State of Florida
DEPARTMENT OF HIGHWAY SAFETY AND MOTOR VEHICLES

TALLAHASSEE, FLORIDA 32399-0500

FRED O. DICKINSON, III
Executive Director

March 20, 2002

Mr. Bert A. Moore, Financial Manager
Manufactured Housing Foundation Systems
Oliver Technologies, Inc.
Post Office Box 9 (467 Swan Avenue)
Hohenwald, Tennessee 38462

Dear Mr. Moore:

We wish to acknowledge receipt of your specifications and test results certifying that your Longitudinal Stabilizing and Lateral Bracing System, 1101 V, listed below complies with the specifications and regulations set by the Department of Highway Safety and Motor Vehicles, Rules 15C-1.0105, 15C-1.0107 and 15C-1.0108, Florida Administrative Code.

Installation instructions must be available at the installation site.

MODEL #	DESCRIPTION
1101 V	Longitudinal Stabilizing and Lateral Bracing System

NOTE: This system is for replacement of longitudinal anchors. This system can only be used with sidewall anchor spacing of 5'4". Maximum strut angle 45°.

If you have any questions, please advise at (407) 623-1340.

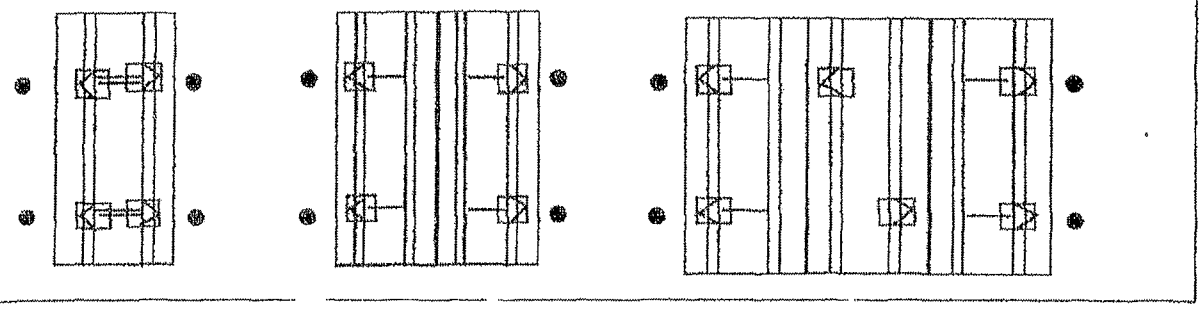
Sincerely,

Phil Bergelt, Program Manager
Bureau of Mobile Home and
Recreational Vehicle Construction
Division of Motor Vehicles

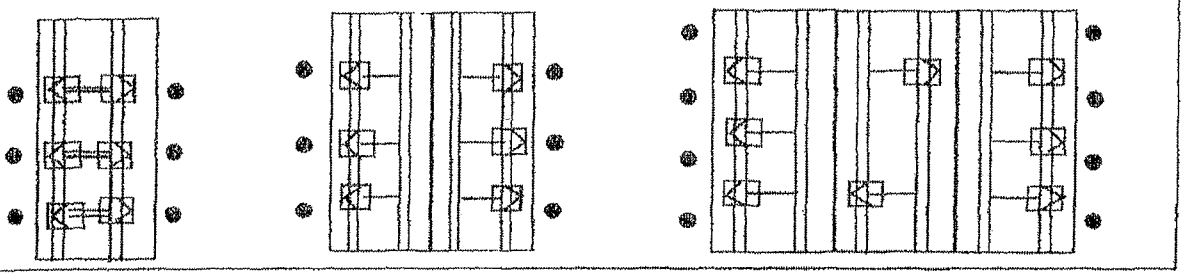
PRB:srb

REQUIRED NUMBER AND LOCATION OF MODEL 1101 "V" BRACES FOR UP TO 4/12 ROOF PITCH

ALL WIDTHS, AND LENGTHS UP TO 52'

