3 or 4 systems (double and triple sections), install on opposite corners. If needed, a 5th system would be in the center of the unit on either side.

Xi2 Longitudinal Stabilization for Wind Zones II & III

When using longitudinal stabilization only, in higher wind zones, Systems must be spaced as evenly as possible, no more than 10' from the end of the home. Longitudinal Struts DO NOT replace anchors on single section homes.

NOTE: (2) Longitudinal struts required on each end for Wind Zones II & III.

NOTE: On triple section homes in WZ II & III an additional longitudinal system is required. It should be installed on the center section.

Length (Feet)	Wind Zone I				Wind Zone II				Wind Zone III			
	5:12	6:12	7:12	9:12	5:12	6:12	7:12	9:12	5:12	6:12	7:12	9:12
34	2	2	2	2	2	2	2	2	2	2	3	3
36	2	2	2	2	2	2	2	3	2	2	3	3
38	2	2	2	3	2	2	2	3	2	3	3	3
40	2	2	2	3	2	2	2	3	3	3	3	3
42	2	2	3	3	2	2	3	3	3	3	3	3
44	2	2	3	3	2	2	3	3	3	3	3	3
46	2	3	3	3	2	3	3	3	3	3	3	4
48	2	3	3	3	3	3	3	3	3	3	3	4
50	3	3	3	3	3	3	3	3	3	3	3	4
52	3	3	3	3	3	3	3	3	3	3	4	4
54	3	3	3	3	3	3	3	3	3	3	4	4
56	3	3	3	3	3	3	3	3	3	3	4	4
58	3	3	3	3	3	3	3	3	3	3	4	4
60	3	3	3	3	3	3	3	3	3	3	4	5
62	3	3	3	3	3	3	3	3	4	4	4	5
64	3	3	4	4	3	3	4	4	4	4	4	5
66	3	3	4	4	3	3	4	4	4	4	4	5
68	3	4	4	4	3	4	4	4	4	4	5	5
70	3	4	4	4	3	4	4	4	4	4	5	5
72	3	4	4	4	4	4	4	5	4	4	5	5
74	4	4	4	5	4	4	4	5	4	5	5	5
76	4	4	4	5	4	4	4	5	4	5	5	6
78	4	4	4	5	4	4	4	5	4	5	5	6
80	4	4	4	5	4	4	4	5	4	5	5	6

Fig. 3-1

Xi2-24 Foundation System Installation for Ground Pads

Step 1 - Ground Pad

- Stand the ground pad on its side. Slide a carriage bolts through the pan washers passing through the ground pad as shown right in Fig 3-1.
  ***Note: The curved side of the pan washer must be positioned away from the curved edge of the ground pad, as illustrated in Figure 3-2.**
- Attach two star washers over the carriage bolts on top of the ground pan, securing both bolts in place as in Fig 3-2.
- Clear all organic matter and debris from the pad site.
- Place pad centered under I-beam.
- Press or drive pan into ground until the top of the pan is level and flush with prepared surface.
- Stack the pier blocks as needed.

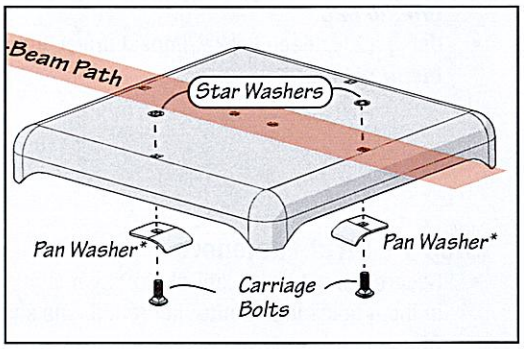


Fig. 3-2

Step 2 -Longitudinal Beam Strut Attachment

- Position Longitudinal beam clamps on both sides of the I-beam. The I-beam frame will slide into the slot on the clamp.
- Extend the top of the longitudinal strut upward and position it between the two beam brackets as shown right in Fig 3-3. **Note:** The fully extended Longitudinal Strut must maintain a minimum of 6" to 8" overlap between inner and outer tubes.
- Insert a 4 "carriage bolt through the bracket and insert the spacers on each side of the strut before sliding bolt all the way through.
- Attach a flange nut to the carriage bolt. Note: the two "loose" beam clamps will appear to be out of alignment with the frame.
- Do Not tighten beam clamps.

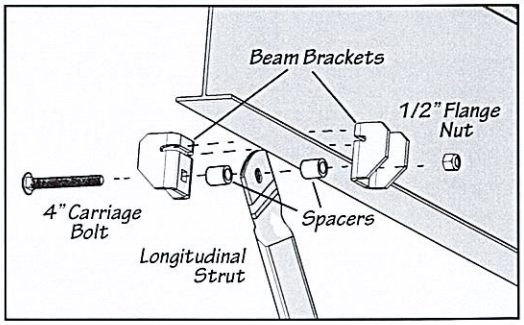


Fig. 3-3

Step 3 – Longitudinal Base Strut Attachment

- Slide the end of the Longitudinal strut over the carriage bolt on the ground pad.
- Slide a pan washer over the carriage bolt/longitudinal strut, install a flange nut over the carriage bolt as shown in figure 4-3.
- Using a 3/4"deep socket/impact driver, tighten the flange nut on the ground pad.
- Using a 3/4" deep socket/impact driver, tighten the flange on the beam clamp.

Step 4 – Longitudinal Strut Fasteners

- Secure the extended Longitudinal Strut by installing 4 self tapping screws in the 4 holes in the outer Longitudinal tube as shown in Fig. 4-4. Attach 2 screw per side.

Step 5 - Lateral Strut Beam Attachment

- Extend the lateral strut outward to the opposite side I-beam.
  NOTE: The fully extended strut must maintain a minimum 6" to 8" overlap between inner and outer tubes.
- Slide the "J" bolt over the I-beam and between the home frame.
- Slide the beam clamp over the "J" bolt end passing through the top of the beam clamp and slide the clamp over the I-beam frame as shown in Fig. 4-2. Attach flange nut over the "J" bolt and loosely tighten nut.
- Align/insert the lateral strut end in the mounting slot on the bottom of the beam clamp as shown in Fig. 4-2.
- Pass a carriage bolt through the beam clamp and lateral strut coming out the opposite side beam clamp. Loosely tighten flange nut. Do not tighten nut.
- Slide the assembled beam clamp with the mounted lateral strut left or right aligning the strut perpendicular to the pad.
- Once the beam clamp/strut attachment is in its final location, tighten the two flange nuts.

