

INSTALLATION INSTRUCTIONS FOR 1100 SERIES ALL STEEL FOUNDATION SYSTEMS (ASFS) GROUND SET FOR WIND ZONES I & II

SPECIAL CIRCUMSTANCES: If the following conditions occur - **STOP!** Contact Oliver Technologies at 1-800-284-7437 for further instructions: A) Pier (system) height exceeds 48" B) Roof eaves exceed 16" C) Location is within 1500 ft. of coastline. D) Soil conditions are less than 4B

The 1100 Series ASFS offers 3 packages:

1) 1102 ITV (1 arm – Lateral), 2) 1102 IV (3 arms - Lateral & Longitudinal- Replaces Pier), or 3) 1102 Solo (2 arms - Lateral & Longitudinal).

Installation of 2 systems is required on homes ≤ 76' (based on the manufacturer's data plate), 96" sidewall height, and 4.37/12 (20°) roof pitch.

Additional instructions below for homes greater than these dimensions. See home manufacturer's installation instructions on all new homes to determine the requirements for lateral and longitudinal securement. When only lateral securement is required, it is not necessary to install longitudinal arms. Any anchors installed in conjunction with an 1100 ASFS must be rated for a working load of 3,150 lbs. with an ultimate load of 4,725 lbs.

INSTALLATION OF GROUND PAN

1) Remove weeds and debris in an approximate 3 foot square to expose firm, level soil or controlled fill for each ground pan. The steel pan is equivalent to a 21" x 21" footing.

2) **Before placing pan in ground make sure pan hardware is installed. (see Diagram 1A & 1B)** Hold lock washer flush to the pan, hand tighten bolt and washer to lock washer. Hammer bolt head until washer and bolt are flush with pan. a.)1102 ITV – Transverse Bolt installed with lock washer.

b.)1102 IV – Transverse bolt installed with lock washer and Longitudinal bracket installed with

bolt, nut, and washer. c.)1102 Solo – Both Transverse & Longitudinal bolt installed with lock washer(s).

3) Place pan on ground; so that, Longitudinal bracket/bolt is centered directly under the I-Beam and/or Transverse Bolt is placed towards adjacent I-Beam or center line of home. (Diagram 1A) Press or drive pan in ground flush with or below grade as per local jurisdiction.

INSTALLATION OF TRANSVERSE (LATERAL) ARM: See Table 3

1102 ITV, 1102 IV, & 1102 Solo System - see Page 2 Diagram(S) 5 or 7:

1) Hook Transverse I-Beam connector (D) over adjacent I-Beam. .

2) Slide 1.25" section of Transverse Arm (E) into 1.5" section. Attach 1.25" section of arm to I-Beam connector with bolt, nut, and washer.

3) Extend flattened end of 1.5" Transverse Arm (E) over bolt in pan and hand tighten nut and washer

A) Tighten upper and lower hardware on Transverse Arm.

B) Secure 2 sections of Transverse Arm with (4) ¼" x ¾" self tapping screws in pre-drilled pilot holes.

Diagram 1 B

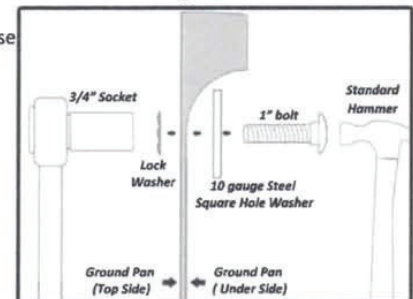
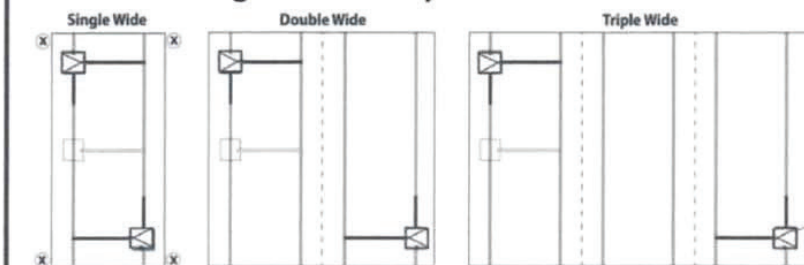


Diagram 1 ASFS System Placement



Transverse and Longitudinal Arms- Shall be installed at a minimum of 2' in and not more than 25% in from the end of the home. (2nd pier location recommended)

Recommended location of 3rd or 5th system, if required.