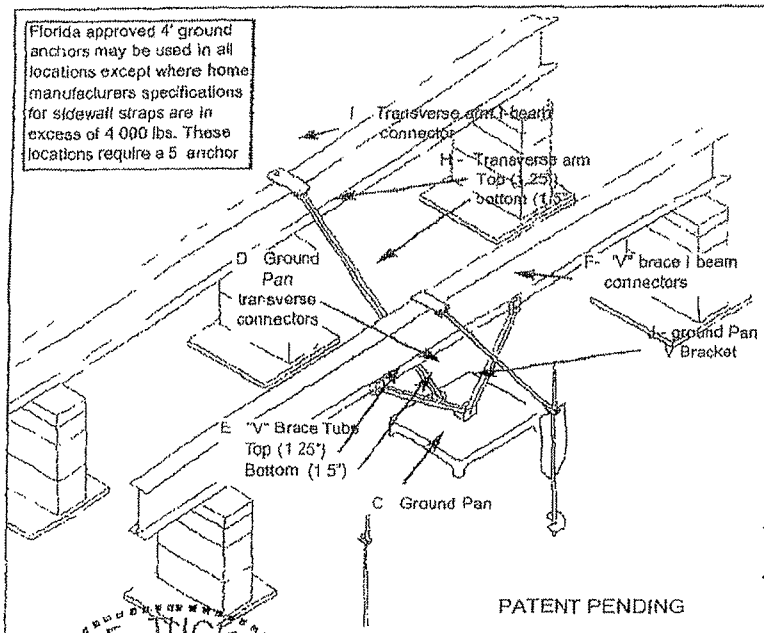


ALL WIDTHS; AND LENGTHS OVER 52' TO 80'



HOMES WITH 5/12 ROOF PITCH REQUIRE. PER FLORIDA REGULATIONS
6 systems for home lengths up to 52' and 8 systems for homes over 52' and up 80' One stabilizer plate and frame tie required at each lateral bracing system

Florida approved 4' ground anchors may be used in all locations except where home manufacturers specifications for sidewall straps are in excess of 4 000 lbs. These locations require a 5 anchor



C = GROUND PAN
D = GROUND PAN CONNECTOR U BRACKETS
E = TELESCOPING V BRACE TUBE ASSEMBLY W/ 1 5 BOT TOM TUBE AND 1 25 TUBE INSERT
F = "V" BRACE I-BEAM CONNEC TORS ASSEMBLY
H = TELESCOPING TRANSVERSE ARM ASSEMBLY
I TRANSVERSE ARM I-BEAM CONNECTOR
J= V PAN BRACKET

REVISED INSTRUCTIONS 4/23/03

NOTES
1 LENGTH OF HOUSE IS THE ACTUAL *BOX SIZE*
2 ⊕ = STABILIZER PLATE AND FRAME TIE LOCATION (needs to be located within 18" from center of ground pan)
3 ⊠ = LOCATION OF ASF MODEL 1101"V" (LATERAL & LONGITUDINAL BRACING)
4 ⊠ = LOCATION OF MODEL 1101-L"V" (LONGITUDINAL BRACING ONLY)

PATENT PENDING

R. F. TUCKER
CERTIFICATE
15896
STATE OF FLORIDA
PROFESSIONAL ENGINEER

MANUFACTURED HOUSING FOUNDATION SYSTEMS
A DIVISION OF OLIVER TECHNOLOGIES, INC.
1-800-284-7437

Telephone: 931 796-4555
Fax 931-796-8811
www.olivertechnologies.com

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R. E. TUCKER CERTIFICATE No 15896 STATE OF FLORIDA PROFESSIONAL ENGINEER
ENGINEERS STAMP

OLIVER TECHNOLOGIES, INC.
FLORIDA INSTALLATION INSTRUCTIONS FOR THE
MODEL 1101 "V" SERIES ALL STEEL FOUNDATION SYSTEM
MODEL 1101"V" (STEPS 1-15)
MODEL 1101-L"V" LONGITUDINAL ONLY
FOLLOW STEPS 1-9
FOR ADDING LATERAL ARM
Follow Steps 10-15

ENGINEERS STAMP

1 SPECIAL CIRCUMSTANCES If the following conditions occur - *STOP! Contact Oliver Technologies at 1-800-284-7437*
a) Pier height exceeds 48" b) Length of home exceeds 76' c) Roof eaves exceed 16" d) Sidewall height exceed 96"
e) Location is within 1500 feet of coast