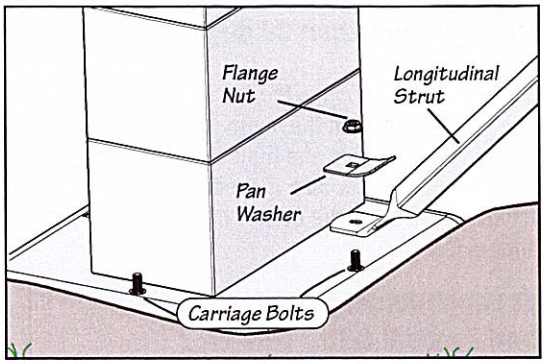


Fig. 4-1

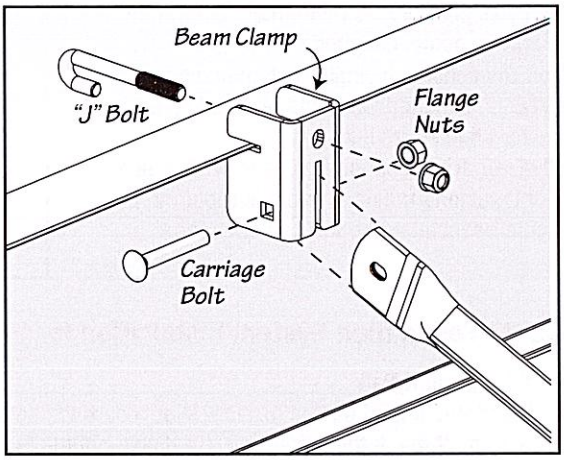


Fig. 4-2

Step 6 - Lateral Strut Base Attachment

- Slide the end of the lateral strut over the carriage bolt on the ground pad.
- Slide a pan washer over the carriage bolt/lateral strut, install a flange nut over the carriage bolt as show right in Fig. 4-3.
- Using a 3/4" deep socket/impact driver, tighten the flange nut on the ***ground pad***.
- Using a 3/4" deep socket/impact driver, tighten the flange nut on the ***beam clamp.***

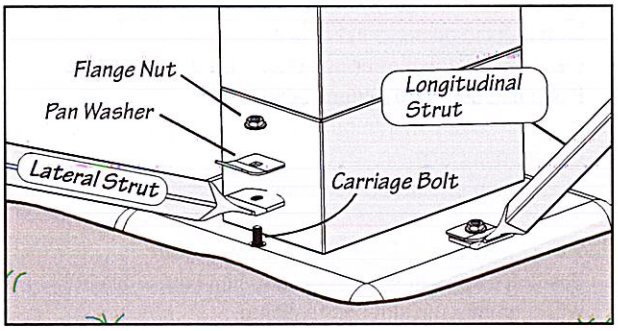


Fig. 4-3

Step 7 - Strut Fasteners

- Secure the extended lateral strut by mounting 4 self tapping screws in the 4 holes in the outer lateral tube as shown in Fig. 4-4. Attach two screws per side.

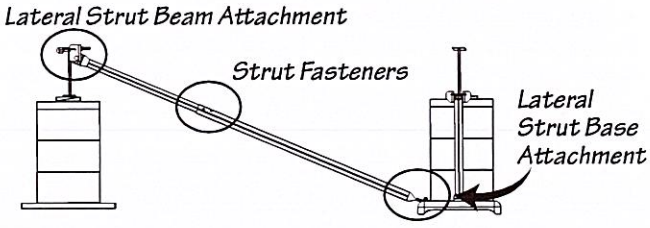


Fig. 4-4

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Instruction #08463 (D2044 Rev. 9/12/25)

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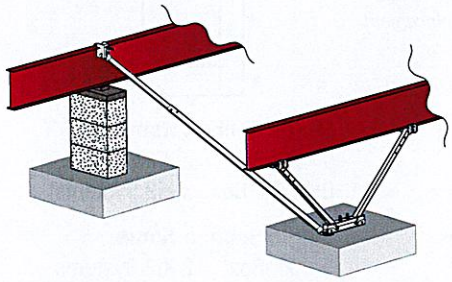
XVC Steel Pier Concrete System Installation Instructions for Wind Zone I, II & III Except Florida and California

Effective November 3, 2025 US Patent No.11,898,318

The XV Steel Pier System replaces the standard pier support and base pad. Installation instructions are for replacing normal lateral frame tie and longitudinal end tie anchorage and plates. In addition, the system requires a minimum amount of uplift anchors in Wind Zone I for enhanced wind protection. Check Anchor charts for details.



Installation Requirements

- Install in type 4B (175-275 lbs.) soil or better.
- Main Rail Spacing must be 75.5" – 99.5", 112" exception with proper strut.
- Maximum pier height must be 48" with 6" maximum rise from the location of the system to the end of the home. For all other piers, use the manufacturers set up instructions.
- Maximum vertical protection at sidewall is 9' wall and 12" eave at roof rim. Higher walls may be used when possible for design loads to be adjusted accordingly. For 10' walls, check with Tie Down.
- Longitudinal strut angles need to be no more than 60 degrees and no less than 40 degrees.
- The XV System is installed on one of the pier footers required by the home manufacturer set up instructions. No other base pad required.
- Two systems designed to work with each other must be placed as evenly as possible. Measuring from the center of the block/pier, systems are to be placed a minimum of 2' and a recommended maximum of 10' (when needed may be a maximum of 1/4 the length of the home) from each end of the home as shown on pier placement chart.
- For roof slopes greater than 20 degrees (4.37" in 12" Pitch), see page 3.
- This system only replaces normal lateral frame tie and or longitudinal end tie anchorage, with minimum uplift anchorage added for Wind Zone I. Wind zones II & III (100+ mph) require additional vertical sidewall anchorage for high wind areas. The home manufacturer may require additional vertical anchor ties that are unique to the homes design. These locations may include shear walls, marriage line ridge beam supports, and rim plates. Check manufacturers installation instructions for set up requirements.

Concrete Installation Requirements

- Poured concrete must be must be 2,500 PSI minimum at 28 days. Bottom of footers must be below the frost line or a minimum of 4" below finished grade. Check with authorities for local requirements (LAHJ).
- **Footer Requirement:** Must to be large enough for the pier load at that location and be a minimum of 22" wide by 6" deep with anchor wedge bolts a minimum of 4" from any edge or 18" wide by 12" deep with anchor wedge bolts a minimum of 1-1/2" from edge. Strip footings minimum of 18" wide by 14' long by 6" deep or 27" wide by 14' long by 4"deep.

XV components exceed HUD code 3280.306 g "Anchoring equipment exposed to weathering shall have a resistance to weather deterioration at least equivalent to that provided by a coating of zinc on steel of not less than 0.30 ounces per square foot of surface coated. The XV Foundation System by Tie Down complies with 24CFR Part 3280 & 3285 when installed in accordance with the instructions provided by Tie Down.

MADE IN THE USA

Online Concrete Installation Manual

⚠ **WARNING:** This product can expose you to chemicals including Nickel, which is known to the State of California to cause cancer. For more information go to: www.P65Warnings.ca.gov

Instruction #08460 (D2041 - Rev. 9/12/25)

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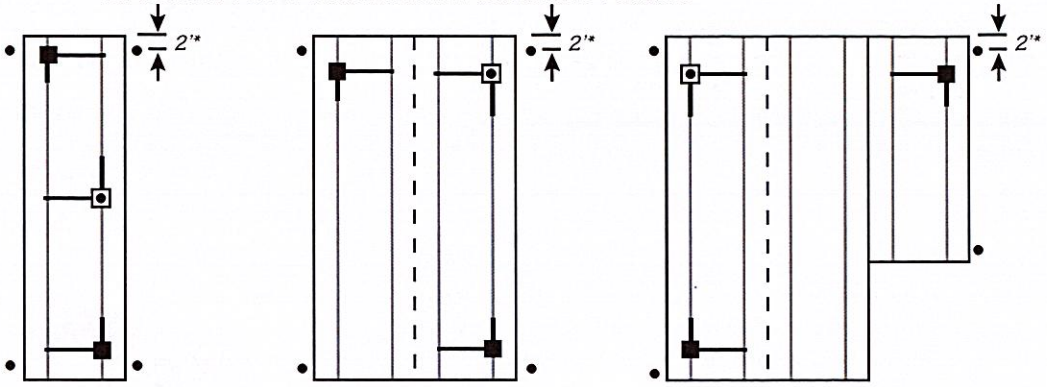
XVC Steel Pier Placement for Concrete Footers