Anchor & Strap- All single wides shall have four corner anchors that shall be installed a minimum of 2' and a maximum of 10' from the end of the home. Straps shall also be at a minimum angle of 45 degrees and a maximum of 90 degrees.

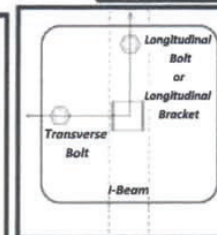


Diagram 1 A
Bracket & Bolt
Placement on
Ground Pan

TABLE 3

Frame Width	Transverse Arm Tube Lengths
99.5" ≤	60"
112" ≤	72"

TABLE 2 ASFS REQUIREMENTS FOR ROOF SLOPES GREATER THAN 20 DEGREES

Length of Building	Roof Slope / Degree of Angle			
	5:12 23.6°	6:12 26.6°	7:12 30.3°	9:12 36.9°
34	2	2	2	2
36	2	2	2	2
38	2	2	2	3
40	2	2	2	3
42	2	2	3	3
44	2	2	3	3
46	2	3	3	3
48	2	3	3	3
50-62	3	3	3	3

Length of Building	Roof Slope / Degree of Angle			
	5:12 23.6°	6:12 26.6°	7:12 30.3°	9:12 36.9°
64	3	3	4	4
66	3	3	4	4
68	3	4	4	4
70	3	4	4	4
72	3	4	4	4
74	4	4	4	5
76	4	4	4	5
78	4	4	4	5
80	4	4	4	5

ADDITIONAL TRANSVERSE SYSTEMS

When the home exceeds 76' (based on the manufacturer's data plate) or 96" sidewall height, an additional transverse system is required.

For roof pitches greater than 4.37/12 (20°), see Table 2 for number of systems to be installed.

If more than 2 systems need to be installed, the additional systems may be transverse only.

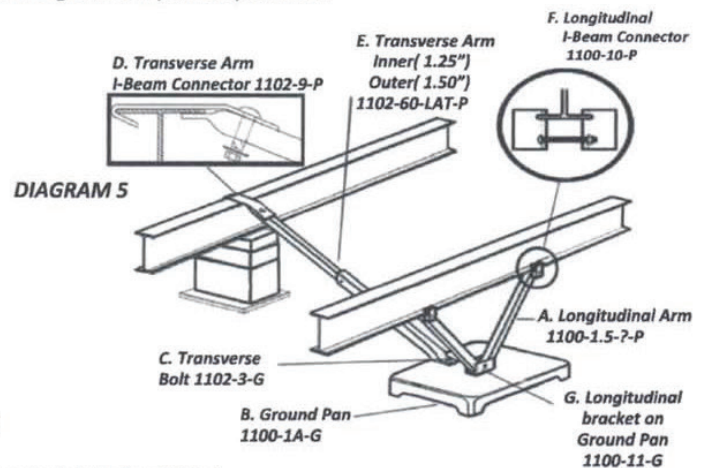
INSTALLATION OF LONGITUDINAL ARM(S):

INSTALLATION OF 1102 IV LONGITUDINAL ARMS see Diagram 5

*The longitudinal "V" brace system serves as a pier under the home and should be loaded as any other pier. Longitudinal bracket (G) must be centered underneath I-beam so that channel in bracket is parallel with I-beam.

- 1) Determine the correct length of longitudinal arms to be installed based on pier height. See **TABLE 4**
- 2) Attach both of the 1.5" square tubes (A) into the Longitudinal bracket (G), insert carriage bolt and leave nut loose for final adjustment.
- 3) Place all four (4) I-beam connectors (F) loosely on the bottom flange of the I-beam.
- 4) Attach the selected 1.5" tubes (A) 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 Longitudinal bracket (G) are correct from the horizontal plane of the pan. The angle of longitudinal arms (A) must be between 40° & 60°. The Longitudinal bracket (G) is stamped with the angles to verify correct placement.
- 5) Using standard hand tools, tighten all nuts and bolts.