INSTALLATION OF GROUND PAN

2 Remove weeds and debris in an approximate two foot square to expose firm soil for each ground pan (C).
3 Place ground pan (C) directly below chassis I-beam Press or drive pan firmly into soil until flush with or below soil
SPECIAL 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 one-half inch (1/2") before home is lowered completely on to piers, complete steps 4 through 9 below

INSTALLATION OF LONGITUDINAL "V" BRACE SYSTEM

NOTE: WHEN INSTALLING THE *MODEL # 1101-L"V" LONGITUDINAL SYSTEM ONLY*, A MINIMUM OF 2 SYSTEMS PER FLOOR SECTION IS REQUIRED SOIL TEST PROBE SHOULD BE USED TO DETERMINE CORRECT TYPE OF ANCHOR PER SOIL CLASSIFICATION. IF PROBE TEST READINGS ARE BETWEEN 175 & 275 A 5 FOOT ANCHOR MUST BE USED. IF PROBE TEST READINGS ARE BETWEEN 276 & 350 A 4 FOOT ANCHOR MAY BE USED USE GROUND ANCHORS WITH DIAGONAL TIES AND STABILIZER PLATES EVERY *5'4"* VERTICAL TIES ARE ALSO REQUIRED ON HOMES SUPPLIED WITH VERTICAL TIE CONNECTION POINTS (PER FLORIDA REG)

4 Select the correct square tube brace (E) length for set - up (pier) height at support location (The 18" tube is always used as the bottom part of the longitudinal arm) Note. Either tube can be used by itself, cut and drilled to length as long as a 40 to 45 degree angle is maintained

PIER HEIGHT (Approx 45 degrees Max)	1.25" ADJUSTABLE Tube Length	1.50" ADJUSTABLE Tube Length
7 3/4" to 25"	22"	18"
24 3/4" to 32 1/4"	32"	18"
33" to 41"	44"	18"
40" to 48"	54"	18"

5 Install (2) of the 1 50" square tubes (E (18" tube)) into the "U" bracket (J), insert carriage bolt and leave nut loose for final adjustment
6 Place I-beam connector (F) loosely on the bottom flange of the I-beam
7 Slide the selected 1.25" tube (E) into a 1.50" tube (E) and attach to I-beam connectors (F) and fasten loosely with bolt and nut.
8 Repeat steps 6 through 7 to create the "V" pattern of the square tubes loosely in place. The angle is not to exceed 45 degree and not below 40 degrees
9 After all bolts are tightened, secure 1 25" and 1 50" tubes using four(4) 1/4"-14 x 3/4" self-tapping screws in pre-drilled holes

INSTALLATION OF LATERAL TELESCOPING TRANSVERSE ARM SYSTEM

THE MODEL 1101 "V" (LONGITUDINAL & LATERAL PROTECTION) ELIMINATES THE NEED FOR MOST STABILIZER PLATES & FRAME TIES
NOTE: THE USE OF THIS SYSTEM REQUIRES VERTICAL TIES SPACED AT 5'4".
FOUR FOOT (4') GROUND ANCHOR MAY BE USED EXCEPT WHERE THE HOME MANUFACTURER SPECIFIES DIFFERENT.

10 Install remaining vertical tie-down straps and 4' ground anchors per home manufacturer's instructions NOTE: 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
11 NOTE: Each system is required to have a frame tie and stabilizer attached at each lateral arm stabilizing location. This frame tie & stabilizer plate needs to be located within 18" from of center ground pan
12 Select the correct square tube brace (H) length for set-up lateral transverse at support location The lengths come in either 60" or 72" lengths. (With the 1.50" tube as the bottom tube, and the 1.25" tube as the inserted tube)
13 Install the 1 50 transverse brace (H) to the ground pan connector (D) with bolt and nut.
14 Slide 1.25" transverse brace into the 1.50" brace and attach to adjacent I-beam connector (I) with bolt and nut
15 Secure 1.50" transverse arm to 1.25" transverse arm using four (4) 1/4" - 14 x 3/4" self-tapping screws in pre-drilled holes