● *Approved Anchors must begin within 2' of the end of home*.*

Xi2 System Placement

3rd System for placement

**See anchor chart below*



	Single Section Home	Double Section Home	Triple Section Home
Wind Zones I & II	0 - 76' Box 2 Xi2 Systems Over 76' Box 3 Xi2 Systems	0 - 76' Box 2 Xi2 Systems Over 76' Box 3 Xi2 Systems	0 - 76' Box 2 Xi2 Systems Over 76' Box 3 Xi2 Systems
Wind Zones III	0 - 64' Box 2 Xi2 Systems Over 64' Box 3 Xi2 Systems	0 - 64' Box 2 Xi2 Systems Over 64' Box 3 Xi2 Systems	0 - 64' Box 2 Xi2 Systems Over 64' Box 3 Xi2 Systems

Wind Zone I Uplift Anchors Chart

Home Section	Home Width	4:12 Home Length	4:12 Anchors Per Side	5:12 Home Length	5:12 Anchors Per Side	6:12-7:12 Home Length	6:12-7:12 Anchors Per Side
Single	12 ft. up to 140 in.	up to 63 ft.	3	up to 55 ft.	4	up to 45 ft.	4
		64 ft. to 90 ft.	4	56 ft. to 74 ft.	5	46 ft. to 62 ft.	5
				75 ft. to 90 ft.	6	63 ft. to 78 ft.	6
						79 ft. to 90 ft.	7
	14 ft.-18 ft. 156 in. to 210 in.	up to 73 ft.	3	up to 58 ft.	4	up to 47 ft.	4
		74 ft. to 90 ft.	4	59 ft. to 78 ft.	5	48 ft. to 64 ft.	5
				79 ft. to 90 ft.	6	65 ft. to 81 ft.	6
						82 ft. to 90'	7
Double	20 ft. to 32 ft. 2 x 118 in. to 2 x 186 in.	up to 90 ft.	2				
		up to 90 ft.	2				
	20' (2 x 118 in.)			up to 90 ft.	3	up to 90 ft.	4
	24 ft. to 32 ft. 2 x 140 in. to 2 x 186 in			up to 90 ft.	2	up to 90 ft.	3
Triple	36 ft. to 48 ft. 3 x 140 in. to 3 x 186 in.	up to 90 ft.	2	up to 90 ft.	2	up to 90 ft.	2

IMPORTANT: System Uplift Anchors are to be installed to the bottom of the rim joist with 3150lb. bracket and lag bolts, not I-beam. The corner anchors should be installed within 2' of the end of the home and any additional anchors installed as evenly as possible per side.

Note: In the event that the home has a solid foundation wall at the sidewall, instead of a bracket at the sidewall as described previously, the bracket can be relocated to a floor joist a maximum of 10" from the sidewall and connected with a vertical strap to a ground anchor, as long as the following limitations to the regular anchor spacings are observed.

Single Sections: 5/12 Max roof slope -add one bracket and anchor, evenly spaced per side.
7/12 Max roof slope -add two brackets/anchors evenly spaced per side.

Doubles and Triple sections – no additional anchors required.

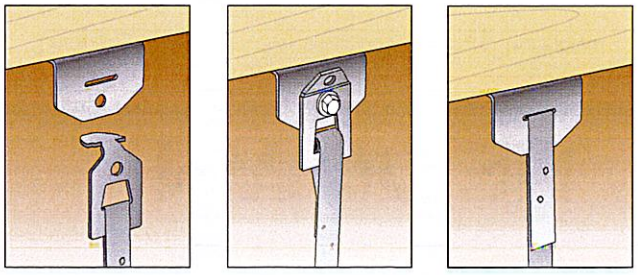
Alternative Concrete Footing Anchor method:

Anchors can be installed in the poured footings a minimum of 18" X 18" X 48" deep. (Check for local frost line depth requirements.) Required uplift anchors would be installed in the footings with straps installed vertically, replacing frame ties.

Uplift Rim Joist Bracket

Bracket attaches to the bottom of rim joist with (2) 1/2"-3.25" lag bolts with minimum 3" threads. Bracket can face inward or outward. Install lag bolts into 2 pre drilled 5/16" holes.

Strap can either be bolted with swivel to end of bracket, slid through swivel connector or through the slot in the bracket and crimped to fit. Strap angle must be 75 deg. to 90 deg.



Xi2-24 System Requirements for Roof Pitches Higher than 20 degrees

Additional Systems:
On a single section home, the 3rd system is placed in the middle of the home. When using 3 or 4 systems (double and triple sections), install on opposite corners. If needed, a 5th system would be in the center of the unit on either side.

Xi2 Longitudinal Stabilization for Wind Zones II & III

When using longitudinal stabilization only, in higher wind zones, Systems must be spaced as evenly as possible, no more than 10' from the end of the home. Longitudinal Struts DO NOT replace anchors on single section homes.

NOTE: On triple section homes in Wind Zones II & III an additional longitudinal system is required. It should be installed on the center section.

Length (Feet)	Wind Zone I				Wind Zone II				Wind Zone III			
	5:12	6:12	7:12	9:12	5:12	6:12	7:12	9:12	5:12	6:12	7:12	9:12
34	2	2	2	2	2	2	2	2	2	2	3	3
36	2	2	2	2	2	2	2	3	2	2	3	3
38	2	2	2	3	2	2	2	3	2	3	3	3
40	2	2	2	3	2	2	2	3	3	3	3	3
42	2	2	3	3	2	2	3	3	3	3	3	3
44	2	2	3	3	2	2	3	3	3	3	3	3
46	2	3	3	3	2	3	3	3	3	3	3	4
48	2	3	3	3	3	3	3	3	3	3	3	4
50	3	3	3	3	3	3	3	3	3	3	3	4
52	3	3	3	3	3	3	3	3	3	3	4	4
54	3	3	3	3	3	3	3	3	3	3	4	4
56	3	3	3	3	3	3	3	3	3	3	4	4
58	3	3	3	3	3	3	3	3	3	3	4	4
60	3	3	3	3	3	3	3	3	3	3	4	5
62	3	3	3	3	3	3	3	3	4	4	4	5
64	3	3	4	4	3	3	4	4	4	4	4	5
66	3	3	4	4	3	3	4	4	4	4	4	5
68	3	4	4	4	3	4	4	4	4	4	5	5
70	3	4	4	4	3	4	4	4	4	4	5	5
72	3	4	4	4	4	4	4	5	4	4	5	5
74	4	4	4	5	4	4	4	5	4	5	5	5
76	4	4	4	5	4	4	4	5	4	5	5	6
78	4	4	4	5	4	4	4	5	4	5	5	6
80	4	4	4	5	4	4	4	5	4	5	5	6

Fig. 3-1

Step 1
- Build footer according to State, Local, or Home Manufacturers guidelines.
- For Dry Set: drill two 1/2"x 3" deep holes in the concrete using holes in the lower tension bracket as a guide (13" apart) . Place nut & washer on anchor, leave enough room for 1 to 2 threads showing on top of bolt. Using a hammer, tap the wedge bolts into hole through bracket, leaving nut & washer flush with bracket. Using a 9/16" socket wrench, tighten wedge/anchor bolt, securing bracket to the concrete.