TABLE 4	
PIER HEIGHT = THE DIMENSION FROM THE TOP OF THE PAN TO THE BOTTOM OF THE I-BEAM	
Pier Height	Tube Lengths
14" - 18"	20"
18" - 25"	28"
24" - 35"	39"
30" - 40"	44"
36" - 48"	54"



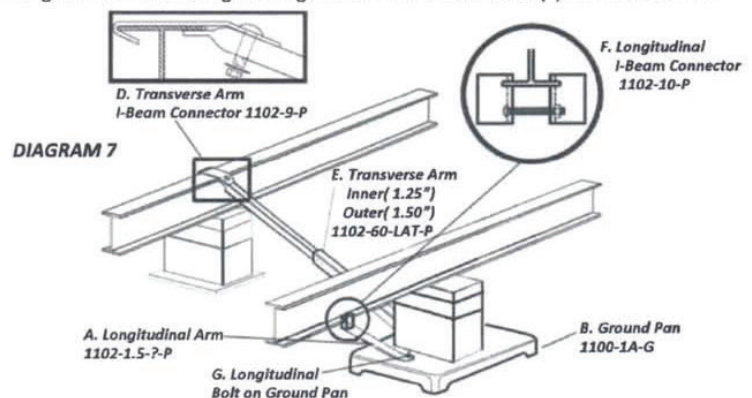
INSTALLATION OF 1102 SOLO LONGITUDINAL ARM see Diagram 7

*The 1102 SOLO system does not replace a pier.

- 1) Determine the correct length of longitudinal arm to be installed based on pier height. See **Table 6**
- 2) Make sure that the Longitudinal bolt (G) is centered underneath the I-beam. Note: It is required that each longitudinal arm is installed in opposite directions underneath the home. see Page 1, Diagram 1
- 3) Place the flattened end of the Longitudinal arm (A) over the bolt on the ground pan (G) and loosely secure with provided nut and washer.
- 4) Place both I-beam connectors (F) loosely on the bottom flange of the I-beam.
- 5) Attach the opposite end of the Longitudinal arm (A) to the bottom flange of the I-beam using the longitudinal I-beam connectors (F) with bolt and nut.
- 6) Using standard hand tools, tighten all nuts and bolts.

Note: Angle of Longitudinal Arm Must Be Between 15° & 45°.

TABLE 6	
PIER HEIGHT = THE DIMENSION FROM THE TOP OF THE PAN TO THE BOTTOM OF THE I-BEAM	
Pier Height	Longitudinal Arm Length
12" - 24"	39"
12" - 32"	44"
12" - 40"	54"
12" - 48"	65"



Notes:

- 1) Installation of Longitudinal systems eliminate the need for the longitudinal anchors. (exception see note 3 & 4 below)
- 2) Installation of Transverse systems eliminates the need for diagonal frame ties and the related anchors and stabilization plates..
- 3) All single wide homes require four corner anchors, See **PG. 1, DIAGRAM 1**
- 4) All other home manufacturer's instructions for installation of stabilizing devices must be followed, including vertical tie-down anchors and any special anchors such as mating line and shear wall tie down anchors. Any required anchors must be installed per the anchor manufacturer's instructions.
- 5) If the home manufacturers' installation instructions are not available, vertical tie-down anchors and any special anchors such as mating line and shear wall tie-down anchors must be installed in accordance with any state regulations, or as required by the authority having jurisdiction.
- 6) All Wind Zone II homes require vertical wall tiedowns see anchor manufacturer's instructions for spacing.

STATE OF MICHIGAN: As required by Section 1805.2.1, 2000 Michigan Building Code footer depth shall be 42" below grade or per local jurisdiction.

STATE OF N. CAROLINA: All tubing must be galvanized.