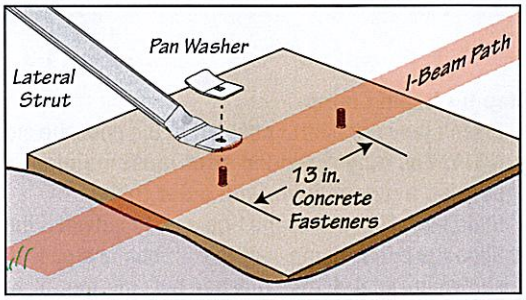


Fig. 3-2

Step 2
- Slide the end of the lateral strut over the outer most concrete anchor.
- Slide the pan washer over the concrete anchor and on top of the lateral strut as shown in Fig. 3-2.

Step 3
- Insert a u-bolt though the lower tension bracket.
- Slide both tension bracket/u-bolt over the two concrete anchors.
- Attach two flange nuts over the lower tension bracket and onto the two concrete anchors as shown right in Fig. 3-2

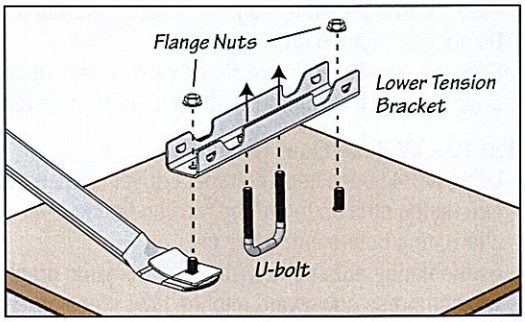


Fig. 3-3

Step 4
- Position the upper tension bracket just over the u-bolt aligning with the two hole in the center of the bracket.
- Slide the upper bracket over the u-bolt and in between the lower bracket as shown right in Fig. 3-4.
- Lightly attach two flange nuts over the u-bolt, do not tighten flange nuts.

Step 5 - Longitudinal Struts
- Insert the black end caps into the bottom end of two longitudinal struts.

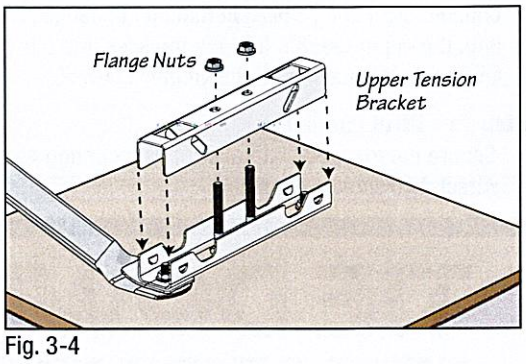


Fig. 3-4

Step 6

- Insert longitudinal struts into the ends of the assembled tension bracket as shown in Fig. 4-1. The struts will hang loose.
- Insert a carriage bolt through one side of the tension bracket,passing the longitudinal strut out the opposite side of the tension bracket.
- Secure the carriage bolt in place with a flange nut. Firmly tighten the flange nut, do not over tighten.
- Repeat for opposite side longitudinal strut as shown in Fig. 4-1.

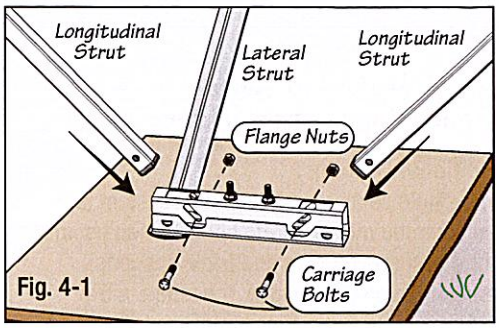


Fig. 4-1

Step 7 - Longitudinal Beam Clamp

- Position two longitudinal beam clamps on both sides of the I-beam. The I-beam frame will slide into the slots on the clamps.
- Raise the longitudinal strut upward and position it between the two beam brackets as shown right in Fig. 4-2.
- Insert a 4" carriage bolt through the clamp, strut, and opposite clamp as shown right.
- Attach a flange nut to the carriage bolt.

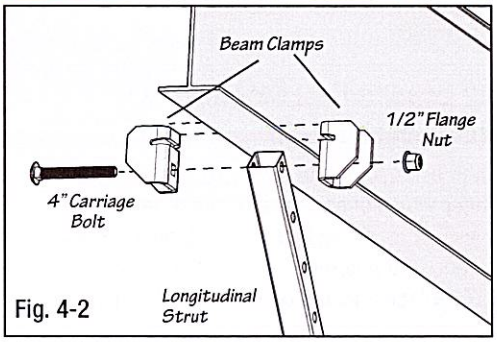


Fig. 4-2

Step 8 - Longitudinal Strut

- Pull the beam bracket assembly outward removing any loose slack between the beam clamp and base.
- Using a 3/4" deep socket/impact driver, tighten the flange nut on the beam clamp assembly. Note: As the bolt/nut tighten, the two beam clamps will begin to crimp the I-beam frame.

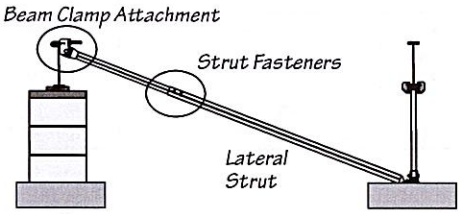


Fig. 4-3

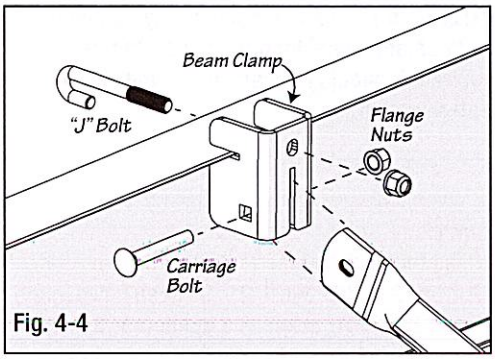


Fig. 4-4

Step 9 - Beam Clamp

- Extend the lateral strut outward to the opposite side I-beam as shown above. **NOTE: The fully extended strut must maintain a minimum 6" to 8" overlap between inner and outer tubes.**
- Slide the "J" bolt over the I-beam and between the home frame.
- Slide the beam clamp over the "J" bolt end passing through the top of the beam clamp and slide the clamp over the I-beam frame as shown in Fig. 4-4. Attach flange nut over the "J" bolt and loosely tighten nut.
- Align/insert the lateral strut end in the mounting slot on the bottom of the beam clamp. As shown right in Fig. 4-4.
- Pass a carriage bolt through the beam clamp and lateral strut coming out the opposite side beam clamp. Loosely tighten flange nut. Do not fully tighten nut.
- Slide the assembled beam clamp with the mounted lateral strut left or right aligning the strut perpendicular to the XV pan/hardware.
- Once the beam clamp/strut attachment is in its final location, tighten the two flange nuts.

Step 10 - XV Base Final Tensioning

- Using a 3/4" deep socket/ impact driver, tighten the two flange nuts on top of the tension bracket, alternating between the two legs.
- As the flange nuts tighten, the upper tension bracket will compress downward into the lower tension bracket as shown in Fig 4-5 "A".
- Continue tightening while alternating the flange nuts until the upper bracket fully compresses into the lower tension bracket as shown in Fig. 4-5 "B"

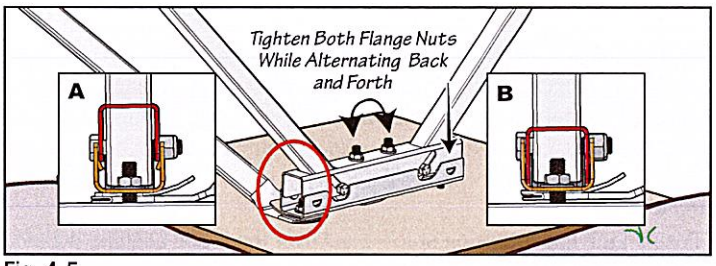


Fig. 4-5

Step 11 - Strut Fasteners

- Secure the extended lateral strut by mounting 4 self tapping screws in the 4 holes in the outer lateral tube as shown in Fig. 4-3. Attach two screws per side.

TIE DOWN
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Manufactured Housing Division
605 Stonehill Drive SW, Atlanta, Georgia 30336
800-241-1806 • 404-344-0000 • www.tiedown.com

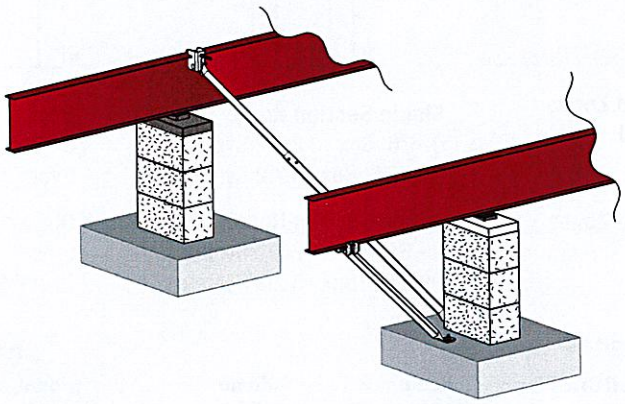
Instruction #08461 (D2041 Rev. 9/12/25)

TIE DOWN
MANUFACTURING INGENUITY

Xi2-24 Concrete Foundation System Installation Instructions for Wind Zone I, II & III Except Florida and California

Effective November 3, 2025 US Patent No.11,898,318

The Xi2-24 System Instructions use the lateral and longitudinal struts to replace normal lateral frame tie and longitudinal end tie anchorage and stabilizer plates. In addition the system requires a minimum amount of uplift anchors in Zone I for enhanced wind protection. Check zone charts for details



Installation Requirements

- Install in any type soil, 4B (175-275 lbs.) or better.
- Main rail spacing must be 75.5" – 99.5", 112" exception with proper strut.
- Maximum pier height at system 48", with 6" maximum rise from location of system to end of home. For all other piers use the home manufacturers set up instructions.
- Maximum vertical projection at sidewall is 9' wall and roof rim (9' wall and 12" eave). Higher walls may be used, when possible for de sign loads to be adjusted accordingly. For 10' walls, check with Tie Down.
- Longitudinal strut angle no more than 50 degrees and no less than 25 degrees. The longitudinal component of the Xi2 system replaces end frame ties. Check manufacturers requirements.
- For roof slopes greater than 20 degrees, (4.37" in 12" pitch) see page 3.
- Two systems designed to work with each other must be placed as evenly as possible. Measuring from the center of the block/pier, systems are to be placed a minimum of 2' to a recommended maximum of 10' (when needed may be a maximum of 1/4 the length of the home) from each end of home as shown on pier placement chart. Components of the Xi2 system such as the longitudinal strut and connecting hardware, may extend beyond pier location and can face in or out as long as both systems share the same direction, both either facing in or both facing out.
- This System only replaces normal lateral frame tie and or longitudinal end tie anchorage, with minimum uplift anchorage for Wind Zone I. Wind Zones II & III (100+ mph) require additional vertical sidewall anchorage for high wind areas. The home manufacturer may require additional vertical anchor ties that are unique to the home's design. These locations may include shear walls, marriage line ridge beam supports, and rim plates. Check the Manufacturers installation instructions for set-up requirements.
- **Footer Requirement:** Must be large enough for the pier load at that location and be a minimum of 22" wide by 6" deep with anchor wedge bolts a minimum of 4" from any edge or 18" wide by 12" deep with anchor wedge bolts a minimum of 1-1/2" from edge. Strip footings minimum of 18" wide by 14' long by 6" deep or 27" wide by 14' long by 4" deep.
- Poured concrete must be 2,500 PSI minimum at 28 days. Bottom of footers must be below the frost line or a minimum of 4" below finished grade. Check with authorities for local requirements (LAHJ).

MADE IN THE USA

Up To Date Concrete Installation Manual

Instruction #08462 (D2043 - Rev. 9/12/25)

TIE DOWN
MANUFACTURING INGENUITY

404-344-0000 • www.tiedown.com
605 Stonehill Drive SW, Atlanta, GA 30336
sales@tiedown.com

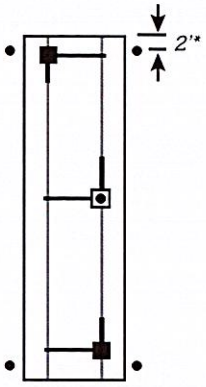
Xi2 Lateral Stabilization

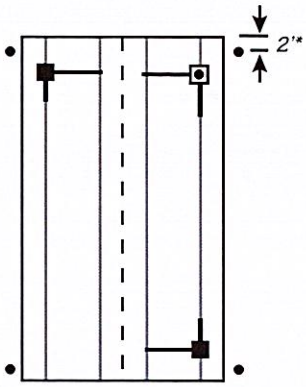
● *Approved Anchors must begin within 2' of the end of home*.*

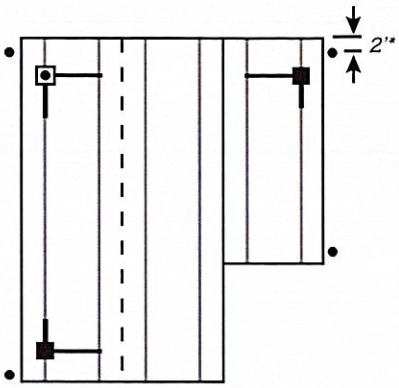
Xi2 System Placement

3rd System for placement

**See anchor chart below*







	Single Section Home	Double Section Home	Triple Section Home
Wind Zones I & II	0 - 76' Box 2 Xi2 Systems Over 76' Box 3 Xi2 Systems	0 - 76' Box 2 Xi2 Systems Over 76' Box 3 Xi2 Systems	0 - 76' Box 2 Xi2 Systems Over 76' Box 3 Xi2 Systems
Wind Zones III	0 - 64' Box 2 Xi2 Systems Over 64' Box 3 Xi2 Systems	0 - 64' Box 2 Xi2 Systems Over 64' Box 3 Xi2 Systems	0 - 64' Box 2 Xi2 Systems Over 64' Box 3 Xi2 Systems

Wind Zone I Uplift Anchors Chart

Home Section	Home Width	4:12 Home Length	4:12 Anchors Per Side	5:12 Home Length	5:12 Anchors Per Side	6:12-7:12 Home Length	6:12-7:12 Anchors Per Side
Single	12 ft. up to 140 in.	up to 63 ft.	3	up to 55 ft.	4	up to 45 ft.	4
		64 ft. to 90 ft.	4	56 ft. to 74 ft.	5	46 ft. to 62 ft.	5
				75 ft. to 90 ft.	6	63 ft. to 78 ft.	6
						79 ft. to 90 ft.	7
	14 ft.-18 ft. 156 in. to 210 in.	up to 73 ft.	3	up to 58 ft.	4	up to 47 ft.	4
		74 ft. to 90 ft.	4	59 ft. to 78 ft.	5	48 ft. to 64 ft.	5
				79 ft. to 90 ft.	6	65 ft. to 81 ft.	6
						82 ft. to 90'	7
Double	20 ft. to 32 ft. 2 x 118 in. to 2 x 186 in.	up to 90 ft.	2				
		up to 90 ft.	2				
	20' (2 x 118 in.)			up to 90 ft.	3	up to 90 ft.	4
	24 ft. to 32 ft. 2 x 140 in. to 2 x 186 in			up to 90 ft.	2	up to 90 ft.	3
Triple	36 ft. to 48 ft. 3 x 140 in. to 3 x 186 in.	up to 90 ft.	2	up to 90 ft.	2	up to 90 ft.	2

IMPORTANT: System Uplift Anchors are to be installed to the bottom of the rim joist with 3150lb. bracket and lag bolts, not I-beam. The corner anchors should be installed within 2' of the end of the home and any additional anchors installed as evenly as possible per side.

Note: In the event that the home has a solid foundation wall at the sidewall, instead of a bracket at the sidewall as described previously, the bracket can be relocated to a floor joist a maximum of 10" from the sidewall and connected with a vertical strap to a ground anchor, as long as the following limitations to the regular anchor spacings are observed.

Single Sections: 5/12 Max roof slope -add one bracket and anchor, evenly spaced per side.
7/12 Max roof slope -add two brackets/anchors evenly spaced per side.

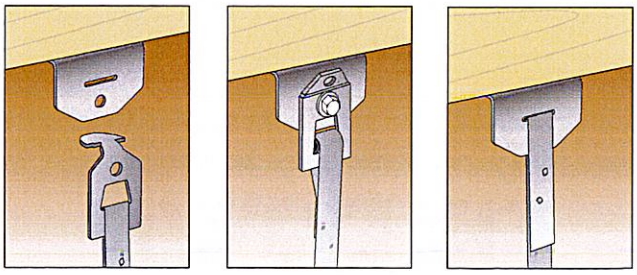
Doubles and Triple sections – no additional anchors required.

Alternative Concrete Footing Anchor method:
Anchors can be installed in the poured footings a minimum of 18" X 18" X 48" deep. (Check for local frost line depth requirements.) Required uplift anchors would be installed in the footings with straps installed vertically, replacing frame ties.

Uplift Rim Joist Bracket

Bracket attaches to the bottom of rim joist with (2) 1/2"-3.25" lag bolts with minimum 3" threads. Bracket can face inward or outward. Install lag bolts into 2 pre drilled 5/16" holes.

Strap can either be bolted with swivel to end of bracket, slid through swivel connector or through the slot in the bracket and crimped to fit. Strap angle must be 75 deg. to 90 deg.



467 Swan Ave. Hohenwald, TN 38462
Phone: (800) 284-7437
Fax: (931) 796-8811
olivertechnologies.com

OLIVER TECHNOLOGIES, INC.
Installation Instructions for 1100 Series All Steel Foundation System
Wind Zones I & II

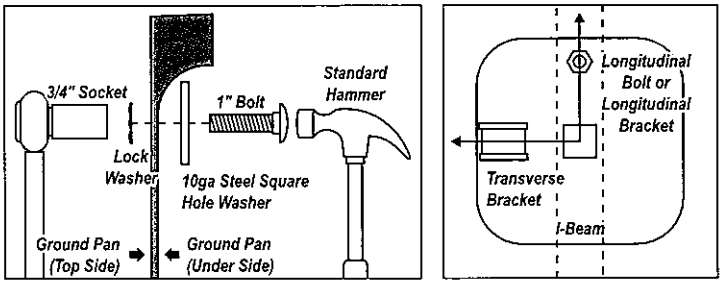
SPECIAL CIRCUMSTANCES: If the following conditions occur – STOP! Contact Oliver Technologies at 1-800-284-7437

- Any pier height exceeds 48"
- Soil conditions less than 4B
- Roof eaves exceed 16"
- Roof pitch greater than 7/12
- Location is within 1,500' of coastline
- Sidewall height exceeds 9' (108")

The 1100 series ASFS Offers 3 packages:

1. **1100ITV** (1 Arm/Brace– Lateral) see 1,3, 9-12
2. **1100IV** (3 Arm/Brace– Lateral and Longitudinal- Replaces Pier) 1,3, 4a-8a, 9-12
3. **1100 SOLO** (2 Arm/Brace– Lateral and Longitudinal) 1-3, 4b-9b, 9-12

INSTALLATION OF GROUND PAN FOR DIRT SET



Bracket & Bolt Placement on Ground Pan

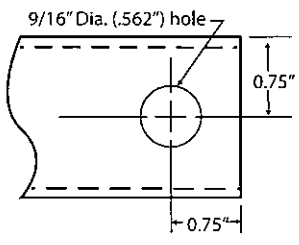
1. Remove weeds and debris in an approximate 3' square to expose firm, level undisturbed soil or controlled fill for each ground pan. The 1100 Pan is equivalent to a 21" x 21" footing. Top of ground pan (C) must be installed at ground level or per local jurisdiction. Ground pan can be installed below grade and backfilled as long as a distance between top of ground pan and bottom of frame does not exceed 48".
2. If using the SOLO longitudinal brace, ensure the longitudinal HW is installed on the correct side. Hold lock washer flush to pan, hand tighten bolt and washer to lock washer. Hammer bolt head until washer and bolt are flush with pan. Refer to Diagram 1A.
3. Place center ground pan (C) directly below chassis I-beam. Press or drive pan completely into soil until flush with or below soil.
   NOTE: The longitudinal "V" brace system serves as a pier under the home and should be loaded as any other pier. It is recommended that after leveling piers, and 1/2" before home is lowered completely onto piers, refer to diagram 1B.

INSTALLATION OF LONGITUDINAL "V" BRACE SYSTEM

4a. Select the correct square tube brace (E) length for set-up (pier) height at support location.

5a. Install end of the 1.50" square tubes (E) into the "U" bracket (J), insert carriage bolt and leave nut loose for final adjustment.

6a. Place both longitudinal I-beam connectors (F) loosely on the bottom flange of the I-beam.



PIER HEIGHT (40° MIN. - 60° MAX.)	1.50" TUBE LENGTH
14" - 18"	20"
18" - 25"	28"
24" - 35"	39"
30" - 40"	44"
36" - 48"	54"

PIER HEIGHT = The dimension from the top of the pan to the bottom of the I-Beam
*Vertical pier load should not exceed 4,800lbs

7a. Attach the selected 1.5" tubes (E) to the I-beam connectors (F) and fasten loosely with bolts and nuts.
NOTE: The ground pan must be level in both directions to ensure the angle markings on the center point connector are correct from the horizontal plane of the pan. The angle is not to exceed 60° and not less than 40°. The "V" bracket is stamped with angle marks to use as a guide. Use an Angle Finder to verify proper angle. Use proper length tube or cut and drill tube to achieve proper length. (The tube may be cut using any appropriate steel cutting method such as reciprocating saw, band saw etc. New holes must be drilled to the dimension and at the location as shown for part (E).

8a. Using standard hand tools, tighten all nuts and bolts. When connecting the brace tube to the model 1100-10-P I-beam connector bracket, tighten at least one and a half to two full turns past hand tight.

INSTALLATION OF 1100 SOLO LONGITUDINAL BRACE

4b. Determine the correct length of the longitudinal brace (K) to be installed based on pier height.

5b. Make sure the longitudinal bolt (L) is centered under the I-beam. Note: It is required that each longitudinal brace is installed in opposite directions underneath the home.

6b. Place the flattened end of the longitudinal brace over the bolt (L) on the ground pan and loosely secure with provided nut and washer.

7b. Place both longitudinal I-beam connectors (F) loosely on the bottom flange of the I-beam.

PIER HEIGHT (15° MIN. - 45° MAX.)	LONGITUDINAL BRACE LENGTH
12" - 24"	39"
12" - 32"	44"
12" - 40"	54"
12" - 48"	65"

PIER HEIGHT = The dimension from the top of the pan to the bottom of the I-Beam

8b. Attach the opposite end of the longitudinal brace to the bottom flange of the I-beam using the longitudinal I-beam connectors (F) with bolt and nut. Using standard hand tools, tighten all nuts and bolts.

NOTE: Angle of longitudinal brace must be between 15° and 45° from horizontal plane.

INSTALLATION OF (LATERAL) TELESCOPING TRANSVERSE BRACE SYSTEM (1100 ITV)

9. Select the correct transverse brace (H). The 60" sections are standard. The 72" sections are used on frame widths greater than 99.5".
10. Install the 1.5" transverse brace (H) to the ground pan connector (D) with the bolt and nut.
11. Slide 1.25" transverse brace into the 1.5" brace and attach to adjacent lateral I-beam connector (I) with bolt and nut.
12. Secure 1.5" transverse brace to 1.25" transverse brace using four (4) 1/4" - 14 x 3/4" self-tapping screws in pre-drilled pilot holes.
    NOTE: Installation drill speed should not exceed 1800 rpm.

INSTALLATION USING CONCRETE (ICV)

The concrete footer, runner or slab that has a minimum of 2900 cu. in., with a minimum depth of 6" at each system location. The surface of the footing shall be large enough to support the pier load and allow at least 4" from the concrete bolt to the edge of the concrete (ie. 22" x 22" x 6" footer). The concrete shall be a minimum of 2500 psi mix (pre-blended sacked concrete mix is acceptable). Special inspection of footing is not required. If the 1100ITC Transverse system is to be installed without the use of a longitudinal system, it MUST be installed on same footing within 18" of pier. Provide a minimum spacing of 4" center-to-center between wedge bolt installations, and maintain a minimum distance of 4" from any concrete edge to the centerline of the wedge bolt.

LONGITUDINAL (V)

When using the 1100 wet set bracket, simply install the bracket in runner/footer OR when installing in cured concrete, use the 1100 dry set bracket. The 1100 dry set bracket is attached to the concrete using (2) 1/2" X 3" concrete wedge bolts. Center bracket under I-beam in desired location. Mark bolt hole locations, then using a 1/2" masonry bit, drill a hole to a minimum depth of 3". Be sure all dust is blown out of the holes. Place wedge bolts into drilled holes, then place 1100 bracket onto wedge bolts and start wedge bolt nuts. Take a hammer and lightly drive the wedge bolts down by hitting the nut (Do not hit the top of threads on bolt). Complete by tightening the nuts.

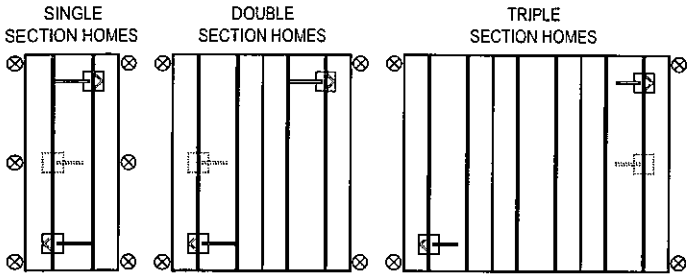
LONGITUDINAL (SOLO)– Dry Concrete Only

Position longitudinal concrete bolt for installation and drill ½" hole. 3" deep into concrete. Make sure that the Longitudinal bolt is centered under the IBEAM. Be sure all dust is blown out of the holes. Place wedge bolt into drilled hole. Make sure starter nut is threaded onto wedge bolt. Then, lightly hammer wedge bolt into concrete. Leave approximately 1" of wedge bolt threads above surface. Remove starter nut from wedge bolt and follow applicable instructions based on system being installed.

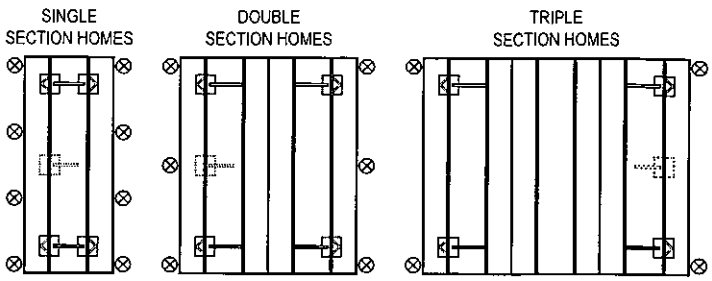
LATERAL (Transverse Brace)

For wet set installation set the transverse connector bracket into runner/footer at desired location. For dry set installations, the transverse connector bracket is attached to the concrete using (2) 1/2" X 3" concrete wedge bolts. Mark bolt hole locations, then using a 1/2" masonry bit, drill a hole to a minimum depth of 3". Be sure all dust is blown out of the holes. Place wedge bolts into drilled holes,then place transverse connector bracket onto wedge bolts and start wedge bolt nuts. Take a hammer and lightly drive the wedge bolts down by hitting the nut (do not hit the top of threads on bolt.) Complete by tightening the nuts.

REQUIRED NUMBER AND LOCATION OF MODEL 1100 SERIES BRACES FOR 4/12 & 5/12



REQUIRED NUMBER AND LOCATION OF MODEL 1100 SERIES BRACES FOR 6/12 & 7/12



LEGEND

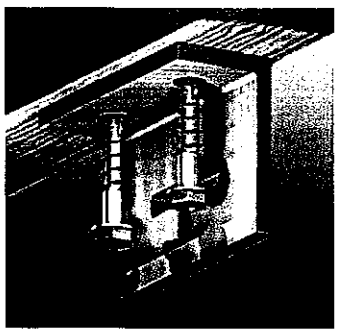
1. Location of ASF Model 1100 (Lateral and Longitudinal Bracing) or 1100 T (Lateral only) up to 76'.
2. Location of additional ASF Model 1100 T System (Lateral only) for homes exceeding 76' in length or with roof pitch between 4.37/12 (20°) and 5/12, the additional system is to be installed at approximately the midpoint of the house and may be installed at either exterior beam.
3. ⊗ Installation on all homes require a minimum number of uplift anchors in WZ I for enhanced wind protection. Strap angle 75-90°. Check anchor tables for details.

Wind Zone I Vertical Anchor Table

		4:12 Roof Pitch		5:12 Roof Pitch		6:12/7:12 Roof Pitch	
Home Section	**Home Width**	**Home Length**	**Anchors Per Side**	**Home Length**	**Anchors Per Side**	**Home Length**	**Anchors Per Side**
Single	12'	up to 63'	3	up to 55'	4	up to 45'	4
	140" +	64'-90'	4	56'-74'	5	46'-62'	5
				75'-90'	6	63'-78'	6
						79'-90'	7
	14'-18'	up to 73'	3	up to 58'	4	up to 47'	4
	156" to 210"	74'-90'	4	59'-78'	5	48'-64'	5
				79'-90'	6	65'-81'	6
						82'-90'	7
Double	20' (2)118"	up to 90'	2	up to 90'	3	up to 90'	4
	24'-32' (2)140" to (2)186"	up to 90'	2	up to 90'	2	up to 85'	3
						86'-90'	4
Triple	36'-48' (3)140" to (3)186"	up to 90'	2	up to 90'	2	up to 90'	2

IMPORTANT: System Uplift Anchors are to be installed to the bottom of the rim joist with a 3150lb rated bracket and lag bolts, not to the IBEAM. Corner anchors should be installed within 2' of the end of the home and any additional anchors installed as evenly as possible per side.

NOTE: Brackets can be moved in 10" to a floor joist if they interfere with block skirting. One additional anchor is required on single sections with a roof pitch of 5/12 and two additional anchors are required on roof pitches of 7/12. Single section homes with a pitch of 4/12 and below, double sections and triple sections require no additional anchors when relocating brackets.



INSTALLATION OF THE OT SWB SIDEWALL BRACKET

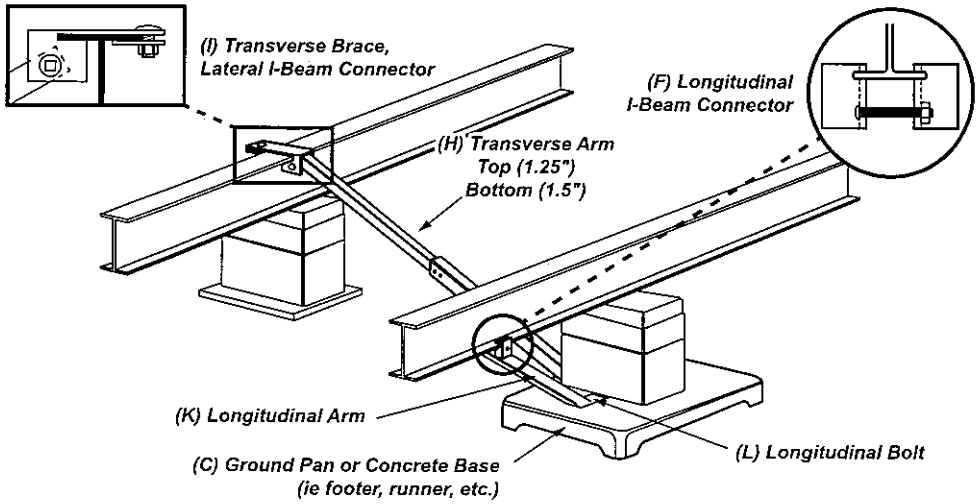
1. Locate desired location under home, on underside of rim or floor joist.
2. Position sidewall bracket with two holes centered on joist. Orientation of sidewall bracket does not affect performance.
3. Mark the center of both holes and pre-drill two pilot holes using a 15/64" drill bit.
4. Install (2) two 3/8"- 7 x 4.5" lag screws into pre-drilled holes to secure sidewall bracket.
5. Refer to anchor and strapping installation instructions for proper installation of anchor and strap.

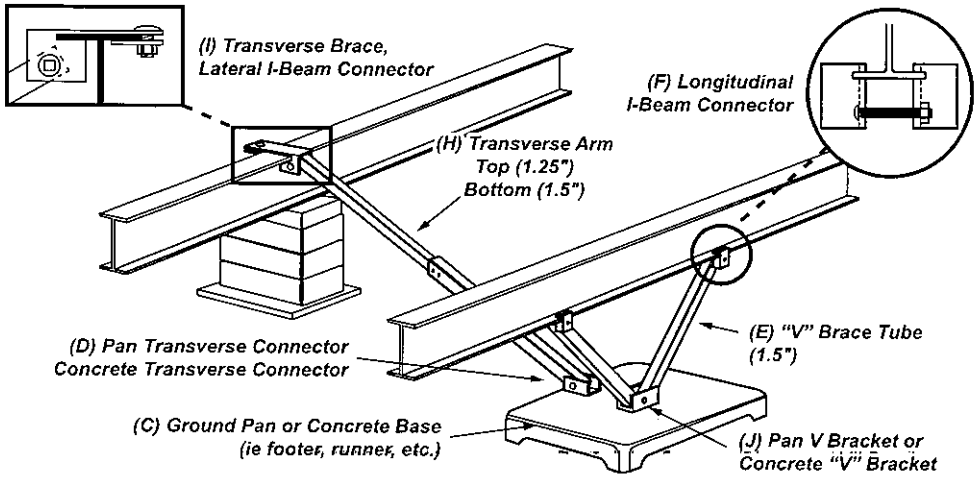
   NOTE: The OT SWB sidewall bracket can be used in place of any sidewall or marriage line bracket that is rated at or below 3150 lbs. working load.

NOTE:

A. Installation of the longitudinal system eliminates the need for all longitudinal anchors.
B. Installation of the transverse system eliminates the need for all lateral anchors, diagonal frame ties and stabilization plates except when noted. (Note C)
C. All other home manufacturer's instructions for installation of stabilizing devices must be followed, including installation of vertical tie-down anchors, and mating line column, shear wall or center-line tie-down anchors. NOTE WIND ZONE II: ALL VERTICAL ANCHORS (NOT TO EXCEED 8' SPACING) MUST BE INSTALLED PER MANUFACTURERS INSTALLATION INSTRUCTIONS!
D. If the home manufacturer's installation instructions are not available, the home must be installed in accordance with any state promulgated rules or as required by the authority having jurisdiction.
E. When the length of home exceeds 76', sidewall height exceeds 96" or the roof pitch is between 4.37/12 (20°) and 5/12, add 1 transverse system (see location diagrams above) 6/12: a total of 4 Transverse & 3 Longitudinal systems are needed & 7/12: a total of 5 Transverse & 3 Longitudinal systems are needed. (Longitudinal portion only required when longitudinal bracing is required by home manufacturer).
F. An alternative method using the 1100 CVD anchors (dry set) or 1100 CVW (wet set) may be used on a footing size of 16" diameter x 24" depth. These brackets are designed for lateral and longitudinal protection.
G. It is recommended that the systems be installed at the 2nd pier in from each end of the house. However, they may be installed at any location at least 2', but not more than ¼ the house length, in from the ends of the home.

STATE OF MICHIGAN ONLY: As required by Section 1805.2 of the 200 Michigan Building Code, the depth of the footer shall be a minimum depth of
42" below grade, except that the authority having jurisdiction may approve a lesser depth based on known prevailing soil and weather conditions, or as provided by the exception under Section 1805.2.1 of the Code.
STATE OF NORTH CAROLINA ONLY: Tubing must be galvanized and, when the manufacturer's installation instructions are not available, vertical wall tie-downs must be installed not to exceed 8' on center. (Wind Zone II)
STATE OF NORTH IDAHO ONLY: Concrete must be a minimum of 8" in depth.
STATE OF CALIFORNIA ONLY: Refer to specific CA instructions for proper installation.





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